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26801 West Agoura Road
Calabasas, CA 91301

Service & Support Contact Information

North America: 800-995-2696

Latin America: 877-919-9526

EMEA: +800 00200100 (Toll Free) or +1(650)385-2193

Asia Pacific: +65 6240 8484

Web: service.esd.alcatel-lucent.com

Email: esd.support@alcatel-lucent.com

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CLI Quick Reference

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About This Guide

This *OmniSwitch AOS Release 6250/6350/6450 CLI Reference Guide* is a comprehensive resource to all Command Line Interface (CLI) commands available on the OmniSwitch 6250 Series, OmniSwitch 6350 Series, and OmniSwitch 6450 Series.

Supported Platforms

This information in this guide applies to the following products:

- OmniSwitch 6250 Series
- OmniSwitch 6450 Series
- OmniSwitch 6350 Series

Unsupported Platforms

The information in this guide does not apply to the following products:

- OmniSwitch 9000 Series
- OmniSwitch 6400 Series
- OmniSwitch 6600 Family
- OmniSwitch 6800 Family
- OmniSwitch 6850 Series
- OmniSwitch 6855 Series
- OmniSwitch (original version with no numeric model name)
- OmniSwitch 7700/7800
- OmniSwitch 8800
- Omni Switch/Router
- OmniStack
- OmniAccess

Who Should Read this Manual?

The audience for this user guide is network administrators and IT support personnel who need to configure, maintain, and monitor switches and routers in a live network. Anyone wishing to gain knowledge on the details of all CLI commands available on the OmniSwitch benefit from the material in this reference guide. However, advanced users who have already familiarized themselves with the OmniSwitch CLI commands benefit most from the detailed content in this guide.

When Should I Read this Manual?

Read this guide whenever you want detailed information on individual CLI commands. Although this guide provides helpful information during any stage of the configuration process, it is a good idea to first familiarize yourself with the software features available on the switch before investigating the detailed command information in this guide.

Overview information, procedures, and live network examples on switch software features is found in the *OmniSwitch AOS Release 6250/6350/6450 Switch Management Guide* and the *OmniSwitch AOS Release 6250/6350/6450 Network Configuration Guide*. Once you are familiar with the procedures and base CLI commands in these configuration guides, see the guide to obtain detailed information on the individual commands.

What is in this Manual?

This reference guide includes information on every CLI command available in the switch. The information provided for each CLI command includes:

- Command description.
- Syntax.
- Description of all keywords and variables included in the syntax.
- Default values.
- Usage guidelines, which include tips on when and how to use the command.
- Examples of command lines using the command.
- Related commands with descriptions.
- Release history, which indicates the release when the command was introduced.
- SNMP information, such as the MIB files related to a set of CLI commands. In addition each CLI command includes the corresponding MIB variables that map to all parameters included in a command.

What is Not in this Manual?

Primarily a reference, this guide does not provide step-by-step instructions on how to set up particular features on the switch. It also does not provide overview or application examples on software features. For comprehensive information on how to configure particular software features in the switch, consult the appropriate configuration guide.

This guide also does not provide any information on the network management applications, WebView and OmniVista. Further information on WebView and OmniVista is found in the context-sensitive on-line help available with those applications.

How is the Information Organized?

Each chapter in this guide includes reference material for all commands related to a single software feature, such as server load balancing or link aggregation. Commands in a single chapter share a common prefix.

Text Conventions

The following table contains text conventions and usage guidelines for CLI commands as they are documented in this guide.

bold text	Indicates basic command and keyword syntax. Example: show snmp station
<i>italicized text</i>	Indicates user-specific information such as IP addresses, slot numbers, passwords, names, and so on. Example: no snmp station <i>ip_address</i>
[] (Straight Brackets)	Indicates optional parameters for a given command. Example: show aaa server [<i>server_name</i>] Here, you can enter either of the following options: show aaa server show aaa server <i>server_name</i> (where <i>server_name</i> is the user-specified server name, for example, show aaa server myserv-er1) Note that this example includes <i>italicized text</i> . The optional parameter in this case is a user-specified server name.
{ } (Curly Braces)	Indicates that the user has to choose between one or more parameters. Example: port mirroring { enable disable } Here, you have to choose one of the following: port mirroring enable or port mirroring disable

(Vertical Pipes)	Used to separate parameter choices within a command string. For example, the command string show health threshold [rx txrx memory cpu] separates the choices rx , txrx , memory , and cpu . Examples: show health threshold rx show health threshold txrx show health threshold memory show health threshold cpu
“” (Quotation Marks)	Used to enclose text strings that contain spaces. The quotation marks are required input on the command line. Example: vlan 2 “new test vlan”

Documentation Roadmap

The OmniSwitch user documentation suite was designed to supply you with information at several critical junctures of the configuration process. The following section outlines a roadmap of the manuals that helps you at each stage of the configuration process. Under each stage, we point you to the manual or manuals that is helpful to you.

Stage 1: Using the Switch for the First Time

Pertinent Documentation: *Getting Started Guide*
Release Notes

A hard-copy *Getting Started Guide* is included with your switch; this guide provides all the information you need to get your switch up and running the first time. This guide provides information on unpacking the switch, rack mounting the switch, installing modules, unlocking access control, setting the switch's IP address, and setting up a password. It also includes succinct overview information on fundamental aspects of the switch, such as hardware LEDs, the software directory structure, CLI conventions, and web-based management.

At this time you have to also familiarize yourself with the Release Notes that accompanied your switch. This document includes important information on feature limitations that are not included in other user guides.

Stage 2: Gaining Familiarity with Basic Switch Functions

Pertinent Documentation: *Hardware Users Guide*
Switch Management Guide

Once you have your switch up and running, you begin to understand the basic aspects of its hardware and software. Information about switch hardware is provided in the platform-specific *Hardware Users Guide*. This guide provides specifications, illustrations, and descriptions of all hardware components—chassis, power supplies, Chassis Management Modules (CMMs), Network Interface (NI) modules, uplink modules, stacking modules, and cooling fans. It also includes steps for common procedures, such as removing and installing switch components.

The *Switch Management Guide* for your switch platform is the primary user guide for the basic software features on a single switch. This guide contains information on the switch directory structure, basic file and directory utilities, switch access security, SNMP, and web-based management. It is recommended that you read this guide before connecting your switch to the network.

Stage 3: Integrating the Switch Into a Network

Pertinent Documentation: *Network Configuration Guide*

When you are ready to connect your switch to the network, you need to learn how the OmniSwitch implements fundamental software features, such as 802.1Q, VLANs, Spanning Tree, and network routing protocols. The *Network Configuration Guide* for your switch platform contains overview information, procedures and examples on how standard networking technologies are configured in the OmniSwitch.

Anytime

The *OmniSwitch CLI Reference Guide* contains comprehensive information on all CLI commands supported by the switch. This guide includes syntax, default, usage, example, related CLI command, and CLI-to-MIB variable mapping information for all CLI commands supported by the switch. Consult this guide anytime during the configuration process to find detailed and specific information on each CLI command.

Related Documentation

User manuals can be downloaded at following

<http://enterprise.alcatel-lucent.com/?dept=UserGuides&page=Portal>

The following are the titles and descriptions of all the related OmniSwitch 6250, 6450, 6350 user manuals:

- *OmniSwitch 6250 Hardware Users Guide*

Complete technical specifications and procedures for all OmniSwitch 6250 chassis, power supplies, and fans. Also includes comprehensive information on assembling and managing stacked configurations.

- *OmniSwitch 6450 Hardware Users Guide*

Complete technical specifications and procedures for all OmniSwitch 6450 chassis, power supplies, and fans. Also includes comprehensive information on assembling and managing stacked configurations.

- *OmniSwitch 6350 Hardware Users Guide*

Complete technical specifications and procedures for all OmniSwitch 6350 chassis, power supplies, and fans. Also includes comprehensive information on assembling and managing stacked configurations.

- *OmniSwitch AOS Release 6250/6350/6450 CLI Reference Guide*

Complete reference to all CLI commands supported on the OmniSwitch 6250, 6450, 6350. Includes syntax definitions, default values, examples, usage guidelines and CLI-to-MIB variable mappings.

- *OmniSwitch AOS Release 6250/6350/6450 Switch Management Guide*

Includes procedures for readying an individual switch for integration into a network. Topics include the software directory architecture, image rollback protections, authenticated switch access, managing switch files, system configuration, using SNMP, and using web management software (WebView).

- *OmniSwitch AOS Release 6250/6350/6450 Network Configuration Guide*

Includes network configuration procedures and descriptive information on all the major software features and protocols included in the base software package. Chapters cover Layer 2 information (Ethernet and VLAN configuration), Layer 3 information (routing protocols, such as RIP), security options (authenticated VLANs), Quality of Service (QoS), and link aggregation.

- *OmniSwitch AOS Release 6250/6350/6450 Transceivers Guide*

Includes information on Small Form Factor Pluggable (SFPs) and 10 Gbps Small Form Factor Pluggables (XFPs) transceivers.

- *Technical Tips, Field Notices*

Includes information published by Alcatel-Lucent Enterprise's Customer Support group.

- *Release Notes*

Includes critical Open Problem Reports, feature exceptions, and other important information on the features supported in the current release and any limitations to their support.

Product Documentation

All products are shipped with a Product Documentation Card that provides details for downloading documentation for all OmniSwitch and other Alcatel-Lucent Enterprise data products. All user guides for the OmniSwitch Series are included on the Alcatel-Lucent Enterprise public website. This website also includes user guides for other Alcatel-Lucent Enterprise products. The latest user guides can be found on our website at:

<http://enterprise.alcatel-lucent.com/UserGuides>

Technical Support

An Alcatel-Lucent Enterprise service agreement brings your company the assurance of 7x24 no-excuses technical support. You'll also receive regular software updates to maintain and maximize your Alcatel-Lucent Enterprise product's features and functionality and on-site hardware replacement through our global network of highly qualified service delivery partners. Additionally, with 24-hour-a-day access to Alcatel-Lucent Enterprise's Service and Support web page, you will be able to view and update any case (open or closed) that you have reported to Alcatel-Lucent Enterprise's technical support, open a new case or access helpful release notes, technical bulletins, and manuals. For more information on Alcatel-Lucent Enterprise's Service Programs, see our web page at service.esd.alcatel-lucent.com, call us at 1-800-995-2696, or email us at esd.support@alcatel-lucent.com.

Documentation Feedback

Alcatel-Lucent Enterprise values comments on the quality and usefulness of the documentation. To send comments on the OmniSwitch documentation use the following email address: feedback.osdocs@alcatel-lucent.com.

For document identification it's helpful to include the Document Title, Part Number and Revision (which can be found on the title page) with any comments.

1 CMM Commands

The Chassis Management Module (CMM) CLI commands allow you to manage switch software files in the working directory, the certified directory, and the running configuration.

MIB information for the CMM commands is as follows:

Filename: AlcatelIND1Chassis.mib
Module: ALCATEL-IND1-CHASSIS-MIB

Filename: AlcatelIND1ConfigMgr.mib
Module: ALCATEL-IND1-CONFIG-MGR-MIB DEFINITIONS

A summary of available commands is listed here:

reload
reload working
copy running-config working
write memory
copy working certified
copy flash-synchro
takeover
show running-directory
show reload
show microcode
show usb statistics
usb
usb auto-copy
usb disaster-recovery
mount
umount
image integrity-check

reload

Reboots the CMM to its startup software configuration.

reload [**primary** | **secondary**] [**with-fabric**] [**in** [*hours:*] *minutes* | **at** *hour:minute* [*month day* | *day month*]]

reload [**primary** | **secondary**] [**with-fabric**] **cancel**

Syntax Definitions

primary secondary	Reboot the primary or secondary CMM to its startup software configuration. If the primary CMM is already running the startup version, a primary reboot results in a secondary takeover.
in [<i>hours:</i>] <i>minutes</i>	Optional syntax. Schedules a reload of the software to take effect in the specified minutes or hours and minutes within the next 24 hours.
at <i>hour:minute</i>	Optional syntax. Schedules a reload of the software to take place at the specified time using a 24-hour clock. If you do not specify the month and day, the reload takes place at the specified time on the current day provided the specified time is later than the time when the CLI command is issued. If the specified time is earlier than the current time, the reload takes place on the following day.
<i>month day</i> <i>day month</i>	The name of the month and the number of the day for the scheduled reload. Specify a month name and the day number. It is unimportant if the month or day is first. See examples below for further explanation.
cancel	Cancels a pending time delayed reboot.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- This command causes the specified CMM to reboot. If no CMM is specified, the primary CMM reboots.
- If a reload command is issued, and another reload is currently scheduled, a message appears informing the user of the next reload time and asks for confirmation to change to the new reload time.
- If the switch has a redundant CMM and the primary CMM is rebooted, the switch fails over to the secondary CMM. For more information on CMM failover, see “Managing CMM Directories” in the *OmniSwitch AOS Release 6250/6350/6450 Switch Management Guide*.
- If the switch is part of a stacked configuration consisting of three or more switches, the next switch in “idle” mode becomes the secondary CMM, and the original primary CMM becomes “idle.” For more information on stacks, see “Managing Stacks” in the appropriate *Hardware Users Guide*. The **cancel** keyword stops a pending reboot.

- This command can also be used on the secondary CMM.

Examples

```
-> reload
-> reload primary
-> reload primary in 15:25
-> reload primary at 15:25 august 10
-> reload primary at 15:25 10 august
```

Release History

Release 6.6.1; command introduced.

Related Commands

[reload working](#)

Immediate primary CMM reboot to the working software configuration without secondary CMM takeover.

MIB Objects

```
chasEntPhysicalTable
  csEntPhysicalIndex
  chasEntPhysAdminStatus
chasControlRedundantTable
  chasControlDelayedRebootTimer
```

reload working

Immediately reboots the primary CMM from the working directory. There is no CMM fail over during this reboot, causing a loss of switch functionality during the reboot. All NIs reboot as well, including the secondary CMM.

reload working {**rollback-timeout** *minutes* / **no rollback-timeout**} [**in** [*hours:*] *minutes* | **at** *hour:minute*]

Syntax Definitions

rollback-timeout <i>minutes</i>	Sets a timeout period, in minutes. The switch immediately reboots from the working directory and then at the end of this time period, automatically reboots again from the certified directory. The range is 1–15.
no rollback-timeout	Specifies no timeout to rollback. If the command is issued with this keyword, then the switch continues to run from the working directory until manually rebooted.
in [<i>hours:</i>] <i>minutes</i>	Optional syntax. Schedules a reload of the working directory to take effect in the specified minutes or hours and minutes within the next 24 hours.
at <i>hour:minute</i>	Optional syntax. Schedules a reload of the working directory to take place at the specified time using a 24-hour clock. If you do not specify the month and day, the reload takes place at the specified time on the current day provided the specified time is later than the time when the CLI command is issued. If the specified time is earlier than the current time, the reload takes place on the following day.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- This command is used to reload the primary CMM from the working directory as opposed to the certified CMM. The working directory reload takes place immediately unless a time frame is set using the **in** or **at** keywords.
- The **in** or **at** keywords allow you to schedule a working reload sometime in the future. A schedule working reboot is called an **activate**.
- If a reload or an immediate working reload is initiated before a scheduled activate is enacted, a message appears displaying the number of seconds until the scheduled activate and if it has to be overridden.
- If a timeout is set, the switch reboots again after the set number of minutes, from the certified directory. The reboot can be halted by issuing a cancel order as described in the **reload** command.
- If the switch is a part of a stacked configuration, using this command synchronizes the working directories of all the switches in the stack to the working directory of the primary CMM switch.

Examples

```
-> reload working rollback-timeout 5
-> reload working no rollback-timeout
-> reload working no rollback-timeout in 50
-> reload working rollback-timeout 10 at 12:50
```

Release History

Release 6.6.1; command introduced.

Related Commands

reload Reboots the CMM to its startup software configuration.

MIB Objects

```
chasControlModuleTable
  csEntPhysicalIndex
  chasControlActivateTimeout
```

copy running-config working

Copies the running configuration (RAM) to the working directory.

[configure] copy running-config working

Syntax Definitions

N/A

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- This command is used to copy the changes made using the CLI commands from the running configuration (RAM) to the working directory. A trap is raised to enforce a poll whenever a configuration file is saved. The configuration changes that are not committed are not detected by the switch until **write memory** or **copy running-config working** is applied.
 - This command is only valid if the switch is running from the working directory. Use the **show running-directory** command to check from where the switch is running.
 - This command performs the same function as the **write memory** command.
-

Note. The saved **boot.cfg** file is overwritten if the **takeover** command is executed after the **copy running-config working** or **write memory** commands, in an OmniSwitch set up with redundant CMMs.

Examples

```
-> configure copy running-config working
```

Release History

Release 6.6.1; command introduced.

Related Commands

[write memory](#)

Copies the running primary RAM version of the CMM software to the working primary flash.

[copy flash-synchro](#)

Copies the startup primary flash version of the CMM software to the startup secondary flash version of the CMM software.

MIB Objects

chasControlModuleTable
 csEntPhysicalIndex
 chasControlVersionMngt

write memory

Copies the running configuration (RAM) to the working directory.

[configure] write memory

Syntax Definitions

N/A

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- This command is used to copy the changes made using the CLI commands from the running configuration (RAM) to the working directory. A trap is raised to enforce a poll whenever a configuration file is saved. The configuration changes that are not committed are not detected by the switch until **write memory** or **copy running-config working** is applied.
- This command is only valid if the switch is running from the working directory. Use the **show running-directory** command to check from where the switch is running.
- This command performs the same function as the **copy running-config working** command.

Note. The saved **boot.cfg** file is overwritten if the **takeover** command is executed after the **copy running-config working** or **write memory** commands, in an OmniSwitch set up with redundant CMMs.

Examples

```
-> configure write memory
-> write memory
```

Release History

Release 6.6.1; command introduced.

Related Commands

- | | |
|------------------------------------|--|
| copy running-config working | Copies the running primary RAM version of the CMM software to the working primary flash. Or copy the startup primary flash version of the CMM software to the working primary flash. |
| copy flash-synchro | Copies the startup primary flash version of the CMM software to the startup secondary flash version of the CMM software. |

MIB Objects`configManager``configWriteMemory``configSaveSucceededTrapReason`

copy working certified

Copies the working directory version of the CMM software to the certified directory, on the primary CMM. This command also allows you to synchronize the primary and secondary CMMs.

[configure] copy working certified [flash-synchro]

Syntax Definitions

N/A

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- This command is used to overwrite the contents of the certified directory with the contents of the working directory. This has to be done only if the contents of the working directory have been verified as the best version of the CMM files.
- The **flash-synchro** keyword, when used with the **copy certified working** command, synchronizes the files between the primary and secondary CMMs by overwriting the contents of the secondary CMM certified directory with the contents of the primary CMM certified directory. If the switch is part of a stacked configuration, all switches in the stack are updated with the primary CMM files.
- In order for this command to work, the amount of free space in flash must equal the size of the files being copied. If there isn't enough free space, the copy attempt fails and an error message is generated. Only image files, the boot.cfg file, and the certs.pem file has to be kept in the working directory.
- This command does not work if the switch is running from the certified directory. To view where the switch is running from, see the [show running-directory](#) command.

Examples

```
-> copy working certified  
-> copy working certified flash-synchro
```

Release History

Release 6.6.1; command introduced.

Related Commands

copy working certified

Copies the running primary RAM version of the CMM software to the working primary flash. Or copy the startup primary flash version of the CMM software to the working primary flash.

copy flash-synchro

Copies the startup primary flash version of the CMM software to the startup secondary flash version of the CMM software.

MIB Objects

chasControlModuleTable

csEntPhysicalIndex

chasControlVersionMngt

copy flash-synchro

Copies the certified directory version of the primary CMM software to the certified directory of the secondary CMM.

[configure] copy flash-synchro

Syntax Definitions

N/A

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- This command is used to synchronize the certified directories of the primary and secondary CMMs. The two CMMs must be in synchronization if a fail over occurs, otherwise switch performance is lost.
- If the switch is part of stackable configuration, all switches in the stack are updated with the primary CMM files.

Examples

```
-> copy flash-synchro
-> configure copy flash-synchro
```

Release History

Release 6.6.1; command introduced.

Related Commands

[copy working certified](#)

Copies the running primary RAM version of the CMM software to the working primary flash. Or copies the startup primary flash version of the CMM software to the working primary flash.

[copy working certified](#)

Copies the working primary flash version of the CMM software to certified primary flash. Or copies the working primary flash version of the CMM software to startup secondary flash.

MIB Objects

```
chasControlModuleTable
  csEntPhysicalIndex
  chasControlVersionMngt
```

Release History

Release 6.6.1; command introduced.

Related Command

reload Reboots the CMM to its startup software configuration.

MIB Objects

chasEntPhysicalTable
 csEntPhysicalIndex
 chasEntPhysAdminStatus

show running-directory

Shows the directory from where the switch was booted.

show running-directory

Syntax Definitions

N/A

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Once a switch has booted and is running, it runs either from the working or certified directory. If running from the certified, changes made to the running configuration using CLI commands cannot be saved. A switch must be running from the working directory in order to save the current running configuration.
- This command can also be used on the secondary CMM.

Examples

-> show running-directory

```
CONFIGURATION STATUS
  Running CMM           : PRIMARY,
  CMM Mode              : DUAL CMMs,
  Current CMM Slot     : 1,
  Running configuration : WORKING,
  Certify/Restore Status : CERTIFY NEEDED
SYNCHRONIZATION STATUS
  Flash Between CMMs   : SYNCHRONIZED,
  Running Configuration : NOT AVAILABLE,
  Stacks Reload on Takeover: ALL STACKs (SW Activation)
```

output definitions

Running CMM	The CMM currently controlling the switch, either PRIMARY or SECONDARY.
CMM Mode	Displays whether the primary and secondary CMMs are synchronized. In the case that there is no secondary CMM, MONO-CMM-CHASSIS is shown.
Current CMM Slot	The slot number of the primary CMM.
Running Configuration	Where the switch is running from, either WORKING or CERTIFIED. A switch running from the certified directory is unable to manipulate files in the directory structure.

output definitions (continued)

Certify/Restore Status	Indicates if the CM has been certified (that is, the Working directory matches the Certified directory).
Flash Between CMMs	Displays whether the Working and Certified directories are the same.
NIs Reload On Takeover Stacks Reload on Takeover	<p>Displays how many Network Interface (NI) modules or switches in a stack is reloaded in the event of a management module takeover. Options include NONE, ALL, or a list of specific NIs.</p> <p>If there are <i>no</i> unsaved configuration changes <i>and</i> the flash directories on both the primary and secondary management modules have been synchronized via the copy flash-synchro command, no NIs is reloaded if a management module takeover occurs. As a result, data flow is not interrupted on the NIs during the takeover.</p> <p>If a configuration change is made to one or more NI modules (for example, a VLAN is configured on several different interfaces), and <i>the changes are not saved via the write memory</i> command, the corresponding NIs are automatically reload if a management module takeover occurs. Data flow on the affected NIs is interrupted until the reload is complete. Note that the NIs reload whether or not the flash synchronization status shows SYNCHRONIZED. This is because the unsaved changes have occurred in the running configuration (that is, RAM), and have not been written to the flash directory's configuration file. In this case, a list of only the affected NIs displays in the table output (for example, 1 6 9 12).</p> <p>If the flash directories on the primary and secondary management modules are <i>not synchronized</i> (for example, a copy flash-synchro command has not been issued recently), all NIs are reloaded automatically if a management module takeover occurs. Data flow is interrupted on all NIs until the reload is complete.</p>

Release History

Release 6.6.1; command introduced.

Related Commands

reload	Reboots the CMM to its startup software configuration.
write memory	Copies the running configuration (RAM) to the working directory.
copy flash-synchro	Copies the certified directory version of the primary CMM software to the certified directory of the secondary CMM.

MIB Objects

```

chasControlModuleTable
  chasControlRunningVersion
  chasControlActivateTimeout
  chasControlVersionMngt
  chasControlDelayedActivateTimer
  chasControlCertifyStatus
  chasControlSynchronizationStatus

```

show reload

Shows the status of any time delayed reboot(s) that are pending on the switch.

show reload [status]

Syntax Definitions

N/A

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- It is possible to preset a reboot on a CMM by using the **reload** command. If this is done, use the **show reload** command to see when the next scheduled reboot occurs.
- If the **reload working** command was used, and a rollback timeout was set, the time the rollback occurs is shown using the **show reload** command.
- This command can also be used on the secondary CMM.

Examples

```
-> show reload status
Primary   Control Module Reload Status: No Reboot Scheduled,
Secondary Control Module Reload Status: No Reboot Scheduled
```

Release History

Release 6.6.1; command introduced.

Related Commands

reload Reboots the primary or secondary CMM to its startup software configuration.

reload working Immediate primary CMM reboot to the working software configuration without secondary CMM takeover.

MIB Objects

N/A

show microcode

Displays microcode versions installed on the switch.

show microcode [**working** | **certified** | **loaded**]

Syntax Definitions

working	Specifies the switch's working directory; only microcode information from the working directory is displayed.
certified	Specifies the switch's certified directory; only microcode information from the certified directory is displayed.
loaded	Specifies that only loaded (that is, currently-active) microcode versions is displayed. Idle microcode versions is not displayed.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- If no additional parameters are entered (that is, **working**, **certified**, or **loaded**), microcode information for the running configuration is displayed.
- This command can also be used on the secondary CMM.

Examples

```
-> show microcode
Package           Release           Size           Description
-----+-----+-----+-----
Jbase.img         6.1.1.403.R01    10520989      Alcatel-Lucent Base Software
Jos.img           6.1.1.403.R01    1828255       Alcatel-Lucent OS
Jadvrout.img      6.1.1.403.R01    1359435       Alcatel-Lucent Advanced Routing
```

output definitions

Package	File name.
Release	Version number.
Size	File size.
Description	File description.

Release History

Release 6.6.1; command introduced.

Related Commands

[show microcode](#) Displays microcode versions installed on the switch.

MIB Objects

N/A

usb

Enables access to the device connected to the USB port.

usb {enable | disable}

Syntax Definitions

N/A

Defaults

parameter	default
enable / disable	disable

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Must use an Alcatel-Lucent certified USB device.
- If an Alcatel-Lucent certified USB device is connected after enabling the USB interface, the device is automatically mounted as **/uflash**.
- Once mounted, common file and directory commands can be used for file management.

Examples

```
-> usb enable
-> cp /flash/working/boot.cfg /uflash/boot.cfg
-> ls /uflash
```

Release History

Release 6.6.3; command introduced.

Related Commands

usb auto-copy

Allows backup image files from the USB device to be automatically copied to the /flash/working directory on the switch immediately after the USB device is connected

MIB Objects

```
systemServices
  systemServicesUsbEnable
```

usb auto-copy

Upgrades the image files from the USB device to the */flash/working* directory on the switch immediately after the USB device is connected.

usb auto-copy {enable | disable}

Syntax Definitions

N/A

Defaults

parameter	default
enable / disable	disable

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- The USB device must contain the proper file structure and image files mentioned below and the USB root directory must contain a signature file named *aossignature*. The *aossignature* file can be a blank text file transferred to the switch.
- This operation enables all of the image files from the */uflash/6250/working* or */uflash/6450/working*, based upon the platform performing the operation, to be copied to the */flash/working* directory and then reboot the switch.
- If the auto-copy is successful, the auto-copy feature is disabled before rebooting the switch and must be re-enabled by the administrator for the next auto-copy process to execute. This prevents running the same auto-copy multiple times.

Examples

```
-> usb auto-copy enable  
-> usb auto-copy disable
```

Release History

Release 6.6.3; command introduced.

Related Commands

usb

Enables access to the device connected to the USB interface.

MIB Objects

systemServices

systemServicesUsbAutoCopyEnable

usb disaster-recovery

Enables the disaster-recovery access to the USB device connected to the USB port when the switch is unable to boot properly.

usb disaster-recovery {enable | disable}

Syntax Definitions

N/A

Defaults

parameter	default
enable / disable	enable

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- The USB device must contain the proper file structure and image files mentioned below.
- If miniboot is unable to load AOS from the KFos.img file then the disaster-recovery operation begins. The disaster recovery operation formats the switch flash, copy all of the files from the */uflash/6250/certified* or */uflash/6450/certified* directory, based upon the platform performing the operation, to the */flash/certified* directory and reboot the switch.
- Disaster recovery has to be run on a standalone unit so that it does not affect any other units in a stack.

Examples

```
-> usb disaster-recovery enable
-> usb disaster-recovery disable
```

Release History

Release 6.6.3; command introduced.

Related Commands

usb Enables access to the device connected to the USB interface.

show usb statistics Displays the status USB setting and features.

MIB Objects

```
systemServices
  systemServicesUsbDisasterRecoveryEnable
```

mount

Mounts a USB device on /uflash.

mount [/uflash]

Syntax Definitions

/uflash The name of the file-system to mount.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

Once the USB device is mounted most file and directory commands associated with the **/flash** file system can be used with **/uflash** such as: mkdir, rmdir, cd, rm, cp, ls.

Examples

```
-> mount /uflash
-> ls /uflash
```

Release History

Release 6.6.3; command introduced.

Related Commands

umount Unmounts the /uflash file system from AOS.

MIB Objects

```
systemServicesAction
  systemServicesArg1
```

umount

Unmounts the /uflash file system from AOS.

umount /uflash

Syntax Definitions

N/A

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

This command unmounts the USB drive and has to be used prior to unplugging the USB drive to prevent possible data corruption.

Examples

```
-> umount /uflash
```

Release History

Release 6.6.3; command introduced.

Related Commands

mount Mounts the /uflash file system from AOS.

MIB Objects

```
systemServicesAction  
systemServicesArg1
```

show usb statistics

Displays the status USB setting and features.

show usb statistics

Syntax Definitions

N/A

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

N/A

Examples

```
-> show usb statistics
USB:                               Disabled
USB auto-copy:                     Enabled
USB disaster-recovery:             Disabled
/uflash is not mounted
```

output definitions

USB	Status of USB device interface.
USB auto-copy	Status of USB auto-copy feature.
USB disaster-recovery	Status of USB auto-copy feature.
/uflash	Whether the USB device is mounted or unmounted.

Release History

Release 6.6.3; command introduced.

Related Commands

usb

Enables access to the device connected to the USB interface.

usb auto-copy

Allows backup files from the USB device to be automatically copied to the /flash/working directory on the switch immediately after the USB device is connected.

usb disaster-recovery

Enables the disaster-recovery access to the USB device connected to the interface.

MIB Objects

NA

image integrity-check

This command is used to check the integrity of the image files in working or certified directory.

image integrity-check {**working** | **certified**} *filename*

Syntax Definitions

working	Specifies the working directory of the switch. Image integrity check will be performed only for microcode information present in the working directory.
certified	Specifies the certified directory of the switch. Image integrity check will be performed only for microcode information present in the certified directory.
<i>filename</i>	Name of the file in flash which has the hash value from the image, against which the calculated hash value need to be compared.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- When this command is entered without the filename, the SHA hash of the image files in selected directory (working/certified) is calculated and displayed. It can be manually verified against the hash provided in the file.
- When the command is entered with the filename, the SHA hash is calculated on the individual image files in the selected directory (working/certified) and compared with the hash information in the file.
- Hash value for the images needs to be stored in the *<filename>* in the below format.
 KFsecu.img:AE02549EA4D793593AD676F8A49A6522F2C9F4E
 KFeni.img:7F95BE32F2F1CB12E31D635AFA873C149551F1EA

Example

```
-> image integrity-check working
  HASH for  KFsecu.img      :  BC077D4A467CA0794E231A841342783793AE48E8

  HASH for  KFeni.img      :  9E09B914CFCA80333F6405116ADB89DF76A025C4

  HASH for  KFos.img       :  CD1C0743F1EEBF3480677D649F0748FB70FE3A11

  HASH for  KFdiag.img     :  4CF2A1E394906D40E6DBE6817C66664322B4CAED

  HASH for  KFbase.img     :  3955CDAA1C49DC50D0B52BE35DA2E5E0769C710D
```

```
-> Image integrity-check working hash.txt  
Computing the HASH for image files .....
```

```
Image integrity check success for KFsecu.img  
Image integrity check success for KPeni.img  
Image integrity check success for KFos.img  
Image integrity check success for KFdiag.img  
Image integrity check success for KFbase.img
```

Release History

Release 6.7.1 R02; command introduced.

Related Commands

N/A

MIB Objects

```
systemServicesAction  
systemServicesArg1  
systemServicesArg2
```

2 Chassis Management and Monitoring Commands

Chassis Management and Monitoring commands allow you to configure and view hardware-related operations on the switch. Topics include basic system information, as well as Network Interface (NI) module and chassis management.

Additional Information. Refer to your separate *Hardware Users Guide* for detailed information on chassis components as well as managing and monitoring hardware-related functions.

MIB information for the Chassis Management and Monitoring commands is as follows:

Filename: AlcatelIND1Chassis.mib
Module: ALCATEL-IND1-CHASSIS-MIB

Filename: AlcatelIND1System.MIB
Module: ALCATEL-IND1-SYSTEM-MIB

Filename: AlcatelIND1StackManager.MIB
Module: ALCATEL-IND1-STACK-MANAGER-MIB

A summary of available commands is listed here:

Management Commands	system contact system name system location system date system time system time-and-date synchro system timezone system daylight savings time update update lanpower reload ni reload all reload pass-through power ni temp-threshold stack set slot stack set slot mode stack clear slot hash-control mode fdb
Stack Split Detection Commands	stack split-protection stack split-protection linkaggid stack split-protection guard-timer stack split-protection helper stack split-protection helper linkagg show stack split-protection status show stack split-protection statistics show stack split-protection stacking-units show stack split-protection helper status
Monitoring Commands	show system show hardware info show chassis show cmm show ni show module show module long show module status show power show fan show temperature show stack topology show stack status show stack mode show hash-control
Licensing Commands	license apply license remove license unlock show license info show license file

system contact

Specifies the administrative contact of the switch. An administrative contact is the person or department in charge of the switch. If a contact is specified, users can easily find the appropriate network administrator if they have questions or comments about the switch.

system contact *text_string*

Syntax Definitions

text_string

The administrative contact being specified for the switch. The system contact can range from 1 to 254 characters in length. Text strings that include spaces must be enclosed in quotation marks. For example, **“Jean Smith Ext. 477 jsmith@company.com”**.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

N/A

Examples

```
-> system contact "Jean Smith Ext. 477 jsmith@company.com"  
-> system contact engineering-test@company.com
```

Release History

Release 6.6.1; command introduced.

Related Commands

system name	Modifies the current system name of the switch.
system location	Specifies the current physical location of the switch.
show system	Displays the basic system information for the switch.

MIB Objects

system
systemContact

system name

Modifies the current system name of the switch. The system name can be any simple, user-defined text description for the switch.

system name *text_string*

Syntax Definitions

text_string

The new system name. The system name can range from 1 to 254 characters in length. Text strings that include spaces must be enclosed in quotation marks. For example, “**OmniSwitch 6250**”.

Defaults

By default, the system name is set to ‘VxTarget’.

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

The OmniSwitch can be configured with a DHCP Client interface that allows the switch to obtain the system name (DHCP Option-12) from a DHCP server dynamically. The user-defined system name configuration (through CLI, WebView, SNMP) always gets priority over the DHCP server values.

For more information on DHCP client options, refer to the “Configuring DHCP” chapter of the *OmniSwitch AOS Release 6250/6350/6450 Network Configuration Guide*.

Examples

```
-> system name "OmniSwitch 6250"  
-> system name OS-6250
```

Release History

Release 6.6.1; command introduced.

Related Commands

system contact	Specifies the administrative contact details of the switch (for example, an individual or a department).
system location	Specifies the current physical location of the switch.
show system	Displays the basic system information for the switch.

MIB Objects

```
system  
  systemName
```

system location

Specifies the current physical location of the switch. If you need to determine the location of the switch from a remote site, entering a system location can be useful.

system location *text_string*

Syntax Definitions

text_string

The physical location of the switch. For example, **TestLab**. The system location can range from 1 to 254 characters in length. Text strings that include spaces must be enclosed in quotation marks. For example, **“NMS Test Lab”**.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

N/A

Examples

```
-> system location "NMS Test Lab"  
-> system location TestLab
```

Release History

Release 6.6.1; command introduced

Related Commands

[system contact](#)

Specifies the administrative contact of the switch (for example, an individual or a department).

[system name](#)

Modifies the current system name of the switch.

[show system](#)

Displays the basic system information for the switch.

MIB Objects

system
systemLocation

system date

Displays or modifies the current system date of the switch.

system date [*mm/dd/yyyy*]

Syntax Definitions

mm/dd/yyyy

The new date being specified for the system. Enter the date in the following format: *mm/dd/yyyy*, where *mm* is the month, *dd* is the day, and *yyyy* is the year. For example, **08/08/2005**.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- If you do not specify a new system date in the command line, the current system date is displayed.
- For more information on setting time zone parameters (for example, Daylight Savings Time), refer to the [system timezone command on page 2-9](#).

Examples

```
-> system date 08/08/2005
```

Release History

Release 6.6.1; command introduced.

Related Commands

[system time](#)

Displays or modifies the current system time of the switch.

[system timezone](#)

Displays or modifies the time zone for the switch.

MIB Objects

systemServices

systemServicesDate

system time

Displays or modifies the current system time of the switch.

system time [*hh:mm:ss*]

Syntax Definitions

hh:mm:ss

The new time being specified for the system. To set this value, enter the current time in 24-hour format, where *hh* is the hour, *mm* is the minutes, and *ss* is the seconds. For example, **14:30:00**.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

If you do not specify a new system time in the command line, the current system time is displayed.

Examples

```
-> system time 14:30:00
```

Release History

Release 6.6.1; command introduced.

Related Commands

[system date](#)

Displays or modifies the current system date of the switch.

[system timezone](#)

Displays or modifies the time zone for the switch.

MIB Objects

systemServices

 systemServicesTime

system time-and-date synchro

Synchronizes the time and date settings between primary and secondary Chassis Management Module (CMM).

system time-and-date synchro

Syntax Definitions

N/A

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- The **system time-and-date synchro** command applies only to switches with redundant CMM configurations.
- Synchronizing date and time settings is an important step in providing effective CMM failover for switches in redundant configurations. Be sure to periodically synchronize the primary and secondary CMMs using this command.
- For detailed redundancy information refer to “Managing Stacks” in addition to “Managing CMM Directory Content” in the *OmniSwitch AOS Release 6250/6350/6450 Switch Management Guide*.

Examples

```
-> system time-and-date synchro
```

Release History

Release 6.6.1; command introduced.

Related Commands

[copy flash-synchro](#)

Copies the certified directory version of the primary CMM software to the certified directory of the secondary CMM.

MIB Objects

systemServices

system timezone

Displays or modifies the time zone for the switch.

system timezone [*timezone_abbrev* | *offset_value* | *time_notation*]

Syntax Definitions

<i>timezone_abbrev</i>	Specifies a time zone for the switch and sets the system clock to run on UTC or GMT. Refer to the table in the “Usage Guidelines” section for a list of supported time zones. If you specify a time zone abbreviation, the hours offset from UTC is automatically calculated by the switch.
<i>offset_value</i>	Specifies the number of hours offset from UTC. Values can range from -13 through +12. The switch automatically enables UTC. If you do not want your system clock to run on UTC, enter the offset value as ‘+0’. This sets UTC to run on the local time.
<i>time_notation</i>	Specifies a non-integer time-notation offset for areas that are offset from UTC by increments of 15, 30, or 45 minutes (for example, 05:30).

Defaults

By default, the timezone is set to ‘GMT’.

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- To view the current time zone for the switch, enter the command **system timezone**.
- If Daylight Saving Time (DST), also referred to as *summertime*, is enabled, the clock automatically sets the default DST parameters for the local time zone. See [“system daylight savings time” on page 2-12](#)
- The OmniSwitch can be configured with a DHCP Client interface that allows the switch to dynamically obtain the time zone (DHCP Option-2) from a DHCP server. The user-defined time zone configuration (through CLI, WebView, SNMP) always gets priority over the DHCP server values. For more information on DHCP client options, refer to the “Configuring DHCP” chapter of the *OmniSwitch AOS Release 6250/6350/6450 Network Configuration Guide*.
- Refer to the following table for a list of supported time zone abbreviations:

Abbreviation	Name	Hours from UTC	DST Start	DST End	DST Change
nzst	New Zealand	+12:00	1st Sunday in Oct. at 2:00 a.m.	3rd Sunday in Mar. at 3:00 a.m.	1:00
zp11	No standard name	+11:00	No default	No default	No default
aest	Australia East	+10:00	Last Sunday in Oct. at 2:00 a.m.	Last Sunday in Mar. at 3:00 a.m.	1:00
gst	Guam	+10:00	No default	No default	No default

Abbreviation	Name	Hours from UTC	DST Start	DST End	DST Change
acst	Australia Central Time	+09:30	Last Sunday in Oct. at 2:00 a.m.	Last Sunday in Mar. at 3:00 a.m.	1:00
jst	Japan	+09:00	No default	No default	No default
kst	Korea	+09:00	No default	No default	No default
awst	Australia West	+08:00	No default	No default	No default
zp8	China; Manila, Philippines	+08:00	No default	No default	No default
zp7	Bangkok	+07:00	No default	No default	No default
zp6	No standard name	+06:00	No default	No default	No default
zp5	No standard name	+05:00	No default	No default	No default
zp4	No standard name	+04:00	No default	No default	No default
msk	Moscow	+03:00	Last Sunday in Mar. at 2:00 a.m.	Last Sunday in Oct. at 3:00 a.m.	1:00
eet	Eastern Europe	+02:00	Last Sunday in Mar. at 2:00 a.m.	Last Sunday in Oct. at 3:00 a.m.	1:00
cet	Central Europe	+01:00	Last Sunday in Mar. at 2:00 a.m.	Last Sunday in Oct. at 3:00 a.m.	1:00
met	Middle Europe	+01:00	Last Sunday in Mar. at 2:00 a.m.	Last Sunday in Oct. at 3:00 a.m.	1:00
bst	British Standard Time	+00:00	Last Sunday in Mar. at 1:00 a.m.	Last Sunday in Oct. at 3:00 a.m.	1:00
wet	Western Europe	+00:00	Last Sunday in Mar. at 1:00 a.m.	Last Sunday in Oct. at 3:00 a.m.	1:00
gmt	Greenwich Mean Time	+00:00	No default	No default	No default
wat	West Africa	-01:00	No default	No default	No default
zm2	No standard name	-02:00	No default	No default	No default
zm3	No standard name	-03:00	No default	No default	No default
nst	Newfoundland	-03:30	1st Sunday in Apr. at 2:00 a.m.	Last Sunday in Oct. at 2:00 a.m.	1:00
ast	Atlantic Standard Time	-04:00	1st Sunday in Apr. at 2:00 a.m.	Last Sunday in Oct. at 2:00 a.m.	1:00
est	Eastern Standard Time	-05:00	1st Sunday in Apr. at 2:00 a.m.	Last Sunday in Oct. at 2:00 a.m.	1:00
cst	Central Standard Time	-06:00	1st Sunday in Apr. at 2:00 a.m.	Last Sunday in Oct. at 2:00 a.m.	1:00
mst	Mountain Standard Time	-07:00	1st Sunday in Apr. at 2:00 a.m.	Last Sunday in Oct. at 2:00 a.m.	1:00
pst	Pacific Standard Time	-08:00	2nd Sunday in Mar. at 2:00 a.m.	1st Sunday in Nov. at 2:00 a.m.	1:00
akst	Alaska	-09:00	1st Sunday in Apr. at 2:00 a.m.	Last Sunday in Oct. at 2:00 a.m.	1:00
hst	Hawaii	-10:00	No default	No default	No default
zm11	No standard name	-11:00	No default	No default	No default

Examples

```
-> system timezone mst
-> system timezone -7
-> system timezone +0
-> system timezone +12
-> system timezone 12
-> system timezone 05:30
-> system timezone 00:00 hour from UTC
```

Release History

Release 6.6.1; command introduced.

Related Commands

system date	Displays or modifies the current system date of the switch.
system time	Displays or modifies the current system time of the switch.

MIB Objects

```
systemServices
  systemServicesTimezone
  systemServicesTimezoneStartWeek
  systemServicesTimezoneStartDay
  systemServicesTimezoneStartMonth
  systemServicesTimezoneStartTime
  systemServicesTimezoneOffset
  systemServicesTimezoneEndWeek
  systemServicesTimezoneEndDay
  systemServicesTimezoneEndMonth
  systemServicesTimezoneEndTime
  systemServicesEnabledDST
```

system daylight savings time

Enables or disabled Daylight Savings Time (DST) on the switch.

```
system daylight savings time [{enable | disable} | start {week} {day} in {month} at {hh:mm} end {week}
{day} in {month} at {hh:mm} [by min]]
```

Syntax Definitions

enable	Enables DST. The switch clock automatically adjusts for DST as specified by one of the default time zones or by the specifications set with the system daylight savings time start command.
disable	Disables DST. The switch clock does not change for DST.
start	For non-default time zone, specify the <i>week</i> , <i>day</i> , <i>month</i> , and <i>hour</i> for DST to start. (Specify the <i>week</i> , <i>day</i> , <i>month</i> , and <i>hour</i> for DST to end.)
end	For non-default time zone, if you specify the week, day, month, and hour for DST to end, you have to specify the <i>week</i> , <i>day</i> , <i>month</i> , and <i>hour</i> for DST to end.
<i>week</i>	Indicate whether first, second, third, fourth, or last.
<i>day</i>	Indicate whether Sunday, Monday, Tuesday, Wednesday, Thursday, Friday, or Saturday.
<i>month</i>	Indicate whether January, February, March, April, May, June, July, August, September, October, November, or December.
<i>hh:mm</i>	Use two digits between 00 and 23 to indicate hour. Use two digits between 00 and 59 to indicate minutes. Use as for a 24 hour clock.
by min	Use two digits to indicate the number of minutes switch clock will be offset for DST. The range is from 00 to 50.

Defaults

- By default, DST is disabled.
- Unless a different value is set with the **by** syntax, the system clock offsets one hour for DST.

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- If your timezone shows a default value in the DST Start and DST End columns of the “Time Zone and DST Information Table” found in Chapter 2, “Managing System Files,” of the *OmniSwitch AOS Release 6250/6350/6450 Switch Management Guide*, you do not need to set a start and end time. Your switch clock automatically adjusts for DST as shown in the table.
- You must enable DST whether you use a default DST timezone or if you specify your offset using the **daylight savings time start** syntax.

Examples

```
-> system daylight savings time enable
-> system daylight savings time disable
-> system daylight savings time start first Sunday in May at 23:00 end last Sunday
in November at 10:00
-> system daylight savings time start first Sunday in May at 23:00 end last Sunday
in November at 10:00 by 45
```

Release History

Release 6.6.1; command introduced.

Related Commands

system time	Displays or modifies the current system time of the switch.
system timezone	Displays or modifies the timezone for the switch.
system date	Displays or modifies the current system date of the switch.

MIB Objects

```
systemServices
  systemServicesTimezone
  systemServicesEnabledDST
```

update

Updates the versions of Uboot, FPGA, BootROM, or Miniboot. Refer to the Release Notes and any available Upgrade Instructions for the new release before performing this type of update on the switch.

update {uboot {cmm | ni {all | slot}} uboot-miniboot | fpga cmm | bootrom {all | slot} | [default | backup] miniboot [all | slot] }

Syntax Definitions

uboot	Updates the Uboot version.
ni	Specifies that the update is performed for the NI Module.
all	Specifies that the update is performed for all slots within a chassis or all switches within a stack.
<i>slot</i>	Specifies the number of the NI module within a chassis or the switch number within a stack for which the update is performed.
uboot-miniboot	Updates the Uboot and the miniboot version on all available slots on all available switches within a stack.
miniboot	Updates the miniboot version.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- When performing an update, it is important that the correct update file is used and that the file is located in the **/flash** directory on the switch. Specifying the wrong file can affect the operation of the switch.
- A different update file is required depending on the type of switch and the type of update. The following table provides a list of the required update files:

Platform	Update Type	Update File
OmniSwitch 6250, 6350, 6450	Uboot	kfu-boot.bin
	Miniboot	kfminiboot.bs
	Uboot and Miniboot	kfu-boot.bin kfminiboot.bs
	FPGA	KFfpga.upgrade_kit

Examples

```
-> update uboot 2
-> update uboot-miniboot
-> update fpga cmm
-> update miniboot 3
```

Release History

Release 6.6.1; command introduced.

Related Commands

reload all Reloads all the NIs and CMMs in a chassis.

MIB Objects

```
systemServices
  systemServicesArg1
  systemServicesAction
```

update lanpower

Uploads new firmware to the POE controller. Contact Alcatel-Lucent support representative before using this command.

update lanpower {*lanpower_num* | **all**}

Syntax Definitions

<i>lanpower_num</i>	The POE unit number to update.
all	Updates all POE units in the switch.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

N/A

Examples

```
-> update lanpower 3  
-> update lanpower all
```

Release History

Release 6.6.1; command introduced.

Related Commands

update	Updates the versions of Uboot, FPGA, BootROM, or Miniboot.
------------------------	--

reload ni

Reloads (that is, reboots) a specified NI module.

reload ni [slot] *number*

Syntax Definitions

slot	Optional command syntax.
<i>number</i>	Slot (that is, switch) number within a stack that represents the NI module to be reloaded.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

The **reload ni** command reboots only the specified switch. If you use this command on a switch that has a primary CMM role in a stack, it will no longer be primary. Instead, it will be secondary in a two-switch stack and idle in a stack consisting of three or more switches.

Examples

```
-> reload ni slot 2
-> reload ni 2
```

Release History

Release 6.6.1; command introduced.

Related Commands

reload all	Reloads all the NIs and CMMs in a chassis.
power ni	Turns the power on or off for a specified NI module.
show ni	Shows the hardware information and the status for NI modules currently running in the chassis.

MIB Objects

```
chasEntPhysicalTable
  chasEntPhysAdminStatus
  reset
```

reload all

Reloads all NIs and CMMs.

reload all [**in** [*hours:*] *minutes* | **at** *hour:minute* [*month day* / *day month*]]

reload all cancel

Syntax Definitions

in [*hours:*] *minutes*

Optional syntax. Schedules a reload of all modules to take effect in the specified minutes or hours and minutes within the next 24 hours.

at *hour:minute*

Optional syntax. Schedules a reload of all modules to take place at the specified time using a 24-hour clock. If you do not specify the month and day, reload takes place at the specified time on the current day provided the specified time is later than the time the CLI command was issued. If the specified time is earlier than the current time, the reload takes place on the following day.

month day / *day month*

The name of the month and the number of the day for the scheduled reload. Specify a month name and the day number. It is unimportant if the month or day is first.

cancel

Cancels a pending time delayed reload.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

N/A

Examples

```
-> reload all
```

Release History

Release 6.6.1; command introduced.

Related Commands

reload ni	Reloads a specific NI module.
power ni	Turns the power on or off for a specified NI module.
show ni	Shows the hardware information and status for NI modules currently running in the chassis.

MIB Objects

```
chasEntPhysicalTable  
  chasEntPhysAdminStatus  
  reset
```

reload pass-through

Reloads a switch in a stacked configuration that has been forced into the pass-through mode. The pass-through mode is a state in which a switch is assigned a slot number that is not available in the current stacked configuration. When a switch is in the pass-through mode, its Ethernet ports are brought down (they cannot pass traffic). However, its stacking ports are fully functional and can pass traffic through to other switches in the stack. In this way, pass-through mode provides a mechanism to prevent the stack ring from being broken.

Note. If a switch is forced into the pass-through mode, the rest of the virtual chassis (stack) is not disrupted. Any elements in the stack *not* operating in pass-through mode continue to operate normally.

reload pass-through *slot-number*

Syntax Definitions

slot-number

The virtual chassis slot number of the switch currently in the pass-through mode (1001–1008). For more information on pass-through slot numbering, refer to the “Usage Guidelines” section.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Switches in the pass-through mode are given distinct slot numbers. These slot numbers are *not* related to their position in the stack. Instead, they are assigned the prefix “100,” followed by the numerical order in which they were forced into pass-through. In other words, if only one switch in a stack is forced into the pass-through mode, it is given the slot number 1001. If multiple switches in a stack are forced into pass-through, the first switch in pass-through is given the slot number 1001, the second switch is given the slot number 1002, the third switch is given the slot number 1003, and so on.
- Before issuing the **reload pass-through** command, be sure that the corresponding switch has been given a unique *saved slot* number. The saved slot number is the slot number the switch assumes after it has been rebooted. If the saved slot number is not unique, the switch returns to pass-through mode. To view the current and saved slot numbers for all switches in a stack, use the [show stack topology](#) command. To assign a unique saved slot number to a switch before rebooting, use the [stack set slot](#) command.

Examples

```
-> reload pass-through 1001
```

Release History

Release 6.6.1; command introduced.

Related Commands

[show stack topology](#)

Displays the current operating topology of switches within a stack.

[stack set slot](#)

Assigns a new saved slot number to a switch in a stacked configuration.

MIB Objects

alaStackMgrChassisTable

 alaStackMgrSlotNINumber

 alaStackMgrCommandAction

 reloadPassThru

power ni

Turns the power on or off for a specified NI module.

power ni [**slot**] *slot-number*

no power ni [**slot**] *slot-number*

Syntax Definitions

slot

Optional command syntax.

slot-number

The chassis slot number containing the NI module being powered on or off.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

Use the **no** form of this command to power off the corresponding switch in a stacked configuration.

Examples

```
-> power ni slot 1
-> power ni 7
```

Release History

Release 6.6.1; command introduced.

Related Commands

[reload ni](#)

Reloads a specified NI module.

[show ni](#)

Shows the hardware information and status for NI modules currently running in the chassis.

MIB Objects

```
chasEntPhysicalTable
  chasEntPhysAdminStatus
  powerOn
  powerOff
```

temp-threshold

Sets the CPU warning temperature threshold for the switch.

temp-threshold *temp slot slot-number*

Syntax Definitions

<i>temp</i>	The new temperature threshold value, in Celsius (0–105; 0–91 on OS6250-P24).
<i>slot-number</i>	The chassis slot number for which the CPU warning temperature threshold is set.

Defaults

parameter	default
<i>temp</i>	95 86 (OS6250-P24)

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

Use the [show temperature](#) command to display the current value for the temperature warning threshold. Do not use the [show health threshold](#) command as it does not display temperature threshold information.

Examples

```
-> temp-threshold 45
-> temp-threshold 55 slot 2
```

Release History

Release 6.6.1; command introduced.

Related Commands

[show temperature](#) Displays the current operating chassis ambient temperature, as well as current temperature threshold settings.

MIB Objects

chasChassisTable
chasTempThreshold

stack set slot

Sets the *saved slot* number for a switch in a stacked configuration. The saved slot number is the slot position the switch assumes following a reboot. The **stack set slot** command also provides syntax for immediately rebooting the corresponding switch.

stack set slot *slot-number saved-slot saved-slot-number [reload]*

Syntax Definitions

<i>slot-number</i>	The current slot position used by the switch (1–8; 1001–1008). The valid slot number range also includes slot positions 1001 through 1008, reserved for switches in pass-through mode.
<i>saved-slot-number</i>	The new (that is, saved) slot number (1–8). The saved slot number is the slot position the switch assumes following a reboot.
reload	Optional command syntax. When reload is entered in the command line, a confirmation prompt is issued. If the user approves the reload, the corresponding switch reboots immediately and the new (saved) slot number takes effect when the switch comes back up barring any pass-through mode conditions, such as duplicate slot numbers.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6450

Usage Guidelines

- When the **stack set slot** command is issued, the new saved slot value is written to the **boot.slot.cfg** file. This file is located in the /flash directory of the switch and is used when assigning a slot number for the switch during the boot process.
- To avoid duplicate slot numbers within the virtual chassis (that can force one or more switches into pass-through mode), be sure that the saved slot number being configured is not already being used by another switch in the stack. To view the saved slot numbers currently assigned, use the **show stack topology** command. For detailed information on assigning saved slot numbers, as well as information on pass-through mode, refer to the *Hardware Users Guide*.

Examples

```
-> stack set slot 2 saved-slot 3
-> stack set slot 1001 saved-slot 4 reload
```

Release History

Release 6.6.1; command introduced.

Related Commands

- stack clear slot** Clears the current saved slot information for a switch within a stacked configuration.
- show stack topology** Displays the current operating topology of switches within a stack.

MIB Objects

alaStackMgrChassisTable
 alaStackMgrSlotNINumber
 alaStackMgrSavedSlotNINumber
 alaStackMgrCommandAction
 alaStackMgrCommandStatus

stack set slot mode

Sets the switch to either stackable or standalone mode. The **stack set slot mode** command also provides syntax for immediately rebooting the corresponding switch.

stack set slot *slot-number* **mode** {**stackable** | **standalone**} [**reload**]

Syntax Definitions

<i>slot-number</i>	The current slot position used by the switch (1–8; 1001–1008). The valid slot number range also includes slot positions 1001 through 1008, reserved for switches in pass-through mode.
stackable	Sets the switch to stackable mode allowing the switch to be stacked into a virtual chassis using the fixed fiber ports.
standalone	Sets the switch to standalone mode allowing the fixed fiber ports to be used as uplink ports.
reload	Optional command syntax. When reload is entered in the command line, a confirmation prompt is issued. If the user approves the reload, the corresponding switch reboots immediately and the new mode takes effect when the switch comes back up.

Defaults

parameter	default
mode	Standalone

Platforms Supported

OmniSwitch 6250-Metro model, OmniSwitch 6450-10

Usage Guidelines

Reboot the switch for the new mode to take effect.

Examples

```
-> stack set slot 2 mode stackable
```

Release History

Release 6.6.1; command introduced.

Release 6.6.4; command introduced on OS6450-10.

Related Commands

show stack mode Displays the current mode of the switches.

MIB Objects

```
alaStackMgrChassisTable  
  alaStackMgrSlotNINumber  
  alaStackMgrCommandAction  
  alaStackMgrCommandStatus
```

stack clear slot

Clears the current saved slot information for a switch within a stacked configuration. When the saved slot information is cleared using the **stack clear slot** command, the corresponding switch is automatically assigned a unique slot number following a reboot. The command also provides optional syntax for immediately forcing the corresponding switch into pass-through mode.

stack clear slot *slot-number* [**immediate**]

Syntax Definitions

<i>slot-number</i>	The current slot position used by the switch (1–8; 1001–1008). The valid slot number range also includes slot positions 1001 through 1008, reserved for switches in pass-through mode.
immediate	Optional command syntax. When immediate is entered in the command line, the corresponding switch is manually forced into pass-through mode at the time the command is entered. All traffic on the Ethernet ports of the switch is stopped. Unprocessed traffic (if applicable) continue to pass through the stacking cables to other switches in the stack. A limited number of management commands on the switch are also supported.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6450

Usage Guidelines

- When the **stack clear slot** command is issued, the **boot.slot.cfg** file is immediately removed from the /flash directory of the switch. As a result, no slot assignment information is found the next time the switch is booted. The switch is automatically assigned a unique slot number during the boot process.
- Primary and secondary management modules *cannot* be forced into pass-through mode using the **stack clear slot** command. If the user attempts to force the secondary management module into pass-through, the secondary switch reboots and assumes idle status when it comes back up. Meanwhile, an idle switch within the stack is selected and rebooted; when it comes up it assumes the secondary role.

Examples

```
-> stack clear slot 1002
-> stack clear slot 3 immediate
```

Release History

Release 6.6.1; command introduced.

Related Commands

- stack set slot** Sets the saved slot number for a switch in a stacked configuration.
- show stack topology** Displays the current operating topology of switches within a stack.

MIB Objects

alaStackMgrChassisTable
 alaStackMgrSlotNINumber
 alaStackMgrSavedSlotNINumber
 alaStackMgrCommandAction
 alaStackMgrCommandStatus

hash-control mode fdb

Configures the hash control method on the switch. Depending on this configuration, hashing algorithm used by various applications for Layer 2 table lookup is affected.

```
hash-control mode fdb { xor | crc }
```

Syntax Definitions

xor Sets hash control lookup to XOR mode.
crc Sets hashing to extended mode.

Defaults

parameter	default
fdb	xor

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- The hash control setting impacts the fabric load balancing for chassis based products.
- Changing the hash control mode affects the hashing algorithm for Link Aggregation and EMCP.
- Changing the hash mode requires a switch or stack reboot.

Examples

```
-> hash-control mode fdb xor  
-> hash-control mode fdb crc
```

Release History

Release 6.6.3; command introduced.

Related Commands

[show hash-control](#) Displays the current hash control setting for the switch.

MIB Objects

```
alaChasHashMode  
alachasFdbHashMode
```

show system

Displays basic system information for the switch. Information includes a user-defined system description, name, administrative contact, and location, as well as object ID, up time, and system services.

show system

Syntax Definitions

N/A

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

This command can be used when logged in to the switch that performs either the primary or secondary CMM role in a stack.

Examples

```
-> show system
```

```
System:
```

```
Description: Alcatel-Lucent OS6250-24 6.6.2.63.R02 February 21, 2010.,
Object ID:    1.3.6.1.4.1.6486.800.1.1.2.1.6.1.2,
Up Time:     0 days 5 hours 20 minutes and 49 seconds,
Contact:     Alcatel-Lucent, www.alcatel-lucent.com/enterprise/en,
Name:        OmniSwitch 6250,
Location:    NMS_LABORATORY,
Services:    72,
Date & Time: FRI FEB 24 2010 16:21:30 (PST)
```

```
Flash Space:
```

```
Primary CMM:
```

```
Available (bytes): 31266816,
Comments          : None
```

output definitions

System Description	The description for the current system. This description shows the current software version and the system date.
System Object ID	The SNMP object identifier for the switch.
System Up Time	The amount of time the switch has been running since the last system reboot.
System Contact	An user-defined administrative contact for the switch. This field is modified using the system contact command.
System Name	A user-defined text description for the switch. This field is modified using the system name command.

output definitions (continued)

System Location	The user-defined physical location of the switch. This field is modified using the system location command.
System Services	The number of current system services.
System Date & Time	The current system date and time. This field is modified using the system date and system time commands.
Flash Space: Primary CMM: Available (bytes)	The available flash memory space available on the <i>primary</i> management module of the switch.
Flash Space: Primary CMM: Comments	Comments regarding the available flash memory space available on the primary management module of the switch, if applicable.

Release History

Release 6.6.1; command introduced.

Related Commands

system contact	Specifies the administrative contact of the switch (for example, an individual or a department).
system name	Modifies the current system name of the switch.
system location	Specifies the current physical location of the switch.

MIB Objects

```
system
  systemContact
  systemName
  systemLocation
```

show hardware info

Displays the current system hardware information. Includes CPU, flash, RAM, NVRAM battery, jumper positions, BootROM, and miniboot and FPGA information.

show hardware info

Syntax Definitions

N/A

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

This command can be used when logged in to the switch that performs either as the primary or secondary CMM role in a stack.

Examples

```
-> show hardware info
CPU Type                : PowerPC 8245,
Flash Manufacturer      : TOSHIBA,
Flash size              : 67108864 bytes (64 MB),
RAM Manufacturer       : (null),
RAM size                : 268435456 bytes (256 MB),
NVRAM Battery OK ?    : YES,
BootROM Version        : 6.1.2.20.R02 ,
Backup Miniboot Version : 6.1.2.20.R02,
Default Miniboot Version : 6.1.2.20.R02,
Product ID Register    : 54
Hardware Revision Register : 00
CPLD Revision Register : 06
XFP Module ID          : 02
```

output definitions

CPU Type	The manufacturer and model number of the CPU used on the CMM.
Flash Manufacturer	The manufacturer of the flash memory used on the CMM.
Flash size	The total amount of flash memory (that is, file space) on the CMM. This field specifies the total flash memory size only and does not indicate the amount of memory free or memory used.
RAM Manufacturer	The manufacturer of the RAM memory used on the CMM.
RAM size	The total amount of RAM memory on the CMM. This field specifies the total RAM memory only and does not indicate the amount of memory free or memory used.

output definitions (continued)

NVRAM Battery OK	The status of the NVRAM battery. If the battery is OK, YES is displayed in this field. If the battery charge becomes low, NO is displayed in this field.
BootROM Version	The current BootROM version.
Backup Miniboot Version	The current backup miniboot version.
Default Miniboot Version	The current default miniboot version.
Product ID Register	The register number of the product ID.
Hardware Revision Register	The register number of the hardware revision.
CPLD Revision Register	The register number of the CPLD revision.
XFP Module ID	The ID number of the XFP module.

Release History

Release 6.6.1; command introduced.

Related Commands

show chassis	Displays the basic configuration and status information for the switch chassis.
show cmm	Displays the basic hardware and status information for CMM modules running in the chassis.

MIB Objects

```

systemHardware
  systemHardwareBootCpuType
  systemHardwareFlashMfg
  systemHardwareFlashSize
  systemHardwareMemoryMfg
  systemHardwareMemorySize
  systemHardwareNVRAMBatteryLow
  systemHardwareJumperInterruptBoot
  systemHardwareJumperForceUartDefaults
  systemHardwareJumperRunExtendedMemoryDiagnostics
  systemHardwareJumperSpare
  systemHardwareBootRomVersion
  systemHardwareBackupMiniBootVersion
  systemHardwareDefaultMiniBootVersion
  systemHardwareFpgaVersionTable
  systemHardwareFpgaVersionEntry
  systemHardwareFpgaVersionIndex

```

show chassis

Displays the basic configuration and status information for the switch chassis.

show chassis [*number*]

Syntax Definitions

number Specifies the slot (that is, switch) number within a stack of switches. The valid range of slot numbers is 1–8, depending on the size of the stack.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

This command can be used when logged into either the primary or secondary CMM.

Examples

```
-> show chassis
```

```
Chassis 1
  Model Name:          OS6250-24,
  Description:        10/100/1000,
  Part Number:        902274-10,
  Hardware Revision:  002,
  Serial Number:      E23L9052,
  Manufacture Date:   JUN 09 2004,
  Admin Status:       POWER ON,
  Operational Status: UP,
  Number Of Resets:   115
```

```
Chassis 2
  Model Name:          OS6250-24,
  Description:        10/100/1000,
  Part Number:        902274-10,
  Hardware Revision:  004,
  Serial Number:      432L0008,
  Manufacture Date:   SEP 08 2004,
  Admin Status:       POWER ON,
  Operational Status: UP,
  Number Of Resets:   115
```

```

Chassis 3
  Model Name:          OS6250-24,
  Description:         10/100/1000,
  Part Number:         902274-10,
  Hardware Revision:   002,
  Serial Number:       E23L9037,
  Manufacture Date:    JUN 09 2004,
  Admin Status:        POWER ON,
  Operational Status:  UP,
  Number Of Resets:    115

```

output definitions

Model Name	The factory-set model name for the switch. This field cannot be modified.
Description	The factory-set description for the switch. This field cannot be modified.
Part Number	The Alcatel-Lucent part number for the chassis.
Hardware Revision	The hardware revision level for the chassis.
Serial Number	The Alcatel-Lucent serial number for the chassis.
Manufacture Date	The date the chassis was manufactured.
Admin Status	The current power status of the chassis. Admin status is always POWER ON as the chassis information is obtained from a running CMM.
Operational Status	The current operational status of the chassis.
Number of Resets	The number of times the CMM has been reset (that is, reloaded or rebooted) since the last cold boot of the switch.

Release History

Release 6.6.1; command introduced.

Related Commands

show hardware info	Displays the current system hardware information.
show power	Displays the hardware information and status for chassis power supplies.
show fan	Displays the current operating status of chassis fans.

MIB Objects

```

chasChassisTable
  chasFreeSlots
  chasPowerLeft

```

show cmm

Displays basic hardware and status information for the CMM modules in a standalone switch or the switches that perform the CMM role running in a stack.

show cmm [*number*]

Syntax Definitions

number Specifies the CMM slot number within a standalone switch or the CMM switch number within a stack switches.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- A switch with a secondary CMM role in a stack also displays the hardware and the status information for the primary switch in the stack.
- This command can be used when logged in to the switch that performs either the primary or secondary CMM role in a stack.

Examples

```
-> show cmm
CMM in slot 1
  Model Name:           OS6250-24,
  Description:          10/100/1000,
  Part Number:          902271-10,
  Hardware Revision:    002,
  Serial Number:        E23L9059,
  Manufacture Date:     JUN 08 2004,
  Firmware Version:     N/A,
  Admin Status:         POWER ON,
  Operational Status:   UP,
  Power Consumption:    0,
  Power Control Checksum: 0x0,
  MAC Address:          00:d0:95:a3:e5:09,
```

output definitions

Model Name	The model name of the switch.
Description	A factory-defined description of the associated board (for example, BBUS Bridge, or PROCESSOR).
Part Number	The Alcatel-Lucent part number for the board.
Hardware Revision	The hardware revision level for the board.
Serial Number	The Alcatel-Lucent serial number for the board.

output definitions (continued)

Manufacture Date	The date the board was manufactured.
Firmware Version	The firmware version for the ASIC of the board.
Admin Status	The current power status of the CMM. Admin status value is always POWER ON as the information is obtained from a running CMM.
Operational Status	The current operational status of the CMM.
Power Consumption	The current power consumption for the CMM.
Power Control Checksum	The current power control checksum for the corresponding CMM.
MAC Address	The MAC address assigned to the chassis. This base chassis MAC address is a unique identifier for the switch and is stored on an EEPROM card in the chassis. It is not tied to the CMM. Therefore, it does not change if the CMM is replaced or becomes secondary. The MAC address is used by the Chassis MAC Server (CMS) for allocation to various applications. Refer to the “Managing MAC Addresses and Ranges” chapter of the <i>OmniSwitch AOS Release 6250/6350/6450 Switch Management Guide</i> for more information.

Release History

Release 6.6.1; command introduced.

Related Commands

show chassis	Displays the basic configuration and status information for the switch chassis.
show ni	Displays the basic hardware and status information for Network Interface (NI) modules currently installed in the switch.
show module	Displays the basic information for either a specified module or all the modules installed in the chassis.
show module long	Displays the detailed information for either a specified module or all modules installed in the chassis.
show module status	Displays the basic status information for either a specified module or all modules installed in the chassis.
show system	Displays basic system information for the switch.

MIB Objects

N/A

show ni

Displays the basic hardware and status information for NI modules currently installed in a standalone switch or in a stack.

show ni [*number*]

Syntax Definitions

number The slot number for a specific NI module installed in a standalone chassis or the switch number within a stack. If no slot number is specified, information for all the NI modules is displayed.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

This command can be used when logged in to the switch that performs either the primary or secondary CMM role in a stack.

Examples

```
-> show ni 1
Module in slot 1
  Model Name:                6250 24 PORT COPPER FE,
  Description:               6250 24 PORT COPPER FE,
  Part Number:               902734-90,
  Hardware Revision:         03,
  Serial Number:             K2182393,
  Manufacture Date:          JUN 27 2009,
  Firmware Version:          ,
  Admin Status:              POWER ON,
  Operational Status:        UP,
  Power Consumption:          43,
  Power Control Checksum:    0x6b36,
  CPU Model Type   :         ARM926 (Rev 1),
  MAC Address:              00:e0:b1:c2:ee:89,
  ASIC - Physical 1:        MV88F6281 Rev 2,
  FPGA - Physical 1:        0010/00,
  UBOOT Version :           n/a,
  UBOOT-miniboot Version :  6.6.1.602.R01,
  POE SW Version :          n/a
```

output definitions

Model Name	The module name of NI. For example, OS9-GNI-C24 indicates a twenty four-port 10/100/1000BaseT Ethernet module.
Description	A general description of the NI. For example, 24pt 10/100/1000BaseT Mod indicates a twenty four-port 10/100/1000BaseT Ethernet module.
Part Number	The Alcatel-Lucent part number for the NI.
Hardware Revision	The hardware revision level for the NI.
Serial Number	The Alcatel-Lucent serial number for the printed circuit board (PCB) of the NI.
Manufacture Date	The date the NI was manufactured.
Firmware Version	The firmware version for the ASIC of the NI.
Admin Status	The current power status of the NI. Options include POWER ON or POWER OFF.
Operational Status	The operational status of the NI. Options include UP or DOWN. The operational status can be DOWN while the power status is on, indicating a possible software issue.
Power Consumption	The current power consumption for the CMM.
Power Control Checksum	The current power control checksum for the corresponding NI.
MAC Address	The MAC address assigned to the NI.
ASIC - Physical	General information regarding the NI ASIC of the module.
CPLD - Physical	General information regarding the CPLD.
UBOOT Version	UBOOT version of the NI.
UBOOT-miniboot Version	UBOOT-miniboot version of the NI.
POE SW Version	POE software version of the NI (POE modules only).
C20L Upgd FailCount	The number of failed upgrade attempts (C20L modules that have attempted to be upgraded only).

Release History

Release 6.6.1; command introduced.

Related Commands

reload ni	Reloads a specified NI module.
power ni	Turns the power on or off for a specified NI module.
show module	Displays the basic information for either a specified module or all modules installed in the chassis.
show module long	Displays the detailed information for either a specified module or all modules installed in the chassis.
show module status	Displays the basic status information for either a specified module or all modules installed in the chassis.

MIB Objects

chasEntPhysOperStatus

show module

Displays the basic information for either a specified module or all modules installed in a standalone switch chassis or a stack. Modules include switches performing the primary and secondary CMM roles and NI in a stack.

show module [*number*]

Syntax Definitions

number The slot number for a specific module installed in a standalone switch chassis or the switch number within a stack. If no slot number is specified, information for all modules is displayed.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

This command can be used when logged in to the switch that performs either the primary or secondary CMM role in a stack.

Examples

-> show module

Slot	Part-Number	Serial #	HW Rev	Mfg Date	Model Name
CMM-1	902271-10	E23L9059	002	JUN 08 2004	OS6250-24
NI-1	902271-10	E23L9059	002	JUN 08 2004	OS6250-24

output definitions

Slot	The chassis slot position of the module. For detailed slot numbering information, refer to the “Chassis and Power Supplies” chapter of the <i>Hardware Users Guide</i> . Refer to page 2-37 for additional information on CMM location callouts.
Part-Number	The Alcatel-Lucent part number for the module.
Serial #	The Alcatel-Lucent serial number for the module.
Rev	The hardware revision level for the module.
Date	The date the module was manufactured.
Model Name	The descriptive name for the module. For example, OS9-GNI-U24 indicates a twenty four-port Gigabit Ethernet module.

Release History

Release 6.6.1; command introduced.

Related Commands

show module long

Displays the detailed information for either a specified module or all modules installed in the chassis.

show module status

Displays the basic status information for either a specified module or all modules installed in the chassis.

MIB Objects

N/A

show module long

Displays the detailed information for either a specified module or all the modules installed in a standalone switch chassis or a stack. Modules include switches performing the primary and secondary CMM roles and NI in a stack.

show module long [*number*]

Syntax Definitions

number The slot number for a specific module installed in a standalone switch chassis or the switch number within a stack. If slot number is not specified, detailed information for all the modules is displayed.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- When a particular NI module is specified in the command line, output is the same as that of the [show ni](#) command.
- This command can be used when logged in to the switch that performs either the primary or secondary CMM role in a stack.

Examples

```
-> show module long
CMM in slot 1
  Model Name:                OS6250-24,
  Description:               10/100/1000,
  Part Number:               902271-10,
  Hardware Revision:         002,
  Serial Number:             E23L9059,
  Manufacture Date:          JUN 08 2004,
  Firmware Version:          N/A,
  Admin Status:              POWER ON,
  Operational Status:        UP,
  Power Consumption:         0,
  Power Control Checksum:    0x0,
  MAC Address:               00:d0:95:a3:e5:09,

Module in slot 1
  Model Name:                OS6250-24,
  Description:               10/100/1000,
  Part Number:               902271-10,
  Hardware Revision:         002,
  Serial Number:             E23L9059,
  Manufacture Date:          JUN 08 2004,
```

```

Firmware Version:          N/A,
Admin Status:              POWER ON,
Operational Status:       UP,
Power Consumption:        200,
Power Control Checksum:   0x0,
MAC Address:              00:d0:95:a3:e5:0b,
ASIC - Physical 1 (hex):  BCM5695_A1,
ASIC - Physical 2 (hex):  BCM5695_A1,
ASIC - Physical 3 (hex):  BCM5670_A1
CPLD - Physical 1 (hex):  0006/00

```

output definitions

Model Name	The module name of NI. For example, OS9-GNI-C24 indicates a twenty four-port 10/100/1000BaseT Ethernet module.
Description	A general description of the NI. For example, 24pt 10/100/1000BaseT Mod indicates a twenty four-port 10/100/1000BaseT Ethernet module.
Part Number	The Alcatel-Lucent part number for the NI.
Hardware Revision	The hardware revision level for the NI.
Serial Number	The Alcatel-Lucent serial number for the printed circuit board (PCB) of NI.
Manufacture Date	The date the NI was manufactured.
Firmware Version	The firmware version for ASIC of NI.
Admin Status	The current power status of the NI. Options include POWER ON or POWER OFF.
Operational Status	The operational status of the NI. Options include UP or DOWN. The operational status can be DOWN while the power status is on, indicating a possible software issue.
Power Control Checksum	The current power control checksum for the corresponding NI.
MAC Address	The MAC address assigned to the NI.
ASIC - Physical	General information regarding the ASIC of NI.
CPLD - Physical	General information regarding the CPLD.

Release History

Release 6.6.1; command introduced.

Related Commands

show module	Displays the basic information for either a specified module or all modules installed in the chassis.
show module status	Displays the basic status information for either a specified module or all modules installed in the chassis.

MIB Objects

N/A

show module status

Displays the basic status information for either a specified module or all modules installed in a standalone switch chassis or a stack. Modules include switches performing the primary and secondary CMM roles and NI in a stack.

show module status [*number*]

Syntax Definitions

number The slot number for a specific module installed in a standalone switch chassis or the switch number within a stack. If no slot number is specified, status information for all modules is displayed.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

This command can be used when logged in to the switch that performs either as the primary or secondary CMM role in a stack.

Examples

```
-> show module status
```

Slot	Operational Status	Admin-Status	Firmware Rev	MAC
CMM-1	UP	POWER ON	N/A	00:d0:95:a3:e5:09
NI-1	UP	POWER ON	N/A	00:d0:95:a3:e5:0b

output definitions

Slot	The chassis slot position of the module. For detailed slot numbering information, refer to the “Chassis and Power Supplies” chapter of the <i>Hardware Users Guide</i> . Refer to page 2-37 for additional information on CMM callouts.
Operational Status	The operational status of the module. Options include UP or DOWN. For NI and secondary CMM modules, the operational status can be DOWN while the power status is on, indicating a possible software issue.
Admin-Status	The current power status of the module. Options include POWER ON or POWER OFF.

output definitions (continued)

Firmware Rev	The firmware version for module's ASICs.
MAC	For the CMM, the base chassis MAC address is displayed. For detailed information on this base chassis MAC address, refer to the "Managing MAC Addresses and Ranges" chapter of the <i>OmniSwitch AOS Release 6250/6350/6450 Switch Management Guide</i> . For NI modules, the MAC address for the corresponding NI is displayed.

Release History

Release 6.6.1; command introduced.

Related Commands

show module	Displays the basic information for either a specified module or all the modules installed in the chassis.
show module long	Displays the detailed information for either a specified module or all the modules installed in the chassis.

MIB Objects

N/A

show power

Displays the hardware information and status for chassis power supplies.

show power [**supply**] [*number*]

Syntax Definitions

supply Optional command syntax.

number The single-digit number for a specific power supply installed in the chassis. If no power supply number is specified, information for all power supplies is displayed.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

When the **show power** command is entered on stackable switches, information is displayed only for power supplies that are installed in the chassis and powered on. If a power supply is present in a power supply bay, but the power supply is unplugged or its on/off switch is in the off position, the power supply is not listed in the command output.

Examples

```
-> show power
Slot  PS   Wattage  Type   Status  Location
-----+-----+-----+-----+-----+-----
  1    1     530     AC     UP      Internal
  1    2      --      --     --      --
  2    1     530     AC     UP      Internal
  3    1     320     AC     UP      Internal
  4    1     600     AC     UP      External
```

output definitions

Slot	The slot number of the power supply.
PS	The power supply number.
Wattage	The wattage of the power supply.
Type	The type of power supply. Options include AC or DC.
Status	The operational status of the power supply. Options include UP or DOWN.
Location	The location of the power supply. Options include Internal or External.

Release History

Release 6.6.1; command introduced.

Related Commands

[show chassis](#)

Displays the basic configuration and status information for the switch chassis.

MIB Objects

N/A

show fan

Displays the current operating status of chassis fans.

show fan [*number*]

Syntax Definitions

number Specifies the switch (slot) number of the chassis.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

This parameter specifies the switch (slot) number of the chassis. If no switch number is specified, then all the switches in a stack is displayed.

Examples

```
-> show fan
Chassis Fan  Status
-----+-----
 1      1  Running
 1      2  Running
 1      3  Running
 1      4  Not Running
 1      5  Not Running
 1      6  Not Running
 2      1  Running
 2      2  Running
 2      3  Running
 2      4  Not Running
 2      5  Not Running
 2      6  Not Running
 3      1  Running
 3      2  Running
 3      3  Running
 3      4  Not Running
 3      5  Not Running
 3      6  Not Running
```

output definitions

Chassis	The number of the switch in a stack.
Fan	The fan number describing the fan position.
Status	The current operational status of the corresponding fan.

Release History

Release 6.6.1; command introduced.

Related Commands

[show temperature](#)

Displays the current operating chassis ambient temperature, as well as current temperature threshold settings.

MIB Objects

N/A

show temperature

Displays the current operating chassis ambient temperature, as well as current temperature threshold settings.

show temperature [*number*]

Syntax Definitions

number Specifies the slot (that is, switch) number within the stack. The valid range of slot numbers is 1–8, depending on the size of the stack.

Defaults

If a slot number is not specified with this command, temperature information for all switches operating in the stack is displayed by default.

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

The *number* parameter is not an option when using this command on a standalone switch.

Examples

```
-> show temperature
```

```
Temperature for chassis 1
  Hardware Board Temperature (deg C)           = 41,
  Hardware Cpu Temperature (deg C)            = N/A,
  Temperature Upper Threshold Range (deg C)    = 15 to 80,
  Temperature Upper Threshold (deg C)         = 57,
  Temperature Status                           = UNDER THRESHOLD,
  Temperature Danger Threshold (deg C)        = 80

Temperature for chassis 2
  Hardware Board Temperature (deg C)           = 40,
  Hardware Cpu Temperature (deg C)            = N/A,
  Temperature Upper Threshold Range (deg C)    = 15 to 80,
  Temperature Upper Threshold (deg C)         = 57,
  Temperature Status                           = UNDER THRESHOLD,
  Temperature Danger Threshold (deg C)        = 80

Temperature for chassis 3
  Hardware Board Temperature (deg C)           = 40,
  Hardware Cpu Temperature (deg C)            = N/A,
  Temperature Upper Threshold Range (deg C)    = 15 to 80,
  Temperature Upper Threshold (deg C)         = 57,
  Temperature Status                           = UNDER THRESHOLD,
  Temperature Danger Threshold (deg C)        = 80
```

output definitions

Hardware Board Temperature	The current chassis temperature as determined by the built-in temperature sensor. The temperature is displayed in degrees Centigrade (Celsius). This temperature is checked against the upper threshold value. If the threshold is exceeded, a warning is sent to the user.
Hardware Cpu Temperature	The current CPU temperature. The temperature is displayed in degrees Centigrade (Celsius).
Temperature Upper Threshold Range	The supported threshold range. When you specify a threshold for the switch using the temp-threshold command, values range from 31–94.
Temperature Upper Threshold	The warning temperature threshold, in degrees Celsius. If the switch reaches or exceeds this temperature, the primary switch or TEMP LED of the CMM displays amber, and a warning is sent to the user. Values range from 15–94. The default value is 60. For information on changing the upper threshold value, refer to the temp-threshold command on page 2-23 .
Temperature Range	The current threshold status of the switch. Displays whether the switch is UNDER THRESHOLD or OVER THRESHOLD. If the status is OVER THRESHOLD, the primary TEMP LED of the CMM displays amber, and a warning is sent to the user.
Temperature Danger Threshold	The factory-defined danger threshold. This field is not configurable. If the chassis temperature rises above 80 degrees Centigrade, the switch powers off all NI modules until the temperature conditions (for example, chassis air flow obstruction or ambient room temperature) is addressed and the switch is manually booted.

Release History

Release 6.6.1; command introduced.

Related Commands

temp-threshold	Sets the chassis warning temperature threshold.
show fan	Shows the hardware information and status for the chassis fans.

MIB Objects

```

chasChassisTable
  chasHardwareBoardTemp
  chasHardwareCpuTemp
  chasTempRange
  chasTempThreshold
  chasDangerTempThreshold

```

show stack topology

Displays the current operating topology of switches within a stack.

show stack topology [*slot-number*]

Syntax Definitions

slot-number Optional syntax specifying a single slot number within the stack (1–8). When a slot number is specified, topology information for only the corresponding slot displays.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

N/A

Examples

-> show stack topology

NI	Role	State	Saved Slot	Link A State	Link A Remote NI	Link A Remote Port	Link B State	Link B Remote NI	Link B Remote Port
1	PRIMARY	RUNNING	1	UP	3	StackB	UP	2	StackA
2	IDLE	RUNNING	2	UP	1	StackB	UP	3	StackA
3	SECONDARY	RUNNING	3	UP	2	StackB	UP	1	StackA

output definitions

NI	The current slot position for each switch in the virtual chassis (stacked configuration). The order of the slot numbers does not necessarily correspond with the physical positions of switches within the stack. In other words, slot position 1 may not be the uppermost (top) switch in the stack. To assign these slot numbers, use the stack set slot command.
Role	The current management role of the corresponding switch within the stack. Options include PRIMARY (the switch is the primary management module in the stack; standalone switches also display this role), SECONDARY [the switch is the secondary (or backup) management module in the stack], IDLE (the switch does not have a management role but is operating normally as a network interface module within the stack), PASS-THRU (the switch is operating in pass-through mode), UNDEFINED (the current role of the switch is not known).
State	The current operational state of the corresponding switch. Options include RUNNING (the switch is up and operating normally), DUP-SLOT (the switch has a duplicate saved slot number and has automatically entered pass-through mode), CLR-SLOT (the switch has been manually “cleared” through the stack clear slot command and is now in pass-through mode), OUT-SLOT (the current stacked configuration already has eight switches and therefore cannot accommodate this switch), OUT-TOK (there are not enough unused tokens remaining in the current stacked configuration to accommodate this switch), UNKNOWN (the current state of the switch is not known).
Saved Slot	The designated saved slot number for the corresponding switch. The saved slot number is the slot position the switch assumes following a reboot. A value of zero (0) indicates that the switch has been “cleared” and, as a result, is designated for pass-through mode. To assign saved slot numbers, use the stack set slot command. To clear a switch and designate it for pass-through mode, use the stack clear slot command.
Link A State	The status of the stacking cable link at the stacking port A of the switch. Options include UP, DOWN, or UNKNOWN.
Link A Remote NI	The slot number of the switch to which <i>remote end</i> of the stacking cable A is connected. In other words, if a switch in slot position 1 displays a Link A Remote NI value of 3, this indicates that the stacking cable plugged into slot 1 stacking port A is connected to the <i>slot 3</i> switch. If no stacking cable link exists, the value 0 displays.
Link A Remote Port	The specific stacking port to which <i>remote end</i> of the stacking cable A is connected. Options include StackA, StackB, and 0. If the remote end of the stacking cable A is connected to stacking port B on the other switch, the value displays StackB. If no stacking cable link exists, the value 0 displays.
Link B State	The status of the stacking cable link at the stacking port B of the switch. Options include UP, DOWN, or UNKNOWN.

output definitions (continued)

Link B Remote NI	The slot number of the switch to which <i>remote end</i> of the stacking cable B is connected. In other words, if a switch in slot position 6 displays a Link A Remote NI value of 7, this indicates that the stacking cable plugged into slot 6 stacking port B is connected to the <i>slot 7</i> switch.
Link B Remote Port	The specific stacking port to which <i>remote end</i> of the stacking cable B is connected. Options include StackA, StackB, and 0. If the remote end of the stacking cable B is connected to stacking port B on the other switch, the value displays StackB. If there are no stacking cable links, the value 0 displays.

Release History

Release 6.6.1; command introduced.

Related Commands

show stack status Displays the current redundant stacking cable status and token availability for a stacked configuration.

MIB Objects

```

alaStackMgrChassisTable
  alaStackMgrSlotNINumber
  alaStackMgrSlotCMMNumber
  alaStackMgrChasRole
  alaStackMgrLocalLinkStateA
  alaStackMgrRemoteNISlotA
  alaStackMgrRemoteLinkA
  alaStackMgrLocalLinkStateB
  alaStackMgrRemoteNISlotB
  alaStackMgrRemoteLinkB
  alaStackMgrChasState
  alaStackMgrSavedSlotNINumber
  alaStackMgrCommandAction
  alaStackMgrCommandStatus

```

show stack status

Displays the current redundant stacking cable status and token availability for a stacked configuration.

show stack status

Syntax Definitions

N/A

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

N/A

Examples

```
-> show stack status
```

```
Redundant cable status : present
```

output definitions

Redundant cable status	Indicates whether a redundant stacking cable is currently installed. Options include present and not present . To provide added resiliency and redundancy, it is recommended that a redundant stacking cable is connected from the top switch in the stack to the bottom switch in the stack at all times. For more information on stack redundancy, refer to the “Managing OmniSwitch 6250/6450 Series Stacks” chapter in the <i>Hardware Users Guide</i> .
-------------------------------	--

Release History

Release 6.6.1; command introduced.

Related Commands

[show stack topology](#) Displays the current operating topology of switches within a stack.

MIB Objects

```
alaStackMgrStackStatus  
alaStackMgrTokensUsed  
alaStackMgrTokensAvailable
```

show stack mode

Displays the current stacking or standalone mode of the switch.

show stack mode

Syntax Definitions

N/A

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6450

Usage Guidelines

N/A

Examples

```
-> show stack mode
NI      Role      State      Running      Saved
        Mode      Mode
-----+-----+-----+-----+-----
  1  PRIMARY  RUNNING  stackable  stackable
  2  SECONDARY  RUNNING  stackable  stackable
```

output definitions

NI	The current slot position for each switch in the virtual chassis (stacked configuration). The order of the slot numbers does not necessarily correspond with the physical positions of switches within the stack. In other words, slot position 1 may not be the uppermost (top) switch in the stack. To assign these slot numbers, use the stack set slot command.
Role	The current management role of the corresponding switch: PRIMARY (the switch is the primary management module in the stack; standalone switches also display this role) SECONDARY [the switch is the secondary (or backup) management module in the stack].

output definitions (continued)

State	The current operational state of the switch: UNKNOWN: the state of the element cannot be determined RUNNING: element is up and running DUP SLOT: this element has a duplicate slot number CLR SLOT: the slot number of the element has been cleared using the management command after the last reboot OUT SLOT: the element cannot initialize because there are no slot IDs left to be assigned
Running Mode	The current mode of the switch.
Saved Mode	The mode of the switch after reboot. The output is based on contents of "boot.slot.cfg" file.

Release History

Release 6.6.1; command introduced.

Related Commands

stack set slot mode Changes the stacking/standalone mode of the switch.

MIB Objects

```
alaStackMgrChassisTable
  alaStackMgrSlotNINumber
  alaStackMgrSlotCMMNumber
  alaStackMgrChasRole
  alaStackMgrChasState
  alaStackMgrCommandAction
  alaStackMgrCommandStatus
```

show hash-control

Displays the current hash control settings for the switch.

show hash-control {mode fdb}

Syntax Definitions

N/A

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

N/A

Examples

```
-> show hash-control
FDB Hash Mode = XOR-Mode
-> show hash-control mode fdb
FDB Hash Mode = XOR-Mode
```

output definitions

FDB Hash Mode	The current hash mode activated (XOR-Mode or CRC-Mode).
----------------------	---

Release History

Release 6.6.3; command introduced.

Related Commands

hash-control mode fdb

Configures the hash control method on the switch. Depending on this configuration, hashing algorithm used by various applications for Layer 2 table lookup is affected.

MIB Objects

```
alaChasHashMode
alachasFdbHashMode
```

license apply

Activates the license for licensed features on the switch.

license apply

Syntax Definitions

N/A

Defaults

By default, licensed features are not activated on the switch.

Platforms Supported

OmniSwitch 6250, 6450

Usage Guidelines

- Ensure the license file *lmLicense.dat* is placed in the **/flash** directory of the primary CMM.
- When the **license apply** command is issued, the switch displays a message to ensure the installation. Enter 'Y' to apply the license and reboot the switch.
- Use [show license file](#) command to verify the installed license.

Examples

```
-> license apply
The switch will reboot after the license is applied.
Are you sure you want to proceed(Y/N)?
Y
```

Release History

Release 6.6.3; command introduced.

Related Commands

license remove	Removes the licensed applications installed on the switch.
show license file	Displays the license file information of the switch.
show license info	Displays all the license information for the switch.

MIB Objects

```
aluLicenseManagerApplyLicense
aluLicensedFileName
```

license remove

Removes the license for specified feature on the switch.

license remove feature {metro | gig | 10G}

Syntax Definitions

metro	Removes Metro features.
gig	Removes Gigabit interfaces on lite models.
10G	Removes 10-Gigabit interfaces.

Defaults

By default, licensed features are not activated on the switch.

Platforms Supported

OmniSwitch 6250, 6450

Usage Guidelines

Use [show license file](#) command to verify the removed licenses.

Examples

```
-> license remove feature metro
```

Release History

Release 6.6.3; command introduced.

Related Commands

license apply	Applies the licensed applications installed on the switch.
show license file	Displays the license file information of the switch.
show license info	Displays all the license information for the switch.

MIB Objects

```
aluLicenseManagerRemoveTable  
  aluLicenseRemoveFeatureID  
  aluLicenseRemoveSlotID
```

license unlock

Temporarily activates the license feature on the switch.

license unlock feature {metro | gig | 10G}

Syntax Definitions

metro	Temporarily activates the metro license features.
gig	Temporarily activates the Gigabit interface license feature.
10G	Temporarily activates the 10-Gigabit license feature.

Defaults

By default, licensed protocols are not activated on the switch.

Platforms Supported

OmniSwitch 6250, 6450

Usage Guidelines

- When the **license unlock** command is issued, the switch displays a message to ensure the installation. Enter 'Y' to apply the license and reboot the switch.
- Use [show license file](#) command to verify the installed license.

Examples

```
-> license unlock feature metro
```

Release History

Release 6.6.3; command introduced.

Related Commands

show license file	Displays the license file information of the switch.
show license info	Displays all the license information for the switch.

MIB Objects

```
aluLicenseManagerDemoLicenseTable  
  aluLicenseDemoFeatureID  
  aluLicenseDemoSlotID
```

show license info

Displays all the licensed applications installed on the switch.

show license info

Syntax Definitions

N/A

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6450

Usage Guidelines

- Use this command to verify the licenses installed on the switch.
- The number of days remaining is determined only by the switch up time. If a switch is turned off, the time remaining is not decremented.

Examples

```
->show license info
(* indicates primary NI)
```

```
Chassis: METRO
```

```
NI   Application   License Type   Time Left (In Days)
----+-----+-----+-----
1(*) METRO          Permanent      -
1(*) GIG           Temporary      10
1002 GIG            Temporary      5
3    METRO          Permanent      -
3    GIG            Temporary      12
```

output definitions

Application	Displays the name of the licensed applications installed on the switch.
License Type	The type of license; Permanent or Temporary.
Time Left	Number of days remaining for temporary license.

Release History

Release 6.6.3; command introduced.

Related Commands

license apply

Applies the license file to the switch.

license remove

Removes the license from the switch.

MIB Objects

```
aluLicenseManagerInfoTable  
  aluLicensedApplication  
  aluLicenseType  
  aluLicenseTimeRemaining
```

show license file

Displays the information contained in the license file.

show license file [*filename* / **local**]

Syntax Definitions

<i>filename</i>	The path and name of the license file.
local	Displays the file on the local switch only.

Defaults

parameter	default
<i>filename</i>	/flash/lmLicense.dat

Platforms Supported

OmniSwitch 6250, 6450

Usage Guidelines

- Use this command to display the contents of the license file.
- The *lmLicense.dat* file can contain licenses for other switches.

Examples

```
-> show license file
MAC Address          Application
-----+-----
00:d0:95:d5:e6:01*   METRO
00:d0:95:d5:e6:0a    GIG
00:d0:95:d5:e6:0b    GIG
00:d0:95:d5:e6:0c*   METRO
```

* - indicates entry applicable for local switch

output definitions

MAC Address	Displays the base MAC address of the switch. An asterisk indicates the MAC address of the local switch.
Application	Displays the name of the licensed application.

Release History

Release 6.6.3; command introduced.

Related Commands

show license info

Displays all the licensed applications installed on the switch.

MIB Objects

```
aluLicenseManagerLicenseInfoTable  
  aluSwitchMacAddress  
  aluLicensedFileApplication
```

stack split-protection

Enables or disables the stack split detection feature.

stack split-protection {enable | disable}

Syntax Definitions

enable Enables stack split protection.

disable Disables stack split protection.

Defaults

parameter	default
enable disable	disable

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- SSP cannot be enabled before assigning a Linkagg.
- Stack split protection cannot be enabled on a device that is already running the helper functionality.

Examples

```
-> stack split-protection enable  
-> stack split-protection disable
```

Release History

Release 6.6.5; command was introduced.

Related Commands

show stack split-protection status This command displays all the information related to SSP when enabled.

stack split-protection linkaggid This command is used to assign a linkagg for use with SSP.

MIB Objects

AlcatelIND1StackManager
alaSspConfigStatus

stack split-protection linkaggid

This command is used to assign a linkagg for use with SSP.

[no] stack split-protection linkaggid *linkagg-id*

Syntax Definitions

linkagg-id The link aggregate ID to be used with SSP. The range is 0-128.

Defaults

parameter	default
N/A	

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

This command must be used to configure stack split protection linkagg before enabling stack split protection.

Examples

```
-> stack split-protection linkaggid 1
```

Release History

Release 6.6.5; command was introduced.

Related Commands

[show stack split-protection status](#) This command displays all the information related to SSP when enabled.

[show stack split-protection statistics](#) This command shows statistics of stack split-protection.

MIB Objects

AlcatelIND1StackManager
alaSspLinkaggID

stack split-protection guard-timer

This command sets the timer value for how long the unit will wait to receive SSP PDUs before beginning transmission of SSP PDUs.

stack split-protection guard-timer *time*

Syntax Definitions

time Time interval to wait on boot up before choosing any state. Range is 30-100 seconds.

Defaults

parameter	default
<i>time</i>	30 seconds

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

Changes to the Guard timer only take affect after reboot or by disabling and re-enabling stack split protection.

Examples

```
-> stack split-protection guard-timer 60
```

Release History

Release 6.6.5; command was introduced.

Related Commands

[show stack split-protection status](#) This command displays all the information related to SSP when enabled.

[show stack split-protection statistics](#) This command shows statistics of stack split-protection.

MIB Objects

AlcatelIND1StackManager
alaSspGuardTimer

stack split-protection helper

This command is used to enable or disable to helper functionality on the helper device.

stack split-protection helper {enable | disable}

Syntax Definitions

enable	Enables stack split protection helper functionality.
disable	Disables stack split protection helper functionality.

Defaults

parameter	default
enable disable	disable

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Use this command on the helper device to enable the helper functionality.
- The helper functionality cannot be enabled on a device that is running stack split protection.

Examples

```
-> stack split-detection helper enable  
-> stack split-detection helper disable
```

Release History

Release 6.6.5; command was introduced.

Related Commands

[stack split-protection helper linkagg](#) Linkagg ID on which to apply the SSP protocol for the helper device.

MIB Objects

```
AlcatelIND1StackManager  
  alaSspHelperConfigStatus
```

stack split-protection helper linkagg

Linkagg ID on which to apply the SSP protocol on the helper device.

stack split-detection helper linkagg *linkagg-id*

Syntax Definitions

linkagg-id Linkagg ID associated to the helper to support SSP. Range is 0-31.

Defaults

parameter	default
N/A	

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

Use this command on the helper device to enable the SSP protocol on the helper linkagg.

Examples

```
-> stack split-protection helper linkagg 1
```

Release History

Release 6.6.5; command was introduced.

Related Commands

show stack split-protection helper status This command shows SSP Helper status of the Link Aggregation ID assigned.

stack split-protection helper This command is used to enable or disable to helper functionality.

MIB Objects

AlcatelIND1StackManager
alaSspHelperLinkaggId

show stack split-protection status

This command displays all the information related to SSP when enabled.

show stack split-protection status

Syntax Definitions

N/A

Defaults

parameter	default
N/A	

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

N/A

Examples

```
-> show stack split-protection status
SSP admin status:      enabled
SSP operational status: Active
SSP linkagg:          31
SSP Guard Timer:      30
```

Release History

Release 6.6.5; command was introduced.

Related Commands

[stack split-protection](#) Enable or disables the stack split detection feature.

MIB Objects

```
AlcatelIND1StackManager
  alaSspConfigStatus
  alaSSpGuardTimer
```

show stack split-protection statistics

This command shows statistics of stack split-protection.

show stack split-protection statistics

Syntax Definitions

N/A

Defaults

parameter	default
N/A	

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

N/A

Examples

```
-> show stack split-protection statistics
SSP admin status:      Enable
SSP operational status: Active
SSP uptime:           10d:02h:15m:31s
SSP protection uptime: 00d:00h:00m:00s
```

Release History

Release 6.6.5; command was introduced.

Related Commands

[stack split-protection](#) Enable or disables the stack split detection feature..

MIB Objects

```
AlcatelIND1StackManager
  alaSspConfigStatus
  alaSspUptime
  alsSspStateUptime
```

show stack split-protection stacking-units

This command shows the SSP state of all stacked units.

show stack split-protection stacking-units

Syntax Definitions

N/A

Defaults

parameter	default
N/A	

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

N/A

Examples

```
-> show stack split-protection stacking-units
```

```
Stacking Units - SSP States
```

```
-----  
SLOT    STATE  
-----  
 1      ACTIVE  
 2      ACTIVE
```

Release History

Release 6.6.5; command was introduced.

Related Commands

[stack split-protection](#) Enable or disables the stack split detection feature.

MIB Objects

```
AlcatelIND1StackManager  
  alaStackMgrSlotNINumber  
  alaSSpOpStatus
```

show stack split-protection helper status

This command shows SSP Helper status of the Link Aggregation ID assigned.

show stack split-protection helper status

Syntax Definitions

N/A

Defaults

parameter	default
N/A	

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

N/A

Examples

```
-> show stack split-protection helper status
Stack Split-Protection Helper Status : Disabled
  Link Aggregation Id           Stack Split-Protection Status
-----+-----
                3                Disabled
```

Release History

Release 6.6.5; command was introduced.

Related Commands

[stack split-protection helper](#) This command is used to enable or disable the helper functionality.

MIB Objects

```
AlcatelIND1StackManager
  alaSspHelperAggregateId
  alaSspHelperAggregateStatus
```

3 Chassis MAC Server (CMS) Commands

The Chassis MAC Server (CMS) manages MAC addresses on the switch. The MAC addresses managed through the CMS are used as identifiers for the following functions:

- Base chassis MAC address
- Ethernet Management Port (EMP)
- VLAN router ports

Similar to IP addresses, MAC addresses are assigned by the Internet Assigned Numbers Authority (IANA) and distributed to users in sequential blocks. A sequential block of MAC addresses is referred to as a MAC address *range*.

The MAC address range is stored on the switch's EEPROM. The switch supports one MAC address range only. By default, this MAC address range contains thirty-two (32) factory-installed, contiguous MAC addresses. Users may add additional MAC addresses; the maximum capacity for the switch's default range is 256 MAC addresses.

In stackable switches, CMS is responsible for sharing the base MAC address of the primary switch with all the other switches in the stack. This helps the secondary switch to retain the same MAC address during takeover. This is called MAC Address Retention.

MIB information for the Chassis MAC Server commands is as follows:

Filename: AlcatelIND1MacServer.MIB
Module: Alcatel-IND1-MAC-SERVER-MIB

A summary of the available commands is listed here:

mac-range eeprom
mac-retention status
mac-retention dup-mac-trap
mac release
show mac-range
show mac-range alloc
show mac-retention status

mac-range eeprom

Modifies the default MAC range on the switch's EEPROM.

Note. Use caution when modifying the default MAC range. Improper use of this command can disable your system and adversely affect your network. Contact Alcatel-Lucent Customer Support for further assistance.

mac-range eeprom *start_mac_address count*

Syntax Definitions

start_mac_address The first MAC address in the modified range. Enter the MAC address in the following format: **xx:xx:xx:xx:xx:xx**, where **x** is a hex value (0–f).

count Specifies the number of MAC addresses in the range (1–256).

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Because the factory-installed 32 MAC addresses are sufficient for most network configurations, this command has to be used only by qualified network administrators for special network requirements.
- After modifying a MAC address range by using the **mac-range eeprom** command, you must reboot the switch. Otherwise, MAC addresses for existing VLAN router ports is not be allocated properly.
- All MAC addresses in a range must be contiguous (that is, there cannot be any gaps in the sequence of MAC addresses).

Examples

```
-> mac-range eeprom 00:20:da:23:45:35 32
```

Release History

Release 6.6.1; command was introduced.

Related Commands

show mac-range

Displays the MAC range table.

MIB Objects

chasMacAddressRangeTable

 chasMacRangeIndex

 chasGlobalLocal

 chasMacAddressStart

 chasMacAddressCount

mac-retention status

Enables or disables the MAC retention status.

mac-retention status {enable | disable}

Syntax Definitions

enable Enables the administrative status of MAC retention.
disable Disables the administrative status of MAC retention.

Defaults

Parameter	Status
enable disable	disable

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- When MAC retention is enabled, the stack uses the MAC address of the primary switch even after it has failed.
- When the administrative status of MAC retention is enabled, the stack performance is enhanced.

Examples

```
-> mac-retention status enable
```

Release History

Release 6.6.1; command was introduced.

Related Commands

[show mac-retention status](#) Displays the MAC retention status.

MIB Objects

```
chasMacAddrRetentionObjects  
  chasMacAddrRetentionStatus
```

mac-retention dup-mac-trap

Enables or disables the duplicate MAC address trap status.

mac-retention dup-mac-trap {enable | disable}

Syntax Definitions

enable Enables the duplicate MAC address trap status.
disable Disables the duplicate MAC address trap status.

Defaults

Parameter	Status
enable disable	disable

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

If the old primary switch is not detected and included in the stack within a pre-defined time period, an SNMP trap is generated.

Examples

```
-> mac-retention dup-mac-trap enable
```

Release History

Release 6.6.1; command was introduced.

Related Commands

[show mac-retention status](#) Displays the MAC retention status.

MIB Objects

chasMacAddrRetentionObjects
chasPossibleDuplicateMacTrapStatus

mac release

Releases the MAC address currently being used as the primary base MAC address.

mac release

Syntax Definitions

N/A

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

The MAC address is released only if the address has not been derived from the EEPROM (that is, it has to be a retained MAC address of the old primary switch).

Examples

```
-> mac release
```

Release History

Release 6.6.1; command was introduced.

Release 6.6.1; **mac-retention** keyword was replaced with the **mac** keyword.

Related Commands

N/A

MIB Objects

chasMacAddrRetentionObjects

chasMacAddrRetentionStatus

show mac-range

Displays the MAC range table.

show mac-range [*index*]

Syntax Definitions

index Identifies the MAC range by referring to its position in the MAC range table.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

Because the switch currently supports one MAC address range only, index position 1 displays.

Examples

```
-> show mac range
```

Mac Range	Row Status	Local/Global	Start Mac Addr	End Mac Addr
01	ACTIVE	GLOBAL	00:d0:95:6a:79:6e	00:d0:95:6a:79:8d

output definitions

Mac Range	The MAC range index number (1). Because the switch currently supports one MAC address range only, index position 1 displays.
Row Status	The current status of the MAC range. The status ACTIVE refers to MAC addresses that are available for allocation to VLAN router ports and other applications.
Local/Global	The Local/Global status for MAC addresses in the range. Local MAC addresses have the local bit set in the first byte of the address. Global MAC addresses (also referred to as <i>EEPROM</i> MAC addresses) have the global bit set in the first byte of the address and are stored on the switch's EEPROM. Because the switch's default MAC range is stored on EEPROM, the status GLOBAL displays.
Start Mac Addr	The first MAC address in the MAC address range.
End Mac Addr	The last MAC address in the MAC address range.

Release History

Release 6.6.1; command was introduced.

Related Commands

mac-range eeprom

Modifies the default MAC range on the switch's EEPROM.

MIB Objects

chasMacAddressRangeTable

 chasMacRangeIndex

 chasGlobalLocal

 chasMacAddressStart

 chasMacAddressCount

 chasMacRowStatus

show mac-range alloc

Displays all allocated addresses from the MAC range table.

show mac-range [*index*] **alloc**

Syntax Definitions

index Identifies the MAC range by referring to its position in the MAC range table. Currently, index position 1 only is supported.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

If you are assigning VLAN router ports while the switch is in *single MAC router mode*, all VLAN router ports uses the base chassis MAC address (ID value 0).

Examples

```
-> show mac-range alloc
Range      Mac Address          Application      Id
-----+-----+-----+-----
01         00:d0:95:6b:09:40  CHASSIS         0
01         00:d0:95:6b:09:41  802.1X          0
01         00:d0:95:6b:09:5f  CHASSIS         1
```

output definitions

Range	The MAC range's index number. The index number refers to the position of the range in the MAC range table. Values may range from 1–20. MAC ranges are divided by index number into four distinct categories. Refer to page 3-7 for more information.
Mac Address	Current MAC address allocated for a specific application.

output definitions (continued)

Application	The application for which the allocated MAC address is being used. Current options include VLAN , 802.1X , and CHASSIS . VLAN refers to MAC addresses allocated to VLAN router ports in multiple MAC router mode. CHASSIS refers to MAC addresses used for the base chassis MAC address and the Ethernet Management Port (EMP).
Id	An ID number used to identify an allocated MAC address. ID numbers are used for the base chassis MAC address and Ethernet Management Port (EMP), as well as VLAN router ports. The ID value 0 is reserved for the switch's base chassis MAC address. The ID value 1 is reserved for the EMP MAC address. Router ports assigned to VLANs 2 through 4094 are given corresponding MAC IDs. For example, a router port configured on VLAN 44 receives an allocated MAC ID of 44. Because default VLAN 1 router ports use the base chassis MAC address by default, any router port configured on VLAN 1 is assigned the ID value 0.

Release History

Release 6.6.1; command was introduced.

Related Commands

mac-range eeprom Modifies the default MAC range on the switch's EEPROM.

MIB Objects

ChasMacAddressAllocTable
 chasAppId
 chasObjectId
 chasAllocMacRangeIndex
 chasAllocMacAddress

show mac-retention status

Displays the MAC retention status.

show mac-retention status

Syntax Definitions

N/A

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- If the administrative status of MAC retention is not configured, it is displayed as disabled by default.
- If the administrative status of the duplicate MAC address trap is not configured, it is displayed as disabled by default.
- If the source of the currently used MAC address is not configured, it is displayed as EEPROM by default.

Examples

```
-> show mac-retention status
MAC RETENTION STATUS
=====
Admin State : Enabled
Trap admin state: Enabled
Current MAC address : 00:0a:0b:0c:0d:0e
MAC address source : Retained
Topology Status      : Ring present
```

output definitions

Admin State	Displays the administrative status of MAC retention (Enabled or Disabled).
Trap admin state	Displays the administrative status of the duplicate MAC address trap (Enabled or Disabled).
Current MAC address	Displays the MAC address currently used by the switch.
MAC address source	Displays the source of the currently used MAC address. Options include EEPROM and Retained .
Topology Status	Displays the topology status of the stack. Options include Ring present and Ring Not Present .

Release History

Release 6.6.1; command was introduced.

Release 6.6.1; **EEPROM MAC Address** field was deleted.

Related Commands

mac-retention status Enables or disables the MAC retention status.

mac-retention dup-mac-trap Enables or disables the duplicate MAC address trap status.

MIB Objects

chasMacAddrRetentionObjects

chasMacAddrRetentionStatus

chasPossibleDuplicateMacTrapStatus

chasRingStatus

chasBaseMacAddrSource

chasBaseMacAddr

4 Power over Ethernet (PoE) Commands

The Power over Ethernet (PoE) feature is supported on the OmniSwitch 6250-P24 switch. See the *Hardware Users Guide* for further details.

Note on Terminology. There are several general terms used to describe this feature. The terms *Power over Ethernet (PoE)*, *Power over LAN (PoL)*, *Power on LAN (PoL)*, and *Inline Power* are synonymous terms used to describe the powering of attached devices through Ethernet ports. For consistency, this chapter and the *OmniSwitch AOS Release 6250/6350/6450 CLI Reference Guide* see the feature as *Power over Ethernet (PoE)*.

Additional terms, such as *Powered Device (PD)* and *Power Source Equipment (PSE)* are terms that are not synonymous, but are directly related to PoE.

- *PD* refers to any attached device that uses a PoE data cable as its only source of power. Examples include access points such as IP telephones, Ethernet hubs, wireless LAN stations, and so on.
- *PSE* refers to the actual hardware source of the electrical current for PoE. In the case of OS6250-P24-Enterprise Model, the PSE is contained within the chassis and is augmented by the backup inline power supply.

PoE commands documented in this section comply with IEEE 802.3 and 802.af.

MIB information for the PoE commands is as follows:

Filename: AlcatelIND1InLinePowerEthernet_mib
Module: ALCATEL-IND1-INLINE-POWER-MIB

Filename: AaIETF_HUBMIB_POWER_ETHERNET_DRAFT_mib
Module: POWER-ETHERNET-MIB

A summary of the available commands is listed here:

lanpower start
lanpower stop
lanpower power
lanpower maxpower
lanpower priority
lanpower priority-disconnect
lanpower combo-port
show lanpower
show lanpower capacitor-detections
show lanpower priority-disconnect

lanpower start

Activates Power over Ethernet on a single specified PoE port *or* on all PoE ports in a specified slot.

lanpower start {*slot/port*[-*port2*] | *slot*}

Important. Inline power is *not activated* until the **lanpower start** *slot* syntax is issued for the applicable PoE slot(s).

Syntax Definitions

<i>slot/port</i>	Activates inline power on the specified PoE port only. This syntax is used to re-enable power to an <i>individual port</i> that has been manually turned off through the lanpower stop command.
<i>port2</i>	The last port number in a range of ports that you want to configure on the same slot (for example, 3/1-4 specifies ports 1-4 on slot 3).
<i>slot</i>	Activates inline power on all PoE ports in the corresponding slot.

Defaults

Power over Ethernet operational status is globally disabled by default.

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

Use the *slot/port* syntax to activate power on a particular port. When all ports in a slot are manually turned off, use only the *slot* syntax in the command line. This activates power on all ports in the specified slot. As noted above, inline power is *not active* until the **lanpower start** *slot* syntax is issued for the applicable PoE slot(s).

Examples

```
-> lanpower start 5/11
-> lanpower start 5
-> lanpower start 5/11-14
```

Release History

Release 6.6.1; command was introduced.

Related Commands

lanpower stop

Manually disconnects power on a single specified PoE port or on all PoE ports in a specified slot.

show lanpower

Displays current inline power status and related statistics for all PoE ports in a specified slot.

MIB Objects

```
alaPethMainPseGroup
  alaPethMainPseAdminStatus
pethPsePortTable
  pethPsePortAdminEnable
```

lanpower stop

Manually disables power on a single specified PoE port *or* on all PoE ports in a specified slot.

lanpower stop {*slot/port*[-*port2*] | *slot*}

Syntax Definitions

<i>slot/port</i>	Disables inline power on the specified PoE port only.
<i>port2</i>	The last port number in a range of ports that you want to configure on the same slot (for example, 3/1-4 specifies ports 1-4 on slot 3).
<i>slot</i>	Disables inline power on all PoE ports in the corresponding slot.

Defaults

Power over Ethernet operational status is globally disabled by default.

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

N/A

Examples

```
-> lanpower stop 5/22
-> lanpower stop 5
-> lanpower stop 5/22-27
```

Release History

Release 6.6.1; command was introduced.

Related Commands

lanpower start	Activates inline power on a single specified PoE port <i>or</i> on all PoE ports in a specified slot.
lanpower combo-port	Displays current inline power status and related statistics for all PoE ports in a specified slot.

MIB Objects

```
alaPethMainPseGroup
  alaPethMainPseAdminStatus
pethPsePortTable
  pethPsePortAdminEnable
```

lanpower power

Specifies the maximum amount of inline power, in milliwatts, allocated to *a specific PoE port*. The value specified is used to supply inline power to devices such as IP telephones and wireless LAN devices.

lanpower {*slot/port* | *slot*} **power** *milliwatts*

Syntax Definitions

<i>slot/port</i>	A PoE port on which the maximum amount of inline power is being allocated.
<i>milliwatts</i>	The maximum amount of inline power, in milliwatts, being allocated to the corresponding port (3000–16000 or 3000-31000).

Defaults

parameter	default
<i>milliwatts (802.3af ports)</i>	16000
<i>milliwatts (802.3at ports)</i>	31000

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- To globally specify the amount of inline power allocated to *all ports in a slot*, see the [lanpower maxpower command on page 4-7](#).
- Be sure that the value specified complies with specific power requirements for all attached IP telephones and wireless LAN devices.
- Note that the power value for the [lanpower power](#) command is specified in milliwatts (mW); the related command, [lanpower maxpower](#), is specified in watts (W).

Examples

```
-> lanpower 3/1 power 3025
```

Release History

Release 6.6.1; command was introduced.

Related Commands

[lanpower maxpower](#)

Specifies the maximum amount of inline power, in watts, allocated to all PoE ports in a specified slot.

[lanpower combo-port](#)

Displays current inline power status and related statistics for all PoE ports in a specified slot.

MIB Objects

alaPethPsePortTable

 alaPethPsePortPowerMaximum

lanpower maxpower

Specifies the maximum amount of inline power, in watts, allocated to *all PoE ports in a specified slot*.

lanpower slot maxpower watts

Syntax Definitions

<i>slot</i>	The slot containing PoE ports on which the maximum amount of inline power allowed is being allocated.
<i>watts</i>	The maximum amount of inline power, in watts, allocated to all PoE ports in the corresponding slot.

Defaults

parameter	default
<i>watts</i>	Will vary based on model and power supply.

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Before changing the maximum slot-wide power allowance, you have to disable PoE for the slot through the **lanpower stop** command. Once the new value is assigned, re-enable PoE for the slot through the **lanpower start** command.
- To specify the maximum amount of inline power allocated to a *single port*, see the **lanpower power** command on page 4-5.
- Note that the power value for the **lanpower maxpower** command is specified in watts (W); the related command, **lanpower power**, is specified in milliwatts (mW).

Examples

```
-> lanpower 3 maxpower 200
```

Release History

Release 6.6.1; command was introduced.

Related Commands

lanpower power

Specifies the maximum amount of inline power, in milliwatts, allocated to a specific PoE port.

lanpower combo-port

Displays current inline power status and related statistics for all PoE ports in a specified slot.

MIB Objects

alaPethMainPseGroup

alaPethMainPseMaxPower

lanpower priority

Specifies an inline power priority level to a port. Levels include critical, high, and low.

lanpower *slot/port* **priority** {**critical** | **high** | **low**}

Syntax Definitions

<i>slot/port</i>	The particular port on which a priority level is being configured.
critical	Intended for ports that have mission-critical devices attached, and therefore require top (that is, critical) priority. In the event of a power management issue, inline power to critical ports is maintained as long as possible.
high	Intended for ports that have important, but <i>not</i> mission-critical, devices attached. If other ports in the chassis have been configured as critical, inline power to high-priority ports is given second priority.
low	Intended for ports that have low-priority devices attached. In the event of a power management issue, inline power to low-priority ports is interrupted first (that is, before critical- and high-priority ports).

Defaults

parameter	default
low high critical	low

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

N/A

Examples

```
-> lanpower 2/16 priority low
```

Release History

Release 6.6.1; command was introduced.

Related Commands

[lanpower combo-port](#)

Displays current inline power status and related statistics for all PoE ports in a specified slot.

MIB Objects

pethPsePortGroup

 pethPsePortPowerPriority

lanpower priority-disconnect

Enables or disables the priority disconnect function on all ports in a specified slot. Priority disconnect is used by the system software in determining whether an incoming PD is granted or denied power when there are too few watts remaining in the PoE power budget for an additional device. For detailed information on this function, see the “Managing Power over Ethernet (PoE)” chapter in the *OmniSwitch AOS Release 6.7 Hardware Users Guide*.

lanpower slot priority-disconnect {enable | disable}

Syntax Definitions

slot	The particular slot on which the priority disconnect function is being enabled or disabled.
enable	Enables priority disconnect on a specified port. When this function is enabled <i>and</i> a power budget deficit occurs in which there is inadequate power for an incoming device, the system software uses priority disconnect rules to determine whether an incoming device is granted or denied power. For information on priority disconnect rules, see the “Managing Power over Ethernet (PoE)” chapter in the <i>OmniSwitch AOS 6.7 Series</i> .
disable	Disables priority disconnect on a specified port. When priority disconnect is disabled and there is inadequate power in the budget for an additional device, power is denied to <i>any</i> incoming PD, regardless of its priority status.

Defaults

parameter	default
enable disable	enable

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

N/A

Examples

```
-> lanpower 2 priority-disconnect disable
```

Release History

Release 6.6.1; command was introduced.

Related Commands

lanpower priority

Specifies an inline power priority level to a port. Levels include critical, high, and low.

show lanpower priority-disconnect

Displays the priority disconnect function status on all ports in a specified slot.

MIB Objects

alaPethMainPseTable

alaPethMainPsePriorityDisconnect

lanpower combo-port

Enables or disables PoE capability on the copper combo ports.

lanpower slot combo-port {enable | disable}

Syntax Definitions

slot	The particular slot on which to enable or disable PoE capability on the copper combo ports.
enable	Enables PoE capability on the copper combo ports 25/26 and disables PoE capability on ports 23/24.
disable	Disables PoE capability on the copper combo ports 25/26 and enables PoE capability on ports 23/24.

Defaults

parameter	default
enable disable	disable

Platforms Supported

OmniSwitch 6250

Usage Guidelines

Port pairs 23/24 and 25/26 cannot have PoE enabled at the same time. Use this command to choose which port pairs support PoE.

Examples

```
-> lanpower 1 combo-port enable
```

Release History

Release 6.6.1; command was introduced.

Related Commands

show lanpower	Displays current inline power status and related statistics for all PoE ports in a specified slot.
-------------------------------	--

MIB Objects

N/A

show lanpower

Displays current inline power status and related statistics for all PoE ports in a specified slot.

show lanpower *slot*

Syntax Definitions

slot The slot for which current inline power status and related statistics are to be displayed.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

N/A

Examples

```
-> show lanpower 1
Port Maximum(mW) Actual Used(mW) Status Priority On/Off Class
-----+-----+-----+-----+-----+-----+-----
  1      31000           0 Undefined Low OFF -
  2      31000           0 Undefined Low OFF -
  3      31000           0 Undefined Low OFF -
  4      31000           0 Undefined Low OFF -
  5      31000           0 Undefined Low OFF -
  6      31000           0 Undefined Low OFF -
  7      16000           0 Undefined Low OFF -
(Output truncated)
 22      16000           0 Undefined Low OFF -
 23      31000           0 Undefined Low OFF -
 24      31000           0 Undefined Low OFF -
```

```
Slot 1 Max Watts 225
1 Power Supplies Available
```

output definitions

Port	A PoE port for which current status and related statistics are being displayed.
Maximum (mW)	The current maximum amount of power allocated to the corresponding PoE port, in milliwatts. The default value is 15400. To change this setting, use the lanpower power command.
Actual Used (mW)	The actual amount of power being used by an attached device (if applicable), in milliwatts. If no device is attached to the corresponding port, this row displays a value of 0.

output definitions (continued)

Status	Displays the current operational status. Options include Powered On , Powered Off , and Undefined .
Priority	The current priority level for the corresponding PoE port. Options include Critical , High , and Low . Critical has to be reserved for ports that have mission-critical devices attached, and therefore require top (that is, critical) priority. In the event of a power management issue, inline power to critical ports is maintained as long as possible. High indicates ports that have important, but not mission-critical, devices attached. If other ports in the chassis have been configured as critical, inline power to high-priority ports is given second priority. Low priority is for ports that have low-priority devices attached. In the event of a power management issue, inline power to low-priority ports is interrupted first (that is, before critical and high-priority ports). The default value is Low. Priority levels is changed using the lanpower priority command.
On/Off	Displays whether a port has been manually turned on or off by the user. ON indicates that the port has been turned on by the user through the lanpower start command. OFF indicates that the port has been turned off by the user through the lanpower stop command.
Max Watts	The maximum watts allocated to the corresponding slot. The maximum watts value for a slot is changed using the lanpower maxpower command.
Class	Displays the IEEE class of the PoE based on the power consumption.

Release History

Release 6.6.1; command was introduced.

Related Commands

N/A

MIB Objects

```

alaPethMainPseGroup
  alaPethMainPseAdminStatus
pethPsePortTable
  pethPsePortAdminEnable
alaPethPsePortTable
  alaPethPsePortPowerMaximum
alaPethMainPseGroup
  alaPethMainPseMaxPower
  pethMainPsePower
pethPsePortGroup
  pethPsePortPowerPriority

```

show lanpower capacitor-detection

Displays the capacitor detection method status.

show lanpower capacitor-detection *slot*

Syntax Definitions

slot The particular slot on which the capacitor detection method status is being displayed.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

N/A

Examples

```
-> show lanpower capacitor-detection 2  
Capacitor Detection enabled on Slot 2
```

Release History

Release 6.6.1; command was introduced.

Related Commands

lanpower capacitor-detection Enables or disables the capacitor detection method.

MIB Objects

```
alaPethMainTable  
  alaPethMainPseCapacitorDetect
```

show lanpower priority-disconnect

Displays the priority disconnect function status on all ports in a specified slot.

show lanpower priority-disconnect *slot*

Syntax Definitions

slot The particular slot on which the priority disconnect function status you want to display.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

N/A

Examples

```
-> show lanpower priority-disconnect 2
Slot 2 Priority Disconnect Enabled!
```

Release History

Release 6.6.1; command was introduced.

Related Commands

[lanpower priority-disconnect](#) Enables or disables the priority disconnect function on all ports in a specified slot.

MIB Objects

```
alaPethMainPseTable
  alaPethMainPsePriorityDisconnect
```

5 Network Time Protocol Commands

The Network Time Protocol (NTP) is used to synchronize the time of a computer client or server to another server or reference time source, such as a radio or satellite receiver. It provides client time accuracies within a millisecond on LANs, and up to a few tens of millisecond on WANs. Typical NTP configurations utilize multiple redundant servers and diverse network paths in order to achieve high accuracy and reliability.

It is important for networks to maintain accurate time synchronization between network nodes. The standard timescale used by most nations of the world is based on a combination of Universal Coordinated Time (UTC) (representing the Earth's rotation about its axis) and the Gregorian Calendar (representing the Earth's rotation about the Sun). UTC time is disseminated by various means, including radio and satellite navigation systems, telephone modems, and portable clocks.

The MIB information for NTP is as follows:

Filename: AlcatelIND1Ntp.mib
Module: alcatelIND1NTPMIB

A summary of available commands is listed here:

ntp server
ntp server synchronized
ntp server unsynchronized
ntp client
ntp broadcast
ntp broadcast-delay
ntp key
ntp key load
show ntp client
show ntp server status
show ntp client server-list
show ntp keys

ntp server

Specifies an NTP server from which the switch receives updates.

ntp server {*ip_address* | *domain_name*} [**key** *key* | **version** *version* | **minpoll** *exponent* / **prefer**]

no ntp server {*ip_address* | *domain_name*}

Syntax Definitions

<i>ip_address</i>	The IP address of the NTP server to be added or deleted to the client's server list.
<i>domain_name</i>	The domain name of the NTP server to be added or deleted to the client's server list. This is usually a text string.
<i>key</i>	The key identification number that corresponds to the specified NTP server.
<i>version</i>	The version of NTP being used. This is 1, 2, 3, or 4.
<i>exponent</i>	The number of seconds between polls to this server. This number is determined by raising 2 to the power of the number entered. Therefore, if 4 were entered, the minimum poll time would be 16 seconds ($2^4 = 16$).
prefer	Marks this server as the preferred server. A preferred server's timestamp is used before another server.

Defaults

Parameter	Default
<i>version</i>	4
<i>exponent</i>	6
prefer	not preferred

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Use the **no** form of this command to delete the specified server.
- To configure NTP in the client mode you have to first define the NTP servers.
- Either an IP address or domain name for the specified server can be entered.
- The NTP key identification is an integer. It corresponds to an MD5 authentication key contained in an authentication file (.txt) located on the server. This file has to be on both the server and the local switch, and match, for authentication to work. Enter the key identification using the **key** keyword if the server is set to MD5 authentication.
- Use the **version** keyword to set the correct version of NTP.

- Use the **minpoll** keyword to set the minimum poll time for the server. This number is determined by raising 2 to the power of the number entered. Therefore, if 4 were entered, the minimum poll time would be 16 seconds ($2^4 = 16$). The client polls the server for a time update when the **minpoll** time is exceeded.

Examples

```
-> ntp server 1.1.1.1
-> ntp server spartacus
-> ntp server 1.1.1.1 key 1
-> ntp server 1.1.1.1 version 4
-> ntp server spartacus minpoll 5
-> no ntp server 1.1.1.1
```

Release History

Release 6.6.1; command was introduced.

Related Commands

ntp client Enables or disables NTP operation on the switch.

MIB Objects

```
alaNtpConfig
  alaNtpPeerAddressType
  alaNtpPeerType
  alaNtpPeerAuth
  alaNtpPeerVersion
  alaNtpPeerMinpoll
  alaNtpPeerPrefer
  alaNtpPeerAddress
```

ntp server synchronized

Enables an NTP client to invoke tests for NTP server synchronization as specified by the NTP protocol.

ntp server synchronized

Syntax Definitions

N/A

Defaults

By default, NTP synchronization is enabled.

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

The NTP protocol discards the NTP servers that are unsynchronized. However, the unsynchronized NTP servers are used as network time sources.

Examples

```
-> ntp server synchronized
```

Release History

Release 6.6.1; command was introduced.

Related Commands

[ntp server unsynchronized](#) Disables an NTP client from invoking tests for NTP server synchronization. This allows the NTP client to synchronize with unsynchronized NTP servers in the network.

MIB Objects

```
alaNtpConfig  
  alaNtpPeerTests
```

ntp server unsynchronized

Disables an NTP client from invoking tests for NTP server synchronization. This allows the NTP client to synchronize with unsynchronized NTP servers in the network.

ntp server unsynchronized

Syntax Definitions

N/A

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

When NTP peer synchronization tests are disabled, the NTP client is able to synchronize with either an NTP peer that is not synchronized with an atomic clock or a network of NTP servers that finally synchronizes with an atomic clock.

Examples

```
-> ntp server unsynchronized
```

Release History

Release 6.6.1; command was introduced.

Related Commands

[ntp server synchronized](#)

Enables an NTP client to invoke tests for NTP server synchronization as specified by the NTP protocol.

MIB Objects

```
alaNtpConfig  
  alaNtpPeerTests
```

ntp client

Enables or disables NTP operation on the switch.

ntp client {enable | disable}

Syntax Definitions

enable	Enables NTP.
disable	Disables NTP.

Defaults

NTP protocol is disabled by default.

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

Use this command to enable or disable NTP. Before NTP can be enabled, an NTP server has to be specified using the **ntp server** command.

Examples

```
-> ntp client enable
-> ntp client disable
```

Release History

Release 6.6.1; command was introduced.

Related Commands

ntp server Specifies an NTP server from which the switch receives updates.

MIB Objects

alaNtpEnable

ntp broadcast

Enables or disables the client's broadcast mode.

ntp broadcast {enable | disable}

Syntax Definitions

enable	Enables the client broadcast mode.
disable	Disables the client broadcast mode.

Defaults

Broadcast mode is disabled by default.

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

Broadcast mode is intended for operation on networks with numerous workstations and where the highest accuracy is not required. In a typical scenario, one or more time servers on the network broadcast NTP messages that are received by NTP hosts. Correct time is determined from this NTP message based on a pre-configured latency or broadcast delay in the order of a few milliseconds.

Examples

```
-> ntp broadcast enable
-> ntp broadcast disable
```

Release History

Release 6.6.1; command was introduced.

Related Commands

[ntp broadcast-delay](#) Sets the broadcast delay time in microseconds.

MIB Objects

alaNtpBroadcastEnable

ntp broadcast-delay

Sets the broadcast delay time in microseconds.

ntp broadcast delay *microseconds*

Syntax Definitions

microseconds The number of microseconds for the broadcast delay.

Defaults

parameter	default
<i>microseconds</i>	4000

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

When running in the NTP client broadcast mode, a broadcast delay has to be set. The broadcast delay is the number of microseconds added to the timestamp.

Examples

```
-> ntp broadcast delay 1000
-> ntp broadcast delay 10000
```

Release History

Release 6.6.1; command was introduced.

Related Commands

[ntp broadcast](#) Enables or disables the client's broadcast mode.

MIB Objects

alaNtpBroadcastDelay

ntp key

Labels the specified authentication key identification as trusted or untrusted.

ntp key *key* [**trusted** | **untrusted**]

Syntax Definitions

<i>key</i>	The key number matching an NTP server.
trusted	Signifies that the specified key is trusted and can be used for authentication.
untrusted	Signifies that the specified key is not trusted and cannot be used for authentication. Synchronization does not occur with an untrusted authentication key.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Authentication keys are stored in a key file and loaded into memory when the switch boots. The keys loaded into memory are not trusted until this command is used.
- Once the keys are loaded into software (on boot up of the switch), they have to be activated by being labeled as trusted. A trusted key authenticates with a server that requires authentication as long as the key matches the server key.
- New keys has to be added manually to the key file. A newly added key is not be loaded into the switch software until the **ntp key load** command is issued, or the switch is rebooted.

Examples

```
-> ntp key 5 trusted  
-> ntp key 2 untrusted
```

Release History

Release 6.6.1; command was introduced.

Related Commands

- ntp key** Sets the public key the switch uses when authenticating with the specified NTP server.
- ntp client** Enables or disables authentication on the switch.

MIB Objects

alaNtpAccessKeyIdTable
 alaNtpAccessKeyIdKeyId
 alaNtpAccessKeyIdTrust

ntp key load

Loads the current key file into memory.

ntp key load

Syntax Definitions

N/A

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- This command reloads the key file into the switch memory. This allows for new keys in the key file to be added to the list of keys the switch can use for authentication.
- Newly added keys has to be labeled as **trusted** with the **ntp key** command before being used for authentication.

Examples

```
-> ntp key load
```

Release History

Release 6.6.1; command was introduced.

Related Commands

- | | |
|-------------------|---|
| ntp key | Labels the specified authentication key identification as trusted or untrusted. |
| ntp server | Specifies an NTP server from which this switch receives updates. |

MIB Objects

alaNtpAccessRereadkeyFile

show ntp client

Displays information about the current client NTP configuration.

show ntp client

Syntax Definitions

N/A

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

This command displays the current configuration parameters for the NTP client. The display is slightly different depending on what has been configured on the client. See the Examples section for more information.

Examples

```
-> show ntp client
Current time:                SAT APR 16 2005 00:19:02 (UTC)
Last NTP update:            SAT APR 16 2005 00:06:45 (UTC)
Client mode:                 enabled
Broadcast client mode:      disabled
Broadcast delay (microseconds): 4000
```

output definitions

Current time	The current time for the NTP client.
Last NTP update	The time of the last synchronization with an NTP server.
Client mode	Whether the NTP client software is enabled or disabled.
Broadcast client mode	What NTP mode the client is running in, either client or broadcast.
Broadcast delay	The number of microseconds in the advertised broadcast delay time. This field is absent if the client broadcast mode is disabled.

Release History

Release 6.6.1; command was introduced.

Related Command**ntp client**

Enables or disables NTP operation on the switch.

MIB ObjectsalaNtpLocalInfo

show ntp client server-list

Displays a list of the servers with which the NTP client synchronizes.

show ntp client server-list

Syntax Definitions

N/A

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

N/A

Examples

```
-> show ntp client server-list
```

```
IP Address      Ver  Key  St   Delay      Offset      Disp
=====+====+=====+=====+=====+=====+=====
198.206.181.70  4    0   2    0.167      0.323      0.016
```

output definitions

IP Address	The server IP address.
Ver	The version of NTP the server is using. Versions 3 and 4 are valid.
Key	The NTP server's public key. This has to be accurate and the same as the NTP server, or the client switch is unable to synchronize with the NTP server. A zero (0) means there is no key entered.
St	The stratum of the server.
Delay	The delay received from the server in its timestamp.
Offset	The offset received from the server in its timestamp.
Disp	The dispersion value received from the server in its timestamp.

Release History

Release 6.6.1; command was introduced.

Related Command**ntp client**

Enables or disables authentication on the switch.

MIB ObjectsalaNtpPeerListTable

show ntp server status

Displays the basic server information for a specific NTP server or a list of NTP servers.

show ntp server status [*ip_address* | *domain_name*]

Syntax Definitions

<i>ip_address</i>	The IP address of the NTP server to be displayed.
<i>domain_name</i>	The domain name of the server to be displayed. This is usually a text string.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- This command displays a selected server or a list of servers with which the NTP client synchronizes.
- To display a specific server, enter the command with the server's IP address or domain name. To display all servers, enter the command with no server IP address.

Examples

```
-> show ntp server status
-> show ntp server status 198.206.181.139
IP address          = 198.206.181.139,
Host mode           = client,
Peer mode           = server,
Prefer              = no,
Version             = 4,
Key                 = 0,
Stratum             = 2,
Minpoll             = 6 (64 seconds),
Maxpoll             = 10 (1024 seconds),
Delay               = 0.016 seconds,
Offset              = -180.232 seconds,
Dispersion          = 7.945 seconds
Root distance       = 0.026,
Precision           = -14,
Reference IP        = 209.81.9.7,
Status              = configured : reachable : rejected,
Uptime count        = 1742 seconds,
Reachability         = 1,
Unreachable count   = 0,
Stats reset count   = 1680 seconds,
Packets sent        = 1,
Packets received    = 1,
Duplicate packets   = 0,
```



```

Bogus origin      = 0,
Bad authentication = 0,
Bad dispersion    = 0,
Last Event        = peer changed to reachable,

```

output definitions

IP address	The server IP address.
Host mode	The host mode of this remote association.
Peer mode	The peer mode of this remote association.
Prefer	Whether this server is a preferred server or not. A preferred server is used to synchronize the client before a non-preferred server.
Version	The version of NTP the server is using. Versions 3 and 4 are valid.
Key	The NTP server's public key. This has to be accurate and the same as the NTP server, or the client switch is able to synchronize with the NTP server. A zero (0) means there is no key entered.
Stratum	The stratum of the server. The stratum number is the number of hops from a UTC time source.
Minpoll	The minimum poll time. The client polls the server for a time update every time this limit has been exceeded.
Maxpoll	The maximum poll time.
Delay	The delay received from the server in its timestamp.
Offset	The offset received from the server in its timestamp.
Dispersion	The dispersion value received from the server in its timestamp.
Root distance	The total round trip delay (in seconds) to the primary reference source.
Precision	The advertised precision of this association.
Reference IP	The IP address identifying the peer's primary reference source.
Status	The peer selection and association status.
Uptime count	The time period (in seconds) during which the local NTP server was associated with the switch.
Reachability	The reachability status of the peer.
Unreachable count	Number of times the NTP entity was unreachable.
Stats reset count	The time delay (in seconds) since the last time the local NTP server was restarted.
Packets sent	Number of packets sent.
Packets received	Number of packets received.
Duplicate packets	Number of duplicated packets received.
Bogus origin	Number of bogus packets.
Bad authentication	Number of NTP packets rejected for not meeting the authentication standards.
Bad dispersion	Number of bad dispersions.
Last Event	The last event.

Release History

Release 6.6.1; command was introduced.

Related Command

ntp client

Enables or disables authentication on the switch.

MIB Objects

alaNtpPeerListTable

 alaNtpPeerShowStatus

show ntp keys

Displays information about all authentication keys.

show ntp keys

Syntax Definitions

N/A

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

This command displays information about the authentication keys loaded into the memory.

Examples

```
-> show ntp keys
Key      Status
=====+=====
1        untrusted
2        untrusted
3        trusted
4        trusted
5        untrusted
6        untrusted
7        trusted
8        trusted
```

output definitions

Key	The key number corresponding to a key in the key file.
Status	Whether the key is trusted or untrusted.

Release History

Release 6.6.1; command was introduced.

Related Command

ntp key Labels the specified authentication key identification as trusted or untrusted.

ntp key load Loads the current key file into memory.

MIB Objects

alaNtpAccessKeyIdTable

6 Session Management Commands

Session Management commands are used to monitor and configure operator sessions including FTP, Telnet, HTTP (WebView), console, Secure Shell, and Secure Shell FTP on the switch. (See the SNMP Commands chapter for SNMP session commands.)

Maximum number of concurrent sessions allowed are:

Session	OmniSwitch 6250/6450
Telnet (v4 or v6)	6
FTP(v4 or v6)	4
SSH + SFTP(v4 or v6 secure sessions)	8
HTTP	4
Total Sessions	20
SNMP	50

MIB information for commands in this chapter are as follows:

Filename: AlcatelInd1SessionMgr.mib
Module: AlcatelIND1SessionMgrMIB

Filename: AlcatelIND1AAA.mib
Module: Alcatel-IND1-AAA-MIB

Filename: AlcatelIND1System.mib
Module: Alcatel-IND1ConfigMgr.mib

Filename: AlcatelIND1Ssh.mib
Module: ALCATEL-IND1-SSH-MIB

A summary of the available commands is listed here:

- session login-attempt**
- session login-timeout**
- session banner**
- session timeout**
- session prompt default**
- session console**
- session xon-xoff**
- prompt**
- show prefix**
- alias**
- show alias**
- user profile save**
- user profile save global-profile**
- user profile reset**
- history size**
- show history**
- !**
- command-log**
- kill**
- exit**
- who**
- whoami**
- show session config**
- show session xon-xoff**
- more size**
- more**
- show more**
- telnet**
- telnet6**
- ssh**
- ssh6**
- ssh enforce pubkey-auth**
- show ssh config**
- show command-log**
- show command-log status**

session login-attempt

Sets or resets the number of times a user can attempt unsuccessfully to log in to the switch before the TCP connection is closed.

session login-attempt *integer*

Syntax Definitions

integer The number of times the user can attempt to log in to the switch before the TCP connection is closed. Valid range is 1 to 10.

Defaults

By default, three-login attempts are provided.

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

N/A

Examples

```
-> session login-attempt 5
```

Release History

Release 6.6.1; command introduced.

Related Commands

- | | |
|---------------------------------------|---|
| show session config | Displays Session Manager information such as banner file name, session timeout value, and default prompt value. |
| session login-timeout | Sets or resets the amount of time the user can take to accomplish a successful login to the switch. |
| session timeout | Configures the inactivity timer for a CLI, HTTP (including WebView), or FTP interface. When the switch detects no user activity for this period, the user is logged off the switch. |

MIB Objects

```
sessionMgr  
    sessionLoginAttempt
```

session login-timeout

Sets or resets the amount of time the user can take to accomplish a successful login to the switch. If the timeout period is exceeded, the TCP connection is closed by the switch.

session login-timeout *seconds*

Syntax Definitions

seconds The number of seconds the switch allows for the user to accomplish a successful login. Valid range is from 5 seconds to 600 seconds.

Defaults

Login timeout default is 55 seconds.

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

N/A

Examples

```
-> session login-timeout 30
```

Release History

Release 6.6.1; command introduced.

Related Commands

show session config Displays Session Manager information such as banner file name, session timeout value, default prompt value, login timer, and login attempt number.

session login-attempt Sets or resets the number of times a user can attempt unsuccessfully to log in to the switch before the TCP connection is closed.

session timeout Configures the inactivity timer for a CLI, HTTP (including WebView), or FTP interface. When the switch detects no user activity for this period, the user is logged off the switch.

MIB Objects

sessionMgr
 sessionLoginTimeout

session banner

Sets or resets the file name of the user-defined banner. The banner is a welcome banner that appears after the user successfully logs on to the switch.

session banner {cli | ftp | http} *file_name*

session banner no {cli | ftp | http}

Syntax Definitions

cli	Creates/modifies the CLI banner file name.
ftp	Creates/modifies the FTP banner file name.
http	Creates/modifies the HTTP banner file name.
<i>file_name</i>	Banner file name including the path from the switch /flash directory. The maximum length of the file name and path is 255 characters.

Defaults

- A default banner is included in one of the switch image files. It is automatically displayed at login so no configuration is needed.
- The user has the option of defining a custom supplementary banner or of using the default banner.

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- The **session banner no** command is used to disable a user-defined session banner file from displaying when you log on to the switch. The text file containing the custom banner remains on the switch until you remove it with the **rm** command.
- The **session banner** command is used to configure or modify the banner file *name*. You can use a text editor to edit the file containing the banner text.

Examples

```
-> session banner cli/switch/banner.txt
```

Release History

Release 6.6.1; command introduced.

Related Commands

[show session config](#)

Displays Session Manager information such as banner file name, session timeout value, and default prompt value.

MIB Objects

SessionConfigTable

 SessionType

 SessionBannerFileName

session timeout

Configures the inactivity timer for a CLI, HTTP (including WebView), or FTP interface. When the switch detects no user activity for this period, the user is logged off the switch.

session timeout {cli | http | ftp} *minutes*

Syntax Definitions

cli	Sets the inactivity timeout for CLI sessions.
http	Sets the inactivity timeout for HTTP sessions.
ftp	Sets the inactivity timeout for FTP sessions.
<i>minutes</i>	Inactivity timeout value (in minutes). Valid range 1 to 596523.

Defaults

parameter	default
<i>minutes</i>	4

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- The inactivity timer value can be different for each type of interface, such as CLI (Console, Telnet), HTTP (including WebView), and FTP.
- If you change the timer, the new value does not affect current sessions; the new timer is applied to new sessions only.

Examples

```
-> session timeout cli 5
```

Release History

Release 6.6.1; command introduced.

Related Commands

[show session config](#) Displays Session Manager information, such as banner file name, session timeout value, and default prompt value.

MIB Objects

SessionConfigTable
 SessionType
 SessionInactivityTimerValue

session prompt default

Configures the default CLI prompt for console and Telnet sessions. The prompt is the symbol and/or text that appears on the screen in front of the cursor.

```
session prompt default {<num> | <string> | system-name}
```

Syntax Definitions

<i>num</i>	The new numerical prompt value.
<i>string</i>	The new prompt string. Text strings that include spaces must be enclosed in quotation marks. For example, “OmniSwitch 6250” .
system-name	Sets the prompt to the current system name of the switch. By default, the system name is set to ‘VxTarget’.

Defaults

parameter	default
<i>string</i>	->
system-name	VxTarget

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- The maximum prompt string length is 35 characters.
- System name is configured for the switch using the CLI command **system name**. The system name can also be dynamically obtained from the DHCP server (DHCP Option-12). The user-defined system name configuration (through CLI, WebView, SNMP) gets priority over the DHCP server values. For more information, refer to [“system name” on page 2-4](#) in Chassis Management and Monitoring Commands chapter.
- Every time the system name is modified, the prompt also gets modified.
- In case the system name is larger than 35 characters, prompt is truncated to 35 characters.
- The new prompt takes effect after relogging to a new session.

Examples

```
-> session prompt default
-> session prompt default system-name
```

Release History

Release 6.6.1; command introduced.

Release 6.6.3; keyword **system name** introduced.

Related Commands

[show session config](#)

Displays Session Manager information such as banner file name, session timeout value, and default prompt value.

MIB Objects

SessionConfigTable

 SessionType

 sessionDefaultPromptString

 sessionDefaultPromptSysName

session console

Enable or disable switch access through the console port of the switch.

```
session console {enable | disable}
```

Syntax Definitions

enable	Enables the switch access through the console port through the CLI shell.
disable	Disables the switch access through the console port through the CLI shell.

Defaults

parameter	default
enable / disable	enable

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- It is recommended to create a back-up of the configuration file before using this command. contact customer support to recover the switch.
- Before disabling the CLI console shell, configuration for telnet access with proper user privilege must be made.
- The command must be issued only through telnet or SSH session, and not through console sessions.
- When the CLI console shell is disabled, the switch log output to the console is also disabled.
- When the CLI console shell is disabled, switch can be accessed through SSH or telnet or webview session.
- The command can be stored to the configuration file using write memory.
- If this command is disabled and the telnet or SSH or webview access to the switch is also lost, set the bootflags to 0x1000 and stop the switch in miniboot . Once the switch stops in miniboot, delete the configuration file and reboot the switch to get console access to the switch. Alternatively, contact customer support.

Note. Deleting configuration file will also delete the other configurations. Hence, it is recommended to create a back-up of the configuration file before deleting the configuration file.

Examples

```
-> session console disable  
-> session console enable
```

Release History

Release 6.6.5; command introduced.

Related Commands

[show session config](#)

Displays Session Manager information such as banner file name, session timeout value, and default prompt value.

MIB Objects

SessionConfigTable
sessionConsoleStatus

session xon-xoff

Enables/disables the XON-XOFF protocol on the console port.

```
session xon-xoff {enable | disable}
```

Syntax Definitions

enable	Enables XON-XOFF on the console port.
disable	Disables XON-XOFF on the console port.

Defaults

parameter	default
enable / disable	disable

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

The switch can interpret noise from an RS232 line as Control-S (XOFF). If the **session console xon-xoff** command is enabled, traffic to the console port can be stopped.

Examples

```
-> session xon-xoff enable
-> session xon-xoff disable
```

Release History

Release 6.6.1; command introduced.

Related Commands

show session xon-xoff	Displays whether the console port is enabled or disabled for XON-XOFF.
------------------------------	--

MIB Objects

```
sessionXonXoffEnable
```

prompt

This command defines the CLI prompt.

prompt [**user**] [**time**] [**date**] [**string** *string*] [**prefix**]

no prompt

Syntax Definitions

user	The name of the current user is displayed as part of the CLI prompt.
time	The current system time is displayed as part of the CLI prompt.
date	The current system date is displayed as part of the CLI prompt.
<i>string</i>	You can specify a text string as the prompt. Prompts specified with this parameter are limited to four characters.
prefix	The current prefix (if any) is displayed as part of the CLI prompt. Prefixes are stored for command families that support the prefix recognition feature.

Defaults

The default prompt is the arrow (->, or dash greater-than).

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Use the **no** form of this command to remove the CLI prompt.
- Prefixes are stored for command families that support the prefix recognition feature. These command families include AAA, Interface, Link Aggregation, QoS, Spanning Tree, and VLAN Management. Other command families do not store a prefix.
- To set the CLI prompt back to the arrow (->), enter the **prompt string ->** (prompt string dash greater than) syntax.

Examples

```
-> prompt user
-> prompt user time date
-> prompt prefix
-> prompt string 12->
-> prompt prefix ->
```

Release History

Release 6.6.1; command introduced.

Related Commands**show prefix**

Shows the command prefix (if any) currently stored by the CLI. Prefixes are stored for command families that support the prefix recognition feature.

MIB Objects

N/A

show prefix

Shows the command prefix (if any) currently stored by the CLI. Prefixes are stored for command families that support the prefix recognition feature.

show prefix

Syntax Definitions

N/A

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

Prefixes are stored for command families that support the prefix recognition feature. These command families include AAA, Interface, Link Aggregation, QoS, Spanning Tree, and VLAN Management. Other command families do not store a prefix.

Examples

```
-> show prefix
```

Release History

Release 6.6.1; command introduced.

Related Commands

prompt

This command defines the format of the CLI prompt. The prompt can be defined to include the command prefix.

MIB Objects

N/A

alias

Defines substitute command text for the switch CLI command keywords.

alias *alias command_name*

Syntax Definitions

<i>alias</i>	Text string that defines the new CLI command name (alias) that you can use to replace an old CLI command name.
<i>command_name</i>	The old CLI command name being replaced by your alias.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Alias commands are stored until the user session ends. To save alias settings, use the [user profile save](#) command. Otherwise, once you log off the switch, substitute commands configured with the **alias** command are destroyed.
- You can eliminate excess typing by reducing the number of characters required for a command. For instance, the group syntax can be defined as **gp**.
- You can change unfamiliar command words into familiar words or patterns. For instance, if you prefer the term “privilege” to the term “attribute” with reference to a login account read/write capabilities, you can change the CLI command from **attrib** to privilege.
- To reset commands set with alias back to their factory default, use the [user profile reset](#) command.

Examples

```
-> alias gp group
-> alias privilege attrib
```

Release History

Release 6.6.1; command introduced.

Related Commands

- show alias** Lists all current commands defined by the use of the **alias** CLI command.
- user profile reset** Resets the alias, prompt, and more values to their factory defaults.

MIB ObjectsN/A

show alias

Displays all current commands defined by the use of the **alias** CLI command.

show alias

Syntax Definitions

N/A

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

N/A

Examples

The following information is displayed where the alias **gp** was defined to replace the **group** command, and the alias **privilege** was defined to replace the **attrib** command.

```
-> show alias
gp:          group
privilege:  attrib
```

Release History

Release 6.6.1; command introduced.

Related Commands

alias

Defines substitute command text for the switch CLI command keywords.

MIB Objects

N/A

user profile save

Saves the user account settings for aliases, prompts, and the more mode screen settings. These settings are automatically loaded when the user account logs on.

user profile save

Syntax Definitions

N/A

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Use this command to save alias definitions, prompt definitions, and more mode screen settings for use in future login sessions for the current user account.
- If you do not use the **user profile save**, **alias**, **prompt**, and **more size** commands, settings are lost when the user account logs off.
- Use the **user profile reset** command to set the alias, prompt, and more size values to their factory defaults.

Examples

```
-> user profile save
```

Release History

Release 6.6.1; command introduced.

Related Commands

alias	Defines substitute command text for the switch CLI command keywords.
prompt	Defines substitute command text for the switch CLI command keywords.
more size	Specifies the number of lines that your console screen displays.
user profile reset	Resets the alias, prompt, and more values to their factory defaults.

MIB Objects

N/A

user profile save global-profile

This command is available only for the user with an administrative profile.

This command can be used to add alias, prompt, and more settings and these settings can be saved as a global profile. These settings are loaded as default settings when any user logs in, irrespective of the user privileges.

user profile save global-profile

Syntax Definitions

global-profile The administrative user setting that presets a global setting as default to all users at login prompt.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- This profile can be reset when by the user by using the **user profile save** and **user profile reset** commands.
- Use this command to save alias definitions, prompt definitions, and more mode screen settings for use in future login sessions for all user accounts.
- The current settings (prompt, more, aliases) for the session are saved in the global profile file **/flash/switch/GlobalProfile.txt**. The file can be manually edited by the administrator. The file name must not be changed or deleted.
- If a user profile is configured by the individual user with the **user profile save** command, the global profile is overridden and the user profile settings are loaded at user login.

Examples

```
-> user profile save global-profile
```

```
Setting global profile..
```

Release History

Release 6.6.3; command introduced.

Related Commands

alias	Defines substitute command text for the switch CLI command keywords.
prompt	Defines substitute command text for the switch CLI command keywords.
more size	Specifies the number of lines that your console screen must display.
user profile save	Saves the user account settings for aliases, prompts, and the more mode screen settings. These settings are automatically loaded when the user logs on.
user profile reset	Resets the alias, prompt, and more values to their factory defaults.

MIB Objects

N/A

user profile reset

Resets the alias, prompt, and more values to their factory defaults.

user profile reset

Syntax Definitions

N/A

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

N/A

Examples

```
-> user profile reset
```

Release History

Release 6.6.1; command introduced.

Related Commands

alias	Defines substitute command text for the switch CLI command keywords.
prompt	Defines substitute command text for the switch CLI command keywords.
more size	Specifies the number of lines that your console screen must display.
user profile save	Saves the user account settings for aliases, prompts, and the more screen.

MIB Objects

N/A

history size

Sets the number of commands to be stored in the CLI history buffer.

history size *number*

Syntax Definitions

number Enter an integer between 1 and 500. The history buffer can store up to 500 commands.

Defaults

By default, the history buffer size is set to 100 commands.

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

N/A

Examples

```
-> history size 10
```

Release History

Release 6.6.1; command introduced.

Related Commands

show history Displays commands that you have recently issued to the switch. The commands are displayed in a numbered list.

! Recalls commands listed in the history buffer and displays them at the CLI prompt.

MIB Objects

N/A

show history

Displays commands that you have recently issued to the switch. The commands are displayed in a numbered list.

show history [parameters]

Syntax Definitions

parameters When this syntax is used, the CLI displays the history buffer size, the current number of commands in the history buffer, and the index range of the commands.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

N/A

Examples

```
-> show history
1 show cmm
2 show fan
3 show sensor
4 show temp
5 show time
6 show arp
7 clear arp
8 show prefix
```

```
-> show history parameters
History size: 10
Current Size: 7
Index Range: 1-7
```

output definitions

History Size	The size of the history buffer.
Current Size	The number of commands currently stored in the history buffer for this session.
Index Range	The index range of the commands for this CLI session currently stored in the history buffer.

Release History

Release 6.6.1; command introduced.

Related Commands**history size**

Sets the number of commands to be stored in the CLI history buffer.

!

Recalls commands listed in the history buffer and displays them at the CLI prompt.

MIB ObjectsN/A

!

!

Recalls commands listed in the history buffer and displays them at the CLI prompt.

!{! | *n*}

Syntax Definitions

!	Recalls the last command listed in the history buffer and displays that command at the CLI prompt.
<i>n</i>	Identifies a single command in the history buffer by number and displays that command at the CLI prompt.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- You can use the [show history](#) command to list all commands in the history buffer, then use the **!*n*** syntax to issue a single command from the list.
- When you use **!*n*** or **!!** to recall a command in the history buffer list, press the Enter key to run the command.

Examples

```
-> show history
1* show cmm
2 show fan
3 show sensor
4 show temp
5 show time
6 show arp
7 clear arp
```

Release History

Release 6.6.1; command introduced.

Related Commands

history size

Sets the number of commands to be stored in the CLI history buffer.

show history

Displays commands you have recently issued to the switch. The commands are displayed in a numbered list.

MIB Objects

N/A

command-log

Enables or disables command logging on the switch. A **command.log** is automatically created; this file stores a comprehensive CLI command history for all active sessions since the function was *first* enabled.

command-log {enable | disable}

Syntax Definitions

enable	Creates a file called command.log in the switch /flash directory. Any configuration commands entered on the command line are recorded to this file until command logging is disabled.
disable	Disables logging of current session commands to the command.log file.

Defaults

parameter	default
enable disable	disable

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

The maximum log file size is 66,402 bytes; the file can hold up to 100 commands.

Examples

```
-> command-log enable
-> command-log disable
```

Release History

Release 6.6.1; command introduced.

Related Commands

show ssh config	Displays the contents of the command.log file.
show command-log status	Shows the status of the command logging function (enabled or disabled).

MIB Objects

sessionCliCommandLogEnable

kill

Kills an active session. The command takes effect immediately.

kill *session_number*

Syntax Definitions

session_number Number of the session you want to kill.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Use the **who** command to obtain the session number variable.
- You cannot kill your own session.
- You cannot kill a connected session where the user has not yet completed the login process. These sessions appear with username “(at login)” when displayed with the **who** command.

Examples

```
-> kill 3
```

Release History

Release 6.6.1; command introduced.

Related Commands

who Displays all active login sessions (for example, Console, Telnet, FTP, HTTP, Secure Shell, and Secure Shell FTP).

MIB Objects

SessionMgr
 sessionIndex
 sessionRowStatus

exit

Ends the current CLI session. If the CLI session to the switch was through Telnet, the connection is closed.

exit

Syntax Definitions

N/A

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

If changes were made using the CLI and have not been saved with the [copy running-config working](#) command, a warning message appears asking to confirm the user exit. To save changes, enter **N** at the warning prompt and use the [copy running-config working](#) command.

Examples

```
-> exit
```

Release History

Release 6.6.1; command introduced.

Related Commands

[kill](#) Kills an active session. The command takes effect immediately.

MIB Objects

```
SessionMgr  
  sessionIndex  
  sessionRowStatus
```

whoami

Displays the current user session.

whoami

Syntax Definitions

N/A

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

Use the **who** command to display all sessions on the switch.

Examples

```
-> whoami
Session number = 5
  User name     = admin,
  Access type   = telnet,
  Access port   = NI,
  IP address    = 121.251.17.76,
  Read-only domains = None,
  Read-only families = ,
  Read-Write domains = All,
  Read-Write families = ,
  End-User profile =
```

output definitions

Session Number	The session number assigned to the user.
User name	The user name.
Access type	Type of access protocol used to connect to the switch.
Access port	Switch port used for access during this session.
Ip Address	User IP address.
Read-only domains	The command domains available with the user read-only access. See the table beginning on page 6-32 for a listing of valid domains.
Read-only families	The command families available with the user read-only access. See the table beginning on page 6-32 for a listing of valid families.
Read-Write domains	The command domains available with the user read-write access. See the table beginning on page 6-32 for a listing of valid domains.

output definitions

Read-Write families	The command families available with the user read-write access. See the table beginning on page 6-32 for a listing of valid families.
End-User Profile	The name of an end-user profile associated with the user.

Possible values for command domains and families are listed here:

domain	families
domain-admin	file image bootrom telnet reset dshell debug
domain-system	system aip snmp rmon webmgt config
domain-physical	chassis module interface pmm flood health
domain-network	ip iprm ipmr ipms
domain-layer2	vlan bridge stp 802.1q linkagg ip-helper
domain-service	ldap dhcp dns
domain-security	session binding aaa

Release History

Release 6.6.1; command introduced.

Related Commands

who	Displays all active login sessions (for example, Console, Telnet, FTP, HTTP, Secure Shell, and Secure Shell FTP).
kill	Kills another user session.

MIB Objects

```

SessionActive
  sessionIndex
  sessionAccessType
  sessionPhysicalPort
  sessionUserName
  sessionUserReadPrivileges
  sessionUserWritePrivileges
  sessionUserProfileNumber
  sessionUserIpAddress
  sessionRowStatus

```

who

Displays all active login sessions (for example, Console, Telnet, FTP, HTTP, Secure Shell, and Secure Shell FTP).

who

Syntax Definitions

N/A

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- You can identify your current login session by using IP address.
- This command applies to the following session types: Console, Telnet, SSH, FTP, SFTP, HTTP, HTTPS, SNMP.

Examples

```
-> who
Session number = 0
  User name   = (at login),
  Access type = console,
  Access port = Local,
  IP address  = 0.0.0.0,
  Read-only domains = None,
  Read-only families = ,
  Read-Write domains = None,
  Read-Write families = ,
  End-User profile =
Session number = 5
  User name   = admin,
  Access type = telnet,
  Access port = NI,
  IP address  = 128.251.17.176,
  Read-only domains = None,
  Read-only families = ,
  Read-Write domains = All,
  Read-Write families = ,
  End-User profile =
```

output definitions

Session Number	The session number assigned to the user.
User name	The user name.
Access type	Type of access protocol used to connect to the switch.
Access port	Switch port used for access during this session.
Ip Address	User IP address.
Read-only domains	The command domains available with the user read-only access. See the table beginning on page 6-35 for a listing of valid domains.
Read-only families	The command families available with the user read-only access. See the table beginning on page 6-35 for a listing of valid families.
Read-Write domains	The command domains available with the user read-write access. See the table beginning on page 6-35 for a listing of valid domains.
Read-Write families	The command families available with the user read-write access. See the table beginning on page 6-35 for a listing of valid families.
End-User Profile	The name of an end-user profile associated with the user.

Possible values for command domains and families are listed here:

domain	families
domain-admin	file image bootrom telnet reset dshell debug
domain-system	system aip snmp rmon webmgt config
domain-physical	chassis module interface pmm flood health
domain-network	ip rip iprm ipmr ipms
domain-layer2	vlan bridge stp 802.1q linkagg ip-helper
domain-service	ldap dhcp dns
domain-security	session binding avlan aaa

Release History

Release 6.6.1; command introduced.

Related Commands

whoami	Displays current user session.
kill	Kills another user session.

MIB Objects

```

SessionActive
  sessionIndex
  sessionAccessType
  sessionPhysicalPort
  sessionUserName
  sessionUserReadPrivileges

```

```
sessionUserWritePrivileges  
sessionUserProfileNumber  
sessionUserIpAddress  
sessionRowStatus
```

show session config

Displays session manager configuration information (for example, default prompt, banner file name, inactivity timer, login timer, login attempts, and CLI console shell status).

show session config

Syntax Definitions

N/A

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

Use the configuration commands detailed in this section to modify any of the values displayed.

Examples

```
-> show session config
```

```

Cli Default Prompt           = ->
Cli Banner File Name        = ,
Cli Inactivity Timer in minutes = 60
Ftp Banner File Name        = ,
Ftp Inactivity Timer in minutes = 60
Http Inactivity Timer in minutes = 60
Login Timer in seconds      = 60
Maximum number of Login Attempts = 2

```

output definitions

Cli Default Prompt	Default prompt displayed for CLI sessions.
Cli Banner File Name	Name of the file that contains the banner information that appears during a CLI session.
Cli Inactivity Timer in minutes	Inactivity timer value (in minutes) for CLI sessions. The user is logged off when this value is exceeded.
Ftp Banner File Name	Name of the file that contains the banner information that appears during an FTP session.
Ftp Inactivity Timer in minutes	Inactivity timer value (in minutes) for FTP sessions. The user is logged off when this value is exceeded.
Http Inactivity Timer in minutes	Inactivity timer value (in minutes) for HTTP (including WebView) sessions. The user is logged off when this value is exceeded.

output definitions (continued)

Login Timer in seconds	The amount of time the user can take to accomplish a successful login to the switch. If the timeout period is exceeded, the TCP connection is closed by the switch.
Maximum number of Login Attempts	The number of times a user can attempt unsuccessfully to log in to the switch before the TCP connection is closed.

Release History

Release 6.6.1; command introduced.

Related Commands

session prompt default	Configures the default CLI prompt for console and Telnet sessions.
session banner	Sets the file name of the user-defined banner.
session timeout	Configures the inactivity timer for a CLI, HTTP (including WebView), or FTP interface.
session login-attempt	Sets the number of times a user can attempt to log in to the switch unsuccessfully before the TCP connection is closed.
session login-timeout	Sets the amount of time the user can take to accomplish a successful login to the switch.

MIB Objects

```
SessionConfigTable  
  sessionType  
  sessionBannerFileName  
  sessionInactivityTimerValue  
  sessionDefaultPromptString
```

show session xon-xoff

Displays whether the console port is enabled or disabled for XON-XOFF.

show session xon-xoff

Syntax Definitions

N/A

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

The switch can interpret noise from an RS232 line as Control-S (XOFF). If the console port is enabled for XON-XOFF (through the [session xon-xoff](#) command), traffic to the console port can be stopped.

Examples

```
-> show session xon-xoff
XON-XOFF Enabled
```

Release History

Release 6.6.1; command introduced.

Related Commands

[session xon-xoff](#) Enables/disables the XON-XOFF protocol on the console port.

MIB Objects

sessionXonXoffEnable

more size

Specifies the number of lines that your console screen must display.

more size *lines*

Syntax Definitions

lines Specify the number of lines for your console to display.

Defaults

parameter	default
<i>lines</i>	128

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- If the display from the switch contains more lines than specified with this command, the switch displays only the number of lines specified. The last line on your console displays as follows:

```
More? [next screen <sp>, next line <cr>, filter pattern </>, quit </>]
```
- To display more lines, press the space bar to show another full screen, press Enter to show the next line, or press q to quit the display and return to the system prompt.

Examples

```
-> more size 12  
-> more size 30
```

Release History

Release 6.6.1; command introduced.

Related Commands

- [more](#) Enables the more mode for your console screen display.
- [show more](#) Shows the enable status of the more mode along with the number of lines specified for the screen display.

MIB Objects

```
SystemServices  
  systemServicesArg1  
  systemServicesAction
```

more

Enables the more mode for your console screen display.

more

no more

Syntax Definitions

N/A

Defaults

Disabled

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

This command enables the **more** mode where your console screen display is determined by the value set with the **more size** command.

Examples

```
-> more
-> no more
```

Release History

Release 6.6.1; command introduced.

Related Commands

show more	Shows the number of TTY lines and columns to be displayed.
more size	Specifies the number of lines that your console screen must display.

MIB Objects

```
SystemServices
  systemServicesArg1
  systemServicesAction
```

show more

Shows the enable status of the more mode along with the number of lines specified for the screen display.

show more

Syntax Definitions

N/A

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- This command shows the enable status of the **more** mode.
- The number of lines displayed is the value set with the **more size** command.

Examples

```
-> show more
```

The more feature is enabled and the number of line is set to 12

Release History

Release 6.6.1; command introduced.

Related Commands

more

Enables the more mode for your console screen display.

more size

Specifies the number of lines that your console screen must display.

MIB Objects

SystemServices

systemServicesArg1

systemServicesAction

telnet

Invokes a Telnet session. A Telnet session is used to connect to a remote system or device.

```
telnet {host_name | ip_address}
```

Syntax Definitions

<i>host_name</i>	Specifies the host name for the Telnet session.
<i>ip_address</i>	Specifies the IP address for the Telnet session.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- To abort a Telnet session, enter **CTRL +]** and then **CTRL + D**. Refer to your switch User Manual for more information on using Telnet.
- You can establish up to five concurrent IPv4 or IPv6 telnet client sessions.
- You can establish up to four concurrent IPv4 or IPv6 telnet sessions (when the switch acts as a telnet server).

Examples

```
-> telnet 172.17.6.228
Trying 172.17.6.228...
Connected to 172.17.6.228.
Escape character is '^]'.

```

Release History

Release 6.6.1; command introduced.

Related Commands

telnet6

Invokes a Telnetv6 session. A Telnetv6 session is used to connect to a remote system or device over an IPv6 network

ssh

Invokes the Secure Shell on the switch. A Secure Shell is used to make a secured connection to a remote system or device.

MIB Objects

SystemServices

systemServicesArg1

systemServicesAction

telnet6

Invokes a Telnetv6 session. A Telnetv6 session is used to connect to a remote system or device over an IPv6 network.

```
telnet6 {ipv6_address | hostname} [if_name]
```

Syntax Definitions

<i>ipv6_address</i>	Specifies the IPv6 address for the Telnetv6 server.
<i>hostname</i>	Specifies the hostname for the Telnetv6 server.
<i>if_name</i>	The name of the interface used to reach the Telnetv6 server, if the target has been specified using the link-local address.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- To abort a Telnet session, enter **CTRL +]** and then **CTRL + D**. Refer to your switch-specific User Manual for more information on using Telnet.
- If the session is invoked using the server link-local address, the source interface name must be provided.
- You can establish up to five concurrent IPv4 or IPv6 telnet client sessions.
- You can establish up to four concurrent IPv4 or IPv6 telnet sessions (when the switch acts as a telnet server).

Examples

```
-> telnet6 fe80::a00:20ff:fea8:8961 intf1  
-> telnet6 ::1  
-> telnet6 Sun.com
```

Release History

Release 6.6.1; command introduced.

Related Commands

telnet

Invokes a Telnet session. A Telnet session is used to connect to a remote system or device.

ssh6

Invokes Secure Shellv6 on the switch. Secure Shellv6 is used to make a secured connection to an SSHv6 server.

MIB Objects

SystemServices

systemServicesArg1

systemServicesAction

ssh

Invokes Secure Shell on the switch. Secure Shell is used to make a secured connection to a remote system or device.

```
ssh {tcp-port port-number | host_name | ip_address / enable / disable}
```

Syntax Definitions

<i>port-number</i>	Specifies the TCP port number to be used for SSH. The TCP port numbers that can be configured for SSH port are either default port 22 or port numbers in the range 1025 - 65535.
<i>host_name</i>	Specifies the host name for Secure Shell.
<i>ip_address</i>	Specifies the IP address for Secure Shell.
enable	Administratively enables Secure Shell on the switch.
disable	Administratively disables Secure Shell on the switch.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- You must have a valid username and password for the specified host.
- You can establish one SSH session from an OmniSwitch (when it acts as Client) and up to eight SSH sessions towards an OmniSwitch (when it acts as Server).
- The configured TCP port number will be saved in the switch file **/flash/network/sshConfig.cfg**. The switch must be rebooted after configuring the TCP port number.
- Well-known reserved TCP port numbers (1-1024) and the IP ports which are internally used cannot be configured for the SSH TCP port.

Examples

```
-> ssh enable
-> ssh tcp-port 1200
-> ssh 172.155.11.211
login as:
```

Release History

Release 6.6.1; command introduced.
Release 6.7.1 R02; **tcp-port** parameter introduced.

Related Commands

telnet	Invokes a Telnet session. A telnet session is used to connect to a remote system or device.
sftp	Starts an SFTP session. An SFTP session provides a secure file transfer method.
ssh6	Invokes Secure Shellv6 on the switch. Secure Shellv6 is used to make a secured connection to an SSHv6 server.
show ssh config	Displays the status of Secure Shell, SCP/SFTP on the switch.

MIB Objects

```
aaaAcctSatable  
  aaacsInterface  
alaSshConfigGroup  
  alaSshAdminStatus
```

ssh6

Invokes Secure Shellv6 on the switch. Secure Shellv6 is used to make a secured connection to an SSHv6 server.

```
ssh6 {ipv6_address | hostname} [if_name]
```

Syntax Definitions

<i>ipv6_address</i>	Specifies the IPv6 address for Secure Shell.
<i>hostname</i>	Specifies the host name for Secure Shell.
<i>if_name</i>	The name of the interface used to reach the sshv6 server, if the target has been specified using the link-local address.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- You must have a valid username and password for the specified host.
- If the session is invoked using the server link-local address, the source interface name must be provided.
- You can establish one SSH6 session from an OmniSwitch (when it acts as Client) and up to eight SSH6 sessions towards an OmniSwitch (when it acts as Server).
- A console or a telnet session can handle only one SSHv6 client session
- At anytime, there can be only one SSH client session (either SSHv4 or SSHv6) to any SSH server.

Examples

```
-> ssh6 fe80::a00:20ff:fea8:8961 int1
-> ssh6 ::1
-> ssh6 Sun.com
```

Release History

Release 6.6.1; command introduced.

Related Commands

telnet6	Invokes a Telnetv6 session. A Telnetv6 session is used to connect to a remote system or device over an IPv6 network
sftp6	Starts an SFTPv6 session. An SFTPv6 session provides a secure file transfer method.
ssh	Invokes Secure Shell on the switch. Secure Shell is used to make a secured connection to a remote system or device.
show ssh config	Displays the status of Secure Shell, SCP/SFTP on the switch.

MIB Objects

```
aaaAcctSatable
  aaacsInterface
alaSshConfigGroup
  alaSshAdminStatus
```

ssh enforce pubkey-auth

Enables or disables Secure Shell public key and password authentication. When enabled, password authentication is not allowed.

ssh enforce pubkey-auth {enable | disable}

Syntax Definitions

enable Enforces only SSH public key authentication.
disable Enforces both SSH public key and password authentication.

Defaults

parameter	default
enable disable	disable

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

If a public key file (**thomas_dsa.pub**) exists in the **flash/network/pub** directory on the switch, public key authentication is used even if this method of authentication is disabled using this command. Rename, move, or delete the public key file to ensure that public key authentication is disabled.

Examples

```
-> ssh enforce pubkey-auth enable
```

Release History

Release 6.6.1; command introduced.

Related Commands

telnet Invokes a Telnet session. A Telnet session is used to connect to a remote system or device.

sftp Starts an SFTP session. An SFTP session provides a secure file transfer method.

MIB Objects

alaSshConfigGroup
 alaSshPubKeyEnforceAdminStatus

show ssh config

Displays the status of Secure Shell, SCP/SFTP on the switch.

show ssh config

Syntax Definitions

N/A

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

N/A

Examples

```
-> show ssh config
SSH = Enabled
SCP/SFTP = Enabled
Public Key Authentication Enforced = False
```

output definitions

SSH	Displays the SSH status (enabled or disabled).
SCP/SFTP	Displays the SCP/SFTP status (enabled or disabled).
Public Key Authentication Enforced	Displays whether the Public Key Authentication is enforced. Options include true or false .

Release History

Release 6.6.1; command introduced.

Related Commands

ssh

Invokes Secure Shell on the switch. Secure Shell is used to make a secured connection to a remote system or device.

ftp6

Enables or disables secure copy (SCP) and secure FTP (SFTP) at the same time on the switch.

MIB Objects

alaSshConfigGroup

alaSshAdminStatus

alaScpSftpAdminStatus

alaSshPubKeyEnforceAdminStatus

show command-log

Displays the contents of the **command.log** file. This file contains a record of all CLI commands run on the switch since the command logging function was enabled. For more information on enabling and disabling command logging, refer to [page 6-28](#).

show command-log

Syntax Definitions

N/A

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- The **show command-log** command lists the CLI commands in the *descending order*. In other words, the most recent commands are listed first. In the following example, the **command-log enable** syntax is the *least recent* command logged; the **ip interface Marketing address 17.11.5.2 vlan 255** syntax is the *most recent*.
- By default, command logging is disabled. To enable command logging on the switch, use the **command-log** command.
- Command history is archived to the **command.log** file. If this file is removed, the command history is no longer available. In addition, the **command.log** file has a 66,402 byte capacity. This capacity allows up to 100 commands; if the maximum capacity is reached, only the 100 most recent commands are displayed.

Examples

```
-> show command-log
Command : ip interface Marketing address 17.11.5.2 vlan 255
  UserName : admin
  Date      : FRI JAN 09 00:20:01
  Ip Addr   : 128.251.19.240
  Result    : SUCCESS

Command : ip interface "Distribution" 11.255.14.102 vlan 500 local-proxy-arp
  UserName : admin
  Date      : FRI JAN 09 00:19:44
  Ip Addr   : 128.251.19.240
  Result    : ERROR: Ip Address must not belong to IP VLAN 44 subnet

Command : command-log enable
  UserName : admin
  Date      : FRI JAN 09 00:18:49
  Ip Addr   : 128.251.19.240
  Result    : SUCCESS
```

output definitions

Command	The exact syntax of the command, as entered by the user.
UserName	The name of the user session that entered the command. For more information on different user session names, refer to the user command page, or the “Managing Switch User Accounts” chapter in the <i>OmniSwitch AOS Release 6250/6350/6450 Switch Management Guide</i> .
Date	The date and time, down to the second, when the command was entered.
IpAddr	The IP address of the terminal from which the command was entered.
Result	The outcome of the command entry. Options include SUCCESS and ERROR . For erroneous command entries, the same error details presented by the switch at the time the command was entered are also displayed in the log file.

Release History

Release 6.6.1; command introduced.

Related Commands

command-log	Enables or disables command logging on the switch.
show command-log status	Shows the status of the command logging function (enabled or disabled).

MIB Objects

sessionCliCommandLogEnable

show command-log status

Shows the status of the command logging function (enabled or disabled). For more information on enabling and disabling command logging, refer to the [command-log](#) command.

show command-log status

Syntax Definitions

N/A

Defaults

Command logging is disabled by default.

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

N/A

Examples

```
-> show command-log status
CLI command logging : Enable
```

output definitions

CLI command logging	The status of command logging on the switch. Options include Disable and Enable . Disable indicates that the command logging function is currently disabled (default). Enable indicates that the command logging function has been enabled through the command-log command. For more information, refer to page 6-28 .
----------------------------	--

Release History

Release 6.6.1; command introduced.

Related Commands

command-log	Enables or disables command logging on the switch.
show ssh config	Displays the contents of the command.log file.

MIB Objects

sessionCliCommandLogStatus

7 File Management Commands

This chapter includes descriptions for CLI commands used to manage files on the switch. Several of these commands are used to create, move, and delete both files and directories in the OmniSwitch flash directory. Other commands allow you to change command privileges and to monitor the switch's memory.

MIB information for the system commands is as follows:

Filename: AlcatelIND1System.mib
Module: ALCATEL-IND1-SYSTEM-MIB

Filename: AlcatelIND1Chassis.mib
Module: ALCATEL-IND1-CHASSIS-MIB

Filename: AlcatelIND1Ssh.mib
Module: ALCATEL-IND1-SSH-MIB

A summary of the available commands is listed here:

File System

cd
pwd
mkdir
rmdir
ls
dir
rename
rm
delete
cp
scp
mv
move
chmod
attrib
freespace
fsck
newfs
rcp
rrm
rls

System Services

vi
view
tty
show tty
more
ftp
ftp6
scp-sftp
show ssh config
sftp
sftp6
tftp
rz

cd

Changes the switch's current working directory.

cd [*path*]

Syntax Definitions

path Specifies a particular working directory. If no path is specified, the switch's working directory is changed to the top level.

Defaults

The switch's default working directory is **/flash**.

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Up to 255 characters may be used for a fully qualified path.
- A path can contain up to a maximum of seven (7) directories, including **/flash**.
- As with files names, up to thirty-two (32) characters may be used for a directory name.
- File and directory names can include only the following character types: a-z, A-Z, 0-9, dashes (-), dots (.), and underscores (_).
- This command can also be used on the secondary CMM.

Examples

```
-> cd  
-> cd test_path
```

Release History

Release 6.6.1; command was introduced.

Related Commands

pwd	Displays the switch's current working directory.
mkdir	Creates a new directory.
rmdir	Deletes an existing directory.
ls	Displays the contents of a specified directory or the current working directory.
dir	Displays the contents of a specified directory or the current working directory.

MIB Objects

systemServices
systemServicesWorkingDirectory

pwd

Displays the switch's current working directory.

pwd

Syntax Definitions

N/A

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

This command can also be used on the secondary CMM.

Examples

```
-> pwd  
/flash
```

Release History

Release 6.6.1; command was introduced.

Related Commands

cd	Changes the switch's current working directory.
mkdir	Creates a new directory.
rmdir	Deletes an existing directory.
ls	Displays the contents of a specified directory or the current working directory.
dir	Displays the contents of a specified directory or the current working directory.

MIB Objects

```
systemServices  
  systemServicesWorkingDirectory
```

mkdir

Creates a new directory.

mkdir [*path*]/*dir*

Syntax Definitions

<i>path</i>	The path in which the new directory is being created. If no path is specified, the new directory is created in the current path.
<i>dir</i>	A user-defined name for the new directory. Up to thirty-two (32) characters may be used (for example, test_directory).

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Be sure to separate path directories with a slash (/). Refer to the examples below.
- Up to 255 characters may be used for a fully qualified path.
- A path can contain up to a maximum of seven (7) directories including **/flash**.
- As with files names, up to thirty-two (32) characters may be used for a directory name.
- File and directory names can include only the following character types: a-z, A-Z, 0-9, dashes (-), dots (.), and underscores (_).
- This command can also be used on the secondary CMM.

Examples

```
-> mkdir test_directory  
-> mkdir flash/test_directory
```

Release History

Release 6.6.1; command was introduced.

Related Commands

cd	Changes the switch's current working directory.
pwd	Displays the switch's current working directory.
rmdir	Deletes an existing directory.
ls	Displays the contents of a specified directory or the current working directory.
dir	Displays the contents of a specified directory or the current working directory.

MIB Objects

```
systemServices
  systemServicesArg1
  systemServicesAction
```

rmdir

Deletes an existing directory.

rmdir [*path*]/*dir*

Syntax Definitions

<i>path</i>	The path containing the directory to be removed. If no path is specified, the command assumes the current path.
<i>dir</i>	The name of the existing directory being removed. Up to thirty-two (32) characters may be used (for example, test_directory).

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Be sure to separate path directories with a slash (/). Refer to the examples below.
- Up to 255 characters may be used for the specified path.
- This command can also be used on the secondary CMM.

Examples

```
-> rmdir ../working  
-> rmdir flash/working
```

Release History

Release 6.6.1; command was introduced.

Related Commands

cd	Changes the switch's current working directory.
pwd	Displays the switch's current working directory.
mkdir	Creates a new directory.
ls	Displays the contents of a specified directory or the current working directory.
dir	Displays the contents of a specified directory or the current working directory.

MIB Objects

```
systemServices
  systemServicesArg1
  systemServicesAction
```

ls

Displays the contents of a specified directory or the current working directory.

ls [-r] [[*path*]/*dir*]

Syntax Definitions

-r	Optional syntax that displays the contents of the current directory in addition to <i>recursively</i> displaying all subdirectories. Be sure to include a space between the syntax ls and -r (that is, ls -r).
<i>path</i> /	Specifies the path (that is, location) of a particular directory to be displayed. If no path is specified, the command assumes the current location.
<i>dir</i>	Specifies a particular directory to be displayed. If no directory name is specified, the contents of the current working directory are displayed.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Be sure to separate multiple path directories with a slash (/).
- Up to 255 characters may be used for a fully qualified path.
- A path can contain up to a maximum of seven (7) directories including **/flash**.
- As with files names, up to thirty-two (32) characters may be used for a directory name.
- File and directory names can include only the following character types: a-z, A-Z, 0-9, dashes (-), dots (.), and underscores (_).
- This command can also be used on the secondary CMM.

Examples

```
-> ls
```

```
Listing Directory /flash:
```

```
-rw      268 Oct  2 09:54 boot.params
drw     2048 Sep 29 15:36 certified/
drw     2048 Oct  2 05:32 working/
drw     2048 Sep 27 12:26 switch/
-rw    115837 Sep 27 15:30 debug.lnk
-rw      185 Sep 29 14:19 phwi
-rw      706 Sep 29 14:52 incrsrc2
-rw   127640 Sep 29 14:52 pktgen.o
-rw      354 Sep 29 15:48 incrsrc
```

```
3143680 bytes free
```

Release History

Release 6.6.1; command was introduced.

Related Commands

cd	Changes the switch's current working directory.
pwd	Displays the switch's current working directory.
mkdir	Creates a new directory.
rmdir	Deletes an existing directory.
dir	Displays the contents of a specified directory or the current working directory.

MIB Objects

```
systemServices
  systemServicesArg1
  systemServicesAction
```

dir

Displays the contents of a specified directory or the current working directory.

dir *[[path/]dir]*

Syntax Definitions

<i>path/</i>	Specifies the path (that is, location) of a particular directory to be displayed. If no path is specified, the command assumes the current location.
<i>dir</i>	Specifies a particular directory to be displayed. If no directory name is specified, the contents of the current working directory are displayed.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Be sure to separate multiple path directories with a slash (/).
- Up to 255 characters may be used for a fully qualified path.
- A path can contain up to a maximum of seven (7) directories including **/flash**.
- As with files names, up to thirty-two (32) characters may be used for a directory name.
- File and directory names can include only the following character types: a-z, A-Z, 0-9, dashes (-), dots (.), and underscores (_).
- This command can also be used on the secondary CMM.

Examples

```
-> dir /certified
```

```
Listing Directory /certified:
```

```
drw      2048 Jul  8 11:05 ./
drw      2048 Aug 21 13:54 ../
-rw    3555538 Jul  5 09:37 Jeni.img
-rw    1824898 Jul  5 09:37 Jos.img
-rw       2929 Jul  5 09:37 Jrelease.img
-rw   10526922 Jul  5 09:37 Jbase.img
-rw    9393680 Jun 10 10:35 Jeni2.img
-rw       1452 Jun 28 18:23 boot.cfg
-rw   1348241 Jul  5 09:36 Jadvrout.img
-rw   2478362 Jul  5 09:37 Jdiag.img
-rw    349555 Jul  5 09:37 Jsecu.img
-rw        256 Jul  8 11:05 random-seed
```

```
2390016 bytes free
```

Release History

Release 6.6.1; command was introduced.

Related Commands

cd	Changes the switch's current working directory.
pwd	Displays the switch's current working directory.
mkdir	Creates a new directory.
rmdir	Deletes an existing directory.
ls	Displays the contents of a specified directory or the current working directory.

MIB Objects

```
systemServices
  systemServicesArg22
  systemServicesAction
```

rename

Renames an existing file or directory.

```
rename [path]/old_name [path]/new_name
```

Syntax Definitions

<i>path</i> /	Specifies the particular path (that is, location) containing the file or directory to be renamed. If no path is specified, the command assumes the current directory.
<i>old_name</i>	The name of the existing file or directory to be renamed.
<i>new_name</i>	The new user-defined file or directory name. Up to thirty-two (32) characters may be used.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Be sure to separate path directories and file names with a slash (/). Refer to the examples below.
- Up to 255 characters may be used for a fully qualified path.
- A path can contain up to a maximum of seven (7) directories including **/flash**.
- As with files names, up to thirty-two (32) characters may be used for a directory name.
- File and directory names can include only the following character types: a-z, A-Z, 0-9, dashes (-), dots (.), and underscores (_).
- This command can also be used on the secondary CMM.

Examples

```
-> rename flash/working/asc.1.snap new_file
```

Release History

Release 6.6.1; command was introduced.

Related Commands

cp	Copies an existing file or directory.
mv	Moves an existing file or directory to a new location.
move	Moves an existing file or directory to a new location.

MIB Objects

```
systemServices
  systemServicesArg1
  systemServicesArg2
  systemServicesAction
```

rm

Permanently deletes an existing file. This command can also delete a directory if the `-r` keyword is used.

rm [-r] [path/]filename

Syntax Definitions

-r	Syntax that <i>recursively</i> removes directories, as well as any associated subdirectories and files. Be sure to include a space between the syntax rm and -r (that is, rm -r).
<i>path</i>	The path (that is, location) containing the file being removed. If no path is specified, the command assumes the current directory.
<i>filename</i>	The name of the existing file being deleted. Up to thirty-two (32) characters may be used (for example, test_config_file).

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Be sure to separate path directories and file names with a slash (/). Refer to the examples below.
- Use care when deleting files. Depending on your switch and network configurations, specific configuration and image files has to be present for your system to work properly.
- This command can also be used on the secondary CMM.

Examples

```
-> rm test_config_file
-> rm flash/test_config_file
```

Release History

Release 6.6.1; command was introduced.

Related Commands

delete Deletes an existing file.

MIB Objects

```
systemServices
  systemServicesArg1
  systemServicesAction
```

delete

Deletes an existing file.

delete [*path/*]*filename*

Syntax Definitions

path/

The path (that is, location) containing the file being removed. If no path is specified, the command assumes the current directory.

filename

The name of the existing file being removed. Up to thirty-two (32) characters may be used (for example, **test_config_file**).

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Be sure to separate path directories and file names with a slash (/). Refer to the examples below.
- Use care when deleting files. Depending on your switch and network configurations, specific configuration and image files has to be present for your system to work properly.
- This command can also be used on the secondary CMM.

Examples

```
-> delete test_config_file
-> delete flash/test_config_file
```

Release History

Release 6.6.1; command was introduced.

Related Commands

rm Deletes an existing file or directory.

MIB Objects

```
systemServices
  systemServicesArg1
  systemServicesAction
```

cp

Copies an existing file. This command can also copy a directory if the `-r` keyword is used.

```
cp [-r] [path/]orig_filename [dest_path/]dupl_filename
```

Syntax Definitions

<code>-r</code>	Syntax that <i>recursively</i> copies directories, as well as any associated sub-directories and files. Be sure to include a space between the syntax <code>cp</code> and <code>-r</code> (that is, <code>cp -r</code>).
<code>path/</code>	Specifies the path containing the original file to be copied. If no path name is specified, the command assumes the current path.
<code>orig_filename</code>	The name of the existing file to be copied.
<code>dest_path/</code>	Specifies the destination path for the resulting file copy. If no destination path is specified, the file copy is placed in the current path.
<code>dupl_filename</code>	The new user-defined file name for the resulting file copy. If you are copying a file to the same directory as the original, the file name for the copy has to be different from the original. Up to thirty-two (32) characters may be used.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- You have to verify that your switch's **/flash** directory has enough available memory to hold the new files and directories that results from using the `cp -r` command.
- A file may be copied to a new location; you are not required to copy a file to the same directory that contains the original.
- Be sure to separate path directories and file names with a slash (/). Refer to the examples below.
- Up to 255 characters may be used for a fully qualified path.
- A path can contain up to a maximum of seven (7) directories including **/flash**.
- As with files names, up to thirty-two (32) characters may be used for a directory name.
- File and directory names can include only the following character types: a-z, A-Z, 0-9, dashes (-), dots (.), and underscores (_).
- This command can also be used on the secondary CMM.

Examples

```
-> cp flash/snapshots/asc.1.snap flash/snapshot/snapshot_copy
-> cp flash/snapshots/asc.1.snap snapshot_copy
-> cp asc.1.snap flash/snapshot/snapshot_copy
-> cp asc.1.snap snapshot_copy
```

Release History

Release 6.6.1; command was introduced.

Related Commands

mv Moves an existing file or directory to a new location.

MIB Objects

```
systemServices
  systemServicesArg1
  systemServicesArg2
  systemServicesAction
```

scp

Copies an existing file in a secure manner.

```
scp user_name@remote_ip_addr:[path/]source [path/]target
```

```
scp [path/]source user_name@remote_ip_addr:[path/]target
```

Syntax Definitions

<i>user_name@remote_ip_addr:</i>	The username along with the IP address of the remote switch.
<i>path/</i>	Specifies the path containing the file to be copied and the path where the file is copied.
<i>source</i>	The name of the file(s) to be copied.
<i>target</i>	The new user-defined file name for the resulting file copy. Up to thirty-two (32) characters may be used.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- This command prompts you to enter the admin password, and the names and the path of the files being copied is displayed.
- A file may be copied to a new location; you are not required to copy a file to the same directory that contains the original.
- Be sure to separate path directories and file names with a slash (/). Refer to the examples below.
- Up to 255 characters may be used for a fully qualified path.
- A path can contain up to a maximum of seven (7) directories including **/flash**.
- As with files names, up to thirty-two (32) characters may be used for a directory name.
- File and directory names can include only the following character types: a-z, A-Z, 0-9, dashes (-), dots (.), and underscores (_).
- If SCP is not enabled, use the [scp-sftp](#) command to enable it.
- SCP is not supported between OmniSwitch and Windows currently.

Examples

```
-> scp admin@172.17.11.13:/flash/working/Kos.img /flash/working/Kos.img
admin's password for keyboard-interactive method:
```

```
Fetching /flash/working/Kos.img to /flash/working/Kos.img
Connection to 172.17.11.13 closed.
```

```
-> scp /flash/working/Kos.img admin@172.17.11.13:/flash/working/Kos.img
admin's password for keyboard-interactive method:
```

```
Uploading /flash/working/Kos.img to /flash/working/Kos.img
Connection to 172.17.11.13 closed.
```

```
-> scp admin@172.17.11.13:/flash/working/*.img /flash/working
admin's password for keyboard-interactive method:
```

```
Fetching /flash/working/K2os.img to /flash/working/K2os.img
Fetching /flash/working/Kadvrout.img to /flash/working/Kadvrout.img
Fetching /flash/working/Kbase.img to /flash/working/Kbase.img
Fetching /flash/working/Keni.img to /flash/working/Keni.img
Fetching /flash/working/Kos.img to /flash/working/Kos.img
Fetching /flash/working/Krelease.img to /flash/working/Krelease.img
Fetching /flash/working/Ksecu.img to /flash/working/Ksecu.img
Connection to 172.17.11.13 closed.
```

Release History

Release 6.6.1; command was introduced.

Related Commands

mv Moves an existing file or directory to a new location.

MIB Objects

```
systemServices
  systemServicesArg1
  systemServicesArg2
  systemServicesAction
```

mv

Moves an existing file or directory to a new location.

```
mv {[path/]filename dest_path[/new_filename] | [path/]dir dest_path[/new_dir]}
```

Syntax Definitions

<i>path/</i>	Specifies the path (that is, location) containing the file or directory being moved. If no path name is specified, the command assumes the current path.
<i>filename</i>	Specifies the name of the existing file to be moved.
<i>dest_path/</i>	Specifies the destination path (that is, new location) for the file or directory that is being moved.
<i>new_filename</i>	Specifies a new file name for the file being moved. If a new name is not specified, the existing name is used.
<i>dir</i>	Specifies the name of the existing directory to be moved.
<i>new_dir</i>	Specifies a new directory name for the directory being moved. If a new name is not specified, the existing name is used.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- The **mv** command does not make a copy of the file or directory being moved. To copy a file or directory to the current path or to a new location, use the **cp** command on page 7-19.
- Be sure to separate path directories and file names with a slash (/). Refer to the examples below.
- Up to 255 characters may be used for a fully qualified path.
- A path can contain up to a maximum of seven (7) directories including **/flash**.
- As with files names, up to thirty-two (32) characters may be used for a directory name.
- File and directory names can include only the following character types: a-z, A-Z, 0-9, dashes (-), dots (.), and underscores (_).
- This command can also be used on the secondary CMM.

Examples

```
-> mv flash/asc.1.snap flash/backup_files/asc.1.snap
```

Release History

Release 6.6.1; command was introduced.

Related Commands

<code>rename</code>	Renames an existing file or directory.
<code>cp</code>	Copies an existing file or directory.

MIB Objects

```
systemServices
  systemServicesArg1
  systemServicesArg2
  systemServicesAction
```

move

Moves an existing file or directory to a new location.

```
move {[path]/filename dest_path[/new_filename]} | {[path]/dir dest_path[/new_dir]}
```

Syntax Definitions

<i>path</i> /	Specifies the path (that is, location) containing the file or directory being moved. If no path name is specified, the command assumes the current path.
<i>filename</i>	Specifies the name of the existing file to be moved.
<i>dest_path</i> /	Specifies the destination path (that is, new location) for the file or directory that is being moved.
<i>new_filename</i>	Specifies a new file name for the file being moved. If a new name is not specified, the existing name is used.
<i>dir</i>	Specifies the name of the existing directory to be moved.
<i>new_dir</i>	Specifies a new directory name for the directory being moved. If a new name is not specified, the existing name is used.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- The **move** command does not make a copy of the file or directory being moved. To copy a file or directory to the current path or to a new location, use the **cp** command.
- Be sure to separate path directories and file names with a slash (/). Refer to the examples below.
- Up to 255 characters may be used for a fully qualified path.
- A path can contain up to a maximum of seven (7) directories including **/flash**.
- As with files names, up to thirty-two (32) characters may be used for a directory name.
- File and directory names can include only the following character types: a-z, A-Z, 0-9, dashes (-), dots (.), and underscores (_).
- This command can also be used on the secondary CMM.

Examples

```
-> move flash/asc.1.snap flash/backup_files/asc.1.snap
```

Release History

Release 6.6.1; command was introduced.

Related Commands

<code>rename</code>	Renames an existing file or directory.
<code>cp</code>	Copies an existing file or directory.

MIB Objects

```
systemServices
  systemServicesArg1
  systemServicesArg2
  systemServicesAction
```

chmod

Changes the write privileges for a specified file.

```
chmod {+w | -w} [path/]file
```

Syntax Definitions

<code>+w</code>	Enables read-write privileges for the file.
<code>-w</code>	Disables write privileges for the file—that is, the file becomes read-only.
<code>path/</code>	The path containing the file for which privileges are being changed. Be sure to separate path directories and file names with a slash (/). Up to 255 characters may be used for the specified path. Also, a path may contain a maximum of thirty-two (32) directories.
<code>file</code>	The name of the file for which read-write privileges are being changed.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

This command can also be used on the secondary CMM.

Examples

```
-> chmod +w vlan.config  
-> chmod -w flash/backup_configs/vlan.config
```

Release History

Release 6.6.1; command was introduced.

Related Commands

[attrib](#) Changes the write privileges for a specified file.

MIB Objects

```
systemServices  
  systemServicesArg1  
  systemServicesAction
```

attrib

Changes the write privileges for a specified file.

attrib {+w | -w} [*path*]/*file*

Syntax Definitions

+w	Enables read-write privileges for the file.
-w	Disables write privileges for the file—that is, the file becomes read-only.
<i>path</i> /	The path containing the file for which write privileges are being changed. Be sure to separate path directories and file names with a slash (/). Up to 255 characters may be used for the specified path. Also, a path may contain a maximum of thirty-two (32) directories.
<i>file</i>	The name of the file for which write privileges are being changed.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

This command can also be used on the secondary CMM.

Examples

```
-> attrib +w vlan.config  
-> attrib -w flash/backup_configs/vlan.config
```

Release History

Release 6.6.1; command was introduced.

Related Commands

chmod Changes the write privileges for a specified file.

MIB Objects

```
systemServices  
  systemServicesArg1  
  systemServicesAction
```

freespace

Displays the amount of free space available in the **/flash** directory.

freespace [/flash]

Syntax Definitions

/flash Optional syntax. The amount of free space is shown for the **/flash** directory.

Defaults

N/A

Usage Guidelines

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Examples

```
-> freespace /flash
/flash 3143680 bytes free
```

```
-> freespace
/flash 3143680 bytes free
```

Release History

Release 6.6.1; command was introduced.

Related Commands

fsck Performs a file system check, including diagnostic information in the event of file corruption. If the **fsck** command detects a problem with the **/flash** file system, a message is displayed indicating the problem, along with any steps needed to resolve it.

MIB Objects

SystemFileSystemTable
systemFileSystemFreespace

fsck

Performs a file system check, including diagnostic information in the event of file corruption.

fsck /flash [no-repair | repair]

Syntax Definitions

/flash	Indicates that the file system check is performed on the /flash directory.
no-repair	Performs only the file system check on the /flash directory.
repair	Performs file system check on the /flash directory and also repairs any errors found on the file system.

Defaults

parameter	default
no-repair repair	no-repair

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- The file system check is performed on the **/flash** directory by default.
- Specifying the parameter **repair** along with the command performs the file system check and also repairs any errors found. The switch displays the errors found and specify those errors that have been repaired. If there are no errors found, then just the file system information is displayed.
- This command only applies to the primary and secondary CMM in an OmniSwitch chassis-based switch or the primary and secondary switch in an OmniSwitch stack.

Examples

```
-> fsck /flash no-repair
/flash/ - disk check in progress ...
/flash/ - Volume is OK

        total # of clusters: 29,758
        # of free clusters: 18,886
        # of bad clusters: 0
        total free space: 77,357,056
max contiguous free space: 55,451,648 bytes
        # of files: 59
        # of folders: 5
total bytes in files: 44,357,695
        # of lost chains: 0
total bytes in lost chains: 0
```

(Example Continued on Next Page)

```
-> fsck /flash repair
/flash/ - disk check in progress ...
/flash/ - Volume is OK
Change volume Id from 0x0 to 0xef2e3c

    total # of clusters: 29,758
      # of free clusters: 18,886
      # of bad clusters: 0
    total free space: 77,357,056
max contiguous free space: 55,451,648 bytes
      # of files: 59
      # of folders: 5
    total bytes in files: 44,357,695
      # of lost chains: 0
total bytes in lost chains: 0
```

Release History

Release 6.6.1; command was introduced.

Related Commands

[freespace](#) Displays the amount of free space available in the **/flash** directory.

MIB Objects

```
systemServices
  systemServicesArg1
  systemServicesAction
```

newfs

Deletes a complete **/flash** file system and all files within it, replacing it with a new, empty **/flash** file system. Use this command when you want to reload all files in the file system or in the unlikely event that the **/flash** file system becomes corrupt.

newfs /flash

Syntax Definitions

/flash Required syntax. This indicates that the complete flash file system is replaced.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- It is recommended that you preserve all required image and configuration files by saving them to a remote host before executing the **newfs** command.
- Do not power-down the switch after running the **newfs** command until you reload all required image and configuration files.
- This command can also be used on the secondary CMM.

Examples

```
-> newfs /flash
```

Release History

Release 6.6.1; command was introduced.

Related Commands

N/A

MIB Objects

```
systemServices  
  systemServicesArg1  
  systemServicesAction
```

rcp

Copies a file from a primary to a non-primary switch in a stack and vice versa.

rcp [*slot:*] *source_filepath* [*slot:*] *destination_filepath*

Syntax Definitions

<i>slot</i>	The slot number of the non-primary switch in a stack.
<i>source_filepath</i>	The name and path of the source file.
<i>destination_filepath</i>	The name and path of the destination file.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

On switches in a stack configuration, this command copies a file from any non-primary switch to the primary switch in a stack. You have to specify the slot number on these switches.

Examples

```
-> rcp 3:/flash/file.txt file.txt
-> rcp /flash/working/file.txt 3:/flash/working/file.txt
```

Release History

Release 6.6.1; command was introduced.

Related Commands

rrm	Removes a file from a secondary CMM or from a non-primary switch in a stack.
rls	Displays the content of a non primary CMM in a switch or a non-primary switch in a stack.

MIB Objects

```
chasSupervisionRfsLsTable
  alcatelIND1ChassisSupervisionRfsCommands
  chasSupervisionRfsCommandsSlot
  chasSupervisionRfsCommandsCommand
  chasSupervisionRfsCommandsSrcFileName
  chasSupervisionRfsCommandsDestFileName
```

rrm

Removes a file from a non-primary switch in a stack.

rrm *slot* *filepath*

Syntax Definitions

slot The slot number of the non-primary switch in a stack.
filepath The name and path of the file to be deleted.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

On switches in a stacked configuration, this command deletes a file from any non-primary switch. You have to specify the slot number on these switches.

Examples

```
-> rrm 5 /flash/boot.params
```

Release History

Release 6.6.1; command was introduced.

Related Commands

rcp Copies a file from a non-primary switch to a primary switch in a stack.
rls Displays the content of a non primary CMM in a switch or anon-primary switch in a stack.

MIB Objects

chasSupervisionRfsLsTable
 alcatelIND1ChassisSupervisionRfsCommands
 chasSupervisionRfsCommandsSlot
 chasSupervisionRfsCommandsCommand
 chasSupervisionRfsCommandsSrcFileName

rls

Displays the content of a non-primary switch in a stack.

rls *slot directory* [*file_name*]

Syntax Definitions

<i>slot</i>	The slot number of the non-primary switch in a stack.
<i>directory</i>	The name of the directory on the non-primary switch.
<i>file_name</i>	The file to be displayed on the non-primary switch.

Defaults

By default, all files in the specified directory are displayed.

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

This command displays directory content on any non-primary switch in a stack. You have to specify the slot number on these switches.

Examples

```
-> rls 5 /flash
-rw      324  Mar  3 11:32  boot.params
drw     2048  Mar  3 11:32  certified/
drw     2048  Mar  3 11:32  working/
-rw    64000  Mar  7 09:54  swlog1.log
-rw       29  Feb  5  2023  policy.cfg
-rw   3369019  Mar  3 11:20  cs_system.pmd
-rw   394632  Jan  1  1980  bootrom.bin
-rw   511096  Jan  1  1980  miniboot.backup
-rw   511096  Jan  1  1980  miniboot.default
drw     2048  Feb 25 06:34  network/
drw     2048  Mar  3 11:29  switch/
-rw     256  Mar  3 11:29  random-seed
```

Release History

Release 6.6.1; command was introduced.

Related Commands

rcp	Copies a file from a secondary CMM to a primary CMM or from a non-primary switch to a primary switch in a stack.
rrm	Removes a file from a secondary CMM or from a non-primary switch in a stack.

MIB Objects

```
chasSupervisionRfsLsTable
  chasSupervisionRfsLsFileIndex
  chasSupervisionRfsLsSlot
  chasSupervisionRfsLsDirName
  chasSupervisionRfsLsFileName
  chasSupervisionRfsLsFileType
  chasSupervisionRfsLsFileSize
  chasSupervisionRfsLsFileAttr
  chasSupervisionRfsLsFileDateTime
```

vi

Launches the switch's UNIX-like Vi text editor. The Vi file editor allows you to view or edit the contents of a specified text file.

vi [*path*/*filename*]

Syntax Definitions

path The path (that is, location) containing the file being viewed or edited. If no path is specified, the command assumes the current directory.

filename The name of the existing file being viewed or edited. Up to thirty-two (32) characters may be used (for example, **test_config_file**).

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Until you exit the switch's file editor, all keystrokes is passed to the text editor rather than the switch's command line.
- This command can also be used on the secondary CMM.

Examples

```
-> vi test_config_file
```

Release History

Release 6.6.1; command was introduced.

Related Commands

view Allows you to view the contents of a specified file by invoking the Vi text editor in read-only mode.

MIB Objects

```
systemServices  
  systemServicesArg1  
  systemServicesAction
```

view

Allows you to view the contents of a specified file by invoking the Vi text editor in read-only mode.

view [*path*]/*filename*

Syntax Definitions

<i>path</i>	The path directory leading to the file being viewed. If no path is specified, the command assumes the current directory.
<i>filename</i>	The name of the existing file being viewed. Up to thirty-two (32) characters may be used (for example, test_config_file).

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

This command can also be used on the secondary CMM.

Examples

```
-> view flash/text_file.txt
```

Release History

Release 6.6.1; command was introduced.

Related Commands

vi Launches the switch's Vi text editor.

MIB Objects

```
systemServices  
  systemServicesArg1  
  systemServicesAction
```

tty

Specifies the number of lines and columns to be displayed on the terminal screen while the switch is in the edit file mode.

tty *lines columns*

Syntax Definitions

lines The number of lines to be displayed on the terminal emulation screen for the current session. Values may range from 10 to 150.

columns The number of columns to be displayed for each line. One column is the same width as a single text character. Values may range from 20 to 150.

Defaults

parameter	default
<i>lines</i>	24
<i>columns</i>	80

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- The number of lines and columns set with this command control the screen size when the switch is editing or viewing a text file with the **vi** or **more** commands.
- The values set with this command do not control the CLI screen when the switch is operating in normal mode.
- This command can also be used on the secondary CMM.

Examples

```
-> tty 10 60
```

Release History

Release 6.6.1; command was introduced.

Related Commands

[show tty](#)

Displays current TTY settings.

[more](#)

Displays a switch text file onto the console screen.

MIB Objects

systemServices

 systemServicesTtyLines

 systemServicesTtyColumns

show tty

Displays current TTY settings.

show tty

Syntax Definitions

N/A

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Shows the settings made with the **tty** command.
- This command can also be used on the secondary CMM.

Examples

```
-> show tty  
lines = 24, columns = 80
```

Release History

Release 6.6.1; command was introduced.

Related Commands

tty Specifies the number of TTY lines and columns to be displayed.

MIB Objects

```
systemServices  
  systemServicesTtyLines  
  systemServicesTtyColumns
```

more

Displays a switch text file onto the console screen.

more [*path*]/*file*

Syntax Definitions

<i>path</i>	The directory path leading to the file to be displayed. If no path is specified, the command assumes the current path.
<i>file</i>	The name of the text file to be displayed.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- This command displays the specified text file within the line and column parameters set with the **tty** command.
- If the specified text file contains more columns than set with the **tty** command, the text wraps to the next line displayed.
- If the text file contains more lines than set with the **tty** command, the switch displays only the number of lines specified. To display more lines, press the space bar to show another full screen, press Enter to show the next line, or press q to quit the display and return to the system prompt.
- This command can also be used on the secondary CMM.

Examples

```
-> more config_file1
-> more flash/config_file1
-> more flash/working/config_file1
```

Release History

Release 6.6.1; command was introduced.

Related Commands

tty Specifies the number of TTY lines and columns to be displayed.

MIB Objects`systemServices``systemServicesArg1``systemServicesAction`

ftp

Starts an FTP session.

ftp {*host_name* | *ip_address*}

Syntax Definitions

host_name Specifies the host name for the FTP session.
ip_address Specifies the IP address for the FTP session.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- You have to have a valid username and password for the specified host.
- You can establish up to 9 FTP sessions from an OmniSwitch (when it acts as FTP Client) and up to 4 FTP sessions towards an OmniSwitch (when it acts as FTP Server).
- After logging in, FTP commands are supported. They are defined in the following table:

ascii	Set transfer type to ASCII (7-bit).
binary	Set transfer type to binary (8-bit).
bye	Close session gracefully.
cd	Change to a new directory on the remote machine.
delete	Delete a file on the remote machine.
dir	Obtain a long listing on the remote machine.
get	Retrieve a file from the remote machine.
hash	Print the hash symbol (#) for every block of data transferred. (This command toggles hash enabling and disabling.)
ls	Display summary listing of the current directory on the remote host.
put	Send a file to the remote machine.
pwd	Display the current working directory on the remote host.
quit	Close session gracefully.
remotehelp	List the commands that the remote FTP server supports.
user	Send new user information.
lpwd	Display the current working directory on the local host.
?	Display list of available FTP commands.

Examples

```
-> ftp 172.17.6.228
Connecting to 172.17.6.228 [172.17.6.228]...connected.
220 Annex FTP server (Version RA4000 R14.1.15) ready.
Name :
```

Release History

Release 6.6.1; command was introduced.

Related Commands

sftp	Starts an SFTP session.
ftp6	Starts an FTPv6 session.

MIB Objects

```
systemServices
  systemServicesArg1
  systemServicesAction
```

ftp6

Starts an FTPv6 session.

ftp6 {*ipv6_address* | *hostname*} [*if_name*]

Syntax Definitions

<i>ipv6_address</i>	Specifies the IPv6 address of the FTPv6 server.
<i>hostname</i>	Specifies the hostname of the FTPv6 server.
<i>if_name</i>	The name of the interface used to reach the FTPv6 server, if the target has been specified using the link-local address.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- You need to have a valid username and password for the specified host.
- A console, a telnet or an SSH session can handle only one FTPv6 client session.
- You can establish up to 9 FTP or FTPv6 sessions from an OmniSwitch (when it acts as FTP Client) and up to 4 FTP or FTPv6 sessions towards an OmniSwitch (when it acts as FTP Server).
- If the session is invoked using the server's link-local address, the source interface name has to be provided.
- After logging in, FTPv6 commands are supported. They are defined in the following table:

ascii	Set transfer type to ASCII (7-bit).
binary	Set transfer type to binary (8-bit).
bye	Close session gracefully.
cd	Change to a new directory on the remote machine.
close	Terminate the ftp session.
delete	Delete a file on the remote machine.
dir	Obtain a long listing on the remote machine.
get	Retrieve a file from the remote machine.
hash	Print the hash symbol (#) for every block of data transferred. (This command toggles hash enabling and disabling.)
help	Display list of available FTP commands.
lcd	Change to a new directory on the local machine.

ls	Display summary listing of the current directory on the remote host.
?	Display list of available FTP commands.
mgets	Receive multiple files.
mputs	Receive multiple files.
prompt	Enable/disable interactive prompting.
put	Send a file to the remote machine.
pwd	Print current working directory.
quit	Close session gracefully.
remotehelp	List the commands that the remote FTP server supports.
user	Send new user information.
ls	Display list content of local directory.

Examples

```
-> ftp6 fe80::a00:20ff:fea8:8961 int3
-> ftp6 ::5
-> ftp6 Sun.com
```

Release History

Release 6.6.1; command was introduced.

Related Commands

sftp6 Starts an SFTPv6 session.
ftp Starts an FTP session.

MIB Objects

```
systemServices
  systemServicesArg1
  systemServicesAction
```

scp-sftp

Enables or disables secure copy (SCP) and Secure FTP (SFTP) at the same time on the switch.

scp-sftp {enable / disable}

Syntax Definitions

enable Administratively enables SCP/SFTP on the switch.
disable Administratively disables SCP/SFTP on the switch.

Defaults

parameter	default
enable / disable	enable

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

N/A

Examples

```
-> scp-sftp enable
```

Release History

Release 6.6.1; command was introduced.

Related Commands

[ssh](#) Invokes Secure Shell on the switch. Secure Shell is used to make a secured connection to a remote system or device.

[show ssh config](#) Displays the status of Secure Shell, SCP/SFTP on the switch.

MIB Objects

alaSshConfigGroup
alaScpSftpAdminStatus

show ssh config

Displays the status of Secure Shell, SCP/SFTP on the switch.

show ssh config

Syntax Definitions

N/A

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

N/A

Examples

```
-> show ssh config
SSH = Enabled
SCP/SFTP = Enabled
Public Key Authentication Enforced = False
```

output definitions

SSH	Displays the SSH status (enabled or disabled).
SCP/SFTP	Displays the SCP/SFTP status (enabled or disabled).
Public Key Authentication Enforced	Displays whether the Public Key Authentication is enforced. Options include true or false .

Release History

Release 6.6.1; command was introduced.

Related Commands

[ssh](#)

Invokes Secure Shell on the switch. Secure Shell is used to make a secured connection to a remote system or device.

[ftpd](#)

Enables or disables secure copy (SCP) and secure FTP (SFTP) at the same time on the switch.

MIB Objects

alaSshConfigGroup

alaSshAdminStatus

alaScpSftpAdminStatus

 alaSshPubKeyEnforceAdminStatus

sftp

Starts an SFTP session. An SFTP session provides a secure file transfer method.

sftp {*host_name* | *ip_address*}

Syntax Definitions

host_name Specifies the host name for the SFTP session.
ip_address Specifies the IP address for the SFTP session.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- You need to have a valid username and a password for the specified host.
- If SFTP is not enabled, use the [scp-sftp](#) command to enable it.
- You can establish up to 4 SFTP sessions from an OmniSwitch (when it acts as FTP Client) and up to 8 SFTP sessions towards an OmniSwitch (when it acts as FTP Server).
- After logging in, SFTP commands are supported. They are defined in the following table:

cd path	Change remote path to 'path'.
lcd path	Change local directory to 'path'.
chmod mode path	Change permissions of file 'path' to 'mode'.
help	Display command help information.
get remote-path [local path]	Download a file from the remote path to the local path.
lls [path]	Display local directory listing.
ln oldpath newpath	Creates a symbolic link (symlink) to the remote file.
symlink oldpath newpath	Creates a symbolic link (symlink) to the remote file.
mkdir path	Create local directory.
lpwd	Print local working directory.
ls [path]	Display remote directory listing.
mkdir path	Create remote directory.
put local-path [remote-path]	Upload file.
pwd	Display remote working directory.
exit	Quit the sftp mode.

quit	Exit the sftp mode.
rename oldpath newpath	Rename a remote file.
rmdir path	Remove remote directory.
rm path	Delete remote file.
version	Show the current SFTP version.
?	Synonym for help. Displays command help information.

Examples

```
-> sftp 12.251.11.122  
login as:
```

Release History

Release 6.6.1; command was introduced.

Related Commands

ftp	Starts an FTP session.
ssh	Invokes Secure Shell on the switch. Secure Shell is used to make a secured connection to a remote system or device.

MIB Objects

```
SystemServices  
  systemServicesArg1  
  systemServicesAction
```

sftp6

Starts an SFTPv6 session. An SFTPv6 session provides a secure file transfer method.

sftp6 {*host_name* | *ipv6_address*} [*if_name*]

Syntax Definitions

<i>host_name</i>	Specifies the host name for the SFTPv6 session.
<i>ipv6_address</i>	Specifies the IPv6 address for the SFTPv6 session.
<i>if_name</i>	The name of the interface used to reach the SFTPv6 server, if the target has been specified using the link-local address.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- You need to have a valid username and a password for the specified host.
- A console or a telnet session can handle only one SSHv6 client session.
- If the session is invoked using the server's link-local address, the source interface name has to be provided.
- You can establish up to 4 SFTP6 sessions from an OmniSwitch (when it acts as FTP Client) and up to 8 SFTP6 sessions towards an OmniSwitch (when it acts as FTP Server).
- At anytime, there can be only 4 SFTP sessions (including SFTPv4 or SFTPv6) to any SSH servers.
- After logging in, SFTPv6 commands are supported. They are defined in the following table:

cd path	Change remote path to 'path'.
lcd path	Change local directory to 'path'.
chmod mode path	Change permissions of file 'path' to 'mode'.
help	Display command help information.
get remote-path [local path]	Download a file from the remote path to the local path.
lls [path]	Display local directory listing.
ln oldpath newpath	Creates a symbolic link (symlink) to the remote file.
symlink oldpath newpath	Creates a symbolic link (symlink) to the remote file.
mkdir path	Create local directory.
lpwd	Print local working directory.
ls [path]	Display remote directory listing.
mkdir path	Create remote directory.

put local-path [remote-path]	Upload file.
pwd	Display remote working directory.
exit	Quit the sftp mode.
quit	Exit the sftp mode.
rename oldpath newpath	Rename a remote file.
rmdir path	Remove remote directory.
rm path	Delete remote file.
version	Show the current SFTP version.
?	Synonym for help. Displays command help information.

Examples

```
-> sftp6 fe80::a00:20ff:fea8:8961 int1
-> sftp6 ::1
-> sftp6 Sun.com
```

Release History

Release 6.6.1; command was introduced.

Related Commands

ftp6	Starts an FTP6 session.
ssh6	Invokes Secure Shellv6 on the switch. Secure Shellv6 is used to make a secured connection to an SSHv6 server.

MIB Objects

```
SystemServices
  systemServicesArg1
  systemServicesAction
```

tftp

Starts a TFTP client session that enables a file transfer to an TFTP server.

```
tftp {host_name | ip_address} {get | put} source-file [src_path]/src_file [destination-file [dest_path]/dest_file] [ascii]
```

Syntax Definitions

<i>host_name</i>	Specifies the hostname of the TFTP server.
<i>ip_address</i>	Specifies the IP address of the TFTP server.
get	Specifies to download the file from the TFTP server.
put	Specifies to upload the file to the TFTP server.
<i>src_path</i>	Specifies the path containing the source file to be transferred.
<i>src_file</i>	Specifies the file name of the source file to be transferred.
<i>dest_path</i>	Specifies the destination path of the file to be transferred.
<i>dest_file</i>	Specifies the destination file name of the file to be transferred.
ascii	Sets the transfer type to ASCII (7-bit).

Defaults

- If a path is not specified with the filename, the current path is used by default (for example, /flash).
- If a destination filename is not specified, the source filename is used by default.
- The default file transfer mode for a TFTP client session is Binary mode.

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- The OmniSwitch supports TFTP client functionality only.
- A TFTP server has no provisions for user authentication.
- Only one active TFTP client session is allowed at a time.
- When downloading a file to the switch, the file size must not exceed the available flash space.

Examples

```
-> tftp tftp.server.com get source-file abc.img destination-file xyz.img
-> tftp tftp.server.com put source-file abc.txt destination-file xyz.txt ascii
-> tftp 10.211.17.1 get source-file boot.cfg destination-file /flash/working/
boot.cfg ascii
-> tftp 10.211.17.1 get source-file boot.cfg ascii
```

Release History

Release 6.6.1; command was introduced.

Related Commands

N/A

MIB Objects

```
systemServices
  systemServicesArg1
  systemServicesArg2
  systemServicesArg3
  systemServicesArg4
  systemServicesArg5
  systemServicesAction
```

rz

Starts a Zmodem session.

rz

Syntax Definitions

N/A

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- To use Zmodem, you need to have a terminal emulator that supports the Zmodem protocol.
- Activate the Zmodem transfer according to the instructions that came with your terminal emulation software.
- When the transfer is complete, use the **ls** command to verify that the files were loaded successfully.
- To abort a Zmodem session, enter **CTRL + X** five times in succession. Refer to your switch's User Manual for more information on uploading files via Zmodem.
- This command can also be used on the secondary CMM.

Examples

```
-> rz
Upload directory: /flash
rz ready to receive file, please start upload (or send 5 CTRL-X's to abort).
```

Release History

Release 6.6.1; command was introduced.

Related Commands

N/A

MIB Objects

```
systemServices
  systemServicesAction
```

8 Web Management Commands

The switch can be configured and monitored using WebView, which is a web-based device management tool. Web Management CLI commands allow you to enable/disable web-based management and configure certain WebView parameters, such as Secure Socket Layer (SSL).

MIB information for the Web Management commands is as follows:

Filename: AlcatelInd1WebMgt.mib
Module: alcatelIND1WebMgtMIB

A summary of the available commands is listed here:

http server
http ssl
http port
https port
debug http sessiondb
show http

http server

Enables/disables web management on the switch. When enabled, a user is able to configure the switch using the WebView application.

{[ip] http | https} server

no {[ip] http | https} server

Syntax Definitions

ip Optional syntax. Using this optional syntax is the same as using the **http server** command.

Defaults

Web management is enabled by default.

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

Use the **no** form of this command to disable web management. If web management is disabled, you may be unable to access the switch using WebView.

Examples

```
-> http server
-> no http server
-> https server
-> no https server
```

Release History

Release 6.6.1; command was introduced.

Related Commands

http ssl	Enables/disables SSL on the switch.
debug http sessiondb	Displays web management session information.
show http	Displays web management configuration information.

MIB Objects

```
alaIND1WebMgtConfigMIBGroup
  alaInd1WebMgtAdminStatus
```

http ssl

Enables/disables Force SSL on the switch. SSL is a protocol that establishes and maintains secure communication between SSL-enabled servers and clients across the Internet.

{[ip] http | https} ssl

no {[ip] http | https} ssl

Syntax Definitions

ip Optional syntax. Using this optional syntax is the same as using the **http ssl** command.

Defaults

SSL is enabled by default.

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

Use the **no** form of this command to disable SSL.

Examples

```
-> http ssl
-> no http ssl
-> https ssl
-> no https ssl
```

Release History

Release 6.6.1; command was introduced.

Related Commands

[http server](#) Enables/disables web management on the switch.

[show http](#) Displays web management configuration information.

MIB Objects

```
alaIND1WebMgtConfigMIBGroup
  alaInd1WebMgtSsl
```

http port

Changes the port number for the embedded Web server in the switch.

[ip] http port {default | *port*}

Syntax Definitions

ip	Optional syntax.
default	Restores the port to its default (80) value.
<i>port</i>	The desired port number for the embedded Web server. The number has to be in the range 0 to 65535; well-known port numbers cannot be configured.

Defaults

parameter	default
<i>port</i>	80

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

All WebView sessions has to be terminated before entering this command.

Examples

```
-> http port 1025
-> http port default
```

Release History

Release 6.6.1; command was introduced.

Related Commands

http server	Enables/disables web management on the switch.
show http	Displays web management configuration information.

MIB Objects

```
alaIND1WebMgtConfigMIBGroup
  alaIND1WebMgtHttpPort
```

https port

Changes the default secure HTTP (HTTPS) port for the embedded Web server.

https port {**default** | *port*}

Syntax Definitions

default Restores the port to its default (443) value.
port The desired HTTPS port number. The number has to be in the range 0 to 65535; well-known port numbers cannot be configured.

Defaults

parameter	default
<i>port</i>	443

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

All WebView sessions has to be terminated before entering this command.

Examples

```
-> https port 1026  
-> https port default
```

Release History

Release 6.6.1; command was introduced.

Related Commands

[http server](#) Enables/disables web management on the switch.
[show http](#) Displays web management configuration information.

MIB Objects

alaIND1WebMgtConfigMIBGroup
alaIND1WebMgtHttpsPort

debug http sessiondb

Displays web management session information.

debug http sessiondb

Syntax Definitions

N/A

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

N/A

Examples

```
-> debug http sessiondb
```

```
Sess      SessName  Name  TimeOut      Status          URL Name--&--StatMsg
-----+-----+-----+-----+-----+-----+-----
0 6  sess_21606  admin  5848035  AUTHENTICATED  /web/content/index.html
1 -2  sess_28257      5999940  IN_PROGRESS  /ip/content/index.html
Current Active WebView Session: 1
```

output definitions

Sess	The first number is the session number.
SessName	Unique ID assigned by the browser.
Name	User name.
TimeOut	User-configured inactivity timer, in minutes.
Status	Session status. If the user has successfully logged in, the status is "Authenticated."
URL Name&StatMsg	Current page being viewed by the user.

Release History

Release 6.6.1; command was introduced.

Related Commands**http server**

Enables/disables web management on the switch.

http ssl

Enables/disables SSL on the switch.

show http

Displays web management configuration information.

MIB ObjectsN/A

show http

Displays web management configuration information.

show [ip] http

Syntax Definitions

ip Optional syntax. Using this optional syntax is the same as using the **show http** command.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

N/A

Examples

```
-> show http
```

```
Web Management = on
Force SSL = on
Web Management Http Port = 80
Web Management Hhttps Port = 443
```

output definitions

Web Management	Indicates whether web management is enabled (on) or disabled (off) on the switch.
Force SSL	Indicates whether Force SSL is enabled (on) or disabled (off) on the switch. If this is set to on this means that SSL is forced on an HTTP session and hence HTTPS protocol is negotiated between the client and server. For example, an “http://switchname.com” URL is redirected to an “https://switchname.com” URL.
Web Management Http Port	The port configured for the HTTP connection.
Web Management Hhttps Port	The port configured for a secure HTTP connection (SSL enabled).

Release History

Release 6.6.1; command was introduced.

Related Commands

http server	Enables/disables web management on the switch.
http ssl	Enables/disables SSL on the switch.
http port	Changes the port number for the embedded Web server in the switch.
https port	Changes the default secure HTTP (HTTPS) port for the embedded Web server.

MIB Objects

```
alaIND1WebMgtConfigMIBGroup
  alaInd1WebMgtAdminStatus
  alaInd1WebMgtSsl
  alaInd1WebMgtHttpPort
  alaInd1WebMgtHttpsPort
```

9 Configuration File Manager Commands

The Configuration Manager feature allows you to configure your switch using an ASCII-based text file. CLI commands may be typed into a text document—referred to as a *configuration file*—and then uploaded and applied to the switch.

MIB information for the Configuration Manager commands is as follows:

Filename: AlcatelIND1System.mib
Module: Alcatel-IND1ConfigMgr.mib

A summary of the available commands is listed here:

configuration apply
configuration error-file limit
show configuration status
configuration cancel
configuration syntax check
configuration snapshot
show configuration snapshot
write terminal

configuration apply

Applies a configuration file to the switch. Files may be applied immediately or after a designated timer session. With the timer session option, files are applied either at a scheduled date and time or after a specified period of time (that is, a countdown) has passed.

configuration apply *filename* [**at** *hh:mm month dd* [*year*]] | [**in** *hh[:mm]*] [**verbose**]

Syntax Definitions

<i>filename</i>	The name of the configuration text file to be applied to the switch (for example., newfile1).
at <i>hh:mm{dd month month dd}</i> [<i>year</i>]	Designates a timer session in which a configuration file is applied at a specified date and time in the future. Values for <i>hh</i> range from 00 through 23. Values for <i>mm</i> range from 00 through 59. Values for <i>dd</i> range from 01 through 31. Values for month range from January through December. The switch assumes either the current year or the next calendar year for month and day pairs that precede the current date.
in <i>hh[:mm]</i>	Designates a timer session in which the configuration file is applied after a specific amount of time (that is, a countdown) has passed. Values for <i>hh</i> range from 00 through 23. Values for <i>mm</i> range from 00 through 59.
verbose	When verbose is entered, information is displayed on your workstation's console as each command in the configuration file is applied.

Defaults

By default, **verbose** error checking is not performed.

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- The **configuration apply** command only applies settings to the running configuration. The **boot.cfg** file does not get overwritten.
- It is recommended that you check all configuration files for syntax errors before applying them to your switch.
- To schedule a timer session in which a file is applied at a specific date and time, enter **at** followed by the hour, minute, month, day, and year. The switch assumes either the current calendar year or the next calendar year for dates beginning January 1.
- To schedule a timer session in which a file is applied after a specific amount of time, that is, a countdown, has passed, enter **in** followed by the number of hours and minutes.
- Verbose mode is not supported for timer sessions.
- The keyword, **authkey**, along with a related alpha-numeric text string, are automatically included in many snapshot files (for example, **configuration snapshot all**). The text string following the **authkey**

keyword represents a login password that has been encrypted *twice*. (The first encryption occurs when a password is first created by a user; the second encryption occurs when a configuration snapshot is taken.) This dual encryption further enhances switch security. However, it is important to note that any configuration file (including a generated snapshot) that includes this dual-encrypted password information results in an error whenever it is applied to the switch through the **configuration apply** command. This is a valid switch function and does not represent a significant problem. If an **authkey**-related error is the *only* error detected, simply remove all **authkey**-related syntax using a text editor. If a new password is required for the switch, include valid password syntax in the configuration file or immediately issue a new password by using the **password** command at the command prompt. For more information on passwords, see [page 49-42](#).

Examples

```
-> configuration apply new_configuration at 12:00 15 november
-> configuration apply new_configuration at 12:00 november 15
-> configuration apply newfile1 in 01:30
-> configuration apply my_switch_config in 00:05
-> configuration apply asc.1.snap in 23:00
-> configuration apply aaa_config in 12
-> configuration apply vlan_config verbose
-> configuration apply vlan_config
...
```

Note. When the **configuration apply** command is entered *without at* or *in* syntax information, one or more dots “.” is displayed in the next line, immediately following the command line. This indicates command progress; each dot represents 256 text lines in the configuration file processed by the configuration apply mechanism.

Release History

Release 6.6.1; command was introduced.

Related Commands

configuration syntax check Performs a syntax and authorization check of all CLI commands contained in a configuration file.

MIB Objects

```
alcatelIND1ConfigMgrMIBObjects
  configFileName
  configFileMode
  configFileAction
  configTimerFileName
  configTimerFileTime
```

configuration error-file limit

Specifies the maximum number of configuration error files allowed in the switch's **/flash** directory. Error files are normally generated when a configuration file is applied to the switch. Error files are identified by their **.err** extension. When the maximum number of **.err** files is exceeded, any new error file overwrites the **.err** file with the oldest timestamp.

configuration error-file limit *number*

Syntax Definitions

number Indicate the number of error files allowed in the **/flash** directory. The valid range is from 1 to 25 files.

Defaults

parameter	default
<i>number</i>	1

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- When the error file limit is set to 1 (the default value), the next error file generated by the switch replaces the existing one.
- When the error file limit is set to a value greater than 1, when a new error file that exceeds the maximum limit is created, the switch automatically removes the error file with the smallest timestamp.
- The error files generated by the switch have the **.err** extension.
- If you want to save an error file, you may change the file name so that it does not have the **.err** extension, or you can move it from the **/flash** directory.

Examples

```
-> configuration error-file limit 2  
-> configuration error-file limit 1
```

Release History

Release 6.6.1; command was introduced.

Related Commands

configuration apply Applies a configuration file to the switch. Also used for scheduling a timer session for a configuration file.

configuration cancel Cancels a pending timer session for a configuration file.

MIB Objects

alcatelIND1ConfigMgrMIBObjects
configErrorFileMaximum

show configuration status

Displays whether there is a pending timer session scheduled for a configuration file and indicates whether the running configuration and the saved configuration files are *identical* or *different*. This command also displays the number of error files that is held in the flash directory.

show configuration status

Syntax Definitions

N/A

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- A timer session can be scheduled using the [configuration apply](#) command. For more information, see [page 9-2](#).
- The screen output **File configuration </path/filename>: scheduled at dd/mm hh:mm** indicates that a timer session has been scheduled for a later time.
- The output **No file configuration has been scheduled** indicates an idle timer session (that is, no timer session has been scheduled for a configuration file).
- The output **File configuration is in progress** indicates that a file is currently being applied to the switch.
- The output **File configuration </path/filename>: completed with 2 errors** indicates that the named file was applied to the switch with two recorded errors.
- When the running and saved configurations are the same, the output **Running configuration and saved configuration are identical** are displayed.
- When the running and saved configurations are the different, the output **Running configuration and saved configuration are different** are displayed.
- To synchronize the running and saved configuration, use the [write memory](#) command.

Examples

```
-> show configuration status
```

Release History

Release 6.6.1; command was introduced.

Related Commands

- configuration apply** Applies a configuration file to the switch. Also used for scheduling a timer session for a configuration file.
- configuration cancel** Cancels a pending timer session for a configuration file.
- configuration error-file limit** Specifies the maximum number of configuration error files allowed in the switch's **/flash** directory.
- write memory** Copies the running configuration (RAM) to the working directory.

MIB Objects

```
configTimerFileGroup  
  configTimerFileStatus
```

configuration cancel

Cancels a pending timer session for a configuration file.

configuration cancel

Syntax Definitions

N/A

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

N/A

Examples

```
-> configuration cancel
```

Release History

Release 6.6.1; command was introduced.

Related Commands

configuration apply Applies a configuration file to the switch. Also used for scheduling a timer session for a configuration file.

show configuration status Displays whether there is a pending timer session scheduled for a configuration file.

MIB Objects

```
configTimerFileGroup  
configTimerClear
```

configuration syntax check

Performs a syntax and authorization check of all CLI commands contained in a configuration file.

configuration syntax check *path/filename* [**verbose**]

Syntax Definitions

path/filename

The configuration file being checked for syntax and authorization errors. If a configuration file is located in another directory, be sure to specify the full path. For example, **/flash/working/asc.1.snap**.

verbose

When **verbose** is specified in the command line, all syntax contained in the configuration file is printed to the console, even if no error is detected. When **verbose** is *not* specified in the command line, cursory information (number of errors and error log file name) is printed to the console *only if a syntax or configuration error is detected*.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- When an error is detected, an error file (**.err**) is automatically generated by the switch. By default, this file is placed in the root **/flash** directory. To view the contents of a generated error file, use the **view** command. For example, **view asc.1.snap.1.err**.
- The syntax, **mac alloc**, is automatically included in many snapshot files (for example, **configuration snapshot all**). All **mac alloc**-related syntax is valid *during switch boot up only* (that is, it cannot be applied while the switch is in run-time operation). Because snapshot files are commonly used as configuration files, syntax checks may detect **mac alloc** syntax and issue an error (along with a generated **.err** file). This is a valid switch function and does not represent a significant problem. If a **mac alloc**-related error is the *only* error detected, simply remove the syntax using a text editor, then re-check the file using the **configuration syntax check** command.
- It is recommended that you check all configuration files for syntax errors before applying them to your switch.

Examples

```
-> configuration syntax check vlan_file1
..
```

Note. When the **configuration syntax check** command is entered, one or more dots “.” is displayed in the command output. This indicates command progress; each dot represents 256 text lines in the configuration file processed by the syntax check mechanism.

Release History

Release 6.6.1; command was introduced.

Related Commands

- | | |
|----------------------------------|--|
| configuration apply | Applies a configuration file to the switch. Also used for scheduling a timer session for a configuration file. |
| show configuration status | Displays whether there is a pending timer session scheduled for a configuration file. |

MIB Objects

```
configFileGroup
  configErrorFileName
  configErrorFileMaximum
  configFileMode
  configFileStatus
```

configuration snapshot

Generates a snapshot file of the switch's non-default current running configuration. A snapshot can be generated for all current network features or for one or more specific network features. A snapshot is a single text file that can be viewed, edited, and reused as a configuration file.

configuration snapshot *feature_list* [*path/filename*]

Syntax Definitions

feature_list The description for the network feature(s) to be included in the snapshot. You may enter more than one network feature in the command line. Current snapshot-supported network features are listed below.

snapshot-supported features

802.1q	ip	pmm
aaa	ip-helper	policy
aip	ip-routing	qos
all	ipmr	rdp
bridge	ipms	rip
chassis	ipv6	ripng
efm-oam	linkagg	session
erp	loopback-detection	snmp
ethernet-oam	module	stack-manager
health	ntp	stp
interface	port-mapping	vlan

path/filename A user-defined name for the resulting snapshot file. For example, **test_snmp_snap**. You may also enter a specific path for the resulting file. For example, the syntax **/flash/working/test_snmp_snap** places the **test_snmp_snap** file in the switch's **/flash/working** directory.

Defaults

If a file name is not specified, the default file name **asc.#.snap** is used. Here, # indicates the order in which the default file is generated. For example, the first default file name to be generated is **asc.1.snap**, the second default file name to be generated is named **asc.2.snap**, and so on. By default, all snapshot files are placed in the root **/flash** directory.

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Only current, non-default configuration settings are written to the snapshot file.
- You may enter more than one network feature in the command line. Separate each network feature with a space and no comma. Network features may be entered in any order.
- The snapshot file is automatically placed in the root **/flash** directory unless otherwise specified.

Examples

```
-> configuration snapshot all
-> configuration snapshot new_file1 qos health aggregation
-> configuration snapshot snmp_snapshot snmp
-> configuration snapshot 802.1q
```

Release History

Release 6.6.1; command was introduced.

Release 6.6.2; **erp** parameter added.

Related Commands

N/A

MIB Objects

```
configManager
  configSnapshotFileName
  configSnapshotAction
  configSnapshotAllSelect
  configSnapshotVlanSelect
  configSnapshotSpanningTreeSelect
  configSnapshotQOSSelect
  configSnapshotIPSelect
  configSnapshotIPMSSelect
  configSnapshotAAASelect
  configSnapshotSNMPSelect
  configSnapshot802.1QSelect
  configSnapshotLinkAggregateSelect
  configSnapshotPortMirrorSelect
  configSnapshotXIPSelect
  configSnapshotHealthMonitorSelect
  configSnapshotBootPSelect
  configSnapshotBridgeSelect
  configSnapshotChassisSelect
  configSnapshotInterfaceSelect
  configSnapshotPolicySelect
  configSnapshotSessionSelect
  configSnapshotSystemServiceSelect
  configSnapshotWebSelect
  configSnapshotRIPSelect
  configSnapshotIPRMSelect
  configSnapshotIPMRSelect
  configSnapshotModuleSelect
  configSnapshotRDPSelect
```

`configSnapshotIPv6Select`

show configuration snapshot

Displays the switch's current running configuration for all features or for the specified feature(s).

show configuration snapshot [*feature_list*]

Syntax Definitions

feature_list Specify the feature(s) for which you want to display the running configuration. List the features separated by a space with no comma.

snapshot-supported features

802.1q	ip	pmm
aaa	ip-helper	policy
aip	ip-routing	qos
all	ipmr	rdp
bridge	ipms	rip
chassis	ipv6	ripng
efm-oam	linkagg	session
erp	loopback-detection	snmp
ethernet-oam	module	stack-manager
health	ntp	stp
interface	port-mapping	vlan

Defaults

By default, this command shows configuration information for *all* features.

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Use this command to view the current configuration for any feature shown in the table.
- To show a list of features on the switch, use the **show configuration snapshot ?** syntax.
- Configurations are listed below the name of each feature.
- Features with no current configuration show only the name of the feature.

Examples

```
-> show configuration snapshot
```

AAA output for Case Sensitive MAC address Authentication

```
-> show configuration snapshot aaa
aaa authentication console "local"
user "public" read All write All no auth authkey 391b0e74dbd13973d703ccea4a8e30
retransmit 3 timeout 2 auth-port 1812 mac-address-format-status enable
mac-address-format 1 lowercase
```

```
-> show configuration snapshot aaa bridge
! Bridging :
```

```
! AAA :
aaa authentication default "local"
aaa authentication console "local"
user "public" read All write All no auth authkey 391b0e74dbd13973d703ccea4a8e30
```

Bridging snapshot with finite learning window:

```
-> show configuration snapshot bridge
! Bridging :
port-security SHUTDOWN 1 boot-up disable no-aging disable convert-to-static enable
learn-as-static enable mac-move enable
```

Bridging snapshot with infinite learning window:

```
-> show configuration snapshot bridge
! Bridging :
port-security SHUTDOWN 0 boot-up disable no-aging enable convert-to-static disable
learn-as-static enable mac-move enable
```

Release History

Release 6.6.1; command was introduced.

Release 6.6.2; **erp** parameter added.

Related Commands

[write terminal](#) Displays the switch's current running configuration for all features.

MIB Objects

```
configManager
  configSnapshotFileName
  configSnapshotAction
  configSnapshotAllSelect
  configSnapshotVlanSelect
  configSnapshotSpanningTreeSelect
  configSnapshotQOSSelect
  configSnapshotIPSelect
  configSnapshotIPMSSelect
  configSnapshotAAASelect
  configSnapshotSNMPSelect
  configSnapshot802.1QSelect
  configSnapshotLinkAggregateSelect
  configSnapshotPortMirrorSelect
  configSnapshotXIPSelect
  configSnapshotHealthMonitorSelect
  configSnapshotBootPSelect
  configSnapshotBridgeSelect
  configSnapshotChassisSelect
  configSnapshotInterfaceSelect
  configSnapshotPolicySelect
  configSnapshotSessionSelect
  configSnapshotSystemServiceSelect
  configSnapshotWebSelect
  configSnapshotRIPSelect
  configSnapshotIPRMSelect
  configSnapshotIPMRSelect
  configSnapshotModuleSelect
  configSnapshotRDPSelect
  configSnapshotIPv6Select
```

write terminal

Displays the switch's current running configuration for all features.

write terminal

Syntax Definitions

N/A

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Configurations are listed below the name of each feature.
- Features with no current configuration show only the name of the feature.

Examples

```
-> write terminal
```

Release History

Release 6.6.1; command was introduced.

Related Commands

show configuration snapshot Displays the switch's current running configuration for all features or for the specified feature(s).

MIB Objects

```
configManager  
  mib_configSnapshotAllSelect
```

10 SNMP and OpenFlow Commands

This chapter includes descriptions for Trap Manager and SNMP Agent commands. The commands are used for configuring SNMP settings on the switch.

- SNMP station commands can create, modify, or delete an SNMP station. Also included is a show command for monitoring current SNMP station status.
- SNMP trap commands configure SNMP trap settings. Traps can be replayed and filtered. Also, test traps can be generated to verify that individual traps are being correctly handled by the Network Management Station (NMS). The SNMP trap commands set includes show commands for monitoring SNMP trap information.
- SNMP agent commands configure SNMP security levels on the switch. Also includes show commands for monitoring the current SNMP security status.

MIB information for SNMP Community commands is as follows:

Filename: IETFsnmpCommunity.MIB
Module: IETF SNMP-COMMUNITY.MIB

MIB information for Trap Manager commands is as follows:

Filename AlcatelIND1TrapMgr.MIB
Module: ALCATEL-IND1-TRAP-MGR.MIB

MIB information for SNMP Agent commands is as follows:

Filename: AlcatelIND1SNMPAgent.MIB
Module: ALCATEL-IND1-SNMP-AGENT.MIB

OpenFlow is a communications interface defined between the control and forwarding layers that is used in a Software Defined Network (SDN). OpenFlow separates the control plane and the data plane in the switch. Traditionally, switches and routers have made decisions on where packets should travel based on rules local to the device. With OpenFlow, only the data plane exists on the switch itself, and all control decisions are communicated to the switch from a central Controller. The OmniSwitch can operate in AOS or OpenFlow mode, including a modified OpenFlow mode known as Hybrid mode.

MIB information for the OpenFlow commands is as follows:

Filename: ALCATEL-IND1-OPENFLOW-MIB.mib
Module: alcatelIND1OpenflowMIB

A summary of the available commands is listed here:

SNMP station commands	snmp station show snmp station
SNMP community map commands	snmp community map snmp community map mode show snmp community map
SNMP security commands	snmp security show snmp security show snmp statistics show snmp mib family
SNMP trap commands	snmp trap absorption snmp trap to webview snmp trap replay snmp trap filter snmp authentication trap show snmp trap replay show snmp trap filter snmp authentication trap show snmp trap config
OpenFlow Commands	openflow back-off-max openflow idle-probe-timeout openflow logical-switch openflow logical-switch controller openflow logical-switch interfaces show openflow show openflow logical-switch show openflow logical-switch stats

snmp station

Adds a new SNMP station; modifies or deletes an existing SNMP station.

snmp station {*ip_address* | *ipv6_address*} [{*udp_port*] [*username*] [**v1** | **v2** | **v3**] [**enable** | **disable**]

no snmp station {*ip_address* | *ipv6_address*}

Syntax Definitions

<i>ip_address</i>	The IP address to which SNMP unicast traps is sent.
<i>ipv6_address</i>	The IPv6 address to which SNMP unicast traps is sent.
<i>udp_port</i>	A UDP destination port.
<i>username</i>	The user name on the switch or external server used to send traps to the SNMP station(s). The username specified here must match an existing user account name.
v1	Specifies that traps are sent using SNMP version 1.
v2	Specifies that traps are sent using SNMP version 2.
v3	Specifies that traps are sent using SNMP version 3.
enable	Enables the specified SNMP station.
disable	Disables the specified SNMP station.

Defaults

parameter	default
<i>udp_port</i>	162
v1 v2 v3	v3
enable disable	enable

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Use the no form of the command to remove an existing SNMP station.
- When adding an SNMP station, you have to specify an IP address *plus username parameters*. For example, the syntax **snmp station 1.2.3.4** is not a valid command entry; however, **snmp station 1.2.3.4 username1** is a valid command entry.
- You can establish up to 50 SNMP sessions towards an OmniSwitch.
- When modifying an SNMP station, you have to specify an IP address *plus at least one additional parameter*. For example, the syntax **snmp station 1.2.3.4** is not a valid command entry; however, **snmp station 1.2.3.4 v2** is a valid command entry.

- The default UDP port 162 is commonly used for traps; however, the destination port can be redefined to accommodate an SNMP station using a nonstandard port. The destination port specified in the command line has to correspond with the UDP destination port configured at the receiving SNMP station(s).
- When the SNMP station is enabled, the switch transmits traps to the specified IP or IPv6 address.

Examples

```
-> snmp station 168.22.2.2 111 username2 v1 disable
-> snmp station 168.151.2.101 "test lab"
-> snmp station 170.1.2.3 username1 enable
-> snmp station 1.1.2.2 v2
-> no snmp station 2.2.2.2
-> snmp station 300::1 enable
-> no snmp station 300::1
```

Release History

Release 6.6.1; command was introduced.

Related Commands

[show snmp station](#) Displays the current SNMP station information.

MIB Objects

```
trapStationTable
  trapStationIP
  trapStationPort
  trapStationUser
  trapStationProtocol
  trapStationRowStatus
alaTrapInetStationTable
  alaTrapInetStationIPType
  alaTrapInetStationIP
  alaTrapInetStationPort
  alaTrapInetStationRowStatus
  alaTrapInetStationProtocol
  alaTrapInetStationUser
```

snmp source ip preferred

Configures the source IP address field of the SNMP client packets.

snmp source ip preferred {**default** | **no-loopback** | *ip_address*}

no snmp source ip preferred

Syntax Definitions

default	The Loopback0 address, if configured, will be used for the source IP address field. If no Loopback0 is configured, the first IP address on the switch will be used.
no-loopback	The Loopback0 address should not be used for the source IP address field and the first available IP address on the switch should be used for this field.
<i>ip_address</i>	The IP address to be used in the source IP field.

Defaults

By default, the setting is set to the **default** parameter.

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- When configuring a specific IP address, that address must already exist on the switch.
- Use the **no** form of this command to clear a specific IP address and change the behavior back to default.

Examples

```
-> snmp source ip preferred 192.168.10.1
-> snmp source ip preferred no-loopback
-> snmp source ip preferred default
```

Release History

Release 6.6.4; command was introduced

Related Commands

snmp station Adds a new SNMP station; modifies or deletes an existing SNMP station.

MIB Objects

N/A

show snmp station

Displays the current SNMP station status.

show snmp station

Syntax Definitions

N/A

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

N/A

Examples

```
-> show snmp station
ipAddress/udpPort                               status    protocol user
-----+-----+-----+-----
172.21.160.32/4000                               enable    v3       abc
172.21.160.12/5000                               enable    v3       user1
0300:0000:0000:0000:0211:d8ff:fe47:470b/4001    enable    v3       user2
0300:0000:0000:0000:0211:d8ff:fe47:470c/5001    enable    v2       abc
```

output definitions

IPAddress	IP Address of the SNMP management station that replayed the trap.
UDP Port	UDP port number.
Status	The Enabled/Disabled status of the SNMP management station.
Protocol	The version of SNMP set for this management station.
User	The user account name.

Release History

Release 6.6.1; command was introduced.

Related Commands

snmp station

Adds a new SNMP station; modifies or deletes an existing SNMP station.

MIB Objects

trapStationTable

 trapStationIP

 trapStationPort

 trapStationUser

 trapStationProtocol

 trapStationRowStatus

alaTrapInetStationTable

 alaTrapInetStationIPType

 alaTrapInetStationIP

 alaTrapInetStationPort

 alaTrapInetStationRowStatus

 alaTrapInetStationProtocol

 alaTrapInetStationUser

snmp community map

Configures and enables a community string on the switch and maps it to an existing user account name.

```
snmp community map community_string {[user useraccount_name] | {enable | disable}}
```

```
no snmp community map community_string
```

Syntax Definitions

community_string

A community string in the form of a text string. This string has to be between 1 and 32 characters.

useraccount_name

A user name in the form of a text string. This name must match a user login account name already configured on the switch or configured remotely on an external AAA server. This user name must be between 1 and 32 characters.

enable

Enables SNMP community string mapping.

disable

Disables SNMP community string mapping.

Defaults

By default, SNMP community map authentication is enabled.

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Community strings configured on the switch are used for v1 and v2c SNMP managers only.
- The user account name must be a current user account recognized by the switch. For a list of current user names use the **show user** command. To create a new user account, use the **user** command.
- There is one to one mapping between each community string and a user account name.
- Privileges attached to the community string are the ones inherited from the user account name that created it.

Examples

```
-> snmp community map community1 user testname1  
-> snmp community map community1 enable
```

Release History

Release 6.6.1; command was introduced.

Related Commands

snmp community map mode Enables the local community strings database.

MIB Objects

```
SNMPCommunityTable  
  snmpCommunityIndex  
  snmpCommunitySecurityName  
  snmpCommunityStatus
```

snmp community map mode

Enables the local community strings database.

snmp community map mode {enable | disable}

Syntax Definitions

enable	Enables SNMP community map database.
disable	Disables SNMP community map database.

Defaults

By default, SNMP community strings database is enabled.

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- When enabled, the community string carried over each incoming v1 or v2c SNMP request must be mapped to a user account name in order to be processed by the SNMP agent.
- When enabled, mapping is contained in the local community strings database populated by using the [snmp community map](#) command.
- When disabled, the community strings carried over each incoming v1 or v2c request must be *equal* to a user account name in order to be processed by the SNMP agent.

Examples

```
-> snmp community map mode enable
-> snmp community map mode disable
```

Release History

Release 6.6.1; command was introduced.

Related Commands

snmp community map	Configures and enables a community string on the switch and maps it to an existing user account name.
------------------------------------	---

MIB Objects

```
SNMPCommunityTable
  snmpCommunityIndex
  snmpCommunitySecurityName
  snmpCommunityStatus
```

show snmp community map

Shows the local community strings database.

show snmp community map

Syntax Definitions

N/A

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guideline

N/A

Examples

```
-> show snmp community map
Community mode : enabled
```

```
status   community string                user name
-----+-----+-----
enabled  test_string1                        bb_username
enabled  test_string2                        rr_username
disabled test_string3                        cc_username
disabled test_string4                        jj_username
```

output definitions

Status	The Enabled/Disabled status of the community string.
Community String	The text that defines the community string.
User Name	The user account name.

Release History

Release 6.6.1; command was introduced.

Related Commands

[snmp community map](#) Configures and enables a community string on the switch and maps it to an existing user account name.

MIB Objects

NA

snmp security

Configures SNMP security settings.

snmp security {no security | authentication set | authentication all | privacy set | privacy all | trap only}

Syntax Definitions

no security	The switch accepts all SNMP v1, v2, and v3 requests.
authentication set	The switch accepts all requests <i>except</i> v1, v2, and non-authenticated v3 set requests. SNMP v1, v2, and non-authenticated v3 set requests is rejected.
authentication all	The switch accepts all requests <i>except</i> v1, v2, and non-authenticated v3 get, get-next, and set requests. SNMP v1, v2, and non-authenticated v3 get, get-next, and set requests is rejected.
privacy set	The switch accepts <i>only</i> authenticated SNMP v3 get, get-next and encrypted v3 set requests. All other requests is rejected.
privacy all	The switch accepts only encrypted v3 get, get-next, and set requests. All other requests is rejected.
trap only	All SNMP get, get-next, and set requests is rejected.

Defaults

By default, the SNMP security default is set to **privacy all**, which is the highest level of security.

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

Refer to the table below for a quick-reference list of security parameter and the SNMP request allowances for each parameter.

	v1 set v2 set v3 non-auth set	v1 get v2 get v3 non-auth get/ get-next	v3 auth set	v3 auth get/ get-next	v3 encryp set	v3 encryp get/ get-next
no security	accepted	accepted	accepted	accepted	accepted	accepted
authentication set	rejected	accepted	accepted	accepted	accepted	accepted
authentication all	rejected	rejected	accepted	accepted	accepted	accepted
privacy set	rejected	rejected	rejected	accepted	accepted	accepted
privacy all	rejected	rejected	rejected	rejected	accepted	accepted
trap only	rejected	rejected	rejected	rejected	rejected	rejected

Examples

```
-> snmp security no security
-> snmp security authentication set
```

```
-> snmp security authentication all
-> snmp security privacy set
-> snmp security trap only
```

Release History

Release 6.6.1; command was introduced.

Related Commands

[show snmp security](#) Displays the current SNMP security status.

MIB Objects

```
SNMPAgtConfig
  SnmpAgtSecurityLevel
```

show snmp security

Displays the current SNMP security status.

show snmp security

Syntax Definitions

N/A

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

Refer to the command on page [10-12](#) for descriptions of the five SNMP security states: no security, authentication set, authentication all, privacy set, privacy all, and trap only.

Examples

```
-> show snmp security
snmp security = no security
```

```
-> show snmp security
snmp security = authentication set
```

```
-> show snmp security
snmp security = authentication all
```

```
-> show snmp security
snmp security = privacy set
```

```
-> show snmp security
snmp security = privacy all
```

```
-> show snmp security
snmp security = trap only
```

Release History

Release 6.6.1; command was introduced.

Related Commands**snmp security**

Configures the SNMP security settings.

MIB ObjectsN/A

show snmp statistics

Displays the current SNMP statistics.

show snmp statistics

Syntax Definitions

N/A

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

N/A

Examples

```
-> show snmp statistics
From RFC1907
  snmpInPkts                = 801
  snmpOutPkts               = 800
  snmpInBadVersions         = 0
  snmpInBadCommunityNames  = 0
  snmpInBadCommunityUses   = 0
  snmpInASNParseErrs       = 0
  snmpEnableAuthenTraps    = disabled(2)
  snmpSilentDrops           = 0
  snmpProxyDrops            = 0
  snmpInTooBigs             = 0
  snmpOutTooBigs            = 0
  snmpInNoSuchNames        = 0
  snmpOutNoSuchNames       = 0
  snmpInBadValues          = 0
  snmpOutBadValues         = 0
  snmpInReadOnlys          = 0
  snmpOutReadOnlys         = 0
  snmpInGenErrs            = 0
  snmpOutGenErrs           = 0
  snmpInTotalReqVars       = 839
  snmpInTotalSetVars       = 7
  snmpInGetRequests        = 3
  snmpOutGetRequests       = 0
  snmpInGetNexts           = 787
  snmpOutGetNexts         = 0
  snmpInSetRequests        = 7
  snmpOutSetRequests       = 0
  snmpInGetResponses       = 0
  snmpOutGetResponses      = 798
```



```

    snmpInTraps           = 0
    snmpOutTraps          = 0
From RFC2572
    snmpUnknownSecurityModels = 0
    snmpInvalidMsgs         = 0
    snmpUnknownPDUHandlers  = 0
From RFC2573
    snmpUnavailableContexts = 0
    snmpUnknownContexts     = 1
From RFC2574
    usmStatsUnsupportedSecLevels = 0
    usmStatsNotInTimeWindows    = 1
    usmStatsUnknownUserNames    = 1
    usmStatsUnknownEngineIDs    = 0
    usmStatsWrongDigests       = 0
    usmStatsDecryptionErrors    = 0

```

output definitions

From RFCxxxx	Displays the RFC number that defines the SNMP MIB objects listed.
MIB Objects	Name of the MIB object listed as an SNMP statistic.
= (integer)	The number of times the MIB object has been reported to the SNMP management station since the last reset.

Release History

Release 6.6.1; command was introduced.

Related Commands

N/A

MIB Objects

N/A

show snmp mib family

Displays SNMP MIB information. Information includes MIP ID number, MIB table name, and command family.

show snmp mib family [*table_name*]

Syntax Definitions

table_name The name of the MIB table to be displayed.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- If a table name is not specified in the command syntax, all MIB table names is displayed.
- If the command family is not valid for the entire MIB table, the command family is displayed on a per-object basis.
- Table names are case-sensitive. Therefore, use the exact table names from the MIB database.

Examples

```
-> show snmp mib family trapStationTable
MIP ID   MIB TABLE NAME                               FAMILY
-----+-----+-----
 73733   trapStationTable                               snmp
```

output definitions

MIP ID	Identification number for the MIP associated with this MIB Table.
MIB Table Name	Name of the MIB table.
Family	Command family to which this MIB table belongs.

Release History

Release 6.6.1; command was introduced.

Related Commands**show snmp trap filter**

Displays the SNMP trap filter information.

MIB ObjectsN/A

snmp trap absorption

Enables or disables the trap absorption function.

snmp trap absorption {enable | disable}

Syntax Definitions

enable	Enables SNMP trap absorption. When trap absorption is enabled, identical, repetitive traps sent by applications during a pre-configured time period is absorbed, and therefore not sent to SNMP Manager stations configured on the switch.
disable	Disables SNMP trap absorption.

Defaults

By default, trap absorption is enabled. Trap absorption drops additional traps within the absorption period (default 15 seconds).

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

To view the current trap absorption status, use the **show snmp trap config** command.

Examples

```
-> snmp trap absorption enable  
-> snmp trap absorption disable
```

Release History

Release 6.6.1; command was introduced.

Related Commands

show snmp trap config	Displays the SNMP trap information. Information includes trap ID numbers and corresponding trap names and families.
------------------------------	---

MIB Objects

```
trapFilterTable  
  trapAbsorption
```

snmp trap to webview

Enables the forwarding of traps to WebView.

snmp trap to webview {enable | disable}

Syntax Definitions

enable	Enables WebView forwarding. When WebView forwarding is enabled, all traps sent by switch applications are also forwarded to WebView. This allows a WebView session to retrieve the trap history log.
disable	Disables WebView forwarding.

Defaults

By default, WebView forwarding is enabled.

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

To view the current WebView forwarding status, use the **show snmp trap config** command.

Examples

```
-> snmp trap to webview enable
-> snmp trap to webview disable
```

Release History

Release 6.6.1; command was introduced.

Related Commands

show snmp trap config	Displays the SNMP trap information, including the current status for trap absorption and WebView forwarding.
---------------------------------------	--

MIB Objects

```
trapFilterTable
  trapToWebView
```

snmp trap replay

Replays stored traps from the switch to a specified SNMP station. This command is used to replay (to resend) traps on demand. This is useful in the event when traps are lost in the network.

```
snmp trap replay {ip_address | ipv6_address} [seq_id]
```

Syntax Definitions

<i>ip_address</i>	The IP address for the SNMP station to which traps are replayed from the switch.
<i>ipv6_address</i>	The IPv6 address for the SNMP station to which traps are replayed from the switch.
<i>seq_id</i>	The sequence number from which trap replay begins. Each trap sent by the switch to an SNMP station has a sequence number. The sequence number reflects the order in which the trap was sent to the SNMP station. For example, the first trap sent to an SNMP station has a sequence number of 1; the second trap has a sequence number of 2, and so on. If no sequence number is entered, all stored traps are replayed.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Use the [show snmp station](#) command on [page 10-6](#) to display the latest stored sequence number for each SNMP station.
- The switch replays traps in the same order that they were previously sent, beginning from the specified sequence number.
- When traps are replayed, the original dates on which the trap was issued, rather than the current dates are used.
- If the specified sequence number is lower than the oldest trap sequence number stored in the switch, the switch replays all stored traps.
- If the specified sequence number is equal to or greater than the oldest trap sequence number stored, the switch replays all stored traps from the specified sequence number up to the latest sequence number.
- If the specified sequence number is greater than the latest sequence number, no traps are replayed.

Examples

```
-> snmp trap replay 172.12.2.100  
-> snmp trap replay 300::1
```

Release History

Release 6.6.1; command was introduced.

Related Commands

- | | |
|---------------------------------------|--|
| show snmp station | Displays the current SNMP station status. |
| show snmp trap replay | Displays the SNMP trap replay information. |

MIB Objects

```
trapStationTable
  trapStation Replay
AlaTrapInetStationEntry
  alaTrapInetStationReplay
  alaTrapInetStationNextSeq
```

snmp trap filter

Enables or disables SNMP trap filtering. Trap filtering is used to determine whether a trap or group of traps is sent from the switch to a specified SNMP station.

snmp trap filter {*ip_address* | *ipv6_address*} *trap_id_list*

no snmp trap filter {*ip_address* / *ipv6_address*} *trap_id_list*

Syntax Definitions

<i>ip_address</i>	The IP address for the SNMP station for which trap filtering is being enabled or disabled.
<i>ipv6_address</i>	The IPv6 address for the SNMP station for which trap filtering is being enabled or disabled.
<i>trap_id_list</i>	Specifies the trap(s) for which filtering is being enabled or disabled. Traps must be specified using the numeric trap ID. You can specify more than one trap in the command line; separate each trap ID with a space and no comma.

Defaults

By default, SNMP trap filtering is disabled.

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- To *enable* trap filtering, use the syntax **snmp trap filter** *ip_address trap_id_list*.
- To *disable* trap filtering, use the syntax **no snmp trap filter** *ip_address trap_id_list*.
- When filtering is enabled, the specified trap(s) *is not* sent to the SNMP station. When filtering is disabled, the specified traps *is* sent to the SNMP station.
- To display a list of traps and their ID numbers, use the **show snmp trap config** command.

Examples

```
-> snmp trap filter 172.1.2.3 1
-> snmp trap filter 172.1.2.3 0 1 3 5
-> snmp trap filter 300::1 1 3 4
-> no snmp trap filter 172.1.2.3 1
-> no snmp trap filter 172.1.2.3 0 1 3 5
-> no snmp trap filter 300::1 1 3
```

Release History

Release 6.6.1; command was introduced.

Related Commands

show snmp trap filter

Displays the current SNMP trap filter status.

show snmp trap config

Displays the SNMP trap information, including trap ID numbers, trap names, command families, and absorption rate.

MIB Objects

trapFilterTable

 trapFilterStatus

alaTrapInetFilterTable

 alaTrapInetFilterStatus

snmp authentication trap

Enables or disables SNMP authentication failure trap forwarding.

snmp authentication trap {enable | disable}

Syntax Definitions

enable	Enables authentication failure trap forwarding. When enabled, the standard authentication failure trap is sent each time an SNMP authentication failure is detected.
disable	Disables authentication failure trap forwarding.

Defaults

By default, authentication failure trap forwarding is disabled.

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

N/A

Examples

```
-> snmp authentication trap enable  
-> snmp authentication trap disable
```

Release History

Release 6.6.1; command was introduced.

Related Commands

show snmp authentication trap Displays the current authentication failure trap forwarding status.

MIB Objects

```
snmpGroup  
  snmpEnableAuthenTraps
```

show snmp trap replay

Displays SNMP trap replay information.

show snmp trap replay

Syntax Definitions

N/A

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

A maximum of 60 traps is replayed.

Examples

```
-> show snmp trap replay
ipAddress                               oldest replay number
-----+-----
172.21.160.32                            12
172.21.160.12                            57
0300:0000:0000:0000:0211:d8ff:fe47:470b  12
0300:0000:0000:0000:0211:d8ff:fe47:470c  42
```

output definitions

IPAddress	IP address of the SNMP station manager that replayed the trap.
Oldest Replay Number	Number of the oldest replayed trap.

Release History

Release 6.6.1; command was introduced.

Related Commands

[snmp trap replay](#)

Replays stored traps from the switch to a specified SNMP station.

MIB Objects

trapStationTable

 snmpStation Replay

AlaTrapInetStationEntry

 alaTrapInetStationReplay

 alaTrapInetStationNextSeq

show snmp trap filter

Displays the current SNMP trap filter status.

show snmp trap filter

Syntax Definitions

N/A

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

To display a list of traps and their ID numbers, use the [show snmp trap config](#) command.

Examples

```
-> show snmp trap filter
ipAddress                               trapId list
-----+-----
172.21.160.32                            1 3 4
172.21.160.12                            no filter
0300:0000:0000:0000:0211:d8ff:fe47:470b 4 5 6
0300:0000:0000:0000:0211:d8ff:fe47:470c no filter
```

output definitions

IPAddress	IP address of the SNMP management station that recorded the traps.
TrapId List	Identification number for the traps being filtered.

Release History

Release 6.6.1; command was introduced.

Related Commands

snmp trap filter	Enables or disables SNMP trap filtering.
show snmp trap config	Displays the SNMP trap information, including trap ID numbers, trap names, command families, and absorption rate.

MIB Objects

```
trapFilterTable
  trapFilterEntry
```

```
alaTrapInetFilterTable  
  alaTrapInetFilterStatus
```

show snmp authentication trap

Displays the current authentication failure trap forwarding status (that is, enable or disable).

show snmp authentication trap

Syntax Definitions

N/A

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

N/A

Examples

```
-> show snmp authentication trap  
snmp authentication trap = disable
```

Release History

Release 6.6.1; command was introduced.

Related Commands

[snmp authentication trap](#) Enables or disables SNMP authentication failure trap forwarding.

MIB Objects

sessionAuthenticationTrap

show snmp trap config

Displays SNMP trap information. Information includes trap ID numbers, trap names, command families, and absorption rate. This command also displays the Enabled/Disabled status of SNMP absorption and the Traps to WebView service.

show snmp trap config

Syntax Definitions

N/A

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

N/A

Examples

```
-> show snmp trap config
Absorption service : enabled
Traps to WebView : enabled
```

Id	trapName	family	absorption
0	coldStart	chassis	15 seconds
1	warmStart	chassis	15 seconds
2	linkDown	interface	15 seconds
3	linkUp	interface	15 seconds
4	authenticationFailure	snmp	15 seconds
5	entConfigChange	module	15 seconds
30	slPesudoCAMStatusTrap	bridge	15 seconds
34	ifMauJabberTrap	interface	15 seconds
35	sessionAuthenticationTrap	session	15 seconds

output definitions

Id	Identification number for the trap.
Trap Name	Name of the trap.
Family	Family to which the trap belongs.
Absorption	Time needed for the trap to process.

Release History

Release 6.6.1; command was introduced.

Related Commands

[show snmp mib family](#)

Displays SNMP MIB information.

[snmp trap absorption](#)

Enables or disables the trap absorption function.

[snmp trap to webview](#)

Enables or disables the forwarding of SNMP traps to WebView.

MIB Objects

trapConfigTable

 trapConfigEntry

openflow back-off-max

Configures the maximum amount of time to wait between Controller connection attempts.

openflow back-off-max *seconds*

Syntax Definitions

seconds The back-off-max value, in seconds. The valid range is from 1 - 60.

Defaults

parameter	default
<i>seconds</i>	60

Platforms Supported

OmniSwitch 6250, 6450

Usage Guidelines

N/A

Examples

```
-> openflow back-off-max 32
-> openflow back-off-max 60
```

Release History

Release 6.6.5; command introduced

Related Commands

[show openflow](#) Displays global OpenFlow configuration parameters.

MIB Objects

alaOpenflowGlobalBackoffMax

openflow logical-switch

Configures an OpenFlow Logical Switch. An OpenFlow Logical Switch consists of a portion of the switch's resources that are managed by an OpenFlow Controller (or set of Controllers) via the OpenFlow Agent.

openflow logical-switch *name* [**admin-state** {**enable** | **disable**}] [**mode** {**normal** | **api**}] [**version** {**1.0** | **1.3.1**}+] [**vlan** *vlan_id*]

no openflow logical-switch <*name*>

Syntax Definitions

<i>name</i>	The Logical Switch name (up to 32 characters).
admin-state enable	Enables the Logical Switch.
admin-state disable	Disables the Logical Switch.
normal	Configures the Logical Switch to run in Normal Mode.
api	Configures the Logical Switch to run in Hybrid (API) Mode. Only one (1) Logical Switch can be configured in Hybrid Mode.
1.0	Configures the Logical Switch to run OpenFlow Version 1.0.
1.3.1	Configures the Logical Switch to run OpenFlow Version 1.3.1.
<i>vlan_id</i>	The Default VLAN for all ports assigned to the Logical Switch. Traffic on this VLAN on these ports will not carry an 802.1q tag. Traffic on all other VLANs on these ports will carry an 802.1q tag. The valid range is 2 - 4093.

Defaults

parameter	default
enable disable	enable
normal api	normal
1.0 1.3.1	1.0 1.3.1

Platforms Supported

OmniSwitch 6250, 6450

Usage Guidelines

- Up to three (3) OpenFlow Logical Switches can be configured on an OmniSwitch.
- Use the no form of the command to delete an OpenFlow Logical Switch and all Controller/port configurations for that Logical Switch.
- When a Logical Switch is disabled, all Controllers for that Logical Switch are operationally disabled, and flows added by those Controllers are removed.

- In Normal Mode, the switch operates as per the OpenFlow standards. In Hybrid mode, OpenFlow operates as an interface through which the Controller may add over-ride policies to the switch much like QoS. In Hybrid mode, no traffic is forwarded to the Controller(s) and AOS operates normally.
- OpenFlow versions 1.0 and 1.3.1 are both enabled by default. At least one version must be enabled.
- “vlan” is not valid if the configured mode for the Logical Switch is API. An API Logical Switch implicitly operates on all ports, link aggregates, and VLANs not assigned to other OpenFlow Logical Switches.

Examples

```
-> openflow logical-switch vswitch1
-> openflow logical-switch vswitch1 admin-state enable
-> openflow logical-switch vswitch1 mode normal version 1.0 vlan 5
-> no openflow logical-switch vswitch1
```

Release History

Release 6.6.5; command introduced

Related Commands

show openflow logical-switch Displays information about all of the configured OpenFlow Logical Switches.

MIB Objects

```
alaOpenflowLogicalSwitchTable
  alaOpenflowLogicalSwitch
  alaOpenflowLogicalSwitchAdminState
  alaOpenflowLogicalSwitchMode
  alaOpenflowLogicalSwitchVersions
  alaOpenflowLogicalSwitchVlan
```

openflow logical-switch controller

Configures a Controller for an OpenFlow Logical Switch. You can configure up to three (3) Controllers per Logical Switch.

openflow logical-switch *name* **controller** *ip_address* [:*port*] **admin-state** {**enable** | **disable**}

no openflow logical-switch *name* **controller** *ip_address* [:*port*]

Syntax Definitions

<i>name</i>	The Logical Switch name (up to 32 characters).
<i>ip_address</i>	The IP address of Controller.
<i>port</i>	The Controller IP Port (1 - 65535).
enable	Enables the connection to the Controller.
disable	Disables the connection to the Controller.

Defaults

parameter	default
<i>port</i>	6633
enable disable	enable

Platforms Supported

OmniSwitch 6250, 6450

Usage Guidelines

- Currently, only IPv4 addresses are supported.
- If a Logical Switch cannot connect to any of its Controllers, it runs in “Fail Secure Mode”. All flow aging, etc. continues unaffected while the Controllers are disconnected.

Examples

```
-> openflow logical-switch vswitch1 controller 1.2.3.4
-> openflow logical-switch vswitch1 controller 1.2.3.4:6634 admin-state enable
-> no openflow logical-switch vswitch1 controller 1.2.3.4
```

Release History

Release 6.6.5; command introduced.

Related Commands

show openflow logical-switch Displays information about all of the configured OpenFlow Logical Switches.

MIB Objects

```
alaOpenflowControllerTable
  alaOpenflowControllerLogicalSwitch
  alaOpenflowControllerIpType
  alaOpenflowControllerIp
  alaOpenflowControllerPort
  alaOpenflowControllerAdminState
```

openflow logical-switch interfaces

Configures a range of interfaces to/from a Logical Switch.

openflow logical-switch *name* **interfaces** {**port** *slot/port1[-port2]* | **linkagg** *agg_id[-agg_id2]*}

no openflow logical-switch *name* **interfaces** {**port** *slot/port1[-port2]* | **linkagg** *agg_id[-agg_id2]*}

Syntax Definitions

<i>name</i>	The Logical Switch name (up to 32 characters).
<i>slot/port[-port2]</i>	The slot and port number. Use a hyphen to specify a range of ports (1/1-8).
<i>agg_id[-agg_id2]</i>	The link aggregate ID number. Use a hyphen to specify a range of link aggregate IDs (10-15).

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6450

Usage Guidelines

N/A

Examples

```
-> openflow logical-switch vswitch1 interfaces port 1/1
-> no openflow logical-switch vswitch1 interfaces port 1/1
-> openflow logical-switch vswitch2 interfaces linkagg 5
-> no openflow logical-switch vswitch2 interfaces linkagg 5
-> openflow logical-switch vswitch1 interfaces port 1/1-8
-> no openflow logical-switch vswitch1 interfaces port 1/1-8
```

Release History

Release 6.6.5; command introduced

Related Commands

show openflow logical-switch Displays information about all of the configured Logical Switches.

MIB Objects

```
alaOpenflowInterfaceTable
  alaOpenflowInterfaceLogicalSwitch
  alaOpenflowInterface
```

show openflow

Displays global OpenFlow configuration parameters.

show openflow

Syntax Definitions

N/A

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6450

Usage Guidelines

N/A

Examples

```
-> show openflow
Back-off Max      : 60,
Idle Probe Timeout : 15
```

output definitions

Back-off Max	The configured maximum back off time, in seconds, for Controller connection attempts (Range = 1 - 60, Default = 60).
Idle Probe Timeout	The configured idle probe timeout value, in seconds (Range = 1– 60, Default = 15).

Release History

Release 6.6.5; command introduced

Related Commands

- openflow back-off-max** Configures the maximum amount of time allowed for Controller connection attempts.
- openflow idle-probe-timeout** Configures the idle probe timeout value.

MIB Objects

```
alaOpenflowGlobalBackoffMax
alaOpenflowGlobalIdleProbeTimeout
```

show openflow logical-switch

Displays information about configured OpenFlow Logical Switches.

show openflow logical-switch [*name* | **controllers** | **interfaces**]

Syntax Definitions

name The Logical Switch name (up to 32 characters).
controllers The controllers assigned to this logical switch.
interfaces The interfaces assigned to this logical switch.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6450

Usage Guidelines

Enter a Logical Switch name to display only information about a specific Logical Switch.

Examples

```
-> show openflow logical-switch
```

Logical Switch	Admin State	Mode	Versions	VLAN	Ctrlrs	Intf	Flows
vswitch1	Ena	Norm	1.0	1	1	4	0
vswitch2	Dis	Norm	1.0, 1.3.1	5	3	4	2
vswitch3	Ena	API	1.0, 1.3.1	N/A	1	0	0

output definitions

Logical Switch	The Logical Switch name
Admin State	The Logical Switch administrative state (Enabled/Disabled).
Mode	The Logical Switch operational Mode (Normal/API).
Versions	The OpenFlow versions enabled on the Logical Switch (1.0/1.3.1).
VLAN	The default VLAN for all ports assigned to the Logical Switch. Zero (0) indicates no VLAN configured.
Ctrlrs	The number of Controllers configured for the Logical Switch (up to three (3) Controllers can be configured per Logical Switch).
Intf	The number of interfaces (ports and link aggregations) configured for the Logical Switch.
Flows	The number of flows pushed to the Logical Switch by its Controllers.
Controller	The controller IP address and port.

output definitions

Role	Current role of the controller. Equal, Master, or Slave.
Oper State	Current connection state of the controller (invalid, operDisabled, sendError, init, connecting, backoff, exchangingHello, active, idle, disconnected).

Release History

Release 6.6.5; command introduced

Related Commands

openflow logical-switch	Configures an OpenFlow Logical Switch.
openflow logical-switch controller	Configures a Controller for an OpenFlow Logical Switch. You can configure up to three (3) Controllers per Logical Switch.
openflow logical-switch interfaces	Configures a range of interfaces to/from a Logical Switch.

MIB Objects

```
alaOpenflowLogicalSwitchTable
  alaOpenflowLogicalSwitch
  alaOpenflowLogicalSwitchAdminState
  alaOpenflowLogicalSwitchMode
  alaOpenflowLogicalSwitchVersions
  alaOpenflowLogicalSwitchVlan
  alaOpenflowLogicalSwitchControllerCount
  alaOpenflowLogicalSwitchInterfaceCount
  alaOpenflowLogicalSwitchFlowCount
```

show openflow logical-switch stats

Displays information about statistics for OpenFlow Logical Switches.

show openflow logical-switch *name* {**flowtable** | **flowentry** | **openflowport** | **group**} **stats**

Syntax Definitions

<i>name</i>	The Logical Switch name.
flowtable	Display statistics on the flow tables.
flowentry	Display statistics for individual flows.
openflowport	Display statistics for an individual port.
group	Display statistics for groups.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6450

Usage Guidelines

N/A

Examples

```
-> show openflow logical-switch LS1 flowtable stats
  Table                               Flow Count
-----+-----
Exact Match Table                     45
Wild card Match Table                 32

-> show openflow logical-switch LS1 flowentry stats
  Flow-id           Received Packets  Received bytes  Duration in sec
-----+-----+-----+-----
1                   45                1200            50
2                   32                5000            120

-> show openflow logical-switch LS1 openflow-port stats
  OpenFlow Port           Transmitted Packets  Received Packets  Duration in sec
-----+-----+-----+-----
1/1                      45                1200            50
1/2                      32                5000            120

-> show openflow logical-switch LS1 group stats
  Group-id           Duration in sec
-----+-----
1                   45
2                   32
```

output definitions

Table	Table type match.
Flow Count	The number of flows matched for the table.
Flow-id	The flow identifier.
Received packets/bytes	The number of packets/bytes received from the flow.
Duration in sec	The number of seconds the flow has been active.
OpenFlow Port	The port on which the flow was received.
Transmitted /received packets	The number of packets transmitted by the flow.
Group-id	The group identifier.

Release History

Release 6.6.5; command introduced

Related Commands

openflow logical-switch	Configures an OpenFlow Logical Switch.
openflow logical-switch controller	Configures a Controller for an OpenFlow Logical Switch. You can configure up to three (3) Controllers per Logical Switch.
openflow logical-switch interfaces	Configures a range of interfaces to/from a Logical Switch.

MIB Objects

N/A

11 DNS Commands

A Domain Name System resolver is an internet service that translates host names into IP addresses. Every time you use a host name, a DNS service must resolve the name to an IP address. You can configure up to three domain name servers. If the primary DNS server does not know how to translate a particular host name, it asks the secondary DNS server (if specified). If this fails, it asks the third DNS server (if specified), until the correct IP address is returned (resolved). If all DNS servers have been queried and the name is still not resolved to an IP address, the DNS resolver fails and issue an error message.

MIB information for the DNS commands is as follows:

Filename: AlcatelIND1System.mib
Module: ALCATEL-IND1-SYSTEM.MIB

A summary of the available commands is listed here.

[ip domain-lookup](#)
[ip name-server](#)
[ipv6 name-server](#)
[ip domain-name](#)
[show dns](#)

ip domain-lookup

Enables or disables the DNS resolver.

ip domain-lookup

no ip domain-lookup

Syntax Definitions

N/A

Defaults

By default, the DNS resolver is disabled.

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Use the **no** form of this command to disable the DNS resolver.
- You must use the **ip domain-name** command to set a default domain name for your DNS resolver(s) and the **ip name-server** command to specify up to three DNS servers to query on host lookups.
- The **ip domain-lookup** command enables the DNS resolver.

Examples

```
-> ip domain-lookup  
-> no ip domain-lookup
```

Release History

Release 6.6.1; command was introduced.

Related Commands

ip name-server	Specifies the IP addresses of up to three servers to query on a host lookup.
ipv6 name-server	Specifies the IPv6 addresses of up to three IPv6 DNS servers to query on a host lookup.
ip domain-name	Sets or deletes the default domain name for DNS lookups.
show dns	Displays the current DNS resolver configuration and status.

MIB Objects

```
systemDNS  
  systemDNSEnableDnsResolver
```

ip name-server

Specify the IP addresses of up to three servers to query on a host lookup.

ip name-server *server-address1* [*server-address2* [*server-address3*]]

Syntax Definitions

<i>server-address1</i>	The IP address of the primary DNS server to query for host lookup. This is the only address that is required.
<i>server-address2</i>	The IP address of the secondary DNS server to query for host lookup. This server is queried only if the desired host name or host IP address is not located by the primary DNS server. A second IP address is optional.
<i>server-address3</i>	The IP address of the DNS server with the lower priority. This server is queried only if the desired host name or IP address is not located by the primary and secondary DNS servers. A third IP address is optional.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Configuration of the DNS resolver to resolve any host query requires that you first set the default domain name with the **ip domain-name** command and enable the DNS resolver function with the **ip domain-lookup** command before you specify the IP addresses of the DNS servers by using the **ip name-server** command.
- You can configure up to three IPv4 DNS servers and three IPv6 DNS servers in a switch.

Examples

```
-> ip name-server 189.202.191.14 189.202.191.15 188.255.19.1  
-> ip name-server 10.255.11.66
```

Release History

Release 6.6.1; command was introduced.

Related Commands

ip domain-lookup

Enables or disables the DNS resolver.

ip domain-name

Sets or deletes the default domain name for DNS lookups.

show dns

Displays the current DNS resolver configuration and status.

MIB Objects

systemDNS

systemDNSNsAddr1

systemDNSNsAddr2

systemDNSNsAddr3

ipv6 name-server

Specifies the IPv6 addresses of up to three IPv6 DNS servers to query on a host lookup.

```
ipv6 name-server server-ipv6_address1 [server-ipv6_address2 [server-ipv6_address3]]
```

Syntax Definitions

<i>server-ipv6_address1</i>	The IPv6 address of the primary IPv6 DNS server to query for host lookup. Specifying the primary IPv6 DNS address is mandatory.
<i>server-ipv6_address2</i>	The IPv6 address of the secondary IPv6 DNS server to query for host lookup. This server is queried only if the desired host name is not able to be resolved by the primary IPv6 DNS server. A second IPv6 address is optional.
<i>server-ipv6_address3</i>	The IPv6 address of the IPv6 DNS server with the lower priority. This server is queried only if the desired host name is not able to be resolved by both the primary and secondary IPv6 DNS servers. A third IPv6 address is optional.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Configuration of the DNS resolver to resolve any host query requires that you first set the default domain name with the **ip domain-name** command and enable the DNS resolver function with the **ip domain-lookup** command before you specify the IPv6 addresses of the IPv6 DNS servers by using the **ipv6 name-server** command.
- You cannot use multicast, loopback, link-local and unspecified IPv6 addresses for specifying IPv6 DNS servers.
- You can configure up to three IPv6 DNS servers and three IPv4 DNS servers in a switch.

Examples

```
-> ipv6 name-server fec0::2d0:d3:f3fc
-> ipv6 name-server fe2d::2c f302::3de1:1 f1bc::202:fd40:f3
```

Release History

Release 6.6.1; command was introduced.

Related Commands

ip domain-lookup

Enables or disables the DNS resolver.

ip domain-name

Sets or deletes the default domain name for DNS lookups.

show dns

Displays the current DNS resolver configuration and status.

MIB Objects

systemDNS

systemDNSNsIPv6Addr1

systemDNSNsIPv6Addr2

systemDNSNsIPv6Addr3

ip domain-name

Sets or deletes the default domain name for DNS lookups.

ip domain-name *name*

no ip domain-name

Syntax Definitions

name The default domain name for host lookups.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Use the **no** form of this command to delete the default domain name.
- Use this command to set the default domain name for DNS lookups.

Examples

```
-> ip domain-name company.com  
-> no ip domain-name
```

Release History

Release 6.6.1; command was introduced.

Related Commands

ip domain-lookup	Enables or disables the DNS resolver.
ip name-server	Specifies the IP addresses of up to three servers to query on a host lookup.
ipv6 name-server	Specifies the IPv6 addresses of up to three IPv6 DNS servers to query on a host lookup.
show dns	Displays the current DNS resolver configuration and status.

MIB Objects

systemDNS
 systemDNSDomainName

show dns

Displays the current DNS resolver configuration and status.

show dns

Syntax Definitions

N/A

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

N/A

Examples

```
-> show dns
Resolver is      : enabled
domainName      : company.com
IPv4 nameServer(s): 189.202.191.14
                  : 189.202.191.15
                  : 188.255.19.1
IPv6 nameServer(s): fe2d::2c
                  : f302::3de1:1
                  : f1bc::202:fd40:f3
```

output definitions

Resolver is	Indicates whether the DNS resolver is enabled or disabled.
domainName	Indicates the default domain name assigned to the DNS lookups. This value is set using the ip domain-name command.
IPv4 nameServer(s)	Indicates the IP address(es) of the IPv4 DNS server(s). These addresses are set using the ip name-server command.
IPv6 nameServer(s)	Indicates the IPv6 address(es) of the IPv6 DNS server(s). These addresses are set using the ipv6 name-server command.

Release History

Release 6.6.1; command was introduced.

Related Commands

ip domain-lookup	Enables or disables the DNS resolver.
ip name-server	Specifies the IP addresses of up to three servers to query on a host lookup.
ipv6 name-server	Specify the IPv6 addresses of up to three IPv6 DNS servers to query on a host lookup.
ip domain-name	Sets or deletes the default domain name for DNS lookups.

MIB Objects

```
systemDNS
  systemDNSEnableDnsResolver
  systemDNSDomainName
  systemDNSNsAddr1
  systemDNSNsAddr2
  systemDNSNsAddr3
  systemDNSNsIPv6Addr1
  systemDNSNsIPv6Addr2
  systemDNSNsIPv6Addr3
```

12 Link Aggregation Commands

Link aggregation is a way of combining multiple physical links between two switches into one logical link. The aggregate group operates within Spanning Tree as one virtual port and can provide more bandwidth than a single link. It also provides redundancy. If one physical link in the aggregate group goes down, link integrity is maintained.

There are two types of aggregate groups: static and dynamic. Static aggregate groups are manually configured on the switch with static links. Dynamic groups are set up on the switch but they aggregate links as necessary according to the Link Aggregation Control Protocol (LACP).

The dynamic aggregation software is compatible only with the following IEEE standard:

802.3ad — Aggregation of Multiple Link Segments

MIB information for the link aggregation commands is as follows:

Filename: AlcatelIND1LAG.MIB
Module: ALCATEL-IND1-LAG-MIB

A summary of available commands is listed here:

Static link aggregates	static linkagg size static linkagg name static linkagg admin state static agg agg num
Dynamic link aggregates	lACP linkagg size lACP linkagg name lACP linkagg admin state lACP linkagg actor admin key lACP linkagg actor system priority lACP linkagg actor system id lACP linkagg partner system id lACP linkagg partner system priority lACP linkagg partner admin key lACP agg actor admin key lACP agg actor admin state lACP agg actor system id lACP agg actor system priority lACP agg partner admin state lACP agg partner admin system id lACP agg partner admin key lACP agg partner admin system priority lACP agg actor port priority lACP agg partner admin port lACP agg partner admin port priority
Dual Home Link (DHL) Active-Active	dhl num dhl num linka linkb dhl num admin-state dhl num vlan-map linkb dhl num pre-emption-time dhl num mac-flushing show dhl show dhl num show dhl num link
Static and dynamic	show linkagg show linkagg port

static linkagg size

Creates a static aggregate group between two switches. A static aggregate group contains static links.

static linkagg *agg_num* **size** *size* [**name** *name*] [**admin state** {**enable** | **disable**}]

no static linkagg *agg_num*

Syntax Definitions

<i>agg_num</i>	The number corresponding to the static aggregate group. Can be an unique integer in the range 0–31.
<i>size</i>	The maximum number of links allowed in the aggregate group. Values can be 2, 4, or 8.
<i>name</i>	The name of the static aggregate group. Can be any alphanumeric string up to 255 characters long. Spaces can be given within quotes (for example, “Static Group 1”).
enable	Specifies that the static aggregate group is active and is able to aggregate links.
disable	Specifies that the static aggregate group is inactive and not able to aggregate links.

Defaults

parameter	default
enable disable	enable

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Use the **no** form of this command to remove a static aggregate group from the configuration.
- The maximum number of link aggregate groups allowed on the switch (static and dynamic combined) is 32.
- A maximum of 256 link aggregation ports are supported. The number of link aggregation ports per group determines the maximum number of groups that can be configured. The following table provides some example configurations:

Number of Ports in Group	Maximum Number of Groups
2	128
4	64
8	32

- If the static aggregate has any attached ports, delete them with the **static agg agg num** command before you can delete it.

- Use the **lacp linkagg size** command to create a dynamic aggregation (LACP) group. See [page 12-9](#) for more information about this command.

Examples

```
-> static linkagg 3 size 8
-> static linkagg 4 size 2 admin state disable
-> no static linkagg 3
```

Release History

Release 6.6.1; command introduced.

Related Commands

[show linkagg](#)

Displays information about static and dynamic (LACP) link aggregate groups.

MIB Objects

```
alclnkaggAggTable
  alclnkaggAggNumber
  alclnkaggAggSize
  alclnkaggAggLacpType
  alclnkaggAggName
  alclnkaggAggAdminState
```

static linkagg name

Configures a name for an existing static aggregate group.

static linkagg *agg_num* **name** *name*

static linkagg *agg_num* **no name**

Syntax Definitions

agg_num

The number corresponding to the static aggregate group.

name

The name of the static aggregation group, an alphanumeric string up to 255 characters. Spaces can be given within quotes (for example, "Static Group 1").

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

Use the **no** form of this command to remove a name from a static aggregate.

Examples

```
-> static linkagg 2 name accounting
```

```
-> static linkagg 2 no name
```

Release History

Release 6.6.1; command introduced.

Related Commands

[static linkagg size](#)

Creates a static aggregate group.

[show linkagg](#)

Displays information about static and dynamic (LACP) aggregate groups.

MIB Objects

alclnkaggAggTable

alclnkaggAggNumber

alclnkaggAggName

static linkagg admin state

Configures the administrative state (whether the static aggregate group is active or inactive) of a static aggregate group.

```
static linkagg agg_num admin state {enable | disable}
```

Syntax Definitions

<i>agg_num</i>	The number corresponding to the static aggregate group.
enable	Specifies that the static aggregate group is active and is able to aggregate links.
disable	Specifies that the static aggregate group is inactive and not able to aggregate links.

Defaults

parameter	default
enable disable	enable

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

When the administrative state is set to **disable**, the static aggregate group is disabled.

Examples

```
-> static linkagg 2 admin state disable
```

Release History

Release 6.6.1; command introduced.

Related Commands

static linkagg size	Creates a static aggregate group.
show linkagg	Displays information about static and dynamic (LACP) aggregate groups.

MIB Objects

```
alclnkaggAggTable  
  alclnkaggAggNumber  
  alclnkaggAggAdminState
```

static agg agg num

Configures a slot and port for a static aggregate group.

```
static agg [ethernet | fastethernet | gigaethernet] slot/port agg num agg_num
```

```
static agg no [ethernet | fastethernet | gigaethernet] slot/port
```

Syntax Definitions

ethernet	Documents that the port is 10 Mbps Ethernet.
fastethernet	Documents that the port is 100 Mbps Fast Ethernet.
gigaethernet	Documents that the port is Gigabit Ethernet.
<i>slot</i>	The slot number for this aggregate.
<i>port</i>	The port that the switch initially uses as the Spanning Tree virtual port for this aggregate.
<i>agg_num</i>	The number corresponding to the static aggregate group.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Use the **no** form of this command to remove one or more ports from a static aggregate group.
- Mobile ports cannot be aggregated.
- A port can belong to only one aggregate group.
- Ports in a static aggregate must all be the same speed (for example, all 10 Mbps, all 100 Mbps, all 1 Gigabit, or all 10 Gigabit).
- Ports that belong to the same static aggregate group need not be configured sequentially and can be on any Network Interface (NI) or unit within a stack.
- The **ethernet**, **fastethernet**, and **gigaethernet** keywords do not modify a port configuration. See [“Ethernet Port Commands,”](#) for information on CLI commands to configure Ethernet ports.

Examples

```
-> static agg 2/1 agg num 4  
-> static agg no 2/1
```

Release History

Release 6.6.1; command introduced.

Related Commands

static linkagg size

Creates a static aggregate group.

show linkagg port

Displays information about link aggregation ports.

MIB Objects

alclnkaggAggPortTable

alclnkaggAggPortGlobalPortNumber

alclnkaggAggPortLacpType

alclnkaggAggPortSelectedAggNumber

lacp linkagg size

Creates a dynamic aggregate group that uses the Link Aggregation Control Protocol (LACP) to establish and maintain link aggregation. The **size** parameter is required to create the link aggregate group.

lacp linkagg *agg_num* **size** *size*

[**name** *name*]

[**admin state** {**enable** | **disable**}]

[**actor admin key** *actor_admin_key*]

[**actor system priority** *actor_system_priority*]

[**actor system id** *actor_system_id*]

[**partner system id** *partner_system_id*]

[**partner system priority** *partner_system_priority*]

[**partner admin key** *partner_admin_key*]

no lacp linkagg *agg_num*

Syntax Definitions

<i>agg_num</i>	The number corresponding to the dynamic aggregate group. Can be a unique integer in the range 0–31.
<i>size</i>	The maximum number of links that can belong to the aggregate. Values can be 2, 4, or 8.
<i>name</i>	The name of the dynamic aggregate group. Can be any alphanumeric string up to 255 characters long. Spaces must be contained within quotes (for example, “Dynamic Group 1”).
enable	Specifies that the dynamic aggregate group is active and is able to aggregate links.
disable	Specifies that the dynamic aggregate group is inactive and not able to aggregate links.
<i>actor_admin_key</i>	The administrative key value associated with the dynamic aggregate group. Possible values are 0–65535.
<i>actor_system_priority</i>	The priority of the dynamic aggregate group. Possible values are 0–65535.
<i>actor_system_id</i>	The MAC address of the dynamic aggregate group on the switch.
<i>partner_system_id</i>	The MAC address of the remote system to which the aggregate group of the switch is attached.
<i>partner_system_priority</i>	The priority of the remote system to which the aggregate group is attached. Possible values are 0–65535.
<i>partner_admin_key</i>	The administrative key for the remote partner of the aggregate group. Possible values are 0–65535.

Defaults

parameter	default
enable disable	enable

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Use the **no** form of this command to remove a dynamic aggregate group from the configuration.
- The maximum number of link aggregate groups allowed on the switch (static and dynamic combined) is 32.
- A maximum of 256 link aggregation ports are supported. The number of link aggregation ports per group determines the maximum number of groups that can be configured. The following table provides some example configurations:

Number of Ports in Group	Maximum Number of Groups
2	128
4	64
8	32

- If the dynamic group has any attached ports, disable the group with the **lACP linkagg admin state** command before you can delete it.
- Optional parameters for the dynamic aggregate group can be configured when the aggregate is created or the dynamic aggregate group can be modified later.
- Use the **static linkagg size** command to create static aggregate groups. See [page 12-3](#) for more information about this command.

Examples

```
-> lACP linkagg 2 size 4
-> lACP linkagg 3 size 2 admin state disable actor system priority 65535
```

Release History

Release 6.6.1; command introduced.

Related Commands

show linkagg Displays information about static and dynamic (LACP) aggregate groups.

MIB Objects

alclnkaggAggTable

```
alclnkaggAggNumber  
alclnkaggAggSize  
alclnkaggAggLACPType  
alclnkaggAggName  
alclnkaggAggAdminState  
alclnkaggAggActorAdminKey  
alclnkaggAggActorSystemPriority  
alclnkaggAggActorSystemID  
alclnkaggAggPartnerSystemID  
alclnkaggAggPartnerSystemPriority  
alclnkaggAggPartnerAdminKey
```

lACP linkagg name

Configures a name for a dynamic aggregate group.

lACP linkagg *agg_num* **name** *name*

lACP linkagg *agg_num* **no name**

Syntax Definitions

agg_num

The number corresponding to the dynamic aggregate group.

name

The name of the dynamic aggregate group. Can be any alphanumeric string up to 255 characters long. Spaces must be contained within quotes (for example, "Dynamic Group 1").

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

Use the **no** form of this command to remove a name from a dynamic aggregate group.

Examples

```
-> lACP linkagg 2 name finance
```

```
-> lACP linkagg 2 no name
```

Release History

Release 6.6.1; command introduced.

Related Commands

[lACP linkagg size](#)

Creates a dynamic aggregate group.

[show linkagg](#)

Displays information about static and dynamic (LACP) aggregate groups.

MIB Objects

alclnkaggAggTable

alclnkaggAggNumber

alclnkaggAggName

lACP linkagg admin state

Configures the administrative state of the dynamic aggregate (whether it is up and active, or down and inactive) group.

lACP linkagg *agg_num* **admin state** {**enable** | **disable**}

Syntax Definitions

<i>agg_num</i>	The number corresponding to the dynamic aggregate group.
enable	Specifies that the dynamic aggregate group is active and is able to aggregate links.
disable	Specifies that the operation of a dynamic aggregate group cannot be performed.

Defaults

parameter	default
enable disable	enable

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

When the administrative state is set to **disable**, the operation of a dynamic aggregation (LACP) group cannot be performed.

Examples

```
-> lACP linkagg 2 admin state disable
```

Release History

Release 6.6.1; command introduced.

Related Commands

lACP linkagg size	Creates a dynamic aggregate group.
show linkagg	Displays information about static and dynamic (LACP) aggregate groups.
show linkagg port	Displays information about static and dynamic (LACP) aggregate groups.

MIB Objects

```
alclnkaggAggTable  
  alclnkaggAggNumber  
  alclnkaggAggAdminState
```

lacp linkagg actor admin key

Configures the administrative key associated with a dynamic aggregate group.

```
lacp linkagg agg_num actor admin key actor_admin_key
```

```
lacp linkagg agg_num no actor admin key
```

Syntax Definitions

agg_num

The number corresponding to the dynamic aggregate group.

actor_admin_key

The administrative key value associated with the dynamic aggregate group. The valid range is 1–65535.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

Use the **no** form of this command to remove an actor admin key from a dynamic aggregate group.

Examples

```
-> lacp linkagg 3 actor admin key 2  
-> lacp linkagg 3 no actor admin key
```

Release History

Release 6.6.1; command introduced.

Related Commands

[lacp linkagg size](#)

Creates a dynamic aggregate group.

[show linkagg](#)

Displays information about static and dynamic (LACP) aggregate groups.

MIB Objects

alclnkaggAggTable

alclnkaggAggNumber

alclnkaggAggActorAdminKey

lACP linkagg actor system priority

Configures the priority of the dynamic aggregate group.

```
lACP linkagg agg_num actor system priority actor_system_priority
```

```
lACP linkagg agg_num no actor system priority
```

Syntax Definitions

<i>agg_num</i>	The number corresponding to the link aggregate group.
<i>actor_system_priority</i>	The priority of the dynamic aggregate group of the switch in relation to other aggregate groups. Possible values are 0–65535.

Defaults

parameter	default
<i>actor_system_priority</i>	0

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Use the **no** form of this command to return the value to its default.
- Ports with the same system priority value can join the same dynamic aggregate group.

Examples

```
-> lACP linkagg 3 actor system priority 100  
-> lACP linkagg 3 no actor system priority
```

Release History

Release 6.6.1; command introduced.

Related Commands

lACP linkagg size	Creates a dynamic aggregate group.
show linkagg	Displays information about static and dynamic (LACP) aggregate groups.

MIB Objects

```
alclnkaggAggTable  
  alclnkaggAggNumber  
  alclnkaggAggActorSystemPriority
```

lacp linkagg actor system id

Configures the MAC address of a dynamic aggregate group on the switch.

lacp linkagg *agg_num* **actor system id** *actor_system_id*

lacp linkagg *agg_num* **no actor system id**

Syntax Definitions

agg_num

The number corresponding to the dynamic aggregate group.

actor_system_id

The MAC address of the dynamic aggregate group on the switch in the hexadecimal format *xx:xx:xx:xx:xx:xx*.

Defaults

parameter	default
<i>actor_system_id</i>	0

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

Use the **no** form of this command to remove an actor system ID from a dynamic aggregate group.

Examples

```
-> lacp linkagg 3 actor system id 00:20:da:81:d5:b0
-> lacp linkagg 3 no actor system id
```

Release History

Release 6.6.1; command introduced.

Related Commands

[lacp linkagg size](#)

Creates a dynamic aggregate group.

[show linkagg](#)

Displays information about static and dynamic (LACP) aggregate groups.

MIB Objects

alclnkaggAggTable
 alclnkaggAggNumber
 alclnkaggAggActorSystemID

lACP linkagg partner system id

Configures the MAC address of the remote system's dynamic aggregate group to which the dynamic aggregate group of the local switch is attached.

lACP linkagg *agg_num* **partner system id** *partner_system_id*

lACP linkagg *agg_num* **no partner system id**

Syntax Definitions

<i>agg_num</i>	The number corresponding to the dynamic aggregate group on the switch.
<i>partner_system_id</i>	The MAC address of the remote switch's dynamic aggregate group in the hexadecimal format <i>xx:xx:xx:xx:xx:xx</i> .

Defaults

parameter	default
<i>partner_system_id</i>	0

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Use the **no** form of this command to remove a partner system ID from a dynamic aggregate group.
- The *partner_system_id* and the *partner_system_priority* specifies the priority of remote system.

Examples

```
-> lACP linkagg 2 partner system id 00:20:da4:32:81  
-> lACP linkagg 2 no partner system id
```

Release History

Release 6.6.1; command introduced.

Related Commands

lacp linkagg size

Creates a dynamic aggregate group.

show linkagg

Displays information about static and dynamic (LACP) aggregate groups.

MIB Objects

alclnkaggAggTable

 alclnkaggAggNumber

 alclnkaggAggPartnerSystemID

lACP linkagg partner system priority

Configures the priority of the remote switch's dynamic aggregate group to which the local switch's aggregate group is attached.

lACP linkagg *agg_num* **partner system priority** *partner_system_priority*

lACP linkagg *agg_num* **no partner system priority**

Syntax Definitions

<i>agg_num</i>	The number corresponding to the dynamic aggregate group.
<i>partner_system_priority</i>	The priority of the remote switch's dynamic aggregate group to which the local switch's aggregate group is attached. Possible values are 0–65535.

Defaults

parameter	default
<i>partner_system_priority</i>	0

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

Use the **no** form of this command to return to the priority value to its default.

Examples

```
-> lACP linkagg 3 partner system priority 65535
-> lACP linkagg 3 no partner system priority
```

Release History

Release 6.6.1; command introduced.

Related Commands

lACP linkagg size	Creates a dynamic aggregate group.
show linkagg	Displays information about static and dynamic (LACP) aggregate groups.

MIB Objects

```
alclnkaggAggTable
  alclnkaggAggNumber
  alclnkaggAggPartnerSystemPriority
```

lacp linkagg partner admin key

Configures the administrative key for the dynamic aggregation group's remote partner.

```
lacp linkagg agg_num partner admin key partner_admin_key
```

```
lacp linkagg agg_num no partner admin key
```

Syntax Definitions

agg_num

The number corresponding to the dynamic aggregate group.

partner_admin_key

The administrative key for the dynamic aggregation group's remote partner. Possible values are 0–65535.

Defaults

parameter	default
<i>partner_admin_key</i>	0

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

Use the **no** form of this command to remove a partner admin key from a dynamic aggregate group.

Examples

```
-> lacp linkagg 3 partner admin key 1  
-> lacp linkagg 3 no partner admin key
```

Release History

Release 6.6.1; command introduced.

Related Commands

[lacp linkagg size](#)

Creates a dynamic aggregate group.

[show linkagg](#)

Displays information about static and dynamic (LACP) aggregate groups.

MIB Objects

alclnkaggAggTable

alclnkaggAggNumber

alclnkaggAggPartnerAdminKey

lACP agg actor admin key

Configures an actor administrative key for a port, which allows the port to join a dynamic aggregate group.

```
lACP agg [ethernet | fastethernet | gigaehternet] slot/port actor admin key actor_admin_key
  [actor admin state {[no] active} [[no] timeout] [[no] aggregate] [[no] synchronize] [[no] collect]
  [[no] distribute] [[no] default] [[no] expire] | none}]
  [actor system id actor_system_id]
  [actor system priority actor_system_priority]
  [partner admin system id partner_admin_system_id]
  [partner admin key partner_admin_key]
  [partner admin system priority partner_admin_system_priority]
  [partner admin state {[no] active} [[no] timeout] [[no] aggregate] [[no] synchronize] [[no] collect]
  [[no] distribute] [[no] default] [[no] expire] | none}]
  [actor port priority actor_port_priority]
  [partner admin port partner_admin_port]
  [partner admin port priority partner_admin_port_priority]
```

```
lACP agg no [ethernet | fastethernet | gigaehternet] slot/port
```

Syntax Definitions

ethernet	Documents that the port is 10 Mbps Ethernet.
fastethernet	Documents that the port is 100 Mbps Fast Ethernet.
gigaehternet	Documents that the port is Gigabit Ethernet.
<i>slot</i>	The slot number for this aggregate.
<i>port</i>	The port that the switch initially uses as the Spanning Tree virtual port for this aggregate.
<i>actor_admin_key</i>	The administrative key associated with this dynamic aggregate group. Possible values are 0–65535.
actor admin state	See the lACP agg actor admin state command on page 12-25 .
<i>actor_system_id</i>	The MAC address of this dynamic aggregate group on the switch.
<i>actor_system_priority</i>	The priority of the dynamic aggregate group. Possible values are 0–255.
<i>partner_admin_system_id</i>	The MAC address of the remote switch's dynamic aggregate group.
<i>partner_admin_key</i>	The administrative key for the dynamic aggregation group's remote partner. Possible values are 0–65535.
<i>partner_admin_system_priority</i>	The priority of the remote system to which the dynamic aggregation group is attached. Possible values are 0–255.
partner admin state	See the lACP agg partner admin state command on page 12-31 .
<i>actor_port_priority</i>	The priority of the actor port. Possible values are 0–255.
<i>partner_admin_port</i>	The administrative state of the partner port. Possible values are 0–65535.
<i>partner_admin_port_priority</i>	The priority of the partner port. Possible values are 0–255.

Defaults

parameter	default
[active] [timeout]....	active, timeout, aggregate

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Use the **no** form of this command to remove a slot and port from a dynamic aggregate group.
- Mobile ports cannot be aggregated.
- A port can belong to only one aggregate group.
- Ports in a dynamic aggregate must all be in the same speed (for example, all 100 Mbps, 1 Gigabit, or all 10 Gigabit).
- Ports that belong to the same dynamic aggregate group need not be configured sequentially and can be on any Network Interface (NI).
- The **ethernet**, **fastethernet**, and **gigaethernet** keywords do not modify port configuration. See “[Ethernet Port Commands](#),” for information on CLI commands to configure Ethernet ports.

Examples

```
-> lacp agg 3/1 actor admin key 0
-> lacp agg no 3/1
```

Release History

Release 6.6.1; command introduced.

Related Commands

- | | |
|-----------------------------------|--|
| lacp linkagg size | Creates a dynamic aggregate group. |
| show linkagg port | Displays information about ports associated with a particular aggregate group or all aggregates. |

MIB Objects

```
alclnkaggAggPortTable
  alclnkaggAggPortGlobalPortNumber
  alclnkaggAggActorAdminKey
  alclnkaggAggPortLacpType
  alclnkaggAggPortActorAdminState
  alclnkaggAggPortActorSystemID
  alclnkaggAggPortActorSystemPriority
  alclnkaggAggPortPartnerAdminSystemID
  alclnkaggAggPortPartnerAdminKey
  alclnkaggAggPortPartnerAdminSystemPriority
  alclnkaggAggPortPartnerAdminState
```

```
alclnkaggAggPortActorPortPriority  
alclnkaggAggPortPartnerAdminPort  
alclnkaggAggPortPartnerAdminPortPriority
```

lacp agg actor admin state

Configures the system administrative state of the slot and port for the dynamic aggregate group on the local switch. The state values correspond to bits in the actor state octet in the LACPDU frame.

lacp agg [ethernet | fastethernet | gigaehternet] *slot/port* **actor admin state** {[active] [timeout] [aggregate] [synchronize] [collect] [distribute] [default] [expire] | none}

lacp agg [ethernet | fastethernet | gigaehternet] *slot/port*
actor admin state {[no] active} {[no] timeout} {[no] aggregate} {[no] synchronize}
 {[no] collect} {[no] distribute} {[no] default} {[no] expire} | none}

Syntax Definitions

ethernet	Documents that the port is 10 Mbps Ethernet.
fastethernet	Documents that the port is 100 Mbps Fast Ethernet.
gigaehternet	Documents that the port is Gigabit Ethernet.
<i>slot</i>	The slot number for this aggregate.
<i>port</i>	The port that the switch initially uses as the Spanning Tree virtual port for this aggregate.
active	Specifies that bit 0 in the actor state octet is enabled. When this bit is set, the dynamic aggregate group is able to exchange LACPDU frames. By default, this value is set.
timeout	Specifies that bit 1 in the actor state octet is enabled. When this bit is set, a short timeout is used for LACPDU frames. When this bit is disabled, a long timeout is used for LACPDU frames. By default, this value is set.
aggregate	Specifies that bit 2 in the actor state octet is enabled. When this bit is set, the system considers this port to be a potential candidate for aggregation. If this bit is not enabled, the system considers the port to be individual (it can only operate as a single link). By default, this value is set.
synchronize	Specifying that this keyword has no effect because the system always determines its value. When this bit (bit 3) is set by the system, the port is allocated to the correct dynamic aggregation group. If this bit is not set by the system, the port is not allocated to the correct dynamic aggregation group.
collect	Specifying that this keyword has no effect because the system always determines its value. When this bit (bit 4) is set by the system, incoming LACPDU frames are collected from the individual ports that make up the dynamic aggregate group.
distribute	Specifying that this keyword has no effect because the system always determines its value. When this bit (bit 5) is set by the system, distributing outgoing frames on the port is disabled.
default	Specifying that this keyword has no effect because the system always determines its value. When this bit (bit 6) is set by the system, it indicates that the actor is using the defaulted partner information administratively configured for the partner.

expire	Specifying that this keyword has no effect because the system always determines its value. When this bit (bit 7) is set by the system, the actor cannot receive LACPDU frames.
none	Resets all administrative states to their default configurations.

Defaults

parameter	default
[active] [timeout]	active, timeout, aggregate

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Use the **no** form of this command to restore the LACPDU bit settings to their default configuration.
- When the actor admin state is set to **none**, all bit values are restored to their default configurations.
- The **ethernet**, **fastethernet**, and **gigaethernet** keywords do not modify port configuration. See “[Ethernet Port Commands](#),” for information on CLI commands to configure Ethernet ports.

Examples

```
-> lacp agg 4/2 actor admin state synchronize no collect distribute
-> lacp agg 4/2 actor admin state no synchronize collect
-> lacp agg 4/2 actor admin state none
```

Release History

Release 6.6.1; command introduced.

Related Commands

lacp linkagg size	Creates a dynamic aggregate group.
show linkagg port	Displays information about ports associated with a particular aggregate group or all aggregate groups.

MIB Objects

```
alclnkaggAggPortTable
  alclnkaggAggPortGlobalPortNumber
  alclnkaggAggPortActorAdminState
```

lacp agg actor system id

Configures the system ID (MAC address) for the local port associated with a dynamic aggregate group.

lacp agg [ethernet | fastethernet | gigaethernet] *slot/port* **actor system id** *actor_system_id*

lacp agg [ethernet | fastethernet | gigaethernet] *slot/port* **no actor system id**

Syntax Definitions

ethernet	Documents that the port is 10 Mbps Ethernet.
fastethernet	Documents that the port is 100 Mbps Fast Ethernet.
gigaethernet	Documents that the port is Gigabit Ethernet.
<i>slot</i>	The slot number for this aggregate.
<i>port</i>	The port that the switch initially uses as the Spanning Tree virtual port for this aggregate.
<i>actor_system_id</i>	The MAC address of the dynamic aggregate group on the switch in the hexadecimal format <i>xx:xx:xx:xx:xx:xx</i> .

Defaults

parameter	default
<i>actor_system_id</i>	0

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Use the **no** form of this command to remove an actor system ID from a slot and port associated with a dynamic aggregate group.
- The **ethernet**, **fastethernet**, and **gigaethernet** keywords do not modify a port configuration. See [“Ethernet Port Commands,”](#) for information on CLI commands to configure Ethernet ports.

Examples

```
-> lacp 3/1 actor system id 00:20:da:06:ba:d3
-> lacp 3/1 no actor system id
```

Release History

Release 6.6.1; command introduced.

Related Commands

lACP linkagg size

Creates a dynamic aggregate group.

show linkagg port

Displays information about ports associated with a particular aggregate group or all aggregate groups.

MIB Objects

alclnkaggAggPortTable

alclnkaggAggPortGlobalPortNumber

alclnkaggAggPortActorSystemID

lacp agg actor system priority

Configures the system priority of the port on the switch that belongs to the dynamic aggregate group.

lacp agg [**ethernet** | **fastethernet** | **gigaethernet**] *slot/port* **actor system priority** *actor_system_priority*

lacp agg [**ethernet** | **fastethernet** | **gigaethernet**] *slot/port* **no actor system priority**

Syntax Definitions

ethernet	Documents that the port is 10 Mbps Ethernet.
fastethernet	Documents that the port is 100 Mbps Fast Ethernet.
gigaethernet	Documents that the port is Gigabit Ethernet.
<i>slot</i>	The slot number for this aggregate.
<i>port</i>	The port that the switch initially uses as the Spanning Tree virtual port for this aggregate.
<i>actor_system_priority</i>	The priority of the dynamic aggregate group. Possible values are 0–255.

Defaults

parameter	default
<i>actor_system_priority</i>	0

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Use the **no** form of this command to remove an actor system priority value from a slot and port associated with a dynamic aggregate group.
- The **ethernet**, **fastethernet**, and **gigaethernet** keywords do not modify a port configuration. See [“Ethernet Port Commands,”](#) for information on CLI commands to configure Ethernet ports.

Examples

```
-> lacp agg ethernet 3/2 actor system priority 65
-> lacp agg ethernet 3/2 no actor system priority
```

Release History

Release 6.6.1; command introduced.

Related Commands

[lACP linkagg size](#)

Creates a dynamic aggregate group.

[show linkagg port](#)

Displays information about ports associated with a particular aggregate group or all aggregates.

MIB Objects

AlcLnkAggAggPortTable

alclnkaggAggPortGlobalPortNumber

alclnkaggAggPortActorSystemPriority

lacc agg partner admin state

Configures the system administrative state of the slot and port for the dynamic aggregate group on the remote switch. The state values correspond to bits in the actor state octet in the LACPDU frame.

lacc agg [ethernet | fastethernet | gigaehternet] *slot/port* **partner admin state**
 {[active] [timeout] [aggregate] [synchronize] [collect] [distribute] [default] [expire] | none}

lacc agg [ethernet | fastethernet | gigaehternet] *slot/port* **partner admin state**
 {[no active] [[no] timeout] [[no] aggregate] [[no] synchronize] [[no] collect] [[no] distribute]
 [[no] default] [[no] expire] | none}

Syntax Definitions

ethernet	Documents that the port is 10 Mbps Ethernet.
fastethernet	Documents that the port is 100 Mbps Fast Ethernet.
gigaehternet	Documents that the port is Gigabit Ethernet.
<i>slot</i>	The slot number for this aggregate.
<i>port</i>	The port that the switch initially uses as the Spanning Tree virtual port for this aggregate.
active	Specifies that bit 0 in the partner state octet is enabled. When this bit is set, the dynamic aggregate group is able to exchange LACPDU frames. By default, this value is set.
timeout	Specifies that bit 1 in the partner state octet is enabled. When this bit is set, a short timeout is used for LACPDU frames. When this bit is disabled, a long timeout is used for LACPDU frames. By default, this value is set.
aggregate	Specifies that bit 2 in the partner state octet is enabled. When this bit is set, the system considers this port to be a potential candidate for aggregation. If this bit is not enabled, the system considers the port to be individual (it can only operate as a single link). By default, this value is set.
synchronize	Specifies that bit 3 in the partner state octet is enabled. When this bit is set, the port is allocated to the correct dynamic aggregation group. If this bit is not enabled, the port is not allocated to the correct aggregation group. By default, this value is disabled.
collect	Specifying this keyword has no effect because the system always determines its value. When this bit (bit 4) is set by the system, incoming LACPDU frames are collected from the individual ports that make up the dynamic aggregate group.
distribute	Specifying that this keyword has no effect because the system always determines its value. When this bit (bit 5) is set by the system, distributing outgoing frames on the port is disabled.
default	Specifying that this keyword has no effect because the system always determines its value. When this bit (bit 6) is set by the system, it indicates that the partner is using the defaulted actor information administratively configured for the actor.

expire	Specifying that this keyword has no effect because the system always determines its value. When this bit (bit 7) is set by the system, the partner cannot receive LACPDU frames.
none	Resets all administrative states to their default configurations.

Defaults

parameter	default
[active] [timeout]	active, timeout, aggregate

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Use the **no** form of this command to restore the LACPDU bit settings to their default configuration.
- When the partner admin state is set to **none**, all bit values are restored to their default configurations.
- The **ethernet**, **fastethernet**, and **gigaethernet** keywords do not modify a port configuration. See [“Ethernet Port Commands,”](#) for information on CLI commands to configure Ethernet ports.

Examples

```
-> lACP agg 4/2 partner admin state synchronize collect distribute
-> lACP agg 4/2 partner admin state no synchronize no collect
```

Release History

Release 6.6.1; command introduced.

Related Commands

lACP linkagg size	Creates a dynamic aggregate group.
show linkagg port	Displays information about ports associated with a particular aggregate group or all aggregate groups.

MIB Objects

```
alclnkaggAggPortTable
  alclnkaggAggPortGlobalPortNumber
  alclnkaggAggPortPartnerAdminState
```


lACP agg partner admin system id

Configures the partner administrative system ID for a dynamic aggregate group port.

```
lACP agg [ethernet | fastethernet | gigaehternet] slot/port partner admin system id partner_admin_system_id
```

```
lACP agg [ethernet | fastethernet | gigaehternet] slot/port no partner admin system id
```

Syntax Definitions

ethernet	Documents that the port is 10 Mbps Ethernet.
fastethernet	Documents that the port is 100 Mbps Fast Ethernet.
gigaehternet	Documents that the port is Gigabit Ethernet.
<i>slot</i>	The slot number for this aggregate.
<i>port</i>	The port that the switch initially uses as the Spanning Tree virtual port for this aggregate.
<i>partner_admin_system_id</i>	The MAC address of the remote dynamic aggregate group in the hexadecimal format <i>xx:xx:xx:xx:xx:xx</i> .

Defaults

parameter	default
<i>partner_admin_system_id</i>	0

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Use the **no** form of this command to remove a partner administrative system ID from a slot and port associated with a dynamic aggregate group.
- The **ethernet**, **fastethernet**, and **gigaehternet** keywords do not modify a port configuration. See [“Ethernet Port Commands,”](#) for information on CLI commands to configure Ethernet ports.

Examples

```
-> lACP agg 3/1 partner admin system id 00:20:da:05:f6:23
```

Release History

Release 6.6.1; command introduced.

Related Commands

lcp linkagg size

Creates a dynamic aggregate group.

show linkagg port

Displays information about ports associated with a particular aggregate group or all aggregate groups.

MIB Objects

AlcLnkAggAggPortTable

alclnkaggAggPortGlobalPortNumber

alclnkaggAggPortPartnerAdminSystemID

lacp agg partner admin key

Configures the partner administrative key for a dynamic aggregate group port.

lacp agg [**ethernet** | **fastethernet** | **gigaethernet**] *slot/port* **partner admin key** *partner_admin_key*

lacp agg [**ethernet** | **fastethernet** | **gigaethernet**] *slot/port* **no partner admin key**

Syntax Definitions

ethernet	Documents that the port is 10 Mbps Ethernet.
fastethernet	Documents that the port is 100 Mbps Fast Ethernet.
gigaethernet	Documents that the port is Gigabit Ethernet.
<i>slot</i>	The slot number for this aggregate.
<i>port</i>	The port that the switch initially uses as the Spanning Tree virtual port for this aggregate.
<i>partner_admin_key</i>	The administrative key for the dynamic aggregation group's remote partner. Possible values are 0–65535.

Defaults

parameter	default
<i>partner_admin_key</i>	0

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Use the **no** form of this command to remove a partner admin key value from a slot and port associated with a dynamic aggregate group.
- The **ethernet**, **fastethernet**, and **gigaethernet** keywords do not modify a port configuration. See [“Ethernet Port Commands,”](#) for information on CLI commands to configure Ethernet ports.

Examples

```
-> lacp agg 2/1 partner admin key 0
-> lacp agg 2/1 no partner admin key
```

Release History

Release 6.6.1; command introduced.

Related Commands

lcp linkagg size	Creates a dynamic aggregate group.
show linkagg port	Displays detailed information about ports associated with a particular aggregate group or all aggregate groups.
show linkagg port	Displays information about slots and ports associated with all aggregate groups.

MIB Objects

AlcLnkAggAggPortTable
 alclnkaggAggPortGlobalPortNumber
 alclnkaggAggPortPartnerAdminKey

lacp agg partner admin system priority

Configures the partner system priority for a dynamic aggregate group port.

lacp agg [**ethernet** | **fastethernet** | **gigaethernet**] *slot/port* **partner admin system priority** *partner_admin_system_priority*

lacp agg [**ethernet** | **fastethernet** | **gigaethernet**] *slot/port* **no partner admin system priority**

Syntax Definitions

ethernet	Documents that the port is 10 Mbps Ethernet.
fastethernet	Documents that the port is 100 Mbps Fast Ethernet.
gigaethernet	Documents that the port is Gigabit Ethernet.
<i>slot</i>	The slot number for this aggregate.
<i>port</i>	The port that the switch initially uses as the Spanning Tree virtual port for this aggregate.
<i>partner_admin_system_priority</i>	The priority of the remote switch's dynamic aggregate group to which the aggregation group is attached. Possible values are 0–255.

Defaults

parameter	default
<i>partner_admin_system_priority</i>	0

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Use the **no** form of this command to remove a *partner_system_priority* value from a slot and port associated with a dynamic aggregate group.
- The **ethernet**, **fastethernet**, and **gigaethernet** keywords do not modify a port configuration. See [“Ethernet Port Commands,”](#) for information on CLI commands to configure Ethernet ports.

Examples

```
-> lacp agg 2/1 partner admin system priority 65
-> lacp agg 2/1 no partner admin system priority
```

Release History

Release 6.6.1; command introduced.

Related Commands

lacp linkagg size

Creates a dynamic aggregate group.

show linkagg port

Displays information about ports associated with a particular aggregate group or all aggregate groups.

MIB Objects

AlcLnkAggAggPortTable

alclnkaggAggPortGlobalPortNumber

alclnkaggAggPortAdminSystemPriority

lacp agg actor port priority

Configures the priority for an actor port.

```
lacp agg [ethernet | fastethernet | gigaethernet] slot/port actor port priority actor_port_priority
```

```
lacp agg [ethernet | fastethernet | gigaethernet] slot/port no actor port priority
```

Syntax Definitions

ethernet	Documents that the port is 10 Mbps Ethernet.
fastethernet	Documents that the port is 100 Mbps Fast Ethernet.
gigaethernet	Documents that the port is Gigabit Ethernet.
<i>slot</i>	The slot number for this aggregate.
<i>port</i>	The port that the switch initially uses as the Spanning Tree virtual port for this aggregate.
<i>actor_port_priority</i>	The priority of the actor port. Possible values are 0–255.

Defaults

parameter	default
<i>actor_port_priority</i>	0

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Use the **no** form of this command to remove an *actor_port_priority* value from a slot and port associated with a dynamic aggregate group.
- The **ethernet**, **fastethernet**, and **gigaethernet** keywords do not modify a port configuration. See [“Ethernet Port Commands,”](#) for information on CLI commands to configure Ethernet ports.

Examples

```
-> lacp agg 2/1 actor port priority 100  
-> lacp agg 2/1 no actor port priority
```

Release History

Release 6.6.1; command introduced.

Related Commands

lACP linkagg size

Creates a dynamic aggregate group.

show linkagg port

Displays information about ports associated with a particular aggregate group or all aggregate groups.

MIB Objects

AlcLnkAggAggPortTable

alclnkaggAggPortGlobalPortNumber

alclnkaggAggPortActorPortPriority

lacp agg partner admin port

Configures the administrative status of a partner port.

```
lacp agg [ethernet | fastethernet | gigaehternet] slot/port partner admin port partner_admin_port
```

```
lacp agg [ethernet | fastethernet | gigaehternet] slot/port no partner admin port
```

Syntax Definitions

ethernet	Documents that the port is 10 Mbps Ethernet.
fastethernet	Documents that the port is 100 Mbps Fast Ethernet.
gigaehternet	Documents that the port is Gigabit Ethernet.
<i>slot</i>	The slot number for this aggregate.
<i>port</i>	The port that the switch initially uses as the Spanning Tree virtual port for this aggregate.
<i>partner_admin_port</i>	The administrative state of the partner port. Possible values are 0–65535.

Defaults

parameter	default
<i>partner_admin_port</i>	0

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Use the **no** form of this command to remove a *partner_admin_port* value from a slot and port associated with a dynamic aggregate group.
- The **ethernet**, **fastethernet**, and **gigaehternet** keywords do not modify a port configuration. See [“Ethernet Port Commands,”](#) for information on CLI commands to configure Ethernet ports.

Examples

```
-> lacp agg 2/1 partner admin port 255
-> lacp agg 2/1 no partner admin port
```

Release History

Release 6.6.1; command introduced.

Related Commands

lACP linkagg size

Creates a dynamic aggregate group.

show linkagg port

Displays information about ports associated with a particular aggregate group or all aggregate groups.

MIB Objects

AlcLnkAggAggPortTable

alclnkaggAggPortGlobalPortNumber

alclnkaggAggPortPartnerAdminPort

lacp agg partner admin port priority

Configures the priority for a partner port.

lacp agg [**ethernet** | **fastethernet** | **gigaethernet**] *slot/port* **partner admin port priority** *partner_admin-port_priority*

lacp agg [**ethernet** | **fastethernet** | **gigaethernet**] *slot/port* **no partner admin port priority**

Syntax Definitions

ethernet	Documents that the port is 10 Mbps Ethernet.
fastethernet	Documents that the port is 100 Mbps Fast Ethernet.
gigaethernet	Documents that the port is Gigabit Ethernet.
<i>slot</i>	The slot number for this aggregate.
<i>port</i>	The port that the switch initially uses as the Spanning Tree virtual port for this aggregate.
<i>partner_admin_port_priority</i>	The priority of the partner port. Possible values are 0–255.

Defaults

parameter	default
<i>partner_admin_port_priority</i>	0

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Use the **no** form of this command to remove a *partner_admin_port_priority* value from a slot and port associated with a dynamic aggregate group.
- The **ethernet**, **fastethernet**, and **gigaethernet** keywords do not modify a port configuration. See [“Ethernet Port Commands,”](#) for information on CLI commands to configure Ethernet ports.

Examples

```
-> lacp agg 2/1 partner admin port priority 100
-> lacp agg 2/1 no partner admin port priority
```

Release History

Release 6.6.1; command introduced.

Related Commands

lACP linkagg size

Creates a dynamic aggregate group.

show linkagg port

Displays information about ports associated with a particular aggregate group or all aggregate groups.

MIB Objects

AlcLnkAggAggPortTable

alclnkaggAggPortGlobalPortNumber

alclnkaggAggPortPartnerAdminPortPriority

show linkagg

Displays information about static and dynamic (LACP) aggregate groups.

show linkagg [*agg_num*]

Syntax Definitions

agg_num Specifies the aggregate group. Configured through the **static linkagg size** or **lacp linkagg size** command.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- If no aggregation number is specified, information for all aggregate groups is displayed. If an aggregate number is specified, information about that aggregate group is displayed only. The fields included in the display depend on whether the aggregate group is a static or dynamic.
- Use the **show linkagg port** command to display information about aggregate group ports.

Examples

No aggregate group is specified:

```
-> show linkagg
```

Number	Aggregate	SNMP Id	Size	Admin State	Oper State	Att/Sel Ports
1	Static	40000001	8	ENABLED	UP	2 2
2	Dynamic	40000002	4	ENABLED	DOWN	0 0
3	Dynamic	40000003	8	ENABLED	DOWN	0 2
4	Dynamic	40000004	8	ENABLED	UP	3 3
5	Static	40000005	2	DISABLED	DOWN	0 0

Output fields are defined here:

output definitions

Number	The aggregate group number.
Aggregate	The type of aggregate group, which can be Static or Dynamic .
SNMP Id	The SNMP ID associated with the aggregate group.
Size	The number of links in this aggregate group.

output definitions (continued)

Admin State	The current administrative state of the aggregate group, which can be ENABLED or DISABLED . You can modify this parameter with the static linkagg admin state command (see page 12-6) for static aggregate groups and with the lacp linkagg admin state command (see page 12-13) for dynamic aggregate groups.
Oper State	The current operational state of the aggregate group, which can be UP or DOWN .
Att Ports	The number of ports attached to this aggregate group.
Sel Ports	The number of ports that could possibly attach to the aggregate group.

A static aggregate is specified:

```
-> show linkagg 5
Static Aggregate
  SNMP Id           : 40000005,
  Aggregate Number  : 5,
  SNMP Descriptor   : Omnichannel Aggregate Number 5 ref 40000005 size 2,
  Name              : AGG5,
  Admin State       : ENABLED,
  Operational State : DOWN,
  Aggregate Size    : 2,
  Number of Selected Ports : 0,
  Number of Reserved Ports : 0,
  Number of Attached Ports : 0,
  Primary Port      : NONE
```

output definitions

SNMP Id	The SNMP ID associated with this static aggregate group.
Aggregate Number	The group number.
SNMP Descriptor	The standard MIB name for this static aggregate group.
Name	The name of this static aggregate group. You can modify this parameter with the static linkagg name command (see page 12-5).
Admin State	The administrative state of this static aggregate group, which can be ENABLED or DISABLED . You can modify this parameter with the static linkagg admin state command (see page 12-6).
Operational State	The operational state of this static aggregate group, which can be UP or DOWN .
Aggregate Size	The number of links configured for this static aggregate group.
Number of Selected Ports	The number of ports that could possibly attach to this static aggregate group.
Number of Reserved Ports	The total number of ports reserved for use in link aggregation by this static aggregate group. (Note: This field is not relevant for static aggregate groups.)
Number of Attached Ports	The number of ports attached to this static aggregate group.
Primary Port	The port number of the first port to join this static aggregate group. If the first port to join the aggregate is no longer part of the aggregate group, the switch automatically assigns another port in the aggregate group to be the primary port.

A dynamic aggregate group is specified:

```
-> show linkagg 2
Dynamic Aggregate
  SNMP Id           : 40000002,
  Aggregate Number  : 2,
  SNMP Descriptor   : Dynamic Aggregate Number 2 ref 40000002 size 4,
  Name              : AGG 2,
  Admin State       : ENABLED,
  Operational State : DOWN,
  Aggregate Size    : 4,
  Number of Selected Ports : 0,
  Number of Reserved Ports : 0,
  Number of Attached Ports : 0,
  Primary Port      : NONE,
LACP
  MACAddress        : [00:1f:cc:00:00:00],
  Actor System Id   : [00:20:da:81:d5:b0],
  Actor System Priority : 50,
  Actor Admin Key   : 120,
  Actor Oper Key    : 0,
  Partner System Id : [00:20:da:81:d5:b1],
  Partner System Priority : 70,
  Partner Admin Key : 220,
  Partner Oper Key  : 0
  Pre-emption       : ENABLED
  Pre-empt Value    : 250
```

output definitions

SNMP Id	The SNMP ID associated with this dynamic aggregate group.
Aggregate Number	The group number of this dynamic aggregate group.
SNMP Descriptor	The standard MIB name for this dynamic aggregate group.
Name	The name of this dynamic aggregate group. You can modify this parameter with the lacp linkagg name command (see page 12-12).
Admin State	The administrative state of this dynamic aggregate group, which can be ENABLED or DISABLED . You can modify this parameter with the lacp linkagg admin state command (see page 12-13).
Operational State	The operational state of this dynamic aggregate group, which can be UP or DOWN .
Aggregate Size	The number of links configured for this dynamic aggregate group.
Number of Selected Ports	The number of ports available to this dynamic aggregate group.
Number of Reserved Ports	The total number of ports reserved for use in link aggregation by this dynamic aggregate group.
Number of Attached Ports	The number of ports attached to this dynamic aggregate group.
Primary Port	The port number of the first port to join this dynamic aggregate group. If the first port to join the aggregate group is no longer part of the aggregate group, the switch automatically assigns another port in the aggregate group to be the primary port.
MACAddress	The MAC address associated with the primary port.
Actor System Id	The MAC address of this dynamic aggregate group. You can modify this parameter with the lacp linkagg actor system id command (see page 12-17).

output definitions (continued)

Actor System Priority	The priority of this dynamic aggregate group. You can modify this parameter with the lacp linkagg actor system priority command (see page 12-16).
Actor Admin Key	The administrative key associated with this dynamic aggregate group. You can modify this parameter with the lacp linkagg actor admin key command (see page 12-15).
Actor Oper Key	The operational key associated with this dynamic aggregate group.
Partner System Id	The MAC address of the remote dynamic aggregate group. You can modify this parameter with the lacp linkagg partner system id command (see page 12-18).
Partner System Priority	The priority of the remote system to which this dynamic aggregation group is attached. You can modify this parameter with the lacp linkagg partner system priority command (see page 12-20).
Partner Admin Key	The administrative key for this dynamic aggregation group's remote partner. You can modify this parameter with the lacp linkagg partner admin key command (see page 12-21).
Partner Oper Key	The operational key of the remote system to which the dynamic aggregation group is attached.
Pre-emption	The pre-emption status of the link agg ID.
Pre-empt Value	The value of the pre-emption timer.

Release History

Release 6.6.3; command introduced.

Related Commands

[static linkagg size](#)

Creates a static aggregate group.

[lacp linkagg size](#)

Creates a dynamic aggregate group.

MIB Objects

```
alclnkaggAggTable
  alclnkaggAggSize
  alclnkaggAggNumber
  alclnkaggAggDescr
  alclnkaggAggName
  alclnkaggAggLacpType
  alclnkaggAggAdminState
  alclnkaggAggOperState
  alclnkaggAggNbrSelectedPorts
  alclnkaggAggNbrAttachedPorts
  alclnkaggPrimaryPortIndex
  alclnkaggAggMACAddress
  alclnkaggAggActorSystemPriority
  alclnkaggAggActorSystemID
  alclnkaggAggPartnerAdminKey
  alclnkaggAggActorAdminKey
  alclnkaggAggActorOperKey
  alclnkaggAggPartnerSystemID
  alclnkaggAggPartnerSystemPriority
  alclnkaggAggPartnerOperKey
  alclnkaggAggPreemptState
  alclnkaggAggPreemptValue
```

show linkagg port

Displays the aggregate group information about a particular slot and port.

show linkagg [*agg_num*] **port** [*slot/port*]

Syntax Definitions

<i>agg_num</i>	Specifies the aggregate group. Configured through the static linkagg size or lACP linkagg size command
<i>slot</i>	The slot number for this aggregate.
<i>port</i>	The port number for this aggregate.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- If no *slot/port* is specified, the information for all ports is displayed. If a particular slot or port is specified, the fields displayed depend upon whether the port belongs to a static aggregate group or dynamic (LACP) aggregate group.
- If no *agg_num* is specified, the information for all aggregates is displayed.

Examples

```
-> show linkagg port
Slot/Port Aggregate SNMP Id   Status   Agg  Oper Link Prim Standby
-----+-----+-----+-----+-----+-----+-----+-----+-----+-----
  1/9     Static      1009  ATTACHED   1  UP   UP   YES  NO
  1/10    Static      1010  ATTACHED   1  UP   UP   NO   YES
  1/11    Static      1011  ATTACHED   2  UP   UP   YES  NO
```

```
-> show linkagg 1 port
Slot/Port Aggregate SNMP Id   Status   Agg  Oper Link Prim Standby
-----+-----+-----+-----+-----+-----+-----+-----+-----+-----
  1/9     Static      1009  ATTACHED   1  UP   UP   YES  NO
  1/10    Static      1010  ATTACHED   1  UP   UP   NO   YES
```

output definitions

Slot/Port	The slot/port associated with the aggregate group.
Aggregate	The type of aggregate group associated with the port, either Static or Dynamic .

output definitions

SNMP Id	The SNMP ID associated with the aggregate group.
Status	The current status of the port (ATTACHED , CONFIGURED , PENDING , SELECTED , or RESERVED).
Agg	The number of the aggregate groups associated with this port.
Oper	The current operational state of the port (UP or DOWN).
Link	The current operational state of the link from this port to its remote partner (UP or DOWN).
Prim	Whether the port is the primary port in the link agg.
Standby	Whether the port is a standby port. A standby port is one of two ports that participate in a dynamic dual-home link aggregate. Configured through the show linkagg command.

A port that belongs to a static aggregate is specified:

```
-> show linkagg port 4/1
Static Aggregable Port
  SNMP Id           : 4001,
  Slot/Port         : 4/1,
  Administrative State : ENABLED,
  Operational State  : DOWN,
  Port State         : CONFIGURED,
  Link State         : DOWN,
  Selected Agg Number : 2,
  Port position in the aggregate: 0,
  Primary port       : NONE
```

output definitions

SNMP Id	The SNMP ID associated with this port.
Slot/Port	The slot and port number.
Administrative State	The current administrative state of this port (ENABLED or DISABLED).
Operational State	The current operational state of the port (UP or DOWN).
Port State	The current operational state of the port (CONFIGURED , PENDING , SELECTED , or RESERVED).
Link State	The current operational state of the link from this port to its remote partner (UP or DOWN).
Selected Agg Number	The number associated with the static aggregate group to which the port is attached.
Port position in the aggregate	The rank of this port within the static aggregate group (0–15).
Primary Port	The port number of the first port to join this static aggregate group. If the first port to join the aggregate is no longer part of the aggregate group, the switch automatically assigns another port in the aggregate group to be the primary port.

A port that belongs to a dynamic aggregate is specified:

```
-> show linkagg port 2/1
```

Dynamic Aggregable Port

```
SNMP Id           : 2001,
Slot/Port         : 2/1,
Administrative State : ENABLED,
Operational State  : DOWN,
Port State        : CONFIGURED,
Link State        : DOWN,
Selected Agg Number : NONE,
Primary port      : UNKNOWN,
```

LACP

```
Actor System Priority : 10,
Actor System Id      : [00:d0:95:6a:78:3a],
Actor Admin Key      : 8,
Actor Oper Key       : 8,
Partner Admin System Priority : 20,
Partner Oper System Priority : 20,
Partner Admin System Id : [00:00:00:00:00:00],
Partner Oper System Id  : [00:00:00:00:00:00],
Partner Admin Key     : 8,
Partner Oper Key      : 0,
Attached Agg Id       : 0,
Actor Port            : 7,
Actor Port Priority    : 15,
Partner Admin Port    : 0,
Partner Oper Port     : 0,
Partner Admin Port Priority : 0,
Partner Oper Port Priority : 0,
Actor Admin State     : act1.tim1.agg1.syn0.col0.dis0.def1.exp0
Actor Oper State      : act1.tim1.agg1.syn0.col0.dis0.def1.exp0,
Partner Admin State   : act0.tim0.agg1.syn1.col1.dis1.def1.exp0,
Partner Oper State    : act0.tim0.agg1.syn0.col1.dis1.def1.exp0
Standby State         : ENABLED
```

output definitions

SNMP Id	The SNMP ID associated with this port.
Slot/Port	The slot and port number.
Administrative State	The current administrative state of this port (ENABLED or DISABLED).
Operational State	The current operational state of the port (UP or DOWN).
Port State	The current operational state of the port (CONFIGURED , PENDING , SELECTED , or AGGREGATED).
Link State	The current operational state of the link from this port to its remote partner (UP or DOWN).
Selected Agg Number	The number associated with the dynamic aggregate group to which the port is attached.
Primary Port	The port number of the first port to join this dynamic aggregate group. If the first port to join the aggregate is no longer part of the aggregate group, the switch automatically assigns another port in the aggregate group to be the primary port.
Actor System Priority	The actor system priority of this port. Configured through the lacp agg actor system priority command.

output definitions (continued)

Actor System Id	The actor system ID (MAC address) of this port. Configured through the lACP agg actor system id command.
Actor Admin Key	The actor administrative key value for this port. Configured through the lACP agg actor admin key command.
Actor Oper Key	The actor operational key associated with this port.
Partner Admin System Priority	The administrative priority of the remote system to which this port is attached. Configured through the lACP agg partner admin system priority command.
Partner Oper System Priority	The operational priority of the remote system to which this port is attached.
Partner Admin System Id	The administrative MAC address associated with the remote partner's system ID. This value is used along with Partner Admin System Priority, Partner Admin Key, and Partner Admin Port Priority to configure aggregation. Configured through the lACP agg partner admin system id command.
Partner Oper System id	The MAC address that corresponds to the remote partner's system ID.
Partner Admin Key	The administrative value of the key for the remote partner. This value is used along with Partner Admin System Priority, Partner Admin System, Partner Admin Port, and Partner Admin Port Priority to configure aggregation. Configured through the lACP agg partner admin key command.
Partner Oper Key	The current operational value of the key for the protocol partner.
Attached Agg ID	The ID of the aggregate group that the port has attached itself to. A value of zero indicates that the port is not attached to an aggregate group.
Actor Port	The port number locally assigned to this port.
Actor Port Priority	The actor priority value assigned to the port. Configured through the lACP agg actor port priority command.
Partner Admin Port	The administrative value of the port number for the protocol partner. This value is used along with Partner Admin System Priority, Partner Admin System ID, Partner Admin Key, and Partner Admin Port Priority to configure aggregation. Configured through the lACP agg partner admin port command.
Partner Oper Port	The operational port number assigned to the port by the protocol partner of the port.
Partner Admin Port Priority	The administrative port priority of the protocol partner. This value is used along with Partner Admin System Priority, Partner Admin System ID, and Partner Admin Key to configure aggregation. Configured through the lACP agg partner admin port priority command.
Partner Oper Port Priority	The priority value assigned to the port by the partner.
Actor Admin State	The administrative state of the port. Configured through the lACP agg actor admin state command.
Actor Oper State	The current operational state of the port.

output definitions (continued)

Partner Admin State	The administrative state of the partner's port. Configured through the lacp agg partner admin state command.
Partner Oper State	The current operational state of the partner's port.
Standby State	The standby state of the port. This value indicates if the port will participate as a standby port in a dynamic dual-home link aggregate. Configured through the show linkagg command.

Release History

Release 6.6.3; command introduced.

Related Commands

static agg agg num	Configures a slot and port for a static aggregate group.
lacp agg actor admin key	Configures a slot and port for a dynamic aggregate group.
show linkagg	Displays information about static and dynamic (LACP) aggregate groups.

MIB Objects

alclnkaggAggPortTable

```

alclnkaggAggPortActorSystem
alclnkaggAggPortActorSystemPriority
alclnkaggAggPortActorSystemID
alclnkaggAggPortActorAdminKey
alclnkaggAggPortActorOperKey
alclnkaggAggPortPartnerAdminSystemPriority
alclnkaggAggPortPartnerOperSystemPriority
alclnkaggAggPortPartnerAdminSystemID
alclnkaggAggPortPartnerOperSystemID
alclnkaggAggPortPartnerAdminKey
alclnkaggAggPortPartnerOperKey
alclnkaggAggPortSelectedAggID
alclnkaggAggPortAttachedAggID
alclnkaggAggPortActorPort
alclnkaggAggPortActorPortPriority
alclnkaggAggPortPartnerAdminPort
alclnkaggAggPortPartnerOperPort
alclnkaggAggPortPartnerAdminPortPriority
alclnkaggAggPortPartnerOperPortPriority
alclnkaggAggPortActorAdminState
alclnkaggAggPortActorOperState
alclnkaggAggPortPartnerAdminState
alclnkaggAggPortPartnerOperState
alclnkaggAggPortStandbyState

```

dhl num

Configures a Dual-homed Link (DHL) session associated with the specified session ID number.

dhl num *dhl_num* [**name** *name*]

no dhl num *dhl_num*

Syntax Definitions

<i>dhl_num</i>	The DHL session ID number. Valid range is 1–1000.
<i>name</i>	The name of the DHL session.

Defaults

By default, if a name is not assigned to a DHL session, the session is configured as DHL-1.

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Use the **no** form of this command to remove a DHL session ID from the switch configuration.
- Use the optional **name** parameter to specify a name for the DHL session.
- Only one DHL session can be configured per switch.
- Once the DHL session ID is created, assign link A port and link B port to the session before administratively enabling the DHL session is allowed.

Examples

```
-> dhl num 1 name dhl_session1  
-> no dhl num 1
```

Release History

Release 6.6.3; command introduced.

Related Commands

dhl num linka linkb	Associates a pair of links (port or linkagg) with the DHL session.
dhl num admin-state	Configures the administrative status of the DHL session.
show dhl num	Displays information about a specific DHL session.

MIB Objects

```
alaDHLSessionTable  
  alaDHLSessionIndex  
  alaDHLSessionDescr
```

dhl num linka linkb

Configures two ports or two link aggregates or a combination of both as linkA and linkB for the specified DHL session. Only two links are allowed per DHL session. Only one DHL session per switch is allowed.

```
dhl num dhl_num linka {port slot/port | linkagg agg_id} linkb {port slot/port | linkagg agg_id}
```

```
no dhl num dhl_num linka {port slot/port | linkagg agg_id} linkb {port slot/port | linkagg agg_id}
```

Syntax Definitions

<i>dhl_num</i>	An existing DHL session ID number.
<i>slot/port</i>	The slot number and the physical port number to designate as a link for the DHL session. (for example, 3/1 specifies port 1 on slot 3).
<i>agg_id</i>	The link aggregate ID number to designate as a link for the DHL session.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Use the **no** form of this command to remove the linkA and linkB ports from the specified session ID. Before attempting to remove the links, administratively disable the DHL session.
- Ensure that the DHL linkA *and* linkB are associated with each VLAN that the DHL session will protect. Any VLAN not associated with either link or only associated with one of the links is unprotected.
- DHL linkA *and* linkB must belong to the same default VLAN. In addition, select a default VLAN that is one of the VLANs that the DHL session will protect. For example, if the session is going to protect VLANs 10-20, then assign one of those VLANs as the default VLAN for linkA and linkB.
- Only one DHL session per switch is allowed. Each session can have only two links (linkA and linkB). Specify a physical switch port or a link aggregate (linkagg) ID as a DHL link. The same port or link aggregate is not configurable as both linkA or linkB.
- DHL is not supported on mobile, 802.1x-enabled, GVRP, or UNI ports. DHL is also not supported on a port that is a member of a link aggregate or a port that is enabled for transparent bridging.
- The administrative state of a DHL session is not configurable until a linkA port and a linkB port are associated with the specified DHL session ID number.
- Changing the port designations for linkA and linkB is not recommended while the DHL session is enabled.
- If the aggregate is configured as a link for a DHL session, you cannot remove a link aggregate from the switch configuration.

Examples

```
-> dhl num 1 linka port 1/1 linkb port 1/2
-> dhl num 1 linka linkagg 1 linkb port 1/2
-> dhl num 1 linka port 1/1 linkb linkagg 1
-> dhl num 1 linka linkagg 1 linkb linkagg 2
-> no dhl num 1 linka port 1/1 linkb port 1/2
```

Release History

Release 6.6.3; command introduced.

Related Commands

dhl num	Configures a session ID for the DHL session.
dhl num admin-state	Configures the administrative status for the DHL session.
show dhl	Displays the global status of the DHL configuration.
show dhl num	Displays information about a specific DHL session.
show dhl num link	Displays information about a specific link.

MIB Objects

```
AlaDHLLinksTable
  alaDHLLinksSessionIndex
  alaDHLLinkslinkA
  alaDHLLinkslinkB
```

dhl num admin-state

Enables or disables the administrative state of a DHL session.

dhl num *dhl_num* **admin-state** {**enable** | **disable**}

Syntax Definitions

<i>dhl_num</i>	An existing DHL session ID number.
enable	Enables the DHL session.
disable	Disables the DHL session.

Defaults

parameter	default
enable disable	disable

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- The DHL session ID specified with this command must exist in the switch configuration.
- The administrative state is not configurable until a linkA port and a linkB port are associated with the specified DHL session ID number.

Examples

```
-> dhl num 1 admin-state enable
-> dhl num 1 admin-state disable
```

Release History

Release 6.6.3; command introduced.

Related Commands

dhl num	Configures a session ID for the DHL session.
dhl num linka linkb	Configures the two links required for a DHL session.
show dhl	Displays the global status of the DHL configuration.
show dhl num	Displays information about a specific DHL session.

MIB Objects

```
alaDHLSessionTable
  alaDHLSessionAdminStatus
```

dhl num vlan-map linkb

Configures a VLAN-MAP (a single VLAN or a range of VLANs) from a common pool of VLANs to operate on DHL link B.

```
dhl num dhl_num vlan-map linkb {vlan_id [-vlan_id]}
```

```
no dhl num dhl_num vlan-map linkb {vlan_id [-vlan_id]}
```

Syntax Definitions

<i>dhl_num</i>	Specifies the DHL session ID number.
<i>vlan_id</i> [- <i>vlan_id</i>]	A VLAN ID number or a range of VLAN IDs to map to linkB. The valid range is 1- 4094.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Create a DHL session prior to VLAN-MAP configuration.
- When the DHL session is active, the common VLAN that both the dual homed links belong to is treated as a protected VLAN. The VLAN having only one dual homed link is treated as an unprotected VLAN. Traffic is forwarded only on the dual homed links belonging to the protected VLAN.
- If a VLAN is removed globally and if the VLAN belongs to a particular dual homed link, then the VLAN is automatically removed from the dual homed link.
- If one dual homed link, for example linkA, is moved out of a protected VLAN, then the VLAN becomes unprotected and the VPA is removed from the second dual homed link, for example linkB.
- If the admin state of a VLAN is changed to disabled, and if the VLAN is part of a protected VLAN, then the disabled VLAN is removed from the operational DHL VLAN list but will be present in the protected VLAN list.
- If the admin state of a dual homed link, for example linkA, is changed to disabled, then the protected VLANs of the disabled linkA is moved to the other link, for example linkB. When linkA is re-enabled, then the VLANs are moved back to linkA.
- If the VLAN-MAP of linkB is removed, then the VPAs for the linkB is also removed, and the VLANs configured on linkB is moved to linkA.
- If a VLAN is configured as default on one dual homed link, for example linkA, then the same VLAN cannot be configured as tagged on the other link, for example linkB.

Examples

```
-> vlan 10-30
-> vlan 10-20 802.1q 1/1
-> vlan 4
-> vlan port default 1/1-2
-> dhl num 1 name dhl_session1
-> dhl num 1 linka port 1/1 linkb port 1/2
-> dhl num 1 vlan-map linkb 18-20
-> no dhl num 1 vlan-map linkb 18-20
```

Release History

Release 6.6.3; command introduced.

Related Commands

dhl num	Configures a session ID for the DHL session.
dhl num linka linkb	Configures a port or a link aggregate as dual homed links (linkA, linkB) of a DHL session.
show dhl	Displays the global status of the DHL configuration.
show dhl num	Displays information about a specific DHL session.
show dhl num link	Displays information about a specific DHL link.

MIB Objects

```
alaDHLVlanMapTable
  alaDHLVlanMapSessionIndex
  alaDHLVlanMapVlanStart
  alaDHLVlanMapVlanEnd
  alaDHLVlanMapRowStatus
```

dhl num pre-emption-time

Configures the pre-emption timer for the DHL session. A pre-emption timer is a recovery-delay timer that is used to delay the switchover of VLANs to their primary links. It is the delay in the resumption of traffic when a link that is down is brought up.

dhl num *dhl_num* **pre-emption-time** *num*

Syntax Definitions

<i>dhl_num</i>	Specifies the number of the DHL session.
<i>num</i>	Specifies the number of seconds for the delay in the switchover of VLANs to their primary links. The valid range is 10 - 600.

Defaults

parameter	default
<i>num</i>	30 seconds

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Pre-emption timer is applicable only when a failed port is brought up. If both ports are down, the pre-emption timer is activated only when the second port is brought up.
- If a link fails when the pre-emption value is active, that is when the pre-emption value is not equal to 0, then the time will be halted.
- When the pre-emption timer is active for a particular link and port and if the other port goes down, then the VLANs of the port that is down is automatically moved to the port for which the pre-emption timer is active.
- When DHL ports spanned across the NIs or DHC ports are on the same NI but data port is on different NI, configure mac-flush mechanism for faster convergence.

Examples

```
-> dhl num 1 pre-emption-time 40
```

Release History

Release 6.6.3; command introduced.

Related Commands

dhl num	Configures a session ID for the DHL session.
show dhl	Displays the global status of the DHL configuration.
show dhl num	Displays information about a specific DHL session.
show dhl num link	Displays information about a specific dual homed link.

MIB Objects

alaDHLSessionTable
 alaDHLSessionPreemptionTime

dhl num mac-flushing

Configures the MAC-flushing technique for the DHL session. The MAC-flushing technique is used to correct any stale MAC entries that are caused when a dual homed link goes down.

dhl num *dhl_num* **mac-flushing** {**none** | **raw** | **mvrp**}

Syntax Definitions

<i>dhl_num</i>	Specifies the number of the DHL session.
none	Flushing of the MAC address tables does not occur.
raw	Method of flushing when VPAs of the links moved across them due to link up/down or configuration change (VLAN-map). The switch determines the MAC addresses within the affected VLANs

Defaults

parameter	default
none raw mvrp	none

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

If VLANs are moved across the dual homed links as a result of configuration changes, then mac-flushing is automatically enabled, if configured, excepting dual homed links that are changed on the fly.

Examples

```
-> dhl num 1 mac-flushing none
-> dhl num 1 mac-flushing raw
```

Release History

Release 6.6.3; command introduced.

Related Commands

dhl num	Configures a session ID for the DHL session.
show dhl	Displays the global status of the DHL configuration.
show dhl num	Displays information about a specific DHL session.
show dhl num link	Displays information about a specific dual homed link.

MIB Objects

alaDHLSessionTable
 alaDHLSessionMacFlushingtech

show dhl

Displays the global status of the DHL configuration.

show dhl

Syntax Definitions

N/A

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

N/A

Examples

```
-> show DHL
Number  Name      Admin  Oper  Pre-emption  Mac-flushing  Active Mac-flushing
state   state    time
-----+-----+-----+-----+-----+-----+-----+-----
1       DHL-1    UP     UP    30sec        Raw            Raw
```

output definitions

Number	Number of the DHL session.
Name	The user-defined text description of the DHL session.
Admin state	The administrative status of the DHL session.
Oper state	The operational status of the DHL session.
Pre-emption time	The pre-emption time in seconds of the DHL session.
Mac-flushing	Mac-flushing technique on the DHL session.
Active Mac-flushing	Mac-flushing technique that is currently active on the DHL session.

Release History

Release 6.6.3; command introduced.

Related Commands

dhl num	Configures a session ID for the DHL session.
show dhl num	Displays information about a specific DHL session.
show dhl num link	Displays information about a specific dual homed link.

MIB Objects

```
alaDHLSessionTable  
  alaDHLSessionIndex  
  alaDHLSessionDesc  
  alaDHLSessionAdminStatus  
  alaDHLSessionOperStatus  
  alaDHLSessionPreemptionTime  
  alaDHLSessionMacFlushingtech
```

show dhl num

Displays information about a specific DHL session.

show dhl num *dhl_num*

Syntax Definitions

dhl_num Specifies the number of the DHL session.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

N/A

Examples

```
-> show dhl num 1
DHL session name      : Arice,
Admin state           : Up,
Operational state     : Up,
Pre-emption time      : 40 sec,
Mac-flushing          : Raw-Flushing,
Active Mac-flushing   : Raw-Flushing,

Protected VLANs      : 10-20,23,25,30-100,600,700,800,

linkA:
  Port                 : 1/2,
  Operational state    : Up

  Un protected VLANs  : 900,1980,1987,234,
  Active VLAN         : 10-20,23,25,30-100,600,700,800,

linkB:
  Port                 : 1/1,
  Operational state    : Down,
  Un protected VLANs  : 1730-1800,
  Vlan-map             : 30-100,600,
  Active Vlans        : none,
```

output definitions

DHL session Name	The user-defined text description of the DHL session.
Admin state	The current administrative status of the DHL session.
Operational state	The operational state of the DHL session.

output definitions

Pre-emption time	The delay-interval in seconds to move the VLANs back to their original links.
Mac-flushing	Mac-flushing technique on the DHL session.
Active Mac-flushing	The active Mac-flushing technique that is enabled on the specified DHL session.
Protected VLANs	The common VLANs that contain both the dual homed links, for example linkA and linkB.
linkA	A dual homed link that is part of a pair of DHL links that can be configured per switch.
Port	The port number of linkA.
Operational state	The operational state of the port. The operational states are UP or DOWN.
Un protected VLANs	The VLANs containing only one dual homed link.
Active VLANs	The VLANs that are in an active state.
linkB	A dual homed link that is part of a pair of DHL links that can be configured per switch.
Port	The port number of linkB.
Operational state	The operational state of the port. The operational states are UP or DOWN.
Un protected VLANs	The VLANs containing only one dual homed link.
VLAN-map	The DHL VLAN map for linkB. VLAN map specifies the VLANs that are operational on DHL linkB from the common pool of VLANs between DHL linkA and linkB.
Operational VLANs	The VLANs that are in an operational state.

Release History

Release 6.6.3; command introduced.

Related Commands

dhl num	Configures a session ID for the DHL session.
show dhl num link	Displays information about a specific dual homed link.

MIB Objects

```

alaDHLSessionTable
  alaDHLSessionIndex
  alaDHLSessionDescr
  alaDHLSessionAdminStatus
  alaDHLSessionOperStatus
  alaDHLSessionPreemptionTime
  alaDHLSessionMacFlushingtech
alaDHLLinksTable
  alaDHLLinksSessionIndex
  alaDHLLinkslinkA

```

```
alaDHLLinkslinkAOperStatus
alaDHLLinkslinkB
alaDHLLinkslinkBOperStatus
alaDHLVlanMapTable
  alaDHLVlanMapSessionIndex
  alaDHLVlanMapVlanStart
  alaDHLVlanMapVlanEnd
alaDHLVpaTable
  alaDHLVpalink
  alaDHLVpaVlan
  alaDHLVpaVlanType
  alaDHLVpaOperationalLink
```

show dhl num link

Displays information about a specific DHL link, for example linkA or linkB and the VLAN details of the specified link.

```
show dhl num dhl_num [linkA | linkB]
```

Syntax Definitions

<i>dhl_num</i>	Specifies the number of the DHL session.
linkA	The dual homed link that is part of a pair of DHL links that can be configured per switch.
linkB	The dual homed link that is part of a pair of DHL links that can be configured per switch.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

N/A

Examples

```
-> show dhl num 1 linkA
```

```
linkA:
  Port                : 1/2,
  Operational state   : Up,

  Protected VLANs     : 10-20, 23, 25, 30-100,600,700,800,
  Un protected VLANs  : 900, 1980, 1987,234,
  Active VLAN         : 10-20, 23, 25, 30-100,600,700,800,
```

Release History

Release 6.6.3; command introduced.

Related Commands

dhl num	Configures a session ID for the DHL session.
dhl num linka linkb	Configures a port or a link aggregate as dual homed links (linkA, linkB) of a DHL session.
dhl num vlan-map linkb	Configures a VLAN or a range of VLANs from a common pool to operate on DHL linkB.
show dhl num	Displays information about a specific DHL session.

MIB Objects

```
alaDHLLinksTable
  alaDHLLinksSessionIndex
  alaDHLLinkslinkA
  alaDHLLinkslinkAOperStatus
  alaDHLLinkslinkB
alaDHLVpaTable
  alaDHLVpalink
  alaDHLVpaVlan
  alaDHLVpaVlanType
  alaDHLVpaOperationalLink
alaDHLVlanMapTable
  alaDHLVlanMapSessionIndex
  alaDHLVlanMapVlanStart
  alaDHLVlanMapVlanEnd
```

13 802.1AB Commands

802.1AB is an IEEE standard for exchanging information with neighboring devices and maintaining a database of the information. The information is exchanged using the LLDPDU (Link Layer Discovery Protocol Data Unit) in TLV (Time, Length, Value) format. This chapter details configuring and monitoring 802.1AB on a switch.

Alcatel-Lucent version of 802.1AB complies with the IEEE 802.1AB-2005 Station and Media Access Control Discovery and ANSI-TIA 1057-2006 Link Layer Discovery Protocol for Media End Point Devices.

MIB information for the 802.1AB commands is as follows:

Filename: IEEE_LLDP_Base.mib
Module: LLDP-MIB

Filename: IEEE_LLDP_Dot1.mib
Module: LLDP-EXT-DOT1-MIB

Filename: IEEE_LLDP_Dot3.mib
Module: LLDP-EXT-DOT3-MIB

Filename: ANSI_TIA_LLDP_MED.mib
Module: LLDP-EXT-DOT3-MIB

Link Layer Discovery Protocol (LLDP) Security Mechanism in AOS prevents rogue LLDP agent from being connected to OmniSwitch. This security mechanism ensures secured access to the device and the network.

LLDP Security Mechanism ensures having only one trusted LLDP agent on a network port. When more than one LLDP agent is learned on a port, the port is moved to violation state.

MIB information for the LLDP commands is as follows:

Filename: AlcatelINDLLDP.mib
Module: LLDP (IEEE802.1ab)

A summary of available commands is listed here:

LLDP	lldp destination mac-address lldp transmit fast-start-count lldp transmit interval lldp transmit hold-multiplier lldp transmit delay lldp reinit delay lldp network-policy lldp med network-policy lldp notification interval lldp lldpdu lldp notification lldp tlv management lldp tlv dot1 lldp tlv dot3 mac-phy lldp tlv dot3 power-via-mdi lldp tlv med show lldp config show lldp network-policy show lldp med network-policy show lldp system-statistics show lldp statistics show lldp local -system show lldp local -port show lldp local-management-address show lldp remote-system show lldp remote-system med
LLDP Security Mechanism	lldp trust-agent lldp trust-agent violation-action show lldp trusted remote-agent show lldp trust-agent

Configuration procedures for 802.1AB are explained in the “Configuring 802.1AB” chapter of the *OmniSwitch AOS Release 6250/6350/6450 Network Configuration Guide*.

lldp destination mac-address

Sets the LLDP destination MAC address sent in LLPDUs.

lldp destination mac-address {nearest-bridge | nearest-edge}

Syntax Definitions

nearest-bridge Specifies the destination MAC address as 01:80:C2:00:00:0E.
nearest-edge Specifies the destination MAC address as 01:20: DA: 02:01:73.

Defaults

parameter	default
<i>mac-address</i>	nearest-bridge

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

The **nearest-edge** MAC address is used in conjunction with the Auto Download Configuration feature to advertise the management VLAN.

Examples

```
-> lldp destination mac-address nearest-edge
```

Release History

Release 6.6.2; command introduced.

Related Commands

[show lldp local -system](#) Displays local system information.

MIB Objects

lldpDestMac

lldp transmit fast-start-count

Configures the fast start count for an LLDP Media Endpoint Device (MED). The fast start count specifies the number of LLDPDUs to be sent as soon as a MED is detected by the switch. The LLDPDUs contain the LLDP MED Network Policy TLVs.

lldp transmit fast-start-count *num*

Syntax Definitions

num Specifies the number of LLDPDUs to send when a MED is detected. The valid range is 1–10.

Defaults

parameter	default
<i>num</i>	3

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

The LLDP MED fast start is only applicable when the MED is detected by the switch.

Examples

```
-> lldp transmit fast-start-count 4
```

Release History

Release 6.6.2; command introduced.

Related Commands

lldp network-policy	Configures a MED Network Policy on the switch for a specific application type.
lldp med network-policy	Associates an existing MED Network Policy with one or more LLDP ports.
show lldp local -system	Displays local system information.

MIB Objects

lldpXMedFastStartRepeatCount

lldp transmit interval

Sets the transmit time interval for LLDPDUs.

lldp transmit interval *seconds*

Syntax Definitions

seconds The transmit interval between LLDPDUs, in seconds. The valid range is 5 - 32768.

Defaults

parameter	default
<i>seconds</i>	30

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

The LLDP protocol must be enabled before using this command.

Examples

```
-> lldp transmit interval 40
```

Release History

Release 6.6.1; command introduced.

Related Commands

lldp transmit hold-multiplier Sets the transmit hold multiplier value. This value is used to calculate the Time to Live (TTL) value that is advertised in an LLDPDU.

show lldp local -system Displays local system information.

MIB Objects

lldpConfiguration
lldpMessageTxInterval

lldp transmit hold-multiplier

Sets the transmit hold multiplier value. This value is used to calculate the Time to Live (TTL) value that is advertised in an LLDPDU.

lldp transmit hold-multiplier *num*

Syntax Definitions

num The transmit hold multiplier value. The valid range is 2-10.

Defaults

parameter	default
<i>num</i>	4

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- The LLDP protocol must be enabled before using this command.
- The Time to Live is a multiple of transmit interval and transmit hold multiplier.

Examples

```
-> lldp transmit hold-multiplier 6
```

Release History

Release 6.6.1; command introduced.

Related Commands

- lldp destination mac-address** Sets the transmit time interval for LLDPDUs. Time interval is the amount of time the switch waits between each transmission of an LLDPDU.
- show lldp local -system** Displays local system information.

MIB Objects

```
lldpConfiguration  
  lldpMessageTxHoldMultiplier
```

lldp transmit delay

Sets the minimum amount of time that must elapse between successive LLDPDUs that are transmitted as the result of a value or status change in the LLDP local systems MIB.

lldp transmit delay *seconds*

Syntax Definitions

seconds The time interval between successive LLDPDUs transmitted, in seconds. The valid range is 1-8192.

Defaults

parameter	default
<i>seconds</i>	2

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- The LLDP protocol must be enabled before using this command.
- The transmit delay is less than or equal to the multiplication of transmit interval and 0.25 (transmit interval * 0.25).

Examples

```
-> lldp transmit delay 20
```

Release History

Release 6.6.1; command introduced.

Related Commands

lldp destination mac-address Sets the transmit time interval for LLDPDUs. Time interval is the amount of time the switch waits between each transmission of an LLDPDU.

show lldp local -system Displays local system information.

MIB Objects

lldpConfiguration
 lldpTxDelay

lldp reinit delay

Sets the time interval that must elapse before the status of a port is reinitialized after a status change.

lldp reinit delay *seconds*

Syntax Definitions

seconds The number of seconds to reinitialize the ports status after a status change. The valid range is 1-10.

Defaults

parameter	default
<i>seconds</i>	2

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

The LLDP protocol must be enabled before using this command.

Examples

```
-> lldp reinit delay 4
```

Release History

Release 6.6.1; command introduced.

Related Commands

lldp transmit delay Sets the minimum time interval between successive LLDPDUs transmitted.

show lldp local -system Displays local system information.

MIB Objects

lldpConfiguration
 lldpReinitDelay

lldp notification interval

Sets the time interval that must elapse before a notification about the local system MIB change is generated.

lldp notification interval *seconds*

Syntax Definitions

seconds The minimum number of seconds for generating a notification-event.
The valid range is 5-3600.

Defaults

parameter	default
<i>seconds</i>	5

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- The LLDP protocol and notification must be enabled before using this command.
- In a specified interval, generating more than one notification-event is not possible.

Examples

```
-> lldp notification interval 25
```

Release History

Release 6.6.1; command introduced.

Related Commands

lldp notification	Enables or disables the LLDP notification status for one or more switch ports. LLDP notifications are sent when there is a change to the remote systems MIB.
show lldp local -system	Displays local system information.

MIB Objects

```
lldpConfiguration  
  lldpNotificationInterval
```

lldp lldpdu

Configures the switch to control the transmission and the reception of LLDPDUs for a particular chassis, a slot, or a port.

lldp {*slot/port* | *slot* / **chassis**} **lldpdu** {**tx** | **rx** | **tx-and-rx** | **disable**}

Syntax Definitions

<i>slot/port</i>	Slot number for the module and physical port number on that module (for example, 3/1 specifies port 1 on slot 3).
<i>slot</i>	The slot number for a specific module.
chassis	All ports on the switch.
tx	Transmits LLDPDUs.
rx	Receives LLDPDUs.
tx-and-rx	Transmits and receives LLDPDUs.
disable	Disables LLDPDUs transmission and reception.

Defaults

parameter	default
tx rx tx-and-rx disable	tx-and-rx

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- The port can be set to receive, transmit, or transmit and receive LLDPDUs using this command.
- If this command is applied to a slot or chassis, then the existing configuration related to this command is lost.

Examples

```
-> lldp 1/2 lldpdu tx-and-rx
-> lldp chassis lldpdu disable
```

Release History

Release 6.6.1; command introduced.

Related Commands

lldp notification

Enables or disables the LLDP notification status for one or more switch ports. LLDP notifications are sent when there is a change to the remote systems MIB.

show lldp local -port

Displays information about local system ports.

show lldp config

Displays the general LLDP configuration information for LLDP ports.

MIB Objects

```
lldpPortConfigTable  
  lldpPortConfigPortNum  
  lldpPortConfigAdminStatus
```

lldp notification

Enables or disables the LLDP notification status for one or more switch ports. LLDP notifications are sent when there is a change to the remote systems MIB.

lldp {*slot/port* | *slot* / **chassis**} **notification** {**enable** | **disable**}

Syntax Definitions

<i>slot/port</i>	Slot number for the module and physical port number on that module (for example, 3/1 specifies port 1 on slot 3).
<i>slot</i>	The slot number for a specific module.
chassis	All switch ports.
enable	Enables the notification of local system MIB changes.
disable	Disables the notification.

Defaults

parameter	default
enable disable	disable

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- The LLDPDU administrative status must be in the receive state before using this command.
- If this command is applied to a slot or chassis, then the existing configuration related to this command is lost.

Examples

```
-> lldp 1/2 notification enable
-> lldp 1 notification disable
```

Release History

Release 6.6.1; command introduced.

Related Commands

lldp notification interval

Sets the time interval that must elapse before a notification about the local system MIB change is generated.

lldp lldpdu

Configures the LLDPDU status for one or more switch ports. The status determines if the specified switch ports will transmit, receive, transmit and receive, or drop LLDPDUs.

MIB Objects

lldpPortConfigTable

 lldpPortConfigPortNum

 lldpPortConfigNotificationEnable

lldp network-policy

Configures a local Network Policy on the switch for a specific application type.

```
lldp network-policy policy_id - [ policy_id2 ] application { voice | voice-signaling | guest-voice | guest-voice-signaling | softphone-voice | video-conferencing | streaming-video | video-signaling } vlan { untagged | priority-tag | vlan-id } [ l2-priority 802.1p_value ] [ dscp dscp_value ]
```

```
no lldp network-policy policy_id - [ policy_id2 ]
```

Syntax Definitions

<i>policy_id</i> - [<i>policy_id2</i>]	A network policy identifier (0-31) which is associated to a port.
voice	Specifies a voice application type.
voice-signaling	Specifies a voice-signaling application type.
guest-voice	Specifies a guest-voice application type.
guest-voice-signaling	Specifies a guest-voice-signaling application type.
softphone-voice	Specifies a softphone-voice application type.
video-conferencing	Specifies a video-conferencing application type.
streaming-video	Specifies a streaming-video application type.
video-signaling	Specifies a video-signaling application type.
untagged	Specifies that a VLAN port is untagged.
priority-tag	Specifies the internal priority that would be assigned to the VLAN.
<i>vlan_id</i>	VLAN identifier. Valid range is 1–4094.
<i>802.1p_value</i>	The Layer-2 priority value assigned to the VLAN. Valid range is 0–7.
<i>dscp_value</i>	Priority value assigned to the DSCP (Differentiated Service Code Point) header. Valid range is 0–63.

Defaults

parameter	default
<i>802.1p_value</i>	0
<i>dscp_value</i>	0

- By default, the VLAN ID is configured in the voice network profile.
- By default, the 802.1p_value is 5 for voice application.

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Use the **no** form of this command to remove the configured network policy from the system.
- When a network policy is deleted, all the associated values and port bindings are also deleted.

- A maximum of 32-network policies can be configured on a single VLAN.
- Once a policy is created, the application type, VLAN ID, 802.1p, and DSCP values can be modified.
- If a network policy ID is bound to a port, it cannot be modified.
- Use a hyphen to specify a range of Policy IDs and a space to separate multiple Policy IDs in the command.
- The range for Policy IDs is supported only with the **no** form of this command.

Examples

```
-> lldp network-policy 10 application voice vlan 20
-> lldp network-policy 11 application guest-voice-signaling vlan untagged
l2-priority 3
-> lldp network-policy 20 application voice vlan priority-tag dscp 39
-> lldp network-policy 20 application voice-signaling vlan 23 l2-priority 2 dscp 43
-> no lldp network-policy 10
-> no lldp network-policy 10-20
```

Release History

Release 6.6.2; command introduced.

Related Commands

- | | |
|-------------------------------------|---|
| lldp tlvs dot3 power-via-mdi | Configures whether LLDP-MED TLVs are included in transmitted LLDPDUs. |
| show lldp network-policy | Displays the network policy details for a given policy ID. |
| show lldp med network-policy | Displays the network policy configured on a slot or port. If no option is specified, network policies configured on all ports of the chassis are displayed. |

MIB Objects

```
aLldpXMedLocMediaPolicyTable
  alaLldpXMedLocMediaPolicyId
  alaLldpXMedLocMediaPolicyAppType
  alaLldpXMedLocMediaPolicyVlanType
  alaLldpXMedLocMediaPolicyVlanID
  alaLldpXMedLocMediaPolicyPriority
  alaLldpXMedLocMediaPolicyDscp
  alaLldpXMedLocMediaPolicyUnknown
  alaLldpXMedLocMediaPolicyTagged
  alaLldpXMedLocMediaPolicyRowStatus
```

lldp med network-policy

Associates an existing network policy to a port, slot, or chassis.

```
lldp {slot/port | slot / chassis} med network-policy policy_id - [policy_id2]
```

```
no lldp {slot/port | slot / chassis} med network-policy policy_id - [policy_id2]
```

Syntax Definition

<i>slot/port</i>	The slot number for the module and physical port number on that module (for example, 3/1 specifies port 1 on slot 3).
<i>slot</i>	The slot number for a specific module.
chassis	All switch ports.
<i>policy_id</i> - [<i>policy_id2</i>]	A network policy identifier (0–31).

Defaults

NA

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Use the **no** form of this command to disassociate a network policy from a port.
- The network policy must already be configured in the system before associating it with a port.
- A maximum of eight-network policies can be associated to a port.
- Two or more network policy IDs with the same application type cannot be associated to a port.

Examples

```
-> lldp chassis med network-policy 22  
-> lldp 1 med network-policy 1-4 5 6  
-> lldp 2/3 med network-policy 12  
-> no lldp 2/3 med network-policy 12
```

Release History

Release 6.6.2; command introduced.

Related Commands

- lldp tlv dot3 power-via-mdi** Configures whether LLDP-MED TLVs are included in transmitted LLDPDUs.
- show lldp network-policy** Displays the MED Network Policy details for a given policy ID.
- show lldp med network-policy** Displays the network policy configured on a slot or port. If no option is specified, network policies configured on all ports of the chassis are displayed.

MIB Objects

```
alaLldpXMedLocMediaPolicyPortTable  
  alaLldpXMedLocMediaPolicyPortIfIndex  
  alaLldpXMedLocMediaPolicyId  
  alaLldpXMedLocMediaPolicyPortRowStatus
```

lldp tlv management

Configures the switch to control per port management TLVs to be included in the LLDPDUs.

lldp {*slot/port* | *slot* / **chassis**} **tlv management** {**port-description** | **system-name** | **system-description** | **system-capabilities** | **management-address**} {**enable** | **disable**}

Syntax Definitions

<i>slot/port</i>	Slot number for the module and physical port number on that module (for example, 3/1 specifies port 1 on slot 3).
<i>slot</i>	The slot number for a specific module.
port-description	Enables or disables the transmission of port description TLV in LLDPDU.
system-name	Enables or disables the transmission of system name TLV in LLDPDU.
system-description	Enables or disables transmission of system description TLV in LLDPDU.
system-capabilities	Enables or disables transmission of system capabilities TLV in LLDPDU.
management-address	Enables or disables transmission of management address on per port.
enable	Enables management TLV LLDPDU transmission.
disable	Disables management TLV LLDPDU transmission.

Defaults

parameter	default
enable disable	disable

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- The LLDPDU must be enabled and set to transmit before using this command.
- If this command is applied to a slot or chassis, then the existing configuration related to this command is lost.

Examples

```
-> lldp 1/2 tlv management port-description enable
-> lldp 2 tlv management management-address enable
-> lldp 3 tlv management system-name disable
```

Release History

Release 6.6.1; command introduced.

Related Commands

lldp lldpdu	Configures the switch to control the transmission and the reception of LLDPDUs for a particular chassis, a slot, or a port.
show lldp local -system	Displays local system information.
show lldp local -port	Displays per port information.
show lldp remote-system	Displays per local port and information of remote system.

MIB Objects

```
lldpPortConfigTable
  lldpLocPortPortNum
  lldpPortConfigTLVsTxEnable
lldpConfigManAddrTable
  lldpConfigManAddrPortsTxEnable
```

lldp tlv dot1

Configures the switch to control per port 802.1 TLVs to be included in the LLDPDU.

lldp *{slot/port | slot / chassis}* **tlv dot1** **{port-vlan | vlan-name}** **{enable | disable}**

Syntax Definitions

<i>slot/port</i>	Slot number for the module and physical port number on that module (for example, 3/1 specifies port 1 on slot 3).
<i>slot</i>	The slot number for a specific module.
port-vlan	Enables or disables transmission of port VLAN TLV in LLDPDU.
vlan-name	Enables or disables transmission of VLAN name TLV in LLDPDU.
enable	Enables 802.1 TLV LLDPDU transmission.
disable	Disables 802.1 TLV LLDPDU transmission.

Defaults

parameter	default
enable disable	disable

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- The LLDPDU must be enabled and set to transmit before using this command.
- If this command is applied to a slot or chassis, then the existing configuration related to this command is lost.
- If one TLV is included then the other TLV is automatically included when you use this command.

Examples

```
-> lldp 5/1 tlv dot1 port-vlan enable
-> lldp 3 tlv dot1 vlan-name enable
-> lldp 3 tlv dot1 vlan-name disable
```

Release History

Release 6.6.1; command introduced.

Related Commands

lldp tlv management	Configures the switch to control per port management TLVs to be included in the LLDPDUs.
show lldp statistics	Displays per port statistics.
show lldp local -port	Displays per port information.

MIB Objects

```
lldpPortConfigTable
  lldpPortConfigPortNum
lldpXdot1ConfigPortVlanTable
  lldpXdot1ConfigPortVlanTxEnable
lldpXdot1ConfigVlanNameTable
  lldpXdot1ConfigVlanNameTxEnable
```

lldp tlv dot3 mac-phy

Configures the switch to control per port 802.3 TLVs to be included in the LLDPDUs.

```
lldp {slot/port | slot / chassis} tlv dot3 mac-phy {enable | disable}
```

Syntax Definitions

<i>slot/port</i>	Slot number for the module and physical port number on that module (for example, 3/1 specifies port 1 on slot 3).
<i>slot</i>	The slot number for a specific module.
enable	Enables 802.3 TLV LLDPDU transmission.
disable	Disables 802.3 TLV LLDPDU transmission.

Defaults

parameter	default
enable disable	disable

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- The LLDPDU must be enabled and set to transmit before using this command.
- If this command is applied to a slot or chassis, then the existing configuration related to this command is lost.

Examples

```
-> lldp 2/4 tlv dot3 mac-phy enable  
-> lldp 2 tlv dot3 mac-phy disable
```

Release History

Release 6.6.1; command introduced.

Related Commands

lldp lldpdu	Configures the LLDPDU status for one or more switch ports. The status determines if the specified switch ports will transmit, receive, transmit and receive, or drop LLDPDUs.
lldp tlv management	Configures the switch to control per port management TLVs to be included in the LLDPDUs.
lldp tlv dot1	Configures the switch to control per port 802.1 TLVs to be included in the LLDPDUs.
show lldp statistics	Displays per port statistics.

MIB Objects

```
lldpPortConfigTable  
  lldpPortConfigPortNum  
lldpXdot3PortConfigTable  
  lldpXdot3PortConfigTLVsTxEnable
```

lldp tlv dot3 power-via-mdi

Configures the switch to use the power via MDI TLV in the LLDPDU sent by the powered device.

```
lldp {slot/port | slot / chassis} tlv dot3 power-via-mdi {enable | disable}
```

Syntax Definitions

<i>slot/port</i>	Slot number for the module and physical port number on that module (for example, 3/1 specifies port 1 on slot 3).
<i>slot</i>	The slot number for a specific module.
chassis	All ports on the chassis.
enable	Enables 802.3 TLV LLDPDU transmission.
disable	Disables 802.3 TLV LLDPDU transmission.

Defaults

parameter	default
enable disable	disable

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- The LLDPDU must be enabled and set to transmit before using this command.
- If this command is applied to a slot or chassis, then the existing configuration related to this command is lost.
- When power-via-mdi is configured the power is negotiated between the powered device and the switch using the optional MDI TLV in the LLDPDU.

Examples

```
-> lldp 2/4 tlv dot3 power-via-mdi enable  
-> lldp 2 tlv dot3 power-via-mdi disable
```

Release History

Release 6.6.5; command introduced.

Related Commands

lldp lldpdu	Configures the LLDPDU status for one or more switch ports. The status determines if the specified switch ports will transmit, receive, transmit and receive, or drop LLDPDUs.
lldp tlv management	Configures the switch to control per port management TLVs to be included in the LLDPDUs.
lldp tlv dot1	Configures the switch to control per port 802.1 TLVs to be included in the LLDPDUs.
show lldp statistics	Displays per port statistics.

MIB Objects

```
lldpPortConfigTable
  lldpPortConfigPortNum
lldpXdot3PortConfigTable
  lldpXdot3PortConfigTLVsTxEnable
```

lldp tlv med

Configures the switch to control per port LLDP-MED (Media Endpoint Device) TLVs to be included in the LLDPDUs.

lldp {*slot/port* | *slot* / **chassis**} **tlv med** {**power** | **capability** | **network policy**} {**enable** | **disable**}

Syntax Definitions

<i>slot/port</i>	Slot number for the module and physical port number on that module (for example, 3/1 specifies port 1 on slot 3).
<i>slot</i>	The slot number for a specific module.
chassis	All ports on the switch.
power	Includes the extended PoE TLV in transmitted LLDPDUs.
capability	Enables or disables transmission of LLDP-MED capabilities TLV in LLDPDU.
network policy	Includes the network policy TLV in transmitted LLDPDUs.
enable	Enables LLDP-MED TLV LLDPDU transmission.
disable	Disables LLDP-MED TLV LLDPDU transmission.

Defaults

parameter	default
enable disable	disable

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- The LLDPDU must be enabled and set to transmit before using this command.
- If this command is applied to a slot or chassis, then the existing configuration related to this command is lost.
- The **lldp tlv med power** version of this command applies only to PoE units.
- Before enabling the power MED TLV, use the **lanpower start** command to activate PoE on a port or on all ports in a specific slot.

Examples

```
-> lldp 4/4 tlv med power enable
-> lldp 4/3 tlv med capability enable
-> lldp 4 tlv med power disable
-> lldp 4 tlv med network-policy enable
-> lldp chassis tlv med network-policy enable
```

Release History

Release 6.6.1; command introduced.
Release 6.6.2; **network policy** option added.

Related Commands

lldp lldpdu	Configures the LLDPDU status for one or more switch ports. The status determines if the specified switch ports will transmit, receive, transmit and receive, or drop LLDPDUs.
lldp tlv management	Configures the switch to control per port management TLVs to be included in the LLDPDUs.
lldp tlv dot1	Configures the switch to control per port 802.1 TLVs to be included in the LLDPDUs.
lldp tlv dot3 mac-phy	Configures the switch to control per port 802.3 TLVs to be included in the LLDPDUs.
show lldp med network-policy	Displays the MED Network Policy configuration.

MIB Objects

```
lldpPortConfigTable  
    lldpPortConfigPortNum  
lldpXMedPortConfigTable  
    lldpXMedPortConfigTLVsTxEnable
```

show lldp config

Displays the general LLDP configuration information for LLDP ports.

show lldp {*slot* / *slot/port*} **config**

Syntax Definitions

<i>slot</i>	The slot number for a specific module.
<i>slot/port</i>	Slot number for the module and physical port number on that module (for example, 3/1 specifies port 1 on slot 3).

Defaults

By default, a list of all LLDP ports with their configuration parameters is displayed.

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

Use the *slot/port* or *slot* parameter to display information for a specific port or for all ports on a specific module.

Examples

-> show lldp config

Slot/Port	Admin Status	Notify Trap	Std TLV Mask	Mgmt Address	802.1 TLV	802.3 Mask	MED Mask
2/1	Rx + Tx	Disabled	0x00	Disabled	Disabled	0x00	0x00
2/2	Rx + Tx	Disabled	0x00	Disabled	Disabled	0x00	0x00
2/3	Rx + Tx	Disabled	0x00	Disabled	Disabled	0x00	0x00
2/4	Rx + Tx	Disabled	0x00	Disabled	Disabled	0x00	0x00
2/5	Rx + Tx	Disabled	0x00	Disabled	Disabled	0x00	0x00

output definitions

Slot/Port	The LLDP slot and port number.
Admin Status	Indicates the Administrative status of the LLDP port. The options are - Disabled , Rx , Tx , and Rx+Tx .
Notify Trap	Indicates whether the Notify Trap feature is disabled or enabled on a particular port.
Std TLV Mask	The standard TLV mask set for the port.
Mgmt Address	Indicates whether transmission of the per port IPv4 management address is enabled or disabled.
802.1 TLV	Indicates whether 802.1 TLV status is enabled or disabled on the LLDP port.

output definitions

802.3 Mask	The standard 802.3 mask set for the port.
MED Mask	The standard MED mask set for the port.

Release History

Release 6.6.1; command introduced.

Related Commands

lldp lldpdu	Configures the LLDPDU status for one or more switch ports. The status determines if the specified switch ports will transmit, receive, transmit and receive, or drop LLDPDUs.
lldp notification	Enables or disables the LLDP notification status for one or more switch ports. LLDP notifications are sent when there is a change to the remote systems MIB.
lldp tlv management	Configures the switch to control per port management TLVs to be included in the LLDPDUs.
lldp tlv dot3 mac-phy	Configures the switch to control per port 802.3 TLVs to be included in the LLDPDUs.

MIB Objects

```
lldpPortConfigTable
  lldpPortConfigPortNum
  lldpPortConfigAdminStatus
  lldpPortConfigNotificationEnable
  lldpLocPortPortNum
  lldpPortConfigTLVsTxEnable
lldpConfigManAddrTable
  lldpConfigManAddrPortsTxEnable
lldpXdot3PortConfigTable
  lldpXdot3PortConfigTLVsTxEnable
```

show lldp network-policy

Displays the MED Network Policy details for a given policy ID.

show lldp network-policy [*policy_id*]

Syntax Definitions

policy_id Policy identifier for a network policy definition. Valid range is between 0 and 31.

Defaults

By default, all configured policies are displayed.

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Network policy must be configured on the system before using this command.
- Enter a policy ID with this command to display information for a specific policy.

Examples

```
-> show lldp network-policy
Legend: 0 Priority Tagged Vlan
        - Untagged Vlan
```

Network Policy ID	Application Type	Vlan Id	Layer2 Priority	DSCP Value
1	voice	4000	7	33
12	guest-voice	-	-	44
21	streaming-voice	0	4	11
31	guest-voice-signaling	23	2	1

```
-> show lldp network-policy 1
Legend: 0 Priority Tagged Vlan
        - Untagged Vlan
```

Network Policy ID	Application Type	Vlan Id	Layer2 Priority	DSCP Value
1	voice	4000	7	33

output definitions

Network Policy ID	Policy identifier for a network policy definition.
Application Type	Indicates the type of application configured on the port or VLAN.
VLAN ID	The VLAN ID assigned to the port on which the network policy is configured.
Layer2 Priority	Layer 2 priority to be used for the specified application type.
DSCP Value	DSCP value to be used to provide Diffserv node behavior for the specified application type.

Release History

Release 6.6.2; command introduced.

Related Commands

[lldp network-policy](#) Configures a local network policy on a switch for an application type.

MIB Objects

```

alaLldpXMedLocMediaPolicyTable
  alaLldpXMedLocMediaPolicyId
  alaLldpXMedLocMediaPolicyAppType
  alaLldpXMedLocMediaPolicyVlanType
  alaLldpXMedLocMediaPolicyVlanId
  alaLldpXMedLocMediaPolicyPriority
  alaLldpXMedLocMediaPolicyDscp
  alaLldpXMedLocMediaPolicyUnknown
  alaLldpXMedLocMediaPolicyTagged

```

show lldp med network-policy

Displays the network policy configured on a slot or port. If no option is specified, network policies configured on all ports of the chassis are displayed.

show lldp [*slot* / *slot/port*] **med network-policy**

Syntax Definitions

slot Specifies the slot number on a specific module or chassis.

slot/port Specifies the slot number for the module and physical port number on that module (for example, 3/1 specifies port 1 of slot 3).

Defaults

By default, all ports with associated policies are displayed.

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Network policy must be configured on the system before using this command.
- Enter a slot or slot/port number with this command to display information for a specific slot or port.

Examples

```
-> show lldp med network-policy
```

slot/port	Network Policy ID
1/1	1 3 5 7 21 23 30 31
1/2	1 2 3 4 7 8 9 10
.	
.	
.	
2/1	1 3 5
.	
.	

```
-> show lldp 1/1 med network-policy
```

Legend: 0 Priority Tagged Vlan
- Untagged Vlan

Slot/ Port	Network Policy ID	Application Type	Vlan Id	Layer2 Priority	DSCP Value
1/1	1	guest-voice-signaling	-	-	0

output definitions

Slot / Port	Slot number for the module and physical port number on that module.
Network Policy ID	Policy identifier for a network policy definition.
Application Type	Indicates the type of application configured on the port or VLAN.
VLAN ID	The VLAN ID assigned to the port on which the network policy is configured.
Layer2 Priority	Layer 2 priority to be used for the specified application type.

Release History

Release 6.6.2; command introduced.

Related Commands

lldp tlv dot3 power-via-mdi	Configures whether LLDP-MED TLVs are included in transmitted LLDPDUs.
lldp network-policy	Configures a local network policy on a switch for an application type.

MIB Objects

```
alaLldpXMedLocMediaPolicyPortTable  
  alaLldpXMedLocMediaPolicyPortIfIndex  
  alaLldpXMedLocMediaPolicyId
```

show lldp system-statistics

Displays system-wide statistics.

show lldp system-statistics

Syntax Definitions

N/A

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

N/A

Examples

```
-> show lldp system-statistics
Local LLDP Agent System Statistics:
  Remote Systems Last Change = 0 days 0 hours 3 minutes and 10 seconds,
  Remote Systems MIB Inserts = 2,
  Remote Systems MIB Deletes = 0,
  Remote Systems MIB Drops = 0,
  Remote Systems MIB Age Outs = 0
```

output definitions

Remote Systems Last Change	The last change recorded in the tables associated with the remote system.
Remote Systems MIB Inserts	The total number of complete inserts in the tables associated with the remote system.
Remote Systems MIB Deletes	The total number of complete deletes in tables associated with the remote system.
Remote Systems MIB Drops	The total number of LLDPDUs dropped because of insufficient resources.
Remote Systems MIB Age Outs	The total number of complete age-outs in the tables associated with the remote system.

Release History

Release 6.6.1; command introduced.

Related Commands

lldp notification

Enables or disables the LLDP notification status for one or more switch ports. LLDP notifications are sent when there is a change to the remote systems MIB.

lldp notification interval

Sets the amount of time that must elapse before an LLDP notification about a remote systems MIB change is generated.

MIB Objects

lldpStatistics

lldpStatsRemTablesLastChangeTime

lldpStatsRemTablesInserts

lldpStatsRemTablesDeletes

lldpStatsRemTablesDrops

lldpStatsRemTablesAgeouts

show lldp statistics

Displays per port statistics.

show lldp [*slot/slot/port*] **statistics**

Syntax Definitions

slot/port Slot number for the module and physical port number on that module (for example, 3/1 specifies port 1 on slot 3).

slot The slot number for a specific module.

Defaults

By default, statistics are displayed for all LLDP ports.

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Enter a slot or slot/port number to display statistics for a specific slot or port.
- If the statistics are zero they are not displayed.

Examples

-> show lldp statistics

Slot/Port	Tx	LLDPDU Rx	Errors	LLDPDU Discards	TLV Unknown	Device Discards	Ageouts
1/23	52	0	0	0	0	0	0
2/47	50	50	0	0	0	0	0
2/48	50	50	0	0	0	0	0

output definitions

Slot/Port	Slot number for the module and physical port number on that module.
LLDPDU Tx	The total number of LLDPDUs transmitted on the port.
LLDPDU Rx	The total number of valid LLDPDUs received on the port.
LLDPDU Errors	The total number of invalid LLDPDUs discarded on the port.
LLDPDU Discards	The total number of LLDPDUs discarded on the port.
TLV Unknown	The total number of unrecognized LLDP TLVs on the port.
TLV Discards	The total number of LLDP TLVs discarded on the port.
Device Ageouts	The total number of complete age-outs on the port.

Release History

Release 6.6.1; command introduced.

Related Commands

lldp lldpdu

Configures the LLDPDU status for one or more switch ports. The status determines if the specified switch ports will transmit, receive, transmit and receive, or drop LLDPDUs.

lldp tlv management

Configures the switch to control per port management TLVs to be included in the LLDPDUs.

MIB Objects

lldpStatsTxPortTable

 lldpStatsTxPortNum

 lldpStatsTxPortFramesTotal

lldpStatsRxPortTable

 lldpStatsRxPortNum

 lldpStatsRxPortFramesDiscardedTotal

 lldpStatsRxPortFramesErrors

 lldpStatsRxPortFramesTotal

 lldpStatsRxPortTLVsDiscardedTotal

 lldpStatsRxPortTLVsUnrecognizedTotal

 lldpStatsRxPortAgeoutsTotal

show lldp local-system

Displays local system information.

show lldp local-system

Syntax Definitions

N/A

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

N/A

Examples

```
-> show lldp local-system
Local LLDP Agent System Data:
  Chassis ID Subtype      = 4 (MAC Address),
  Chassis ID              = 00:d0:95:e9:c9:2e,
  System Name             = vxTarget,
  System Description      = Alcatel-Lucent 6450 10 PORT COPPER GE 6.6.3.177.
                          R01 Development, February 10, 2012.,
  Capabilities Supported  = Bridge, Router,
  Capabilities Enabled    = Bridge, Router,
  LLDPDU Transmit Interval = 30 seconds,
  TTL Hold Multiplier     = 4,
  LLDPDU Transmit Delay   = 2 seconds,
  Reinitialization Delay  = 2 seconds,
  MIB Notification Interval = 5 seconds
  Fast Start Count        = 3,
  Management Address Type = 1 (IPv4),
  Management IP Address   = 10.255.13.44,
```

output definitions

Chassis ID Subtype	The subtype that specifies the chassis ID.
Chassis ID	The chassis ID (MAC address).
System Name	The name of the system.
System Description	The description of the system.
Capabilities Supported	The capabilities of the system.
Capabilities Enabled	The enabled capabilities of the system.
LLDPDU Transmit Interval	The LLDPDU transmit interval.

output definitions (continued)

TTL Hold Multiplier	The hold multiplier used to calculate TTL.
LLDPDU Transmit Delay	The minimum transmit time between successive LLDPDUs.
Reinitialization Delay	The minimum time interval before the reinitialization of local port objects between port status changes.
MIB Notification Interval	The minimum time interval between consecutive notifications of local system MIB change.
Fast Start Count	Configures the number of LLDPDUs to be sent as soon as a MED is detected by system.
Management Address Type	The type of management address used in LLDPDU.
Management IP Address	The management IP address. The Loopback0 IP address (if configured) is considered as the management IP address, else, the first IP interface configured on the switch is considered.

Release History

Release 6.6.1; command introduced.

Release 6.6.2; **Fast Start Count** field added to output.

Related Commands

lldp destination mac-address	Configures the fast start count for an LLDP Media Endpoint Device (MED).The fast start count specifies the number of LLDPDUs to be sent as soon as a MED is detected by the switch. The LLDPDUs contain the LLDP MED Network Policy TLVs.
lldp reinit delay	Sets the amount of time that must elapse before an LLDP port is re-initialized after the status for the port was disabled.
lldp transmit hold-multiplier	Sets the transmit hold multiplier value. This value is used to calculate the Time to Live (TTL) value that is advertised in an LLDPDU.
lldp transmit delay	Sets the minimum amount of time that must elapse between successive LLDPDUs that are transmitted as the result of a value or status change in the LLDP local systems MIB.

MIB Objects

```
lldpLocalSystemData
  lldpLocChassisIdSubtype
  lldpLocChassisId
  lldpLocSysName
  lldpLocSysDesc
  lldpLocSysCapSupported
  lldpLocSysEnabled
lldpPortConfigTable
  lldpMessageTxInterval
  lldpMessageTXHoldMultiplier
  lldpTxDelay
  lldpReinitDelay
  lldpNotificationInterval
lldpLocManAddrTable
  lldpLocManAddrSubtype
```

```
lldpLocManAddr  
lldpXMedFastStartRepeatCount
```

show lldp local-port

Displays per port information.

show lldp [*slot/port* | *slot*] **local-port**

Syntax Definitions

slot/port Slot number for the module and physical port number on that module (for example, 3/1 specifies port 1 on slot 3).

slot The slot number for a specific module.

Defaults

By default, a list of all LLDP ports is displayed.

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

N/A

Examples

```
-> show lldp local-port
Local Slot 1/Port 1 LLDP Info:
  Port ID           = 1001 (Locally assigned),
  Port Description  = Alcatel 1/1,
Local Slot 1/Port 2 LLDP Info:
  Port ID           = 1002 (Locally assigned),
  Port Description  = Alcatel 1/2,
Local Slot 1/Port 3 LLDP Info:
  Port ID           = 1003 (Locally assigned),
  Port Description  = Alcatel 1/3,
Local Slot 1/Port 4 LLDP Info:
  Port ID           = 1004 (Locally assigned),
  Port Description  = Alcatel 1/4,
Local Slot 1/Port 5 LLDP Info:
  Port ID           = 1005 (Locally assigned),
  Port Description  = Alcatel 1/5,
Local Slot 1/Port 6 LLDP Info:
  Port ID           = 1006 (Locally assigned),
  Port Description  = Alcatel 1/6,
Local Slot 1/Port 7 LLDP Info:
  Port ID           = 1007 (Locally assigned),
  Port Description  = Alcatel 1/7,
Local Slot 1/Port 8 LLDP Info:
  Port ID           = 1008 (Locally assigned),
  Port Description  = Alcatel 1/8,
Local Slot 1/Port 9 LLDP Info:
  Port ID           = 1009 (Locally assigned),
  Port Description  = Alcatel 1/9,
```

```
Local Slot 1/Port 10 LLDP Info:
  Port ID           = 1010 (Locally assigned),
  Port Description  = Alcatel 1/10,
Local Slot 1/Port 11 LLDP Info:
  Port ID           = 1011 (Locally assigned),
  Port Description  = Alcatel 1/11,
Local Slot 1/Port 12 LLDP Info:
  Port ID           = 1012 (Locally assigned),
  Port Description  = Alcatel 1/12,
Local Slot 1/Port 13 LLDP Info:
  Port ID           = 1013 (Locally assigned),
  Port Description  = Alcatel 1/13,
Local Slot 1/Port 14 LLDP Info:
  Port ID           = 1014 (Locally assigned),
  Port Description  = Alcatel 1/14,
Local Slot 1/Port 15 LLDP Info:
  Port ID           = 1015 (Locally assigned),
  Port Description  = Alcatel 1/15,
Local Slot 1/Port 16 LLDP Info:
  Port ID           = 1016 (Locally assigned),
  Port Description  = Alcatel 1/16,
Local Slot 1/Port 17 LLDP Info:
  Port ID           = 1017 (Locally assigned),
  Port Description  = Alcatel 1/17,
Local Slot 1/Port 18 LLDP Info:
  Port ID           = 1018 (Locally assigned),
  Port Description  = Alcatel 1/18,
Local Slot 1/Port 19 LLDP Info:
  Port ID           = 1019 (Locally assigned),
  Port Description  = Alcatel 1/19,
Local Slot 1/Port 20 LLDP Info:
  Port ID           = 1020 (Locally assigned),
  Port Description  = Alcatel 1/20,
Local Slot 1/Port 21 LLDP Info:
  Port ID           = 1021 (Locally assigned),
  Port Description  = Alcatel 1/21,
Local Slot 1/Port 22 LLDP Info:
  Port ID           = 1022 (Locally assigned),
  Port Description  = Alcatel 1/22,
Local Slot 1/Port 23 LLDP Info:
  Port ID           = 1023 (Locally assigned),
  Port Description  = Alcatel 1/23,
Local Slot 1/Port 24 LLDP Info:
  Port ID           = 1024 (Locally assigned),
  Port Description  = Alcatel 1/24,
Local Slot 1/Port 25 LLDP Info:
  Port ID           = 1025 (Locally assigned),
  Port Description  = ,
Local Slot 1/Port 26 LLDP Info:
  Port ID           = 1026 (Locally assigned),
  Port Description  = ,
Local Slot 2/Port 1 LLDP Info:
  Port ID           = 2001 (Locally assigned),
  Port Description  = Alcatel 2/1,
Local Slot 2/Port 2 LLDP Info:
  Port ID           = 2002 (Locally assigned),
  Port Description  = Alcatel 2/2,
Local Slot 2/Port 3 LLDP Info:
  Port ID           = 2003 (Locally assigned),
```

```
Port Description           = Alcatel 2/3,
Local Slot 2/Port 4 LLDP Info:
  Port ID                  = 2004 (Locally assigned),
  Port Description         = Alcatel 2/4,
Local Slot 2/Port 5 LLDP Info:
  Port ID                  = 2005 (Locally assigned),
  Port Description         = Alcatel 2/5,
Local Slot 2/Port 6 LLDP Info:
  Port ID                  = 2006 (Locally assigned),
  Port Description         = Alcatel 2/6,
Local Slot 2/Port 7 LLDP Info:
  Port ID                  = 2007 (Locally assigned),
  Port Description         = Alcatel 2/7,
Local Slot 2/Port 8 LLDP Info:
  Port ID                  = 2008 (Locally assigned),
  Port Description         = Alcatel 2/8,
Local Slot 2/Port 9 LLDP Info:
  Port ID                  = 2009 (Locally assigned),
  Port Description         = Alcatel 2/9,
Local Slot 2/Port 10 LLDP Info:
  Port ID                  = 2010 (Locally assigned),
  Port Description         = Alcatel 2/10,
Local Slot 2/Port 11 LLDP Info:
  Port ID                  = 2011 (Locally assigned),
  Port Description         = Alcatel 2/11,
Local Slot 2/Port 12 LLDP Info:
  Port ID                  = 2012 (Locally assigned),
  Port Description         = Alcatel 2/12,
Local Slot 2/Port 13 LLDP Info:
  Port ID                  = 2013 (Locally assigned),
  Port Description         = Alcatel 2/13,
Local Slot 2/Port 14 LLDP Info:
  Port ID                  = 2014 (Locally assigned),
  Port Description         = Alcatel 2/14,
Local Slot 2/Port 15 LLDP Info:
  Port ID                  = 2015 (Locally assigned),
  Port Description         = Alcatel 2/15,
Local Slot 2/Port 16 LLDP Info:
  Port ID                  = 2016 (Locally assigned),
  Port Description         = Alcatel 2/16,
Local Slot 2/Port 17 LLDP Info:
  Port ID                  = 2017 (Locally assigned),
  Port Description         = Alcatel 2/17,
Local Slot 2/Port 18 LLDP Info:
  Port ID                  = 2018 (Locally assigned),
  Port Description         = Alcatel 2/18,
Local Slot 2/Port 19 LLDP Info:
  Port ID                  = 2019 (Locally assigned),
  Port Description         = Alcatel 2/19,
Local Slot 2/Port 20 LLDP Info:
  Port ID                  = 2020 (Locally assigned),
  Port Description         = Alcatel 2/20,
Local Slot 2/Port 21 LLDP Info:
  Port ID                  = 2021 (Locally assigned),
  Port Description         = Alcatel 2/21,
Local Slot 2/Port 22 LLDP Info:
  Port ID                  = 2022 (Locally assigned),
  Port Description         = Alcatel 2/22,
Local Slot 2/Port 23 LLDP Info:
```

```
Port ID = 2023 (Locally assigned),
Port Description = Alcatel 2/23,
Local Slot 2/Port 24 LLDP Info:
Port ID = 2024 (Locally assigned),
Port Description = Alcatel 2/24,
Local Slot 2/Port 25 LLDP Info:
Port ID = 2025 (Locally assigned),
Port Description = Alcatel 2/25,
Local Slot 2/Port 26 LLDP Info:
Port ID = 2026 (Locally assigned),
Port Description = Alcatel 2/26,
Local Slot 2/Port 27 LLDP Info:
Port ID = 2027 (Locally assigned),
Port Description = Alcatel 2/27,
Local Slot 2/Port 28 LLDP Info:
Port ID = 2028 (Locally assigned),
Port Description = Alcatel 2/28,
Local Slot 2/Port 29 LLDP Info:
Port ID = 2029 (Locally assigned),
Port Description = Alcatel 2/29,
Local Slot 2/Port 30 LLDP Info:
Port ID = 2030 (Locally assigned),
Port Description = Alcatel 2/30,
Local Slot 2/Port 31 LLDP Info:
Port ID = 2031 (Locally assigned),
Port Description = Alcatel 2/31,
Local Slot 2/Port 32 LLDP Info:
Port ID = 2032 (Locally assigned),
Port Description = Alcatel 2/32,
Local Slot 2/Port 33 LLDP Info:
Port ID = 2033 (Locally assigned),
Port Description = Alcatel 2/33,
Local Slot 2/Port 34 LLDP Info:
Port ID = 2034 (Locally assigned),
Port Description = Alcatel 2/34,
Local Slot 2/Port 35 LLDP Info:
Port ID = 2035 (Locally assigned),
Port Description = Alcatel 2/35,
Local Slot 2/Port 36 LLDP Info:
Port ID = 2036 (Locally assigned),
Port Description = Alcatel 2/36,
Local Slot 2/Port 37 LLDP Info:
Port ID = 2037 (Locally assigned),
Port Description = Alcatel 2/37,
Local Slot 2/Port 38 LLDP Info:
Port ID = 2038 (Locally assigned),
Port Description = Alcatel 2/38,
Local Slot 2/Port 39 LLDP Info:
Port ID = 2039 (Locally assigned),
Port Description = Alcatel 2/39,
Local Slot 2/Port 40 LLDP Info:
Port ID = 2040 (Locally assigned),
Port Description = Alcatel 2/40,
Local Slot 2/Port 41 LLDP Info:
Port ID = 2041 (Locally assigned),
Port Description = Alcatel 2/41,
Local Slot 2/Port 42 LLDP Info:
Port ID = 2042 (Locally assigned),
Port Description = Alcatel 2/42,
```

```

Local Slot 2/Port 43 LLDP Info:
  Port ID                = 2043 (Locally assigned),
  Port Description       = Alcatel 2/43,
Local Slot 2/Port 44 LLDP Info:
  Port ID                = 2044 (Locally assigned),
  Port Description       = Alcatel 2/44,
Local Slot 2/Port 45 LLDP Info:
  Port ID                = 2045 (Locally assigned),
  Port Description       = Alcatel 2/45,
Local Slot 2/Port 46 LLDP Info:
  Port ID                = 2046 (Locally assigned),
  Port Description       = Alcatel 2/46,
Local Slot 2/Port 47 LLDP Info:
  Port ID                = 2047 (Locally assigned),
  Port Description       = Alcatel 2/47,
Local Slot 2/Port 48 LLDP Info:
  Port ID                = 2048 (Locally assigned),
  Port Description       = Alcatel 2/48,

```

output definitions

Port ID	The port ID (port MAC).
Port Description	The description of the port (which includes the port number and the AOS version).

Release History

Release 6.6.1; command introduced.

Related Commands

lldp tlv management

Configures the switch to control per port management TLVs to be included in the LLDPDUs.

lldp tlv dot1

Configures the switch to control per port 802.1 TLVs to be included in the LLDPDUs.

MIB Objects

```

lldpLocPortTable
  lldpLocPortNum
  lldpLocPortIdsubtype
  lldpLocPortId
  lldpLocPortDesc

```

show lldp local-management-address

Displays the local management address information.

show lldp local-management-address

Syntax Definitions

N/A

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

N/A

Examples

```
-> show lldp local-management-address
Local LLDP Agent Management Address:
  Management Address Type      = 1 (IPv4),
  Management IP Address        = 10.255.11.100
```

output definitions

Management Address Type	The address type used to define the interface number (IPv4 or IPv6).
Management IP Address	The management IP address. The loopback0 IP address is configured for the management IP address to be transmitted.

Release History

Release 6.6.1; command introduced.

Related Commands

lldp tlv management	Configures the switch to control per port management TLVs to be included in the LLDPDUs.
show lldp local -system	Displays local system information.

MIB Objects

```
lldpLocManAddrTable
  lldpLocManAddrLen
  lldpLocManAddrIfSubtype
  lldpLocManAddrIfId
```

show lldp remote-system

Displays per local port and information of remote system.

show lldp [*slot/port* | *slot*] **remote-system**

Syntax Definitions

slot/port Slot number for the module and physical port number on that module (for example, 3/1 specifies port 1 on slot 3).

slot The slot number for a specific module.

Defaults

By default, a list of all LLDP ports is displayed.

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

N/A

Examples

```
-> show lldp remote-system
Remote LLDP Agents on Local Slot/Port: 2/47,
  Chassis ID Subtype      = 4 (MAC Address),
  Chassis ID              = 00:d0:95:e9:c9:2e,
  Port ID Subtype         = 7 (Locally assigned),
  Port ID                 = 2048,
  Port Description        = (null),
  System Name             = (null),
  System Description      = (null),
  Capabilities Supported  = none supported,
  Capabilities Enabled    = none enabled,

Remote LLDP Agents on Local Slot/Port: 2/48,
  Chassis ID Subtype      = 4 (MAC Address),
  Chassis ID              = 00:d0:95:e9:c9:2e,
  Port ID Subtype         = 7 (Locally assigned),
  Port ID                 = 2047,
  Port Description        = (null),
  System Name             = (null),
  System Description      = (null),
  Capabilities Supported  = none supported,
  Capabilities Enabled    = none enabled,
```

output definitions

Remote LLDP Agents on Local Slot/Port	The Slot number to which the remote system entry is associated and the physical port number on that module.
Chassis ID Subtype	The sub type that specifies the chassis ID.
Chassis ID	The chassis ID (MAC address).
Port ID Subtype	The sub type that specifies the port ID.
Port ID	The port ID (Port MAC).
Port Description	The description of the port (which includes the port number and the AOS version).
System Name	The name of the system.
System Description	The description of the system.
Capabilities Supported	The capabilities of the system.
Capabilities Enabled	The enabled capabilities of the system.

Release History

Release 6.6.1; command introduced.

Related Commands

show lldp local -port	Displays per port information.
show lldp local -system	Displays local system information.

MIB Objects

```

lldpRemTable
  lldpRemLocalPortNum
  lldpRemChassisIdSubtype
  lldpRemChassisId
  lldpRemPortIdSubtype
  lldpRemPortId
  lldpRemPortDesc
  lldpRemSysName
  lldpRemSysDesc
  lldpRemSysCapSupported
  lldpRemSysCapEnabled
  lldpRemManAddrIfSubtype
  lldpRemManAddrIfId

```

show lldp remote-system med

Displays remote system MED information for a single port or all ports on a slot.

show lldp [*slot/port* | *slot*] **remote-system** [**med** {**network-policy** | **inventory**}]

Syntax Definitions

<i>slot/port</i>	Slot number for the module and physical port number on that module (for example, 3/1 specifies port 1 on slot 3).
<i>slot</i>	The slot number for a specific module.
network-policy	Display network-policy TLVs from remote Endpoint Devices
inventory	Display inventory management TLVs from remote Endpoint Devices

Defaults

By default, a list of all LLDP ports is displayed.

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

Use the *slot/port* or *slot* parameter to display information for a specific port or for all ports on a specific module.

Examples

```
-> show lldp 2/47 remote-system med network-policy
Slot/ Remote  Application      Unknown   Tagged   Vlan   Layer2   DSCP
Port   ID          Type            Policy   Flag    Flag    Id       Priority  Value
-----+-----+-----+-----+-----+-----+-----+-----+-----
1/22   1           Voice(01)       Defined  Untagged 345     4        34
1/22   2           Guest Voice(4)  Defined  Untagged 50      3        46
```

output definitions

Slot/Port	The Slot number to which the remote system entry is associated and the physical port number on that module.
Remote ID	The Index of the Remote Device.
Application Type	The Application type of the peer entity. 1. Voice 2. Voice Signaling 3. Guest Voice 4. Guest Voice Signaling 5. Softphone Voice 6. Video Conferencing 7. Streaming Video 8. Video Signaling

output definitions (continued)

Unknown Policy Flag	Whether the network policy for the specified application type is currently defined or unknown.
Tagged Flag	Whether the specified application type is using a tagged or an untagged VLAN.
VLAN ID	The VLAN identifier (VID) for the port.
Layer 2 Priority	Layer 2 priority to be used for the specified application type.
DSCP Value	DSCP value to be used to provide Diffserv node behavior for the specified application type.

```
-> show lldp 2/47 remote-system med inventory
```

```
Remote LLDP Agents on Local Slot/Port 1/22:
```

```
Remote ID 1:
```

```
MED Hardware Revision = "1.2.12.3",
MED Firmware Revision = "6.3.4.1",
MED Software Revision = "4.2.1.11",
MED Serial Number      = "32421",
MED Manufacturer Name = "Manufacturer1",
MED Model Name        = "Alc32d21",
MED Asset ID          = "124421",
```

```
Remote ID 2:
```

```
MED Hardware Revision = "1.2.12.4",
MED Firmware Revision = "6.3.4.2",
MED Software Revision = "4.2.1.13",
MED Serial Number      = "32424",
MED Manufacturer Name = "Manufacturer2",
MED Model Name        = "Alc32d41",
MED Asset ID          = "124424",
```

output definitions

Remote ID	The Index of the Remote Device.
MED Hardware Revision	The Hardware Revision of the endpoint
MED Firmware Revision	The Firmware Revision of the endpoint.
MED Software Revision	The Software Revision of the endpoint.
MED Manufacturer Name	The Manufacturer Name of the endpoint.
MED Model Name	The Model Name of the endpoint.
MED Asset ID	The Asset ID of the endpoint.

Release History

Release 6.6.1; command introduced.

Related Commands

show lldp local -port	Displays per port information.
show lldp local -system	Displays local system information.

MIB Objects

```
lldpXMedRemMediaPolicyTable
  lldpXMedRemMediaPolicyAppType
  lldpXMedRemMediaPolicyDscp
  lldpXMedRemMediaPolicyPriority
  lldpXMedRemMediaPolicyTagged
  lldpXMedRemMediaPolicyUnknown
  lldpXMedRemMediaPolicyVlanID
lldpXMedRemInventoryTable
  lldpXMedRemAssetID
  lldpXMedRemFirmwareRev
  lldpXMedRemHardwareRev
  lldpXMedRemMfgName
  lldpXMedRemModelName
  lldpXMedRemSerialNum
  lldpXMedRemSoftwareRev
```

lldp trust-agent

Enables or disables the security mechanism globally (chassis level) or for a slot or a single port. By enabling LLDP security mechanism on a port, LLDP CMM task brings the LLDP status of the port as trusted, and monitors the port for any LLDP security violation.

lldp {*slot/port/ slot* | **chassis**} **trust-agent** {**enable** | **disable**}

lldp {*slot/port/ slot* | **chassis**} [**chassis-id-subtype** {**chassis-component** | **interface-alias** | **port-component** | **mac-address** | **network-address** | **interface-name** | **locally-assigned** | **any**}]

Syntax Definitions

<i>slot/port</i>	The slot number for the module and the physical port number on that module (for example, 3/1 specifies port 1 on slot 3).
<i>slot</i>	The slot number for the module (for example, 3 specifies slot 3)
chassis	Specifies all the ports in the chassis.
enable	Enables LLDP security mechanism.
disable	Disables LLDP security mechanism.
chassis-component	The chassis component is used for validating the remote agent.
interface-alias	The alias configured for the interface is used for validating the remote agent.
port-component	The port component is used for validating the remote agent.
mac-address	The MAC address is used for validating the remote agent.
network-address	The network address is used for validating the remote agent.
interface-name	The interface name is used for validating the remote agent.
locally-assigned	The locally assigned component is used for validating the remote agent, that is the chassis information, which can be locally assigned (the local configuration)
any	The remote agent with any chassis ID sub type is accepted as a trust agent.

Defaults

'**any**' - If the chassis ID sub type is not configured for validating the remote agent, by default, the first remote agent is accepted as a trust agent considering any of the chassis ID sub types.

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- By enabling security on chassis or slot level, the ports that come under the respective levels are monitored for any LLDP security violation.
- If the chassis ID sub type is not configured for validating the remote agent, then the LLDP learns the first remote agent with available chassis ID TLV (Time, Length, Value) received in the PDU.

- After a link up is received on an LLDP security enabled port, LLDP CMM waits for three times the LLDP timer interval (30 seconds). If LLDP PDU is not received after link up that has no remote agent, the port is moved to a violation state.
- If a trusted remote agent exists, and if no LLDP remote agent is learned even after three times the LLDP timer interval (30 seconds), the port is moved to violation state. If a new LLDP remote agent is learned after the link toggle, then the port is moved to a violation state.
- If the same chassis ID and port ID exist in the trusted remote agent database but on a different port, then the port remote agent is learned, and the port is moved to a violation state. If a new LLDP remote agent is learned on a port that has a trusted LLDP remote agent, then the port is moved to a violation state.

Examples

```
-> lldp chassis trust-agent enable
-> lldp chassis trust-agent chassis-id-subtype chassis-component
```

Release History

Release 6.6.3; command introduced.

Related Commands

lldp trust-agent violation-action	Sets the action to be performed when a violation is detected.
show lldp trusted remote-agent	Displays information on trusted remote-agents.
show lldp trust-agent	Displays information on local LLDP agent/port.

MIB Objects

```
alaLldpTrustAdminStatus
  alaLldpTrustChassiIdSubType
```

lldp trust-agent violation-action

Sets the action to be performed when a violation is detected.

lldp {*slot/port/ slot* | **chassis**} **trust-agent violation-action** {**trap-and-shutdown** | **trap** | **shutdown**}

Syntax Definitions

<i>slot/port</i>	The slot number for the module and the physical port number on that module (for example, 3/1 specifies port 1 on slot 3).
<i>slot</i>	The slot number for the module (for example, 3 specifies slot 3)
chassis	All switch ports.
trap-and-shutdown	Shuts down the port and sends a trap notification when a violation is detected.
trap	Sends a trap notification when a violation is detected.
shutdown	Shuts down the port when a violation is detected.

Defaults

By default, trust agent violation action is set to 'trap'.

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- If the port is in a shutdown state, clear the violation on the port by using the command “**interfaces slot[/port[-port2]] clear-violation-all**”
- Clearing the violation on a port does not clear the trusted remote agent existing on that port. To clear the trusted remote agent, disable the LLDP security mechanism on the port.
- If the port is in a shutdown state due to violation and the port link is toggled, only the link comes up. The port remains in the violation state and the trusted remote agent existing on that port is not cleared.

Examples

```
-> lldp chassis trust-agent violation-action trap
-> lldp 3 trust-agent violation-action shutdown
```

Release History

Release 6.6.3; command introduced.

Related Commands

lldp trust-agent

Sets the status of trust admin status for a port.

show lldp trusted remote-agent

Displays information on trusted remote-agents.

show lldp trust-agent

Displays information on local LLDP agent/port.

MIB Objects

alaLldpTrustAction

show lldp trusted remote-agent

Displays information on trusted remote-agents.

show lldp [*num* | *slot/port*] **trusted remote-agent**

Syntax Definitions

num The slot number for the module (for example, 3 specifies slot 3)

slot/port The slot number for the module and the physical port number on that module (for example, 3/1 specifies port 1 on slot 3).

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

Use the slot/port or slot parameter to display information for a specific port or for all ports on a specific module.

Examples

```
-> show lldp trusted remote-agent
```

```
Trusted Remote LLDP Agents on Local Slot/Port: 1/7
  Chassis ID Subtype      = 4 (MAC Address),
  Chassis ID              = 00:e0:b1:7a:e6:3c,
  Port ID Subtype         = 7 (Locally assigned),
  Port ID                 = 1017
```

output definitions

Trusted Remote LLDP Agents on Local Slot/Port	The slot number to which the remote trusted agent is associated and the physical port number on that module.
Chassis ID Subtype	The sub type that specifies the chassis ID.
Chassis ID	The chassis ID (MAC address).
Port ID Subtype	The sub type that specifies port ID.
Port ID	The port ID (Port MAC).

Release History

Release 6.6.3; command introduced.

Related Commands

lldp trust-agent

Sets the status of trust admin status for a port.

lldp trust-agent violation-action

Sets the action to be performed when a violation is detected.

show lldp trust-agent

Displays information on local LLDP agent/port.

MIB Objects

N/A

show lldp trust-agent

Displays information of the local LLDP agent/port.

show lldp [*num* | *slot/port*] **trust-agent**

Syntax Definitions

num The slot number for the module (for example, 3 specifies slot 3)

slot/port The slot number for the module and the physical port number on that module (for example, 3/1 specifies port 1 on slot 3).

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

Use the slot/port or slot parameter to display information for a specific port or for all ports on a specific module.

Examples

```
-> show lldp trust-agent
```

Slot/Port	Admin Status	Violation Action	Violation Status	Chassis Subtype
1/1	Enabled	Trap Only	Trusted	1(Chassis Component)
1/2	Enabled	Trap Only	Trusted	1(Chassis Component)
1/3	Enabled	Trap Only	Trusted	1(Chassis Component)
1/4	Enabled	Trap Only	Trusted	1(Chassis Component)
1/5	Enabled	Trap Only	Trusted	1(Chassis Component)
1/6	Enabled	Trap Only	Trusted	1(Chassis Component)
1/7	Enabled	Trap Only	Trusted	1(Chassis Component)
1/8	Enabled	Trap Only	Trusted	1(Chassis Component)
1/9	Enabled	Trap Only	Trusted	1(Chassis Component)
1/10	Enabled	Trap Only	Trusted	1(Chassis Component)
1/11	Enabled	Trap Only	Trusted	1(Chassis Component)
1/12	Enabled	Trap Only	Trusted	1(Chassis Component)
1/13	Enabled	Trap Only	Trusted	1(Chassis Component)
1/14	Enabled	Trap Only	Trusted	1(Chassis Component)
1/15	Enabled	Trap Only	Trusted	1(Chassis Component)
1/16	Enabled	Trap Only	Trusted	1(Chassis Component)
1/17	Enabled	Trap Only	Trusted	1(Chassis Component)
1/18	Enabled	Trap Only	Trusted	1(Chassis Component)
1/19	Enabled	Trap Only	Trusted	1(Chassis Component)
1/20	Enabled	Trap Only	Trusted	1(Chassis Component)
1/21	Enabled	Trap Only	Trusted	1(Chassis Component)
1/22	Enabled	Trap Only	Trusted	1(Chassis Component)
1/23	Enabled	Trap Only	Trusted	1(Chassis Component)

```
1/24    Enabled      Trap Only      Trusted      1(Chassis Component)
```

output definitions

Slot/Port	The LLDP slot and port number.
Admin Status	Indicates the administrative status of the LLDP port: Enabled or Disabled
Violation Action	Indicates the action performed when a violation is detected. The options are - Trap Only , Trap-and-Shutdown , and Shutdown Only .
Violation Status	The violation status of the port, Trusted or Violated
Chassis Subtype	The sub type that specifies the chassis ID.

Release History

Release 6.6.3; command introduced.

Related Commands

lldp trust-agent	Sets the status of trust admin status for a port.
lldp trust-agent violation-action	Sets the action to be performed when a violation is detected.
show lldp trusted remote-agent	Displays information on trusted remote-agents.

MIB Objects

N/A

14 Interswitch Protocol Commands

Alcatel-Lucent Interswitch Protocols (AIP) are used to discover and advertise adjacent switch information. Only one protocol is supported:

Alcatel-Lucent Mapping Adjacency Protocol (AMAP), used to discover the topology of OmniSwitches.

This chapter includes descriptions of AMAP commands.

MIB information for AMAP commands is as follows:

Filename: alcatelIND1InterswitchProtocol.MIB
Module: ALCATEL-IND1-INTERSWITCH-PROTOCOL-MIB

A summary of the available commands is listed here:

Mapping Adjacency Protocol	amap
	amap discovery time
	amap common time
	show amap

amap

Enables or disables the Alcatel-Lucent Mapping Adjacency Protocol (AMAP) on the switch. AMAP discovers adjacent switches by sending and responding to Hello update packets on active Spanning Tree ports.

amap {enable | disable}

Syntax Definitions

enable	Enables AMAP.
disable	Disables AMAP.

Defaults

By default, AMAP is enabled on the switch.

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

Adjacent switches are defined as those having a Spanning Tree path between them and no other switch between them on the same Spanning Tree path that has AMAP enabled.

Examples

```
-> amap disable
-> amap enable
```

Release History

Release 6.6.1; command was introduced.

Related Commands

amap discovery time	Sets the discovery transmission time interval used by active Spanning Tree ports in the discovery transmission state.
amap common time	Sets the common transmission time interval used by active Spanning Tree ports in the common transmission state.
show amap	Displays adjacent switches and associated MAC addresses, ports, VLANs, and IP addresses.

MIB Objects

aipAMAPstate

amap discovery time

Sets the discovery transmission time interval. In the discovery transmission state, an active port sends AMAP Hello packets to detect adjacent switches. The discovery transmission time specifies the number of seconds to wait between each Hello packet transmission.

amap discovery [**time**] *seconds*

Syntax Definitions

seconds Discovery transmission time value, in seconds (1–65535). Do not use commas in the value.

Defaults

By default, the discovery transmission time is set to 30 seconds.

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Use of the **time** command keyword is optional.
- When AMAP is enabled, all active Spanning Tree ports start out in the discovery transmission state.
- Ports that receive Hello packets before three discovery transmission times expire, send a Hello reply and transition to the common transmission state.
- Ports that do not receive Hello packets before three discovery transmission times expire, revert to the passive reception state.
- Ports in the passive reception state do not send Hello packets and do not use any timer to determine how long to wait for Hello packets.
- The discovery transmission time value is also used by ports in the common transmission state to determine how long to wait for Hello packets (see [page 14-5](#)).

Examples

```
-> amap discovery 1200
-> amap discovery time 600
```

Release History

Release 6.6.1; command was introduced.

Related Commands

amap	Enables (default) or disables AMAP on a switch.
amap common time	Sets the common transmission time interval used by active Spanning Tree ports in the common transmission state.
show amap	Displays adjacent switches and associated MAC addresses, ports, VLANs, and IP addresses.

MIB Objects

aipAMAPdisctime

amap common time

Sets the common phase transmission time interval. In the common transmission state, an active port sends AMAP Hello packets to determine adjacent switch failures and disconnects. The common transmission time specifies the number of seconds to wait between each Hello packet transmission.

amap common [time] seconds

Syntax Definitions

seconds Common transmission time value in seconds (1–65535). Do not use commas in the value.

Defaults

By default, the common transmission time is set to 300 seconds.

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Use of the **time** command keyword is optional.
- To avoid synchronization with adjacent switches, the common transmission time is jittered randomly by plus or minus ten percent. For example, if the default time is used (300 seconds), the jitter is plus or minus 30 seconds.
- The common transmission time value is only used by ports in the common transmission state.
- If a Hello packet is received from an adjacent switch before the common transmission time has expired, the switch sends a Hello reply and restarts the common transmission timer.
- A port reverts to the discovery transmission state if a Hello response is not received after the discovery time interval (see [page 14-3](#)) has expired.

Examples

```
-> amap common 1200
-> amap common time 600
```

Release History

Release 6.6.1; command was introduced.

Related Commands

amap	Enables (default) or disables AMAP on a switch.
amap discovery time	Sets the discovery transmission time interval used by the active Spanning Tree ports in the discovery transmission state.
show amap	Displays adjacent switches and associated MAC addresses, ports, VLANs, and IP addresses.

MIB Objects

aipAMAPcommontime

show amap

Displays adjacent switches and associated MAC addresses, ports, VLANs, IP addresses, and system names.

show amap

Syntax Definitions

N/A

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

Remote switches that stop sending Hello packets and are connected to an AMAP switch via a hub may take up to two times the common transmission time to age out of the AMAP database, and no longer appear in this show command display.

Examples

```
-> show amap
AMAP is currently enabled,
AMAP Common Phase Timeout Interval (seconds) = 300,
AMAP Discovery Phase Timeout Interval (seconds) = 30
```

```
Remote Host Description = falconCmm
Remote Host Base MAC = 00:00:00:00:00:00
Local Interface = 1/2, VLAN = 200
Remote Interface = 3/1, VLAN = 200
Remote IP Address Configured = 1
  2.0.0.10
```

```
Remote Host Description = falconCmm
Remote Host Base MAC = 00:d0:95:6b:09:40
Local Interface = 3/1, VLAN = 1
Remote Interface = 6/1, VLAN = 1
Remote IP Address Configured = 1
  2.0.0.11
```

output definitions

AMAP is currently	The AMAP status: enabled (default) or disabled . Use the amap command to change the AMAP status for the switch.
AMAP Common Phase Timeout Interval (seconds)	The number of seconds to wait between each Hello packet transmission during the common phase. Use the amap common time command to change this value.

output definitions (continued)

AMAP Discovery Phase Time-out Interval (seconds)	The number of seconds to wait between each Hello packet transmission during the discovery phase. Use the amap discovery time command to change this value.
Remote Host Description	The system name for the adjacent switch.
Remote Host Base MAC	The chassis base MAC address for the adjacent switch.
Local Interface	The local switch port/VLAN that received the AMAP packet.
Remote Interface	The adjacent switch port/VLAN that sent the AMAP packet.
Remote IP Address Configured	The number of IP addresses configured on the adjacent switch. The actual IP address values are listed below this field.

Release History

Release 6.6.1; command was introduced.

Related Commands

amap	Enables (default) or disables AMAP on a switch.
amap discovery time	Sets the discovery transmission time interval used by active Spanning Tree ports in the discovery transmission state.
amap common time	Sets the common transmission time interval used by the active Spanning Tree ports in the common transmission state.

MIB Objects

N/A

15 802.1Q Commands

Alcatel-Lucent's 802.1Q is an IEEE standard for sending frames through the network tagged with VLAN identification. This chapter details configuring and monitoring 802.1Q tagging on a single port in a switch or an aggregate of ports on a switch.

Alcatel-Lucent's version of 802.1Q complies with the Draft Standard *P802.1Q/D11 IEEE Standards for Local And Metropolitan Area Network: Virtual Bridged Local Area Networks, July 30, 1998.*

MIB information for the 802.1Q commands is as follows:

Filename: alcatelIND1Dot1Q.mib
Module: ALCATEL-IND1-DOT1Q-MIB

A summary of available commands is listed here:

[vlan 802.1q](#)
[vlan 802.1q frame type](#)
[show 802.1q](#)

Note. Before using 802.1Q, the VLAN for 802.1Q must be created using the commands described in [Chapter 25, "VLAN Management Commands."](#)

Configuration procedures for 802.1Q are explained in "Configuring 802.1Q," *OmniSwitch AOS Release 6250/6350/6450 Network Configuration Guide.*

vlan 802.1q

Creates, deletes, or modifies 802.1Q tagging on a single port or on an aggregate of ports.

```
vlan vid 802.1q {slot/port | aggregate_id} [description]
```

```
vlan vid no 802.1q {slot/port | aggregate_id}
```

Syntax Definitions

<i>vid</i>	The VLAN identification number for a preconfigured VLAN that handles the 802.1Q traffic for this port. The valid range is 1 to 4094.
<i>slot</i>	The slot number for the 802.1Q tagging.
<i>port</i>	The port number for the 802.1Q tagging.
<i>aggregate_id</i>	The link aggregation ID, which allows you to configure 802.1Q tagging on an aggregate of ports. The valid range is 1 to 31.
<i>description</i>	An optional textual description (up to 32 characters) for this 802.1Q tag. Spaces must be unclosed within quotation marks (for example, “802.1Q tag 2”).

Defaults

The default description for 802.1Q tagging on a port is **TAG PORT slot/port VLAN vid** (where the *slot/port* and *vid* are as entered when inputting the command) when you configure 802.1Q tagging on a single port, and **TAG AGGREGATE aggregate_id VLAN vid** (where the *slot/port* and *vid* are as entered when inputting the command) when you configure 802.1q tagging on an aggregate link.

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Use the **no** form of this command to delete 802.1Q tagging on a port or an aggregate of ports.
- The VLAN specified for the port or aggregate link before 802.1Q tagging can be specified. See [Chapter 25, “VLAN Management Commands”](#) for information on how to create a VLAN.
- You *must* enable link aggregation before you can tag an aggregate of ports. See [Chapter 12, “Link Aggregation Commands”](#) for more information on link aggregation.
- The port’s default VLAN can never be configured to accepted tagged frames.
- This command is also supported on an NNI interface.
- An error message is displayed, if the TPID of the NNI port is other than 0x8100 while configuring the port as 802.1Q tagged. An error message is displayed, if the user tries to configure TPID, other than 0x8100, on 802.1Q tagged NNI interface.
- An error message is displayed, if VLAN 1 is tried to be configured as default VLAN on an NNI port.

Examples

```
-> vlan 2 802.1q 3/1
-> vlan 10 802.1q 100
-> vlan 5 802.1q 4/2 "802.1q tag 2"
-> vlan 6 no 802.1q 3/1
```

Release History

Release 6.6.1; command was introduced.

Release 6.6.5; command supported on NNI interface.

Related Commands

[vlan 802.1q frame type](#)

Configures a port to accept only VLAN-tagged frames or all frames.

[show 802.1q](#)

Displays 802.1Q tagging status and configuration.

MIB Objects

QPORTVLANTABLE

```
qPortVlanSlot
qPortVlanPort
qPortVlanStatus
qPortVlanTagValue
qPortVlanDescription
qAggregateVlanTagValue
qAggregateVlanAggregateId
qAggregateVlanStatus
qAggregateVlanDescription
```

vlan 802.1q frame type

Configures a port to accept all frames or accept only VLAN-tagged frames.

vlan 802.1q *slot/port* frame type {all | tagged}

Syntax Definitions

<i>slot</i>	The slot number to configure 802.1Q tagging.
<i>port</i>	The port number to configure 802.1Q tagging.
all	Configures this port to accept all frames.
tagged	Configures this port to accept only VLAN-tagged frames.

Defaults

parameter	default
all tagged	all

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

If you configure a port to accept only VLAN-tagged frames, then any frames received on this port that do not carry a VLAN ID (that is, untagged frames or priority-tagged frames) is discarded by the ingress rules for this port. Frames that are not discarded by this ingress rule are classified and processed according to the ingress rules for this port.

Examples

```
-> vlan 802.1q 3/1 frame type all
```

Release History

Release 6.6.1; command was introduced.

Related Commands

vlan 802.1q	Creates, modifies, or deletes 802.1Q tagging on a single port or an aggregate of ports.
show 802.1q	Displays 802.1Q tagging status and configuration.

MIB Objects

```
DOT1QPORTVLANTABLE
  dot1dBasePort
  dot1qPortAcceptableFrameTypes
```

show 802.1q

Displays 802.1Q tagging information for a single port or an aggregate of ports.

show 802.1q {*slot/port* | *aggregate_id*}

Syntax Definitions

<i>slot</i>	The slot number to display 802.1Q tagging.
<i>port</i>	The port number to display 802.1Q tagging.
<i>aggregate_id</i>	The link aggregation ID to display 802.1Q tagging. See Chapter 12, “Link Aggregation Commands” for more information on link aggregation.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

N/A

Examples

```
-> show 802.1q 3/4
```

```
Acceptable Frame Type : Any Frame Type
Force Tag Internal    : off
```

```
Tagged VLANs      Internal Description
-----+-----+
          2      TAG PORT 3/4 VLAN 2
```

```
-> show 802.1q 2
```

```
Tagged VLANs      Internal Description
-----+-----+
          3      TAG AGGREGATE 2 VLAN 3
```

Output fields are described here:

output definitions

Acceptable Frame Type	The acceptable frame type for this port, which can be Any Frame Type or Tagged Only Frame Type .
Force Tag Internal	This field displays if adding the default VLAN ID (VID) to tagged frames is turned on or off .

output definitions (continued)

Tagged VLANs	The 802.1Q tag number for this port.
Internal Description	The description of this 802.1Q tag. You can modify this description with the vlan 802.1q command, which is described on page 15-2 .

Release History

Release 6.6.1; command was introduced.

Related Commands

vlan 802.1q	Creates, modifies, or deletes 802.1Q tagging on a single port or an aggregate of ports.
vlan 802.1q frame type	Configures a port to accept only VLAN-tagged frames or all frames.

MIB Objects

QPORTVLANTABLE

```
qPortVlanSlot  
qPortVlanPort  
qPortVlanStatus  
qPortVlanTagValue  
qPortVlanDescription  
qAggregateVlanTagValue  
qAggregateVlanAggregateId  
qAggregateVlanStatus  
qAggregateVlanDescription
```

16 Distributed Spanning Tree Commands

The Spanning Tree Algorithm and Protocol (STP) is a self-configuring algorithm that maintains a loop-free topology while providing data path redundancy and network scalability. Based on the IEEE 802.1D standard, the Alcatel-Lucent STP implementation distributes the Spanning Tree load between the primary management module and the network interface modules. In the case of a stack of switches, the STP load is distributed between the primary management switch and other switches in the stack. This functionality improves network robustness by providing a Spanning Tree that continues to respond to BPDUs and port link up and down states in the event of a fail over to a backup management module or switch.

In addition to a distributed architecture, this implementation also provides the following Spanning Tree features:

- Automatic configuration of a physical topology into a single Spanning Tree to ensure that there is only one data path between any two switches.
- Fault tolerance within the network topology. The Spanning Tree is reconfigured in the event of a data path or bridge failure or when a new switch is added to the topology.
- Support for four Spanning Tree protocols: 802.1D (STP), 802.1W (RSTP), 802.1Q 2005 (MSTP), and RRSTP.
- A *flat* Spanning Tree operating mode. If STP or RSTP is used, this mode applies a single STP instance across all VLANs. If MSTP is used, this mode applies a single STP instance to each Multiple Spanning Tree Instance (MSTI), which identifies a set of VLANs.
- Support for up to 16 MSTIs per switch. In addition, there is always one Common and Internal Spanning Tree (CIST) instance 0 on each switch.
- Ring Rapid Spanning Tree Protocol (RRSTP) supports up to 128 rings per switch. Note that there can be no alternate connections for the same instance between any two switches within an RRSTP ring topology.
- A *1x1* Spanning Tree operating mode, which applies a single STP instance for each defined VLAN on the switch.
- An STP topology that includes 802.1Q tagged ports and link aggregate logical ports in the calculation of the physical topology.

MIB information for Distributed Spanning Tree commands is as follows:

Filename: AlcatelIND1VlanSTP.MIB
Module: STP-MGMT-MIB

A summary of the available commands is listed here:

Implicit bridge commands	bridge mode bridge protocol bridge priority bridge hello time bridge max age bridge forward delay bridge bpdu-switching bridge path cost mode bridge auto-vlan-containment show spantree show spantree mode
Explicit bridge commands	bridge cist protocol bridge 1x1 protocol bridge cist priority bridge msti priority bridge 1x1 priority bridge cist hello time bridge 1x1 hello time bridge cist max age bridge 1x1 max age bridge cist forward delay bridge 1x1 forward delay show spantree cist show spantree msti show spantree 1x1
Implicit port commands	bridge slot/port bridge slot/port priority bridge slot/port path cost bridge slot/port mode bridge slot/port connection show spantree ports

Explicit port commands	<code>bridge cist slot/port</code> <code>bridge 1x1 slot/port</code> <code>bridge cist slot/port priority</code> <code>bridge msti slot/port priority</code> <code>bridge 1x1 slot/port priority</code> <code>bridge cist slot/port path cost</code> <code>bridge msti slot/port path cost</code> <code>bridge 1x1 slot/port path cost</code> <code>bridge cist slot/port mode</code> <code>bridge 1x1 slot/port mode</code> <code>bridge cist slot/port connection</code> <code>bridge 1x1 slot/port connection</code> <code>bridge cist slot/port admin-edge</code> <code>bridge 1x1 slot/port admin-edge</code> <code>bridge cist slot/port auto-edge</code> <code>bridge 1x1 slot/port auto-edge</code> <code>bridge cist slot/port restricted-role</code> <code>bridge 1x1 slot/port restricted-role</code> <code>bridge cist slot/port restricted-tcn</code> <code>bridge 1x1 slot/port restricted-tcn</code> <code>bridge cist txholdcount</code> <code>bridge 1x1 txholdcount</code> <code>show spantree cist ports</code> <code>show spantree msti ports</code> <code>show spantree 1x1 ports</code>
MST region commands	<code>bridge mst region name</code> <code>bridge mst region revision level</code> <code>bridge mst region max hops</code> <code>show spantree mst region</code>
MST instance commands	<code>bridge msti</code> <code>bridge msti vlan</code> <code>show spantree msti vlan-map</code> <code>show spantree cist vlan-map</code> <code>show spantree map-msti</code> <code>show spantree mst port</code>
RRSTP commands	<code>bridge rrstp</code> <code>bridge rrstp ring</code> <code>bridge rrstp ring vlan-tag</code> <code>bridge rrstp ring status</code> <code>show bridge rrstp configuration</code> <code>show bridge rrstp ring</code>
PVST+ commands	<code>bridge mode 1x1 pvst+</code> <code>bridge port pvst+</code>

bridge mode

Selects a flat Spanning Tree or 1x1 Spanning Tree operating mode for the switch. These modes are exclusive; however, it is not necessary to reboot the switch when changing modes.

bridge mode {flat | 1x1}

Syntax Definitions

flat	One Spanning Tree instance per switch.
1x1	One Spanning Tree instance for each VLAN configured on a switch.

Defaults

By default, the bridge mode for the switch is set to 1x1 Spanning Tree.

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- The Multiple Spanning Tree Protocol (MSTP), as defined in the IEEE 802.1Q 2005 standard, is only supported on switches operating in the flat Spanning Tree mode.
- If standard STP or RSTP is used when the switch is running in the flat mode, a single STP instance is applied across all VLANs. For example, if a port belonging to VLAN 10 and a port belonging to VLAN 20 both connect to the same switch, then STP will block one of these ports.
- If MSTP is used when the switch is running in the flat mode, a single STP instance is applied to each Multiple Spanning Tree Instance (MSTI). Each MSTI represents a set of VLANs.
- Flat Spanning Tree mode supports fixed (untagged) and 802.1Q tagged ports in each VLAN. However, Bridge Protocol Data Units (BPDUs) are always untagged.
- If **1x1** mode is selected, a single Spanning Tree instance is enabled for each VLAN configured on the switch. For example, if there are five VLANs configured on the switch, then there are five separate Spanning Tree instances. In essence, a VLAN is a virtual bridge in that it will have its own bridge ID and configurable STP parameters, such as protocol, priority, hello time, max age, and forward delay.
- When operating in 1x1 mode, 802.1Q tagged ports participate in an 802.1Q Spanning Tree instance that allows the Spanning Tree to extend across tagged VLANs. As a result, a tagged port may participate in more than one Spanning Tree instance; one for each VLAN that the port carries.
- If a VLAN contains both fixed and tagged ports and the switch is operating in 1x1 Spanning Tree mode, then a hybrid of the two Spanning Tree instances (single and 802.1Q) is applied. If a VLAN appears as a tag on a port, then the BPDU for that VLAN are also tagged. However, if a VLAN appears as the configured default VLAN for the port, then BPDU are not tagged and the single Spanning Tree instance applies.
- Regardless of which mode the switch is running in, it is possible to administratively disable the Spanning Tree status for an individual VLAN (see [Chapter 25, “VLAN Management Commands”](#)). Note that active ports associated with such a VLAN are excluded from any Spanning Tree calculations and will remain in a forwarding state.

Examples

```
-> bridge mode flat  
-> bridge mode 1x1
```

Release History

Release 6.6.1; command was introduced.

Related Commands

[bridge protocol](#)

Selects the Spanning Tree protocol for the specified instance.

[bridge bpdu-switching](#)

Enables the switching of Spanning Tree BPDU on a VLAN that has Spanning Tree disabled.

[show spantree](#)

Displays VLAN Spanning Tree parameter values.

MIB Objects

```
vStpTable  
  vStpNumber  
  vStpMode
```

bridge protocol

Configures the Spanning Tree protocol for the flat mode Common and Internal Spanning Tree (CIST) instance or for an individual VLAN instance if the switch is running in the 1x1 mode.

bridge [*instance*] **protocol** {**stp** | **rstp** | **mstp**}

Syntax Definitions

<i>instance</i>	The flat mode CIST instance (1) or an existing 1x1 mode VLAN ID instance number (bridge 1–4094).
stp	IEEE 802.1D standard Spanning Tree Algorithm and Protocol.
rstp	IEEE 802.1W Rapid Spanning Tree Protocol.
mstp	IEEE 802.1Q 2005 Multiple Spanning Tree Protocol.

Defaults

RSTP is the default protocol for the flat mode CIST instance and for the 1x1 mode VLAN instance.

parameter	default
<i>instance</i>	flat mode instance

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Specifying an instance number with this command when the switch is running in the 1x1 Spanning Tree mode implies a VLAN ID and configures the protocol for the associated VLAN instance.
- To configure the protocol for the flat mode CIST instance when the switch is running in either the flat or 1x1 mode, do *not* specify an instance number. The CIST is the instance configured by default with this command.
- If the switch is running in the flat mode and STP or RSTP is the active protocol, entering 1 to specify the CIST instance is optional. If MSTP is the active protocol, however, entering 1 for the instance number is not accepted.
- Note that selecting MSTP is only an option for the flat mode CIST instance and is required to configure Multiple Spanning Tree Instances (MSTI).
- MSTP is only active when the switch is operating in the flat Spanning Tree mode. STP and RSTP are active when the switch is operating in either the flat or 1x1 Spanning Tree mode.
- Deleting all existing MSTIs is required before changing the protocol from MSTP to STP or RSTP.

- Note that when changing the protocol to/from MSTP, the bridge priority and port path cost values for the flat mode CIST instance are reset to their default values. However, if the path cost mode was set to 32-bit prior to the protocol change, the path cost is *not* reset to its default value. See the [bridge path cost mode](#) command page for more information.

Examples

```
-> bridge mode flat
-> bridge protocol mstp
-> bridge protocol rstp
-> bridge protocol stp

-> bridge mode 1x1
-> bridge 10 protocol rstp
-> bridge 200 protocol stp
-> bridge protocol mstp
-> bridge protocol rstp
-> bridge protocol stp
```

Release History

Release 6.6.1; command was introduced.

Related Commands

bridge mode	Selects the Spanning Tree operating mode (flat or 1x1) for the switch.
bridge cist protocol	Explicit command for changing the Spanning Tree protocol for the flat mode instance.
bridge 1x1 protocol	Explicit command for changing the Spanning Tree protocol for a VLAN instance.

MIB Objects

```
vStpInsTable
  vStpInsNumber
  vStpInsMode
  vStpInsProtocolSpecification
```

bridge cist protocol

Configures the Spanning Tree protocol for the flat mode Common and Internal Spanning Tree (CIST) instance (bridge 1).

bridge cist protocol {stp | rstp | mstp}

Syntax Definitions

stp	IEEE 802.1D standard Spanning Tree Algorithm and Protocol.
rstp	IEEE 802.1w Rapid Spanning Tree Protocol.
mstp	IEEE 802.1Q 2005 Multiple Spanning Tree Protocol.

Defaults

RSTP is the default protocol for the flat mode CIST instance and for the 1x1 mode VLAN instance.

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- This command is an explicit Spanning Tree command that only applies to the flat mode CIST instance regardless of which operating mode (flat or 1x1) or protocol is active on the switch.
- Use this command to select STP, RSTP, or MSTP as the protocol for the flat mode CIST instance.
- Note that selecting MSTP is only an option for the flat mode CIST instance and is required to configure Multiple Spanning Tree Instances (MSTI).
- MSTP is only active when the switch is operating in the flat Spanning Tree mode. STP and RSTP are active when the switch is operating in either the flat or 1x1 Spanning Tree mode.
- Note that when changing the protocol to/from MSTP, the bridge priority and port path cost values for the flat mode CIST instance are reset to their default values. However, if the path cost mode was set to 32-bit prior to the protocol change, the path cost is *not* reset to its default value. See the [bridge path cost mode](#) command page for more information.
- If the switch is running in 1x1 mode when this command is used, the specified protocol is not active for the CIST instance until the operating mode for the switch is changed to the flat mode.
- Note that when a configuration snapshot is taken of the switch, all Spanning Tree commands are saved in their explicit format.

Examples

```
-> bridge cist protocol rstp
-> bridge cist protocol mstp
-> bridge cist protocol stp
```

Release History

Release 6.6.1; command was introduced.

Related Commands

bridge mode	Selects the Spanning Tree operating mode (flat or 1x1) for the switch.
bridge protocol	Implicit command for changing the Spanning Tree protocol for the flat mode instance or for a 1x1 mode VLAN instance.
bridge 1x1 protocol	Explicit command for changing the Spanning Tree protocol for a VLAN instance.

MIB Objects

vStpInsTable
 vStpInsNumber
 vStpInsProtocolSpecification

bridge 1x1 protocol

Configures the Spanning Tree protocol for an individual VLAN instance.

bridge 1x1 *vid* protocol {stp | rstp}

Syntax Definitions

<i>vid</i>	An existing VLAN ID number (1–4094).
stp	IEEE 802.1D standard Spanning Tree Algorithm and Protocol.
rstp	IEEE 802.1w Rapid Spanning Tree Protocol.

Defaults

RSTP is the default protocol for the flat mode CIST instance and for the 1x1 mode VLAN instance.

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- This command is an explicit Spanning Tree command that only applies to the specified VLAN instance regardless of which operating mode (flat or 1x1) is active on the switch.
- If the switch is running in flat mode when this command is used, the specified protocol is not active for the specified VLAN instance until the operating mode for the switch is changed to 1x1.
- Note that when a configuration snapshot is taken of the switch, all Spanning Tree commands are saved in their explicit format.

Examples

```
-> bridge 1x1 2 protocol stp
-> bridge 1x1 455 protocol rstp
```

Release History

Release 6.6.1; command was introduced.

Related Commands

bridge mode	Selects the Spanning Tree operating mode (flat or 1x1) for the switch.
bridge protocol	Implicit command for changing the Spanning Tree protocol for the flat mode instance or for a 1x1 mode VLAN instance.
bridge cist protocol	Explicit command for changing the Spanning Tree protocol for the flat mode instance.

MIB Objects

vStpInsTable

vStpIns1x1VlanNumber

vStpInsMode

 vStpInsProtocolSpecification

bridge mst region name

Defines the name for a Multiple Spanning Tree (MST) region. One of three attributes (name, revision level, and a VLAN to MST instance association table) that defines an MST region as required by the IEEE 802.1Q 2005 standard. Switches that share the same attribute values are all considered part of the same MST region. Currently each switch can belong to one MST region at a time.

bridge mst region name *name*

bridge mst region no name

Syntax Definitions

name An alphanumeric string up to 32 characters. Use quotes around string if the name contains multiple words with spaces between them (e.g. "Alcatel-Lucent Marketing").

Defaults

By default, the MST region name is left blank.

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Use the **no** form of this command to remove the MST region name. Note that it is not necessary to specify the region name to remove it.
- To change an existing region name, use this same command but specify a string value that is different than the existing name. It is *not* necessary to first remove the old name.
- Specifying an MST region name is allowed regardless of which Spanning Tree operating mode or protocol is currently active on the switch. However, MST configuration values, such as region name, only apply when the switch is operating in the flat Spanning Tree mode and using MSTP.

Examples

```
-> bridge mst region name SalesRegion
-> bridge mst region name "Alcatel-Lucent Marketing"
-> bridge mst region no name
```

Release History

Release 6.6.1; command was introduced.

Related Commands

- bridge mst region revision level** Defines the revision level for an MST region.
- bridge mst region max hops** Defines the maximum number of hops for the MST region.
- bridge msti** Defines a MSTI number that identifies an association between a range of VLANs and a Spanning Tree instance.
- bridge msti vlan** Defines an association between a range of VLANs and a single MSTI.

MIB Objects

vStpMstRegionTable
 vStpMstRegionNumber
 vStpMstRegionConfigName

bridge mst region revision level

Defines the revision level for a Multiple Spanning Tree (MST) region. One of three attributes (name, revision level, and a VLAN to MST instance association table) that defines an MST region as required by the IEEE 802.1Q 2005 standard. Switches that share the same attribute values are all considered part of the same MST region. Currently each switch can belong to one MST region at a time.

bridge mst region revision level *rev_level*

Syntax Definitions

rev_level A numeric value (0–65535) that identifies the MST region revision level for the switch.

Defaults

By default, the MST revision level is set to zero.

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

Specifying an MST region revision level is allowed regardless of which Spanning Tree operating mode or protocol is currently active on the switch. However, MST configuration values, such as revision level, only apply when the switch is operating in the flat Spanning Tree mode and using the MSTP.

Examples

```
-> bridge mst region revision level 1000
-> bridge mst region revision level 2000
```

Release History

Release 6.6.1; command was introduced.

Related Commands

bridge mst region name	Defines the name for an MST region.
bridge mst region max hops	Defines the maximum number of hops for the MST region.
bridge msti	Defines a MSTI number that identifies an association between a range of VLANs and a Spanning Tree instance.
bridge msti vlan	Defines an association between a range of VLANs and a single MSTI.

MIB Objects

```
vStpMstRegionTable
  vStpMstRegionNumber
  vStpMstRegionConfigRevisionLevel
```

bridge mst region max hops

Configures the maximum number of hops that are authorized to receive Multiple Spanning Tree (MST) regional information. Use this command to designate how many hops a BPDU is allowed to traverse before it is discarded and related information is aged.

bridge mst region max hops *max_hops*

Syntax Definitions

max_hops A numeric value (1–40) that designates the maximum number of hops.

Defaults

By default, the maximum number of hops is set to 20.

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- The value configured with this command is a regional value that applies to all instances and in essence is used to determine the size of the region.
- The maximum hop count value is the initial value of the Remaining Hops parameter in the MST BPDU that originates from the bridge that is serving as the root bridge for the region. Each bridge that in turn receives the MST BPDU decrements the Remaining Hops count value by one and passes the new value along to the next bridge. When the count reaches 0, the BPDU is discarded.
- Specifying an MST maximum hop count is allowed regardless of which Spanning Tree operating mode or protocol is currently active on the switch. However, MST configuration values only apply when the switch is operating in the flat Spanning Tree mode and using the MSTP.

Examples

```
-> bridge mst region max hops 40  
-> bridge mst region max hops 10
```

Release History

Release 6.6.1; command was introduced.

Related Commands

bridge mst region name	Defines the name for an MST region.
bridge mst region revision level	Defines the revision level for an MST region.
bridge msti	Defines a MSTI number that identifies an association between a range of VLANs and a Spanning Tree instance.
bridge msti vlan	Defines an association between a range of VLANs and a single MSTI.

MIB Objects

vStpMstRegionTable
 vStpMstRegionNumber
 vStpMstRegionMaxHops

bridge msti

Defines a Multiple Spanning Tree Instance (MSTI) number. This number identifies an association between a range of VLANs and a single Spanning Tree instance. In addition, it is possible to assign an optional name to the MSTI for further identification.

bridge msti *msti_id* [**name** *name*]

bridge no msti *msti_id*

bridge msti *msti_id* **no name**

Syntax Definitions

<i>msti_id</i>	A numeric value (1–4094) that uniquely identifies an MSTI.
<i>name</i>	An alphanumeric string up to 32 characters. Use quotes around string if the name contains multiple words with spaces between them (e.g. “Alcatel-Lucent Marketing”).

Defaults

By default, a flat mode Common and Internal Spanning Tree (CIST) instance always exists. The MSTI ID number for this instance is 0.

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Use the **no msti** form of this command to remove the MSTI from the switch configuration.
- Use the **no name** form of this command to remove the optional MSTI name from the specified instance. The instance itself is not removed; only the name.
- Up to 16 MSTIs are allowed per switch; select a number from 1 to 4094 for the MSTI number. In addition, there is always one Common and Internal Spanning Tree (CIST) instance 0 per switch. Initially all VLANs are associated with the CIST instance.
- Creating an MSTI is allowed when the switch is operating in either the 1x1 or flat Spanning Tree mode, as long as MSTP is the selected flat mode protocol. The MSTI configuration, however, is not active unless the switch is running in the flat mode.

Examples

```
-> bridge msti 10
-> bridge msti 20 name BldgOneST10
-> bridge msti 20 no name
-> bridge no msti 10
```

Release History

Release 6.6.1; command was introduced.

Related Commands

- bridge mst region name** Defines the name for an MST region.
- bridge mst region revision level** Defines the revision level for an MST region.
- bridge mst region max hops** Defines the maximum number of hops for the MST region.
- bridge msti vlan** Defines an association between a range of VLANs and a single MSTI.

MIB Objects

```
vStpMstInstanceTable  
  vStpMstInstanceNumber  
  vStpMstInstanceName  
  vStpMstInstanceVlanBitmapAddition  
  vStpMstInstanceVlanBitmapDeletion  
  vStpMstInstanceVlanBitmapState
```

bridge msti vlan

Defines an association between a range of VLANs and a single Multiple Spanning Tree Instance (MSTI). The MSTI-to-VLAN mapping created with this command is one of three attributes (name, revision level, and a VLAN to MST instance association table) that defines an MST region as required by the IEEE 802.1Q 2005 standard. Switches that share the same attribute values are all considered part of the same MST region. Currently each switch can belong to one MST region at a time.

bridge msti *msti_id* vlan *vid_range*

bridge msti *msti_id* no vlan *vid_range*

Syntax Definitions

<i>msti_id</i>	An existing MSTI ID number (0–4094).
<i>vid_range</i>	A VLAN ID number (1–4094) To associate multiple VLANs in a single command, use a hyphen to specify a range of VLAN IDs and a space to separate multiple VLAN IDs and/or ranges (e.g. 100-115 122 135 200-210).

Defaults

By default, all VLANs are associated with the flat mode Common and Internal Spanning Tree (CIST) instance, which is also known as MSTI 0.

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Use the **no** form of this command to remove a VLAN or a range of VLANs from the specified MSTI association.
- Note that the VLAN ID specified with this command does not have to already exist in the switch configuration. This command maps VLAN IDs to MSTIs, but does not create VLANs.
- A VLAN is associated with only one MSTI at a time, but it is possible to move a VLAN from one MSTI to another. In addition, it is also possible to assign only one VLAN to an MSTI; a range of VLANs is not required.
- Configuring an MSTI-to-VLAN mapping is allowed when the switch is operating in either the 1x1 or flat Spanning Tree mode, as long as MSTP is the selected flat mode protocol. The MSTI configuration, however, is not active unless the switch is running in the flat mode.

Examples

```
-> bridge msti 10 vlan 100-115
-> bridge msti 20 vlan 122 135 200-210
-> bridge msti 10 no vlan 112 200-204
```

Release History

Release 6.6.1; command was introduced.

Related Commands

bridge mst region name	Defines the name for an MST region.
bridge mst region revision level	Defines the revision level for an MST region.
bridge mst region max hops	Defines the maximum number of hops for the MST region.
bridge msti	Defines a MSTI number that identifies an association between a range of VLANs and a Spanning Tree instance.

MIB Objects

```
vStpMstVlanAssignmentTable  
  vStpMstVlanAssignmentVlanNumber  
  vStpMstVlanAssignmentMstiNumber
```

bridge priority

Configures the bridge priority value for the flat mode Common and Internal Spanning Tree (CIST) instance or for a 1x1 mode VLAN instance. Bridge priority is used to determine which bridge the Spanning Tree algorithm designates as the root bridge.

bridge [*instance*] **priority** *priority*

Syntax Definitions

<i>instance</i>	The flat mode CIST instance or an existing VLAN ID number (1–4094).
<i>priority</i>	A bridge priority value within the range of 0–65535. Do not use commas in the value. If MSTP is the active protocol on the switch, then a bridge priority value that is a multiple of 4096 is required.

Defaults

By default, the bridge priority value is set to 32768.

parameter	default
<i>instance</i>	flat mode instance

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- The bridge priority specifies the priority value for the first two octets of the Bridge ID (eight octets long). The remaining six octets of the Bridge ID contain a dedicated bridge MAC address.
- The lower the bridge priority number, the higher the priority that is associated with the bridge.
- Specifying an instance number with this command when the switch is running in the 1x1 Spanning Tree mode implies a VLAN ID and configures the priority value for the associated VLAN instance.
- To configure the priority value for the flat mode CIST instance when the switch is running in either the flat or 1x1 mode, do *not* specify an instance number. The CIST is the instance configured by default with this command.
- If the switch is running in the flat mode and STP or RSTP is the active protocol, entering 1 to specify the CIST instance is optional. If MSTP is the active protocol, however, entering 1 for the instance number is not accepted. In this case, use the [bridge cist priority](#) or [bridge msti priority](#) commands instead.
- Note that when the protocol is changed to/from MSTP, the bridge priority for the flat mode CIST instance is reset to the default value.

Examples

```
-> bridge mode flat
-> bridge priority 8192
-> bridge priority 2500
ERROR: Valid bridge priority values are multiples of 4096: 0, 4096,
      8192, 12288, 16384 ... 61440

-> bridge mode 1x1
-> bridge 255 priority 16384
-> bridge 355 priority 3500
-> bridge priority 8192
```

Release History

Release 6.6.1; command was introduced.

Related Commands

bridge mode	Selects the Spanning Tree operating mode (flat or 1x1) for the switch.
bridge cist priority	Explicit command for changing the Spanning Tree priority for the CIST instance when the switch is operating in either the flat or 1x1 mode.
bridge msti priority	Explicit command for changing the Spanning Tree priority for an MSTI when the switch is operating in either the flat or 1x1 mode.
bridge 1x1 protocol	Explicit command for changing the Spanning Tree priority for a VLAN instance when the switch is operating in either the flat or 1x1 mode.

MIB Objects

```
vStpInsTable
  vStpInsNumber
  vStpInsMode
  vStpInsPriority
  vStpInsBridgeAddress
```

bridge cist priority

Configures the Spanning Tree priority value for the flat mode Common and Internal Spanning Tree (CIST) instance. Bridge priority is used to determine which bridge the Spanning Tree algorithm designates as the root bridge.

bridge cist priority *priority*

Syntax Definitions

priority A bridge priority value within the range of 0–65535. Do not use commas in the value. If MSTP is the active protocol on the switch, then a bridge priority value that is a multiple of 4096 is required.

Defaults

By default, the bridge priority value is set to 32768.

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- The bridge priority specifies the priority value for the first two octets of the Bridge ID (eight octets long). The remaining six octets of the Bridge ID contain a dedicated bridge MAC address.
- The lower the bridge priority number, the higher the priority that is associated with the bridge.
- This command is an explicit Spanning Tree command that only applies to the CIST instance regardless of which operating mode (flat or 1x1) or protocol is active on the switch.
- If the switch is running in 1x1 mode when this command is used, the specified priority value is not active for the CIST instance until the operating mode for the switch is changed to the flat mode.
- Note that when the protocol is changed to/from MSTP, the bridge priority for the flat mode CIST instance is reset to the default value.
- In regards to the priority for a Multiple Spanning Tree Instance (MSTI), only the four most significant bits are used.
- Note that when a configuration snapshot is taken of the switch, all Spanning Tree commands are saved in their explicit format.

Examples

```
-> bridge mode flat
-> bridge cist priority 16384
-> bridge cist priority 53800
ERROR: Valid bridge priority values are multiples of 4096: 0, 4096,
      8192, 12288, 16384 ... 61440

-> bridge mode 1x1
-> bridge cist priority 16384
-> bridge cist priority 12288
```

Release History

Release 6.6.1; command was introduced.

Related Commands

bridge mode	Selects the Spanning Tree operating mode (flat or 1x1) for the switch.
bridge priority	Implicit command for changing the Spanning Tree priority for the flat mode CIST instance or a 1x1 mode VLAN instance.
bridge msti priority	Explicit command for changing the Spanning Tree priority for an MSTI when the switch is operating in either the flat or 1x1 mode.
bridge 1x1 protocol	Explicit command for changing the Spanning Tree priority for a VLAN instance when the switch is operating in either the flat or 1x1 mode.

MIB Objects

```
vStpInsTable  
  vStpInsNumber  
  vStpInsPriority  
  vStpInsBridgeAddress
```

bridge msti priority

Configures the bridge priority value for an Multiple Spanning Tree Instance (MSTI). Bridge priority is used to determine which bridge the Spanning Tree algorithm designates as the root bridge.

bridge msti *msti_id* **priority** *priority*

Syntax Definitions

<i>msti_id</i>	An existing MSTI ID number (0–4094).
<i>priority</i>	A bridge priority value that is a multiple of 4096 and within the range of 0–65535. Do not use commas in the value.

Defaults

By default, the bridge priority value is set to 32768.

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- The bridge priority specifies the priority value for the first two octets of the Bridge ID (eight octets long). The remaining six octets of the Bridge ID contain a dedicated bridge MAC address.
- The bridge priority value for an MSTI is calculated by adding the configured priority value to the Spanning Tree instance number. For example, if the priority value of MSTI 10 equals 32768 (the default), then the Spanning Tree priority value advertised for this instance is 32770 (32768 + 10).
- The lower the bridge priority number, the higher the priority that is associated with the bridge.
- This command is an explicit Spanning Tree command that only applies to the specified MSTI regardless of which operating mode (flat or 1x1) is active on the switch. If MSTP is not the selected flat mode protocol, however, the priority value for any MSTI is not configurable in either mode.
- Note that if zero is entered for the *msti_id* value, the specified priority value is applied to the CIST instance. The flat mode CIST instance 0 is also known as MSTI 0.
- If the switch is running in 1x1 mode when this command is used, the specified priority value is not active for the specified MSTI until the operating mode for the switch is changed to the flat mode.
- Note that when the protocol is changed to/from MSTP, the bridge priority for the flat mode CIST instance is reset to the default value.
- In regards to the priority for an MSTI, only the four most significant bits are used.

Examples

```
-> bridge mode flat
-> bridge msti 2 priority 4096
-> bridge msti 10 priority 53800
ERROR: Valid bridge priority values are multiples of 4096: 0, 4096,
      8192, 12288, 16384 ... 61440

-> bridge mode 1x1
-> bridge msti 2 priority 61440
-> bridge msti 10 priority 12288
```

Release History

Release 6.6.1; command was introduced.

Related Commands

bridge mode	Selects a flat Spanning Tree or 1x1 (per VLAN) Spanning Tree operating mode for the switch.
bridge priority	Implicit command for changing the Spanning Tree priority for the flat mode CIST instance or a 1x1 mode VLAN instance.
bridge cist priority	Explicit command for changing the Spanning Tree priority for the CIST instance when the switch is operating in either the flat or 1x1 mode.
bridge 1x1 priority	Explicit command for changing the Spanning Tree priority for a VLAN instance when the switch is operating in either the flat or 1x1 mode.

MIB Objects

```
vStpInsTable
  vStpInsMstiNumber
  vStpInsMode
  vStpInsPriority
  vStpInsBridgeAddress
```

bridge 1x1 priority

Configures the bridge priority value for an individual VLAN instance.

bridge 1x1 *vid* **priority** *priority*

Syntax Definitions

<i>vid</i>	An existing VLAN ID number (1–4094).
<i>priority</i>	A bridge priority value within the range of 0–65535. Do not use commas in the value.

Defaults

By default, the bridge priority value is set to 32768.

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- The bridge priority specifies the priority value for the first two octets of the Bridge ID (eight octets long). The remaining six octets of the Bridge ID contain a dedicated bridge MAC address.
- The lower the bridge priority number, the higher the priority that is associated with the bridge.
- This command is an explicit Spanning Tree command that only applies to the specified VLAN instance regardless of which operating mode (flat or 1x1) or protocol is active on the switch.
- If the switch is running in the flat mode when this command is used, the specified priority value is not active for the specified VLAN instance until the operating mode for the switch is changed to the 1x1 mode.
- Note that when a configuration snapshot is taken of the switch, all Spanning Tree commands are saved in their explicit format.

Examples

```
-> bridge mode flat
-> bridge 1x1 2 priority 16384
-> bridge 1x1 10 priority 53800

-> bridge mode 1x1
-> bridge 1x1 2 priority 16384
-> bridge 1x1 10 priority 53800
```

Release History

Release 6.6.1; command was introduced.

Related Commands

bridge mode	Selects a flat Spanning Tree or 1x1 (per VLAN) Spanning Tree operating mode for the switch.
bridge priority	Implicit command for changing the Spanning Tree priority for the flat mode CIST instance or a 1x1 mode VLAN instance.
bridge cist priority	Explicit command for changing the Spanning Tree priority for the CIST instance when the switch is operating in either the flat or 1x1 mode.
bridge msti priority	Explicit command for changing the Spanning Tree priority for an MSTP MSTI when the switch is operating in either the flat or 1x1 mode.

MIB Objects

```
vStpInsTable  
  vStpInslx1VlanNumber  
  vStpInsMode  
  vStpInsPriority  
  vStpInsBridgeAddress
```

bridge hello time

Configures the Spanning Tree hello time value for the flat mode Common and Internal Spanning Tree (CIST) instance or for a 1x1 mode VLAN instance. This value specifies the amount of time, in seconds, between each transmission of a BPDU on any port that is the Spanning Tree root or is attempting to become the Spanning Tree root.

bridge [*instance*] **hello time** *seconds*

Syntax Definitions

instance The flat mode CIST instance or an existing VLAN ID number (1–4094).
seconds Hello Time value, in seconds (1–10).

Defaults

By default, the bridge hello time value for is set to 2 seconds.

parameter	default
<i>instance</i>	flat mode instance

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Lowering the Hello Time interval improves the robustness of the Spanning Tree Algorithm. Increasing the Hello Time interval lowers the overhead of the Spanning Tree Algorithm.
- Specifying an instance number with this command when the switch is running in the 1x1 Spanning Tree mode implies a VLAN ID and configures the hello time value for the associated VLAN instance.
- To configure the hello time value for the flat mode CIST instance when the switch is running in either the flat or 1x1 mode, do *not* specify an instance number. The CIST is the instance configured by default with this command.
- If the switch is running in the flat mode and STP or RSTP is the active protocol, entering 1 to specify the CIST instance is optional. If MSTP is the active protocol, however, entering 1 for the instance number is not accepted.
- Note that for Multiple Spanning Tree Instances (MSTI), the hello time value is inherited from the CIST instance and is not a configurable parameter.

Examples

```
-> bridge mode flat
-> bridge hello time 5

-> bridge mode 1x1
-> bridge 10 hello time 8
-> bridge hello time 5
```

Release History

Release 6.6.1; command was introduced.

Related Commands

bridge mode

Selects the Spanning Tree operating mode (flat or 1x1) for the switch.

bridge cist hello time

Explicit command for changing the Spanning Tree hello time value for the CIST instance when the switch is operating in either the flat or 1x1 mode.

bridge 1x1 hello time

Explicit command for changing the Spanning Tree hello time value for a VLAN instance when the switch is operating in either the flat or 1x1 mode.

MIB Objects

vStpInsTable

 vStpInsNumber

 vStpInsMode

 vStpInsBridgeHelloTime

bridge cist hello time

Configures the bridge hello time value for the flat mode Common and Internal Spanning Tree (CIST) instance. This value is the amount of time, in seconds, between each transmission of a BPDU on any port that is the Spanning Tree root or is attempting to become the Spanning Tree root.

bridge cist hello time *seconds*

Syntax Definitions

seconds Hello time value in seconds (1–10).

Defaults

By default, the bridge hello time value is set to 2 seconds.

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Lowering the Hello Time interval improves the robustness of the Spanning Tree Algorithm. Increasing the Hello Time interval lowers the overhead of the Spanning Tree Algorithm.
- This command is an explicit Spanning Tree command that only applies to the CIST instance regardless of which operating mode (flat or 1x1) or protocol is active on the switch.
- If the switch is running in 1x1 mode when this command is used, the specified hello time value is not active for the CIST instance until the operating mode for the switch is changed to the flat mode.
- Note that when a configuration snapshot is taken of the switch, all Spanning Tree commands are saved in their explicit format.

Examples

```
-> bridge mode flat
-> bridge cist hello time 5
-> bridge cist hello time 10

-> bridge mode 1x1
-> bridge cist hello time 5
-> bridge cist hello time 10
```

Release History

Release 6.6.1; command was introduced.

Related Commands

bridge mode	Selects the Spanning Tree operating mode (flat or 1x1) for the switch.
bridge hello time	Implicit command for changing the Spanning Tree hello time value for the flat mode CIST instance or for a 1x1 mode VLAN instance.
bridge 1x1 hello time	Explicit command for changing the Spanning Tree hello time value for a VLAN instance when the switch is operating in either the flat or 1x1 mode.

MIB Objects

```
vStpInsTable  
  vStpInsNumber  
  vStpInsBridgeHelloTime
```

bridge 1x1 hello time

Configures the bridge hello time value for an individual VLAN instance. This value is the amount of time, in seconds, between each transmission of a BPDU on any port that is the Spanning Tree root or is attempting to become the Spanning Tree root.

bridge 1x1 *vid* **hello time** *seconds*

Syntax Definitions

vid An existing VLAN ID number (1–4094).
seconds Hello time value in seconds (1–10).

Defaults

By default, the bridge Hello Time value is set to 2 seconds.

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Lowering the Hello Time interval improves the robustness of the Spanning Tree Algorithm. Increasing the Hello Time interval lowers the overhead of the Spanning Tree Algorithm.
- This command is an explicit Spanning Tree command that only applies to the specified VLAN instance regardless of which operating mode (flat or 1x1) is active on the switch.
- If the switch is running in the flat mode when this command is used, the specified hello time value is not active for the specified VLAN instance until the operating mode for the switch is changed to the 1x1 mode.
- Note that when a configuration snapshot is taken of the switch, all Spanning Tree commands are saved in their explicit format.

Examples

```
-> bridge mode flat
-> bridge 1x1 2 hello time 5
-> bridge 1x1 10 hello time 10

-> bridge mode 1x1
-> bridge 1x1 255 hello time 5
-> bridge 1x1 455 hello time 10
```

Release History

Release 6.6.1; command was introduced.

Related Commands

bridge mode

Selects the Spanning Tree operating mode (flat or 1x1) for the switch.

bridge hello time

Implicit command for changing the Spanning Tree hello time value for the flat mode CIST instance or for a 1x1 mode VLAN instance.

bridge cist hello time

Explicit command for changing the Spanning Tree hello time value for the CIST instance when the switch is operating in either the flat or 1x1 mode.

MIB Objects

vStpInsTable

 vStpIns1x1VlanNumber

 vStpInsMode

 vStpInsBridgeHelloTime

bridge max age

Configures the Spanning Tree bridge max age time for the flat mode Common and Internal Spanning Tree (CIST) instance or for a 1x1 mode VLAN instance. This value is the amount of time, in seconds, that Spanning Tree information learned from the network on any port is retained. When this information has aged beyond the max age value, the information is discarded.

bridge [*instance*] **max age** *seconds*

Syntax Definitions

instance The flat mode CIST instance or an existing VLAN ID number (1–4094).
seconds Max age time in seconds (6–40).

Defaults

By default, the bridge max age time value is set to 20 seconds.

parameter	default
<i>instance</i>	flat mode instance

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- A low max age time causes the Spanning Tree Algorithm to reconfigure more often.
- Specifying an instance number with this command when the switch is running in the 1x1 Spanning Tree mode implies a VLAN ID and configures the max age value for the associated VLAN instance.
- To configure the max age value for the flat mode CIST instance when the switch is running in either the flat or 1x1 mode, do *not* specify an instance number. The CIST is the instance configured by default with this command.
- If the switch is running in the flat mode and STP or RSTP is the active protocol, entering 1 to specify the CIST instance is optional. If MSTP is the active protocol, however, entering 1 for the instance number is not accepted.
- Note that for Multiple Spanning Tree Instances (MSTI), the max age value is inherited from the CIST instance and is not a configurable parameter.

Examples

```
-> bridge mode flat
-> bridge max age 40

-> bridge mode 1x1
-> bridge 255 max age 40
-> bridge max age 10
```

Release History

Release 6.6.1; command was introduced.

Related Commands

bridge mode

Selects the Spanning Tree operating mode (flat or 1x1) for the switch.

bridge cist max age

Explicit command for changing the Spanning Tree max age time value for the CIST instance when the switch is operating in either the flat or 1x1 mode.

bridge 1x1 max age

Explicit command for changing the Spanning Tree max age time value for a VLAN instance when the switch is operating in either the flat or 1x1 mode.

MIB Objects

vStpInsTable

 vStpInsNumber

 vStpInsMode

 vStpInsBridgeMaxAge

bridge cist max age

Configures the bridge max age time value for the flat mode Common and Internal Spanning Tree (CIST) instance. This value is the amount of time, in seconds, that Spanning Tree Protocol information learned from the network on any port is retained. When this information has aged beyond the max age value, the information is discarded.

bridge cist max age *seconds*

Syntax Definitions

seconds Max age time in seconds (6–40).

Defaults

By default, the bridge max age time value is set to 20 seconds.

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- A low max age time causes the Spanning Tree Algorithm to reconfigure more often.
- This command is an explicit Spanning Tree command that only applies to the CIST instance regardless of which operating mode (flat or 1x1) or protocol is active on the switch.
- If the switch is running in 1x1 mode when this command is used, the specified max age time value is not active for the CIST instance until the operating mode for the switch is changed to the flat mode.
- Note that when a configuration snapshot is taken of the switch, all Spanning Tree commands are saved in their explicit format.

Examples

```
-> bridge mode flat  
-> bridge cist max age 10  
-> bridge cist max age 30
```

```
-> bridge mode 1x1  
-> bridge cist max age 10  
-> bridge cist max age 30
```

Release History

Release 6.6.1; command was introduced.

Related Commands

bridge mode

Selects the Spanning Tree operating mode (flat or 1x1) for the switch.

bridge max age

Implicit command for changing the Spanning Tree max age time value for the flat mode CIST instance or for a 1x1 mode VLAN instance.

bridge 1x1 max age

Explicit command for changing the Spanning Tree max age time value for a VLAN instance when the switch is operating in either the flat or 1x1 mode.

MIB Objects

vStpInsTable

 vStpInsNumber

 vStpInsBridgeMaxAge

bridge 1x1 max age

Configures the bridge max age time value for an individual VLAN instance. This value is the amount of time, in seconds, that Spanning Tree Protocol information learned from the network on any port is retained. When this information has aged beyond the max age value, the information is discarded.

bridge 1x1 *vid max age seconds*

Syntax Definitions

vid An existing VLAN ID number (1–4094).
seconds Max age time in seconds (6–40).

Defaults

By default, the bridge max age time value is set to 20 seconds.

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- A low max age time causes the Spanning Tree Algorithm to reconfigure more often.
- This command is an explicit Spanning Tree command that only applies to the specified VLAN instance regardless of which operating mode (flat or 1x1) is active on the switch.
- If the switch is running in the flat mode when this command is used, the specified max age time value is not active for the specified VLAN instance until the operating mode for the switch is changed to the 1x1 mode.
- Note that when a configuration snapshot is taken of the switch, all Spanning Tree commands are saved in their explicit format.

Examples

```
-> bridge mode flat
-> bridge 1x1 2 max age 10
-> bridge 1x1 10 max age 40

-> bridge mode 1x1
-> bridge 1x1 255 max age 30
-> bridge 1x1 455 max age 10
```

Release History

Release 6.6.1; command was introduced.

Related Commands

bridge mode

Selects the Spanning Tree operating mode (flat or 1x1) for the switch.

bridge max age

Implicit command for changing the Spanning Tree max age time value for the flat mode CIST instance or for a 1x1 mode VLAN instance.

bridge cist max age

Explicit command for changing the Spanning Tree max age time value for the CIST instance when the switch is operating in either the flat or 1x1 mode.

MIB Objects

vStpInsTable

 vStpIns1x1VlanNumber

 vStpInsMode

 vStpInsBridgeMaxAge

bridge forward delay

Configures the bridge forward delay time for the flat mode Common and Internal Spanning Tree (CIST) instance or for 1x1 mode VLAN instance. This value is the amount of time, in seconds, that determines how fast a port changes its Spanning Tree state until it reaches a forwarding state. The forward delay time specifies how long a port stays in the listening and learning states, which precede the forwarding state.

bridge [*instance*] **forward delay** *seconds*

Syntax Definitions

<i>instance</i>	The flat mode CIST instance or an existing VLAN ID number (1–4094).
<i>seconds</i>	Forward delay time, in seconds (4–30).

Defaults

By default, the bridge forward delay time value is set to 15 seconds.

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- A low forward delay time can cause temporary loops in the network, because data may get forwarded before the reconfiguration message has reached all nodes on the network.
- The forward delay time is also used to age out all dynamic MAC address entries in the forwarding table (MAC address table) when a topology change occurs.
- Specifying an instance number with this command when the switch is running in the 1x1 Spanning Tree mode implies a VLAN ID and configures the forward delay time for the associated VLAN instance.
- To configure the forward delay time for the flat mode CIST instance when the switch is running in either the flat or 1x1 mode, do *not* specify an instance number. The CIST is the instance configured by default with this command.
- If the switch is running in the flat mode and STP or RSTP is the active protocol, entering 1 to specify the CIST instance is optional. If MSTP is the active protocol, however, entering 1 for the instance number is not accepted.
- Note that for Multiple Spanning Tree Instances (MSTI), the forward delay time is inherited from the CIST instance and is not a configurable parameter.

Examples

```
-> bridge mode flat
-> bridge forward delay 30

-> bridge mode 1x1
-> bridge 255 forward delay 10
-> bridge forward delay 30
```

Release History

Release 6.6.1; command was introduced.

Related Commands

bridge mode	Selects the Spanning Tree operating mode (flat or 1x1) for the switch.
bridge cist forward delay	Explicit command for changing the Spanning Tree forward delay time value for the CIST instance when the switch is operating in either the flat or 1x1 mode.
bridge 1x1 forward delay	Explicit command for changing the Spanning Tree forward delay time value for a VLAN instance when the switch is operating in either the flat or 1x1 mode.
bridge rrstp ring vlan-tag	Displays VLAN Spanning Tree parameter values.

MIB Objects

```
vStpInsTable  
  vStpInsNumber  
  vStpInsMode  
  vStpInsBridgeForwardDelay
```

bridge cist forward delay

Configures the bridge forward delay time value for the flat mode Common and Internal Spanning Tree (CIST) instance. This value is the amount of time, in seconds, that determines how fast a port changes its Spanning Tree state until it reaches a forwarding state. The forward delay time specifies how long a port stays in the listening and learning states, which precede the forwarding state.

bridge cist forward delay *seconds*

Syntax Definitions

seconds Forward delay time in seconds (4–30).

Defaults

By default, the bridge forward delay time value is set to 15 seconds.

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- A low forward delay time can cause temporary loops in the network, because data may get forwarded before the reconfiguration message has reached all nodes on the network.
- The forward delay time is also used to age out all dynamic MAC address entries in the forwarding table (MAC address table) when a topology change occurs.
- This command is an explicit Spanning Tree command that only applies to the flat mode CIST instance regardless of which operating mode (flat or 1x1) or protocol is active on the switch.
- If the switch is running in 1x1 mode when this command is used, the specified forward delay time value is not active for the CIST instance until the operating mode for the switch is changed to the flat mode.
- Note that when a configuration snapshot is taken of the switch, all Spanning Tree commands are saved in their explicit format.

Examples

```
-> bridge mode flat
-> bridge cist forward delay 10
-> bridge cist forward delay 30

-> bridge mode 1x1
-> bridge cist forward delay 25
-> bridge cist forward delay 4
```

Release History

Release 6.6.1; command was introduced.

Related Commands

bridge mode	Selects the Spanning Tree operating mode (flat or 1x1) for the switch.
bridge forward delay	Implicit command for changing the Spanning Tree forward delay time value for the flat mode CIST instance or for a 1x1 mode VLAN instance.
bridge 1x1 forward delay	Explicit command for changing the Spanning Tree forward delay time value for a VLAN instance when the switch is operating in either the flat or 1x1 mode.

MIB Objects

```
vStpInsTable  
  vStpInsNumber  
  vStpInsBridgeForwardDelay
```

bridge 1x1 forward delay

Configures the bridge forward delay time value for an individual VLAN instance. This value is the amount of time, in seconds, that determines how fast a port changes its Spanning Tree state until it reaches a forwarding state. The forward delay time specifies how long a port stays in the listening and learning states, which precede the forwarding state.

bridge 1x1 *vid* **forward delay** *seconds*

Syntax Definitions

<i>vid</i>	An existing VLAN ID number (1–4094).
<i>seconds</i>	Forward delay time in seconds (4–30).

Defaults

By default, the bridge forward delay time value is set to 15 seconds.

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- A low forward delay time can cause temporary loops in the network, because data may get forwarded before the reconfiguration message has reached all nodes on the network.
- The forward delay time is also used to age out all dynamic MAC address entries in the forwarding table (MAC address table) when a topology change occurs.
- This command is an explicit Spanning Tree command that only applies to the specified VLAN instance regardless of which operating mode (flat or 1x1) is active on the switch.
- If the switch is running in the flat mode when this command is used, the specified max age time value is not active for the specified VLAN instance until the operating mode for the switch is changed to the 1x1 mode.
- Note that when a configuration snapshot is taken of the switch, all Spanning Tree commands are saved in their explicit format.

Examples

```
-> bridge mode flat
-> bridge 1x1 2 forward delay 30
-> bridge 1x1 10 forward delay 4

-> bridge mode 1x1
-> bridge 1x1 255 forward delay 25
-> bridge 1x1 455 forward delay 10
```

Release History

Release 6.6.1; command was introduced.

Related Commands

bridge mode	Selects the Spanning Tree operating mode (flat or 1x1) for the switch.
bridge forward delay	Implicit command for changing the Spanning Tree forward delay time value for the flat mode CIST instance or for a 1x1 mode VLAN instance.
bridge cist forward delay	Explicit command for changing the Spanning Tree forward delay time value for the CIST instance when the switch is operating in either the flat or 1x1 mode.

MIB Objects

```
vStpInsTable  
  vStpIns1x1VlanNumber  
  vStpInsMode  
  vStpInsBridgeForwardDelay
```

bridge bpdu-switching

Enables the switching of Spanning Tree BPDU on the flat mode Common and Internal Spanning Tree (CIST) instance or for an individual VLAN instance if the switch is running in the 1x1 mode.

bridge [*instance*] **bpdu-switching** {**enable** | **disable**}

Syntax Definitions

<i>instance</i>	The flat mode CIST instance (bridge 1) or an existing 1x1 mode VLAN ID instance number (bridge 1–4094).
enable	Enables BPDU switching for the specified instance.
disable	Disables BPDU switching for the specified instance.

Defaults

By default, BPDU switching is disabled for an instance.

parameter	default
<i>instance</i>	CIST (flat mode)

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Specifying the BPDU switching status for a VLAN does not depend on the current VLAN Spanning Tree status. For example, setting the BPDU switching status to enabled is allowed on a VLAN that also has Spanning Tree enabled.
- The **bridge bpdu-switching** command is an implicit Spanning Tree command. When issued in the 1x1 mode, the *instance* number specified implies a VLAN ID. When issued in the flat mode, the *instance* number specified implies an MSTI number.
- If an *instance* is not specified with this command, the BPDU switching status is configured for the flat mode CIST instance by default regardless of which mode (flat or 1x1) is active on the switch.
- Note that if the switch is running in the flat mode, specifying a value greater than 1 for the *instance* will return an error message. BPDU switching is only configured for the flat mode instance (bridge 1), regardless of which protocol is active (STP, RSTP, or MSTP).

Examples

```
-> bridge mode flat
-> bridge bpdu-switching enable
-> bridge 1 bpdu-switching disable

-> bridge mode 1x1
-> bridge 100 bpdu-switching enable
-> bridge 100 bpdu-switching disable
```

Release History

Release 6.6.1; command was introduced.

Related Commands

vlan stp	Enables or disables Spanning Tree instance for the specified VLAN.
show spantree	Displays VLAN Spanning Tree parameter values.

MIB Objects

vStpInsTable
 vStpInsBpduSwitching

bridge path cost mode

Configures the automatic selection of a 16-bit path cost for STP/RSTP ports and a 32-bit path cost for MSTP ports or sets all path costs to use a 32-bit value.

bridge path cost mode {auto | 32bit}

Syntax Definitions

auto	The port path cost value is automatically set depending on which protocol is active on the switch (32-bit for MSTP, 16-bit for STP/RSTP).
32bit	Specifies that a 32-bit value is used for the port path cost value regardless of which protocol is active on the switch.

Defaults

By default, the path cost mode is set to **auto**.

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Note that all path cost values, except those for MSTIs, are reset to the default path cost value when this mode is changed.
- When connecting a switch running in the 32-bit path cost mode to a switch running in the 16-bit mode, the 32-bit switch will have a higher path cost value and thus an inferior path cost to the 16-bit switch. To avoid this, use the **bridge path cost mode** command to change the 32-bit switch to a 16-bit switch.
- Note that when the protocol is changed to/from MSTP, the bridge priority and port path cost values for the flat mode CIST instance are reset to their default values. The exception to this is if the path cost mode is set to 32-bit prior to the protocol change, the path cost is not reset to its default value

Examples

```
-> bridge path cost mode 32bit  
-> bridge path cost mode auto
```

Release History

Release 6.6.1; command was introduced.

Related Commands

bridge slot/port path cost	Defines a Spanning Tree path cost for a port.
bridge protocol	Configures the protocol for the flat mode CIST instance or a 1x1 mode VLAN instance.

MIB Objects

vStpBridge

 vStpPathCostMode

bridge auto-vlan-containment

Enables or disables Auto VLAN Containment (AVC). When enabled, AVC prevents a port that has no VLANs mapped to an Multiple Spanning Tree Instance (MSTI) from becoming the root port for that instance. Such ports are automatically assigned an infinite path cost value to make them an inferior choice for root port.

bridge [*msti msti_id*] **auto-vlan-containment** {**enable** | **disable**}

Syntax Definitions

<i>msti_id</i>	An existing MSTI ID number (0–4094).
enable	Enables automatic VLAN containment.
disable	Disables automatic VLAN containment.

Defaults

By default, automatic VLAN containment is disabled.

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- The AVC feature is not active for any MSTI until it is globally enabled. To globally enable this feature, use the **bridge auto-vlan-containment** command but do not specify an *msti_id*.
- When AVC is globally enabled, it is active for all MSTIs. To disable AVC for a single instance, use the **disable** form of this command and specify the *msti_id* for the instance.
- Use the **enable** form of this command and specify an *msti_id* to enable AVC for an instance that was previously disabled.
- An administratively set port path cost takes precedence and prevents AVC configuration of the path cost. The exception to this is if the port path cost is administratively set to zero, which resets the path cost to the default value.
- Note that when AVC is disabled that a port assigned to a VLAN not mapped to a specific instance can become the root port for that instance and cause a loss of connectivity between other VLANs.
- AVC does not have any effect on root bridges.

Examples

```
-> bridge auto-vlan-containment enable
-> bridge auto-vlan-containment disable
-> bridge msti 1 auto-vlan-containment disable
-> bridge msti 1 auto-vlan containment enable
```

Release History

Release 6.6.1; command was introduced.

Related Commands

bridge slot/port path cost

Defines a Spanning Tree path cost for a port.

show spantree msti ports

Displays Spanning Tree port information for a flat mode Multiple Spanning Tree Instance (MSTI).

MIB Objects

vStpInsTable

 vStpInsAutoVlanContainment

vStpBridge

 vStpBridgeAutoVlanContainment

bridge slot/port

Enables or disables the Spanning Tree status on a single port or an aggregate of ports for the specified flat mode Common and Internal Spanning Tree (CIST) instance or a 1x1 mode VLAN instance.

bridge *instance* {*slot/port* | *logical_port*} {**enable** | **disable**}

Syntax Definitions

<i>instance</i>	The CIST instance number or an existing VLAN ID number (1–4094).
<i>slot/port</i>	The slot number for the module and the physical port number on that module (e.g., 3/1 specifies port 1 on slot 3).
<i>logical_port</i>	The Link aggregate ID number (0–31).
enable	Enables Spanning Tree on the specified port for the specified instance.
disable	Disables Spanning Tree on the specified port for the specified instance.

Defaults

By default, the Spanning Tree status is enabled on eligible ports.

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Specifying an instance number with this command when the switch is running in the 1x1 Spanning Tree mode implies a VLAN ID and configures the port Spanning Tree status for the associated VLAN instance.
- If the switch is running in the flat mode and STP or RSTP is the active protocol, enter 1 to specify the CIST instance. If MSTP is the active protocol, however, entering 1 for the instance number is not accepted. In this case, use the **bridge cist slot/port** command instead.
- Note that for Multiple Spanning Tree Instances (MSTI), the port Spanning Tree status is inherited from the CIST instance and is not a configurable parameter.
- When STP is disabled on a port, the port is set to a forwarding state for the specified STP instance.
- If STP is disabled on a VLAN in the 1x1 mode, the port Spanning Tree status is ignored and all active ports associated with the VLAN are put in a forwarding state and not included in the Spanning Tree Algorithm. Note that ports at this point are *not* switching BPDU, unless the BPDU switching status for the VLAN is enabled.
- Physical ports that are reserved for link aggregation do not participate in the Spanning Tree Algorithm. Instead, the algorithm is applied to the aggregate logical link (virtual port) that represents a collection of physical ports.

Examples

```
-> bridge mode flat
-> bridge 1 4/1 disable
-> bridge 1 1/24 enable

-> bridge mode 1x1
-> bridge 255 5/10 enable
-> bridge 455 16 enable
```

Release History

Release 6.6.1; command was introduced.

Related Commands

bridge mode	Selects the Spanning Tree operating mode (flat or 1x1) for the switch.
bridge cist slot/port	Explicit command for configuring the Spanning Tree status on a port or an aggregate of ports for the CIST instance when the switch is operating in either the 1x1 or flat mode.
bridge 1x1 slot/port	Explicit command for configuring the Spanning Tree status on a port or an aggregate of ports for a VLAN instance when the switch is operating in either the 1x1 or flat mode.
vlan stp	Enables or disables the Spanning Tree instance for a VLAN.
bridge bpdu-switching	Enables or disables BPDU switching for the specified VLAN.

MIB Objects

```
vStpInsPortTable
  vStpInsPortNumber
  vStpInsPortEnable
```

bridge cist slot/port

Enables or disables the Spanning Tree status on a single port or an aggregate of ports for the flat mode Common and Internal Spanning Tree (CIST) instance.

bridge cist {*slot/port* | *logical_port*} {**enable** | **disable**}

Syntax Definitions

<i>slot/port</i>	The slot number for the module and the physical port number on that module (e.g., 3/1 specifies port 1 on slot 3).
<i>logical_port</i>	The Link aggregate ID number (0–31).
enable	Enables Spanning Tree on the specified port for the CIST instance.
disable	Disables Spanning Tree on the specified port for the CIST instance.

Defaults

By default, the Spanning Tree status is enabled on eligible ports.

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- This command is an explicit Spanning Tree command that only applies to the port Spanning Tree status for the flat mode CIST instance regardless of which operating mode (flat or 1x1) or protocol is active on the switch.
- If the switch is running in 1x1 mode when this command is used, the Spanning Tree status configured for the port is not active for the CIST instance until the operating mode for the switch is changed to the flat mode.
- Note that when a configuration snapshot is taken of the switch, all Spanning Tree commands are saved in their explicit format.
- When the Spanning Tree status is disabled on a port, the port is set to a forwarding state for the specified instance.
- If STP is disabled on a VLAN in the 1x1 mode, the port Spanning Tree status is ignored and all active ports associated with the VLAN are put in a forwarding state and not included in the Spanning Tree Algorithm. Note that ports at this point are *not* switching BPDU, unless the BPDU switching status for the VLAN is enabled.
- Physical ports that are reserved for link aggregation do not participate in the Spanning Tree Algorithm. Instead, the algorithm is applied to the aggregate logical link (virtual port) that represents a collection of physical ports.

Examples

```
-> bridge mode flat
-> bridge cist 4/1 enable
-> bridge cist 16 enable

-> bridge mode 1x1
-> bridge cist 5/10 enable
-> bridge cist 22 enable
```

Release History

Release 6.6.1; command was introduced.

Related Commands

bridge mode	Selects the Spanning Tree operating mode (flat or 1x1) for the switch.
bridge slot/port	Implicit command for configuring the Spanning Tree status on a port for the flat mode CIST instance or for a 1x1 mode VLAN instance.
bridge 1x1 slot/port	Explicit command for configuring the Spanning Tree status on a port or an aggregate of ports for a VLAN instance when the switch is operating in either the 1x1 or flat mode.
vlan stp	Enables or disables the Spanning Tree instance for a VLAN.
bridge bpdu-switching	Enables or disables BPDU switching for the specified VLAN.

MIB Objects

```
vStpInsPortTable
  vStpInsPortNumber
  vStpInsPortEnable
```

bridge 1x1 slot/port

Enables or disables the Spanning Tree status on a single port or an aggregate of ports for the specified VLAN instance.

```
bridge 1x1 vid {slot/port | logical_port} {enable | disable}
```

Syntax Definitions

<i>vid</i>	An existing VLAN ID number (1–4094).
<i>slot/port</i>	The slot number for the module and the physical port number on that module (e.g., 3/1 specifies port 1 on slot 3).
<i>logical_port</i>	The Link aggregate ID number (0–31).
enable	Enables Spanning Tree on the specified port for the specified instance.
disable	Disables Spanning Tree on the specified port for the specified instance.

Defaults

By default, the Spanning Tree status is enabled on eligible ports.

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- This command is an explicit Spanning Tree command that only applies to the specified VLAN instance regardless of which operating mode (flat or 1x1) is active on the switch.
- If the switch is running in the flat mode when this command is used, the Spanning Tree status configured for the port is not active for the specified VLAN instance until the operating mode for the switch is changed to the 1x1 mode.
- Note that when a configuration snapshot is taken of the switch, all Spanning Tree commands are saved in their explicit format.
- When the Spanning Tree status is disabled on a port, the port is set to a forwarding state for the specified instance.
- If STP is disabled on a VLAN in the 1x1 mode, the port Spanning Tree status is ignored and all active ports associated with the VLAN are put in a forwarding state and not included in the Spanning Tree Algorithm. Note that ports at this point are *not* switching BPDU, unless the BPDU switching status for the VLAN is enabled.
- Physical ports that are reserved for link aggregation do not participate in the Spanning Tree Algorithm. Instead, the algorithm is applied to the aggregate logical link (virtual port) that represents a collection of physical ports.

Examples

```
-> bridge mode flat
-> bridge 1x1 2 4/1 enable
-> bridge 1x1 3 16 disable

-> bridge mode 1x1
-> bridge 1x1 2 5/10 enable
-> bridge 1x1 3 22 disable
```

Release History

Release 6.6.1; command was introduced.

Related Commands

bridge mode	Selects the Spanning Tree operating mode (flat or 1x1) for the switch.
bridge slot/port	Implicit command for configuring the Spanning Tree status on a port for the flat mode CIST instance or for a 1x1 mode VLAN instance.
bridge cist slot/port	Explicit command for configuring the Spanning Tree status on a port or an aggregate of ports for the CIST instance when the switch is operating in either the 1x1 or flat mode.
vlan stp	Enables or disables Spanning Tree instance for the specified VLAN.
bridge bpdu-switching	Enables or disables BPDU switching for the specified VLAN.

MIB Objects

```
vStpInsPortTable
  vStpInsPortNumber
  vStpInsPortEnable
```

bridge slot/port priority

Configures the Spanning Tree priority for a single port or an aggregate of ports for the flat mode Common and Internal Spanning Tree (CIST) instance or a 1x1 mode VLAN instance. The Spanning Tree Algorithm uses the port priority value to determine the most favorable port when a bridge has multiple ports with the same path cost to the root bridge.

bridge *instance* {*slot/port* | *logical_port*} **priority** *priority*

Syntax Definitions

<i>instance</i>	The flat mode CIST instance or an existing VLAN ID number (1–4094).
<i>slot/port</i>	Enter the slot number for the module and the physical port number on that module (e.g., 3/1 specifies port 1 on slot 3).
<i>logical_port</i>	Link aggregate ID number (0–31).
<i>priority</i>	Port priority value (0–15). The lower the number, the higher the priority.

Defaults

By default, the bridge port priority value is set to 7.

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- The port priority specifies the value of the priority field contained in the first byte of the Port ID. The second byte contains the physical switch port number.
- Specifying an instance number with this command when the switch is running in the 1x1 Spanning Tree mode implies a VLAN ID and configures the port priority value for the associated VLAN instance.
- If the switch is running in the flat mode and STP or RSTP is the active protocol, enter 1 to specify the CIST instance. If MSTP is the active protocol, however, entering 1 for the instance number is not accepted. In this case, use the [bridge cist slot/port priority](#) command instead.

Examples

```
-> bridge mode flat
-> bridge 1 4/1 priority 0

-> bridge mode 1x1
-> bridge 255 1/24 priority 5
-> bridge 455 3/12 priority 15
```

Release History

Release 6.6.1; command was introduced.

Related Commands

bridge mode	Selects the Spanning Tree operating mode (flat or 1x1) for the switch.
bridge cist slot/port priority	Explicit command for configuring the Spanning Tree priority for a port or an aggregate of ports for the CIST instance when the switch is operating in either the 1x1 or flat mode.
bridge msti slot/port priority	Explicit command for configuring the Spanning Tree priority for a port or an aggregate of ports for an MSTI when the switch is operating in either the 1x1 or flat mode.
bridge 1x1 slot/port priority	Explicit command for configuring the Spanning Tree priority for a port or an aggregate of ports for a VLAN instance when the switch is operating in either the 1x1 or flat mode.

MIB Objects

```
vStpInsPortTable  
  vStpInsPortNumber  
  vStpInsPortPriority
```

bridge cist slot/port priority

Configures the Spanning Tree priority value for a port or an aggregate of ports for the flat mode Common and Internal Spanning Tree (CIST) instance. The Spanning Tree algorithm uses the port priority value to determine the most favorable port when a bridge has multiple ports with the same path cost to the root bridge.

bridge cist {*slot/port* | *logical_port*} **priority** *priority*

Syntax Definitions

<i>slot/port</i>	Enter the slot number for the module and the physical port number on that module (e.g., 3/1 specifies port 1 on slot 3).
<i>logical_port</i>	Link aggregate ID number (0–31).
<i>priority</i>	Port priority value (0–15). The lower the number, the higher the priority.

Defaults

By default, the bridge port priority value is set to 7.

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- The port priority specifies the value of the priority field contained in the first byte of the Port ID. The second byte contains the physical switch port number.
- This command is an explicit Spanning Tree command that only applies to the port priority value for the flat mode CIST instance regardless of which operating mode (flat or 1x1) or protocol is active on the switch.
- If the switch is running in 1x1 mode when this command is used, the specified port priority value is not active for the CIST instance until the operating mode for the switch is changed to the flat mode.
- Note that when a configuration snapshot is taken of the switch, all Spanning Tree commands are saved in their explicit format.

Examples

```
-> bridge mode flat
-> bridge cist 4/1 priority 2
-> bridge cist 10 priority 15

-> bridge mode 1x1
-> bridge cist 5/10 priority 1
-> bridge cist 16 priority 15
```

Release History

Release 6.6.1; command was introduced.

Related Commands

bridge mode	Selects the Spanning Tree operating mode (flat or 1x1) for the switch.
bridge slot/port priority	Implicit command for configuring the Spanning Tree priority value for a port or an aggregate of ports that applies to the specified CIST or VLAN instance.
bridge msti slot/port priority	Explicit command for configuring the Spanning Tree priority value for a port or an aggregate of ports for an MSTI when the switch is operating in either the 1x1 or flat mode.
bridge 1x1 slot/port priority	Explicit command for configuring the Spanning Tree priority value for a port or an aggregate of ports for a VLAN instance when the switch is operating in either the 1x1 or flat mode.

MIB Objects

```
vStpInsPortTable  
  vStpInsPortNumber  
  vStpInsPortPriority
```

bridge msti slot/port priority

Configures the Spanning Tree priority value for a port or an aggregate of ports for the specified flat mode Multiple Spanning Tree Instance (MSTI). The Spanning Tree algorithm uses the port priority value to determine the most favorable port when a bridge has multiple ports with the same path cost to the root bridge.

bridge msti *msti_id* {*slot/port* | *logical_port*} **priority** *priority*

Syntax Definitions

<i>msti_id</i>	An existing MSTI ID number (0–4094).
<i>slot/port</i>	Enter the slot number for the module and the physical port number on that module (e.g., 3/1 specifies port 1 on slot 3).
<i>logical_port</i>	Link aggregate ID number (0–31).
<i>priority</i>	Port priority value (0–15). The lower the number, the higher the priority.

Defaults

By default, the bridge port priority value is set to 7.

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- The port priority specifies the value of the priority field contained in the first byte of the Port ID. The second byte contains the physical switch port number.
- This command is an explicit Spanning Tree command that only applies to the specified MSTI regardless of which operating mode (flat or 1x1) is active on the switch. If MSTP is not the selected flat mode protocol, however, the port priority value for any MSTI is not configurable in either mode.
- Note that if zero is entered for the *msti_id* value, the specified priority value is applied to the CIST instance. The flat mode CIST instance 0 is also known as MSTI 0.
- The port priority value configured with this command is only applied to the specified MSTI. As a result, a single port can have different priority values for each instance. For example, in flat mode, port 1/24 can have a priority value of 7 for MSTI 2 and a priority value of 5 for MSTI 3.
- If the switch is running in 1x1 mode when this command is used, the specified priority value is not active for the specified MSTI until the operating mode for the switch is changed to the flat mode.
- Note that when a configuration snapshot is taken of the switch, all Spanning Tree commands are saved in their explicit format.

Examples

```
-> bridge mode flat
-> bridge msti 0 1/24 priority 12
-> bridge msti 2 1/24 priority 5

-> bridge mode 1x1
-> bridge msti 0 1/24 priority 12
-> bridge msti 2 1/24 priority 5
```

Release History

Release 6.6.1; command was introduced.

Related Commands

bridge mode	Selects the Spanning Tree operating mode (flat or 1x1) for the switch.
bridge slot/port priority	Implicit command for configuring the Spanning Tree priority value for a port or an aggregate of ports that applies to the specified CIST or VLAN instance.
bridge cist slot/port priority	Explicit command for configuring the Spanning Tree priority value for a port or an aggregate of ports for the CIST instance when the switch is operating in either the 1x1 or Tree mode.
bridge 1x1 slot/port priority	Explicit command for configuring the Spanning Tree priority value for a port or an aggregate of ports for a VLAN instance when the switch is operating in either the 1x1 or flat mode.

MIB Objects

```
vStpInsPortTable
  vStpInsPortNumber
  vStpInsPortPriority
```

bridge 1x1 slot/port priority

Configures the Spanning Tree priority value for a port or an aggregate of ports for the specified 1x1 mode VLAN instance. The Spanning Tree algorithm uses the port priority value to determine the most favorable port when a bridge has multiple ports with the same path cost to the root bridge.

bridge 1x1 *vid* {*slot/port* | *logical_port*} **priority** *priority*

Syntax Definitions

<i>vid</i>	An existing VLAN ID number (1–4094).
<i>slot/port</i>	Enter the slot number for the module and the physical port number on that module (e.g., 3/1 specifies port 1 on slot 3).
<i>logical_port</i>	Link aggregate ID number (0–31).
<i>priority</i>	Port priority value (0–15). The lower the number, the higher the priority.

Defaults

By default, the bridge port priority value is set to 7.

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- The port priority specifies the value of the priority field contained in the first byte of the Port ID. The second byte contains the physical switch port number.
- This command is an explicit Spanning Tree command that only applies to the specified VLAN instance regardless of which operating mode (flat or 1x1) or protocol is active on the switch.
- If the switch is running in the flat mode when this command is used, the specified priority value for the port is not active for the specified VLAN instance until the operating mode for the switch is changed to the 1x1 mode.
- Note that when a configuration snapshot is taken of the switch, all Spanning Tree commands are saved in their explicit format.

Examples

```
-> bridge mode flat
-> bridge 1x1 100 4/1 priority 2
-> bridge 1x1 200 1/24 priority 4

-> bridge mode 1x1
-> bridge 1x1 255 5/10 priority 1
-> bridge 1x1 455 1/16 priority 15
```

Release History

Release 6.6.1; command was introduced.

Related Commands

bridge mode	Selects the Spanning Tree operating mode (flat or 1x1) for the switch.
bridge slot/port priority	Implicit command for configuring the Spanning Tree priority value for a port or an aggregate of ports that applies to the specified CIST or VLAN instance.
bridge slot/port path cost	Explicit command for configuring the Spanning Tree priority value for a port or an aggregate of ports for the CIST instance when the switch is operating in either the 1x1 or flat mode.
bridge msti slot/port priority	Explicit command for configuring the Spanning Tree priority value for a port or an aggregate of ports for an MSTI when the switch is operating in either the 1x1 or flat mode.

MIB Objects

```
vStpInsPortTable  
  vStpInsPortNumber  
  vStpInsPortPriority
```

bridge slot/port path cost

Configures the Spanning Tree path cost value for a single port or an aggregate of ports that applies to the specified flat mode Common and Internal Spanning Tree (CIST) instance or a 1x1 mode VLAN instance. This value is the contribution of this port to the path cost towards the Spanning Tree root bridge that includes this port. Path cost is a measure of the distance of the listed port from the root bridge in the number of hops.

```
bridge instance {slot/port | logical_port} path cost path_cost
```

Syntax Definitions

<i>instance</i>	The flat mode CIST instance or an existing VLAN ID number (1–4094).
<i>slot/port</i>	Enter the slot number for the module and the physical port number on that module (e.g., 3/1 specifies port 1 on slot 3).
<i>logical_port</i>	Link aggregate ID number (0–31).
<i>path_cost</i>	Path cost value (0 - 65535 for 16-bit, 0–200000000 for 32-bit).

Defaults

By default, the path cost is set to zero.

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Specifying an instance number with this command when the switch is running in the 1x1 Spanning Tree mode implies a VLAN ID and configures the port path cost for the associated VLAN instance.
- If the switch is running in the flat mode and STP (802.1D) or RSTP (802.1W) is the active protocol, enter 1 to specify the CIST instance. If MSTP is the active protocol, however, entering 1 for the instance number is not accepted. In this case, use the **bridge cist slot/port path cost** command instead.
- Note that when the Spanning Tree protocol is changed to/from MSTP, the bridge priority and port path cost values for the flat mode CIST instance are reset to their default values.
- Use the **bridge path cost mode** command to automatically select the path cost value based on the active Spanning Tree protocol (16-bit for STP and RSTP, 32-bit for MSTP) or to use a 32-bit path cost value regardless of which protocol is active.
- If a 32-bit path cost value is in use and the *path_cost* is set to zero, the following recommended default path cost values based on link speed are used.

:

Link Speed	IEEE 802.1D Recommended Value
10 MB	2,000,000
100 MB	200,000
1 GB	20,000
10 Gbps	2,000

- If a 16-bit path cost value is in use and the *path_cost* is set to zero, the following IEEE 802.1D recommended default path cost values based on link speed are used

Link Speed	IEEE 802.1D Recommended Value
4 Mbps	250
10 Mbps	100
16 Mbps	62
100 Mbps	19
1 Gbps	4
10 Gbps	2

- If a 32-bit path cost value is in use and the *path_cost* for a link aggregate is set to zero, the following default values based on link speed and link aggregate size are used

Link Speed	Aggregate Size (number of links)	Default Path Cost Value
10 MB	2	1,200,000
	4	800,000
	8	600,000
100 MB	2	120,000
	4	80,000
	8	60,000
1 GB	2	12,000
	4	8,000
	8	6,000
10 GB	2	1,200
	4	800
	8	600

- If a 16-bit path cost value is in use and the *path_cost* for a link aggregate is set to zero, the following default values based on link speed and link aggregate size are used. Note that for Gigabit ports the aggregate size is not applicable in this case:

Link Speed	Aggregate Size (number of links)	Default Path Cost Value
10 Mbps	2	60
	4	40
	8	30
100 Mbps	2	12
	4	9
	8	7
1 Gbps	N/A	3
10 Gbps	N/A	1

Examples

```
-> bridge mode flat
-> bridge 1 4/1 path cost 19
-> bridge 1 5/1 path cost 0

-> bridge mode 1x1
-> bridge 455 1/24 path cost 2000
-> bridge 955 3/12 path cost 500
```

Release History

Release 6.6.1; command was introduced.

Related Commands

bridge mode	Selects the Spanning Tree operating mode (flat or 1x1) for the switch.
bridge path cost mode	Selects a 32-bit or automatic path cost mode for the switch.
bridge cist slot/port path cost	Explicit command for configuring the Spanning Tree path cost for a port or an aggregate of ports for the CIST instance when the switch is operating in either the 1x1 or flat mode.
bridge msti slot/port path cost	Explicit command for configuring the Spanning Tree path cost for a port or an aggregate of ports for an MSTI when the switch is operating in either the 1x1 or flat mode.
bridge 1x1 slot/port path cost	Explicit command for configuring the Spanning Tree path cost for a port or an aggregate of ports for a VLAN instance when the switch is operating in either the 1x1 or flat mode.

MIB Objects

```
vStpInsPortTable  
    vStpInsPortNumber  
    vStpInsPortPathCost
```

bridge cist slot/port path cost

Configures the Spanning Tree path cost value for a port or an aggregate of ports for the flat mode Common and Internal Spanning Tree (CIST) instance. This value is the contribution of this port to the path cost towards the Spanning Tree root bridge that includes this port. Path cost is a measure of the distance of the listed port from the root bridge in the number of hops.

bridge cist {*slot/port* | *logical_port*} **path cost** *path_cost*

Syntax Definitions

<i>slot/port</i>	Enter the slot number for the module and the physical port number on that module (e.g., 3/1 specifies port 1 on slot 3).
<i>logical_port</i>	Link aggregate ID number (0–31).
<i>path_cost</i>	Path cost value (0 - 65535 for 16-bit, 0–200000000 for 32-bit).

Defaults

By default, the path cost is set to zero.

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- This command is an explicit Spanning Tree command that only applies to the port path cost value for the CIST instance regardless of which operating mode (flat or 1x1) or protocol is active on the switch.
- If the switch is running in 1x1 mode when this command is used, the specified path cost value is not active for the CIST instance until the operating mode for the switch is changed to the flat mode.
- Note that when the Spanning Tree protocol is changed to/from MSTP, the bridge priority and port path cost values for the flat mode CIST instance are reset to their default values.
- Use the **bridge path cost mode** command to automatically select the path cost value based on the active Spanning Tree protocol (16-bit for STP and RSTP, 32-bit for MSTP) or to use a 32-bit path cost value regardless of which protocol is active.
- Note that when a configuration snapshot is taken of the switch, all Spanning Tree commands are saved in their explicit format.
- If a 32-bit path cost value is in use and the *path_cost* is set to zero, the following recommended default path cost values based on link speed are used:

Link Speed	IEEE 802.1D Recommended Value
10 MB	2,000,000
100 MB	200,000
1 GB	20,000
10 Gbps	2,000

- If a 16-bit path cost value is in use and the *path_cost* is set to zero, the following IEEE 802.1D recommended default path cost values based on link speed are used:

Link Speed	IEEE 802.1D Recommended Value
4 Mbps	250
10 Mbps	100
16 Mbps	62
100 Mbps	19
1 Gbps	4
10 Gbps	2

- If a 32-bit path cost value is in use and the *path_cost* for a link aggregate is set to zero, the following default values based on link speed and link aggregate size are used:

Link Speed	Aggregate Size (number of links)	Default Path Cost Value
10 MB	2	1,200,000
	4	800,000
	8	600,000
100 MB	2	120,000
	4	80,000
	8	60,000
1 GB	2	12,000
	4	8,000
	8	6,000
10 GB	2	1,200
	4	800
	8	600

- If a 16-bit path cost value is in use and the *path_cost* for a link aggregate is set to zero, the following default values based on link speed and link aggregate size are used. Note that for Gigabit ports the aggregate size is not applicable in this case:

Link Speed	Aggregate Size (number of links)	Default Path Cost Value
10 Mbps	2	60
	4	40
	8	30
100 Mbps	2	12
	4	9
	8	7
1 Gbps	N/A	3
10 Gbps	N/A	1

Examples

```
-> bridge mode flat
-> bridge cist 4/1 path cost 19
-> bridge cist 16 path cost 12000

-> bridge mode 1x1
-> bridge cist 5/10 path cost 19
-> bridge cist 11 path cost 12000
```

Release History

Release 6.6.1; command was introduced.

Related Commands

bridge mode	Selects the Spanning Tree operating mode (flat or 1x1) for the switch.
bridge path cost mode	Selects a 32-bit or automatic path cost mode for the switch.
bridge slot/port path cost	Implicit command for configuring the Spanning Tree path cost value for a port or an aggregate of ports that applies to the specified CIST or VLAN instance.
bridge msti slot/port path cost	Explicit command for configuring the Spanning Tree path cost value for a port or an aggregate of ports for an MSTI when the switch is operating in either the 1x1 or flat mode.
bridge 1x1 slot/port path cost	Explicit command for configuring the Spanning Tree path cost value for a port or an aggregate of ports for a VLAN instance when the switch is operating in either the 1x1 or flat mode.

MIB Objects

```
vStpInsPortTable  
  vStpInsPortNumber  
  vStpInsPortPathCost
```

bridge msti slot/port path cost

Configures the Spanning Tree path cost value for a port or an aggregate of ports for the specified flat mode Multiple Spanning Tree Instance (MSTI). This value is the contribution of this port to the path cost towards the Spanning Tree root bridge that includes this port. Path cost is a measure of the distance of the listed port from the root bridge in the number of hops.

```
bridge msti msti_id {slot/port | logical_port} path cost path_cost
```

Syntax Definitions

<i>msti_id</i>	An existing MSTI ID number (0–4094).
<i>slot/port</i>	Enter the slot number for the module and the physical port number on that module (e.g., 3/1 specifies port 1 on slot 3).
<i>logical_port</i>	Link aggregate ID number (0–31).
<i>path_cost</i>	Path cost value (0 - 65535 for 16-bit, 0–200000000 for 32-bit).

Defaults

By default, the path cost is set to zero.

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- This command is an explicit Spanning Tree command that only applies to the specified MSTI regardless of which operating mode (flat or 1x1) is active on the switch. If MSTP is not the selected flat mode protocol, however, the path cost value for any MSTI is not configurable.
- Note that if zero is entered for the *msti_id* value, the specified path cost value is applied to the CIST instance. The flat mode CIST instance 0 is also known as MSTI 0.
- Note that when the Spanning Tree protocol is changed to/from MSTP, the bridge priority and port path cost values for the flat mode CIST instance are reset to their default values.
- The path cost value configured with this command is only applied to the specified instance. As a result, a single port can have a different path cost for each instance. For example, in flat mode, port 1/24 can have a path cost of 20000 for MSTI 2 and a path cost of 200000 for MSTI 3.
- If the switch is running in 1x1 mode when this command is used, the specified path cost value is not active for the specified MSTI until the operating mode for the switch is changed to the flat mode.
- Note that when a configuration snapshot is taken of the switch, all Spanning Tree commands are saved in their explicit format.
- When MSTP is the active protocol on the switch, only a 32-bit path cost value is used. Using a 16-bit path cost value is not an option.
- If zero is entered for the *path_cost* value, then the following recommended default path cost values based on link speed are used:

Link Speed	IEEE 802.1D Recommended Value
10 MB	2,000,000
100 MB	200,000
1 GB	20,000
10 Gbps	2,000

- If the *path_cost* value for a link aggregate is set to zero, the following default values based on link speed and link aggregate size are used:

Link Speed	Aggregate Size (number of links)	Default Path Cost Value
10 MB	2	1,200,000
	4	800,000
	8	600,000
100 MB	2	120,000
	4	80,000
	8	60,000
1 GB	2	12,000
	4	8,000
	8	6,000
10 GB	2	1,200
	4	800
	8	600

Examples

```
-> bridge mode flat
-> bridge msti 0 4/1 path cost 200000
-> bridge msti 2 4/1 path cost 20000

-> bridge mode 1x1
-> bridge msti 0 1/24 path cost 200000
-> bridge msti 2 1/24 path cost 20000
```

Release History

Release 6.6.1; command was introduced.

Related Commands

bridge mode	Selects the Spanning Tree operating mode (flat or 1x1) for the switch.
bridge slot/port path cost	Implicit command for configuring the Spanning Tree path cost value for a port or an aggregate of ports that applies to the specified CIST or VLAN instance.
bridge cist slot/port path cost	Explicit command for configuring the Spanning Tree path cost value for a port or an aggregate of ports for the CIST instance when the switch is operating in either the 1x1 or flat mode.
bridge 1x1 slot/port path cost	Explicit command for configuring the Spanning Tree path cost value for a port or an aggregate of ports for a VLAN instance when the switch is operating in either the 1x1 or flat mode.

MIB Objects

```
vStpInsPortTable  
  vStpInsPortNumber  
  vStpInsPortPathCost
```

bridge 1x1 slot/port path cost

Configures the Spanning Tree path cost value for a port or an aggregate of ports for the specified 1x1 mode VLAN instance. This value is the contribution of this port to the path cost towards the Spanning Tree root bridge that includes this port. Path cost is a measure of the distance of the listed port from the root bridge in the number of hops.

bridge 1x1 *vid* {*slot/port* / *logical_port*} **path cost** *path_cost*

Syntax Definitions

<i>vid</i>	An existing VLAN ID number (1–4094).
<i>slot/port</i>	Enter the slot number for the module and the physical port number on that module (e.g., 3/1 specifies port 1 on slot 3).
<i>logical_port</i>	Link aggregate ID number (0–31).
<i>path_cost</i>	Path cost value (0 - 65535 for 16-bit, 0–200000000 for 32-bit).

Defaults

By default, the path cost is set to zero.

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- This command is an explicit Spanning Tree command that only applies to the specified VLAN instance regardless of which operating mode (flat or 1x1) is active on the switch.
- If the switch is running in the flat mode when this command is used, the specified path cost for the port is not active for the specified VLAN instance until the operating mode for the switch is changed to the 1x1 mode.
- Note that when the Spanning Tree protocol is changed to/from MSTP, the bridge priority and port path cost values for the flat mode CIST instance are reset to their default values.
- Use the [bridge path cost mode](#) command to automatically select the path cost value based on the active Spanning Tree protocol (16-bit for STP and RSTP, 32-bit for MSTP) or to use a 32-bit path cost value regardless of which protocol is active.
- Note that when a configuration snapshot is taken of the switch, all Spanning Tree commands are saved in their explicit format.
- If a 32-bit path cost value is in use and the *path_cost* is set to zero, the following IEEE 802.1S recommended default path cost values based on link speed are used:

Link Speed	IEEE 802.1D Recommended Value
10 MB	2,000,000

Link Speed	IEEE 802.1D Recommended Value
100 MB	200,000
1 GB	20,000
10 Gbps	2,000

- If a 16-bit path cost value is in use and the *path_cost* is set to zero, the following IEEE 802.1D recommended default path cost values based on link speed are used:

Link Speed	IEEE 802.1D Recommended Value
4 Mbps	250
10 Mbps	100
16 Mbps	62
100 Mbps	19
1 Gbps	4
10 Gbps	2

- If a 32-bit path cost value is in use and the *path_cost* for a link aggregate is set to zero, the following default values based on link speed and link aggregate size are used:

Link Speed	Aggregate Size (number of links)	Default Path Cost Value
10 MB	2	1,200,000
	4	800,000
	8	600,000
100 MB	2	120,000
	4	80,000
	8	60,000
1 GB	2	12,000
	4	8,000
	8	6,000
10 GB	2	1,200
	4	800
	8	600

- If a 16-bit path cost value is in use and the *path_cost* for a link aggregate is set to zero, the following default values based on link speed and link aggregate size are used. Note that for Gigabit ports the aggregate size is not applicable in this case:

Link Speed	Aggregate Size (number of links)	Default Path Cost Value
10 Mbps	2	60
	4	40
	8	30
100 Mbps	2	12
	4	9
	8	7
1 Gbps	N/A	3
10 Gbps	N/A	1

Examples

```
-> bridge mode flat
-> bridge 1x1 200 4/1 path cost 4
-> bridge 1x1 300 16 path cost 200000

-> bridge mode 1x1
-> bridge 1x1 400 5/10 path cost 19
-> bridge 1x1 500 1/24 path cost 20000
```

Release History

Release 6.6.1; command was introduced.

Related Commands

bridge mode	Selects the Spanning Tree operating mode (flat or 1x1) for the switch.
bridge slot/port path cost	Implicit command for configuring the Spanning Tree path cost value for a port or an aggregate of ports that applies to the specified CIST or VLAN instance.
bridge cist slot/port path cost	Explicit command for configuring the Spanning Tree path cost value for a port or an aggregate of ports for the CIST instance when the switch is operating in either the 1x1 or flat mode.
bridge msti slot/port path cost	Explicit command for configuring the Spanning Tree path cost value for a port or an aggregate of ports for an MSTI when the switch is operating in either the 1x1 or flat Spanning Tree mode.

MIB Objects

```
vStpInsPortTable
  vStpInsPortNumber
  vStpInsPortPathCost
```

bridge slot/port mode

Configures Manual mode (forwarding or blocking) or Dynamic mode to manage the state of a port or an aggregate of ports for the flat mode Common and Internal Spanning Tree (CIST) instance or a 1x1 mode VLAN instance. Dynamic mode defers the configuration of the port state to the Spanning Tree Protocol.

bridge *instance* {*slot/port* | *logical_port*} **mode** {**forwarding** | **blocking** | **dynamic**}

Syntax Definitions

<i>instance</i>	The CIST instance or an existing VLAN ID number (1–4094).
<i>slot/port</i>	Enter the slot number for the module and the physical port number on that module (e.g., 3/1 specifies port 1 on slot 3).
<i>logical_port</i>	Link aggregate ID number (0–31).
forwarding	Set port state to forwarding.
blocking	Set port state to blocking.
dynamic	Port state is determined by Spanning Tree Protocol.

Defaults

By default, the port Spanning Tree mode is set to dynamic.

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Specifying an instance number with this command when the switch is running the 1x1 Spanning Tree operating mode implies a VLAN ID and configures the port Spanning Tree mode (**forwarding**, **blocking**, or **dynamic**) for the associated VLAN instance.
- If the switch is running in the flat mode and STP (802.1D) or RSTP (802.1W) is the active protocol, enter 1 to specify the CIST instance. If MSTP is the active protocol, however, entering 1 for the instance number is not accepted. In this case, use the **bridge cist slot/port mode** command instead.
- Note that for Multiple Spanning Tree Instances (MSTI), the port Spanning Tree mode is inherited from the CIST instance and is not a configurable parameter.
- When port state is manually set to forwarding or blocking, the port remains in that state until it is changed using this command.
- Ports manually configured to operate in a forwarding or blocking state do not participate in the Spanning Tree Algorithm.

Examples

```
-> bridge mode flat
-> bridge 1 4/1 mode forwarding

-> bridge mode 1x1
-> bridge 200 4/1 mode dynamic
-> bridge 300 1/24 mode forwarding
```

Release History

Release 6.6.1; command was introduced.

Related Commands

bridge mode	Selects the Spanning Tree operating mode (flat or 1x1) for the switch.
bridge cist slot/port mode	Explicit command for configuring the Spanning Tree mode on a port or an aggregate of ports for the CIST instance when the switch is operating in either the 1x1 or flat mode.
bridge 1x1 slot/port mode	Explicit command for configuring the Spanning Tree mode on a port or an aggregate of ports for a VLAN instance when the switch is operating in either the 1x1 or flat mode.

MIB Objects

```
vStpInsPortTable
  vStpInsPortNumber
  vStpInsPortManualMode
```

bridge cist slot/port mode

Configures Manual mode (forwarding or blocking) or Dynamic mode to manage the state of a port or an aggregate of ports for the flat mode Common and Internal Spanning Tree (CIST) instance. Dynamic mode defers the management of the port state to the Spanning Tree algorithm.

bridge cist {*slot/port* | *logical_port*} **mode** {**dynamic** | **blocking** | **forwarding**}

Syntax Definitions

<i>slot/port</i>	Enter the slot number for the module and the physical port number on that module (e.g., 3/1 specifies port 1 on slot 3).
<i>logical_port</i>	Link aggregate ID number (0–31).
dynamic	Port state is determined by Spanning Tree algorithm.
blocking	Sets port state to blocking.
forwarding	Sets port state to forwarding.

Defaults

By default, the port Spanning Tree mode is set to dynamic.

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- This command is an explicit Spanning Tree command that only applies to the port Spanning Tree mode for the CIST instance regardless of which operating mode (flat or 1x1) is active on the switch.
- If the switch is running in 1x1 mode when this command is used, the specified port mode is not active for the CIST instance until the operating mode for the switch is changed to the flat mode.
- Note that when a configuration snapshot is taken of the switch, all Spanning Tree commands are saved in their explicit format.
- Ports manually configured to operate in a forwarding or blocking state do not participate in the Spanning Tree algorithm.
- When port state is manually set to forwarding or blocking, the port remains in that state until it is changed using this command.

Examples

```
-> bridge mode flat
-> bridge cist 4/1 mode forwarding
-> bridge cist 10 mode blocking

-> bridge mode 1x1
-> bridge cist 2/2 mode blocking
-> bridge cist 11 mode forwarding
```

Release History

Release 6.6.1; command was introduced.

Related Commands

bridge mode

Selects the Spanning Tree operating mode (flat or 1x1) for the switch.

bridge slot/port mode

Implicit command for configuring the Spanning Tree mode for a port or an aggregate of ports for the CIST instance or a VLAN instance.

bridge 1x1 slot/port mode

Explicit command for configuring the Spanning Tree mode for a port or an aggregate of ports for the specified VLAN instance when the switch is operating in either the 1x1 or flat Spanning Tree mode.

MIB Objects

vStpInsPortTable

 vStpInsPortNumber

 vStpInsPortManualMode

bridge 1x1 slot/port mode

Configures Manual mode (forwarding or blocking) or Dynamic mode to manage the state of a port or an aggregate of ports for the specified 1x1 mode VLAN instance. Dynamic mode defers the management of the port state to the Spanning Tree algorithm.

bridge 1x1 *vid* {*slot/port* | *logical_port*} **mode** {**dynamic** | **blocking** | **forwarding**}

Syntax Definitions

<i>vid</i>	An existing VLAN ID number (1–4094).
<i>slot/port</i>	Enter the slot number for the module and the physical port number on that module (e.g., 3/1 specifies port 1 on slot 3).
<i>logical_port</i>	Link aggregate ID number (0–31).
dynamic	Port state is determined by Spanning Tree algorithm.
blocking	Sets port state to blocking.
forwarding	Sets port state to forwarding.

Defaults

By default, the port Spanning Tree mode is set to dynamic.

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- This command is an explicit Spanning Tree command that only applies to the specified VLAN instance regardless of which operating mode (flat or 1x1) is active on the switch.
- If the switch is running in the flat mode when this command is used, the specified mode for the port is not active for the specified VLAN instance until the operating mode for the switch is changed to the 1x1 mode.
- Note that when a configuration snapshot is taken of the switch, all Spanning Tree commands are saved in their explicit format.
- Ports manually configured to operate in a forwarding or blocking state do not participate in the Spanning Tree algorithm.
- When port state is manually set to forwarding or blocking, the port remains in that state until it is changed using this command.

Examples

```
-> bridge mode flat
-> bridge 1x1 255 4/1 mode forwarding
-> bridge 1x1 355 1/24 mode dynamic

-> bridge mode 1x1
-> bridge 1x1 255 2/2 mode blocking
-> bridge 1x1 355 3/12 mode forwarding
```

Release History

Release 6.6.1; command was introduced.

Related Commands

bridge mode	Selects the Spanning Tree operating mode (flat or 1x1) for the switch.
bridge slot/port mode	Implicit command for configuring the Spanning Tree mode for a port or an aggregate of ports for the CIST instance or for a VLAN instance.
bridge cist slot/port mode	Explicit command for configuring the Spanning Tree mode for a port or an aggregate of ports for the CIST instance when the switch is operating in either the 1x1 or flat Spanning Tree mode.

MIB Objects

```
vStpInsPortTable
  vStpInsPortNumber
  vStpInsPortManualMode
```

bridge slot/port connection

Configures the connection type for a port or an aggregate of ports for the flat mode Common and Internal Spanning Tree (CIST) instance or a 1x1 mode VLAN instance.

bridge *instance* {*slot/port* | *logical_port*} **connection** {**noptp** | **ptp** | **autoptp** | **edgeport**}

Syntax Definitions

<i>instance</i>	The flat mode CIST instance or an existing VLAN ID number (1–4094).
<i>slot/port</i>	Enter the slot number for the module and the physical port number on that module (e.g., 3/1 specifies port 1 on slot 3).
<i>logical_port</i>	Link aggregate ID number (0–31).
noptp	Defines port connection type as no point to point link.
ptp	Defines port connection type as point to point link.
autoptp	Specifies that switch software will automatically define connection type as point to point or no point to point.
edgeport	<i>This parameter is currently not supported.</i> Use the bridge cist slot/port admin-edge or bridge cist slot/port auto-edge command to configure edge port status.

Defaults

By default the link connection type is set to auto point to point.

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Specifying an instance number with this command when the switch is running the 1x1 Spanning Tree operating mode implies a VLAN ID and configures the port connection type for the associated VLAN instance.
- If the switch is running in the flat mode and STP or RSTP is the active protocol, enter 1 to specify the CIST instance. If MSTP is the active protocol, however, entering 1 for the instance number is not accepted. In this case, use the [bridge cist slot/port connection](#) command instead.
- Note that for Multiple Spanning Tree Instances (MSTI), the port connection type is inherited from the CIST instance and is not a configurable parameter.
- A port is considered connected to a point to point LAN segment if the port belongs to a link aggregate of ports or if autonegotiation determines if the port should run in full duplex mode or if full duplex mode was administratively set. Otherwise, the port is considered connected to a no point to point LAN segment.
- Rapid transition of a designated port to forwarding can only occur if the port's connection type is defined as a point to point or an edge port. Rapid transition of an alternate port role to a root port role is not affected by the port connection type definition.

Examples

```
-> bridge mode flat
-> bridge 1 1/24 connection noptp

-> bridge mode 1x1
-> bridge 200 8/2 connection ptp
-> bridge 300 10 connection autoptp
```

Release History

Release 6.6.1; command was introduced.

Related Commands

bridge mode	Selects the Spanning Tree operating mode (flat or 1x1) for the switch.
bridge cist slot/port connection	Explicit command for configuring the Spanning Tree connection type for a port or an aggregate of ports for the CIST instance when the switch is operating in either the 1x1 or flat Spanning Tree mode.
bridge 1x1 slot/port connection	Explicit command for configuring the Spanning Tree connection type for a port or an aggregate of ports for the specified VLAN instance when the switch is operating in either the 1x1 or flat Spanning Tree mode.
bridge cist slot/port admin-edge	Configures the administrative edge port status for a port or aggregate of ports for the CIST instance.
bridge cist slot/port auto-edge	Configures whether or not Spanning Tree automatically determines the operational edge status of a port or an aggregate of ports for the flat mode CIST instance.

MIB Objects

```
vStpInsPortTable
  vStpInsPortNumber
  vStpInsPortAdminConnectionType
  vStpInsPortOperConnectionType
```

bridge cist slot/port connection

Configures the connection type for a port or an aggregate of ports for the flat mode Common and Internal Spanning Tree (CIST).

```
bridge cist {slot/port | logical_port} connection {noptp | ptp | autoptp | edgeport}
```

Syntax Definitions

<i>slot/port</i>	Enter the slot number for the module and the physical port number on that module (e.g., 3/1 specifies port 1 on slot 3).
<i>logical_port</i>	Link aggregate ID number (0–31).
noptp	Defines port connection type as no point to point link.
ptp	Defines port connection type as point to point link.
autoptp	Specifies that switch software will automatically define connection type as point to point or no point to point.
edgeport	<i>This parameter is currently not supported.</i> Use the bridge cist slot/port admin-edge or bridge cist slot/port auto-edge command to configure edge port status.

Defaults

By default, the link connection type is set to auto point to point.

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- This command is an explicit Spanning Tree command that only applies to the port connection type for the CIST instance regardless of which operating mode (flat or 1x1) is active on the switch.
- If the switch is running in 1x1 mode when this command is used, the specified port connection type is not active for the CIST instance until the operating mode for the switch is changed to the flat mode.
- Note that when a configuration snapshot is taken of the switch, all Spanning Tree commands are saved in their explicit format.
- A port is considered connected to a point to point LAN segment if the port belongs to a link aggregate of ports or if autonegotiation determines the port should run in full duplex mode or if full duplex mode was administratively set. Otherwise, the port is considered connected to a no point to point LAN segment.
- Rapid transition of a designated port to forwarding can only occur if the port's connection type is defined as a point to point or an edge port. Rapid transition of an alternate port role to a root port role is not affected by the port connection type definition.

Examples

```
-> bridge mode flat
-> bridge cist 7/24 connection noptp
```

```
-> bridge mode 1x1
-> bridge cist 2/2 connection noptp
```

Release History

Release 6.6.1; command was introduced.

Related Commands

bridge mode	Selects the Spanning Tree operating mode (flat or 1x1) for the switch.
bridge slot/port connection	Implicit command for configuring the Spanning Tree connection type for a port or an aggregate of ports for the CIST instance or for a VLAN instance.
bridge cist slot/port admin-edge	Configures the administrative edge port status for a port or aggregate of ports for the CIST instance.
bridge cist slot/port auto-edge	Configures whether or not Spanning Tree automatically determines the operational edge status of a port or an aggregate of ports for the flat mode CIST instance.

MIB Objects

```
vStpInsPortTable
  vStpInsPortNumber
  vStpInsPortAdminConnectionType
  vStpInsPortOperConnectionType
```

bridge 1x1 slot/port connection

Configures the connection type for a port or an aggregate of ports for a 1x1 mode VLAN instance.

bridge 1x1 *vid* {*slot/port* | *logical_port*} **connection** {**noptp** | **ptp** | **autoptp** | **edgeport**}

Syntax Definitions

<i>vid</i>	An existing VLAN ID number (1–4094).
<i>slot/port</i>	Enter the slot number for the module and the physical port number on that module (e.g., 3/1 specifies port 1 on slot 3).
<i>logical_port</i>	Link aggregate ID number (0–31).
noptp	Defines port connection type as no point to point link.
ptp	Defines port connection type as point to point link.
autoptp	Specifies that switch software will automatically define connection type as point to point or no point to point <i>and</i> whether or not the port is an edge port.
edgeport	<i>This parameter is currently not supported.</i> Use the bridge 1x1 slot/port admin-edge or bridge 1x1 slot/port auto-edge command to configure edge port status.

Defaults

By default, the link connection type is set to auto point to point.

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- This command is an explicit Spanning Tree command that only applies to the specified VLAN instance regardless of which operating mode (flat or 1x1) is active on the switch.
- If the switch is running in the flat mode when this command is used, the specified connection type for the port is not active for the specified VLAN instance until the operating mode for the switch is changed to the 1x1 mode.
- Note that when a configuration snapshot is taken of the switch, all Spanning Tree commands are saved in their explicit format.
- A port is considered connected to a point to point LAN segment if the port belongs to a link aggregate of ports or if autonegotiation determines the port should run in full duplex mode or if full duplex mode was administratively set. Otherwise, the port is considered connected to a no point to point LAN segment.
- Rapid transition of a designated port to forwarding can only occur if the port's connection type is defined as a point to point or an edge port. Rapid transition of an alternate port role to a root port role is not affected by the port connection type definition.

Examples

```
-> bridge mode flat
-> bridge 1x1 255 7/24 connection noptp

-> bridge mode 1x1
-> bridge 1x1 200 2/2 connection noptp
```

Release History

Release 6.6.1; command was introduced.

Related Commands

bridge mode	Selects the Spanning Tree operating mode (flat or 1x1) for the switch
bridge slot/port connection	Implicit command for configuring the Spanning Tree connection type for a port or an aggregate of ports for the CIST instance or for a VLAN instance.
bridge cist slot/port admin-edge	Configures the administrative edge port status for a port or aggregate of ports for the CIST instance.
bridge cist slot/port auto-edge	Configures whether or not Spanning Tree automatically determines the operational edge status of a port or an aggregate of ports for the flat mode CIST instance.

MIB Objects

```
vStpInsPortTable
  vStpInsPortNumber
  vStpInsPortAdminConnectionType
  vStpInsPortOperConnectionType
```

bridge cist slot/port admin-edge

Configures the administrative edge port status for a port or an aggregate of ports for the flat mode Common and Internal Spanning Tree (CIST).

bridge cist {*slot/port* | *logical_port*} **admin-edge** {**on** | **off** | **enable** | **disable**}

Syntax Definitions

<i>slot/port</i>	Enter the slot number for the module and the physical port number on that module (e.g., 3/1 specifies port 1 on slot 3).
<i>logical_port</i>	Link aggregate ID number (0–31).
on	Turns on the administrative edge port status for the specified port-CIST instance.
off	Turns off the administrative edge port status for the specified port-CIST instance.
enable	Enables the administrative edge port status for the specified port-CIST instance.
disable	Disables the administrative edge port status for the specified port-CIST instance.

Defaults

By default, the administrative edge port status is disabled (off).

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- This command is an explicit Spanning Tree command that only applies to the port connection type for the CIST instance regardless of which operating mode (flat or 1x1) is active on the switch.
- If the switch is running in the 1x1 mode when this command is used, the specified edge port status is not active for the CIST instance until the switch is configured to run in the flat Spanning Tree mode.
- Note that when a configuration snapshot is taken of the switch, all Spanning Tree commands are saved in their explicit format.
- The administrative edge port status is used to determine if a port is an edge or non-edge port when automatic edge port configuration (**auto-edge**) is disabled for the port. However, if **auto-edge** is enabled for the port, then the administrative status is overridden.
- Rapid transition of a designated port to forwarding can only occur if the port's connection type is defined as a point to point or an edge port. Rapid transition of an alternate port role to a root port role is not affected by the port connection type definition.

- Configure ports that will connect to a host (PC, workstation, server, etc.) as edge ports to avoid unnecessary topology changes when these ports go active. This will also prevent the flushing of learned MAC addresses on these ports if a topology change occurs as a result of another non-edge port going active. If an edge port receives a BPDU, it will operationally revert back to a no point to point connection type.

Examples

```
-> bridge mode flat
-> bridge cist 15 admin-edge on
-> bridge cist 8/23 admin-edge disable

-> bridge mode 1x1
-> bridge cist 2/2 admin-edge enable
-> bridge cist 8/23 admin-edge off
```

Release History

Release 6.6.1; command was introduced.

Related Commands

bridge mode	Selects the Spanning Tree operating mode (flat or 1x1) for the switch
bridge 1x1 slot/port admin-edge	Configures the administrative edge port status for a port or an aggregate of ports for a specific VLAN instance.
bridge cist slot/port auto-edge	Configures whether or not Spanning Tree automatically determines the operational edge status of a port or an aggregate of ports for the flat mode CIST instance.
bridge 1x1 slot/port auto-edge	Configures whether or not Spanning Tree determines the operational edge port status for a port or an aggregate of ports for the specified 1x1 mode VLAN instance.

MIB Objects

```
vStpInsPortTable
  vStpInsPortNumber
  vStpInsPortAdminEdge
```

bridge 1x1 slot/port admin-edge

Configures the administrative edge port status for a port or an aggregate of ports for a 1x1 mode VLAN instance.

bridge 1x1 *vid* {*slot/port* | *logical_port*} **admin-edge** {**on** | **off** | **enable** | **disable**}

Syntax Definitions

<i>vid</i>	An existing VLAN ID number (1–4094).
<i>slot/port</i>	Enter the slot number for the module and the physical port number on that module (e.g., 3/1 specifies port 1 on slot 3).
<i>logical_port</i>	Link aggregate ID number (0–31).
on	Turns on the administrative edge port status for the specified port-VLAN instance.
off	Turns off the administrative edge port status for the specified port-VLAN instance.
enable	Enables the administrative edge port status for the specified port-VLAN instance.
disable	Disables the administrative edge port status for the specified port-VLAN instance.

Defaults

By default, the administrative edge port status is disabled (off).

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- This command is an explicit Spanning Tree command that only applies to the specified VLAN instance regardless of which operating mode (flat or 1x1) is active on the switch.
- If the switch is running in the flat mode when this command is used, the specified edge port status for the port is not active for the VLAN instance until the switch is configured to run in the 1x1 Spanning Tree mode.
- Note that when a configuration snapshot is taken of the switch, all Spanning Tree commands are saved in their explicit format.
- The administrative edge port status is used to determine if a port is an edge or non-edge port when automatic edge port configuration (**auto-edge**) is disabled for the port. However, if **auto-edge** is enabled for the port, then the administrative status is overridden.
- Rapid transition of a designated port to forwarding can only occur if the port's connection type is defined as point to point or an edge port. Rapid transition of an alternate port role to a root port role is not affected by the port connection type definition.

- Configure ports that will connect to a host (PC, workstation, server, etc.) as edge ports to avoid unnecessary topology changes when these ports go active. This will also prevent the flushing of learned MAC addresses on these ports if a topology change occurs as a result of another non-edge port going active. If an edge port receives a BPDU, it will operationally revert back to a no point to point connection type.

Examples

```
-> bridge mode flat
-> bridge 1x1 4 15 admin-edge on
-> bridge 1x1 255 8/23 admin-edge disable

-> bridge mode 1x1
-> bridge 1x1 3 2/2 admin-edge enable
-> bridge 1x1 255 10 admin-edge off
```

Release History

Release 6.6.1; command was introduced.

Related Commands

bridge mode	Selects the Spanning Tree operating mode (flat or 1x1) for the switch
bridge cist slot/port admin-edge	Configures the administrative edge port status for a port or aggregate of ports for the CIST instance.
bridge cist slot/port auto-edge	Configures whether or not Spanning Tree automatically determines the operational edge status of a port or an aggregate of ports for the flat mode CIST instance.
bridge 1x1 slot/port auto-edge	Configures whether or not Spanning Tree determines the operational edge port status for a port or an aggregate of ports for the specified 1x1 mode VLAN instance.

MIB Objects

```
vStpInsPortTable
  vStpInsPortNumber
  vStpInsPortAdminEdge
```

bridge cist slot/port auto-edge

Configures whether or not Spanning Tree automatically determines the operational edge port status of a port or an aggregate of ports for the flat mode Common and Internal Spanning Tree (CIST).

bridge cist {*slot/port* | *logical_port*} **auto-edge** {**on** | **off** | **enable** | **disable**}

Syntax Definitions

<i>slot/port</i>	Enter the slot number for the module and the physical port number on that module (e.g., 3/1 specifies port 1 on slot 3).
<i>logical_port</i>	Link aggregate ID number (0–31).
on	Spanning Tree automatically determines edge port status.
off	Spanning Tree does not automatically determine edge port status.
enable	Spanning Tree automatically determines edge port status.
disable	Spanning Tree does not automatically determine edge port status.

Defaults

By default, automatic edge port status configuration is enabled (on).

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- This command is an explicit Spanning Tree command that only applies to the CIST instance regardless of which operating mode (flat or 1x1) is active on the switch.
- If the switch is running in the 1x1 mode when this command is used, the specified edge port status for the port is not active for the CIST instance until the switch is running in the flat Spanning Tree mode.
- Note that when a configuration snapshot is taken of the switch, all Spanning Tree commands are saved in their explicit format.
- The administrative edge port status is used to determine if a port is an edge or non-edge port when automatic edge port configuration (**auto-edge**) is disabled for the port. However, if **auto-edge** is enabled for the port, then the administrative status is overridden.
- Rapid transition of a designated port to forwarding can only occur if the port's connection type is defined as point to point or an edge port. Rapid transition of an alternate port role to a root port role is not affected by the port connection type definition.
- Configure ports that will connect to a host (PC, workstation, server, etc.) as edge ports to avoid unnecessary topology changes when these ports go active. This will also prevent the flushing of learned MAC addresses on these ports if a topology change occurs as a result of another non-edge port going active. If an edge port receives a BPDU, it will operationally revert back to a no point to point connection type.

Examples

```
-> bridge mode flat
-> bridge cist 15 auto-edge on
-> bridge cist 8/23 auto-edge disable

-> bridge mode 1x1
-> bridge cist 2/2 auto-edge enable
-> bridge cist 10 auto-edge off
```

Release History

Release 6.6.1; command was introduced.

Related Commands

bridge mode	Selects the Spanning Tree operating mode (flat or 1x1) for the switch
bridge 1x1 slot/port auto-edge	Configures whether or not Spanning Tree determines the operational edge port status for a port or an aggregate of ports for the specified 1x1 mode VLAN instance.
bridge cist slot/port admin-edge	Configures the administrative edge port status for a port or aggregate of ports for the CIST instance.
bridge 1x1 slot/port admin-edge	Configures the administrative edge port status for a port or an aggregate of ports for a specific VLAN instance.

MIB Objects

```
vStpInsPortTable
  vStpInsPortNumber
  vStpInsPortAutoEdge
```

bridge 1x1 slot/port auto-edge

Configures whether or not Spanning Tree determines the operational edge port status for a port or an aggregate of ports for the specified 1x1 mode VLAN instance.

bridge 1x1 *vid* {*slot/port* | *logical_port*} **auto-edge** {**on** | **off** | **enable** | **disable**}

Syntax Definitions

<i>vid</i>	An existing VLAN ID number (1–4094).
<i>slot/port</i>	Enter the slot number for the module and the physical port number on that module (e.g., 3/1 specifies port 1 on slot 3).
<i>logical_port</i>	Link aggregate ID number (0–31).
on	Spanning Tree automatically determines edge port status.
off	Spanning Tree does not automatically determine edge port status.
enable	Spanning Tree automatically determines edge port status.
disable	Spanning Tree does not automatically determine edge port status.

Defaults

By default, automatic edge port status configuration is enabled (on).

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- This command is an explicit Spanning Tree command that only applies to the specified VLAN instance regardless of which operating mode (flat or 1x1) is active on the switch.
- If the switch is running in the flat mode when this command is used, the specified edge port status for the port is not active for the VLAN instance until the switch is running in the 1x1 Spanning Tree mode.
- Note that when a configuration snapshot is taken of the switch, all Spanning Tree commands are saved in their explicit format.
- The administrative edge port status is used to determine if a port is an edge or non-edge port when automatic edge port configuration (**auto-edge**) is disabled for the port. However, if **auto-edge** is enabled for the port, then the administrative status is overridden.
- Rapid transition of a designated port to forwarding can only occur if the port's connection type is defined as point to point or an edge port. Rapid transition of an alternate port role to a root port role is not affected by the port connection type definition.
- Configure ports that will connect to a host (PC, workstation, server, etc.) as edge ports to avoid unnecessary topology changes when these ports go active. This will also prevent the flushing of learned MAC addresses on these ports if a topology change occurs as a result of another non-edge port going active. If an edge port receives a BPDU, it will operationally revert back to a no point to point connection type.

Examples

```
-> bridge mode flat
-> bridge 1x1 3 15 auto-edge on
-> bridge 1x1 255 8/23 auto-edge disable

-> bridge mode 1x1
-> bridge 1x1 4 2/2 auto-edge enable
-> bridge 1x1 255 10 auto-edge off
```

Release History

Release 6.6.1; command was introduced.

Related Commands

bridge mode	Selects the Spanning Tree operating mode (flat or 1x1) for the switch.
bridge cist slot/port auto-edge	Configures whether or not Spanning Tree automatically determines the operational edge status of a port or an aggregate of ports for the flat mode CIST instance.
bridge cist slot/port admin-edge	Configures the administrative edge port status for a port or aggregate of ports for the CIST instance.
bridge 1x1 slot/port admin-edge	Configures the administrative edge port status for a port or an aggregate of ports for a specific VLAN instance.

MIB Objects

```
vStpInsPortTable
  vStpInsPortNumber
  vStpInsPortAutoEdge
```

bridge cist slot/port restricted-role

Configures whether or not to prevent a port (or an aggregate of ports) from becoming the root port. When this parameter is enabled, the port will not become the root even if the port is the most likely candidate for the root. Once another port is selected as the root port, the restricted port becomes the Alternate Port.

bridge cist {*slot/port* | *logical_port*} {**restricted-role** | **root-guard**} {**on** | **off** | **enable** | **disable**}

Syntax Definitions

<i>slot/port</i>	Enter the slot number for the module and the physical port number on that module (e.g., 3/1 specifies port 1 on slot 3).
<i>logical_port</i>	Link aggregate ID number (0–31).
root-guard	Optional command syntax. Enter root-guard instead of restricted-role ; both parameters specify the same functionality for this command.
on	Turns on (enables) the restricted role status for the specified port.
off	Turns off (disables) the restricted role status for the specified port.
enable	Enables the restricted role status for the specified port.
disable	Disables the restricted role status for the specified port.

Defaults

By default, the port is not restricted from becoming the root port.

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- When running in flat mode, this is a per-port setting and is applicable to any CIST or MSTI instances configured on that port.
- Note that preventing an eligible root port from becoming the root may impact connectivity within the network.
- Network administrators exclude certain ports from becoming the root to prevent bridges external to the core region of the network from influencing the Spanning Tree topology.
- Note that when a configuration snapshot is taken of the switch, all Spanning Tree commands are saved in their explicit format.

Examples

```
-> bridge mode flat
-> bridge cist 15 restricted-role on
-> bridge cist 8/23 root-guard disable

-> bridge mode 1x1
-> bridge cist 2/2 root-guard enable
-> bridge cist 10 restricted-role off
```

Release History

Release 6.6.1; command was introduced.

Related Commands

bridge mode	Selects the Spanning Tree operating mode (flat or 1x1) for the switch.
bridge 1x1 slot/port restricted-role	Configures the restricted role status for a port or an aggregate of ports for the 1x1 mode VLAN instance.

MIB Objects

```
vStpInsPortTable
  vStpInsPortNumber
  vStpInsPortRestrictedRole
```

bridge 1x1 slot/port restricted-role

Configures whether or not to prevent a port (or an aggregate of ports) for the specified 1x1 mode VLAN instance from becoming the root port. When this parameter is enabled, the port will not become the root even if the port is the most likely candidate for the root. Once another port is selected as the root port, the restricted port becomes the Alternate Port.

bridge 1x1 *vid* {*slot/port* | *logical_port*} {**restricted-role** | **root-guard**} {**on** | **off** | **enable** | **disable**}

Syntax Definitions

<i>vid</i>	An existing VLAN ID number (1–4094).
<i>slot/port</i>	Enter the slot number for the module and the physical port number on that module (e.g., 3/1 specifies port 1 on slot 3).
<i>logical_port</i>	Link aggregate ID number (0–31).
root-guard	Optional command syntax. Enter root-guard instead of restricted-role ; both parameters specify the same functionality for this command.
on	Turns on (enables) the restricted role status for the specified port-VLAN instance.
off	Turns off (disables) the restricted role status for the specified port-VLAN instance.
enable	Enables the restricted role status for the specified port-VLAN instance.
disable	Disables the restricted role status for the specified port-VLAN instance.

Defaults

By default, the port is not restricted from becoming the root port.

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Note that preventing an eligible port from becoming the root may impact connectivity within the network.
- Network administrators exclude certain ports from becoming the root to prevent bridges external to the core region of the network from influencing the Spanning Tree topology.
- This command is an explicit Spanning Tree command that only applies to the VLAN instance regardless of which operating mode (flat or 1x1) is active on the switch.
- If the switch is running in the flat mode when this command is used, the restricted status of the port is not active for the VLAN instance until the switch is running in the 1x1 Spanning Tree mode.
- Note that when a configuration snapshot is taken of the switch, all Spanning Tree commands are saved in their explicit format.

Examples

```
-> bridge mode flat
-> bridge 1x1 3 15 restricted-role on
-> bridge 1x1 255 8/23 root-guard disable

-> bridge mode 1x1
-> bridge 1x1 4 2/2 root-guard enable
-> bridge 1x1 255 10 restricted-role off
```

Release History

Release 6.6.1; command was introduced.

Related Commands

bridge mode	Selects the Spanning Tree operating mode (flat or 1x1) for the switch.
bridge cist slot/port restricted-role	Configures the restricted role status for a port or an aggregate of ports for the flat mode CIST instance.

MIB Objects

```
vStpInsPortTable
  vStpInsPortNumber
  vStpInsPortRestrictedRole
```

bridge cist slot/port restricted-tcn

Configures the restricted TCN status for a port or an aggregate of ports for the flat mode Common and Internal Spanning Tree (CIST). When this parameter is enabled, the port will not propagate topology changes and notifications to/from other ports.

bridge cist {*slot/port* | *logical_port*} **restricted-tcn** {**on** | **off** | **enable** | **disable**}

Syntax Definitions

<i>slot/port</i>	Enter the slot number for the module and the physical port number on that module (e.g., 3/1 specifies port 1 on slot 3).
<i>logical_port</i>	Link aggregate ID number (0–31).
on	Turns on (enables) the restricted TCN status for the specified port-CIST instance.
off	Turns off (disables) the restricted TCN status for the specified port-CIST instance.
enable	Enables the restricted TCN status for the specified port-CIST instance.
disable	Disables the restricted TCN status for the specified port-CIST instance.

Defaults

By default, the restricted TCN status for the port is disabled.

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Enabling the restricted TCN status is used by network administrators to prevent bridges external to the core region of the network from causing unnecessary MAC address flushing in that region.
- Note that enabling the restricted TCN status for a port may impact Spanning Tree connectivity.
- This command is an explicit Spanning Tree command that only applies to the CIST instance regardless of which operating mode (flat or 1x1) is active on the switch.
- If the switch is running in the 1x1 mode when this command is used, the specified restricted TCN status for the port is not active for the CIST instance until the switch is running in the flat Spanning Tree mode.
- Note that when a configuration snapshot is taken of the switch, all Spanning Tree commands are saved in their explicit format.

Examples

```
-> bridge mode flat
-> bridge cist 15 restricted-tcn on
-> bridge cist 8/23 restricted-tcn disable

-> bridge mode 1x1
-> bridge cist 2/2 restricted-tcn enable
-> bridge cist 10 restricted-tcn off
```

Release History

Release 6.6.1; command was introduced.

Related Commands

bridge mode	Selects the Spanning Tree operating mode (flat or 1x1) for the switch.
bridge 1x1 slot/port restricted-tcn	Configures the restricted TCN status for a port or an aggregate of ports for the specified 1x1 mode VLAN instance.

MIB Objects

```
vStpInsPortTable
  vStpInsPortNumber
  vStpInsPortRestrictedTcn
```

bridge 1x1 slot/port restricted-tcn

Configures the restricted TCN status for a port or an aggregate of ports for the specified 1x1 mode VLAN instance. When this parameter is enabled, the port will not propagate topology changes and notifications to/from other ports.

bridge 1x1 *vid* {*slot/port* | *logical_port*} **restricted-tcn** {**on** | **off** | **enable** | **disable**}

Syntax Definitions

<i>vid</i>	An existing VLAN ID number (1–4094).
<i>slot/port</i>	Enter the slot number for the module and the physical port number on that module (e.g., 3/1 specifies port 1 on slot 3).
<i>logical_port</i>	Link aggregate ID number (0–31).
on	Turns on (enables) the restricted TCN status for the specified port-VLAN instance.
off	Turns off (disables) the restricted TCN status for the specified port-VLAN instance.
enable	Enables the restricted TCN status for the specified port-VLAN instance.
disable	Disables the restricted TCN status for the specified port-VLAN instance.

Defaults

By default, the restricted TCN is set to disable.

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Enabling the restricted TCN status is used by network administrators to prevent bridges external to the core region of the network from causing unnecessary MAC address flushing in that region.
- Note that enabling the restricted TCN status for a port may impact Spanning Tree connectivity.
- This command is an explicit Spanning Tree command that only applies to the specified VLAN instance regardless of which operating mode (flat or 1x1) is active on the switch.
- If the switch is running in the flat mode when this command is used, the specified restricted TCN status for the port is not active for the VLAN instance until the switch is running in the 1x1 Spanning Tree mode.
- Note that when a configuration snapshot is taken of the switch, all Spanning Tree commands are saved in their explicit format.

Examples

```
-> bridge mode flat
-> bridge 1x1 2 15 restricted-tcn on
-> bridge 1x1 255 8/23 restricted-tcn disable

-> bridge mode 1x1
-> bridge 1x1 5 2/2 restricted-tcn enable
-> bridge 1x1 255 10 restricted-tcn off
```

Release History

Release 6.1.3; command was introduced.

Related Commands

bridge mode	Selects the Spanning Tree operating mode (flat or 1x1) for the switch.
bridge cist slot/port restricted-tcn	Configures the restricted TCN status for a port or an aggregate of ports for the flat mode Common and Internal Spanning Tree (CIST).

MIB Objects

```
vStpInsPortTable
  vStpInsPortNumber
  vStpInsPortRestrictedTcn
```

bridge cist txholdcount

This command is used to rate limit the transmission of BPDU through a given port for the flat mode Common and Internal Spanning Tree (CIST) instance.

bridge cist txholdcount *value*

Syntax Definitions

value A numeric value (1–10) that controls the transmission of BPDU through the port.

Defaults

By default, the **txholdcount** value is set to 3.

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- This command is an explicit Spanning Tree command that only applies to the CIST instance regardless of which operating mode (flat or 1x1) is active on the switch.
- If the switch is running in the 1x1 mode when this command is used, the specified **txholdcount** status for the port is not active for the CIST instance until the switch is running in the flat Spanning Tree mode.
- Note that when a configuration snapshot is taken of the switch, all Spanning Tree commands are saved in their explicit format.

Examples

```
-> bridge cist txholdcount 3
```

Release History

Release 6.6.1; command was introduced.

Related Commands

bridge mode	Selects the Spanning Tree operating mode (flat or 1x1) for the switch.
bridge 1x1 txholdcount	Explicit command used to rate limit the transmission of BPDU for the specified VLAN instance when the switch is operating in either the 1x1 or flat Spanning Tree mode.

MIB Objects

vStpInsTable
vStpInsBridgeTxHoldCount

bridge 1x1 txholdcount

This command is used to rate limit the transmission of BPDU through a given port for the 1x1 mode VLAN instance.

bridge 1x1 *vid* **txholdcount** {*value*}

Syntax Definitions

value A numeric value (1–10) that controls the transmission of BPDU through the port.

Defaults

By default, the **txholdcount** value is set to 3.

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- This command is an explicit Spanning Tree command that only applies to the specified VLAN instance regardless of which operating mode (flat or 1x1) is active on the switch.
- If the switch is running in the flat mode when this command is used, the specified **txholdcount** status for the port is not active for the VLAN instance until the switch is running in the 1x1 Spanning Tree mode.
- Note that when a configuration snapshot is taken of the switch, all Spanning Tree commands are saved in their explicit format.

Examples

```
-> bridge 1x1 3 txholdcount 3
```

Release History

Release 6.6.1; command was introduced.

Related Commands

bridge mode	Selects the Spanning Tree operating mode (flat or 1x1) for the switch.
bridge cist txholdcount	Explicit command used to rate limit the transmission of BPDU for the CIST instance when the switch is operating in either the 1x1 or flat Spanning Tree mode.

MIB Objects

vStpInsTable
vStpInsBridgeTxHoldCount

bridge rrstp

Enables or disables RRSTP on a switch.

bridge rrstp

no bridge rrstp

Syntax Definitions

N/A

Defaults

By default, RRSTP is disabled on the switch.

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

Use the **no** form of this command to disable RRSTP on the switch.

Examples

```
-> bridge rrstp  
-> no bridge rrstp
```

Release History

Release 6.6.1; command was introduced.

Related Commands

[bridge rrstp ring](#)

Creates a RRSTP ring comprising of two ports.

[show bridge rrstp configuration](#)

Displays the current RRSTP status for the switch.

MIB Objects

vStpInfo

VStpRrstpGlobalState

bridge rrstp ring

Creates a RRSTP ring comprising of two ports.

```
bridge rrstp ring ring_id port1 {slot/port | linkagg agg_num} port2
{slot/port | linkagg agg_num} vlan-tag vlan_id [status {enable | disable}]
```

```
no bridge rrstp ring [ring_id]
```

Syntax Definitions

<i>ring_id</i>	A numeric value (1–128) that identifies the RRSTP ring.
<i>slot/port</i>	The slot number of the module and the physical port number on that module (For example, 3/1 specifies port 1 on slot 3).
<i>agg_num</i>	The number corresponding to the static aggregate group. Must be a unique integer in the range 0–31.
<i>vlan_id</i>	VLAN identifier with which ring ports should be 802.1q tagged before ring creation.
enable	Enables the RRSTP ring.
disable	Disables the RRSTP ring.

Defaults

Parameters	Defaults
enable disable	disable

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Use the **no** form of this command to remove a specific RRSTP ring.
- This command is used to create a ring or modify ports in an existing ring or modify the ring status.
- The ring ports must be 802.1q tagged with the VLAN before using this command.
- Note that there can be no alternate connections for the same instance between any two switches within an RRSTP ring topology.
- If RRSTP ring consists of NNI ports then they must be tagged with SVLAN (VLAN stacking) and not with standard VLAN before ring creation. For tagged RRSTP frame generation same SVLAN must be specified as ring **vlan-tag**. Also RRSTP ring ports must be of same type i.e. either both ring ports should be NNI ports or both should be conventional ports.
- RRSTP ring cannot be created on UNI ports.

Examples

```
-> bridge rrstp ring 1 port1 1/1 port2 1/3 vlan-tag 10 status enable
-> no bridge rrstp ring 1
```

Release History

Release 6.6.1; command was introduced.

Related Commands

[bridge rrstp](#)

Enables RRSTP on a switch.

[show bridge rrstp ring](#)

Displays information for all the rings or a specific ring present in the system.

MIB Objects

```
vStpRrstpRingConfigTable
  vStpRrstpRingId
  vStpRrstpRingPort1
  vStpRrstpRingPort2
  vStpRrstpRingVlanTag
  vStpRrstpRingState
  vStpRrstpRingRowStatus
```

bridge rrstp ring vlan-tag

Modifies the unique vlan-tag associated with the ring. The previous ring vlan-tag will be over-written.

bridge rrstp ring *ring_id* **vlan-tag** *vid*

Syntax Definitions

<i>ring_id</i>	A numeric value (1–128) that identifies the RRSTP ring.
<i>vid</i>	The VLAN identification number of preconfigured VLAN with which ring ports are 802.1q tagged. The RRSTP ring frames shall be 802.1q tagged with this VLAN.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- The RRSTP ring can have only one VLAN tag associated with it.
- Untagged RRSTP frames shall be generated if the specified **vlan-tag** is the default VLAN of the ports.
- The ring ports must be 802.1q tagged with the new **vlan-tag** before modifying the ring **vlan-tag**.
- RRSTP frames has 802.1q priority similar to STP BPDUs. In order to retain this priority, use the [qos trust ports](#) command.

Examples

```
-> bridge rrstp ring 1 vlan-tag 10
-> bridge rrstp ring 5 vlan-tag 20
-> bridge rrstp ring 11 vlan-tag 11
```

Release History

Release 6.6.1; command was introduced.

Related Commands

bridge rrstp ring	Creates a RRSTP ring comprising of two ports.
show bridge rrstp ring	Displays information for all the rings or a specific ring present in the system.

MIB Objects

vStpRrstpRingConfigTable

 vStpRrstpRingId

 vStpRrstpRingVlanTag

bridge rrstp ring status

Modifies the RRSTP status of an existing ring.

bridge rrstp ring *ring_id* status {enable | disable}

Syntax Definitions

<i>ring_id</i>	A numeric value (1–128) that identifies the RRSTP ring.
enable	Enables the RRSTP ring.
disable	Disables the RRSTP ring.

Defaults

Parameters	Defaults
enable disable	disable

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

The RRSTP status can also be modified by using [bridge rrstp ring](#) command.

Examples

```
-> bridge rrstp ring 1 status enable
```

Release History

Release 6.6.1; command was introduced.

Related Commands

bridge rrstp ring	Creates a RRSTP ring comprising of two ports.
show bridge rrstp ring	Displays information for all the rings or a specific ring present in the system.

MIB Objects

```
vStpRrstpRingConfigTable  
  vStpRrstpRingId  
  vStpRrstpRingState  
  vStpRrstpRingRowStatus
```

```

-> show spantree 1
Spanning Tree Parameters
  Spanning Tree Status :                ON,
  Protocol              :                IEEE Rapid STP,
  mode                  :                FLAT (Single STP),
  Priority               :                32768 (0x8000),
  Bridge ID             :                8000-00:d0:95:57:3a:9e,
  Designated Root      :                8000-00:00:e8:00:00:00,
  Cost to Root Bridge   :                71,
  Root Port             :                Slot 1 Interface 1,
  Next Best Root Cost   :                0,
  Next Best Root Port   :                None,
  Tx Hold Count         :                6,
  Topology Changes      :                8,
  Topology age          :                00:00:02,
  Current Parameters (seconds)
    Max Age              =                20,
    Forward Delay        =                15,
    Hello Time           =                2
  Parameters system uses when attempting to become root
    System Max Age       =                20,
    System Forward Delay =                15,
    System Hello Time    =                2

```

output definitions

Spanning Tree Path Cost Mode	The Spanning Tree path cost mode for the switch (32 BIT or AUTO). Configured through the bridge path cost mode command.
Bridge	The CIST instance, referred to as bridge 1 when either STP (802.1D) or RSTP (802.1W) is the active protocol in the flat mode.
Spanning Tree Status	The Spanning Tree state for the CIST instance (ON or OFF).
Protocol	The Spanning Tree protocol applied to the instance (STP or RSTP). Configured through the bridge protocol command.
Mode	The Spanning Tree operating mode for the switch (1x1 or flat). Configured through the bridge mode command.
Priority	The Spanning Tree bridge priority for the instance. The lower the number, the higher the priority. Configured through the bridge priority command.
Bridge ID	The bridge identifier for this Spanning Tree instance. Consists of the bridge priority value (in hex) concatenated with the dedicated bridge MAC address.
Designated Root	The bridge identifier for the root of the Spanning Tree for this instance.
Cost to Root Bridge	The cost of the path to the root for this Spanning Tree instance.
Root Port	The port that offers the lowest cost path from this bridge to the root bridge for this Spanning Tree instance.
Next Best Root Cost	The cost of the next best root port for this Spanning Tree instance.
Next Best Root Port	The port that offers the next best (second lowest) cost path to the root bridge for this Spanning Tree instance.
Tx Hold Count	The count to limit the transmission of BPDU through the port.

output definitions (continued)

Topology Changes	The number of topology changes detected by this Spanning Tree instance since the management entity was last reset or initialized.
Topology age	The amount of time (in hundredths of seconds) since the last topology change was detected by this Spanning Tree instance (hh:mm:ss or dd days and hh:mm:ss).
Max Age	The amount of time (in seconds) that Spanning Tree Protocol information is retained before it is discarded. Configured through the bridge max age command.
Forward Delay	The amount of time (in seconds) that a port will remain in the Listening state and then the Learning state until it reaches the forwarding state. This is also the amount of time used to age out all dynamic entries in the Forwarding Database when a topology change occurs. Configured through the bridge forward delay command.
Hello Time	The amount of time (in seconds) between the transmission of Configuration BPDUs on any port that is the Spanning Tree root or is attempting to become the Spanning Tree root. Configured through the bridge hello time command.
System Max Age	The Max Age value for the root bridge.
System Forward Delay	The Forward Delay value for the root bridge.
System Hello Time	The Hello Time value for the root bridge.

```

-> bridge mode flat
-> bridge protocol mstp
-> show spantree
  Spanning Tree Path Cost Mode : AUTO
  Msti STP Status Protocol Priority (Prio:SysID)
-----+-----+-----+-----+-----+
  0      ON      MSTP    32768 (0x8000:0x0000)
  2      ON      MSTP    32770 (0x8000:0x0002)
  3      ON      MSTP    32771 (0x8000:0x0003)

```

output definitions

Spanning Tree Path Cost Mode	The Spanning Tree path cost mode for the switch (32 BIT or AUTO). Configured through the bridge path cost mode command.
Msti	The Multiple Spanning Tree Instance (MSTI) instance number. Configured through the bridge msti command. Note that MSTI 0 also represents the CIST instance that is always present on the switch.
Spanning Tree Status Protocol	The Spanning Tree state for the MSTI (ON or OFF).
Priority	The Spanning Tree bridge priority for the instance. The lower the number, the higher the priority. Configured through the bridge priority command.

```

-> bridge mode 1x1
-> show spantree
  Spanning Tree Path Cost Mode : AUTO
  Spanning Tree PVST+ Mode    : Enable
  Vlan STP Status Protocol Priority
-----+-----+-----+-----+
  1      ON      STP   32768 (0x8000)
  2      ON      STP   32768 (0x8000)
  3      ON      STP   32768 (0x8000)
  4      ON      STP   32768 (0x8000)
  5      ON      STP   32768 (0x8000)
  6      ON      STP   32768 (0x8000)
  7      ON      STP   32768 (0x8000)

```

```

-> show spantree 2
Spanning Tree Parameters for Vlan 2
  Spanning Tree Status : ON,
  Protocol              : IEEE STP,
  mode                  : PVST+ (1 STP per Vlan),
  Priority               : 32768 (0x8000),
  Bridge ID             : 8000-00:d0:95:6a:f4:58,
  Designated Root      : 0000-00:00:00:00:00:00,
  Cost to Root Bridge   : 0,
  Root Port             : Slot 1 Interface 1,
  Next Best Root Cost   : 0,
  Next Best Root Port   : Slot 1 Interface 1,
  Tx Hold Count         : 6,
  Topology Changes      : 0,
  Topology age          : 00:00:00,
  Current Parameters (seconds)
    Max Age              = 20,
    Forward Delay        = 15,
    Hello Time           = 2
  Parameters system uses when attempting to become root
    System Max Age       = 20,
    System Forward Delay = 15,
    System Hello Time    = 2

```

output definitions

Spanning Tree Path Cost Mode	The Spanning Tree path cost mode for the switch (32 BIT or AUTO). Configured through the bridge path cost mode command.
Spanning Tree PVST+ Mode	Indicates whether the PVST + status is enabled or disabled. Configured through the bridge mode 1x1 pvst+ command.
Vlan	The VLAN ID associated with the VLAN Spanning Tree instance. Configured through the vlan commands
STP Status	The Spanning Tree state for the instance (ON or OFF). Configured through the vlan stp command.
Protocol	The Spanning Tree protocol applied to this instance (STP or RSTP). Configured through the bridge protocol command.
Mode	The Spanning Tree operating mode for the switch (PVST+ , 1x1 or flat). Configured through bridge mode 1x1 pvst+ or bridge mode command.

output definitions (continued)

Priority	The Spanning Tree bridge priority for the instance. The lower the number, the higher the priority. Configured through the bridge priority command.
Bridge ID	The bridge identifier for this Spanning Tree instance. Consists of the bridge priority value (in hex) concatenated with the dedicated bridge MAC address.
Designated Root	The bridge identifier for the root of the Spanning Tree for this instance.
Cost to Root Bridge	The cost of the path to the root for this Spanning Tree instance.
Root Port	The port that offers the lowest cost path from this bridge to the root bridge for this Spanning Tree instance.
Next Best Root Cost	The cost of the next best root port for this Spanning Tree instance.
Next Best Root Port	The port that offers the next best (second lowest) cost path to the root bridge for this Spanning Tree instance.
Tx Hold Count	The count to limit the transmission of BPDU through the port.
Topology Changes	The number of topology changes detected by this Spanning Tree instance since the management entity was last reset or initialized.
Topology age	The amount of time (in hundredths of seconds) since the last topology change was detected by this Spanning Tree instance (hh:mm:ss or dd days and hh:mm:ss).
Max Age	The amount of time (in seconds) that Spanning Tree Protocol information is retained before it is discarded. Configured through the bridge max age command.
Forward Delay	The amount of time (in seconds) that a port will remain in the Listening state and then the Learning state until it reaches the forwarding state. This is also the amount of time used to age out all dynamic entries in the Forwarding Database when a topology change occurs. Configured through the bridge forward delay command.
Hello Time	The amount of time (in seconds) between the transmission of Configuration BPDUs on any port that is the Spanning Tree root or is attempting to become the Spanning Tree root. Configured through the bridge hello time command.
System Max Age	The Max Age value for the root bridge.
System Forward Delay	The Forward Delay value for the root bridge.
System Hello Time	The Hello Time value for the root bridge.

Release History

Release 6.6.1; command was introduced.

Related Commands

show spantree cist	Explicit command for displaying the Spanning Tree bridge configuration for the CIST instance regardless of which mode (1x1 or flat) is active on the switch.
show spantree msti	Explicit command for displaying the Spanning Tree bridge configuration for an MSTI regardless of which mode (1x1 or flat) is active on the switch.
show spantree 1x1	Explicit command for displaying the Spanning Tree bridge configuration for a VLAN instance regardless of which mode (1x1 or flat) is active on the switch.

MIB Objects

```
vStpInsTable
  vStpInsNumber
  vStpInsProtocolSpecification
  vStpInsMode
  vStpInsPriority
  vStpInsBridgeAddress
  vStpInsDesignatedRoot
  vStpInsRootCost
  vStpInsRootPortNumber
  vStpInsNextBestRootCost
  vStpInsNextBestRootPortNumber
  vStpInsBridgeTxHoldCount
  vStpInsTopChanges
  vStpInsTimeSinceTopologyChange
  vStpInsMaxAge
  vStpInsForwardDelay
  vStpInsHelloTime
```

show spantree mode

Displays the current global Spanning Tree mode parameter values for the switch.

show spantree mode

Syntax Definition

NA

Defaults

NA

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

The global parameters for spanning tree can be activated or configured using the related commands.

Examples

```
-> show spantree mode
```

```
Spanning Tree Global Parameters
  Current Running Mode   : Per VLAN,
  Current Protocol       : N/A (Per VLAN),
  Path Cost Mode         : 32 BIT,
  Auto Vlan Containment : N/A
  Cisco PVST+ mode       : Disabled
  Vlan Consistency check : Disabled
```

output definitions

Current Running Mode	The spantree mode active on the switch. (Flat or Per VLAN)
Current Protocol	The spantree protocol active on the switch.
Path Cost Mode	The path cost mode value configured on the switch. (AUTO or 32 BIT)
Auto Vlan Containment	The Auto VLAN containment mode configured on the switch (Enabled or Disabled).
Cisco PVST+ mode	The PVST+ mode configured on the switch (Enabled or Disabled).
Vlan Consistency check	Specifies if VLAN consistency check is Enabled or Disabled on the switch.

Related Commands

bridge mode	Assigns a flat Spanning Tree or per-VLAN Spanning Tree operating mode for the switch.
bridge protocol	Configures the Spanning Tree protocol for the flat mode Common and Internal Spanning Tree (CIST) instance or for an individual VLAN instance if the switch is running in the per-VLAN mode.
bridge path cost mode	Configures the automatic selection of a 16-bit path cost for STP/RSTP ports and a 32-bit path cost for MSTP ports or sets all path costs to use a 32-bit value.
bridge auto-vlan-containment	Enables or disables Auto VLAN Containment (AVC).

Release History

Release 6.6.4; command introduced.

MIB Objects

```
vStpTable
  vStpMode
vStpInsTable
  vStpInsProtocolSpecification
vStpBridge
  vStpPathCostMode
vStpMstRegionTable
  vStpBridgeModePVST
vStpBridge
  vStpBridgeAutoVlanContainment
```

show spantree cist

Displays the Spanning Tree bridge configuration for the flat mode Common and Internal Spanning Tree (CIST) instance.

show spantree cist

Syntax Definitions

N/A

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guideline

This is an explicit Spanning Tree command that displays Spanning Tree bridge information for the flat mode CIST instance regardless of which mode (1x1 or flat) is active on the switch. Note that minimal information is displayed when this command is used in the 1x1 mode, as the CIST is not active in this mode. See second example below.

Examples

```
-> bridge mode flat
-> show spantree cist
Spanning Tree Parameters for Cist
  Spanning Tree Status :                ON,
  Protocol              :                IEEE Multiple STP,
  mode                  :                FLAT (Single STP),
  Priority              :                32768 (0x8000),
  Bridge ID             :                8000-00:d0:95:6a:f4:58,
  CST Designated Root  :                0001-00:d0:95:6a:79:50,
  Cost to CST Root     :                19,
  Next CST Best Cost   :                0,
  Designated Root      :                8000-00:d0:95:6a:f4:58,
  Cost to Root Bridge  :                0,
  Root Port            :                Slot 1 Interface 12,
  Next Best Root Cost  :                0,
  Next Best Root Port  :                None,
  Tx Hold Count        :                6,
  Topology Changes     :                7,
  Topology age         :                00:00:07,
  Current Parameters (seconds)
    Max Age              =                20,
    Forward Delay        =                15,
    Hello Time           =                2
  Parameters system uses when attempting to become root
    System Max Age       =                20,
    System Forward Delay =                15,
    System Hello Time    =                2
```

```

-> bridge mode 1x1
-> show spantree cist
Per Vlan Spanning Tree is enforced !! (1x1 mode)
INACTIVE Spanning Tree Parameters for Cist
  Spanning Tree Status :          ON,
  Protocol               :          IEEE Multiple STP,
  Priority                :          32768 (0x8000),
  System Max Age (seconds) =          20,
  System Forward Delay (seconds) =          15,
  System Hello Time (seconds) =          2

```

output definitions

STP Status	The Spanning Tree state for the instance (on or off).
Protocol	The Spanning Tree protocol applied to the CIST (STP , RSTP , or MSTP). Configured through the bridge protocol command.
Mode	The Spanning Tree operating mode for the switch (1x1 or flat). Configured through the bridge mode command.
Priority	The Spanning Tree bridge priority for the instance. The lower the number, the higher the priority. Configured through the bridge priority command.
Bridge ID	The bridge identifier for this Spanning Tree instance. Consists of the bridge priority value (in hex) concatenated with the dedicated bridge MAC address.
CST Designated Root	The bridge identifier for the root of the flat mode CIST instance. This field only appears when MSTP is active on the switch.
Cost to CST Root	The cost of the path to the root of the flat mode CIST instance. This field only appears when MSTP is active on the switch.
Next CST Best Cost	The cost of the next best root port for the flat mode CIST instance. This field only appears when MSTP is active on the switch.
Designated Root	The bridge identifier for the root of the Spanning Tree for this instance.
Cost to Root Bridge	The cost of the path to the root for this Spanning Tree instance.
Root Port	The port that offers the lowest cost path from this bridge to the root bridge for this Spanning Tree instance.
Next Best Root Cost	The cost of the next best root port for this Spanning Tree instance.
Next Best Root Port	The port that offers the next best (second lowest) cost path to the root bridge for this Spanning Tree instance.
Tx Hold Count	The count to limit the transmission of BPDU through the port.
Topology Changes	The number of topology changes detected by this Spanning Tree instance since the management entity was last reset or initialized.
Topology age	The amount of time (in hundredths of seconds) since the last topology change was detected by this Spanning Tree instance (hh:mm:ss or dd days and hh:mm:ss).
Max Age	The amount of time (in seconds) that Spanning Tree Protocol information is retained before it is discarded. Configured through the bridge max age command.

output definitions (continued)

Forward Delay	The amount of time (in seconds) that a port will remain in the Listening state and then the Learning state until it reaches the forwarding state. This is also the amount of time used to age out all dynamic entries in the Forwarding Database when a topology change occurs. Configured through the bridge forward delay command.
Hello Time	The amount of time (in seconds) between the transmission of Configuration BPDUs on any port that is the Spanning Tree root or is attempting to become the Spanning Tree root. Configured through the bridge hello time command.
System Max Age	The Max Age value for the root bridge.
System Forward Delay	The Forward Delay value for the root bridge.
System Forward Delay	The Forward Delay value for the root bridge.

Release History

Release 6.6.1; command was introduced.

Related Commands

show spantree	Implicit command for displaying the Spanning Tree bridge configuration for the flat mode CIST instance or a 1x1 mode VLAN instance.
show spantree msti	Explicit command for displaying the Spanning Tree bridge configuration for an MSTI regardless of which mode (1x1 or flat) is active on the switch.
show spantree 1x1	Explicit command for displaying the Spanning Tree bridge configuration for a VLAN instance regardless of which mode (1x1 or flat) is active on the switch.

MIB Objects

vStpInsTable

- vStpInsNumber
- vStpInsMode
- vStpInsProtocolSpecification
- vStpInsPriority
- vStpInsBridgeAddress
- vStpInsTimeSinceTopologyChange
- vStpInsTopChanges
- vStpInsDesignatedRoot
- vStpInsRootCost
- vStpInsRootPortNumber
- vStpInsNextBestRootCost
- vStpInsNextBestRootPortNumber
- vStpInsMaxAge
- vStpInsHelloTime
- vStpInsBridgeTxHoldCount
- vStpInsForwardDelay
- vStpInsBridgeMaxAge
- vStpInsBridgeHelloTime
- vStpInsBridgeForwardDelay
- vStpInsCistRegionalRootId
- vStpInsCistPathCost

```

CST Designated Root : 0001-00:10:b5:58:9d:39,
Cost to CST Root    : 39,
Next CST Best Cost  : 0,
Designated Root     : 8000-00:d0:95:6b:08:40,
Cost to Root Bridge : 0,
Root Port           : Slot 9 Interface 2,
Next Best Root Cost : 0,
Next Best Root Port : None,
TxHoldCount         : 6,
Topology Changes    : 1,
Topology age        : 0:30:46
  Current Parameters (seconds)
    Max Age          = 6,
    Forward Delay    = 4,
    Hello Time       = 2
  Parameters system uses when attempting to become root
    System Max Age   = 20,
    System Forward Delay = 15,
    System Hello Time = 2

-> show spantree msti 1
Spanning Tree Parameters for Msti 1
Spanning Tree Status : ON,
Protocol              : IEEE Multiple STP,
mode                  : FLAT (Single STP),
Priority               : 32769 (0x8001),
Bridge ID             : 8001-00:d0:95:6b:08:40,
Designated Root       : 8001-00:d0:95:6b:08:40,
Cost to Root Bridge   : 0,
Root Port             : None,
Next Best Root Cost   : 0,
Next Best Root Port   : None,
TxHoldCount           : 6,
Topology Changes      : 0,
Topology age          : 0:0:0
  Current Parameters (seconds)
    Max Age          = 20,
    Forward Delay    = 15,
    Hello Time       = 2
  Parameters system uses when attempting to become root
    System Max Age   = 20,
    System Forward Delay = 15,
    System Hello Time = 2

```

```
-> bridge mode 1x1
```

```
-> show spantree msti
```

```

Spanning Tree Path Cost Mode : AUTO
** Inactive flat mode instances: **
Msti STP Status Protocol Priority (Prio:SysID)
-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+
0      ON      MSTP    32768 (0x8000:0x0000)
2      ON      MSTP    32770 (0x8000:0x0002)
3      ON      MSTP    32771 (0x8000:0x0003)

```

```
-> show spantree msti 0
Per Vlan Spanning Tree is enforced !! (1x1 mode)
INACTIVE Spanning Tree Parameters for Cist
  Spanning Tree Status :          ON,
  Protocol               :          IEEE Multiple STP,
  Priority                :          32768 (0x8000),
  System Max Age (seconds) =          20,
  System Forward Delay (seconds) =          15,
  System Hello Time (seconds) =          2
```

```
-> show spantree msti 2
Per Vlan Spanning Tree is enforced !! (1x1 mode)
INACTIVE Spanning Tree Parameters for Msti 2
  Spanning Tree Status :          ON,
  Protocol               :          IEEE Multiple STP,
  Priority                :          32770 (0x8002),
  System Max Age (seconds) =          20,
  System Forward Delay (seconds) =          15,
  System Hello Time (seconds) =          2
```

output definitions

Spanning Tree Path Cost Mode	The Spanning Tree path cost mode for the switch (32 BIT or AUTO). Configured through the bridge path cost mode command.
Msti	The Multiple Spanning Tree Instance (MSTI) number. MSTI 0 represents the CIST. Configured through the bridge msti command.
STP Status	The Spanning Tree state for the instance (ON or OFF).
Protocol	The Spanning Tree protocol applied to the instance (STP , RSTP , or MSTP). This value is not configurable for an MSTI. Configured through the bridge protocol command.
Mode	The Spanning Tree operating mode for the switch (1x1 or flat). Configured through the bridge mode command.
Priority	The Spanning Tree bridge priority for the instance. The lower the number, the higher the priority. Configured through the bridge msti priority command.
Bridge ID	The bridge identifier for this Spanning Tree instance. Consists of the bridge priority value (in hex) concatenated with the dedicated bridge MAC address.
CST Designated Root	The bridge identifier for the root of the flat mode CIST instance. This field only appears when MSTP is active on the switch.
Cost to CST Root	The cost of the path to the root for the flat mode CIST instance. This field only appears when MSTP is active on the switch.
Next CST Best Cost	The cost of the next best root port for the flat mode CIST instance. This field only appears when MSTP is active on the switch.
Designated Root	The bridge identifier for the root of the Spanning Tree for this instance.
Cost to Root Bridge	The cost of the path to the root for this Spanning Tree instance.
Root Port	The port that offers the lowest cost path from this bridge to the root bridge for this Spanning Tree instance.
Next Best Root Cost	The cost of the next best root port for this Spanning Tree instance.

output definitions (continued)

Next Best Root Port	The port that offers the next best (second lowest) cost path to the root bridge for this Spanning Tree instance.
TxHoldCount	The count to limit the transmission of BPDU through the port.
Topology Changes	The number of topology changes detected by this Spanning Tree instance since the management entity was last reset or initialized.
Topology age	The amount of time (in hundredths of seconds) since the last topology change was detected by this Spanning Tree instance (hh:mm:ss or dd days and hh:mm:ss).
Max Age	The amount of time (in seconds) that Spanning Tree Protocol information is retained before it is discarded. MSTIs inherit this value from the CIST instance.
Forward Delay	The amount of time (in seconds) that a port will remain in the Listening state and then the Learning state until it reaches the forwarding state. This is also the amount of time used to age out all dynamic entries in the Forwarding Database when a topology change occurs. MSTIs inherit this value from the CIST instance.
Hello Time	The amount of time (in seconds) between the transmission of Configuration BPDUs on any port that is the Spanning Tree root or is attempting to become the Spanning Tree root. MSTIs inherit this value from the CIST instance.
System Max Age	The Max Age value for the root bridge.
System Forward Delay	The Forward Delay value for the root bridge.
System Forward Delay	The Forward Delay value for the root bridge.

Release History

Release 6.6.1; command was introduced.

Related Commands

show spantree	Implicit command for displaying the Spanning Tree bridge configuration for the flat mode CIST instance or a 1x1 mode VLAN instance.
show spantree cist	Explicit command for displaying the Spanning Tree bridge configuration for the CIST instance regardless of which mode (1x1 or flat) is active on the switch.
show spantree 1x1	Explicit command for displaying the Spanning Tree bridge configuration for a VLAN instance regardless of which mode (1x1 or flat) is active on the switch.

MIB Objects

```
vStpInsTable
  vStpInsNumber
  vStpInsMode
  vStpInsProtocolSpecification
  vStpInsPriority
  vStpInsBridgeAddress
  vStpInsTimeSinceTopologyChange
  vStpInsTopChanges
  vStpInsDesignatedRoot
  vStpInsRootCost
  vStpInsRootPortNumber
  vStpInsNextBestRootCost
  vStpInsNextBestRootPortNumber
  vStpInsMaxAge
  vStpInsHelloTime
  vStpInsBridgeTxHoldCount
  vStpInsForwardDelay
  vStpInsBridgeMaxAge
  vStpInsBridgeHelloTime
  vStpInsBridgeForwardDelay
  vStpInsCistRegionalRootId
  vStpInsCistPathCost
  vStpInsMstiNumber
```

show spantree 1x1

Displays Spanning Tree bridge information for a 1x1 mode VLAN instance.

show spantree 1x1 [*vid*]

Syntax Definitions

vid An existing VLAN ID number (1-4094).

Defaults

parameter	default
<i>vid</i>	all VLAN instances

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- If a *vid* number is *not* specified, this command displays the Spanning Tree status, protocol, and priority values for all VLAN instances.
- Specify a *vid* number with this command to display Spanning Tree bridge information for a specific VLAN instance.
- Specifying a range of VLAN IDs is also allowed. Use a hyphen to indicate a contiguous range (e.g., **show spantree 1x1 10-15**). Note that only one VLAN entry—a single VLAN ID or a range of VLAN IDs—is allowed with this command. Multiple entries are not accepted.
- This is an explicit Spanning Tree command that displays Spanning Tree bridge information for a VLAN instance regardless of which mode (1x1 or flat) is active on the switch. Note that minimal information is displayed when this command is used in the flat mode, as VLAN instances are not active in this mode.

Examples

```
-> show spantree 1x1
Spanning Tree Path Cost Mode : AUTO
Vlan STP Status Protocol Priority
-----+-----+-----+-----+
 1      ON      STP   32768 (0x8000)
 2      ON      STP   32768 (0x8000)
 3      ON      STP   32768 (0x8000)
 4      ON      STP   32768 (0x8000)
 5      ON      STP   32768 (0x8000)
 6      ON      STP   32768 (0x8000)
```



```

-> show spantree 1x1 7
Spanning Tree Parameters for Vlan 7
  Spanning Tree Status :                ON,
  Protocol              :                IEEE STP,
  mode                  :                1X1 (1 STP per Vlan),
  Priority              :                32768 (0x8000),
  Bridge ID             :                8000-00:d0:95:6a:f4:58,
  Designated Root      :                0000-00:00:00:00:00:00,
  Cost to Root Bridge  :                0,
  Root Port            :                Slot 1 Interface 1,
  Next Best Root Cost  :                0,
  Next Best Root Port  :                Slot 1 Interface 1,
  Tx Hold Count        :                6,
  Topology Changes     :                0,
  Topology age         :                00:00:00,
  Current Parameters (seconds)
    Max Age              =                20,
    Forward Delay        =                15,
    Hello Time           =                2
  Parameters system uses when attempting to become root
    System Max Age       =                20,
    System Forward Delay =                15,
    System Hello Time    =                2

```

```

-> show spantree 1x1 10-15
Spanning Tree Path Cost Mode : AUTO
Vlan STP Status Protocol Priority
-----+-----+-----+-----+-----+
 10      ON      RSTP   32768 (0x8000)
 11      ON      RSTP   32768 (0x8000)
 12      ON      RSTP   32768 (0x8000)
 13      ON      RSTP   32768 (0x8000)
 14      ON      RSTP   32768 (0x8000)
 15      ON      RSTP   32768 (0x8000)

```

output definitions

Spanning Tree Path Cost Mode	The Spanning Tree path cost mode for the switch (32 BIT or AUTO) Configured through the bridge path cost mode command.
Vlan	The VLAN ID associated with the VLAN Spanning Tree instance. Configured through the vlan commands
STP Status	The Spanning Tree state for the instance (ON or OFF).
Protocol	The Spanning Tree protocol applied to the VLAN instance (STP or RSTP). Note that MSTP is not supported for a VLAN instance. Configured through the bridge protocol command.
Mode	The Spanning Tree operating mode for the switch (1x1 or flat). Configured through the bridge mode command.
Priority	The Spanning Tree bridge priority for the instance. The lower the number, the higher the priority. Configured through the bridge priority command.
Bridge ID	The bridge identifier for this Spanning Tree instance. Consists of the bridge priority value (in hex) concatenated with the dedicated bridge MAC address.

output definitions (continued)

Designated Root	The bridge identifier for the root of the Spanning Tree for this instance.
Cost to Root Bridge	The cost of the path to the root for this Spanning Tree instance.
Root Port	The port that offers the lowest cost path from this bridge to the root bridge for this Spanning Tree instance.
Next Best Root Cost	The cost of the next best root port for this Spanning Tree instance.
Next Best Root Port	The port that offers the next best (second lowest) cost path to the root bridge for this Spanning Tree instance.
Tx Hold Count	The count to limit the transmission of BPDU through the port.
Topology Changes	The number of topology changes detected by this Spanning Tree instance since the management entity was last reset or initialized.
Topology age	The amount of time (in hundredths of seconds) since the last topology change was detected by this Spanning Tree instance (hh:mm:ss or dd days and hh:mm:ss).
Max Age	The amount of time (in seconds) that Spanning Tree Protocol information is retained before it is discarded. Configured through the bridge max age command.
Forward Delay	The amount of time (in seconds) that a port will remain in the Listening state and then the Learning state until it reaches the forwarding state. This is also the amount of time used to age out all dynamic entries in the Forwarding Database when a topology change occurs. Configured through the bridge forward delay command.
Hello Time	The amount of time (in seconds) between the transmission of Configuration BPDUs on any port that is the Spanning Tree root or is attempting to become the Spanning Tree root. Configured through the bridge hello time command.
System Max Age	The Max Age value for the root bridge.
System Forward Delay	The Forward Delay value for the root bridge.
System Forward Delay	The Forward Delay value for the root bridge.

Release History

Release 6.6.1; command was introduced.

Related Commands

show spantree	Implicit command for displaying the Spanning Tree bridge configuration for the flat mode CIST instance or a 1x1 mode VLAN instance.
show spantree cist	Explicit command for displaying the Spanning Tree bridge configuration for the CIST instance regardless of which mode (1x1 or flat) is active on the switch.
show spantree msti	Explicit command for displaying the Spanning Tree bridge information for an MSTI when the switch is operating in the 1x1 or flat Spanning Tree mode.

MIB Objects

```
vStpInsTable
  vStpInsNumber
  vStpInsMode
  vStpInsProtocolSpecification
  vStpInsPriority
  vStpInsBridgeAddress
  vStpInsTimeSinceTopologyChange
  vStpInsTopChanges
  vStpInsDesignatedRoot
  vStpInsRootCost
  vStpInsRootPortNumber
  vStpInsNextBestRootCost
  vStpInsNextBestRootPortNumber
  vStpInsMaxAge
  vStpInsHelloTime
  vStpInsBridgeTxHoldCount
  vStpInsForwardDelay
  vStpInsBridgeMaxAge
  vStpInsBridgeHelloTime
  vStpInsBridgeForwardDelay
  vStpIns1x1VlanNumber
```

show spantree ports

Displays Spanning Tree port information for the flat mode Common and Internal Spanning Tree (CIST) instance or a 1x1 mode VLAN instance.

show spantree [*instance*] **ports** [**forwarding** | **blocking** | **active** | **configured**]

Syntax Definitions

<i>instance</i>	The CIST instance or an existing VLAN ID number (1–4094).
forwarding	Displays Spanning Tree operational port parameters for ports that are forwarding for the specified instance.
blocking	Displays Spanning Tree operational port parameters for ports that are blocked for the specified instance.
active	Displays a list of active ports associated with the specified instance.
configured	Displays Spanning Tree administrative port parameters for all ports associated with the specified instance. Note that this parameter is only available if an <i>instance</i> value is specified with this command.

Defaults

parameter	default
<i>instance</i>	all instances
forwarding blocking active configured	all ports

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- If an instance number is *not* specified, this command displays the Spanning Tree operational status, path cost, and role for all ports and their associated instances.
- Specifying an instance number with this command when the switch is running the 1x1 Spanning Tree operating mode implies a VLAN ID and displays Spanning Tree port information for the associated VLAN instance.
- If the switch is running in the flat mode and STP (802.1D) or RSTP (802.1W) is the active protocol, enter 1 to specify the CIST instance. If MSTP is the active protocol, however, entering 1 for the instance number is not accepted. In this case, use the [show spantree cist ports](#) or [show spantree msti ports](#) commands instead.
- The **configured** keyword is only available when an instance number is specified with this command. In addition, this keyword cannot be used in combination with either the **forwarding** or **blocking** keywords.

Examples

```
-> bridge mode flat
```

```
-> show spantree ports
```

```
Bridge Port Oper Status Path Cost Role
-----+-----+-----+-----+-----+-----
  1  1/1      FORW          19  ROOT
  1  1/2      DIS           0   DIS
  1  1/3      DIS           0   DIS
  1  1/4      DIS           0   DIS
  1  1/5      DIS           0   DIS
  1  1/6      DIS           0   DIS
  1  1/7      DIS           0   DIS
  1  1/8      DIS           0   DIS
  1  1/9      DIS           0   DIS
  1  1/10     DIS           0   DIS
  1  1/11     DIS           0   DIS
  1  1/12     DIS           0   DIS
```

```
-> show spantree 1 ports
```

```
Spanning Tree Port Summary
```

```
      Oper Path  Desig      Prim. Op Op
Port  St  Cost   Cost   Role Port  Cnx Edg Desig Bridge ID
-----+-----+-----+-----+-----+-----+-----+-----
  1/1  FORW   19    52  ROOT  1/1  PTP EDG 8000-00:30:f1:5b:37:73
  1/2  DIS     0     0  DIS  1/2  NS  NO 0000-00:00:00:00:00:00
  1/3  DIS     0     0  DIS  1/3  NS  NO 0000-00:00:00:00:00:00
  1/4  DIS     0     0  DIS  1/4  NS  NO 0000-00:00:00:00:00:00
  1/5  DIS     0     0  DIS  1/5  NS  NO 0000-00:00:00:00:00:00
  1/6  DIS     0     0  DIS  1/6  NS  NO 0000-00:00:00:00:00:00
  1/7  DIS     0     0  DIS  1/7  NS  NO 0000-00:00:00:00:00:00
  1/8  DIS     0     0  DIS  1/8  NS  NO 0000-00:00:00:00:00:00
  1/9  DIS     0     0  DIS  1/9  NS  NO 0000-00:00:00:00:00:00
  1/10 DIS     0     0  DIS  1/10 NS  NO 0000-00:00:00:00:00:00
  1/11 DIS     0     0  DIS  1/11 NS  NO 0000-00:00:00:00:00:00
  1/12 DIS     0     0  DIS  1/12 NS  NO 0000-00:00:00:00:00:00
```

```
-> show spantree 1 ports active
```

```
Spanning Tree Port Summary
```

```
      Oper Path  Desig      Prim. Op Op
Port  St  Cost   Cost   Role Port  Cnx Edg Desig Bridge ID
-----+-----+-----+-----+-----+-----+-----+-----
  1/1  FORW   19    52  ROOT  1/1  PTP EDG 8000-00:30:f1:5b:37:73
```

output definitions

Bridge

The CIST instance, referred to as bridge 1 when either STP (802.1D) or RSTP (802.1W) is the active protocol in the flat mode.

Port

The slot number for the module and the physical port number or a logical port. If the slot number is 0, then the port number refers to a link aggregate logical port number (e.g., 0/31).

Oper St

The port operational state as defined by application of the Spanning Tree Protocol. Possible port operational states include: disabled, blocking, learning, and forwarding.

output definitions (continued)

Path Cost	The contribution of this port to the path cost towards the Spanning Tree root bridge that includes this port. Path cost is a measure of the distance of the listed port from the root bridge in the number of hops. Configured through the bridge slot/port path cost command.
Desig Cost	The path cost of the Designated Port of the segment connected to this port. If this is the root bridge or the Spanning Tree status of the port is administratively disabled, this value is 0.
Role	The role of the port for this Spanning Tree instance. Possible port roles are: root, designated, alternate, and backup .
Prim. Port	The slot number for the module and the physical port number on that module for the primary port associated with this Spanning Tree instance. This information is only available if the port role is backup.
Op Cnx	Operational connection type: PTP, NPT, or NS (nonsignificant). Shows the current operational state of the port's connection type. See the bridge slot/port connection command on page 16-87 for more information.
Op Edg	Operational connection type: EDG . Shows the current operational state of the port's connection type. See the bridge slot/port connection command on page 16-87 for more information.
Desig Bridge ID	The bridge identifier for the designated bridge for this port's segment.

```

-> show spantree msti 1 ports configured
Spanning Tree Port Admin Configuration
      Port  Adm Man. Config  Adm  Adm  Aut  Rstr Rstr
Port  Pri   St. Mode   Cost Cnx  Edg  Edg  Tcn  Role 10G Opt.
-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----
1/1    7  ENA  No    0  AUT  No  Yes  No   No   DIS
1/2    7  ENA  No    0  AUT  No  Yes  No   No   DIS
1/3    7  ENA  No    0  AUT  No  Yes  No   No   DIS
1/4    7  ENA  No    0  AUT  No  Yes  No   No   DIS
1/5    7  ENA  No    0  AUT  No  Yes  No   No   DIS
1/6    7  ENA  No    0  AUT  No  Yes  No   No   DIS
1/7    7  ENA  No    0  AUT  No  Yes  No   No   DIS
1/8    7  ENA  No    0  AUT  No  Yes  No   No   DIS
1/9    7  ENA  No    0  AUT  No  Yes  No   No   DIS
1/10   7  ENA  No    0  AUT  No  Yes  No   No   DIS
1/11   7  ENA  No    0  AUT  No  Yes  No   No   DIS
1/12   7  ENA  No    0  AUT  No  Yes  No   No   DIS

```

output definitions

Port	The slot number for the module and the physical port number or a logical port. If the slot number is 0, then the port number refers to a link aggregate logical port number (e.g., 0/31).
Port Pri	The Spanning Tree priority for the port (0–15). The lower the number, the higher the priority. Configured through the bridge slot/port priority command.
Adm St	The Spanning Tree administrative status of the port: enabled or disabled . Configured through the bridge slot/port command to enable or disable Spanning Tree on a port.

output definitions

Man. Mode	The manual mode setting for the port: yes indicates that the blocking or forwarding state of the port was manually set and the port does not participate in the Spanning Tree Algorithm; no indicates that the Spanning Tree Algorithm is managing the port state. Configured through the bridge slot/port mode command.
Config Cost	The configured path cost value for this port. Configured through the bridge slot/port path cost command.
Adm Cnx	The administrative connection type: PTP , NPT , or AUT . Configured through the bridge slot/port connection command.
Adm Edg	The edge port administrative status: yes indicates that the port is an admin edge port; no indicates that the port is not an admin edge port. Configured through the bridge slot/port connection command.
Aut Edg	The edge port automatic status: yes indicates that the port is an automatic edge port; no indicates that the port is not an automatic edge port. Configured through the bridge cist slot/port auto-edge or bridge 1x1 slot/port auto-edge command.
Rstr Tcn	The restricted TCN capability: yes indicates that the port supports the restricted TCN capability; no indicates that the port does not support the restricted TCN capability. Configured through the bridge cist slot/port restricted-tcn or bridge 1x1 slot/port restricted-tcn command.
Rstr Role	The restricted role port status: yes indicates that the port is a restricted role port; no indicates that the port is not a restricted role port. Configured through the bridge cist slot/port restricted-role or bridge 1x1 slot/port restricted-role command.
10G Opt.	N/A

```

-> bridge mode flat
-> bridge protocol mstp
-> show spantree ports
Msti  Port Oper Status  Path Cost  Role
-----+-----+-----+-----+-----+
0  1/1      FORW      200000    ROOT
0  1/2      DIS       0         DIS
0  1/3      DIS       0         DIS
0  1/4      DIS       0         DIS
0  1/5      DIS       0         DIS
0  1/6      DIS       0         DIS
0  1/7      DIS       0         DIS
0  1/8      DIS       0         DIS
0  1/9      DIS       0         DIS
0  1/10     DIS       0         DIS
0  1/11     DIS       0         DIS
0  1/12     DIS       0         DIS
0  1/13     DIS       0         DIS
0  1/14     DIS       0         DIS
0  1/15     DIS       0         DIS
0  1/16     DIS       0         DIS
0  1/17     DIS       0         DIS
0  1/18     DIS       0         DIS
0  1/19     DIS       0         DIS
0  1/20     DIS       0         DIS
0  1/21     DIS       0         DIS

```

```

0 1/22    DIS          0    DIS
0 1/23    DIS          0    DIS
0 1/24    DIS          0    DIS
0 5/1     DIS          0    DIS
0 5/2     DIS          0    DIS
1 1/1     FORW       200000 MSTR
1 1/2     DIS          0    DIS
1 1/3     DIS          0    DIS
1 1/4     DIS          0    DIS
1 1/5     DIS          0    DIS
1 1/6     DIS          0    DIS
1 1/7     DIS          0    DIS
1 1/8     DIS          0    DIS
1 1/9     DIS          0    DIS
1 1/10    DIS          0    DIS
1 1/11    DIS          0    DIS
1 1/12    DIS          0    DIS
1 1/13    DIS          0    DIS
1 1/14    DIS          0    DIS
1 1/15    DIS          0    DIS
1 1/16    DIS          0    DIS
1 1/17    DIS          0    DIS
1 1/18    DIS          0    DIS
1 1/19    DIS          0    DIS
1 1/20    DIS          0    DIS
1 1/21    DIS          0    DIS
1 1/22    DIS          0    DIS
1 1/23    DIS          0    DIS
1 1/24    DIS          0    DIS

```

```
-> show spantree ports active
```

```

Msti Port Oper Status Path Cost Role
-----+-----+-----+-----+-----
0 1/1 FORW 200000 ROOT
1 1/1 FORW 200000 MSTR
2 1/1 FORW 200000 MSTR

```

output definitions

Msti	The Multiple Spanning Tree Instance (MSTI) instance number. Configured through the bridge msti command. Note that MSTI 0 also represents the CIST instance that is always present on the switch.
Port	The slot number for the module and the physical port number or a logical port. If the slot number is 0, then the port number refers to a link aggregate logical port number (e.g., 0/31).
Oper St	The port operational state as defined by application of the Spanning Tree Protocol. Possible port operational states include: disabled, blocking, learning, and forwarding.
Path Cost	The contribution of this port to the path cost towards the Spanning Tree root bridge that includes this port. Path cost is a measure of the distance of the listed port from the root bridge in the number of hops. Configured through the bridge slot/port path cost command.
Role	The role of the port for this Spanning Tree instance. Possible port roles are: root , designated , alternate , and backup .


```

-> bridge mode 1x1
-> show spantree ports
  Vlan  Port Oper Status  Path Cost  Role
-----+-----+-----+-----+-----+-----
   1   1/1     DIS         0         0     DIS
   1   1/2     DIS         0         0     DIS
   1   1/3     DIS         0         0     DIS
   1   1/4     DIS         0         0     DIS
   1   1/5     DIS         0         0     DIS
   1   1/6     DIS         0         0     DIS
   1   1/7     DIS         0         0     DIS
   1   1/8     DIS         0         0     DIS
   1   1/9     DIS         0         0     DIS
   1  1/10     DIS         0         0     DIS
   1  1/11     DIS         0         0     DIS
   1  1/12     FORW        19        19    ROOT

-> show spantree 1 ports
Spanning Tree Port Summary for Vlan 1
  Oper Path  Desig      Prim. Op  Op
Port  St  Cost   Cost   Role Port  Cnx  Edg  Desig Bridge ID
-----+-----+-----+-----+-----+-----+-----+-----
 1/1  DIS     0     0  DIS 1/1  NS  EDG  0000-00:00:00:00:00:00
 1/2  DIS     0     0  DIS 1/2  NS  NO   0000-00:00:00:00:00:00
 1/3  DIS     0     0  DIS 1/3  NS  NO   0000-00:00:00:00:00:00
 1/4  DIS     0     0  DIS 1/4  NS  NO   0000-00:00:00:00:00:00
 1/5  DIS     0     0  DIS 1/5  NS  NO   0000-00:00:00:00:00:00
 1/6  DIS     0     0  DIS 1/6  NS  NO   0000-00:00:00:00:00:00
 1/7  DIS     0     0  DIS 1/7  NS  NO   0000-00:00:00:00:00:00
 1/8  DIS     0     0  DIS 1/8  NS  NO   0000-00:00:00:00:00:00
 1/9  DIS     0     0  DIS 1/9  NS  NO   0000-00:00:00:00:00:00
 1/10 DIS     0     0  DIS 1/10 NS  NO   0000-00:00:00:00:00:00
 1/11 DIS     0     0  DIS 1/11 NS  NO   0000-00:00:00:00:00:00
 1/12 FORW    19     0  ROOT 1/12 PTP  NO   0001-00:d0:95:6a:79:50

-> show spantree 1 ports active
Spanning Tree Port Summary for Vlan 1
  Oper Path  Desig      Prim. Op  Op
Port  St  Cost   Cost   Role Port  Cnx  Edg  Desig Bridge ID
-----+-----+-----+-----+-----+-----+-----
 1/12 FORW    19     0  ROOT 1/12 PTP  EDG  0001-00:d0:95:6a:79:50

```

output definitions

Vlan	The VLAN ID associated with the VLAN Spanning Tree instance. Configured through the vlan commands
Port	The slot number for the module and the physical port number or a logical port. If the slot number is 0, then the port number refers to a link aggregate logical port number (e.g., 0/31).
Oper St	The port operational state as defined by application of the Spanning Tree Protocol. Possible port operational states include: disabled, blocking, listening, learning, and forwarding.
Path Cost	The contribution of this port to the path cost towards the Spanning Tree root bridge that includes this port. Path cost is a measure of the distance of the listed port from the root bridge in the number of hops. Configured through the bridge slot/port path cost command.

output definitions (continued)

Desig Cost	The path cost of the Designated Port of the segment connected to this port. If this is the root bridge or the Spanning Tree status of the port is administratively disabled, this value is 0.
Role	The role of the port for this Spanning Tree instance. Possible port roles are: root , designated , alternate , and backup .
Prim. Port	The slot number for the module and the physical port number on that module for the primary port associated with this Spanning Tree instance. This information is only available if the port role is backup.
Op Cnx	Operational connection type: PTP , NPT , or NS (nonsignificant). Shows the current operational state of the port's connection type. See the bridge slot/port connection command on page 16-87 for more information.
Op Edg	Operational connection type: EDG . Shows the current operational state of the port's connection type. See the bridge slot/port connection command on page 16-87 for more information.
Desig Bridge ID	The bridge identifier for the designated bridge for this port's segment.

```
-> show spantree 2 ports configured
```

```
Spanning Tree Port Admin Configuration for Vlan 2
```

Port	Pri	Adm St.	Man. Mode	Config Cost	Adm Cnx	Adm Edg	Aut Edg	Rstr Tcn	Rstr Role	PVST+ 10G Opt.	Cfg Stst
3/1	7	ENA	No	0	AUT	No	Yes	No	No	DIS	AUT/ON
3/3	7	ENA	No	0	AUT	No	Yes	No	No	DIS	AUT/OFF
0/9	7	ENA	No	0	AUT	No	Yes	No	No	DIS	AUT/ON

output definitions

Port	The slot number for the module and the physical port number or a logical port. If the slot number is 0, then the port number refers to a link aggregate logical port number (e.g., 0/31).
Port Pri	The Spanning Tree priority for the port (0–15). The lower the number, the higher the priority. Configured through the bridge slot/port priority command.
Adm St	The Spanning Tree administrative status of the port: enabled or disabled . Configured through the bridge slot/port command to enable or disable Spanning Tree on a port.
Man. Mode	The manual mode setting for the port: yes indicates that the blocking or forwarding state of the port was manually set and the port does not participate in the Spanning Tree Algorithm; no indicates that the Spanning Tree Algorithm is managing the port state. Configured through the bridge slot/port mode command.
Config Cost	The configured path cost value for this port. Configured through the bridge slot/port path cost command.
Adm Cnx	The administrative connection type: PTP , NPT , or AUT . Configured through the bridge slot/port connection command.
Adm Edg	The edge port administrative status: yes indicates that the port is an admin edge port; no indicates that the port is not an admin edge port. Configured through the bridge slot/port connection command.

output definitions (continued)

Aut Edg	The edge port automatic status: yes indicates that the port is an automatic edge port; no indicates that the port is not an automatic edge port. Configured through the bridge cist slot/port auto-edge or bridge 1x1 slot/port auto-edge command.
Rstr Tcn	The restricted TCN capability: yes indicates that the port supports the restricted TCN capability; no indicates that the port does not support the restricted TCN capability. Configured through the bridge cist slot/port restricted-tcn or bridge 1x1 slot/port restricted-tcn command.
Rstr Role	The restricted role port status: yes indicates that the port is a restricted role port; no indicates that the port is not a restricted role port. Configured through the bridge cist slot/port restricted-role or bridge 1x1 slot/port restricted-role command.
10G Opt.	N/A
PVST+ Cfg	Indicates the current PVST+ port configuration (auto , enable or disable).
PVST+ Stat	Indicates the current status of the PVST+ port (On or Off).

Release History

Release 6.6.1; command was introduced.

Related Commands

show spantree cist ports	Implicit command for displaying Spanning Tree port information for the flat mode CIST when the switch is operating in the 1x1 or flat Spanning Tree mode.
show spantree msti ports	Explicit command for displaying Spanning Tree port information for an MSTI when the switch is operating in the 1x1 or flat Spanning Tree mode.
show spantree 1x1 ports	Explicit command for displaying Spanning Tree port information for a VLAN instance when the switch is operating in the 1x1 or flat Spanning Tree mode.

MIB Objects

vStpInsPortTable

- vStpInsPortNumber
- vStpInsPortPriority
- vStpInsPortEnable
- vStpInsPortState
- vStpInsPortManualMode
- vStpInsPortPathCost
- vStpInsPortDesignatedCost
- vStpInsPortRole
- vStpInsPortAdminConnectionType
- vStpInsPortOperConnectionType
- vStpInsPortAdminEdge
- vStpInsPortAutoEdge
- vStpInsPortRestrictedRole
- vStpInsPortRestrictedTcn
- vStpInsPortPrimaryPortNumber
- vStpInsPortDesignatedRoot
- vStpInsPortDesignatedBridge

show spantree cist ports

Displays Spanning Tree port information for the flat mode Common and Internal Spanning Tree (CIST) instance.

show spantree cist ports [forwarding | blocking | active | configured]

Syntax Definitions

forwarding	Displays Spanning Tree operational port parameters for ports that are forwarding for the CIST instance.
blocking	Displays Spanning Tree operational port parameters for ports that are blocked for the CIST instance.
active	Displays a list of active ports associated with the specified instance.
configured	Displays Spanning Tree administrative port parameters for the CIST instance.

Defaults

parameter	default
forwarding blocking active configured	all ports

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- This is an explicit Spanning Tree command that displays Spanning Tree port information for the flat mode CIST instance regardless of which mode (1x1 or flat) is active on the switch.
- Note that minimal information is displayed when this command is used in the 1x1 mode, as the CIST is not active in this mode.

Examples

```
-> show spantree cist ports
Spanning Tree Port Summary for Cist
      Oper Path  Desig      Prim. Op Op
Port  St  Cost   Cost   Role Port Cnx Edg  Desig Bridge ID
-----+-----+-----+-----+-----+-----+-----+-----
  1/1  FORW 200000    52 ROOT  1/1  PTP  EDG  8000-00:30:f1:5b:37:73
  1/2  DIS    0      0  DIS  1/2  NS   No   0000-00:00:00:00:00:00
  1/3  DIS    0      0  DIS  1/3  NS   EDG  0000-00:00:00:00:00:00
  1/4  DIS    0      0  DIS  1/4  NS   No   0000-00:00:00:00:00:00
  1/5  DIS    0      0  DIS  1/5  NS   EDG  0000-00:00:00:00:00:00
  1/6  DIS    0      0  DIS  1/6  NS   EDG  0000-00:00:00:00:00:00
  1/7  DIS    0      0  DIS  1/7  NS   EDG  0000-00:00:00:00:00:00
  1/8  DIS    0      0  DIS  1/8  NS   No   0000-00:00:00:00:00:00
-> show spantree cist ports active
```

Spanning Tree Port Summary for Cist

Port	Oper St	Path Cost	Desig Cost	Role	Prim. Port	Op Cnx	Op Edg	Desig Bridge ID
1/1	FORW	200000	52	ROOT	1/1	PTP	EDG	8000-00:30:f1:5b:37:73

output definitions

Port	The slot number for the module and the physical port number or a logical port. If the slot number is 0, then the port number refers to a link aggregate logical port number (e.g., 0/31).
Oper St	The port operational state as defined by application of the Spanning Tree Protocol. Possible port operational states include: disabled, blocking, listening, learning, and forwarding.
Path Cost	The contribution of this port to the path cost towards the Spanning Tree root bridge that includes this port. Path cost is a measure of the distance of the listed port from the root bridge in the number of hops. Configured through the bridge slot/port path cost command.
Desig Cost	The path cost of the Designated Port of the segment connected to this port. If this is the root bridge or the Spanning Tree status of the port is administratively disabled, this value is 0.
Role	The role of the port for this Spanning Tree instance. Possible port roles are: root , designated , alternate , and backup .
Prim. Port	The slot number for the module and the physical port number on that module for the primary port associated with this Spanning Tree instance. This information is only available if the port role is backup.
Op Cnx	Operational connection type: PTP , NPT , or NS (nonsignificant). Shows the current operational state of the port's connection type. See the bridge slot/port connection command on page 16-87 for more information.
Op Edg	Operational connection type: EDG . Shows the current operational state of the port's connection type. See the bridge slot/port connection command on page 16-87 for more information.
Desig Bridge ID	The bridge identifier for the designated bridge for this port's segment.

```
-> show spantree cist ports configured
```

Spanning Tree Port Admin Configuration for Vlan 1

Port	Pri	Adm St.	Man. Mode	Config Cost	Adm Cnx	Adm Edg	Aut Edg	Rstr Tcn	Rstr Root	Role/ Guard	10G Opt	PVST+ Cfg Stat
1/1	7	ENA	No	0	AUT	No	Yes	No	No	DIS	AUT	Off
1/2	7	ENA	No	0	AUT	No	Yes	No	No	DIS	AUT	Off
1/3	7	ENA	No	0	AUT	No	Yes	No	No	DIS	AUT	Off
1/4	7	ENA	No	0	AUT	No	Yes	No	No	DIS	AUT	Off

output definitions

Port	The slot number for the module and the physical port number or a logical port. If the slot number is 0, then the port number refers to a link aggregate logical port number (e.g., 0/31).
Port Pri	The Spanning Tree priority for the port (0–15). The lower the number, the higher the priority. Configured through the bridge slot/port priority command.
Adm St	The Spanning Tree administrative status of the port: enabled or disabled . Configured through the bridge slot/port command to enable or disable Spanning Tree on a port.
Man. Mode	The manual mode setting for the port: yes indicates that the blocking or forwarding state of the port was manually set and the port does not participate in the Spanning Tree Algorithm; no indicates that the Spanning Tree Algorithm is managing the port state. Configured through the bridge slot/port mode command.
Config Cost	The configured path cost value for this port. Configured through the bridge slot/port path cost command.
Adm Cnx	The administrative connection type: PTP , NPT , or AUT . Configured through the bridge slot/port connection command.
Adm Edg	The edge port administrative status: yes indicates that the port is an admin edge port; no indicates that the port is not an admin edge port. Configured through the bridge slot/port connection command.
Aut Edg	The edge port automatic status: yes indicates that the port is an automatic edge port; no indicates that the port is not an automatic edge port. Configured through the bridge cist slot/port auto-edge or bridge 1x1 slot/port auto-edge command.
Rstr Tcn	The restricted TCN capability: yes indicates that the port supports the restricted TCN capability; no indicates that the port does not support the restricted TCN capability. Configured through the bridge cist slot/port restricted-tcn or bridge 1x1 slot/port restricted-tcn command.
Rstr Role/Root Guard	The restricted status of the port: Yes indicates that the port is restricted from becoming the root; No indicates that the port is not restricted from becoming the root. Configured through the bridge cist slot/port restricted-role or bridge 1x1 slot/port restricted-role command.
10G Opt.	N/A
PVST+ Cfg Stat	The PVST+ status on the switch: enabled or disabled . Configured through the bridge mode 1x1 pvst+ command to enable or disable PVST+ mode on the switch.
PVST+ Stat	Indicates whether or not the PVST+ interoperability status is enabled (ENA) or disabled (DIS) for the port. Configured through the bridge mode 1x1 pvst+ command.

Release History

Release 6.6.1; command was introduced.

Related Commands

show spantree ports	Implicit command for displaying Spanning Tree port information for the flat mode CIST instance or a 1x1 mode VLAN instance.
show spantree msti ports	Explicit command for displaying Spanning Tree port information for an MSTI when the switch is operating in the 1x1 or flat Spanning Tree mode.
show spantree 1x1 ports	Explicit command for displaying Spanning Tree port information for a VLAN instance when the switch is operating in the 1x1 or flat Spanning Tree mode.

MIB Objects

```
vStpInsPortTable
  vStpInsPortNumber
  vStpInsPortPriority
  vStpInsPortState
  vStpInsPortEnable
  vStpInsPortPathCost
  vStpInsPortDesignatedCost
  vStpInsPortDesignatedBridge
  vStpInsPortAdminEdge
  vStpInsPortAutoEdge
  vStpInsPortRestrictedRole
  vStpInsPortRestrictedTcn
  vStpInsPortManualMode
  vStpInsPortRole
  vStpInsPrimaryPortNumber
  vStpInsPortAdminConnectionType
  vStpInsPortOperConnectionType
```

show spantree msti ports

Displays Spanning Tree port information for a flat mode Multiple Spanning Tree Instance (MSTI).

show spantree msti [*msti_id*] **ports** [**forwarding** | **blocking** | **active** | **configured**]

Syntax Definitions

<i>msti_id</i>	An existing MSTI ID number (0-4094).
forwarding	Displays Spanning Tree operational port parameters for ports that are forwarding for the CIST instance.
blocking	Displays Spanning Tree operational port parameters for ports that are blocked for the CIST instance.
active	Displays a list of active ports associated with the specified instance.
configured	Displays Spanning Tree administrative port parameters for the CIST instance.

Defaults

parameter	default
<i>msti_id</i>	all MSTIs
forwarding blocking active configured	all ports

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- If an *msti_id* number is *not* specified, this command displays the Spanning Tree port operational status, path cost, and role values for all associated MSTIs.
- This is an explicit Spanning Tree command that displays Spanning Tree port information for an MSTI regardless of which mode (1x1 or flat) is active on the switch.
- Note that minimal information is displayed when this command is used in the 1x1 mode, as MSTIs are not active in this mode. In addition, if MSTP is not the selected flat mode protocol, this command will fail.
- The **configured** keyword is only available when an instance number is specified with this command. In addition, this keyword cannot be used in combination with either the **forwarding** or **blocking** keywords.
- Note that MSTI 0 also represents the CIST instance that is always present on the switch. To view the CIST instance using this command, specify zero (0) for the *msti_id* number.

Examples

-> show spantree msti ports

Msti	Port	Oper	Status	Path Cost	Role
0	1/1		FORW	200000	ROOT
0	1/2		DIS	0	DIS
0	1/3		DIS	0	DIS
0	1/4		DIS	0	DIS
0	1/5		DIS	0	DIS
0	1/6		DIS	0	DIS
0	1/7		DIS	0	DIS
0	1/8		DIS	0	DIS
0	1/9		DIS	0	DIS
0	1/10		DIS	0	DIS
0	1/11		DIS	0	DIS
0	1/12		DIS	0	DIS
0	1/13		DIS	0	DIS
0	1/14		DIS	0	DIS
0	1/15		DIS	0	DIS
0	1/16		DIS	0	DIS
0	1/17		DIS	0	DIS
0	1/18		DIS	0	DIS
0	1/19		DIS	0	DIS
0	1/20		DIS	0	DIS
0	1/21		DIS	0	DIS
0	1/22		DIS	0	DIS
0	1/23		DIS	0	DIS
0	1/24		DIS	0	DIS
0	5/1		DIS	0	DIS
0	5/2		DIS	0	DIS
1	1/1		FORW	200000	MSTR
1	1/2		DIS	0	DIS
1	1/3		DIS	0	DIS
1	1/4		DIS	0	DIS
1	1/5		DIS	0	DIS
1	1/6		DIS	0	DIS
1	1/7		DIS	0	DIS
1	1/8		DIS	0	DIS
1	1/9		DIS	0	DIS
1	1/10		DIS	0	DIS
1	1/11		DIS	0	DIS
1	1/12		DIS	0	DIS
1	1/13		DIS	0	DIS
1	1/14		DIS	0	DIS
1	1/15		DIS	0	DIS
1	1/16		DIS	0	DIS
1	1/17		DIS	0	DIS
1	1/18		DIS	0	DIS
1	1/19		DIS	0	DIS
1	1/20		DIS	0	DIS
1	1/21		DIS	0	DIS
1	1/22		DIS	0	DIS
1	1/23		DIS	0	DIS
1	1/24		DIS	0	DIS
1	5/1		DIS	0	DIS
1	5/2		DIS	0	DIS

output definitions (continued)

Desig Cost	The path cost of the Designated Port of the segment connected to this port. If this is the root bridge or the Spanning Tree status of the port is administratively disabled, this value is 0.
Role	The role of the port for this Spanning Tree instance. Possible port roles are: root , designated , alternate , master , and backup .
Prim. Port	The slot number for the module and the physical port number on that module for the primary port associated with this Spanning Tree instance. This information is only available if the port role is backup.
Op Cnx	Operational connection type: PTP , NPT , or NS (nonsignificant). Shows the current operational state of the port's connection type. See the bridge slot/port connection command on page 16-87 for more information.
Op Edg	Operational connection type: EDG . Shows the current operational state of the port's connection type. See the bridge slot/port connection command on page 16-87 for more information.
Desig Bridge ID	The bridge identifier for the designated bridge for this port's segment.

```
-> show spantree msti 2 ports configured
Spanning Tree Port Admin Configuration for Msti 2
      Port  Adm Man. Config  Adm  Adm  Aut  Rstr Rstr
Port  Pri   St. Mode   Cost Cnx  Edg  Edg  Tcn  Role 10G Opt.
-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----
1/1   7   ENA  No       0  AUT  No  Yes  No   No  DIS
1/2   7   ENA  No       0  AUT  No  Yes  No   No  DIS
1/3   7   ENA  No       0  AUT  No  Yes  No   No  DIS
1/4   7   ENA  No       0  AUT  No  Yes  No   No  DIS
1/5   7   ENA  No       0  AUT  No  Yes  No   No  DIS
1/6   7   ENA  No       0  AUT  No  Yes  No   No  DIS
1/7   7   ENA  No       0  AUT  No  Yes  No   No  DIS
1/8   7   ENA  No       0  AUT  No  Yes  No   No  DIS
1/9   7   ENA  No       0  AUT  No  Yes  No   No  DIS
1/10  7   ENA  No       0  AUT  No  Yes  No   No  DIS
1/11  7   ENA  No       0  AUT  No  Yes  No   No  DIS
1/12  7   ENA  No       0  AUT  No  Yes  No   No  DIS
```

output definitions

Port	The slot number for the module and the physical port number or a logical port. If the slot number is 0, then the port number refers to a link aggregate logical port number (e.g., 0/31).
Port Pri	The Spanning Tree priority for the port (0–15). The lower the number, the higher the priority. Configured through the bridge msti slot/port priority command.
Adm St	The Spanning Tree administrative status of the port: enabled or disabled . Configured through the bridge slot/port command to enable or disable Spanning Tree on a port.

output definitions (continued)

Man. Mode	The manual mode setting for the port: yes indicates that the blocking or forwarding state of the port was manually set and the port does not participate in the Spanning Tree Algorithm; no indicates that the Spanning Tree Algorithm is managing the port state. Configured through the bridge slot/port mode command.
Config Cost	The configured path cost value for this port. Configured through the bridge msti slot/port path cost command.
Adm Cnx	The administrative connection type: PTP , NPT , or AUT . Configured through the bridge slot/port connection command.
Adm Edg	The edge port administrative status: yes indicates that the port is an admin edge port; no indicates that the port is not an admin edge port. Configured through the bridge slot/port connection command.
Aut Edg	The edge port automatic status: yes indicates that the port is an automatic edge port; no indicates that the port is not an automatic edge port. Configured through the bridge cist slot/port auto-edge or bridge 1x1 slot/port auto-edge command.
Rstr Tcn	The restricted TCN capability: yes indicates that the port supports the restricted TCN capability; no indicates that the port does not support the restricted TCN capability. Configured through the bridge cist slot/port restricted-tcn or bridge 1x1 slot/port restricted-tcn command.
Rstr Role	The restricted role port status: yes indicates that the port is a restricted role port; no indicates that the port is not a restricted role port. Configured through the bridge cist slot/port restricted-role or bridge 1x1 slot/port restricted-role command.
10G Opt.	N/A

Release History

Release 6.6.1; command was introduced.

Related Commands

show spantree ports	Implicit command for displaying Spanning Tree port information for the flat mode CIST instance or a 1x1 mode VLAN instance.
show spantree cist ports	Explicit command for displaying Spanning Tree port information for a CIST instance when the switch is operating in the 1x1 or flat Spanning Tree mode.
show spantree 1x1 ports	Explicit command for displaying Spanning Tree port information for a VLAN when the switch is operating in the 1x1 or flat Spanning Tree mode.

MIB Objects

vStpInsPortTable

- vStpInsPortNumber
- vStpInsPortPriority
- vStpInsPortState
- vStpInsPortEnable
- vStpInsPortPathCost
- vStpInsPortDesignatedCost
- vStpInsPortDesignatedBridge
- vStpInsPortAdminEdge
- vStpInsPortAutoEdge
- vStpInsPortRestrictedRole
- vStpInsPortRestrictedTcn
- vStpInsPortManualMode
- vStpInsPortRole
- vStpInsPrimaryPortNumber
- vStpInsPortAdminConnectionType
- vStpInsPortOperConnectionType

show spantree 1x1 ports

Displays Spanning Tree port information for a 1x1 mode VLAN instance.

show spantree 1x1 [*vid*] **ports** [**forwarding** | **blocking** | **active** | **configured**]

Syntax Definitions

<i>vid</i>	An existing VLAN ID number (1-4094).
forwarding	Displays Spanning Tree operational port parameters for ports that are forwarding for the CIST instance.
blocking	Displays Spanning Tree operational port parameters for ports that are blocked for the CIST instance.
active	Displays a list of active ports associated with the specified instance.
configured	Displays Spanning Tree administrative port parameters for the CIST instance.

Defaults

parameter	default
<i>vid</i>	all VLAN instances
forwarding blocking active configured	all ports

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- If a *vid* number is *not* specified, this command displays the Spanning Tree port operational status, path cost, and role values for all VLAN instances.
- Specifying a range of VLAN IDs is also allowed. Use a hyphen to indicate a contiguous range (e.g., **show spantree 1x1 10-15 ports**). Note that only one VLAN entry—a single VLAN ID or a range of VLAN IDs—is allowed with this command. Multiple entries are not accepted.
- This is an explicit Spanning Tree command that displays Spanning Tree port information for a VLAN instance regardless of which mode (1x1 or flat) is active on the switch.
- Note that minimal information is displayed when this command is used in the flat mode, as VLAN instances are not active in this mode.
- The **configured** keyword is only available when an instance number is specified with this command. In addition, this keyword cannot be used in combination with either the **forwarding** or **blocking** keywords.

Examples

```
-> show spantree 1x1 ports
```

Vlan	Port	Oper	Status	Path	Cost	Role
1	1/1		DIS		0	DIS
1	1/2		DIS		0	DIS
1	1/3		DIS		0	DIS
1	1/4		DIS		0	DIS
1	1/5		DIS		0	DIS
1	1/6		DIS		0	DIS
1	1/7		DIS		0	DIS
1	1/8		DIS		0	DIS
1	1/9		DIS		0	DIS
1	1/10		DIS		0	DIS
1	1/11		DIS		0	DIS
1	1/12		FORW		19	DIS

```
-> show spantree 1x1 1 ports
```

```
Spanning Tree Port Summary for Vlan 1
```

Port	Oper St	Path Cost	Desig Cost	Role	Prim. Port	Op Cnx	Op Edg	Desig	Bridge ID
1/1	DIS	0	0	DIS	1/1	NS	EDG	0000-00:00:00:00:00:00	
1/2	DIS	0	0	DIS	1/2	NS	NO	0000-00:00:00:00:00:00	
1/3	DIS	0	0	DIS	1/3	NS	NO	0000-00:00:00:00:00:00	
1/4	DIS	0	0	DIS	1/4	NS	NO	0000-00:00:00:00:00:00	
1/5	DIS	0	0	DIS	1/5	NS	NO	0000-00:00:00:00:00:00	
1/6	DIS	0	0	DIS	1/6	NS	NO	0000-00:00:00:00:00:00	
1/7	DIS	0	0	DIS	1/7	NS	NO	0000-00:00:00:00:00:00	
1/8	DIS	0	0	DIS	1/8	NS	NO	0000-00:00:00:00:00:00	
1/9	DIS	0	0	DIS	1/9	NS	NO	0000-00:00:00:00:00:00	
1/10	DIS	0	0	DIS	1/10	NS	NO	0000-00:00:00:00:00:00	
1/11	DIS	0	0	DIS	1/11	NS	NO	0000-00:00:00:00:00:00	
1/12	FORW	19	0	DIS	1/12	PTP	NO	0001-00:d0:95:6a:79:50	

```
-> show spantree 1x1 1 ports active
```

```
Spanning Tree Port Summary for Vlan 1
```

Port	Oper St	Path Cost	Desig Cost	Role	Prim. Port	Op Cnx	Op Edg	Desig	Bridge ID
1/12	FORW	19	0	DIS	1/12	PTP	EDG	0001-00:d0:95:6a:79:50	

```
-> show spantree 1x1 10-13 ports
```

```
Spanning Tree Port Summary for Vlan 10
```

Port	Oper St	Path Cost	Desig Cost	Role	Prim. Port	Op Cnx	Op Edg	Desig	Bridge ID
1/46	DIS	0	0	DIS	1/46	NS	EDG	0000-00:00:00:00:00:00	

```
Spanning Tree Port Summary for Vl 11
```

Port	Oper St	Path Cost	Desig Cost	Role	Prim. Port	Op Cnx	Op Edg	Desig	Bridge ID
1/36	DIS	0	0	DIS	1/36	NS	EDG	0000-00:00:00:00:00:00	
1/37	DIS	0	0	DIS	1/37	NS	NO	0000-00:00:00:00:00:00	


```

Spanning Tree Port Summary for Vlan 12
      Oper Path  Desig      Prim. Op Op
Port  St  Cost   Cost   Role Port  Cnx Edg Desig Bridge ID
-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+
  1/42 DIS     0     0 DIS 1/42 NS  EDG 0000-00:00:00:00:00:00
  1/43 DIS     0     0 DIS 1/43 NS  NO  0000-00:00:00:00:00:00
Spanning Tree Port Summary for Vlan 13
      Oper Path  Desig      Prim. Op Op
Port  St  Cost   Cost   Role Port  Cnx Edg Desig Bridge ID
-----+-----+-----+-----+-----+-----+-----+-----+
  1/38 DIS     0     0 DIS 1/38 NS  EDG 0000-00:00:00:00:00:00

```

output definitions

Vlan	The VLAN ID associated with the VLAN Spanning Tree instance. Configured through the vlan commands
Port	The slot number for the module and the physical port number or a logical port. If the slot number is 0, then the port number refers to a link aggregate logical port number (e.g., 0/31).
Oper St	The port operational state as defined by application of the Spanning Tree Protocol. Possible port operational states include: disabled, blocking, listening, learning, and forwarding.
Path Cost	The contribution of this port to the path cost towards the Spanning Tree root bridge that includes this port. Path cost is a measure of the distance of the listed port from the root bridge in the number of hops. Configured through the bridge 1x1 slot/port path cost command.
Desig Cost	The path cost of the Designated Port of the segment connected to this port. If this is the root bridge or the Spanning Tree status of the port is administratively disabled, this value is 0.
Role	The role of the port for this Spanning Tree instance. Possible port roles are: root , designated , alternate , master , and backup .
Prim. Port	The slot number for the module and the physical port number on that module for the primary port associated with this Spanning Tree instance. This information is only available if the port role is backup.
Op Cnx	Operational connection type: PTP , NPT , or NS (nonsignificant). Shows the current operational state of the port's connection type. See the bridge slot/port connection command on page 16-87 for more information.
Op Edg	Operational connection type: EDG . Shows the current operational state of the port's connection type. See the bridge slot/port connection command on page 16-87 for more information.
Desig Bridge ID	The bridge identifier for the designated bridge for this port's segment.

```
-> show spantree 1x1 1 ports configured
Spanning Tree Port Admin Configuration for Vlan 1
      Port  Adm Man. Config  Adm  Adm  Aut  Rstr Rstr Role/          PVST+
Port  Pri  St. Mode   Cost  Cnx  Edg  Edg  Tcn  Root Guard  10G Opt  Cfg Stat
-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+
1/1   7   ENA  No       0  AUT  No  Yes  No   No   No   DIS   AUT OFF
1/2   7   ENA  No       0  AUT  No  Yes  No   No   No   DIS   AUT OFF
1/3   7   ENA  No       0  AUT  No  Yes  No   No   No   DIS   AUT OFF
1/4   7   ENA  No       0  AUT  No  Yes  No   No   No   DIS   AUT OFF
1/5   7   ENA  No       0  AUT  No  Yes  No   No   No   DIS   AUT OFF
1/6   7   ENA  No       0  AUT  No  Yes  No   No   No   DIS   AUT OFF
1/7   7   ENA  No       0  AUT  No  Yes  No   No   No   DIS   AUT OFF
1/8   7   ENA  No       0  AUT  No  Yes  No   No   No   DIS   AUT OFF
1/9   7   ENA  No       0  AUT  No  Yes  No   No   No   DIS   AUT OFF
1/10  7   ENA  No       0  AUT  No  Yes  No   No   No   DIS   AUT OFF
1/11  7   ENA  No       0  AUT  No  Yes  No   No   No   DIS   AUT OFF
1/12  7   ENA  No       0  AUT  No  Yes  No   No   No   DIS   AUT OFF
```

```
-> show spantree 1x1 10-13 ports configured
Spanning Tree Port Admin Configuration for Vlan 10
      Port  Adm Man. Config  Adm  Adm  Aut  Rstr Rstr Role/          PVST+
Port  Pri  St. Mode   Cost  Cnx  Edg  Edg  Tcn  Root Guard  10G Opt  Cfg Stat
-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+
1/46  7   ENA  No       0  AUT  No  Yes  No   No   No   DIS   AUT OFF
```

```
Spanning Tree Port Admin Configuration for Vlan 11
      Port  Adm Man. Config  Adm  Adm  Aut  Rstr Rstr Role/          PVST+
Port  Pri  St. Mode   Cost  Cnx  Edg  Edg  Tcn  Root Guard  10G Opt  Cfg Stat
-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+
1/36  7   ENA  No       0  AUT  No  Yes  No   No   No   DIS   AUT OFF
1/37  7   ENA  No       0  AUT  No  Yes  No   No   No   DIS   AUT OFF
```

```
Spanning Tree Port Admin Configuration for Vlan 12
      Port  Adm Man. Config  Adm  Adm  Aut  Rstr Rstr Role/          PVST+
Port  Pri  St. Mode   Cost  Cnx  Edg  Edg  Tcn  Root Guard  10G Opt  Cfg Stat
-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+
1/42  7   ENA  No       0  AUT  No  Yes  No   No   No   DIS   AUT OFF
1/43  7   ENA  No       0  AUT  No  Yes  No   No   No   DIS   AUT OFF
```

```
Spanning Tree Port Admin Configuration for Vlan 13
      Port  Adm Man. Config  Adm  Adm  Aut  Rstr Rstr Role/          PVST+
Port  Pri  St. Mode   Cost  Cnx  Edg  Edg  Tcn  Root Guard  10G Opt  Cfg Stat
-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+
1/38  7   ENA  No       0  AUT  No  Yes  No   No   No   DIS   AUT OFF
```

output definitions

Port	The slot number for the module and the physical port number or a logical port. If the slot number is 0, then the port number refers to a link aggregate logical port number (e.g., 0/31).
Port Pri	The Spanning Tree priority for the port (0–15). The lower the number, the higher the priority. Configured through the bridge 1x1 slot/port priority command.
Adm St	The Spanning Tree administrative status of the port: enabled or disabled . Configured through the bridge slot/port command to enable or disable Spanning Tree on a port.

output definitions (continued)

Man. Mode	The manual mode setting for the port: yes indicates that the blocking or forwarding state of the port was manually set and the port does not participate in the Spanning Tree Algorithm; no indicates that the Spanning Tree Algorithm is managing the port state. Configured through the bridge slot/port mode command.
Config Cost	The configured path cost value for this port. Configured through the bridge 1x1 slot/port path cost command.
Adm Cnx	The administrative connection type: PTP , NPT , or AUT . Configured through the bridge slot/port connection command.
Adm Edg	The edge port administrative status: yes indicates that the port is an admin edge port; no indicates that the port is not an admin edge port. Configured through the bridge slot/port connection command.
Aut Edg	The edge port automatic status: yes indicates that the port is an automatic edge port; no indicates that the port is not an automatic edge port. Configured through the bridge cist slot/port auto-edge or bridge 1x1 slot/port auto-edge command.
Rstr Tcn	The restricted TCN capability: yes indicates that the port supports the restricted TCN capability; no indicates that the port does not support the restricted TCN capability. Configured through the bridge cist slot/port restricted-tn or bridge 1x1 slot/port restricted-tn command.
Rstr Role/Root Guard	The restricted status of the port: Yes indicates that the port is restricted from becoming the root; No indicates that the port is not restricted from becoming the root. Configured through the bridge cist slot/port restricted-role or bridge 1x1 slot/port restricted-role command.
10G Opt.	N/A
PVST+ Cfg	The type of BPDU used on the port: AUTO indicates that IEEE BPDUs are used until a PVST+ BPDU is detected; ENA indicates that PVST+ BPDUs are used; DIS indicates that IEEE BPDUs are used. Configured through the bridge port pvst+ command.
PVST+ Stat	Indicates whether or not the PVST+ interoperability status is enabled (ENA) or disabled (DIS) for the port. Configured through the bridge mode 1x1 pvst+ command.

Release History

Release 6.6.1; command was introduced.

Related Commands

show spantree ports	Implicit command for displaying Spanning Tree port information for the flat mode CIST instance or a 1x1 mode VLAN instance.
show spantree cist ports	Explicit command for displaying Spanning Tree port information for a CIST instance when the switch is operating in the 1x1 or flat Spanning Tree mode.
show spantree msti ports	Explicit command for displaying Spanning Tree port information for an MSTI when the switch is operating in the 1x1 or flat Spanning Tree mode.

MIB Objects

```
vStpInsPortTable
  vStpInsPortNumber
  vStpInsPortPriority
  vStpInsPortState
  vStpInsPortEnable
  vStpInsPortPathCost
  vStpInsPortDesignatedCost
  vStpInsPortDesignatedBridge
  vStpInsPortAdminConnectionType
  vStpInsPortOperConnectionType
  vStpInsPortAdminEdge
  vStpInsPortAutoEdge
  vStpInsPortRestrictedRole
  vStpInsPortRestrictedTcn
  vStpInsPortManualMode
  vStpInsPortRole
  vStpInsPrimaryPortNumber
  vStpInsPortAdminConnectionType
  vStpInsPortOperConnectionType
```

show spantree mst region

Displays the Multiple Spanning Tree (MST) region information for the switch.

show spantree mst region

Syntax Definitions

N/A

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Three MST region attributes (configuration name, revision level, and configuration digest) define an MST region as required by the IEEE 802.1Q 2005 standard. Switches that share the same values for these attributes are all considered part of the same region. Currently each switch can belong to one MST region at a time.
- This command is available when the switch is operating in either the 1x1 or flat Spanning Tree mode.

Examples

```
-> show spantree mst region
Configuration Name   : Region 1
Revision Level      : 0
Configuration Digest : 0xac36177f 50283cd4 b83821d8 ab26de62
Revision Max hops   : 20
Cist Instance Number : 0
```

output definitions

Configuration Name	An alphanumeric string up to 32 characters that identifies the name of the MST region. Use the bridge mst region name command to define this value.
Revision Level	A numeric value (0–65535) that identifies the MST region revision level for the switch.
Configuration Digest	An MST region identifier consisting of a 16 octet hex value (as per the IEEE 802.1Q 2005 standard) that represents all defined MSTIs and their associated VLAN ranges. Use the bridge msti and bridge msti vlan commands to define VLAN to MSTI associations.

output definitions (continued)

Revision Max hops	The number of maximum hops authorized for region information. Configured through the bridge mst region max hops command.
Cist Instance Number	The number of the CIST instance, which is currently zero as there is only one region per switch. Therefore, only one CIST exists per switch. Note that this instance is also known as the flat mode instance and is known as bridge 1 when using STP or RSTP.

Release History

Release 6.6.1; command was introduced.

Related Commands

show spantree msti vlan-map	Displays the range of VLANs associated to the specified MSTI.
show spantree cist vlan-map	Displays the range of VLANs associated to the CIST instance.
show spantree map-msti	Displays the MSTI that is associated to the specified VLAN

MIB Objects

```
vStpMstRegionTable
  vStpMstRegionNumber
  vStpMstRegionConfigDigest
  vStpMstRegionConfigName
  vStpMstRegionConfigRevisionLevel
  vStpMstRegionCistInstanceNumber
  vStpMstRegionMaxHops
```

show spantree msti vlan-map

Displays the range of VLANs associated with the specified Multiple Spanning Tree Instance (MSTI).

show spantree mst [*msti_id*] vlan-map

Syntax Definitions

msti_id An existing MSTI ID number (0–4094).

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- If an *msti_id* is not specified, then the VLAN to MSTI mapping for all defined MSTIs is displayed.
- This command is available when the switch is operating in either the 1x1 or flat Spanning Tree mode.
- Initially all VLANs are associated with the flat mode CIST instance (also known as MSTI 0).

Examples

```
-> show spantree msti vlan-map
Spanning Tree Msti/Cist Vlan map
-----

Cist
Name          :
VLAN list     : 1-9,14-4094

Msti 1
Name          :
VLAN list     : 10-11

Msti 2
Name          :
VLAN list     : 12-13

-> show spantree msti 2 vlan-map
Spanning Tree Msti Vlan map
-----

Msti 2
Name          :
VLAN list     : 12-13
```

output definitions

Cist Instance	Identifies MSTI VLAN mapping information for the CIST instance.
Msti	The MSTI ID number that identifies an association between a Spanning Tree instance and a range of VLANs.
Name	An alphanumeric value that identifies an MSTI name. Use the bridge msti command to define an MSTI name.
VLAN list	The range of VLAN IDs that are associated with this MSTI.

Release History

Release 6.6.1; command was introduced.

Related Commands

show spantree mst region	Displays the MST region information for the switch.
show spantree cist vlan-map	Displays the range of VLANs associated to the CIST instance.
show spantree map-msti	Displays the MSTI that is associated to the specified VLAN

MIB Objects

vStpMstInstanceTable
vStpMstInstanceNumber
vStpMstInstanceName
vStpMstInstanceVlanBitmapState

show spantree cist vlan-map

Displays the range of VLANs associated with the flat mode Common and Internal Spanning Tree (CIST) instance.

show spantree cist vlan-map

Syntax Definitions

N/A

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- This command is available when the switch is operating in either the 1x1 or flat Spanning Tree mode.
- Initially all VLANs are associated with the flat mode CIST instance 0 (also known as MSTI 0).

Examples

```
-> show spantree cist vlan-map
Spanning Tree Cist Vlan map
```

```
-----
Cist
Name      :
VLAN list : 1-9,14-4094
```

output definitions

Name	An alphanumeric value that identifies the name of the CIST. Use the bridge msti command to define a name for this instance.
VLAN list	The range of VLAN IDs that are associated with the CIST instance.

Release History

Release 6.6.1; command was introduced.

Related Commands

show spantree mst region	Displays the MST region information for the switch.
show spantree msti vlan-map	Displays the range of VLANs associated to the specified MSTI.
show spantree map-msti	Displays the MSTI that is associated to the specified VLAN

MIB Objects

```
vStpMstInstanceTable  
  vStpMstInstanceNumber  
  vStpMstInstanceName  
  vStpMstInstanceVlanBitmapState
```

show spantree map-msti

Displays the Multiple Spanning Tree Instance (MSTI) that is associated to the specified VLAN.

show spantree mst *vid* vlan-map

Syntax Definitions

vid An existing VLAN ID number (1–4094).

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- This command is available when the switch is operating in either the 1x1 or flat Spanning Tree mode.
- Initially all VLANs are associated with the flat mode CIST instance (also known as MSTI 0).

Examples

```
-> show spantree 200 map-msti
Vlan   Msti/Cist(0)
-----+-----
  200     0
```

Release History

Release 6.6.1; command was introduced.

Related Commands

- | | |
|---|---|
| show spantree mst region | Displays the MST region information for the switch. |
| show spantree msti vlan-map | Displays the range of VLANs associated to the specified MSTI. |
| show spantree cist vlan-map | Displays the range of VLANs associated to the CIST instance. |

MIB Objects

```
vStpMstVlanAssignmentTable
  vStpMstVlanAssignmentVlanNumber
  vStpMstVlanAssignmentMstiNumber
```

show spantree mst port

Displays a summary of Spanning Tree connection information and instance associations for the specified port or a link aggregate of ports.

show spantree mst port {*slot/port* | *logical_port*}

Syntax Definitions

slot/port The slot number for the module and the physical port number on that module (e.g., 3/1 specifies port 1 on slot 3).

logical_port The Link aggregate ID number (0–31).

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- This command is only available when the switch is running in the flat Spanning Tree mode.
- Note that MST 0 also represents the flat mode CIST instance, which all ports are associated with when the switch is running in the flat Spanning Tree mode.

Examples

```
-> bridge mode flat
-> show spantree mst port 1/10
MST parameters for interface 1/10:
  Connection Type: NS
  Edge Port: YES
  Boundary Port: YES
```

MST	Role	State	Pth Cst	Vlans
0	DIS	DIS	0	200
2	DIS	DIS	0	

```
-> show spantree mst port 1/1
MST parameters for interface 1/1 :
  Connection Type: PTP
  Edge Port: NO
  Boundary Port: YES
```

MST	Role	State	Pth Cst	Vlans
0	ROOT	FORW	19	1

```
-> bridge mode 1x1
-> show spantree mst port 1/10
Current STP mode is 1x1, MSTI instances are inactive
```

output definitions

Connection Type	Operational connection type: PTP , NPT , NS (non-significant) or EDG . Shows the current operational state of the port's connection type. See the bridge slot/port connection command on page 16-87 for more information.
Edge Port	Indicates whether or not the port is an edge port (YES or NO).
Boundary Port	Indicates whether or not the port is a boundary port (YES or NO). A boundary port connects an MST bridge to a LAN that belongs to a different MST region.
MST	The Multiple Spanning Tree Instance (MSTI) number that is associated with this port.
Role	The role of the port for this Spanning Tree instance. Possible port roles are: root , designated , alternate , master , and backup .
State	The port operational state as defined by application of the Spanning Tree Protocol. Possible port operational states include: disabled, blocking, listening, learning, and forwarding.
Pth Cst	The contribution of this port to the path cost towards the Spanning Tree root bridge that includes this port. Path cost is a measure of the distance of the listed port from the root bridge in the number of hops.
Vlans	The VLAN ID of the default VLAN for the port.

Release History

Release 6.6.1; command was introduced.

Related Commands

show spantree cist ports	Displays Spanning Tree port information for the flat mode Common and Internal Spanning Tree (CIST) instance.
show spantree msti ports	Displays Spanning Tree port information for a flat mode Multiple Spanning Tree Instance (MSTI).
show spantree 1x1 ports	Displays Spanning Tree port information for a 1x1 mode VLAN instance.

MIB Objects

```
vStpInsPortTable
  vStpInsPortAdminConnectionType
  vStpInsPortAdminEdge
  vStpInsPortAutoEdge
  vStpMstInstanceNumber
  vStpInsPortRole
  vStpInsPortState
  vStpInsPortPathCost
vStpMstVlanAssignmentTable
  vStpMstVlanAssignmentVlanNumber
```

show bridge rrstp configuration

Displays the current RRSTP status for the switch.

show bridge rrstp configuration

Syntax Definitions

N/A

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

N/A

Examples

```
-> show bridge rrstp configuration
RRSTP Global state is Enabled
```

Release History

Release 6.6.1; command was introduced.

Related Commands

bridge rrstp	Enables RRSTP on a switch.
show bridge rrstp ring	Displays information for all the rings or a specific ring present in the system.

MIB Objects

vStpInfo
VStpRrstpGlobalState

show bridge rrstp ring

Displays information for all the rings or for a specific ring present in the system.

```
show bridge rrstp ring [ring_id]
```

Syntax Definitions

ring_id An existing ring ID number (1–128).

Defaults

By default displays information for all rings.

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

Use the *ring_id* parameter with this command to display information for a specific ring.

Examples

```
-> show bridge rrstp ring
    RingId      Vlan-Tag       Ring-Port1    Ring-Port2    Ring Status
-----+-----+-----+-----+-----
         2        1000          1/19          1/10          enabled
         6          20           1/1           1/8           disabled
        128          1           0/1           0/31          enabled
```

output definitions

RingId	The numeric ID of the RRSTP ring.
Vlan-Tag	The VLAN to which the RRSTP ring frames are tagged.
Ring-Port-1	The first port in the RRSTP ring.
Ring-Port-2	The second port in the RRSTP ring.
Ring Status	The current state of the RRSTP ring (Enabled or Disabled).

Release History

Release 6.6.1; command was introduced.

Related Commands

bridge rrstp ring

Creates a RRSTP ring comprising of two ports.

**show bridge rrstp
configuration**

Displays the current RRSTP status for the switch.

MIB Objects

vStpRrstpRingConfigTable
 vStpRrstpRingId
 vStpRrstpRingPort1
 vStpRrstpRingPort2
 vStpRrstpRingVlanTag
 vStpRrstpRingState
 vStpRrstpRingRowStatus

bridge mode 1x1 pvst+

Enables or disables PVST+ mode on the switch, enabling it to operate with Cisco switches.

bridge mode 1x1 pvst+ {enable | disable}

Syntax Definitions

enable	Enables the pvst+ mode.
disable	Disables the pvst+ mode.

Defaults

PVST+ is disabled by default.

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- In order to handle PVST+ mode, the ports must be configured in 1x1 mode.
- This command enables the ports to handle PVST+ BPDUs.
- In this mode, the bridge priority field of the bridge ID can only be changed by a multiple of 4096.

Examples

```
-> bridge mode 1x1 pvst+ enable  
-> bridge mode 1x1 pvst+ disable
```

Release History

Release 6.6.1; command was introduced.

Related Commands

bridge port pvst+ Configures the type of BPDU to be used on a port when PVST+ mode is enabled.

MIB Objects

```
vStpTable  
  vStpMode  
  vStpModePVST
```

bridge port pvst+

Configures the type of BPDU to be used on a port when PVST+ mode is enabled.

bridge port {*slot/port* | *agg_num*} **pvst+** {**auto** | **enable** | **disable**}

Syntax Definitions

<i>slot/port</i>	The slot number for the module and the physical port number on that module (e.g., 3/1 specifies port 1 on slot 3).
<i>agg_num</i>	Specifies the aggregate group.
<i>auto</i>	IEEE BPDUs are used until a PVST+ BPDU is detected.
<i>enable</i>	Specifies that PVST+ BPDUs will be used.
<i>disable</i>	Specifies that IEEE BPDUs will be used.

Defaults

parameters	default
auto enable disable	auto

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- In order to handle PVST+ mode, the ports must be configured in 1x1 mode.
- Initially, a port sends or receive IEEE BPDUs. Once a PVST+ BPDU is received, the port will send and receive only PVST+ BPDUs for tagged VLANs and IEEE BPDUs for default VLANs.

Examples

```
-> bridge port 1/3 pvst+ enable
-> bridge port 2/2 pvst+ auto
```

Release History

Release 6.3.1; command was introduced.

Related Commands

bridge mode 1x1 pvst+

Enables or disables PVST+ mode on the switch.

MIB Objects

vStpPortConfigTable

 vStpPortConfigIfInedx

 vStpPortConfigPVST

17 Ethernet Ring Protection Commands

Ethernet Ring Protection (ERP) is a protection switching mechanism for Ethernet ring topologies, such as multi-ring and ladder networks. This implementation of ERP is based on Recommendation ITU-T G.8032 and uses the ring Automatic Protection Switching (APS) protocol to coordinate the prevention of network loops within a bridged Ethernet ring.

Loop prevention is achieved by allowing the traffic to flow on all but one of the links within the protected Ethernet ring. This link is blocked and is referred to as the Ring Protection Link (RPL). When a ring failure condition occurs, the RPL is unblocked to allow the flow of traffic to continue through the ring.

ERP and the Ring Rapid Spanning Tree Protocol (RRSTP) are both used for the prevention of loops in ring-based topologies but have the following differences in their implementation and functionality:

- RRSTP uses a different destination MAC address for each ring, based on the ring ID. ERP uses the same destination MAC address for all ERP protocol frames and identifies the ring based on a unique Service VLAN associated with each ring, which carries the ERP protocol frames.
- When a link failure is detected, RRSTP quickly sets the blocking ports to a forwarding state but relies on MSTP for actual protocol convergence. ERP does not require any support from MSTP. ERP has an inherent mechanism to recover from a failed state once the failed link is active again.
- MSTP determines which ports of a fully active RRSTP ring are blocked. The blocked ports (Ring Protection Link) for an ERP ring is pre-determined and configured by the user.
- RRSTP requires a ring of contiguous RRSTP nodes. ERP allows non-ERP nodes to participate in the ring by using the connectivity monitoring capabilities of Ethernet OAM to alert ERP of a link failure through non-ERP nodes.

MIB information for the Ethernet ring protection command is as follows:

Filename: AlcatelIND1Erp.mib
Module: ALCATEL-IND1-ERP-MIB

A summary of available commands is listed here:

erp-ring
erp-ring protected-vlan
erp-ring rpl-node
erp-ring wait-to-restore
erp-ring enable
erp-ring ethoam-event remote-endpoint
erp-ring guard-timer
clear erp statistics
show erp
show erp protected-vlan
show erp statistics

erp-ring

Creates an Ethernet Ring Protection (ERP) ring using the specified ports and service VLAN ID. The service VLAN transmits ERP control traffic, such as Ring Automatic Protection Switching (R-APS) messages, through the ring and the specified level number identifies an APS Management Entity Group (MEG) to which the service VLAN belongs.

```
erp-ring ring_id port1 {slot/port | linkagg agg_num} port2 {slot/port | linkagg agg_num} service-vlan
vlan_id level level_num [guard-timer guard_timer] [wait-to-restore-timer wtr_timer] [enable | disable]
```

```
no erp-ring ring_id
```

Syntax Definitions

<i>ring_id</i>	The ERP ring ID number. The valid range is 1- 2147483647.
<i>slot/port</i>	The slot number for the module and the physical port number on that module.
<i>agg_num</i>	The link aggregate ID number.
<i>vlan_id</i>	The service VLAN ID number. The valid range is 1- 4094.
<i>level_num</i>	The MEG level number for the service VLAN. The valid range is 0-7.
<i>guard-timer</i>	The guard timer value, in centi-secs, for the ring node.
<i>wtr-timer</i>	The wait-to-restore timer value, in minutes, for the Ring Protection Link (RPL) node.
enable	Administratively enables the ERP ring.
disable	Administratively disables the ERP ring.

Defaults

parameter	default
<i>guard_timer</i>	50
<i>wtr_timer</i>	5
enable disable	disable

Platforms Supported

OmniSwitch 6250, 6450

Usage Guidelines

- Use the **no** form of this command to remove a ring from the switch configuration. Note that administratively disabling ring ports is recommended before deleting the ring to avoid creating any network loops. Once the ring is deleted, then ensure that the same ports are administratively enabled under Spanning Tree control.
- The specified ring identification number must be unique within a switch.

- ERP is not supported on mobile ports, mirroring ports, link aggregate member ports, high availability ports, Multicast VLAN receiver ports (ERP is supported on Multicast VLAN sender ports only), VLAN Stacking user network interface (UNI) ports, or RRSTP ring ports.
- If a port is tagged with the service VLAN ID or the service VLAN is the default VLAN for the port, then the port is not eligible to become an ERP ring port.
- Specify an existing VLAN ID for the service VLAN ID. Use the same VLAN ID and level number for the service VLAN on each switch that participates in the ERP ring.
- If the ERP switch participates in an Ethernet OAM Maintenance Domain (MD), configure the ERP service VLAN to use the same level number that is used for the Ethernet OAM MD.
- Specify a static VLAN ID for the ERP service VLAN; dynamic VLANs are not configurable as service VLANs.
- The service VLAN can belong to only one ERP ring at a time. Up to four rings per switch are allowed.
- The specified service VLAN ID must not participate in a Spanning Tree instance that is associated with non-ERP VLANs. This may require changing the Spanning Tree configuration for the VLAN ID prior to using this command.
- An ERP ring port can belong to only one ERP ring at a time.
- An ERP type NNI-SVLAN binding has to be created before establishing an ERP ring on that SVLAN-NNI binding.

Examples

```
-> erp-ring 1 port1 1/1 port2 2/4 service-vlan 10 level 2 enable
-> erp-ring 2 port1 linkagg 1 port2 2/10 service-vlan 20 level 2
-> erp-ring 3 port1 linkagg 2 port2 linkagg 4 service-vlan 30 level 7
-> no erp-ring 2
```

Release History

Release 6.6.2; command was introduced.

Related Commands

show erp	Displays the ERP ring configuration for the switch.
show erp protected-vlan	Displays the protected VLAN configuration for the switch.
show erp statistics	Displays ERP ring statistics.
ethernet-service svlan nni	Creates a NNI-SVLAN binding.

MIB Objects

```
alaErpRingId
  alaErpRingServiceVid
  alaErpRingMEGLevel
  alaErpRingStatus
  alaErpRingPort1
  alaErpRingPort2
  alaErpRingWaitToRestore
  alaErpRingGuardTimer
  alaErpRingRowStatus
```

erp-ring protected-vlan

Configures a VLAN as a protected VLAN for an ERP ring. The ring ports associated with the specified ring ID are tagged with the protected VLAN ID.

```
erp-ring ring_id protected-vlan vlan_id1[-vlan_id2] [vlan_id1[-vlan_id2]]
```

```
no erp-ring ring_id protected-vlan [vlan_id1[-vlan_id2]]
```

Syntax Definitions

<i>ring_id</i>	The ERP ring ID number. The valid range is 1- 2147483647.
<i>vlan_id1</i> [- <i>vlan_id2</i>]	The VLAN ID number. To specify multiple VLAN IDs in a single command, use a hyphen to indicate a contiguous range of VLAN IDs and a space to separate multiple VLAN ID entries (for example, 10-20 30 100).

Defaults

NA

Platforms Supported

OmniSwitch 6250, 6450

Usage Guidelines

- Use the **no** form of this command to remove a protected VLAN from the ERP ring configuration.
- The ERP ring ID number specified must already exist in the switch configuration, unless the VLAN ID specified belongs to a VLAN Stacking SVLAN.
- The VLAN ID specified must already exist in the switch configuration.
- Specify only static VLAN IDs; dynamic VLANs are not configurable as protected VLANs.
- A protected VLAN can belong to only one ERP ring at a time.
- The specified protected VLAN ID must not participate in a Spanning Tree instance that is associated with non-ERP VLANs. This may require changing the Spanning Tree configuration for the VLAN ID prior to using this command.
- A SVLAN with two ERP VPA type NNI ports is automatically configured as an ERP protected VLAN on a ring if the two NNI ports constitute its ring ports.
- Deletion of SVLAN-NNI binding results in removal of the SVLAN from the corresponding ERP protected VLAN database.

Examples

```
-> erp-ring 1 protected-vlan 11
-> erp-ring 1 protected-vlan 12-20 25-40 100
-> erp-ring 2 protected-vlan 30-50
-> no erp-ring 1 protected-vlan
```

```
-> no erp-ring 1 protected-vlan 25-40
```

Release History

Release 6.6.2; command was introduced.

Related Commands

erp-ring	Configures an ERP ring.
show erp	Displays the ERP ring configuration for the switch.
show erp protected-vlan	Displays the protected VLAN configuration for the switch.

MIB Objects

```
alaErpRingId  
  alaErpRingVlanProtectedVid  
  alaErpRingVlanRowStatus
```

erp-ring rpl-node

Configures a switch as a Ring Protection Link (RPL) node. This command also identifies the ERP port as an RPL connection port. The RPL remains blocked to prevent loops within the ERP ring.

erp-ring *ring_id* **rpl-node** {**port** *slot/port* | **linkagg** *agg_num*}

no erp-ring *ring_id* **rpl-node**

Syntax Definitions

<i>ring_id</i>	An existing ERP ring ID number. The valid range is 1- 2147483647.
<i>slot/port</i>	The slot number for the module and the physical port number on that module.
<i>agg_num</i>	The link aggregate ID number.

Defaults

NA

Platforms Supported

OmniSwitch 6250, 6450

Usage Guidelines

- Use the **no** form of this command to remove the RPL designation for the specified ring.
- The RPL node can be configured only when the ring is disabled; RPL configuration applied to the ring while it is enabled is rejected.
- The specified ERP ring ID must already exist in the switch configuration.
- This command applies only to ERP ring ports; ports not configured as ERP ring ports are not eligible to become RPL ports.
- Only one of the two ring ports configured for the switch can be designated as an RPL node port.

Examples

```
-> erp-ring 1 rpl-node port 2/1
-> erp-ring 2 rpl-node linkagg 2
-> no erp-ring 2 rpl-node
```

Release History

Release 6.6.2; command was introduced.

Related Commands

erp-ring	Configures an ERP ring.
erp-ring wait-to-restore	Configures the wait-to-restore timer value for the Ring Protection Link (RPL) node.
show erp	Displays the ERP ring configuration for the switch.

MIB Objects

```
alaErpRingId  
  alaErpRingPortIfIndex  
  alaErpRingPortType
```

erp-ring wait-to-restore

Configures the wait-to-restore timer value for the Ring Protection Link (RPL) switch. This timer determines the number of minutes the RPL switch waits before returning the RPL ports to a blocked state after the ERP ring has recovered from a link failure.

erp-ring *ring_id* **wait-to-restore** *wtr_timer*

no erp-ring *ring_id* **wait-to-restore**

Syntax Definitions

<i>ring_id</i>	An existing ERP ring ID number. The valid range is 1- 2147483647.
<i>wtr_timer</i>	The number of minutes to wait before restoring the RPL to a blocked state. The valid range is 1-12.

Defaults

By default, the wait-to-restore timer value is set to 5 minutes.

Platforms Supported

OmniSwitch 6250, 6450

Usage Guidelines

- Use the **no** form of this command to set the timer back to the default setting of 5 minutes.
- The specified ERP ring ID must already exist in the switch configuration.
- This command applies only on a switch that serves as the RPL node for the ERP ring.

Examples

```
-> erp-ring 1 wait-to-restore 6
-> no erp-ring 1 wait-to-restore
```

Release History

Release 6.6.2; command was introduced.

Related Commands

erp-ring	Configures an ERP ring.
erp-ring rpl-node	Configures a Ring Protection Link (RPL) port connection.
show erp	Displays the ERP ring configuration for the switch.

MIB Objects

```
alaErpRingId
  alaErpRingWaitToRestoreTimer
```

erp-ring enable

Enables or disables an ERP ring identified by the specified ring ID. This command applies to enabling or disabling existing ERP rings.

erp-ring *ring_id* {**enable** / **disable**}

Syntax Definitions

ring_id An existing ERP ring ID number. The valid range is 1- 2147483647.

Defaults

By default, ERP rings are disabled when they are created.

Platforms Supported

OmniSwitch 6250, 6450

Usage Guidelines

- The specified ring ID must already exist in the switch configuration.
- Enabling a ring is also allowed at the time the ring is created.

Examples

```
-> erp-ring 1 enable  
-> erp-ring 1 disable
```

Release History

Release 6.6.2; command was introduced.

Related Commands

[erp-ring](#) Configures an ERP ring.
[show erp](#) Displays the ERP ring configuration for the switch.

MIB Objects

```
alaErpRingId  
  alaErpRingStatus
```

erp-ring ethoam-event remote-endpoint

Configures an ERP ring port to accept or drop a loss of connectivity event for a Remote Ethernet OAM Maintenance End Point (MEP). This command allows ERP to interact with Ethernet OAM to monitor non-ERP nodes that may exist in an ERP ring.

```
erp-ring ring_id ethoam-event {port slot/port | linkagg agg_num} remote-endpoint mep_id
```

```
no erp-ring ring_id ethoam-event {port slot/port | linkagg agg_num}
```

Syntax Definitions

<i>ring_id</i>	An existing ERP ring ID number. The valid range is 1- 2147483647.
<i>slot/port</i>	The slot number for the module and the physical port number on that module.
<i>agg_num</i>	The link aggregate ID number.
<i>mep_id</i>	The remote MEP ID number. The valid range is 1-8191.

Defaults

By default, ERP ports drops Ethernet OAM loss of connectivity events.

Platforms Supported

OmniSwitch 6250, 6450

Usage Guidelines

- Use the **no** form of this command to configure the ERP ring port to drop loss of connectivity events.
- The specified ring ID must already exist in the switch configuration.
- The specified remote MEP ID number is only allowed on one ring port within the same ERP ring.

Examples

```
-> erp-ring 1 ethoam-event port 1/1 remote-endpoint 10  
-> erp-ring 1 ethoam-event linkagg 1 remote-endpoint 20  
-> no erp-ring 1 ethoam-event port 1/1
```

Release History

Release 6.6.2; command was introduced.

Related Commands

erp-ring

Configures an ERP ring.

show erp

Displays the ERP ring configuration for the switch.

MIB Objects

alaErpRingId

alaErpRingPortEthOAMEvent

alaErpRingPortRmepId

erp-ring guard-timer

Configures the guard timer value for the specified ERP ring node. The guard timer is used to prevent ring nodes from receiving outdated Ring Automatic Protection Switching (R-APS) messages. During the amount of time determined by this timer, all received R-APS messages are ignored by the ring protection control process.

erp-ring *ring_id* **guard-timer** *guard_timer*

no erp-ring *ring_id* **guard-timer**

Syntax Definitions

ring_id An existing ERP ring ID number. The valid range is 1–2147483647.
guard_timer The guard timer value. The valid range is 1–200 centi-secs.

Defaults

parameter	default
<i>guard_timer</i>	50

Platforms Supported

OmniSwitch 6250, 6450

Usage Guidelines

- Use the **no** form of this command to set the timer back to the default value of 50 centi-secs.
- The specified ring ID must already exist in the switch configuration.

Examples

```
-> erp-ring 1 guard-timer 10
-> no erp-ring 1 guard-timer
```

Release History

Release 6.6.2; command was introduced.

Related Commands

[erp-ring](#) Configures an ERP ring.
[show erp](#) Displays the ERP ring configuration for the switch.

MIB Objects

alaErpRingId
 alaErpRingGuardTimer

clear erp statistics

Clears ERP statistics for all rings, a specific ring, or a specific ring port.

clear erp statistics [**ring** *ring_id* [**port** *slot/port* | **linkagg** *agg_num*]]

Syntax Definitions

<i>ring_id</i>	An existing ERP ring ID number. The valid range is 1- 2147483647.
<i>slot/port</i>	The slot number for the module and the physical port number on that module.
<i>agg_num</i>	The link aggregate ID number.

Defaults

By default, statistics are cleared for all ERP rings in the switch configuration.

Platforms Supported

OmniSwitch 6250, 6450

Usage Guidelines

- Enter a ring ID to clear the statistics for a specific ring.
- Enter a ring ID and a ring port number or link aggregate ID to clear the statistics for a specific port or link aggregate.
- The specified ring ID must already exist in the switch configuration.
- The specified port must belong to the ring identified by the ring ID.

Examples

```
-> clear erp statistics
-> clear erp statistics ring 5
-> clear erp statistics ring 5 port 1/2
-> clear erp statistics ring 5 linkagg 10
```

Release History

Release 6.6.2; command was introduced.

Related Commands

erp-ring	Configures an ERP ring.
show erp	Displays the ERP ring configuration for the switch.
show erp statistics	Displays ERP ring statistics.

MIB Objects

```
alaErpClearStats  
alaErpRingTable  
    alaErpRingId  
    alaErpRingClearStats  
alaErpRingPortTable  
    alaErpRingPortIfIndex  
    alaErpRingPortClearStats
```

show erp

Displays the ERP configuration information for all rings, a specific ring, or for a specific ring port.

show erp [**ring** *ring_id*] [**port** *slot/port* | **linkagg** *agg_num*]

Syntax Definitions

<i>ring_id</i>	An existing ERP ring ID number. The valid range is 1- 2147483647.
<i>slot/port</i>	The slot number for the module and the physical port number on that module.
<i>agg_num</i>	The link aggregate ID number.

Defaults

By default, configuration information is displayed for all ERP rings in the switch configuration.

Platforms Supported

OmniSwitch 6250, 6450

Usage Guidelines

- Enter a ring ID to display the configuration for a specific ring.
- Enter a ring port number or a link aggregate ID to display the configuration for a specific port or link aggregate.
- The specified ring ID must already exist in the switch configuration.

Examples

```
-> show erp
```

```
Legends: * - Inactive Configuration
          WTR - Wait To Restore
          MEG - Maintenance Entity Group
```

Ring ID	Ring Port1	Ring Port2	Ring Status	Serv VLAN	WTR Timer (min)	Guard Timer (csec)	MEG Level	Ring State	Ring Node
1	1/15	1/1	enabled	4094	3	50	2	idle	rpl
2	6/7	4/1	enabled	4093	1	50	1	idle	rpl
3	4/7	6/1	enabled	4092	1	50	3	idle	rpl
4	4/8	6/23	enabled	4091	5	50	4	idle	non-rpl

```
Total number of rings configured = 4
```

```
-> show erp ring 1
```

```
Legend: * - Inactive Configuration
```

```
Ring Id           : 1,
Ring Port1       : 1/15,
```

```

Ring Port2           : 1/1,
Ring Status          : enabled,
Service VLAN         : 4094,
WTR Timer (min)     : 3,
Guard Timer (centi-sec) : 50,
MEG Level            : 2,
Ring State           : idle,
Ring Node Type       : rpl,
RPL Port             : 1/1,
Last State Change    : SUN DEC 25 06:50:17 2016 (sysUpTime 00h:01m:31s)

```

output definitions

Ring ID	The ERP ring ID number.
Ring Ports	The slot and port number of the ring ports.
Ring Status	The ring status (enabled or disabled).
Service VLAN	The Service VLAN ID.
WTR Timer	The wait-to-restore timer value in minutes for RPL node.
Guard Timer	The guard timer value in centi-secs for the ring node.
MEG Level	The Service VLAN Management Entity Group (MEG) level.
Ring State	Indicates the state of the ring.
Ring Node Type	Indicates the type of the ring node.
Last State Change	Indicates the time when the last state change occurred.

```

-> show erp port 1/15
Legend: * - Inactive Configuration

```

```

Ring-Id : 1
  Ring Port Status   : forwarding,
  Ring Port Type     : non-rpl,
  Ethoam Event       : disabled

```

```

-> show erp port 1/1
Legend: * - Inactive Configuration

```

```

Ring Id : 1
  Ring Port Status   : blocking,
  Rint Port Type     : RPL,
  Ethoam Event       : enabled,
  Rmepid             : 10

```

output definitions

Ring ID	The ERP ring ID number.
Ring Port Status	The status of the ring port (blocking or forwarding).
Ring Port Type	The type of ring port (RPL or non-RPL).
Ethoam Event	Indicates whether or not the ring port accepts Ethernet OAM loss of connectivity events (enabled or disabled).
Rmepid	The remote Ethernet OAM MEP ID number from which this port accepts loss of connectivity events. This field displays only when the ring port is configured to receive such events.

Release History

Release 6.6.2; command was introduced.

Related Commands

- show erp protected-vlan** Displays the protected VLAN configuration for the switch.
show erp statistics Displays ERP ring statistics.

MIB Objects

```
alaErpRingId
  alaErpRingStatus
  alaErpRingServiceVid
  alaErpRingMEGLevel
  alaErpRingPort1
  alaErpRingPort2
  alaErpRingPortIfIndex
  alaErpRingState
  alaErpRingPortStatus
  alaErpRingPortType
  alaErpRingPortEthOAMEvent
  alaErpRingPortRmepId
  alaErpRingWaitToRestoreTimer
  alaErpRingGuardTimer
  alaErpRingLastStateChange
  alaErpRingTimeToRevert
```

show erp protected-vlan

Displays the protected VLAN configuration for all ERP rings or for a specific ring.

show erp [ring *ring_id*] protected-vlan

Syntax Definitions

ring_id An existing ERP ring ID number. The valid range is 1- 2147483647.

Defaults

By default, the protected VLAN configuration is displayed for all ERP rings in the switch configuration.

Platforms Supported

OmniSwitch 6250, 6450

Usage Guidelines

- Enter a ring ID to display the protected VLANs for a specific ring.
- The specified ring ID must already exist in the switch configuration.

Examples

```
-> show erp protected-vlan
Ring Id      : 1,
Protected VLAN : 10 20 30-40
Ring Id      : 2,
Protected VLAN : 50
```

```
-> show erp ring 3 protected-vlan
Ring Id      : 3,
Protected VLAN : none
```

output definitions

Ring ID	The ERP ring ID number.
Protected VLAN	The VLAN IDs of the protected VLANs associated with the ring ID.

Release History

Release 6.6.2; command was introduced.

Related Commands

show erp

Displays ERP ring configuration for the switch.

show erp statistics

Displays ERP ring statistics.

MIB Objects

alaErpRingId

alaErpRingVlanProtectedVid

show erp statistics

Displays the ERP statistics for all rings, a specific ring, or a specific ring port.

show erp statistics [**ring** *ring_id* [**port** *slot/port* | **linkagg** *agg_num*]]

Syntax Definitions

<i>ring_id</i>	An existing ERP ring ID number. The valid range is 1- 2147483647.
<i>slot/port</i>	The slot number for the module and the physical port number on that module.
<i>agg_num</i>	The link aggregate ID number.

Defaults

By default, statistics are displayed for all ERP rings in the switch configuration.

Platforms Supported

OmniSwitch 6250, 6450

Usage Guidelines

- Enter a ring ID to display the statistics for a specific ring.
- Enter a ring ID and a ring port number or link aggregate ID to display the statistics for a specific port or link aggregate.
- The specified ring ID must already exist in the switch configuration.
- The specified port must belong to the ring identified by the ring ID.

Examples

```
-> show erp statistics
Legends: R-APS - Ring Automatic Protection Switching
         RPL   - Ring Protection Link
```

```
Ring-Id : 1
  Ring Port : 1/15
    Signal Fail PDUs
      Sent : 3,
      Recv : 0,
      Drop : 0
    No Request PDUs
      Sent : 37,
      Recv : 37,
      Drop : 0
    No Request RPL Block PDUs
      Sent : 4322,
      Recv : 0,
      Drop : 0
    Invalid R-APS PDUs
      Recv : 0
```

```
Ring Port : 1/1
Signal Fail PDUs
  Sent : 6,
  Recv : 0,
  Drop : 0
No Request PDUs
  Sent : 37,
  Recv : 38,
  Drop : 0
No Request RPL Block PDUs
  Sent : 4322,
  Recv : 0,
  Drop : 0
Invalid R-APS PDUs
  Recv : 0

Ring-Id : 2
Ring Port : 6/7
Signal Fail PDUs
  Sent : 6,
  Recv : 0,
  Drop : 0
No Request PDUs
  Sent : 16,
  Recv : 14,
  Drop : 0
No Request RPL Block PDUs
  Sent : 4347,
  Recv : 0,
  Drop : 4341
Invalid R-APS PDUs
  Recv : 0

-> show erp statistics ring 3
Legends: R-APS - Ring Automatic Protection Switching
         RPL   - Ring Protection Link

Ring-Id : 3
Ring Port : 4/7
Signal Fail PDUs
  Sent : 6,
  Recv : 0,
  Drop : 0
No Request PDUs
  Sent : 16,
  Recv : 14,
  Drop : 0
No Request RPL Block PDUs
  Sent : 4351,
  Recv : 0,
  Drop : 0
Invalid R-APS PDUs
  Recv : 0

Ring Port : 6/1
Signal Fail PDUs
  Sent : 6,
```

```

    Recv : 0,
    Drop : 0
  No Request PDUs
    Sent : 13,
    Recv : 13,
    Drop : 0
  No Request RPL Block PDUs
    Sent : 4358,
    Recv : 0,
    Drop : 0
  Invalid R-APS PDUs
    Recv : 0

```

```

-> show erp statistics ring 1 port 1/15
Legends: R-APS - Ring Automatic Protection Switching
         RPL   - Ring Protection Link

```

```

Ring-Id : 1
  Ring Port : 1/15
    Signal Fail PDUs
      Sent : 3,
      Recv : 0,
      Drop : 0
    No Request PDUs
      Sent : 37,
      Recv : 37,
      Drop : 0
    No Request RPL Block PDUs
      Sent : 4338,
      Recv : 0,
      Drop : 0
    Invalid R-APS PDUs
      Recv: 0

```

output definitions

Ring ID	The ERP ring ID number.
Ring Port	The slot and port number of the ring port.
R-APS	The type of Ring Automatic Switching Protocol (R-APS) event message (NR = no request, RB = RPL is blocked, SF = signal failure). APS is the protocol ERP uses to monitor and control ring links.
Send	Total number of R-APS messages sent.
Recv	Total number of R-APS messages received.
Drop	Total number of R-APS messages dropped.

Release History

Release 6.6.2; command was introduced.

Related Commands

show erp	Displays the ERP ring configuration for the switch.
show erp protected-vlan	Displays the protected VLAN configuration for the switch.
clear erp statistics	Clears ERP ring statistics.

MIB Objects

```
alaERPClearStats  
alaERPRingClearStats  
alaErpRingPortClearStats  
alaErpRingId  
  alaErpRingPortIfIndex  
  alaErpStatsSignalFailPduTx  
  alaErpStatsSignalFailPduRx  
  alaErpStatsSignalFailPduDrop  
  alaErpStatsNoRequestPduTx  
  alaErpStatsNoRequestPduRx  
  alaErpStatsNoRequestPduDrop  
  alaErpStatsRPLBlockPDUTx  
  alaErpStatsRPLBlockPDURx  
  alaErpStatsRPLBlockPDUDrop  
  alaErpStatsPDUErr
```

18 Loopback Detection Commands

Loopback Detection (LBD) automatically detects and prevents forwarding loops on ports that have forwarded network traffic which has looped back to the originating switch. LBD detects and prevents Layer 2 forwarding loops on a port either in the absence of other loop detection mechanisms such as STP/RSTP/MSTP, or when these mechanisms cannot detect it (for example, a client equipment can drop BPDUs, or the STP protocol can be restricted to the network edge). On a linkagg port, if one port of linkagg is getting shutdown due to LBD, then all the ports of linkagg goes to shutdown state.

Loopback Detection is enabled globally on a chassis or on a per-port basis. Once a loop is discovered, the port from which the loop originated is placed into an “Inactive” state. When the two ports of a switch are connected to each other through a hub, either the port is shutdown or it is in normal state.

When loopback occurs, a trap is sent and the event is logged. The port can manually be enabled again when the problem is resolved, or a Network Manager can define a recovery interval that automatically places the port into a “Normal” state after a defined period.

MIB information for the Loopback Detection commands is as follows:

Filename: alcatelIND1LBD.mib
Module: ALCATEL-IND1-LBD-MIB

A summary of available commands is listed here:

loopback-detection
loopback-detection port
loopback-detection transmission-timer
loopback-detection autorecovery-timer
show loopback-detection
show loopback-detection port
show loopback-detection statistics port

loopback-detection

Enables or disables Loopback Detection (LBD) globally on the switch.

loopback-detection {enable | disable}

Syntax Definitions

enable	Enables LBD on the switch.
disable	Disables LBD on the switch.

Defaults

parameter	default
enable disable	disable

Platforms Supported

OmniSwitch 6250, 6450

Usage Guidelines

- LBD can be enabled globally and per port without any dependency but loopback-detection is operational only if LBD is enabled globally and also on the specific port.
- LBD can be configured for a port and the configuration can be applied and retained, whether LBD is enabled globally. However, LBD functionality on a port is available only when LBD is enabled globally on the switch.

Examples

```
-> loopback-detection enable
```

Release History

Release 6.6.1; command was introduced.

Related Commands

loopback-detection port	Enables or disables LBD on a specific port.
show loopback-detection	Displays LBD configuration information.

MIB Objects

alaLdbConfigTable
alaLdbGlobalConfigStatus

loopback-detection port

Enables or disables LBD on a specific port.

loopback-detection port *slot/port* [-*port2*] {**enable** | **disable**}

Syntax Definitions

<i>slot/port</i>	The slot number and the physical port number of the module that is being configured for LBD.
<i>-port2</i>	Specifies the last port in the range of ports.
enable	Enables LBD on the specified port.
disable	Disables LBD on the specified port.

Defaults

parameter	default
enable disable	disable

Platforms Supported

OmniSwitch 6250, 6450

Usage Guidelines

- Loopback Detection must be enabled globally to enable LBD functionality on a specific port.
- LBD can be configured for a port and the configuration can be applied and retained, whether LBD is enabled globally. However, LBD functionality on a port is available only when LBD is enabled globally on the switch.

Examples

```
-> loopback-detection port 1/1 enable  
-> loopback-detection port 1/1-8 enable
```

Release History

Release 6.6.1; command was introduced.

Related Commands

- loopback-detection** Enables or disables LBD globally on the switch.
- show loopback-detection** Displays LBD configuration information.

MIB Objects

```
alaLdbPortConfigTable
  alaLdbPortConfigEntry
  alaLdbPortConfigIndex
  alaLdbPortConfigLdbAdminStatus
  alaLdbPortConfigLdbOperStatus
```

loopback-detection transmission-timer

Configures the LBD transmission timer on the switch. The transmission time is the time period between the consecutive LBD packet transmissions.

loopback-detection transmission-timer *seconds*

Syntax Definitions

seconds The time period in seconds between LBD packet transmissions. The valid range is from 5 to 600 seconds.

Defaults

parameter	default
<i>seconds</i>	30

Platforms Supported

OmniSwitch 6250, 6450

Usage Guidelines

- If the timer value is not configured, the default value of 30 seconds is assigned to the transmission period.
- The timer can be modified at any time. However, the new timer value takes effect only after the timer is restarted.

Examples

```
-> loopback-detection transmission-timer 200
```

Release History

Release 6.6.1; command was introduced.

Related Commands

- | | |
|---|---|
| loopback-detection | Enables or disables LBD globally on the switch. |
| show loopback-detection | Displays LBD configuration information. |

MIB Objects

```
alaLdbConfigTable  
  alaLdbGlobalConfigTransmissionTimer
```

loopback-detection autorecovery-timer

Configures the LBD autorecovery timer on the switch. The autorecovery time is the time period in seconds that passes after which ports that were shut down through LBD are moved to normal state or inactive state, depending on the parameter that is set on the switch.

loopback-detection autorecovery-timer *seconds*

Syntax Definitions

seconds The LBD autorecovery timer in seconds. The valid range is from 30 to 86400 seconds.

Defaults

parameter	default
<i>seconds</i>	300

Platforms Supported

OmniSwitch 6250, 6450

Usage Guidelines

- If the autorecovery timer value is not configured, the default value of 300 seconds is assigned to the autorecovery period.
- The timer can be modified at any time. However, the new timer value takes effect only after the timer is restarted.

Examples

```
-> loopback-detection autorecovery-timer 300
```

Release History

Release 6.6.1; command was introduced.

Related Commands

- [loopback-detection](#) Enables or disables LBD globally on the switch.
- [show loopback-detection](#) Displays LBD configuration information.

MIB Objects

```
alaLdbConfigTable  
  alaLdbGlobalConfigAutorecoveryTimer
```

show loopback-detection

Displays the global LBD configuration information for the switch.

show loopback-detection

Syntax Definitions

N/A

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6450

Usage Guidelines

- Use this command to display the global configuration of LBD.
- To view information for a specific port, use the [show loopback-detection port](#) command.

Examples

```
-> show loopback-detection
```

```
Global LBD Status           : Enabled
Global LBD Transmission Timer : 200 sec
Global LBD Auto-recovery Timer : 300 sec
```

```
-> show loopback-detection port 1/1
```

```
Global LBD Status           : Enabled
Global LBD Transmission Timer : 200 sec
Global LBD Auto-recovery Timer : 300 sec
Port LBD Status             : Enabled
Port LBD State               : Normal
```

output definitions

Global LBD Status	The status of LBD of the switch (Enabled or Disabled).
Global LBD Transmission Timer	Displays the time interval in seconds between LBD packet transmissions.
Global LBD Auto-recovery Timer	Displays the autorecovery time period in seconds. It is the time period that passes after which ports that were shut down through LBD are moved to normal state.

Release History

Release 6.6.1; command was introduced.

Related Commands

- loopback-detection** Enables or disables LBD globally on the switch.
- show loopback-detection port** Displays LBD configuration information for all ports on the switch.

MIB Objects

alaLdbConfigTable
alaLdbGLobalConfigStatus

show loopback-detection port

Displays global LBD configuration information on the switch. When slot and port number are mentioned, the LBD configuration information of the specific port is displayed.

show loopback-detection port [*slot/port*]

Syntax Definitions

N/A

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6450

Usage Guidelines

Use this command to view LBD information of a specific port on a switch.

Examples

```
-> show loopback-detection port
Slot/Port      Admin State      OperState
-----+-----+-----
1/2            enabled          Normal

-> show loopback-detection port 1/1
Global LBD Status           : Enabled
Global LBD Transmission Timer : 200 sec
Global LBD Transmission Timer : 300 sec
Port LBD Status             : Enabled
Port LBD State               : Normal
```

output definitions

Global LBD Status	The status of LBD of the switch (Enabled or Disabled).
Global LBD Transmission Timer	Displays the time interval in seconds between LBD packet transmissions.
Global LBD Auto-recovery Timer	Displays the autorecovery time period in seconds. It is the time period that passes after which ports that were shut down through LBD are moved to normal state.
Slot/Port	The slot/port number LBD port.
Admin State	The administrative state of the port (Enabled or Disabled).
Oper State	The operational state of the port (Normal or Inactive).

Release History

Release 6.6.1; command was introduced.

Related Commands

[loopback-detection](#)

Enables or disables LBD globally on the switch.

[show loopback-detection](#)

Displays LBD configuration information for the switch or for a specific port.

MIB Objects

alaLdbConfigTable
alaLdbGLobalConfigStatus

show loopback-detection statistics port

Displays LBD statistics information for a specific port on the switch.

show loopback-detection statistics port [*slot/port*]

Syntax Definitions

N/A

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6450

Usage Guidelines

Use this command to view LBD statistics of a specific port on a switch.

Examples

```
-> show loopback-detection statistics port 1/1
```

```
LBD Port Statistics
LBD Packet Send           : 1
Invalid LBD Packet Received : 0
```

output definitions

Slot/Port	The slot/port number LBD port.
LBD Packet Send	The number of LBD packet sent from the port.
Invalid LBD Packet Received	The number of invalid LBD packets received on the port.

Release History

Release 6.6.1; command was introduced.

Related Commands

loopback-detection	Enables or disables LBD globally on the switch.
show loopback-detection	Displays LBD configuration information for the switch or for a specific port.

MIB Objects

```
alaLdbConfigTable
  alaLdbGlobalConfigStatus
```

19 CPE Test Head Commands

The Customer Provider Edge (CPE) Test Head traffic generator and analyzer is a Test-OAM (Operation, Administration, and Maintenance) tool used in the Metro Ethernet Network to validate the customer Service Level Agreements (SLA). This functionality allows the operator to validate the Metro Ethernet Network between customer end points, which is critical when provisioning or troubleshooting network services.

This implementation of CPE Test Head supports unidirectional and bidirectional ingress tests. Traffic is generated at the UNI port as if the traffic was generated from a test head connected to the UNI port. This validates the actual customer SLA by subjecting the test traffic to the ingress QoS defined at the UNI port (Ethernet SAP profile or QoS policy rules for priority and bandwidth control) and the egress QoS defined at the egress NNI port and carrier network.

The CPE test is non-disruptive to traffic running on other UNI ports that are associated with the same SAP profile as the test UNI port. All UNI ports, including CPE test ports, are subject to any SAP profile or QoS configuration associated with the port. This is important to consider when analyzing test results.

The feature provides a multi-stream test capability. The CPE multi-test feature is supported on non-metro switches with metro license. The feature supports a stack containing up to eight switches.

Multi-stream test requires a free port. The port must not be used and not have any configuration. When a multi-stream test starts, the port is made out of service. The port is made operational again and the configuration is retained when the test is stopped.

MIB information for the CPE Test Head commands are:

Filename: alcatelIND1testoam.mib
Module: ALCATEL-IND1-TEST-OAM-MIB

A summary of available commands is listed here:

Single-test	test-oam test-oam direction test-oam src-endpoint dst-endpoint test-oam port test-oam vlan test-frame test-oam role test-oam duration rate packet-size test-oam frame test-oam l2-saa test-oam start stop test-oam remote-sys-mac test-oam statistics flash-logging show test-oam show test-oam saa statistics clear test-oam statistics
Multi-test	test-oam group test-oam group tests test-oam feeder test-oam group src-endpoint dst-endpoint test-oam group role test-oam group port test-oam group direction test-oam group duration rate test-oam group start stop test-oam group remote-sys-mac show test-oam group show test-oam group statistics clear test-oam group statistics

test-oam

Configures the CPE test name and an optional description. The test name is used to identify and configure a CPE test profile.

test-oam *string* [**descr** *description*]

no test-oam *string*

Syntax Definitions

<i>string</i>	The name of the CPE test, an alphanumeric string between 1 and 32 characters. This name is used to identify a specific CPE test and is also referred to as the test ID.
<i>description</i>	The description to assign to the test name, an alphanumeric string between 1 and 32 characters.

Defaults

parameter	default
<i>description</i>	DEFAULT

Platforms Supported

OmniSwitch 6250, 6450

Usage Guidelines

- Use the **no** form of this command to remove the specified CPE test configuration.
- This command creates a new CPE test profile that is identified by the test name. Make sure the name specified does not exist in the switch configuration.
- A maximum of 32 tests can be configured.
- Only one test can be active on the switch at any given time.

Examples

```
-> test-oam Test1
-> test-oam Test2 descr second-test
-> no test-oam Test2
```

Release History

Release 6.6.2; command was introduced.

Related Commands

show test-oam

Displays the CPE test configuration and status.

show test-oam statistics

Displays the statistics for all CPE tests or for a specific test name. Use this command on both the generator and analyzer switch to determine test results.

MIB Objects

alaTestOamConfigTable

 alaTestOamConfigTestName

 alaTestOamConfigTestDescription

 alaTestOamConfigRowStatus

test-oam direction

Configures the CPE test direction.

test-oam *string* [**direction** {**unidirectional** | **bidirectional**}]

Syntax Definitions

<i>string</i>	The name of the CPE test, an alphanumeric string between 1 and 32 characters. This name is used to identify a specific CPE test and is also referred to as the test ID.
direction	The direction of the CPE test.

Defaults

parameter	default
unidirectional bidirectional	unidirectional

Platforms Supported

OmniSwitch 6250, 6450

Usage Guidelines

This command assigns the direction to the CPE test.

Examples

```
-> test-oam Test1 direction unidirectional
-> test-oam Test1 direction bidirectional
```

Release History

Release 6.6.3; command was introduced.
Release 6.6.5; **bidirectional** capability enabled.

Related Commands

show test-oam	Displays the CPE test configuration and status.
show test-oam statistics	Displays the statistics for all CPE tests or for a specific test name. Use this command on both the generator and analyzer switch to determine test results.

MIB Objects

```
alaTestOamConfigTable
  alaTestOamConfigTestName
  alaTestOamConfigDirection
```

test-oam src-endpoint dst-endpoint

Configures the source and destination endpoints for the specified test.

test-oam *string* [**src-endpoint** *src-string*] [**dst-endpoint** *dst-string*]

Syntax Definitions

<i>string</i>	The name of an existing CPE test. The string can be of length 1 to 32 characters.
<i>src-string</i>	This represents the local or transmitting device. The management IP address or DNS host name of the switch that will transmit test traffic. In case of bidirectional test this also identifies the analyzer device. The string can be of length 1 to 32 characters.
<i>dst-string</i>	This represents the remote device. The management IP address or DNS host name of the switch that will receive test traffic. This is the switch on which traffic analysis is done. For unidirectional test this represents the analyzer device. For bidirectional test this identifies the device on which the loopback mode must be active. The string can be of length 1 to 32 characters.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6450

Usage Guidelines

- The end point can be set as switch hostname or switch management IP address.
- Using the DNS host name of the switch is highly recommended, as this name is unique and is mapped to an IP address configured for the switch.
- This command automatically overwrites the source and destination endpoint values previously configured for the specified CPE test.
- Multicast and broadcast address must not be configured for bidirectional test.

Examples

```
-> test-oam Test1 src-endpoint SW1 dst-endpoint SW2
-> test-oam Test1 src-endpoint SW1
-> test-oam Test1 dst-endpoint SW2
```

Release History

Release 6.6.2; command was introduced.

Related Commands

- test-oam port** Configures the port on which the CPE test will run.
show test-oam Displays the CPE test configuration and status.

MIB Objects

```
alaTestOamConfigTable  
  alaTestOamConfigTestName  
  alaTestOamConfigSourceEndpoint  
  alaTestOamConfigDestinationEndpoint
```

test-oam port

Configures the port on which the CPE test will run. Use this command on the switch that will generate the test traffic. If the switch is going to receive test traffic, configuring a test port is not necessary.

test-oam *string* **port** *slot/port*

Syntax Definitions

<i>string</i>	The name of an existing CPE test.
<i>slot/port</i>	The port on which the CPE test will generate traffic.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6450

Usage Guidelines

- In an Ethernet Service environment, the UNI port is designated as the test port on the generator switch to simulate traffic coming in on the port as if it was sent from a test head device. This will subject the test traffic to the SAP profile.
- Note that the customer traffic is disrupted on ports configured as CPE test ports. Configuring a port that is not in use is recommended. In addition, if the test port is a UNI port associated with an SAP profile, only that UNI port is used for the test. Traffic on other UNI ports associated with the same profile is *not* disrupted by the CPE test.
- All UNI ports, including CPE test ports, are subject to any SAP profile or QoS configuration associated with the port. This must be considered when test results are analyzed.
- This command automatically overwrites the port value previously configured for the specified CPE test.

Examples

```
-> test-oam Test1 port 1/2
```

Release History

Release 6.6.2; command was introduced.

Related Commands

test-oam vlan test-frame Configures the source mac-address, destination mac-address, and the SVLAN for the test-frame used in the test.

show test-oam Displays the CPE test configuration and status.

MIB Objects

alaTestOamConfigTable
 alaTestOamConfigTestName
 alaTestOamConfigPort

test-oam vlan test-frame

Configures the SVLAN and the source and destination MAC addresses for the test frame. Use this command to configure these test parameters on both the generator (local) switch and the analyzer (remote) switch for the specified CPE test.

test-oam *string* [**vlan** *svlan*] [[**test-frame** [**src-mac** *src-address*] [**dst-mac** *dst-address*]]

Syntax Definitions

<i>string</i>	The name of an existing CPE test.
<i>svlan</i>	The service VLAN ID. This is used for traffic analysis and test-frame accounting.
<i>src-address</i>	Source mac-address of the test-frame.
<i>dst-address</i>	Destination mac-address of the test-frame.

Defaults

parameter	default
<i>src-address</i>	00:00:00:00:00:00
<i>dst-address</i>	00:00:00:00:00:00

Platforms Supported

OmniSwitch 6250, 6450

Usage Guidelines

- Although the source and destination MAC addresses are optional parameters with this command, the test will not run if these addresses are set to all zeros (the default).
- Make sure that routing is disabled on the specified SVLAN.
- Avoid configuring any IEEE reserved MAC addresses as the destination MAC address for the test.
- This command automatically overwrites the SVLAN, source MAC, or destination MAC values previously configured for the specified CPE test.

Examples

```
-> test-oam Test1 vlan 100 test-frame src-mac 00:01:02:00:00:02 dst-mac
00:00:01:00:00:90
-> test-oam Test1 vlan 100
-> test-oam Test1 test-frame src-mac 00:01:02:00:00:02 dst-mac 00:00:01:00:00:90
-> test-oam Test1 test-frame src-mac 00:01:02:00:00:02
-> test-oam Test test-frame dst-mac 00:00:01:00:00:90
```

Release History

Release 6.6.2; command was introduced.

Related Commands

test-oam role	Configures the switch as a generator or analyzer for the test.
show test-oam	Displays the CPE test configuration and status.

MIB Objects

```
alaTestOamConfigTable  
  alaTestOamConfigTestName  
  alaTestOamConfigVlan  
  alaTestOamConfigFrameSrcMacAddress  
  alaTestOamConfigFrameDstMacAddress
```

test-oam role

Configures the role the switch will perform for the specified CPE test. The type of role assigned determines whether the switch transmits (generator) or receives (analyzer) or loopback test frames.

test-oam *string* **role** {**generator** | **analyzer** | **loopback**}

Syntax Definitions

<i>string</i>	The name of an existing CPE test.
generator	Configures the switch as the test generator.
analyzer	Configures the switch as the test analyzer.
loopback	Configures the switch as loopback.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6450

Usage Guidelines

- Use this command on the switch that will perform the specified role.
- Configuring a generator and an analyzer switch for each test is required.
- Only one role can be assigned to the switch for a particular test.
- This command automatically overwrites the previously configured switch role for the specified CPE test.

Examples

```
-> test-oam Test1 role generator
-> test-oam Test2 role analyzer
-> test-oam Test2 role loopback
```

Release History

Release 6.6.2; command was introduced.
Release 6.6.5; **loopback** mode supported.

Related Commands

test-oam duration rate packet-size Configures the test frame duration, rate and packet-size for the test.

show test-oam Displays the CPE test configuration and status.

MIB Objects

```
alaTestOamConfigTable  
  alaTestOamConfigTestName  
  alaTestOamConfigRole
```

test-oam duration rate packet-size

Configures the duration, rate, and packet-size for the specified test. Use this command to configure these test parameters on the generator switch.

test-oam *string* [**duration** *secs*] [**rate** *rate*] [**packet-size** *bytes*]

Syntax Definitions

<i>string</i>	The name of an existing CPE test.
<i>secs</i>	The duration of the test, in seconds. This is the amount of time the generator will actively transmit test packets to the remote (analyzer) switch. The valid time range is 1–3600 seconds
<i>rate</i>	The rate, in Kbps or Mbps, at which test traffic is generated. The minimum value allowed is 8 Kbps to line rate. The granularity of the transmit rate is 8 Kbps for 100 Mbps port and 2 Mbps for 1Gig ports.
<i>bytes</i>	The packet size, in bytes. The valid range is 64–9212 bytes.

Defaults

Parameter	Default
<i>secs</i>	5 secs
<i>rate</i>	8 k
<i>bytes</i>	64 byte

Platforms Supported

OmniSwitch 6250, 6450

Usage Guidelines

- This command automatically overwrites any duration, rate, and packet size parameter values previously configured for the specified CPE test.
- The status of the CPE test will change to “ended” when the test duration time expires.
- This command automatically overwrites the duration, rate, or packet size values previously configured for the specified CPE test.

Examples

```
-> test-oam Test1 duration 10 rate 8k packet-size 64
-> test-oam Test1 rate 8m
-> test-oam Test1 duration 10
-> test-oam Test1 packet-size 64
```

Release History

Release 6.6.2; command was introduced.

Related Commands

test-oam frame

Configures the test frame parameter values for the CPE test.

show test-oam

Displays the CPE test configuration and status.

MIB Objects

alaTestOamConfigTable

 alaTestOamConfigTestName

 alaTestOamConfigDuration

 alaTestOamConfigGeneratorBandwidth

 alaTestOamConfigGeneratorPacketSize

test-oam frame

Configures the test frame parameter values for the specified CPE test. Use this command on the switch that will generate the test frame traffic.

test-oam *string* frame

```
[vlan-tag vlan-id priority priority drop-eligible {true | false}]
ether-type {hex-num | ipv4 {src-ip src-ipv4 dst-ip dst-ipv4 [ttl ttl] [tos tos] [protocol {udp | tcp} {src-port src-port dst-port dst-port}]}}] [data-pattern pattern]
```

Syntax Definitions

<i>string</i>	The name of an existing CPE test.
<i>vlan-id</i>	The VLAN ID of the frame.
<i>priority</i>	The priority value. The valid range is 0–7.
true	Sets the drop-eligible bit to true.
false	Sets the drop-eligible bit to false.
<i>hex-num</i>	The hexadecimal ethertype value. The valid range is 0x600–0xffff.
<i>src-ipv4</i>	The source IP address for an IPv4 test frame.
<i>dst-ipv4</i>	The destination IP address for an IPv4 test frame.
<i>ttl</i>	The time-to-live value. The valid range is 0–255.
<i>tos</i>	The type-of-service value for QoS features. The valid range is 0x0–0xff.
udp	Specifies the UDP protocol.
tcp	Specifies the TCP protocol.
<i>src-port</i>	The source port of the generated test frame.
<i>dst-port</i>	The destination port of the generated test frame.
<i>pattern</i>	The data pattern present in the generated test frame. The valid range is 0x0000–0xffff.

Defaults

Parameter	Default
<i>priority</i>	7
drop-eligible	false
<i>ttl</i>	64
<i>tos</i>	0x0
<i>pattern</i>	0x0000

Platforms Supported

OmniSwitch 6250, 6450

Usage Guidelines

- Specify the Ether type in hexadecimal format to configure a Layer 2 test frame.
- Specify **ipv4** as the Ether type to configure a Layer 3 test frame. When this option is selected, entering a source and destination IP address is required.
- Do not specify reserved Ether type values.
- This command automatically overwrites the test packet parameter values previously configured for the specified CPE test.

Examples

If the ether-type is a hexadecimal number (Layer 2 test frame):

```
-> test-oam Test1 frame vlan-tag 1 priority 2 drop-eligible false ether-type 0x0100
data-pattern 0x0010
```

If the ether-type is IPV4 (Layer 3 test frame):

```
-> test-oam Test1 frame vlan-tag 1 priority 2 drop-eligible false ether-type ipv4
src-ip 1.1.1.1 dst-ip 2.2.2.2 ttl 4 tos 0x01 protocol udp src-port 2000 dst-port
3000 data-pattern 0x0010
```

Release History

Release 6.6.2; command was introduced.

Related Commands

test-oam l2-saa	Start or stop the CPE test.
show test-oam	Displays the CPE test configuration and status.

MIB Objects

```
alaTestOamConfigTable
  alaTestOamConfigTestName
alaTestOamEtherConfigTable
alaTestOamIpv4ConfigTable
```

test-oam l2-saa

Configures to run SAA tests in parallel with test streams.

test-oam *string* **l2-saa** [**priority** *vlan-priority*] [**count** *num-pkts*] [**interval** *inter-pkt-delay*] [**continuous**] [**size** *size*] [**drop-eligible** {**true** | **false**}]

no test-oam *string* **l2-saa**

Syntax Definitions

<i>string</i>	The name of an existing CPE test.
<i>vlan-priority</i>	Specify the internal priority of MAC ping and 802.1p value on the VLAN tag header.
<i>num-pkts</i>	The number of packets sent in one ping iteration. Valid range is 1 to 10.
<i>inter-pkt-delay</i>	The delay between packets sent during a ping iteration (milliseconds). Valid range is 100 to 1000, in multiples of 100.
continuous	Allows the SAA session to run continuously until the test-oam session ends.
<i>size</i>	The payload size to be used for MAC ping iteration. Must be within 1500 bytes.
drop-eligible	Specify the drop precedence of the MAC ping and the Canonical Format Indicator (CFI) bit on the VLAN tag header.

Defaults

Parameter	Default
<i>vlan-priority</i>	0
<i>num-pkts</i>	5
<i>inter-pkt-delay</i>	1000 ms
<i>size</i>	36 bytes
drop-eligible	false

Platforms Supported

OmniSwitch 6250, 6450

Usage Guidelines

- The L2-SAA test derives the source MAC, destination MAC, and the VLAN ID from the test OAM configuration of the individual test frames.
- The default L2-SAA configuration values will be applied if no optional parameters are configured.
- To run the L2-SAA session until the test-oam session ends, use the **continuous** parameter.
- Different SAA profiles can be configured for each individual test stream.

- Use the **no** form of this command to remove the L2-SAA configuration for the test.

Examples

```
-> test-oam test1 l2-saa priority 5 count 5 interval 1000 size 100 drop-eligible
false
-> test-oam test1 l2-saa continuous
-> no test-oam test1 l2-saa
```

Release History

Release 6.6.2; command was introduced.

Release 6.6.5; **l2-saa** option added.

Release 6.7.1; **continuous** option added.

Related Commands

test-oam

Configures the CPE test name and an optional description. The test name is used to identify and configure a CPE test profile.

show test-oam

Displays the CPE test configuration and status.

MIB Objects

```
alaTestOamConfigTable
  alaTestOamSaaConfigDropEligible
  alaTestOamSaaConfigPayloadSize
  alaTestOamSaaConfigNumPkts
  alaTestOamSaaConfigInterPktDelay
  alaTestOamSaaContinuous
```

test-oam start stop

Starts or stops the CPE test operation.

test-oam *string* {[**vlan** *vlan-id*] [**port** *slot/port*] [**packet-size** *bytes*] **start** | **stop**} [**fetch-remote-stats**]

Syntax Definitions

<i>string</i>	The name of an existing CPE test.
<i>vlan-id</i>	The service VLAN ID. This value is required only for traffic analysis and test frame accounting and is not related to the VLAN tag specified for the actual test frame.
<i>slot/port</i>	The switch port on which the test is run.
<i>bytes</i>	The size of the test packet, in bytes. The valid packet size range is 64–9212 bytes.
start	Starts the CPE test operation.
stop	Stops the CPE test operation.
fetch-remote-stats	Triggers the test at the remote device from the generator. The statistics are collected from the remote device and the test is stopped after receiving the test results.

Defaults

Parameter	Default
<i>bytes</i>	64

Platforms Supported

OmniSwitch 6250, 6450

Usage Guidelines

- Ensure that routing is disabled on the specified service VLAN.
- The optional **vlan**, **port**, and **packet-size** parameters specify “active” parameter values that are applied when the specified CPE test is started. If these same parameters are defined within a CPE test profile, they are considered “configured” parameter values. Active parameter values override configured parameter values when the test is started.
- If no active parameter values are specified with this command, the test is started using the configured values defined in the CPE test profile. However, if active parameter values are not specified and the CPE test does not contain any configured values for these parameters, the test will not run.
- Specifying any of the optional parameter values does not change the configured values associated with the CPE test.
- If the specified port resides on a switch that will transmit test traffic, the port will generate the test frames. However, if the switch is an analyzer switch, specifying a port is not required.
- Start the specified test on the analyzer switch first and then on the generator switch.

- The test will stop when the test duration time expires or when the test is manually stopped using the **test-oam stop** command.
- Manually restart the test if the test is interrupted by a takeover, restart, or hot swap.
- The previous statistics related to the test will be cleared automatically once the test is started.
- Use the **fetch-remote-stats** parameter to collect the test statistics from the remote device. This parameter must be used to start the bidirectional test.

Examples

```
-> test-oam Test1 start
-> test-oam Test1 vlan 100 start
-> test-oam Test1 port 1/1 start
-> test-oam Test1 packet-size 100 start
-> test-oam Test1 vlan 100 port 1/1 packet-size 100 start
-> test-oam Test1 stop
-> test-oam Test1 start fetch-remote-stats
-> test-oam "test2" port 1/2 start fetch-remote-stats
```

Release History

Release 6.6.2; command was introduced.

Release 6.6.5; **fetch-remote-stats** parameter added.

Related Commands

[show test-oam statistics](#)

Displays the statistics for all CPE tests or for a specific test name. Use this command on both the generator and analyzer switch to determine test results.

[show test-oam](#)

Displays the CPE test configuration and status.

MIB Objects

```
alaTestOamConfigTable
  alaTestOamConfigTestName
  alaTestOamConfigVlan
  alaTestOamConfigPort
  alaTestOamConfigGeneratorPacketSize
  alaTestOamConfigTestIdState
  alaTestOamConfigRemoteStatsFetch
```

test-oam remote-sys-mac

Configures the system MAC address of the remote device to receive test OAM messages.

test-oam *string* **remote-sys-mac** *string*

Syntax Definitions

<i>string</i>	The name of an existing CPE test.
remote-sys-mac	The system MAC address of the remote device.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6450

Usage Guidelines

- Use this command on the generator switch to set the system MAC address of the remote device to receive the test OAM messages.
- remote-sys-mac must be the primary CMM MAC address of the remote device. Use the **show cmm** command on the remote device to know the chassis MAC address of the device.
- remote-sys-mac is not applicable for analyzer or loopback.
- Configuring the Remote Sys MAC is mandatory for bidirectional test and optional for unidirectional test.

Examples

```
-> test-oam Test1 remote-sys-mac 00:e0:b1:7c:7a:fa
```

Release History

Release 6.6.5; command introduced.

Related Commands

show test-oam Displays the CPE test configuration and status.

MIB Objects

alaTestOamConfigTable
alaTestOamConfigRemoteSysMacAddress

test-oam statistics flash-logging

Enable or disable the option to save the statistics of the test on the file in the flash directory of the switch. The test information is appended at the end of the default text file (testoamActiveStats.txt) in the flash.

test-oam statistics flash-logging {enable | disable}

Syntax Definitions

N/A

Defaults

Parameter	Default
enable disable	disable

Platforms Supported

OmniSwitch 6250, 6450

Usage Guidelines

Use the **more** command to read the test results stored on the switch.

Examples

```
-> test-oam statistics flash-logging enable
-> test-oam statistics flash-logging disable
```

Release History

Release 6.6.5; command introduced.

Related Commands

[show test-oam statistics](#)

Displays the statistics for all CPE tests or for a specific test name. Use this command on both the generator and analyzer switch to determine test results.

[show test-oam saa statistics](#)

Clears the statistics for all CPE tests or for a specific test name.

MIB Objects

```
alaTestOamConfigTable
  alaTestOamConfigStatsSave
```

show test-oam

Displays the CPE test configuration and status.

show test-oam [*tests* | *string*]

Syntax Definitions

tests Displays information for all the CPE tests.
string The name of an existing CPE test.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6450

Usage Guidelines

- Use the **tests** parameter to display information for all CPE tests configured on the switch.
- Use the *string* parameter to display detailed information for a specific CPE test.

Examples

```
-> show test-oam tests
Total Test-Ids: 1
Test-Id Port      Src-Mac          Dst-Mac          Vlan  Direction  Status      Remote-Sys-Mac
-----+-----+-----+-----+-----+-----+-----+-----
Test1  none  00:00:00:00:00:00  00:00:00:00:00:00  none  unidirectional  not-started  00:00:00:00:00:00
```

output definitions

Test-Id	The CPE test name (ID). Configured through the test-oam command.
Port	The port on which the test is run. Configured through the test-oam port command.
Src-Mac	The source MAC address of the test frame. Configured through the test-oam vlan test-frame command.
Dst-Mac	The destination MAC address of the test frame. Configured through the test-oam vlan test-frame command.
Vlan	The service VLAN (SVLAN) associated with the test. Configured through the test-oam vlan test-frame command.
Direction	The direction of the test traffic. Note that only unidirectional traffic tests are supported.
Status	The operational status of the test.
Remote-Sys-Mac	The MAC address of the remote device configured through the test-oam remote-sys-mac command.

```
-> show test-oam Test1
Legend: dei-drop eligible indicator
TEST Parameters for Test1:
  Source Endpoint      : SW1,
  Destination Endpoint : SW2,
  Test Description    : Ether Test,
  Direction           : unidirectional,
  Source MAC          : 00:11:22:33:44:55,
  Destination MAC     : 00:22:33:44:55:66,
  Remote Sys MAC      : E8:E7:32:72:01:A4,
  Duration            : 10(secs),
  Vlan                : 100,
  Role                : generator,
  Port                : 1/1,
  Tx Rate             : 80m,
  Frame Size          : 100,
  State               : start,
  Status              : running
```

```
Frame Configuration:
  Frame Type : ether,
  Vlan       : 200,
  Priority    : 7,
  Pattern    : 0x0001,
  Dei        : none,
  Ether Type : 0x8000,
```

```
-> show test-oam Test2
TEST Parameters for Test2:
  Source Endpoint      : SW1,
  Destination Endpoint : SW2,
  Test Description    : IPV6 Test,
  Direction           : unidirectional,
  Source MAC          : 00:11:22:33:44:55,
  Destination MAC     : 00:22:33:44:55:66,
  Remote Sys MAC      : E8:E7:32:72:01:A4,
  Duration            : 10(secs),
  Vlan                : 100,
  Role                : generator,
  Port                : 1/1,
  Tx Rate             : 8k,
  Frame Size          : 100,
  State               : start,
  Status              : running
```

```
Frame Configuration :
  Frame Type      : ipv6,
  Vlan            : 200,
  Priority         : 7,
  Pattern         : 0x0001,
  Dei             : true,
  Source Ip       : 00:00:00:00:10.20.30.50,
  Destination Ip  : 00:00:00:00:10.30.40.60,
  Source Port     : 10,
  Destination Port : 20,
  Next Header     : tcp,
  Hop-Count       : 50,
  Traffic-Class   : 0xff
  Flow-Label      : 0x0
```

```

L2-SAA Configuration :
  L2-SAA DE           : False,
  L2-SAA Payload Size : 64,
  L2-SAA Count        : 0,
  L2-SAA Interval     : 1000,
  L2-SAA Continuous   : yes
  L2-SAA Priority      : 0

```

output definitions

Source Endpoint	The host name for the source (generator) switch. Configured through the test-oam direction command.
Destination Endpoint	The host name for the destination (analyzer) switch. Configured through the test-oam direction command.
Test Description	Description for the test name. Configured through the test-oam command.
Direction	The direction of the test traffic. Note that only unidirectional traffic tests are supported.
Source MAC	The source MAC address for the test frame. Configured through the test-oam vlan test-frame command.
Destination MAC	The destination MAC address for the test frame. Configured through the test-oam vlan test-frame command.
Remote Sys MAC	The MAC address of the remote device configured through the test-oam remote-sys-mac command.
Duration	The amount of time the test will run. Configured through the test-oam duration rate packet-size command.
Vlan	The service VLAN (SVLAN) associated with the test. Configured through the test-oam vlan test-frame command.
Role	The role of the switch for this test (generator or analyzer). Configured through the test-oam role command.
Port	The port on which the test is run. Configured through the test-oam port command.
Tx Rate	The rate at which packets are transmitted on the test port. Configured through the test-oam duration rate packet-size command.
Frame Size	The size of the test frame. Configured through the test-oam duration rate packet-size command.
State	The administrative state of the test (stop or start). Configured through the test-oam l2-saa command.
Status	The operational status of the test (running , ended , stopped , or not started).
Frame Configuration	The test frame type (ether or ipv4) and associated parameter values. Configured through the test-oam frame command.
L2-SAA Configuration	Displays the L2 SAA configuration.

Release History

Release 6.6.2; command was introduced.

Release 6.6.5; **Remote Sys Mac** and **L2-SAA** details added.

Release 6.7.1; **L2-SAA Continuous** details added.

Related Commands

[show test-oam statistics](#)

Displays the statistics for all CPE tests or for a specific test name. Use this command on both the generator and analyzer switch to determine test results.

MIB Objects

alaTestOamConfigTable

- alaTestOamConfigTestId
- alaTestOamConfigPort
- alaTestOamConfigFrameSrcMacAddress
- alaTestOamConfigFrameDstMacAddress
- alaTestOamConfigVlan
- alaTestOamConfigDirection
- alaTestOamConfigTestIdStatus
- alaTestOamConfigRemoteSysMacAddress

alaTestOamSaaConfigTable

- alaTestOamSaaConfigDropEligible
- alaTestOamSaaConfigPayloadSize
- alaTestOamSaaConfigNumPkts
- alaTestOamSaaConfigInterPktDelay
- alaTestOamSaaConfigVlanPriority
- alaTestOamSaaContinuous

alaTestOamEtherConfigTable

- alaTestOamIpv4ConfigTable

output definitions

Remote-Stats	The number of test frames received by the analyzer and fetched by the generator device.
Throughput (Mbps)	Displays the traffic throughput of the test.

Release History

Release 6.6.2; command was introduced.

Release 6.6.5; **Remote-Stats** and **Throughput (Mbps)** fields added.

Related Commands

[test-oam statistics flash-logging](#) Displays the CPE test configuration and status.

[clear test-oam statistics](#) Clears CPE test statistics.

MIB Objects

```
alaTestOamStatsTable
  alaTestOamConfigTestId
  alaTestOamTxIngressCounter
  alaTestOamTxEgressCounter
  alaTestOamRxIngressCounter
  alaTestOamRemoteStatsCounter
  alaTestOamBandwidthThroughputStr
```

output definitions

Packets Sent	Displays the number of packets sent during a single MAC ping.
Packets Rcvd	Displays the number of packets received during a single MAC ping.
Description	Displays the Test Description parameter value for each test

Release History

Release 6.6.5; command was introduced.

Related Commands

[test-oam statistics flash-logging](#) Displays the CPE test configuration and status.

[clear test-oam statistics](#) Clears CPE test statistics.

MIB Objects

```
alaTestOamSaaStatsTable
  alaTestOamConfigTestId
  alaTestOamSaaRunTime
  alaTestOamSaaPktsSent
  alaTestOamSaaPktsRcvd
  alaTestOamSaaMinRTT
  alaTestOamSaaAvgRTT
  alaTestOamSaaMaxRTT
  alaTestOamSaaMinJitter
  alaTestOamSaaAvgJitter
  alaTestOamSaaMaxJitter
```

clear test-oam statistics

Clears the statistics for all CPE tests or for a specific test name.

clear test-oam [*string*] **statistics**

Syntax Definitions

string The name of an existing CPE test.

Defaults

By default, statistics are cleared for all CPE tests.

Platforms Supported

OmniSwitch 6250, 6450

Usage Guidelines

Use the *string* parameter with this command to clear the statistics for a specific CPE test.

Examples

```
-> clear test-oam Test1 statistics
-> clear test-oam statistics
```

Release History

Release 6.6.2; command was introduced.

Related Commands

[show test-oam statistics](#) Displays the statistics for all CPE tests or for a specific test name. Use this command on both the generator and analyzer switch to determine test results.

[show test-oam saa statistics](#) Displays the SAA test statistics for all CPE tests or for a specific test name.

MIB Objects

```
alaTestOamStatsTable
  alaTestOamConfigTestId
  alaTestOamStatsClearStats
```

test-oam group

Configures the CPE test group name and an optional description. The group name is used to identify and configure a CPE test group.

test-oam group *string* [**descr** *description*]

no test-oam group *string*

Syntax Definitions

<i>string</i>	The name of the CPE test group, an alphanumeric string between 1 and 32 characters. This name is used to identify a specific CPE test-oam group.
<i>description</i>	The description to assign to the CPE test group, an alphanumeric string between 1 and 32 characters.

Defaults

parameter	default
<i>description</i>	DEFAULT

Platforms Supported

OmniSwitch 6250, 6450

Usage Guidelines

- Use the **no** form of this command to remove the specified CPE test group.
- This command creates a CPE test group that is identified by the test-oam name. Make sure the name specified does not exist in the switch configuration.
- To configure a CPE test group, the individual test must be configured.
- A maximum of eight tests can be configured to run concurrently.
- Only one CPE test group can be active on the switch at any given time.

Examples

```
-> test-oam group Testgroup1
-> test-oam group Testgroup2 descr second-testgroup
-> no test-oam group Testgroup1
```

Release History

Release 6.6.3; command was introduced.

Related Commands

show test-oam group statistics Displays the statistics for all CPE test groups or for a specific CPE test group. Use this command on both the generator and analyzer switch to determine test results.

show test-oam group Displays the statistics for all CPE test groups or for a specific CPE test group.

MIB Objects

alaTestOamGroupConfigTable
 alaTestOamConfigGroupId
 alaTestOamConfigGroupDescription
 alaTestOamGroupConfigRowStatus

test-oam group tests

This defines the list of CPE test group tests that need to be added in the test-oam group.

test-oam group *string* [**tests** *string1.....string8*]

test-oam group *string* [**no tests** *string1.....string8*]

Syntax Definitions

<i>string</i>	The name of the CPE test group, an alphanumeric string between 1 and 32 characters. This name is used to identify a specific CPE test group.
<i>string1.....string8</i>	The name of the configured test-oam tests.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6450

Usage Guidelines

- This command defines the list of test-oam tests that need to run concurrently.
- The test must exist, while configuring the test-oam list.
- A maximum of eight tests can be configured to run concurrently.
- When a CPE test group is running, the modification of a test which is part of the group shall not be allowed.
- When a CPE test group is running, the modification of test-oam group parameters shall not be allowed.
- When a CPE test group is running, the modification of a feeder port shall not be allowed.
- use the **no** form of the command to remove the test-oam tests from the CPE test group.

Examples

```
-> test-oam test1
-> test-oam test2
-> test-oam test3
-> test-oam test4
-> test-oam test5
-> test-oam test6
-> test-oam test7
-> test-oam test8
-> test-oam group Testgroup1 descr first-testgroup
-> test-oam group Testgroup1 tests test1 test2 test3 test4 test5 test6 test7 test8
-> test-oam group Testgroup1 no tests test1 test2 test3
```

Release History

Release 6.6.3; command was introduced.

Related Commands

show test-oam group

Displays the configuration and status of the CPE test groups.

show test-oam group

Displays the SAA statistics for all CPE test groups or for a specific CPE test group if mentioned.

MIB Objects

alaTestOamGroupFlowConfigTable

alaTestOamConfigGroupId

alaTestOamConfigTestId

alaTestOamGroupFlowConfigRowStatus

test-oam feeder

This configures the feeder port globally in the system for CPE test group to feed the test traffic to generator port.

test-oam feeder-port *slot/port*

no test-oam feeder-port

Syntax Definitions

slot/port The port to be used to feed the test traffic only to generator port.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6450

Usage Guidelines

- This command configures the feeder port globally in the system.
- The feeder port cannot be the generator port and the generator port cannot be the feeder port.
- When a CPE test group is running, the modification to the feeder port shall not be allowed.
- use the **no** form of the command to remove the feeder port from the system for CPE test group.

Examples

```
-> test-oam feeder-port 1/4  
-> no test-oam feeder-port
```

Release History

Release 6.6.3; command was introduced.

Related Commands

[test-oam group port](#) Configures the port on which the CPE test group will run.
[show test-oam group](#) Displays the configuration and status of the CPE test groups.

MIB Objects

alaTestOamGlobalFeederPort

test-oam group src-endpoint dst-endpoint

Configures the source and destination endpoints for the CPE test group.

test-oam group *string* [**src-endpoint** *src-string* **dst-endpoint** *dst-string*] [**src-endpoint** *src-string*] [**dst-endpoint** *dst-string*]

Syntax Definitions

<i>string</i>	The name of an existing CPE test group.
<i>src-string</i>	The management IP address or DNS host name of the switch that will transmit test traffic.
<i>dst-string</i>	The management IP address or DNS host name of the switch that will receive test traffic. This is the switch on which traffic analysis is done.

Defaults

parameter	default
src-endpoint	DEFAULT
dst-endpoint	DEFAULT

Platforms Supported

OmniSwitch 6250, 6450

Usage Guidelines

- Using the DNS host name of the switch is highly recommended, as this name is unique and is mapped to an IP address configured for the switch.
- When a CPE test group is running, the modification of a test which is part of the group shall not be allowed.
- When a CPE test group is running, the modification of test-oam group parameters shall not be allowed.
- When a CPE test group is running, the modification of a feeder port shall not be allowed.

Examples

```
-> test-oam group Testgroup1 src-endpoint SW1 dst-endpoint SW2
-> test-oam group Testgroup1 src-endpoint SW1
-> test-oam group Testgroup1 dst-endpoint SW2
```

Release History

Release 6.6.3; command was introduced.

Related Commands

- test-oam group duration rate** Configures the duration and rate for the specified CPE test group.
- show test-oam group** Displays the configuration and status of the CPE test groups.

MIB Objects

```
alaTestOamGroupConfigTable  
  alaTestOamConfigGroupId  
  alaTestOamGroupConfigSourceEndpoint  
  alaTestOamGroupConfigDestinationEndpoint
```

test-oam group role

Configures the role the switch will perform for the specified CPE test group. The type of role assigned determines whether the switch transmits (generator) or receives (analyzer) test frames.

test-oam group *name* **role** {**generator** | **analyzer** | **loopback**}

Syntax Definitions

<i>name</i>	The name of an existing CPE test group.
generator	Configures the switch as the test generator.
analyzer	Configures the switch as the test analyzer.
loopback	Configures the switch as loopback.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6450

Usage Guidelines

- When a CPE test group is running, the modification of a test which is part of the group shall not be allowed.
- When a CPE test group is running, the modification of CPE test group parameters shall not be allowed.
- When a CPE test group is running, the modification of a feeder port shall not be allowed.

Examples

```
-> test-oam group Testgroup1 role generator
-> test-oam group Testgroup2 role analyzer
-> test-oam group Testgroup2 role loopback
```

Release History

Release 6.6.3; command was introduced.
Release 6.6.5; **loopback** mode supported.

Related Commands

- test-oam group duration rate** Configures the duration and rate for the specified CPE test group.
- show test-oam group** Displays the configuration and status of the CPE test groups.

MIB Objects

alaTestOamGroupConfigTable
 alaTestOamConfigGroupId
 alaTestOamGroupConfigRole

test-oam group port

Configures the port on which the CPE test group will run. Use this command on the switch that will generate the test traffic.

test-oam group *string* **port** *slot/port*

Syntax Definitions

<i>string</i>	The name of an existing CPE test group.
<i>slot/port</i>	The port on which the CPE test will generate traffic.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6450

Usage Guidelines

- Configuring a port that is not in use is recommended. In addition, if the test port is a UNI port associated with an SAP profile, only that UNI port is used for the test. Traffic on other UNI ports associated with the same profile is *not* disrupted by the CPE test.
- This command automatically overwrites the port value previously configured for the specified CPE test group.
- The feeder port cannot be the generator port and the generator port cannot be the feeder port.
- When a CPE test group is running, the modification of a test which is part of the group shall not be allowed.
- When a CPE test group is running, the modification of CPE test group parameters shall not be allowed.
- When a CPE test group is running, the modification of a feeder port shall not be allowed.

Examples

```
-> test-oam group Testgroup1 port 1/2
```

Release History

Release 6.6.3; command was introduced.

Related Commands

- test-oam group start stop** Starts the traffic test for the CPE test group on the configured port or the given port.
- test-oam group remote-sys-mac** Stops the traffic test for the CPE test group on the configured port or the given port.
- show test-oam group** Displays the configuration and status of the CPE test groups.

MIB Objects

alaTestOamGroupConfigTable
 alaTestOamConfigGroupId
 alaTestOamGroupConfigPort

test-oam group direction

Configures the test direction of the test-oam group.

test-oam group *string* [**direction** {**unidirectional** | **bidirectional**}]

Syntax Definitions

string The name of an existing CPE test group.
direction The direction of the CPE test group.

Defaults

parameter	default
direction	unidirectional

Platforms Supported

OmniSwitch 6250, 6450

Usage Guidelines

- When a CPE test group is running, the modification of a test which is part of the group shall not be allowed.
- When a CPE test group is running, the modification of CPE test group parameters shall not be allowed.
- When a CPE test group is running, the modification of a feeder port shall not be allowed.

Examples

```
-> test-oam group Testgroup1 direction unidirectional
-> test-oam group Testgroup2 direction bidirectional
```

Release History

Release 6.6.3; command was introduced.
 Release 6.6.5; **bidirectional** capability enabled.

Related Commands

[test-oam group duration rate](#) Configures the duration and rate for the specified CPE test group.
[show test-oam group](#) Displays the configuration and status of the CPE test groups.

MIB Objects

```
alaTestOamGroupConfigTable  
    alaTestOamConfigGroupId  
    alaTestOamGroupConfigDirection
```

test-oam group duration rate

Configures the duration and rate for the specified test-oam group. Use this command to configure these test parameters on the generator switch.

test-oam group *string* [**duration** *secs*] [**rate** *rate*]

Syntax Definitions

<i>string</i>	The name of an existing CPE test group.
<i>secs</i>	The duration of the test, in seconds. This is the amount of time the generator will actively transmit test packets to the remote (analyzer) switch. The valid time range is 5–3600 seconds.
<i>rate</i>	The rate, in Kbps or Mbps, at which test traffic is generated. The minimum value allowed is 8 Kbps to line rate. The granularity of the transmit rate is 8 Kbps for 100 Mbps port and 2 Mbps for 1Gig ports.

Defaults

Parameter	Default
<i>secs</i>	5 secs
<i>rate</i>	8 k

Platforms Supported

OmniSwitch 6250, 6450

Usage Guidelines

- This command automatically overwrites any duration and rate parameter values previously configured for the specified CPE test group.
- The status of the CPE test group will change to “ended” when the test duration time expires.
- When a CPE test group is running, the modification of a test which is part of the group shall not be allowed.
- When a CPE test group is running, the modification of CPE test group parameters shall not be allowed.
- When a CPE test group is running, the modification of a feeder port shall not be allowed.

Examples

```
-> test-oam group Testgroup1 duration 10
-> test-oam group Testgroup1 rate 8m
-> test-oam group Testgroup1 duration 10 rate 8m
```

Release History

Release 6.6.3; command was introduced.

Related Commands

show test-oam group

Displays the configuration and status of the CPE test groups.

MIB Objects

alaTestOamGroupConfigTable

 alaTestOamConfigGroupId

 alaTestOamGroupConfigDuration

 alaTestOamGroupConfigGeneratorBandwidth

test-oam group start stop

Starts or stops the traffic test for the test-oam group on the configured port or the given port.

test-oam group *string* {[port slot/port] start | stop} [fetch-remote-stats]

Syntax Definitions

<i>string</i>	The name of an existing CPE test group.
<i>slot/port</i>	The port on which the CPE test group will generate traffic.
start	Enables the test.
stop	Disables the test.
fetch-remote-stats	Triggers the group test at the remote device from the generator. The statistics are collected during the test and the test is stopped after receiving the test results.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6450

Usage Guidelines

- When a CPE test group is running, the modification of a test which is part of the group shall not be allowed.
- When a CPE test group is running, the modification of CPE test group parameters shall not be allowed.
- When a CPE test group is running, the modification of a feeder port shall not be allowed.
- Use the fetch-remote-stats parameter to collect the test statistics from the remote device.

Examples

```
-> test-oam group Testgroup1 port 1/2 start
-> test-oam group Testgroup2 start
-> test-oam group Testgroup1 start fetch-remote-stats
-> test-oam group testgroup2 port 1/2 start fetch-remote-stats
-> test-oam group Testgroup1 stop
-> test-oam group Testgroup2 stop
```

Release History

Release 6.6.3; command was introduced.

Release 6.6.5; **fetch-remote-stats** parameter added.

Related Commands

show test-oam group

Displays the configuration and status of the CPE test groups.

MIB Objects

alaTestOamGroupConfigTable

 alaTestOamConfigGroupId

 alaTestOamGroupConfigPort

 alaTestOamGroupConfigState

 alaTestOamGroupConfigRemoteStatsFetchState

test-oam group remote-sys-mac

Configures the system MAC address of the remote device to receive test OAM messages.

test-oam group *string* **remote-sys-mac** *string*

Syntax Definitions

<i>string</i>	The name of an existing CPE test group.
remote-sys-mac	The system MAC address of the remote device.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6450

Usage Guidelines

- Use this command on the switch to set the system MAC address of the remote device to receive the test OAM messages.
- remote-sys-mac must be the primary CMM MAC address of the remote device.
- remote-sys-mac is not applicable for analyzer or loopback.

Examples

```
-> test-oam group Testgroup1 remote-sys-mac 00:e0:b1:7c:7a:fa
```

Release History

Release 6.6.5; command introduced.

Related Commands

[show test-oam group](#) Displays the configuration and status of the CPE test groups.

MIB Objects

```
alaTestOamGroupConfigTable  
alaTestOamGroupConfigRemoteSysMacAddress
```

clear test-oam group statistics

This clears the statistics of the CPE test group.

clear test-oam group *string* **statistics**

Syntax Definitions

<i>string</i>	The name of an existing CPE test group.
statistics	Clears the statistics for the give CPE test group.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6450

Usage Guidelines

- When a CPE test group is running, the modification of a test which is part of the group shall not be allowed.
- When a CPE test group is running, the modification of CPE test group parameters shall not be allowed.
- When a CPE test group is running, the modification of a feeder port shall not be allowed.

Examples

```
-> clear test-oam group Testgroup1 statistics (Clears the statistics for the
specified test-oam group)
-> clear test-oam group statistics (Clears the statistics for all the test-oam
groups)
```

Release History

Release 6.6.3; command was introduced.

Related Commands

show test-oam group statistics Displays the statistics for all test-oam groups or for a specific CPE test group.

show test-oam group Displays the configuration and status of the CPE test groups.

MIB Objects

```
alaTestOamGroupConfigTable
  alaTestOamConfigGroupId
  alaTestOamGroupConfigStatsClear
```

alaTestOamGlobalGroupClearStats

show test-oam group

Displays the configuration and status of the CPE test groups.

show test-oam group [**tests** | *string*]

Syntax Definitions

tests Displays information for all the CPE test groups.
string The name of an existing CPE test group.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6450

Usage Guidelines

- Use the **tests** parameter to display information for all CPE test groups configured on the switch.
- Use the *string* parameter to display detailed information for a specific CPE test group.

Examples

```
-> show test-oam group tests
```

```
Total Test-Groups: 2
Feeder Port       : none
Test-Group  Port  Duration      Rate  Nb of  Direction  Status      Remote-Sys-Mac
Test-Group  Port  (secs)                               Flows
-----+-----+-----+-----+-----+-----+-----+-----
Testgroup1 none    5          -         2  unidirectional  not-started  00:00:00:00:00:00
Testgroup2 none    5          -         3  unidirectional  not-started  00:00:00:00:00:00
```

output definitions

Test-Groups	The CPE test group. Configured through the test-oam group command.
Port	The port on which the test is run.
Duration	The amount of time the test will run.
Rate	The rate at which packets are transmitted on the test port. Configured through the test-oam group duration rate command.
Nb of Flows	Number of test flows configured for the respective CPE test group.
Direction	The direction of the test traffic. Note that only unidirectional traffic tests are supported.
Status	The operational status of the test.
Remote-Sys-Mac	The MAC address of the remote device configured through the test-oam group remote-sys-mac command.

```
-> show test-oam group Testgroup1
Legend: Port: * = Inactive port

TEST Parameters for Testgroup1:
Source Endpoint      : SW1,
Destination Endpoint : SW2,
Test Group Description : first-testgroup,
Direction           : bidirectional,
Role                 : generator,
Tx Rate              : 10m,
Duration             : 60 (secs),
Port                 : 1/5,
State                : stop,
Status               : not-started,
Remote Sys MAC       : E8:E7:32:32:A6:EE
Flow 1:
  Test Name          : test1,
  Vlan                : 1001,
  Tx Rate             : 10m,
  Source MAC          : 00:11:22:12:44:55,
  Destination MAC     : 00:22:33:12:55:66,
  Remote Sys MAC      : E8:E7:32:32:A6:EE,
  Frame Size          : 64,
  L2-SAA DE           : False,
  L2-SAA Payload Size : 64,
  L2-SAA Count        : 5,
  L2-SAA Interval     : 1000,
  L2-SAA Priority      : 0
  L2-SAA Continuous   : no
Flow 2:
  Test Name          : test2,
  Vlan                : 1001,
  Tx Rate             : 10m,
  Source MAC          : 00:11:22:13:44:55,
  Destination MAC     : 00:22:33:13:55:66,
  Remote Sys MAC      : E8:E7:32:32:A6:EE,
  Frame Size          : 100,
  L2-SAA DE           : True,
  L2-SAA Payload Size : 120,
  L2-SAA Count        : 0,
  L2-SAA Interval     : 900,
  L2-SAA Priority      : 6
  L2-SAA Continuous   : yes
Flow 3:
  Test Name          : test3,
  Vlan                : 1001,
  Tx Rate             : 10m,
  Source MAC          : 00:11:22:14:44:55,
  Destination MAC     : 00:22:33:14:55:66,
  Remote Sys MAC      : E8:E7:32:32:A6:EE,
  Frame Size          : 100,
  L2-SAA DE           : True,
  L2-SAA Payload Size : 120,
  L2-SAA Count        : 0,
  L2-SAA Interval     : 900,
  L2-SAA Priority      : 6
  L2-SAA Continuous   : yes
Flow 4:
  Test Name          : test4,
```



```

Vlan                : 1001,
Tx Rate             : 10m,
Source MAC          : 00:11:22:15:44:55,
Destination MAC     : 00:22:33:15:55:66,
Remote Sys MAC      : E8:E7:32:32:A6:EE,
Frame Size          : 100
L2-SAA DE           : True,
L2-SAA Payload Size : 120,
L2-SAA Count        : 0,
L2-SAA Interval     : 900,
L2-SAA Priority      : 6
L2-SAA Continuous   : yes

```

output definitions

Test-Groups	The CPE test group. Configured through the test-oam group command.
Port	The port on which the test is run.
Source Endpoint	The host name for the source (generator) switch. Configured through the test-oam group src-endpoint dst-endpoint command.
Destination Endpoint	The host name for the destination (analyzer) switch. Configured through the test-oam group src-endpoint dst-endpoint command.
Source Mac	The source MAC address of the test frame. Configured through the test-oam vlan test-frame command.
Destination Mac	The destination MAC address of the test frame. Configured through the test-oam vlan test-frame command.
Remote Sys Mac	The MAC address of the remote device configured through the test-oam group remote-sys-mac command.
Duration	The amount of time the test will run.
Role	The role of the switch for this test (generator or analyzer). Configured through the test-oam role command.
Rate	The rate at which packets are transmitted on the test port. Configured through the test-oam group duration rate command.
Frame Size	The size of the test frame. Configured through the test-oam group duration rate command.
Direction	The direction of the test traffic. Note that only unidirectional traffic tests are supported.
Status	The operational status of the test.
L2-SAA Count	Specifies the number of packets sent in one MAC ping iteration.
L2-SAA Interval	Specifies the delay between two consecutive packets transmitted during a MAC ping iteration.
L2-SAA DE	Specifies if the drop enable bit value is used.
L2-SAA Payload Size	Specifies the size of the MAC ping payload used for the MAC ping operation.
L2-SAA Priority	Specifies the priority value set for the L2 SAA frames.
L2-SAA Continuous	Specifies the SAA session will run continuously until the test-oam session ends.

Release History

Release 6.6.3; command was introduced.

Release 6.6.5; **Remote Sys Mac** and **L2-SAA** details added.

Release 6.7.1; **L2-SAA continuous** details added.

Related Commands

show test-oam group Displays the statistics for all CPE test groups or for a specific CPE test group.

MIB Objects

```

alaTestOamGloabalFeederPort
alaTestOamGroupConfigTable
alaTestOamGroupConfigRowStatus
    alaTestOamConfigGroupId
    alaTestOamGroupConfigPort
    alaTestOamGroupConfigDuration
    alaTestOamGroupConfigGeneratorBandwidth
    alaTestOamGroupConfigFlowCount
    alaTestOamGroupConfigDirection
    alaTestOamGroupConfigStatus
    alaTestOamGroupConfigRemoteStatsFetchState
    alaTestOamGroupConfigRemoteSysMacAddress
alaTestOamGroupConfigTable
    alaTestOamConfigGroupId
    alaTestOamGroupConfigSourceEndpoint
    alaTestOamGroupConfigDestinationEndpoint
    alaTestOamConfigGroupDescription
    alaTestOamGroupConfigDirection
    alaTestOamGroupConfigRole
    alaTestOamGroupConfigGeneratorBandwidth
    alaTestOamGroupConfigDuration
    alaTestOamGroupConfigPort
    alaTestOamGroupConfigState
    alaTestOamGroupConfigStatus
    alaTestOamGroupConfigStatsClear

alaTestOamGroupFlowConfigTable
    alaTestOamConfigTestId
    alaTestOamGroupFlowVlan
    alaTestOamConfigGroupId
    alaTestOamGroupFlowGeneratorBandwidth
    alaTestOamGroupFlowFrameSrcMacAddress
    alaTestOamGroupFlowFrameDstMacAddress
    alaTestOamGroupFlowGeneratorPacketSize

```


output definitions

Jitter Avg	Displays the average jitter value.
Jitter Max	Displays the maximum jitter value.
Packets Sent	Displays the number of packets sent during a single MAC ping.
Packets Rcvd	Displays the number of packets received during a single MAC ping.
Description	Displays the description for each provided by the user during the test creation. By default it is displayed as "DEFAULT".

Release History

Release 6.6.5; command was introduced.

Related Commands

- show test-oam group** Displays the configuration and status of the CPE test groups.
- clear test-oam group statistics** This clears the statistics of the CPE test group.

MIB Objects

```

alaTestOamGroupFlowSaaStats
  alaTestOamConfigGroupId
  alaTestOamConfigTestId
  alaTestOamGroupFlowSaaStatsEntry
  alaTestOamGroupFlowSaaRunTime
  alaTestOamGroupFlowSaaPktsSent
  alaTestOamGroupFlowSaaPktsRcvd
  alaTestOamGroupFlowSaaRunTime
  alaTestOamGroupFlowSaaMinRTT
  alaTestOamGroupFlowSaaAvgRTT
  alaTestOamGroupFlowSaaMaxRTT
  alaTestOamGroupFlowSaaMinJitter
  alaTestOamGroupFlowSaaAvgJitter
  alaTestOamGroupFlowSaaMaxJitter

```

output definitions

RX-Ingress	The number of test packets received on the ingress NNI. This value is relevant on the receiving (analyzer) switch for the specific test.
Remote-Stats	The number of test frames received by the analyzer and fetched by the generator device.
Throughput(Mbs)	Displays the traffic throughput of the test.

Release History

Release 6.6.3; command was introduced.

Release 6.6.5; **Remote-Stats** and **Throughput (Mbps)** fields added.

Related Commands

show test-oam group Displays the configuration and status of the CPE test groups.

test-oam group remote-sys-mac Clears the statistics of the CPE test group.

MIB Objects

```
alaTestOamGroupFlowStatsTable
  alaTestOamConfigGroupId
  alaTestOamConfigTestId
  alaTestOamGroupFlowTxIngressCounter
  alaTestOamGroupFlowTxEgressCounter
  alaTestOamGroupFlowRxIngressCounter
  alaTestOamGroupFlowRemoteStatsCounter
  alaTestOamGroupBandwidthThroughputStr
```

20 Source Learning Commands

Source Learning is responsible for creating, updating, and deleting source and destination MAC Address entries in the MAC Address Table. This chapter includes descriptions of Source Learning commands used to create or delete static MAC addresses, define the aging time value for static and dynamically learned MAC addresses, and display MAC Address Table entries and statistics.

MIB information for Source Learning commands is as follows:

Filename: AlcatelInd1MacAddress.mib
Module: ALCATEL-IND1-MAC-ADDRESS-MIB

A summary of the available commands is listed here:

mac-address-table
mac-address-table static-multicast
mac-address-table aging-time
source-learning
show mac-address-table
show mac-address-table static-multicast
show mac-address-table count
show mac-address-table aging-time
show source-learning

mac-address-table

Configures a destination unicast MAC address. The configured (static) MAC address is assigned to a non-mobile switch port or link aggregate ID and VLAN. Packets received on ports associated with the specified VLAN that contain a destination MAC address that matches the static MAC address are forwarded to the specified port. Static destination MAC addresses are maintained in the Source Learning MAC address table.

mac-address-table [**permanent**] *mac_address* {*slot/port* | **linkagg** *link_agg*} *vid* [**bridging** | **filtering**]

no mac-address-table [**permanent** | **learned**] [*mac_address* {*slot/port* | **linkagg** *link_agg*} *vid*]

Syntax Definitions

permanent	Defines a permanent static MAC Address that is not removed when the switch reboots.
learned	Specifies that the MAC address is a dynamically learned address.
<i>mac_address</i>	Enter the destination MAC Address to add to the MAC Address Table (for example, 00:00:39:59:f1:0c).
<i>slot/port</i>	Enter the slot number for the module and the physical port number on that module (for example, 3/1 specifies port 1 on slot 3).
<i>link_agg</i>	Enter a link aggregate ID number (0–31). See Chapter 12, “Link Aggregation Commands.”
<i>vid</i>	VLAN ID number (1–4094).
bridging	Specifies that all packets to or from this MAC address are bridged.
filtering	Specifies that all packets to or from this MAC address are dropped.

Defaults

parameter	default
permanent	permanent
bridging filtering	bridging

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Use the **no** form of this command to remove a MAC address from the Source Learning MAC Address Table.
- When **no mac-address-table** command is used, the 802.1x users entry will continue to be maintained in mac-address-table and 802.1x table and there will not be impact on 802.1x users traffic.
- The specified slot/port or link aggregate ID must already belong to the specified VLAN. Use the **vlan port default** command to assign a port or link aggregate ID to a VLAN before you configure the static MAC address. Only traffic from other ports associated with the same VLAN is directed to the static MAC address slot/port.

- Select the **filtering** parameter to set up a denial of service to block potential hostile attacks. Traffic sent to or from a filtered MAC address is dropped. Select the **bridging** parameter for regular traffic flow to or from the MAC address.
- If a packet received on a port associated with the same VLAN contains a source address that matches a static MAC address, the packet is discarded.
- Static MACs are not supported on mobile ports.
- Only static MAC address entries with a **permanent** management status are captured when a snapshot of the switch's running configuration is taken.
- Use the **mac-address-table aging-time** command (see [page 20-6](#)) to set the aging time value for all static and dynamically learned MAC addresses. This is the value applied to static MAC addresses defined using the **mac-address-table timeout** form of this command.

Examples

```
-> mac-address-table permanent 00:00:39:59:f1:0c 4/2 355
-> no mac-address-table
-> no mac-address-table 5/1 755
-> no mac-address-table permanent
```

Release History

Release 6.6.1; command was introduced.

Related Commands

mac-address-table aging-time	Configures aging time, in seconds, for static and dynamically learned MAC addresses.
show mac-address-table	Displays Source Learning MAC Address Table information.
show mac-address-table count	Displays Source Learning MAC Address Table statistics.
show mac-address-table aging-time	Displays the current aging time value for the Source Learning MAC Address Table.

MIB Objects

```
sLMacAddressTable
  sLMacAddress
  sLMacAddressManagement
  sLMacAddressDisposition
```

mac-address-table static-multicast

Configures a static multicast MAC address and assigns the address to one or more egress ports. Packets received on ports associated with the specified VLAN that contain a destination MAC address that matches the static multicast address are forwarded to the specified egress ports. Static multicast MAC addresses are maintained in the Source Learning MAC address table.

mac-address-table static-multicast *multicast_address* {*slot1/port1[-port1a]* [*slot2/port2[-port2a]*...]} / **linkagg** *link_agg* *vid*

no mac-address-table static-multicast [*multicast_address* {*slot1/port1[-port1a]* [*slot2/port2[-port2a]*...]} / **linkagg** *link_agg* *vid*]

Syntax Definitions

<i>multicast_address</i>	Enter the destination multicast MAC Address to add to the MAC Address Table (for example, 01:00:39:59:f1:0c).
<i>slot1/port1[-port1a]</i>	The egress slot and port combination that is assigned to the static multicast MAC address. You may enter multiple ports and port ranges.
<i>slot2/port2[-port2a]</i>	Additional egress slot and port combinations may be assigned to the static multicast MAC address. You may enter multiple ports and port ranges.
<i>link_agg</i>	Enter a link aggregate ID number (0–29). See Chapter 12, “Link Aggregation Commands.”
<i>vid</i>	VLAN ID number (1–4094).

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Use the **no** form of this command to remove a static multicast MAC address from the Source Learning MAC Address Table. Note that if no parameters are specified with this form of the command, then all static multicast addresses are removed.
- Note that a MAC address is considered a multicast MAC address if the least significant bit of the most significant octet of the address is enabled. For example, MAC addresses with a prefix of 01, 03, 05, 13, and so on, are multicast MAC addresses.
- If a multicast prefix value is not present, then the address is treated as a regular MAC address and not allowed when using the **mac-address-table static-multicast** command. Also note that multicast addresses within the following ranges are not supported:

```
01:00:5E:00:00:00 to 01:00:5E:7F:FF:FF
01:80:C2:XX.XX.XX
33:33:XX:XX:XX:XX
```

- The configured (static) multicast MAC address is assigned to a non-mobile switch port or link aggregate ID and VLAN. Static multicast MACs are not supported on mobile ports.
- In addition to configuring the same static multicast address for multiple ports within a given VLAN, it is also possible to use the same multicast address across multiple VLANs.
- The specified slot/port or link aggregate ID must already belong to the specified VLAN. Use the **vlan port default** command to assign a port or link aggregate ID to a VLAN before you configure the static MAC address. Only traffic from other ports associated with the same VLAN is directed to the static multicast MAC address slot/port.
- If the **configuration snapshot** or **write memory** command is entered after a static multicast MAC address is configured, the resulting ASCII file or **boot.cfg** file includes the following additional syntax for the **mac-address-table static-multicast** command:

group *num*

This syntax indicates the number of the multicast group that the switch has assigned to the multicast MAC address for the given VLAN association. Each multicast address – VLAN association is treated as a unique instance and assigned a group number specific to that instance. Up to 1022 such instances are supported per switch.

- Note that if the port assigned to a multicast MAC address is down or administratively disabled when the **configuration snapshot** or **write memory** command is used, the multicast MAC address is not saved to the resulting ASCII file or **boot.cfg** file.

Examples

```
-> mac-address-table static-multicast 02:00:39:59:f1:0c 4/2 355
-> mac-address-table static-multicast 01:00:00:3a:44:11 1/12-24 255
-> mac-address-table static-multicast 03:00:00:3a:44:12 1/10 2/1-6 3/1-8 1500
-> mac-address-table static-multicast 04:00:00:3a:44:13 linkagg 10 455
-> no mac-address-table static-multicast 03:00:00:3a:44:12 1/10 1500
-> no mac-address-table static-multicast 04:00:00:3a:44:13 linkagg 10 455
-> no mac-address-table static-multicast
```

Release History

Release 6.6.1; command was introduced.

Related Commands

- | | |
|--|---|
| show mac-address-table | Displays Source Learning MAC Address Table information. |
| show mac-address-table static-multicast | Displays a list of static multicast MAC addresses that are configured in the Source Learning MAC Address Table. |
| show mac-address-table count | Displays Source Learning MAC Address Table statistics. |

MIB Objects

```
sLMacAddressTable
  sLMacAddress
  sLMacAddressManagement
  sLMacAddressDisposition
```

mac-address-table aging-time

Configures aging time, in seconds, for static and dynamically learned MAC addresses. When a MAC address has aged beyond the aging-time value, the MAC address is discarded.

mac-address-table aging-time *seconds*

no mac-address-table aging-time

Syntax Definitions

seconds Aging time value (in seconds). Do not use commas in value. The range is 60—634.

Defaults

By default, the aging time is set to 300 seconds.

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Use the **no** form of this command to set the aging-time back to the default value of 300 seconds.
- The aging time value is a global value that applies to all VLANs. Configuring this value on a per VLAN basis is not supported on this platform.
- Note that an inactive MAC address may take up to twice as long as the aging time value specified to age out of the MAC address table. For example, if an aging time of 60 seconds is specified, the MAC will age out any time between 60 and 120 seconds of inactivity.
- If the **timeout** parameter is not specified when using the **mac-address-table** command (see [page 20-2](#)) to configure a static MAC address, then the aging time value is not applied to the static MAC address.
- The MAC address table aging time is also used as the timeout value for the Address Resolution Protocol (ARP) table. This timeout value determines how long the switch retains dynamically learned ARP table entries.

Examples

```
-> mac-address-table aging-time 1200
-> no mac-address-table aging-time
```

Release History

Release 6.6.1; command was introduced.

Related Commands

mac-address-table	Configures a static destination Unicast MAC address for a VLAN bridge.
show mac-address-table	Displays Source Learning MAC Address Table information.
show mac-address-table count	Displays Source Learning MAC Address Table statistics.
show mac-address-table aging-time	Displays the current aging time value for the Source Learning MAC Address Table.

MIB Objects

```
s1MacAddressAgingTable  
  s1MacAgingValue
```

source-learning

Configures the status of source MAC address learning on a single port, a range of ports, or on a link aggregate of ports.

```
source-learning {port slot/port1[-port2] / linkagg linkagg_num} {enable | disable}
```

Syntax Definitions

<i>slot/port1</i>	The slot number for the module and the physical port number on that module (for example, 3/1 specifies port 1 on slot 3).
<i>-port2</i>	The last port number in a range of ports that you want to configure on the same slot (for example, 3/1-4 specifies ports 1, 2, 3, and 4 on slot 3).
<i>linkagg_num</i>	Specifies the link aggregate port ID.
enable	Enables source learning.
disable	Disables source learning.

Defaults

By default, source learning is enabled on all ports.

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Configuring source learning is not supported on mobile ports, Learned Port Security ports, individual ports which are members of a link aggregate, or Access Guardian (802.1x) ports.
- When port-based source learning is configured for a link aggregate ID, it affects all the ports that are members of the link aggregate.
- When source-learning is disabled on a port or link aggregate, all dynamically learned MAC addresses are removed from the MAC address table.
- Static MAC addresses associated with a port or link aggregate are *not* cleared when source learning is disabled. Also, new static MAC address configurations are allowed on ports or link aggregates even when source learning is disabled on them.
- Disabling source learning on a port or link aggregate is useful on a ring configuration where switch A does not have to learn MAC addresses from switch B or for a Transparent LAN Service, where the service provider does not require the MAC addresses of the customer network.

Examples

```
-> source-learning port 1/2 disable
-> source-learning port 1/3-9 disable
-> source-learning linkagg 10 disable
```

Release History

Release 6.6.1; command introduced.

Related Commands

[show source-learning](#)

Displays Source Learning status of each port or linkagg ports on a switch.

MIB Objects

```
s1MacAddressTable  
s1MacLearningControlTable  
  s1MacLearningControlEntry  
  s1MacLearningControlStatus
```

show mac-address-table

Displays Source Learning MAC Address Table information.

```
show mac-address-table [permanent | learned] [mac_address] [slot slot | slot/port] [linkagg link_agg]  
[vid | vid1-vid2]
```

Syntax Definitions

permanent	Display static MAC addresses with a permanent status.
learned	Display dynamically learned MAC addresses.
<i>mac_address</i>	Enter a MAC Address (for example, 00:00:39:59:f1:0c).
<i>slot</i>	Enter the slot number for a module to specify that the command has to include all ports on that module (for example, 6 specifies all ports on the module found in slot 6 of the switch chassis).
<i>slot/port</i>	Enter the slot number and the physical port number on that module (for example, 3/1 specifies port 1 on slot 3).
<i>link_agg</i>	Enter a link aggregate ID number (0–31). See Chapter 12, “Link Aggregation Commands.”
<i>vid</i>	A single VLAN ID number (1–4094).
<i>vid1-vid2</i>	A contiguous range of VLAN ID numbers (for example, 5-10).

Defaults

By default, information is displayed for all MAC addresses contained in the table.

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Note that only one VLAN entry—a single VLAN ID or a range of VLAN IDs— is allowed with this command. Multiple entries are not accepted.
- If a static MAC address is configured on a port link that is down or disabled, an asterisk appears to the right of the MAC address in the **show mac-address-table** command display. The asterisk indicates that this is an invalid MAC address. When the port link comes up, however, the MAC address is then considered valid and the asterisk no longer appears next to the address in the display.

Examples

```
-> show mac-address-table
```

Legend: Mac Address: * = address not valid

Vlan	Mac Address	Type	Protocol	Operation	Interface
1	00:00:00:00:00:01	learned	0800	bridging	8/ 1
1	00:d0:95:6a:73:9a	learned	aaaa0003	bridging	10/23

Total number of Valid MAC addresses above = 2

```
-> show mac-address-table 10-15
```

Legend: Mac Address: * = address not valid

Vlan	Mac Address	Type	Protocol	Operation	Interface
10	00:00:00:00:00:01	learned	0800	bridging	1/2
10	00:d0:95:6a:73:9a	learned	aaaa0003	bridging	1/2
11	00:d0:95:a3:e0:0d	learned	---	bridging	1/3
11	00:d0:95:a3:e5:09	learned	---	bridging	1/3
11	00:d0:95:a3:e7:75	learned	---	bridging	1/4
12	00:d0:95:a3:ed:f7	learned	---	bridging	2/1
12	00:d0:95:a8:2a:b6	learned	---	bridging	2/1
12	00:d0:95:ad:e3:cc	learned	---	bridging	2/1
13	00:d0:95:ae:3b:f6	learned	---	bridging	2/8
13	00:d0:95:b2:3d:fa	learned	---	bridging	2/8

Total number of Valid MAC addresses above = 14

output definitions

VLAN	Vlan ID number associated with the MAC address and slot/port.
Mac Address	MAC address that is currently learned or statically assigned.
Type	MAC address management status: learned or permanent . Use the mac-address-table command on page 20-2 to configure the management status for a static MAC address.
Protocol	Protocol type for the MAC address entry. Note that if the hardware source learning mode is active for the port, this field is blank.
Operation	The disposition of the MAC address: bridging (default) or filtering . Use the mac-address-table command on page 20-2 to configure the disposition for a static MAC address.
Interface	The slot number for the module and the physical port number on that module that is associated with the static or dynamically learned MAC address. If the interface is a link aggregate ID, zero is displayed as the slot number (for example, 0/29).

Release History

Release 6.6.1; command was introduced.

Related Commands

- show mac-address-table count** Displays Source Learning MAC Address Table statistics.
- show mac-address-table aging-time** Displays the current aging time value for the Source Learning MAC Address Table.

MIB Objects

```
s1MacAddressTable
  s1MacAddress
  s1MacAddressManagement
  s1MacAddressDisposition
  s1MacAddressProtocol
```

show mac-address-table static-multicast

Displays the static multicast MAC address configuration for the switch.

```
show mac-address-table static-multicast [multicast_address] [slot slot | slot/port] [linkagg link_agg]  
[vid | vid1-vid2]
```

Syntax Definitions

<i>multicast_address</i>	Enter a multicast MAC Address (for example, 01:00:39:59:f1:0c).
<i>slot</i>	Enter the slot number for a module to specify that the command has to include all ports on that module (for example, 6 specifies all ports on the module found in slot 6 of the switch chassis).
<i>slot/port</i>	Enter the slot number and the physical port number on that module (for example, 3/1 specifies port 1 on slot 3).
<i>link_agg</i>	Enter a link aggregate ID number (0–29). See Chapter 12, “Link Aggregation Commands.”
<i>vid</i>	VLAN ID number (1–4094).
<i>vid1-vid2</i>	A contiguous range of VLAN ID numbers (for example, 5-10).

Defaults

By default, information is displayed for all static multicast MAC addresses contained in the MAC address table.

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Note that only one VLAN entry—a single VLAN ID or a range of VLAN IDs—is allowed with this command. Multiple entries are not accepted.
- Note that if a static multicast MAC address is configured on a port link that is down or disabled, the configured multicast address does not appear in the **show mac-address-table static-multicast** command display.
- The **show mac-address-table** command display, however, includes all static multicast addresses regardless of whether or not the port assigned to the address is up or down. See the second example below.
- When the **show mac-address-table** command is used to display MAC addresses known to the switch, an asterisk appears to the left of all static MAC addresses that are configured on a port link that is down or disabled. The asterisk indicates that MAC address is invalid. When the port link comes up, however, the MAC address is then considered valid and the asterisk no longer appears next to the address in the display.

Examples

In the example below, the static multicast address 01:00:00:00:00:01 is associated with port 1/1, which is down. As a result, this address does not appear in the **show mac-address-table static-multicast** display but is included in the **show mac-address-table** display with an asterisk.

```
-> show mac-address-table static-multicast
```

```
Legend: Mac Address: * = address not valid
```

Vlan	Mac Address	Type	Protocol	Operation	Interface
1	01:00:00:00:00:02	static-mcast	---	bridging	2/6

Total number of Valid MAC addresses above = 1

```
-> show mac-address-table
```

```
Legend: Mac Address: * = address not valid
```

Vlan	Mac Address	Type	Protocol	Operation	Interface
* 1	01:00:00:00:00:01	static-mcast	0	bridging	1/1
24	00:d0:95:e4:cf:5a	learned	---	bridging	1/2
24	00:d0:95:e5:af:52	learned	---	bridging	1/2
24	00:e0:4c:bc:ce:a1	learned	---	bridging	1/2
1	01:00:00:00:00:02	static-mcast	---	bridging	2/6
1	00:d0:95:e2:77:38	learned	---	bridging	3/19

Total number of Valid MAC addresses above = 5

output definitions

VLAN	Vlan ID number associated with the static multicast address.
Mac Address	The multicast MAC address that is statically assigned to the VLAN and slot/port.
Type	Indicates the MAC address is a static multicast (static-mcast) address. This type of address is configured through the mac-address-table static-multicast command.
Protocol	Protocol type for the MAC address entry.
Operation	The disposition of the MAC address: bridging (default) or filtering . Note that this value is always set to bridging for static multicast addresses.
Interface	The slot number for the module and the physical port number on that module that is associated with the static multicast MAC address. If the interface is a link aggregate ID, zero is displayed as the slot number (for example, 0/29).

Release History

Release 6.6.1; command was introduced.

Related Commands

show mac-address-table Displays Source Learning MAC Address Table information.

show mac-address-table count Displays Source Learning MAC Address Table statistics.

MIB Objects

```
s1MacAddressTable  
  s1MacAddress  
  s1MacAddressManagement  
  s1MacAddressDisposition  
  s1MacAddressProtocol
```

show mac-address-table count

Displays Source Learning MAC Address Table statistics.

```
show mac-address-table count [mac_address] [slot slot | slot/port] [linkagg link_agg] [vid | vid1-vid2]
```

Syntax Definitions

<i>mac_address</i>	MAC Address (for example, 00:00:39:59:f1:0c).
<i>slot</i> <i>slot/port</i>	Slot number for the module or the slot number and the physical port number on that module (for example, 3/1 specifies port 1 on slot 3).
<i>link_agg</i>	Enter a link aggregate ID number (0–31). See Chapter 12, “Link Aggregation Commands.”
<i>vid</i>	VLAN ID number (1–4094).

Defaults

By default, the count statistics are displayed for all MAC addresses contained in the MAC address table.

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- To display statistics for all ports on one slot, specify only the slot number for the **slot** parameter value.
- Note that only one VLAN entry—a single VLAN ID or a range of VLAN IDs—is allowed with this command. Multiple entries are not accepted.

Examples

```
-> show mac-address-table count
```

```
Mac Address Table count:
Permanent Address Count           = 1
DeleteOnReset Address Count       = 0
DeleteOnTimeout Address Count     = 0
Dynamic Learned Address Count     = 6
Total MAC Address In Use          = 7
```

```
-> show mac-address-table count 10-20
```

```
Mac Address Table count:
Permanent Address Count           = 0
DeleteOnReset Address Count       = 0
DeleteOnTimeout Address Count     = 0
Dynamic Learned Address Count     = 28
Total MAC Address In Use          = 28
```

output definitions

Permanent Address Count	The number of static MAC addresses configured on the switch with a permanent management status (MAC address is never aged out).
DeleteOnReset Address Count	The number of static MAC addresses configured on the switch with a reset management status (MAC address is deleted on the next switch reboot).
DeleteOnTimeout Address Count	The number of static MAC addresses configured on the switch with a timeout management status (MAC address ages out according to the MAC address table aging timer value).
Dynamic Learned Address Count	The number of MAC addresses learned by the switch. These are MAC addresses that are not statically configured addresses.
Total MAC Address In Use	The total number of MAC addresses (learned and static) that are known to the switch.

Release History

Release 6.6.1; command was introduced.

Related Commands

show mac-address-table	Displays Source Learning MAC Address Table information.
show mac-address-table aging-time	Displays the current aging time value for the Source Learning MAC Address Table.

MIB Objects

N/A

show mac-address-table aging-time

Displays the current aging time value.

show mac-address-table aging-time

Syntax Definitions

N/A

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- The MAC Address Table aging time applies to static MAC addresses that were defined using the **time-out** parameter (see [page 20-2](#)) and to dynamically learned MAC addresses.
- Note that the aging time is the same for all VLANs because it is not configurable on a per-VLAN basis. The aging time value on this platform is a global parameter that applies to all VLANs.

Examples

```
-> show mac-address-table aging-time
Mac Address Aging Time (seconds) = 300
```

Release History

Release 6.6.1; command was introduced.

Related Commands

[show mac-address-table](#) Displays Source Learning MAC Address Table information.

[show mac-address-table count](#) Displays Source Learning MAC Address Table statistics.

MIB Objects

```
sLMacAddressAgingTable
  sLMacAgingValue
```

show source-learning

Displays the source learning status of a port or link aggregate of ports.

show source-learning [**port** *slot/port*[-*port2*] | **linkagg** *linkagg_num*]

Syntax Definitions

<i>slot/port1</i>	The slot number for the module and the physical port number on that module (for example, 3/1 specifies port 1 on slot 3).
<i>-port2</i>	The last port number in a range of ports that you want to configure on the same slot (for example, 3/1-4 specifies ports 1, 2, 3, and 4 on slot 3).
<i>linkagg_num</i>	Specifies the link aggregate identifier.

Defaults

By default, the source learning status for all switch ports and link aggregates is displayed.

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Use the **port** *slot/port* or **linkagg** *linkagg_num* parameters to display the source learning status for a specific port or link aggregate ID.
- When the source learning status is configured for a link aggregate ID, it affects all the ports that are members of the link aggregate. However, source learning status cannot be configured on individual ports which are members of the link aggregate.

Example

```
-> show source-learning
port  source-learning
-----+-----
1/1    disabled
1/2    enabled
1/3    disabled

-> show source-learning port 1/2
port  source-learning
-----+-----
1/2    disabled

-> show source-learning linkagg 10
port  source-learning
-----+-----
0/10   disabled
```

output definitions

port	The slot/port number for a switch port or a link aggregate ID number. If the interface is a link aggregate ID, zero is displayed as the slot number (for example, 0/29).
source-learning	The source learning status of the port or link aggregate (enabled or disabled). Configured through the source-learning command.

Release History

Release 6.6.1; command was introduced

Related Commands

source-learning Configures the status of source MAC address learning on a single port, a range of ports or on a link aggregate of ports.

MIB Objects

```
s1MacAddressTable  
s1MacLearningControlTable  
  s1MacLearningControlEntry  
  s1MacLearningControlStatus
```

21 PPPoE Intermediate Agent

Point-to-Point Protocol over Ethernet (PPPoE) provides the ability to connect a network of hosts to a Remote Access Concentrator. For example, Broadband Network Gateway over a simple bridging access device. In PPPoE model, each host utilizes its own Point-to-Point Protocol (PPP) stack and the user is presented with a familiar user interface. By using PPPoE, Access control, billing, and type of service can be configured on a per-user, rather than a per-site, basis.

PPPoE Intermediate Agent (PPPoE-IA) solution is designed for the PPPoE access method and is based on the Access Node implementing a PPPoE-IA function to insert access loop identification in PPPoE discovery packets (PADI/PADR/PADT) received from the user side.

MIB information for the PPPoE-IA commands is as follows:

Filename: alcatel-ind1-pppoe-ia-mib.mib
Module: ALCATEL-IND1-PPPOEIA-MIB

A summary of the available commands is listed here.

pppoe-ia
pppoe-ia {port | linkagg}
pppoe-ia {trust | client}
pppoe-ia access-node-id
pppoe-ia circuit-id
pppoe-ia remote-id
clear pppoe-ia statistics
show pppoe-ia configuration
show pppoe-ia {port | linkagg}
show pppoe-ia statistics

Configuration procedures for PPPoE-IA are explained in the “Configuring PPPoE Intermediate Agent” chapter of the *OmniSwitch AOS Release 6250/6350/6450 Network Configuration Guide*.

pppoe-ia

Enable or disable PPPoE-IA globally on the switch.

pppoe-ia {enable | disable}

Syntax Definitions

enable	Enable PPPoE-IA.
disable	Disable PPPoE-IA.

Defaults

By default, PPPoE-IA is disabled globally on the switch.

Platforms Supported

OmniSwitch 6250, 6450

Usage Guidelines

All PPPoE-IA parameters are configurable irrespective of the global status of PPPoE-IA.

Examples

```
-> pppoe-ia enable  
-> pppoe-ia disable
```

Release History

Release 6.6.3; command introduced.

Related Commands

pppoe-ia {port linkagg}	Enable or disable PPPoE-IA on a port or a link aggregate port.
pppoe-ia {trust client}	Configures a port or a link aggregate port as trust or client port for PPPoE-IA.
pppoe-ia access-node-id	Globally configures a format to form an identifier that uniquely identifies an access node.
pppoe-ia circuit-id	Globally configures a Circuit-ID format that forms an identifier that uniquely identifies an access node and an access loop on which the PADI/PADR/PADT is received from the user side.
pppoe-ia remote-id	Globally configures a format to form an identifier that uniquely identifies the user attached to the access loop.
clear pppoe-ia statistics	Clears the statistics for all the physical or link-aggregate ports, a single port or a link aggregate port, or a range of physical ports for PPPoE-IA.
show pppoe-ia configuration	Displays the global configuration for PPPoE-IA.
show pppoe-ia {port linkagg}	Displays the PPPoE-IA configuration for a physical port, physical port range, link aggregate port, or all the physical or link-aggregate ports.
show pppoe-ia statistics	Displays the PPPoE-IA statistics for a physical port, link aggregate port, physical port range, or all the physical or link-aggregate ports.

MIB Objects

alaPPPoE-IAGlobalStatus

pppoe-ia {port | linkagg}

Enable or disable PPPoE-IA on a port or a link aggregate port. Link aggregate can be either static or dynamic.

pppoe-ia {port *slot/port[-port2]* | linkagg *agg_num*} {enable | disable}

Syntax Definitions

<i>slot</i>	The slot number for the module (for example, 3 specifies slot 3)
<i>port</i>	Port number of the interface to be configured (for example, 3/1 specifies port 1 on slot 3)
<i>port2</i>	Last port number in a range of ports to be configured (for example, 3/1-4 specifies ports 1, 2, 3, and 4 on slot 3).
linkagg <i>agg_num</i>	The link aggregate identification number.
enable	Enable PPPoE-IA on a port.
disable	Disable PPPoE-IA on a port.

Defaults

By default, PPPoE-IA is disabled on all ports.

Platforms Supported

OmniSwitch 6250, 6450

Usage Guidelines

- All PPPoE-IA parameters are configurable irrespective of the per-port PPPoE-IA status (enabled or disabled).
- PPPoE-IA must be enabled globally as well as on a port.
- PPPoE-IA is not supported on port mirroring destination ports. However, the configurations are accepted.
- PPPoE-IA is not supported on aggregable ports.

Examples

```
-> pppoe-ia port 1/1 enable
-> pppoe-ia port 2/4 disable
-> pppoe-ia linkagg 1 enable
```

Release History

Release 6.6.3; command introduced.

Related Commands

pppoe-ia

Enable or disable PPPoE-IA globally on the switch.

show pppoe-ia configuration

Displays the global configuration for PPPoE-IA.

show pppoe-ia {port | linkagg}

Displays the PPPoE-IA configuration for a physical port, physical port range, link aggregate port, or all the physical or link-aggregate ports.

show pppoe-ia statistics

Displays the PPPoE-IA statistics for a physical port, link aggregate port, physical port range, or all the physical or link-aggregate ports.

MIB Objects

alaPPPoEIAPortConfigTable

alaPPPoEIAPortConfigStatus

pppoe-ia {trust | client}

Configures a port or a link aggregate port as trusted or client port for PPPoE-IA.

A trust port is a port that is connected to the Broadband Network Gateway whereas a client port is connected to the host.

pppoe-ia {port slot/port[-port2] | linkagg agg_num} {trust | client}

Syntax Definitions

<i>slot</i>	The slot number for the module (for example, 3 specifies slot 3)
<i>port</i>	Port number of the interface to be configured (for example, 3/1 specifies port 1 on slot 3)
<i>port2</i>	Last port number in a range of ports to be configured (for example, 3/1-4 specifies ports 1, 2, 3, and 4 on slot 3).
linkagg agg_num	Specifies the link aggregate identification number.
trust	Specifies the mode of the port as trust.
client	Specifies the mode of the port as client.

Defaults

By default, all ports are client ports.

Platforms Supported

OmniSwitch 6250, 6450

Usage Guidelines

- All PPPoE-IA parameters are configurable irrespective of per-port PPPoE-IA status (enabled or disabled).
- PPPoE-IA must be enabled globally as well as on a port.
- For PPPoE-IA to work, it must be enabled on a client port as well as a trusted port.
- PPPoE-IA is not supported on aggregable ports.
- PPPoE-IA is not supported on port mirroring destination ports; however, the configurations are accepted.

Examples

```
-> pppoe-ia port 1/1 trust
-> pppoe-ia port 1/2-6 client
-> pppoe-ia linkagg 7 trust
-> pppoe-ia linkagg 0 client
```

Release History

Release 6.6.3; command introduced.

Related Commands

pppoe-ia	Enable or disable PPPoE-IA globally on the switch.
pppoe-ia {port linkagg}	Enable or disable PPPoE-IA on a port or a link aggregate port.
pppoe-ia {trust client}	Configures a port or a link aggregate port as trust or client port for PPPoE-IA.
show pppoe-ia configuration	Displays the global configuration for PPPoE-IA.
show pppoe-ia {port linkagg}	Displays the PPPoE-IA configuration for a physical port, physical port range, link aggregate port, or all the physical or link-aggregate ports.
show pppoe-ia statistics	Displays the PPPoE-IA statistics for a physical port, link aggregate port, physical port range, or all the physical or link-aggregate ports.

MIB Objects

alaPPPoEIAPortConfigTable
alaPPPoEIAPortConfigTrustMode

pppoe-ia access-node-id

Globally configures a format to form an identifier that uniquely identifies an access node.

```
pppoe-ia access-node-id {base-mac | system-name | mgnt-address | user-string string}
```

Syntax Definitions

base-mac	The base MAC address of the switch.
system-name	The configured name of the switch.
mgnt-address	The IP address of the management interface of the switch.
<i>string</i>	The value of user configured string.

Defaults

By default, PPPoE-IA uses the base MAC address of the switch as the Access-Node-Identifier.

Platforms Supported

OmniSwitch 6250, 6450

Usage Guidelines

- The access-node-identifier can have a maximum of 32 characters. The access-node-identifier longer than 32 characters is truncated to 32 characters.
- The access-node-identifier when configured as user-string must not contain spaces.
- The value of user string must not be NULL.
- In case of management address format, IP address of the Loopback0 interface (if configured and active) or the first active IP interface address is used as the management address. If none of them are available, IP address '0.0.0.0' is used as management address.
- If the access-node-identifier is configured as any other format other than user-string format, then the string value configuration is not allowed through SNMP or Web View application.
- It is mandatory to provide the string value through SNMP using Multi-varbind for the user-string format.

Examples

```
-> pppoe-ia access-node-id base-mac  
-> pppoe-ia access-node-id user-string accessnode1
```

Release History

Release 6.6.3; command introduced.

Related Commands

pppoe-ia	Enable or disable PPPoE-IA globally on the switch.
pppoe-ia {port linkagg}	Enable or disable PPPoE-IA on a port or a link aggregate port.
pppoe-ia {trust client}	Configures a port or a link aggregate port as trust or client port for PPPoE-IA.
clear pppoe-ia statistics	Clears the statistics for all the physical or link-aggregate ports, a single port or a link aggregate port, or a range of physical ports for PPPoE-IA.
show pppoe-ia configuration	Displays the global configuration for PPPoE-IA.
show pppoe-ia {port linkagg}	Displays the PPPoE-IA configuration for a physical port, physical port range, link aggregate port, or all the physical or link-aggregate ports.
show pppoe-ia statistics	Displays the PPPoE-IA statistics for a physical port, link aggregate port, physical port range, or all the physical or link-aggregate ports.

MIB Objects

```
alaPPPoEIAGlobalAccessNodeIDFormatType  
alaPPPoEIAGlobalAccessNodeIDStringValue
```

pppoe-ia circuit-id

Globally configures a Circuit-ID format that forms an identifier that uniquely identifies an access node and an access loop that receives the PPPoE Active Discovery Initiation (PADI) or PPPoE Active Discovery Request (PADR) or PPPoE Active Discovery Terminate (PADT) from the user end.

pppoe-ia circuit-id {**default** [**atm**] **ascii** [**base-mac** | **system-name** | **interface** | **vlan** | **cvlan** | **interface-alias** | **user-string** *string* | **delimiter** *char*]}

Syntax Definitions

default	The default value of the Circuit-ID used for the ethernet parameter.
atm	When the PPPoE-IA Circuit-ID format is configured as “default atm” the Circuit-ID encoding happens for “ATM” (Asynchronous Transfer Mode) parameter..
ascii	Circuit-ID format used to configure Circuit-ID string using the five parameters and delimiter. Maximum five parameters can be selected from the given seven options: base-mac, system-name, interface, vlan, cvlan, interface-alias, and user-string.
base-mac	The base MAC address of the switch.
system-name	Name configured for the switch.
interface	The interface on which the PPPoE message is received.
vlan	VLAN interface on which the PPPoE message is received.
cvlan	Inner-VLAN or customer VLAN of the PPPoE message.
interface-alias	Configured alias of the interface on which the PPPoE message is received.
<i>string</i>	The value of user configured string.
delimiter	A user configurable delimiter used to separate the fields of an ASCII string forming the Circuit-ID.
<i>char</i>	The value (a character) of the user configurable delimiter.

Defaults

parameter	default
<i>char</i>	:

By default, “:” (colon) is used as the delimiter.

Platforms Supported

OmniSwitch 6250, 6450

Usage Guidelines

- Circuit-ID identification is configurable only globally and cannot be configured on a per-port or per-VLAN basis.

- To configure ethernet default parameter, use “default” in the CLI command.
- To configure default parameter as “atm”, use “default ATM” in the CLI command.
- When the PPPoE-IA Circuit-ID format is configured as “default atm” the Circuit-ID encoding happens for “ATM” (Asynchronous Transfer Mode) parameter.
- By default, the value of the Circuit-ID is "access-node-id eth slot/port[:vlan-id]". For example, if the value of access-node-id is "vxTarget", the default value of Circuit-ID is "vxTarget eth 1/1:10", if the packet is received on the interface 1/1 in vlan 10.
- By default, the delimiter used is “:”. The available delimiters are: “:” (colon), “|” (pipe), “/” (forward slash), “\” (backward slash), “-” (hyphen), “_” (underscore), “ ” (space), “#” (hash), “.” (full stop), “,” (comma), “;” (semicolon).
- The Circuit-ID can have a maximum of 63 characters. The Circuit-ID longer than 63 characters is truncated to 63 characters.
- At most, five fields out of the available seven is encoded for the Circuit-ID in the order specified by the user.
- If the access-node-identifier is configured as any other format other than user-string format, then the string value configuration is not allowed through SNMP or Web View application.
- It is mandatory to provide the string value through SNMP using Multi-varbind for the user-string format.
- The value of user string must not be NULL.
- You can configure the same Circuit-ID format multiple times (for example, base MAC address of the switch can be configured multiple times in ASCII format of Circuit-ID).
- If the Circuit-ID format is default, irrespective of the ASCII fields (if configured), the Circuit-ID configuration is not visible in **show pppoe-ia configuration** output.

Examples

```
-> pppoe-ia circuit-id default
-> pppoe-ia circuit-id default atm
-> pppoe-ia circuit-id ascii base-mac vlan
-> pppoe-ia circuit-id ascii system-name interface user-string cid1
-> pppoe-ia circuit-id ascii system-name delimiter #
```

Release History

Release 6.6.3; command introduced.

Release 6.6.4; “atm” keyword was added.

Related Commands

pppoe-ia	Enable or disable PPPoE-IA globally on the switch.
pppoe-ia {trust client}	Configures a port or a link aggregate port as trust or client port for PPPoE-IA.
show pppoe-ia configuration	Displays the global configuration for PPPoE-IA.
show pppoe-ia {port linkagg}	Displays the PPPoE-IA configuration for a physical port, physical port range, link aggregate port, or all the physical or link-aggregate ports.
show pppoe-ia statistics	Displays the PPPoE-IA statistics for a physical port, link aggregate port, physical port range, or all the physical or link-aggregate ports.

MIB Objects

```
alaPPPoEIAGlobalCircuitIDFormatType  
alaPPPoEIAGlobalCircuitIDField1  
alaPPPoEIAGlobalCircuitIDField1StrVal  
alaPPPoEIAGlobalCircuitIDField2  
alaPPPoEIAGlobalCircuitIDField2StrVal  
alaPPPoEIAGlobalCircuitIDField3  
alaPPPoEIAGlobalCircuitIDField3StrVal  
alaPPPoEIAGlobalCircuitIDField4  
alaPPPoEIAGlobalCircuitIDField4StrVal  
alaPPPoEIAGlobalCircuitIDField5  
alaPPPoEIAGlobalCircuitIDField5StrVal  
alaPPPoEIAGlobalCircuitIDDelimiter
```

pppoe-ia remote-id

Globally configures a format to form an identifier that uniquely identifies the user attached to the access loop.

pppoe-ia remote-id {**base-mac** | **system-name** | **mgnt-address** | **user-string** *string*}

Syntax Definitions

base-mac	The base MAC address of the switch.
system-name	The name configured for the switch.
mgnt-address	The management IP address of the switch.
<i>string</i>	The value configured for user string.

Defaults

By default, the base MAC address of the switch is used as the format for Remote-ID.

Platforms Supported

OmniSwitch 6250, 6450

Usage Guidelines

- Remote-ID is configurable only globally and cannot be configured on a per-port or per-VLAN basis.
- Remote-ID can have a maximum of 63 characters. The Remote-ID longer than 63 characters is truncated to 63 characters.
- In case of management address format, IP address of the Loopback0 interface (if configured and active) or the first active IP interface address is used as the management address. If none of them are available, IP address '0.0.0.0' is used as management address.
- If the Remote-ID is configured as any other format other than user-string format, then the string value configuration is not allowed through SNMP or Web View application.
- It is mandatory to provide the string value through SNMP using Multi-varbind for the user-string format.
- The value of user string must not be NULL.

Examples

```
-> pppoe-ia remote-id base-mac
-> pppoe-ia remote-id user-string remoteuser1
```

Release History

Release 6.6.3; command introduced.

Related Commands

pppoe-ia

Enable or disable PPPoE-IA globally on the switch.

pppoe-ia {trust | client}

Configures a port or a link aggregate port as trust or client port for PPPoE-IA.

show pppoe-ia configuration

Displays the global configuration for PPPoE-IA.

show pppoe-ia {port | linkagg}

Displays the PPPoE-IA configuration for a physical port, physical port range, link aggregate port, or all the physical or link-aggregate ports.

show pppoe-ia statistics

Displays the PPPoE-IA statistics for a physical port, link aggregate port, physical port range, or all the physical or link-aggregate ports.

MIB Objects

alaPPPoEIAGlobalRemoteIDFormatType
alaPPPoEIAGlobalRemoteIDStringValue

clear pppoe-ia statistics

Clears the statistics for all the physical or link-aggregate ports, a single port or a link aggregate port, or a range of physical ports for PPPoE-IA.

clear pppoe-ia statistics [**port** {*slot/port*[-*port2*] | **linkagg** *agg_num*]

Syntax Definitions

<i>slot</i>	The slot number for the module (for example, 3 specifies slot 3)
<i>port</i>	Port number of the interface to be configured (for example, 3/1 specifies port 1 on slot 3)
<i>port2</i>	Last port number in a range of ports to be configured (for example, 3/1-4 specifies ports 1, 2, 3, and 4 on slot 3).
linkagg <i>agg_num</i>	Specifies the link aggregate identification number.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6450

Usage Guidelines

N/A

Examples

```
-> clear pppoe-ia statistics
-> clear pppoe-ia statistics linkagg 13
```

Release History

Release 6.6.3; command introduced.

Related Commands

[pppoe-ia access-node-id](#)

Globally configures a format to form an identifier that uniquely identifies an access node.

[pppoe-ia circuit-id](#)

Globally configures a Circuit-ID format that forms an identifier that uniquely identifies an access node and an access loop on which the PADI/PADR/PADT is received from the user side.

[show pppoe-ia statistics](#)

Displays the PPPoE-IA statistics for a physical port, link aggregate port, physical port range, or all the physical or link-aggregate ports.

MIB Objects

```
alaPPPoEIAGlobalClearStats  
alaPPPoEIAStatsTable  
    alaPPPoEIAStatsClearStats
```

show pppoe-ia configuration

Displays the global configuration for PPPoE-IA.

show pppoe-ia configuration

Syntax Definitions

N/A

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6450

Usage Guidelines

- If the Circuit-ID is configured with “default” parameter, then the Circuit-ID format will display as “ethernet”.
- If the Circuit-ID is configured with “default atm” parameter, then the Circuit-ID format will display as “atm”.

Examples

```

Default Configuration
-> pppoe-ia circuit-id default
-> show pppoe-ia configuration
Status                               : disabled,
Access Node Identifier
  Access-node-id Format               : base-mac,
  Access-node-id String              : 00:d0:95:ee:fb:02,
Circuit Identifier
  Circuit-Id Format                   : ethernet,
  Circuit-id Field1                  : none,
  Circuit-id Field1 String           : ,
  Circuit-id Field2                  : none,
  Circuit-id Field2 String           : ,
  Circuit-id Field3                  : none,
  Circuit-id Field3 String           : ,
  Circuit-id Field4                  : none,
  Circuit-id Field4 String           : ,
  Circuit-id Field5                  : none,
  Circuit-id Field5 String           : ,
  Circuit-id Delimiter               : ":",
Remote Identifier
  Remote-id Format                    : base-mac,
  Remote-id String                   : 00:d0:95:ee:fb:02

```

```

-> pppoe-ia circuit-id default atm
-> show pppoe-ia configuration
Status                               : enabled,
Access Node Identifier
  Access-node-id Format                : base-mac,
  Access-node-id String                : 00:d0:95:ee:fb:02,
Circuit Identifier
  Circuit-Id Format                    : atm,
  Circuit-id Field1                   : none,
  Circuit-id Field1 String             : ,
  Circuit-id Field2                   : none,
  Circuit-id Field2 String             : ,
  Circuit-id Field3                   : none,
  Circuit-id Field3 String             : ,
  Circuit-id Field4                   : none,
  Circuit-id Field4 String             : ,
  Circuit-id Field5                   : none,
  Circuit-id Field5 String             : ,
  Circuit-id Delimiter                 : ":",
Remote Identifier
  Remote-id Format                     : base-mac,
  Remote-id String                     : 00:d0:95:ee:fb:02

```

output definitions

Status	Displays the global PPPoE-IA status: Enabled or Disabled.
Access-node-id Format	The format used to form an identifier that uniquely identifies an access node.
Access-node-id String	The value of user configured string for the access node.
Circuit-Id Format	The format used to form an identifier that uniquely identifies an access node and an access loop.
Circuit-id Field1	The Circuit-ID format.
Circuit-id Field1 String	The value of Circuit-ID depending on the format configured for the Circuit-ID.
Circuit-id Delimiter	A user configurable delimiter (a character) used to separate the fields of an ASCII string forming the Circuit-ID.
Remote-id Format	The format used to form an identifier that uniquely identifies the user attached to the access loop.
Remote-id String	The value of user configured string for the Remote-ID.

Release History

Release 6.6.3; command introduced.

Related Commands

pppoe-ia	Enable or disable PPPoE-IA globally on the switch.
pppoe-ia access-node-id	Globally configures a format to form an identifier that uniquely identifies an access node.
pppoe-ia circuit-id	Globally configures a Circuit-ID format that forms an identifier that uniquely identifies an access node and an access loop on which the PADI/PADR/PADT is received from the user side.
pppoe-ia remote-id	Globally configures a format to form an identifier that uniquely identifies the user attached to the access loop.
show pppoe-ia statistics	Displays the PPPoE-IA statistics for a physical port, link aggregate port, physical port range, or all the physical or link-aggregate ports.

MIB Objects

```

alaPPPoEIAGlobalStatus
  alaPPPoEIAGlobalAccessNodeIDFormatType
  alaPPPoEIAGlobalAccessNodeIDStringValue
  alaPPPoEIAGlobalCircuitIDFormatType
  alaPPPoEIAGlobalCircuitIDField1
  alaPPPoEIAGlobalCircuitIDField1StrVal
  alaPPPoEIAGlobalCircuitIDField2
  alaPPPoEIAGlobalCircuitIDField2StrVal
  alaPPPoEIAGlobalCircuitIDField3
  alaPPPoEIAGlobalCircuitIDField3StrVal
  alaPPPoEIAGlobalCircuitIDField4
  alaPPPoEIAGlobalCircuitIDField4StrVal
  alaPPPoEIAGlobalCircuitIDField5
  alaPPPoEIAGlobalCircuitIDField5StrVal
  alaPPPoEIAGlobalCircuitIDDelimiter
  alaPPPoEIAGlobalRemoteIDFormatType
  alaPPPoEIAGlobalRemoteIDStringValue
  alaPPPoEIAGlobalClearStats

```

show pppoe-ia {port | linkagg}

Displays the following:

- PPPoE-IA configuration for a physical or link-aggregate port, physical port range, or all the physical or link-aggregate ports.
- Port or port range configuration for ports with PPPoE-IA enabled or disabled
- Ports that are configured as trust or client port for PPPoE-IA.

show pppoe-ia {port {slot/port[-port2] | linkagg agg_num} [enabled | disabled | trusted | client]

Syntax Definitions

<i>slot</i>	The slot number for the module (for example, 3 specifies slot 3)
<i>port</i>	Port number of the interface to be configured (for example, 3/1 specifies port 1 on slot 3)
<i>port2</i>	Last port number in a range of ports to be configured (for example, 3/1-4 specifies ports 1, 2, 3, and 4 on slot 3).
linkagg <i>agg_num</i>	Specifies the link aggregate identification number.
enabled	PPPoE-IA enabled port.
disable	PPPoE-IA disabled port.
trust	Port configured as trust.
client	Port configured as client.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6450

Usage Guidelines

N/A

Examples

```
Default Configuration
-> show pppoe-ia port
Slot/Port      Status      Mode
-----+-----+-----
1/1            enabled     client
1/2            disabled    trusted
1/3            disabled    client
1/4            enabled     trusted
.
.
.
```

```

1/24      enabled   client
0/0       enabled   client
0/1       disabled  trusted

```

```

-> show pppoe-ia linkagg 1 enabled
ERROR: PPPoE-IA is disabled on linkagg 1

```

```

-> show pppoe-ia port 1/1 trusted
Slot/Port  Status
-----+-----
1/3        enabled

```

```

-> show pppoe-ia port 1/1-5 client
Slot/Port  Status
-----+-----
1/1        enabled
1/2        disabled
1/5        disabled

```

output definitions

Slot/Port	Interface slot and port number.
Status	PPPoE-IA enabled or disabled port.
Mode	Port configured as trust or client port for PPPoE-IA.

Release History

Release 6.6.3; command introduced.

Related Commands

pppoe-ia	Enable or disable PPPoE-IA globally on the switch.
pppoe-ia {trust client}	Configures a port or a link aggregate port as trust or client port for PPPoE-IA.
clear pppoe-ia statistics	Clears the statistics for all the physical or link-aggregate ports, a single port or a link aggregate port, or a range of physical ports for PPPoE-IA.
show pppoe-ia configuration	Displays the global configuration for PPPoE-IA.
show pppoe-ia statistics	Displays the PPPoE-IA statistics for a physical port, link aggregate port, physical port range, or all the physical or link-aggregate ports.

MIB Objects

```

alaPPPoEIAGlobalStatus
alaPPPoEIAGlobalAccessNodeIDFormatType
alaPPPoEIAGlobalAccessNodeIDStringValue
alaPPPoEIAGlobalCircuitIDFormatType
alaPPPoEIAGlobalCircuitIDField1
alaPPPoEIAGlobalCircuitIDField1StrVal
alaPPPoEIAGlobalCircuitIDField2
alaPPPoEIAGlobalCircuitIDField2StrVal
alaPPPoEIAGlobalCircuitIDField3

```

```
alaPPPoEIAGlobalCircuitIDField3StrVal  
alaPPPoEIAGlobalCircuitIDField4  
alaPPPoEIAGlobalCircuitIDField4StrVal  
alaPPPoEIAGlobalCircuitIDField5  
alaPPPoEIAGlobalCircuitIDField5StrVal  
alaPPPoEIAGlobalCircuitIDDelimiter  
alaPPPoEIAGlobalRemoteIDFormatType  
alaPPPoEIAGlobalRemoteIDStringValue
```

show pppoe-ia statistics

Displays the PPPoE-IA statistics for a physical port, link aggregate port, physical port range, or all the physical or link-aggregate ports.

show pppoe-ia {port {slot/port[-port2]} | linkagg agg_num} statistics

Syntax Definitions

<i>slot</i>	The slot number for the module (for example, 3 specifies slot 3)
<i>port</i>	Port number of the interface to be configured (for example, 3/1 specifies port 1 on slot 3)
<i>port2</i>	Last port number in a range of ports to be configured (for example, 3/1-4 specifies ports 1, 2, 3, and 4 on slot 3).
linkagg <i>agg_num</i>	Specifies the link aggregate identification number.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6450

Usage Guidelines

N/A

Examples

Default Configuration

```
-> show pppoe-ia statistics
```

Slot/ Port	PADI Rx	PADR Rx	PADT Rx	PADI Discard	PADR Discard	PADT Discard	PADO Discard	PADS Discard
1/1	2	2	0	1	0	0	2	3
1/2	2	1	0	1	0	0	2	0
1/3	3	2	2	2	1	2	2	3
.								
1/24	2	2	0	1	0	0	2	3
0/0	2	2	0	1	0	0	2	3
0/1	2	2	0	1	0	0	2	3

```
-> show pppoe-ia linkagg 1 statistics
```

Slot/ Port	PADI Rx	PADR Rx	PADT Rx	PADI Discard	PADR Discard	PADT Discard	PADO Discard	PADS Discard
0/1	2	2	0	1	0	0	2	3

output definitions

Slot/Port	Interface slot and port number.
PADI Rx	Valid PADI (PPPoE Active Discovery Initiation) packets received on the client port.
PADR Rx	Valid PADR (PPPoE Active Discovery Request) packets received on the client port.
PADT Rx	Valid PADT (PPPoE Active Discovery Terminate) packets received on the client port.
PADI Discard	Invalid (malformed or PDU length exceeds 1484) PADI packets received on the client port or no enabled trust port in the same VLAN as the client port.
PADR Discard	Invalid (malformed or PDU length exceeds 1500) PADR packets received on client port or no enabled trust port in the same VLAN as the client port.
PADT Discard	Invalid (malformed or PDU length exceeds 1500) PADT packets received on client port or no enabled trust port in the same VLAN as the client port.
PADO Discard	Total PADO (PPPoE Active Discovery Offer) packets received on the client port.
PADS Discard	Total PADS (PPPoE Active Discovery Session-confirmation) packets received on the client port.

Release History

Release 6.6.3; command introduced.

Related Commands

pppoe-ia access-node-id	Globally configures a format to form an identifier that uniquely identifies an access node.
pppoe-ia circuit-id	Globally configures a Circuit-ID format that forms an identifier that uniquely identifies an access node and an access loop on which the PADI/PADR/PADT is received from the user side.
pppoe-ia remote-id	Globally configures a format to form an identifier that uniquely identifies the user attached to the access loop.
clear pppoe-ia statistics	Clears the statistics for all the physical or link-aggregate ports, a single port or a link aggregate port, or a range of physical ports for PPPoE-IA.
show pppoe-ia configuration	Displays the global configuration for PPPoE-IA.

MIB Objects

```

alaPPPoEIAStatsTable
  alaPPPoEIAStatsIfIndex
  alaPPPoEIAStatsPADIRxCounter
  alaPPPoEIAStatsPADRRxCounter
  alaPPPoEIAStatsPADTRxCounter

```

```
alaPPPoEIAStatsPADIRxDiscardCounter  
alaPPPoEIAStatsPADRRxDiscardCounter  
alaPPPoEIAStatsPADTRxDiscardCounter  
alaPPPoEIAStatsPADORxDiscardCounter  
alaPPPoEIAStatsPADSRxDiscardCounter
```

22 Learned Port Security Commands

Learned Port Security (LPS) provides a mechanism for controlling network device communication on one or more switch ports. LPS does not support link aggregate and tagged (trunked) link aggregate ports. LPS can be used to control source MAC address learning.

Configurable LPS parameters allow the user to restrict source learning on a port to:

- A maximum number of learned source MAC addresses.
- A specific amount of time during which source MAC addresses are learned.
- An individual learned source MAC address.
- A range of learned source MAC addresses.

This chapter includes descriptions of the CLI commands used to define LPS parameters and display information about the current LPS configuration.

MIB information for Learned Port Security commands is as follows:

Filename: AlcatelInd1LearnedPortSecurity.mib
Module: ALCATEL-IND1-LPS-MIB

A summary of the available commands is listed here:

port-security
port-security shutdown
port-security maximum
port-security max-filtering
port-security convert-to-static
port-security mac
port-security mac-range
port-security violation
port-security release
port-security learn-trap-threshold
show port-security
show port-security shutdown
show port-security brief

port-security

Enables or disables LPS on the switch ports. When LPS is enabled, only devices that have a source MAC address that complies with LPS restrictions are learned on the ports.

port-security *slot/port*[-*port2*] [**admin-status** {**enable** | **disable** | **locked**}]

port-security chassis {**convert-to-static** | **disable**}

no port security *slot/port*[-*port2*]

Syntax Definitions

<i>slot/port</i>	The slot number for the module and the physical port number on that module (for example, 3/1 specifies port 1 on slot 3).
<i>-port2</i>	The last port number in a range of ports you want to configure on the same slot (for example, 3/1-4 specifies ports 1-4 on slot 3).
enable	Enables LPS on the specified port.
disable	Disables LPS on the specified port.
locked	Disables source learning on the specified LPS port.
chassis convert-to-static	Converts the learned bridge MAC address on all the LPS ports into static MAC address. This does not apply to filtered MAC addresses.
chassis disable	Disables all LPS-eligible ports on the chassis.

Defaults

By default, LPS is disabled on all switch ports.

parameter	default
enable disable locked	enable

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Use the **no** form of this command to remove LPS and clear all entries from the table. This command enables the switch port to learn new MAC addresses.
- Use the **locked** parameter to disable learning on the port. All MAC addresses are flushed and the packets are dropped.
- The **port-security chassis disable** command disables all the LPS-eligible ports on the chassis. Disabling port security restricts a port from learning new MAC addresses.
- Use the **port-security chassis convert-to-static** command to stop the aging-out of MAC address learned on the LPS ports.
- LPS is supported on 10/100 and Gigabit Ethernet fixed, mobile, authenticated, 802.1Q tagged ports, and 802.1x ports.

- LPS is not supported on 10 Gigabit Ethernet, link aggregate, or 802.1Q tagged link aggregate (trunked) ports.
- When LPS is enabled on an active port, all MAC addresses learned on that port prior to the time LPS was enabled are cleared from the source learning MAC address table.
- Configurable MAC learning restrictions consist of setting a source learning time limit window, specifying a maximum number of MAC addresses allowed on a specific port, configuring a list of MAC addresses (individual or range of addresses) allowed on the port, and determining how a port handles traffic that is unauthorized.
- When **admin-status** is disabled, all filtered MAC addresses on the port are removed and all bridged and static MAC addresses are retained in "forwarding" state. The LPS static MAC configuration is retained. Source learning is set for the port and all new MAC addresses are learned. The port-security configuration is allowed but not applied, but configuration of LPS static MAC is not allowed.

Examples

```
-> port-security 4/8 admin-status enable
-> port-security 2/1-10 admin-status enable
-> port-security 2/11-15 admin-status disable
-> port-security 4/3 admin-status locked
-> no port-security 1/1-12
-> port-security chassis disable
-> port-security chassis convert-to-static
```

Release History

Release 6.6.1; command introduced.

Release 6.6.3; **admin-status locked** and **convert-to-static** parameters added.

Related Commands

port-security mac	Configures a single authorized source MAC address for a port that belongs to a specified VLAN.
port-security mac-range	Configures a list of authorized MAC addresses by defining a range of addresses allowed on the port.
port-security maximum	Specifies the maximum number of source MAC addresses that an LPS port is allowed to learn.
port-security shutdown	Configures the amount of time in minutes to allow source learning on all LPS ports.
port-security violation	Selects the method for handling traffic that does not comply with LPS restrictions for the specified ports.

MIB Objects

```
learnedPortSecurityTable
  lpsAdminStatus
```

port-security shutdown

Configures the amount of time (in minutes) to allow source learning on all LPS ports. This LPS parameter applies to the entire switch.

When the time limit expires, source learning of *new* MAC addresses is stopped on all LPS ports. Only configured authorized MAC addresses are still allowed on LPS ports. This command also enables or disables the conversion of dynamic MAC addresses to static MAC addresses on LPS ports.

Configures all the options for learning window to default when the shut down time is zero and default option is applied.

port-security shutdown *num* [**no-aging** {enable | disable}] [**convert-to-static** {enable | disable}] [**boot-up** {enable | disable}] [**mac-move** {enable | disable}] [**learn-as-static** {enable | disable}]

port-security shutdown 0 default

Syntax Definitions

<i>num</i>	The number of minutes during which LPS allows source learning across all LPS ports. This amount of time defines the LPS learning window. Learning window value can range from 0-65535 (in minutes).
convert-to-static enable	Converts dynamically learned MAC addresses to static MAC addresses.
convert-to-static disable	Disables conversion of dynamically learned MAC addresses to static MAC addresses.
no-aging enable	Prevents dynamically learned MAC addresses from aging out or getting flushed during the LPS learning window time period.
no-aging disable	Allows dynamically learned MAC addresses to age out or get flushed during the LPS learning window time period.
boot-up enable	Enables the automatic start of the LPS learning window timer when the switch restarts.
boot-up disable	Disables the start of the LPS learning window timer when the switch restarts.
mac-move enable	Enables the movement of pseudo-static or static MAC when learning window is enabled.
mac-move disable	Disables the movement of pseudo-static or static MAC when learning window is enabled or disabled.
learn-as-static enable	Enables LAS functionality. This option is used for learning a MAC as static when learning window is active.
learn-as-static disable	Disables LAS functionality without removing LPS configuration. Learning is unrestricted.
default	All options for learning window are set to their default values.

Defaults

By default, the LPS source learning time limit is not set for the switch.

parameter	default
convert-to-static	disable
no-aging	disable
boot-up	enable
learn-as-static	disable
mac-move	disable

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- The LPS source learning time window is started and/or reset each time the **port-security shutdown** command is issued or when the **port-security shutdown boot-up** option is enabled and the switch restarts.
- When **no-aging** is enabled on an LPS port, the MAC addresses are automatically learned as pseudo static MAC addresses during the LPS learning window time period. (Pseudo static MAC addresses are the MAC addresses that are learned dynamically in the system and are converted to static on the switch). These learned MAC addresses are not affected by aging and flushing operations that occur during the learning window. Once the learning window expires, if the **convert-to-static** option is disabled, these MAC addresses remain as pseudo static. Else if **convert-to-static** is enabled, MAC is converted to static address.
- The MAC addresses entering the LPS enabled port is learned as filtered MAC after the learning window expires in the system. The maximum number of filtered MAC addresses that can be learned is limited by a configurable parameter 'max-filtering'.
- For example, consider a scenario where maximum number of MAC addresses allowed is set to 30 and maximum filtering allowed is 7. If the learning window expires, then only the filtering MAC addresses up to "seven" is learned. After learning seven filtering MAC addresses, the port goes to violation state.
- For example, consider a scenario where maximum MAC address is set to 5, and the max-filtering value is set to 10. If the learning window is running, and if five MAC addresses are learned on the port, then the other ten new MAC addresses is learned as filtering MAC addresses. The 11th MAC puts the port in violation state.
- If the **convert-to-static** parameter is enabled and the LPS source learning time window expires, then all the dynamic MAC addresses are converted to static MAC addresses. This stops the MAC addresses from aging out.
- The conversion of dynamic MAC addresses to static does not apply to LPS mobile and authenticated ports.
- When **learn-as-static** is enabled, during learning window the MAC is learned as pseudo-static and automatically set to a static LPS even if convert-to-static is enabled or disabled. For a duplicate MAC learned during the learning window, MAC movement is allowed when both **learn-as-static** and **mac-move** are enabled.

- The **no-aging** option must be enabled before enabling **learn-as-static**.
 - If **no-aging** is disabled, then, enabling **learn-as-static** displays an error message:
"Cannot enable learn as static option as no-aging option is not enabled".
 - If **learn-as-static** is enabled, then, disabling **no-aging** option displays an error message:
"Cannot disable no-aging as learn-as-static or mac-move still enabled"
- When **mac-move** is enabled, during learning window:
 - A pseudo-static MAC is allowed to move to a new port and the MAC is removed from the old port.
 - In case of Static MACs, the same MACs are learned as static on new port and are marked as duplicate on the old port.
 - When learning window expires, pseudo static MACs move as a filter to the new port and flushed at old port.
 - In case of static MACs, the MAC is learned as a filter at new port and duplicate at old port.
- The **no-aging** option must be enabled before enabling **mac-move**.
 - If **no-aging** is disabled, then, enabling **mac-move** displays an error message:
ERROR: Cannot enable learn as static option as no-aging option is not enabled.
 - If **mac-move** is disabled, then, enabling **no-aging** displays an error message:
ERROR: Cannot disable no-aging as learn-as-static or mac-move still enabled.
- A maximum of 64 MACs can be configured on a port. If total number of configured MACs are greater than 64, then, enabling **mac-move** displays an error message:
ERROR: Cannot enable mac-move as total count of the MACs(p-static/static) is greater than 64.
- Consider that **admin-status** and operation status of a port is disabled using **port-security** command with **port-security chassis convert-to-static** option and **port-security shutdown no-aging** option enabled.
Now, if user changes the **admin-status** from **disabled** to **locked**, CLI displays an error message:
ERROR: LPS admin status cannot be locked for LPS admin disabled port as it is not a valid configuration.
- When **mac-move** is enabled while the default VLAN is moved, if any one of the static MACs are learned on any other port on the VLAN to be moved, the default VLAN change is allowed and one of the static MAC is marked as valid on current port and duplicate on another port.
For example,
 - port 1/1 is on default VLAN 10 and it has learned static MAC 00:00:00:00:00:01
 - port 1/2 is on default VLAN 20 and it also learns same static MAC 00:00:00:00:00:01If default VLAN 10 on port 1/1 is changed to VLAN 20 then static MAC 00:00:00:00:00:01 on port 1/1 is marked with duplicate (STATIC(*)) and port 1/2 as valid (STATIC)
- When **mac-move** is enabled, pure static MACs are learned as static on new port and marked as duplicate MAC entries on old port. Thus duplicate MAC entries are stored on multiple ports.
- When **mac-move** is disabled then, a port specific entry with action is created in the system for all duplicate static MACs at that instance. When **mac-move** is disabled, the 64 MAC restriction does not apply.

Examples

```
-> port-security shutdown 25
-> port-security shutdown 60 no-aging enable
-> port-security shutdown 2 convert-to-static enable no-aging enable
-> port-security shutdown 2 convert-to-static enable no-aging enable boot-up enable
-> port-security shutdown 2 no-aging enable mac-move enable
-> port-security shutdown 0 no-aging disable
-> port-security shutdown 0 no-aging enable
-> port-security shutdown 0 no-aging enable learn-as-static enable
-> port-security shutdown 0 convert-to-static enable no-aging enable
-> port-security shutdown 0 no-aging enable convert-to-static enable boot-up enable
```

Release History

Release 6.6.1; command introduced.

Release 6.6.3; **no-aging** and **boot-up** parameters added.

Release 6.6.4; **learn-as-static** and **mac-move** parameters added.

Related Commands

port-security	Enables or disables LPS on the switch ports.
port-security mac	Configures a single authorized source MAC address for a port that belongs to a specified VLAN.
port-security mac-range	Configures a list of authorized MAC addresses by defining a range of addresses allowed on the port.
port-security maximum	Specifies the maximum number of source MAC addresses that an LPS port is allowed to learn.
port-security violation	Selects the method for handling traffic that does not comply with LPS restrictions for the specified port.

MIB Objects

```
learnedPortSecurityGlobalGroup
  lpsLearningWindowTime
  lpsLearningWindowTimeWithStaticConversion
  lpsLearningWindowNoAging
  lpsConvertToStatic
  lpsLearningWindowBootupStatus
  lpsLearningWindowExpiryStatus
  lpsLearningWindowLearnAsStatic
  lpsLearningWindowPseudoMacMove
```

port-security maximum

Specifies the maximum number of source MAC addresses that an LPS port is allowed to learn.

port-security *slot/port[-port2]* **maximum** *num* **learn-trap-threshold** *num*

Syntax Definitions

<i>slot/port</i>	The slot number for the module and the physical port number on that module (for example, 3/1 specifies port 1 on slot 3).
<i>-port2</i>	The last port number in a range of ports you want to configure on the same slot (for example, 3/1-4 specifies ports 1-4 on slot 3).
maximum <i>num</i>	The number of source MAC addresses that are allowed on this port. Valid range is 1-1000.
learn-trap-threshold <i>num</i>	The number of bridged MAC address to learn before sending traps. Valid range is 0 to maximum number of MAC addresses configured on LPS port.

Defaults

By default, the number of MAC addresses allowed is set to 1.

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- If the port attempts to learn a MAC address that exceeds the maximum number allowed, the port blocks the unauthorized address, or shuts down the port. Use the [port-security violation](#) command to specify how an LPS port handles the violating traffic.
- Source learning of configured authorized MAC addresses is still allowed after the LPS time limit has expired; however, all learning is stopped if the number of MAC addresses learned meets or exceeds the maximum number of addresses allowed, even if the LPS time limit has not expired.
- Reducing the **maximum** to a lower value than the number of static MACs learned on the port is not allowed. For example, consider a scenario where maximum MAC address set on a port is 5 and it learned 3 static Mac's. If Maximum is changing to less than 3, then the following error message is displayed:
"ERROR: Maximum MACs should be the same or greater than the static MAC configured on the port"

Examples

```
-> port-security 2/14 maximum 25
-> port-security 4/10-15 maximum 100
-> port-security 1/2 maximum 5 learn-trap-threshold 4
```

Release History

Release 6.6.1; command introduced.

Release 6.6.3; **learn-trap-threshold** parameter added.

Related Commands

port-security	Enables or disables LPS on the switch ports.
port-security mac	Configures a single authorized source MAC address for a port that belongs to a specified VLAN.
port-security mac-range	Configures a list of authorized MAC addresses by defining a range of addresses allowed on the port.
port-security shutdown	Configures the amount of time in minutes to allow source learning on all LPS ports. Also, enables or disables the conversion of dynamic MAC addresses to static MAC addresses on LPS ports.
port-security violation	Selects the method for handling traffic that does not comply with LPS restrictions for the specified port.

MIB Objects

learnedPortSecurityTable

lpsMaxMacNum

port-security max-filtering

Configures the maximum number of filtered MAC addresses that can be learned on an LPS port.

port-security *slot/port[-port2]* **max-filtering** *num*

Syntax Definitions

<i>slot/port</i>	The slot number for the module and the physical port number on that module (for example, 3/1 specifies port 1 on slot 3).
<i>-port2</i>	The last port number in a range of ports you want to configure on the same slot (for example, 3/1-4 specifies ports 1-4 on slot 3).
<i>num</i>	The maximum number of filtered MAC addresses that can be learned on an LPS port. Valid range is 0–100.

Defaults

By default, the maximum number of filtered MAC addresses that can be learned on an LPS port is set to 5.

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- The MAC addresses entering the LPS enabled port is learned as filtered MAC.
- The maximum filtering value is separate from the maximum bridged MAC address value.
- When the LPS learning window time expires, MAC addresses are learned in a filtering state up to the maximum filtering value set with this command. For example, if the maximum filtering value is set to five, when the learning window time expires, the switch will learn up to five filtering MAC addresses.
- If an LPS port is in a violation state and the maximum number of filtering MAC addresses allowed is changed, the port transitions out of the violation state.
- When the number of filtered MAC addresses learned on the port reaches the maximum configured value, either the port is disabled (shutdown violation mode) or the MAC address learning is disabled (restrict violation mode).

Examples

```
-> port-security 1/10 max-filtering 6
-> port-security 1/10-13 max-filtering 18
```

Release History

Release 6.6.1; command introduced.

Related Commands**port-security maximum**

Specifies the maximum number of source MAC addresses that an LPS port is allowed to learn.

port-security violation

Selects the method for handling traffic that does not comply with LPS restrictions for the specified port.

MIB Objects

learnedPortSecurityTable

lpsMaxFilteredMacNum

port-security convert-to-static

Converts the dynamically learned MAC addresses on the LPS ports to static MAC addresses.

port-security {*slot/port*[-*port2*] / *chassis*} **convert-to-static**

Syntax Definitions

<i>slot/port</i>	The slot number for the module and the physical port number on that module (for example, 3/1 specifies port 1 on slot 3).
<i>-port2</i>	The last port number in a range of ports you want to configure on the same slot (for example, 3/1-4 specifies ports 1-4 on slot 3).
chassis	Specifies all the LPS-eligible ports on the chassis.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- You can stop the aging out of dynamic MAC addresses on the LPS ports by converting them to static MAC addresses.
- The conversion of dynamic MAC addresses to static does not apply to LPS mobile and authenticated ports.
- The number of converted static MAC addresses cannot exceed the maximum number of MAC addresses allowed on the ports.

Examples

```
-> port-security 4/8 convert-to-static
```

Release History

Release 6.6.1; command introduced.

Related Commands

[port-security](#)

Enables or disables LPS on the switch ports.

[port-security maximum](#)

Specifies the maximum number of source MAC addresses that an LPS port is allowed to learn.

MIB Objects

learnedPortSecurityGlobalGroup

lpsConvertToStatic

port-security mac

Configures a single authorized source MAC address for a port that belongs to a specified VLAN.

```
port-security slot/port mac mac_address [vlan vlan_id]
```

```
port-security slot/port no mac {all | mac_address} [vlan vlan_id]
```

Syntax Definitions

<i>slot/port</i>	Enter the slot number for the module and the physical port number on that module (for example, 3/1 specifies port 1 on slot 3).
<i>mac_address</i>	The source MAC address (for example, 00:da:39:59:f1:0c) of the port.
all	Flushes all MAC addresses associated with the specified port.
<i>vlan_id</i>	The VLAN or the tagged VLAN to which the LPS port belongs. The range is 1–4094.

Defaults

By default, the default VLAN ID of the port is used.

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Use the **no** form of this command to remove statically configured or dynamically learned source MAC address entries from the LPS table. When a MAC address is removed from the LPS table, it is automatically cleared from the source learning table at the same time.
- LPS must be enabled on the port before configuring a MAC address. If an attempt is made to configure a MAC address on a non-LPS port, an error message is displayed.
- The additional source MAC addresses received on the LPS port that do not match the configured authorized addresses are allowed on the port based on the LPS time limit (if active) and maximum number of MAC addresses allowed.
- Each configured authorized MAC address counts towards the number of addresses allowed on the port even if the port has not learned the configured address. For example, if a port has three configured authorized MAC addresses and the maximum number of addresses allowed is set to ten, then only seven additional MAC addresses are allowed on that port.
- A static MAC address cannot be configured on a mobile port.

Note.

You can use the **port-security mac** command to configure the same static MAC on multiple ports. A static LPS MAC is allowed to move between ports belonging to the same VLAN. The system supports a maximum of 64 such entries.

Example:

```
-> vlan 2
```

```
-> vlan 2 port default 1/3
-> vlan 2 port default 1/4
-> port-security 1/3 mac 00:00:00:00:00:01
-> port-security 1/4 mac 00:00:00:00:00:01
```

Examples

```
-> port-security 4/20 mac 00:20:95:00:fa:5c vlan 2
-> port-security 2/11 no mac 00:20:95:00:fa:5c
-> port-security 1/2 no mac all
```

Release History

Release 6.6.1; command introduced.

Related Commands

port-security	Enables or disables LPS on the switch ports.
port-security mac-range	Configures a list of authorized MAC addresses by defining a range of addresses allowed on the port.
port-security shutdown	Configures the amount of time in minutes to allow source learning on all LPS ports. Also, enables or disables the conversion of dynamic MAC addresses to static MAC addresses on LPS ports.
port-security maximum	Specifies the maximum number of source MAC addresses that an LPS port is allowed to learn.
port-security violation	Selects the method for handling traffic that does not comply with LPS restrictions for the specified port.

MIB Objects

```
learnedPortSecurityL2MacAddressTable
  lpsL2MacAddress
  lpsL2VlanId
  lpsL2MacAddressRowStatus
```

port-security mac-range

Configures a list of authorized MAC addresses by defining a range of addresses allowed on a port. This command also enables LPS on the specified port, if LPS is not already active on the port.

port-security *slot/port*[-*port2*] **mac-range** [**low** *mac_address* / **high** *mac_address*]

Syntax Definitions

<i>slot/port</i>	The slot number for the module and the physical port number on that module (for example, 3/1 specifies port 1 on slot 3).
<i>-port2</i>	The last port number in a range of ports you want to configure on the same slot (for example, 3/1-4 specifies ports 1-4 on slot 3).
low <i>mac_address</i>	MAC address that defines the low end of a range of MAC addresses (for example, 00:20:95:00:10:2A).
high <i>mac_address</i>	MAC address that defines the high end of a range of MAC addresses (for example, 00:20:95:00:10:2F).

Defaults

parameter	default
high <i>mac_address</i>	ff:ff:ff:ff:ff:ff
low <i>mac_address</i>	00:00:00:00:00:00

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- If **low** and **high** end MAC addresses are not specified with this command, then the range is set back to the default range value (00:00:00:00:00:00– ff:ff:ff:ff:ff:ff).
- Source MAC addresses received on an LPS port that are within the authorized range is allowed on the port. An additional entry is made in the LPS table for each of these learned addresses.
- Any additional source MAC addresses received that do not match configured authorized addresses are allowed on the port based on the LPS time limit (if active) and the maximum number of MAC addresses allowed.
- Each configured authorized MAC address counts towards the number of addresses allowed on the port even if the port has not learned the configured address. For example, if a port has three configured authorized MAC addresses and the maximum number of addresses allowed is set to ten, then only seven additional MAC addresses are allowed on that port.

Examples

```
-> port-security 4/20 mac-range low 00:20:95:00:fa:5c
-> port-security 5/11-15 mac-range low 00:da:95:00:00:10 high 00:da:95:00:00:1f
-> port-security 5/16-20 mac-range high 00:da:95:00:00:1f
-> port-security 5/11-15 mac-range
```

Release History

Release 6.6.1; command introduced.

Related Commands

port-security	Enables or disables LPS on the switch ports.
port-security mac	Configures a single authorized source MAC address for a port that belongs to a specified VLAN.
port-security shutdown	Configures the amount of time in minutes to allow source learning on all LPS ports. Also, enables or disables the conversion of dynamic MAC addresses to static MAC addresses on LPS ports.
port-security maximum	Specifies the maximum number of source MAC addresses that an LPS port is allowed to learn.
port-security violation	Selects the method for handling traffic that does not comply with LPS restrictions for the specified port.

MIB Objects

```
learnedPortSecurityTable
  lpsLoMacRange
  lpsHiMacRange
  lpsRowStatus
```

port-security violation

Configures the violation mode in which the LPS port operates when unauthorized traffic is received on that port. This mode determines if the port is shut down, remains up but discards traffic, or allows LPS-compliant traffic while filtering unauthorized traffic.

port-security slot/port[-port2] violation {shutdown | restrict | discard}

Syntax Definitions

<i>slot/port</i>	The slot number for the module and the physical port number on that module (for example, 3/1 specifies port 1 on slot 3).
<i>-port2</i>	The last port number in a range of ports you want to configure on the same slot (for example, 3/1-4 specifies ports 1-4 on slot 3).
restrict	Filters (blocks) unauthorized traffic but allows traffic that complies with LPS restrictions to forward on the port.
discard	All the learned MAC addresses are flushed and no traffic is allowed on the port, but the port link status remain up.
shutdown	All the learned MAC addresses are flushed and no traffic is allowed on the port, and the port link is brought down.

Defaults

By default, the security violation mode is set to **restrict** when LPS is enabled on the port.

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- When a traffic violation occurs on an LPS port, notice is sent to the Switch Logging task.
- When a port is shut down or goes into discard mode, disable and enable LPS on that port and then use the **port-security release** command to restore the port to normal operation.
- If the violation mode is set to **restrict**, unauthorized source MAC addresses are not learned in the LPS table but are recorded in the source learning MAC address table with a FILTER operational status. This allows the user to view MAC addresses that were attempting unauthorized access to the LPS port. The violating MAC is also shown in the **show port-security** command output.
- When a port goes into restrict mode, use the **port-security release** command to restore the port to normal operation.

Examples

```
-> port-security 2/14 violation restrict
-> port-security 1/2-10 violation discard
-> port-security 4/10-15 violation shutdown
```

Release History

Release 6.6.1; command introduced.
Release 6.6.3; **discard** parameter added.

Related Commands

port-security	Enables or disables LPS on the switch ports.
port-security release	Releases a port that was shut down due to an LPS violation
port-security maximum	Specifies the maximum number of source MAC addresses that an LPS port is allowed to learn.
port-security mac	Configures a single authorized source MAC address for a port that belongs to a specified VLAN.
port-security mac-range	Configures a list of authorized MAC addresses by defining a range of addresses allowed on the port.
port-security shutdown	Configures the amount of time in minutes to allow source learning on all LPS ports. Also, enables or disables the conversion of dynamic MAC addresses to static MAC addresses on LPS ports.

MIB Objects

learnedPortSecurityTable
lpsViolationOption

port-security release

Releases a port that was shut down due to an LPS violation. The specified port resumes normal operation without having to manually reset the port or the entire slot.

port-security *slot/port[-port2]* **release**

Syntax Definitions

<i>slot/port</i>	The slot number for the module and the physical port number on that module (for example, 3/1 specifies port 1 on slot 3). Use a hyphen to specify a range of ports on the same slot (for example, 3/1-16).
<i>-port2</i>	The last port number in a range of ports you want to configure on the same slot (for example, 3/1-4 specifies ports 1-4 on slot 3).

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- This command restores the port to the same operational state it was in before the shutdown. This includes the activation of any existing LPS configuration for the port.
- When **port-security release** command is used, all MAC addresses known to the specified port are flushed from the switch MAC address table.

Examples

```
-> port-security 2/14 release  
-> port-security 4/10-15 release
```

Release History

Release 6.6.1; command introduced.

Related Commands

port-security	Enables or disables LPS on the switch ports.
port-security mac	Configures a single authorized source MAC address for a port that belongs to a specified VLAN.
port-security mac-range	Configures a list of authorized MAC addresses by defining a range of addresses allowed on the port.
port-security shutdown	Configures the amount of time in minutes to allow source learning on all LPS ports. Also, enables or disables the conversion of dynamic MAC addresses to static MAC addresses on LPS ports.
port-security maximum	Specifies the maximum number of source MAC addresses that an LPS port is allowed to learn.

MIB Objects

learnedPortSecurityTable
lpsRelease

port-security learn-trap-threshold

Configures the number of bridged MAC addresses to learn before sending a trap.

port-security *slot/port*[-*port2*] **learn-trap-threshold** *num*

Syntax Definitions

<i>slot/port</i>	The slot number for the module and the physical port number on that module (for example, 3/1 specifies port 1 on slot 3).
<i>-port2</i>	The last port number in a range of ports you want to configure on the same slot (for example, 3/1-4 specifies ports 1-4 on slot 3).
<i>num</i>	The number of bridged MAC addresses to learn before sending a trap. Valid range is 0 to maximum number of MAC addresses configured on LPS port.

Defaults

By default, the number of bridged MAC addresses learned is set to 5.

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- When the number of bridged MAC addresses learned on the port matches the specified threshold amount, a trap is sent for every bridged MAC address learned thereafter.
- Sending a trap when this threshold is reached provides notification of newly learned bridged MAC addresses. Trap contents includes identifying information about the MAC, such as the address itself, the corresponding IP address, switch identification, and the slot and port number on which the MAC was learned.

Examples

```
-> port-security 1/10 learn-trap-threshold 6  
-> port-security 1/10-13 learn-trap-threshold 18
```

Release History

Release 6.6.1; command introduced.

Related Commands

[show port-security](#)

Displays the LPS configuration and the table entries.

MIB Objects

learnedPortSecurityTable
lpslearnedrapThreshold

show port-security

Displays the LPS configuration and the table entries.

show port-security [*slot/port1-port2* | *slot/port*]

Syntax Definitions

<i>slot/port</i>	The slot number for the module and the physical port number on that module (for example, 3/1 specifies port 1 on slot 3).
<i>-port2</i>	The last port number in a range of ports you want to configure on the same slot (for example, 3/1-4 specifies ports 1-4 on slot 3).
<i>slot</i>	Enter the slot number for a module to specify that the command must include all ports on that module (for example, 6 specifies all ports on the module found in slot 6 of the switch chassis).

Defaults

By default, all ports with an LPS configuration are displayed.

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- This command displays ports that have an LPS configuration, even if LPS is disabled on the port.
- Use the *slot/port1-port2* parameter with this command to display the LPS configuration for a specific port or a range of ports.
- Use the *slot* parameter with this command to display the LPS configuration for all the ports on a specific slot.
- MAC addresses learned on the LPS port within the specified MAC address range, appear as a separate entry in the LPS table with a dynamic MAC type.
- Dynamic MAC addresses become configured MAC addresses in the LPS table when the switch configuration is saved and the switch is rebooted. If the configuration is not saved before the next reboot, all the dynamic MAC addresses are cleared from the LPS table.
- The MAC Type field is blank if an authorized MAC address range is configured for the LPS port.
- When **mac-move** is enabled using **port-security shutdown** command, pure static MACs are learned as static on new port and marked as duplicate MAC entries on old port. Thus duplicate MAC entries are stored on multiple ports and displayed with (*).

Examples

-> show port-security

Legend: Mac Address: * = Duplicate Static
 Mac Address: # = Pseudo Static

Port: 1/2
 Operation Mode : ENABLED,
 Max MAC bridged : 6,
 Trap Threshold : DISABLED,
 Max MAC filtered : 5,
 Low MAC Range : 00:00:00:00:00:00,
 High MAC Range : ff:ff:ff:ff:ff:ff,
 Violation : RESTRICT,
 Violating MAC : NULL

MAC Address	VLAN	TYPE
00:00:00:00:00:01	1	STATIC
00:00:00:00:00:02	1	STATIC(*)
00:00:00:00:00:02	1	STATIC(#)
00:00:00:00:00:13	1	STATIC
00:00:00:00:00:14	1	STATIC
00:00:00:00:00:20	1	STATIC

Output for port violation in **restrict** mode.

-> show port-security

Legend: Mac Address: * = Duplicate Static
 Mac Address: # = Pseudo Static

Port: 1/7
 Operation Mode : RESTRICTED,
 Max MAC bridged : 1,
 Trap Threshold : DISABLED,
 Max MAC filtered : 5,
 Low MAC Range : 00:00:00:00:00:00,
 High MAC Range : ff:ff:ff:ff:ff:ff,
 Violation : RESTRICT,
 Violating MAC : 00:00:00:00:00:08,

MAC Address	VLAN	TYPE
00:00:00:00:00:06	10	FILTER
00:00:00:00:00:07	10	FILTER
00:00:00:00:00:20	10	STATIC
00:00:00:00:00:21	10	FILTER
00:00:00:00:00:22	10	FILTER
00:00:00:00:00:23	10	FILTER

output definitions

MAC Address	Duplicate Static: On an LPS port, static MAC can be configured on more than one port on a VLAN. The first configured entry, and the port where the MAC is ingressing is marked as VALID. Pseudo Static: The MAC addresses that are learned dynamically in the system and are converted to static in the hardware.
Port	The module slot number and the physical port number on that module.
Operation Mode	The LPS operation status for the port (enabled or disabled). Configured through the port-security command.
Max MAC bridged	The maximum number of bridged MAC addresses that are allowed on this port. Configured through the port-security maximum command.
Trap Threshold	The number of bridged MAC addresses to learn before sending a trap. After this number is reached, a trap is sent out for every MAC learned thereafter. If disabled is displayed in this field, the trap threshold is not in force. Configured through the port-security learn-trap-threshold command.
Max MAC filtered	The maximum number of filtered MAC addresses that the LPS port can learn. Configured through the port-security max-filtering command.
Low MAC Range	MAC address that defines the lower end of a MAC address range. Configured through the port-security mac-range command.
High MAC Range	MAC address that defines the higher end of a MAC address range. Configured through the port-security mac-range command.
Violation	The MAC Address that caused the violation on this port.
Violating MAC	An individual authorized MAC address. Configured through the port-security mac command.
VLAN	The VLAN to which the LPS port belongs.
TYPE	Indicates if the MAC address was dynamically learned or statically configured as an authorized MAC address for the port. Dynamic MAC addresses become configured MAC address entries after the configuration is saved and reboot of the switch. When MAC is already present on old port as permanent static, the entry is not deleted, but marked as duplicate STATIC (*) and MAC on the new port is learned as pseudo-static STATIC (#) . When port violation is set to restrict, then, STATIC and FILTER options are displayed.

Release History

Release 6.6.1; command introduced.

Release 6.6.3; **Legend** and **Violating MAC** fields added

Related Commands

show port-security shutdown Displays the amount of time during which source learning can occur on all LPS ports.

MIB Objects

learnedPortSecurityTable

- lpsMaxMacNum
- lpsMaxFilteredMacNum
- lpsLoMacRange
- lpsHiMacRange
- lpsViolationOption
- lpsMaxFilteredMacNum
- lpsViolatingMac
- lpsOperStatus
- lpsRelease

show port-security shutdown

Displays the amount of time during which source learning can occur on all LPS ports.

show port-security shutdown

Syntax Definitions

N/A

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- The source learning time limit is a switch-wide parameter that applies to all ports that have LPS enabled.
- If the shutdown time is set to 0, then a source learning time limit is not active on LPS ports.
- Source learning of configured authorized MAC addresses is still allowed after the LPS time limit has expired; however, all learning is stopped if the number of MAC addresses learned meets or exceeds the maximum number of addresses allowed, even if the LPS learning window has not expired.

Examples

```
-> show port-security shutdown
LPS Shutdown Config      = 5,
Convert-to-static        = DISABLE,
No Aging                 = ENABLE,
Boot Up                  = ENABLE,
Learn As Static          = ENABLE,
Mac Move                 = ENABLE,
Remaining Learning Window = 289 sec
```

```
-> show port-security shutdown
LPS Shutdown Config      = Infinity,
Convert-to-static        = DISABLE,
No Aging                 = ENABLE,
Boot Up                  = ENABLE,
Learn As Static          = ENABLE,
Mac Move                 = ENABLE,
Remaining Learning Window = Infinite Window
```


output definitions

LPS Shutdown Config	The configured amount of time during which the LPS port can learn new MAC addresses.
Convert-to-static	Indicates whether dynamic MAC addresses are converted to static MAC addresses (enabled or disabled). When enabled, MAC-addresses learned during learning window are converted into static MAC addresses.
No Aging	Indicates whether learned MAC addresses can age out or get flushed during the LPS learning window time period (disabled or enabled). When enabled, MAC-addresses learned during learning window are retained and not flushed.
Boot Up	Indicates whether the learning window automatically starts when the switch boots up (Enable or disabled). When Boot Up is enabled, Learning window starts at boot-up time when the switch restarts.
Mac-move	Allows the movement of pseudo static/static MAC addresses when enabled.
Learn-as-static	When enabled, the MAC is learned as a static address during learning window.
Remaining Learning Window	The remaining amount of time during which the LPS port can learn MAC addresses.

Release History

Release 6.6.1; command introduced.

Release 6.6.3; **No Aging** and **Boot Up** fields added.

Release 6.6.4; **Mac-move** and **Learn-as-static** fields added.

Related Commands

[port-security learn-trap-threshold](#) Configures the number of bridged MAC addresses to learn before sending a trap.

MIB Objects

```

learnedPortSecurityGlobalGroup
  lpsLearningWindowNoAging
  lpsLearningWindowBootupStatus
  lpsLearningWindowExpiryStatus
  lpsLearningWindowLearnAsStatic
  lpsLearningWindowPseudoMacMove
  lpsConvertToStatic
  lpsLearningWindowTime
  lpsLearningWindowTimeWithStaticConversion

```

show port-security brief

Displays per port LPS parameters configured for all the ports.

show port-security brief

Syntax Definitions

N/A

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- This command displays the configured LPS parameters. The parameters are displayed even if the LPS is disabled on the port.
- The status of the LPS port is displayed according to the admin status set by **port-security admin status** command and the operational status set by the **port-security shutdown** command. The status can be:
 - Enabled
 - Restricted (admin status is enabled)
 - Shutdown (admin status is enabled)
 - Discard (admin status is enabled)
 - Disabled
 - Locked

Operational Mode/ Status	Admin	Enabled	Discard	Restrict	Shutdown
Enabled		Enabled	Discard	Restrict	Shutdown
Disabled		Disabled	Disabled	Disabled	Disabled

Examples

```
-> show port-security brief
```

Legend: enable * = Learning Window has expired

Slot/ Port	Status	Max	Max-Filter	Nb Macs Bridged	Nb Macs Filtered	Nb Macs Static
1/1	ENABLED	5	100	5	10	0
1/2	ENABLED	5	100	0	10	5
1/3	RESTRICTED	5	100	5	100	0
1/4	SHUTDOWN	5	100	-	-	-
1/5	DISABLED	5	100	-	-	-
1/6	LOCKED	5	100	-	-	3

output definitions

Slot/Port	The slot number for the module and the physical port number on that module (for example, 1/2 specifies port 2 on slot 1)
Status	Displays the status of the LPS port.
Max	The maximum number of bridged MAC addresses that are allowed on this port. Configured through the port-security maximum command.
Max-Filter	The maximum number of filtered MAC addresses that the LPS port can learn. Configured through the port-security max-filtering command.
Nb Macs Bridged	Number of bridge MAC address learned on corresponding port.
Nb Macs Filtered	Number of filtered MAC address learned on corresponding port.
Nb Macs Static	Number of static MAC address configured on corresponding port.

Release History

Release 6.6.3; command introduced.

Related Commands

port-security maximum	Configures the maximum number of source MAC addresses that an LPS port is allowed to learn.
port-security max-filtering	Configures the maximum number of MAC addresses that can be filtered on the LPS ports.

MIB Objects

```

learnedPortSecurityTable
  lpsMaxMacNum
  lpsMaxFilteredMacNum
  lpsMaxStaticMacNum
  lpsOperStatus
  lpsAdminStatus
  lpsViolatingMac

```

23 Ethernet Port Commands

The Ethernet port software is responsible for configuring and monitoring Ethernet ports. This software provides the following functionalities:

- Performing hardware diagnostics, loading software, and initializing hardware.
- Notifying other software modules in the system when Ethernet links become active or inactive.
- Configuring basic line parameters for Ethernet ports.
- Gathering basic line statistics for Ethernet ports and passing this information to the user interface and configuration manager.

MIB information for the Ethernet Port commands is as follows:

Filename: AlcatelIND1Port.mib
Module: alcatelIND1PortMIB

Filename: IETF_ETHERLIKE.mib
Module: EtherLike-MIB

A summary of the available commands is listed here.

Trap port commands	trap port link
Interfaces commands	interfaces speed interfaces autoneg interfaces crossover interfaces pause interfaces duplex interfaces admin interfaces alias interfaces ifg interfaces no l2 statistics interfaces max frame interfaces flood enable interfaces flood rate interfaces clear-violation-all interfaces tdr-test-start interfaces no tdr-statistics interfaces tdr-extended-test-start interfaces no tdr-extended-statistics interfaces transceiver ddm interfaces eee show interfaces show interfaces tdr-statistics show interfaces tdr-extended-statistics show interfaces capability show interfaces flow control show interfaces pause show interfaces accounting show interfaces counters show interfaces counters errors show interfaces collisions show interfaces status show interfaces port show interfaces ifg show interfaces flood rate show interfaces traffic show interfaces transceiver show interfaces eee

Combo port commands

interfaces clear-violation-all
interfaces hybrid autoneg
interfaces hybrid crossover
interfaces hybrid duplex
interfaces hybrid speed
interfaces hybrid pause
show interfaces hybrid
show interfaces hybrid status
show interfaces hybrid flow control
show interfaces hybrid pause
show interfaces hybrid capability
show interfaces hybrid accounting
show interfaces hybrid counters
show interfaces hybrid counters errors
show interfaces hybrid collisions
show interfaces hybrid traffic
show interfaces hybrid port
show interfaces hybrid flood rate
show interfaces hybrid ifg

Interface violation commands

interfaces violation-recovery-time
interfaces violation-recovery-maximum
interfaces violation-recovery-trap
interfaces clear-violation-all
show interfaces violation-recovery

IEEE 1588 Precision Time Protocol (PTP) commands

interfaces ptp
show interfaces ptp
show interfaces ptp-statistics

trap port link

Enables trap link messages. If enabled, a message is displayed on the Network Management Station (NMS) whenever the port changes state.

trap *slot*[*/port*[-*port2*]] **port link** {**enable** | **disable** | **on** | **off**}

Syntax Definitions

<i>slot</i>	Slot number you want to configure.
<i>port</i>	Port number of the interface you want to configure.
<i>port2</i>	Last port number in a range of ports you want to configure.
enable	Port link up/down traps are displayed on the NMS.
disable	Port link up/down traps are not displayed on the NMS.
on	Same as enable .
off	Same as disable .

Defaults

parameter	default
enable disable on off	disable

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

N/A

Examples

```
-> trap 3/1 port link enable
-> trap 3 port link enable
-> trap 3/1-6 port link enable
```

Release History

Release 6.6.1; command introduced.

Related Commands

[show interfaces status](#) Displays interface line settings.

MIB Objects

```
esmConfigTable
esmPortSlot
```


esmPortIF

interfaces speed

Configures interface line speed.

```
interfaces slot [/port[-port2]] speed {auto | 10 | 100 | 1000 | 10000 | max {100 | 1000}}
```

Syntax Definitions

<i>slot</i>	Slot number you want to configure.
<i>port</i>	Port number of the interface you want to configure.
<i>port2</i>	Last port number in a range of ports you want to configure.
auto	The switch automatically sets the line speed to match the attached device (auto-sensing).
10	Sets the interface to 10 Mbps.
100	Sets the interface to 100 Mbps.
1000	Sets the interface to 1 Mb.
10000	Sets the interface to 10 Gb.
max 100	Sets the maximum speed to 100 Mb.
max 1000	Sets the maximum speed to 1000 Mb (one Gigabit).

Defaults

parameter	default
auto 10 100 1000 10000 max 100 max 1000	Auto (copper ports); 1000 (fiber ports);

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- You can only configure one slot at a time. Repeat the command to configure additional slots.
- The **auto** option sets the speed to auto-sensing.
- Configuration changes made with the **interfaces speed** command on the combo ports configured as either forced fiber or preferred fiber is applicable only on the SFP fiber ports and not the copper RJ-45 ports. See the [interfaces hybrid speed](#) command for more information.
- Configuration changes made with the **interfaces speed** command on the combo ports configured as either forced copper or preferred copper is applicable only on the copper RJ-45 ports and not the SFP fiber ports. See the [interfaces hybrid speed](#) command for more information.

Examples

```
-> interfaces 3/1 speed auto
-> interfaces 3 speed 100
```

```
-> interfaces 3/1-8 speed auto
```

Release History

Release 6.6.1; command introduced.

Related Commands

interfaces duplex	Configures duplex mode.
interfaces autoneg	Enables and disables autonegotiation.
show interfaces status	Displays interface line settings.

MIB Objects

```
esmConfTable  
  esmPortCfgrSpeed
```

interfaces autoneg

Enables or disables autonegotiation on a single port, a range of ports, or an entire Network Interface (NI).

interfaces *slot* [*/port[-port2]*] **autoneg** {**enable** | **disable** | **on** | **off**}

Syntax Definitions

<i>slot</i>	Slot number you want to configure.
<i>port</i>	Port number of the interface you want to configure.
<i>port2</i>	Last port number in a range of ports you want to configure.
enable	Enables autonegotiation.
disable	Disables autonegotiation.
on	Same as enable.
off	Same as disable.

Defaults

parameter	default
enable disable on off	enable

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- You can only configure one slot at a time. Repeat the command to configure additional slots.
- If autonegotiation is disabled, auto MDIX, auto speed, and auto duplex are not accepted. See the [interfaces crossover](#) command on [page 23-10](#) for more information.
- Configuration changes made with the **interfaces autoneg** command on the combo ports configured as either forced fiber or preferred fiber is applicable only on the SFP fiber ports and not the copper RJ-45 ports. See the [interfaces hybrid autoneg](#) command for more information.
- Configuration changes made with the **interfaces autoneg** command on combo ports configured as either forced copper or preferred copper is applicable only on the copper RJ-45 ports and not the SFP fiber ports. See the [interfaces hybrid autoneg](#) command for more information.
- Disabling autonegotiation is not supported on copper Gigabit ports.

Examples

```
-> interfaces 3 autoneg disable
-> interfaces 3/1 autoneg disable
-> interfaces 3/1-4 autoneg disable
```

Release History

Release 6.6.1; command introduced.

Related Commands

interfaces speed	Configures interface speed.
interfaces crossover	Configures crossover port settings.
show interfaces status	Displays interface line settings.
show interfaces capability	Displays autonegotiation, speed, duplex, and crossover settings.

MIB Objects

esmConfTable
esmPortCfgAutoNegotiation

interfaces crossover

Configures port crossover settings on a single port, a range of ports, or an entire Network Interface (NI).

interfaces *slot* [*/port[-port2]*] **crossover** {**auto** | **mdix** | **mdi**}

Syntax Definitions

<i>slot</i>	Slot number you want to configure.
<i>port</i>	Port number of the interface you want to configure.
<i>port2</i>	Last port number in a range of ports you want to configure.
auto	The interface automatically detects the crossover settings.
mdix	Sets the crossover configuration to Media Dependent Interface with Crossover (MDIX), which is the standard for hubs and switches.
mdi	Sets the crossover configuration to Media Dependent Interface (MDI), which is the standard for end stations.

Defaults

parameter	default
auto mdix mdi (all copper ports)	auto

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- You can only configure one slot at a time. Repeat the command to configure additional slots.
- If autonegotiation is disabled, then the automatic crossover is also disabled. See the [interfaces autoneg](#) command on [page 23-8](#) for more information.
- You cannot configure crossover settings on fiber ports. These ports use the MDI standard.
- Configuration changes made with the **interfaces crossover** command on combo ports configured as either forced copper or preferred copper is applicable only on the copper RJ-45 ports and not the SFP fiber ports. See the [interfaces hybrid crossover](#) command for more information.

Examples

```
-> interfaces 3 crossover mdi
-> interfaces 3/1 crossover mdix
-> interfaces 3/1-4 crossover auto
```

Release History

Release 6.6.1; command introduced.

Related Commands

interfaces speed	Configures interface speed.
interfaces autoneg	Enables and disables autonegotiation.
show interfaces status	Displays interface line settings.
show interfaces capability	Displays autonegotiation, speed, duplex, and crossover settings.

MIB Objects

esmConfTable
esmPortCfgCrossover

interfaces pause

Configures whether the switch honors or transmits and honors the flow control PAUSE frames on the specified interface. PAUSE frames are used to pause the flow of traffic between two connected devices to help prevent packet loss when traffic congestion occurs between switches.

```
interfaces slot [/port[-port2]] pause {rx | tx-and-rx | disable}
```

Syntax Definitions

<i>slot</i>	Slot number you want to configure.
<i>port</i>	Port number of the interface you want to configure.
<i>port2</i>	Last port number in a range of ports you want to configure.
rx	Allows interface to honor PAUSE frames from peer switches and temporarily stop sending traffic to the peer. Does not transmit PAUSE frames to peer switches.
tx-and-rx	Transmits and honors PAUSE frames when traffic congestion occurs between peer switches.
disable	Disables flow control on the interface.

Platforms Supported

OmniSwitch 6250, 6350, 6450

Defaults

By default, flow control is disabled on all switch interfaces.

Usage Guidelines

- Flow control is only supported on a standalone switch. It is not supported in a stackable configuration.
- Flow control is only supported on interfaces configured to run in full-duplex mode; half-duplex mode is not supported.
- If both autonegotiation and flow control are enabled on the same local interface, autonegotiation calculates operational flow control settings for that interface. The operational settings as shown in the following table, override the configured settings as long as both autonegotiation and flow control are enabled for the interface:

Configured Local Tx	Configured Local Rx	Configured Remote Tx	Configured Remote Rx	Operational Local Tx	Operational Local Rx
No	No	No	No	No	No
Yes	Yes	Yes	Yes	Yes	Yes
Yes	No	Yes	No	No	No
No	Yes	No	Yes	Yes	Yes
No	No	No	Yes	No	No
Yes	Yes	No	No	No	No
Yes	No	Yes	Yes	No	No
No	Yes	Yes	No	No	Yes
No	No	Yes	No	No	No
Yes	Yes	No	Yes	Yes	Yes
Yes	No	No	No	No	No
No	Yes	Yes	Yes	Yes	Yes
No	No	Yes	Yes	No	No
Yes	Yes	Yes	No	No	No
Yes	No	No	Yes	Yes	No
No	Yes	No	No	No	No

- If autonegotiation is disabled, the configured flow control settings are applied to the local interface.

Examples

```
-> interfaces 1 tx-and-rx
-> interfaces 3/1-6 pause rx
-> interfaces 3/1-6 disable
```

Release History

Release 6.6.1; command introduced.

Related Commands

[interfaces hybrid pause](#)

Configures flow control settings for combo ports.

[show interfaces pause](#)

Displays interface flow control settings.

MIB Objects

```
esmConfigTable
  esmPortCfgFlow
dot3PauseTable
  dot3PauseAdminMode
```

interfaces duplex

Configures duplex mode. In full duplex mode, the interface transmits and receives data simultaneously. In half duplex mode, the interface can transmit *or* receive data at a given time. Auto duplex setting causes the switch to advertise all available duplex modes (half/full/both) for the port during autonegotiation.

interfaces slot [/port[-port2]] **duplex** {full | half | auto}

Syntax Definitions

<i>slot</i>	Slot number you want to configure.
<i>port</i>	Port number of the interface you want to configure.
<i>port2</i>	Last port number in a range of ports you want to configure.
full	Sets interface to full duplex mode.
half	Sets interface to half duplex mode.
auto	Switch automatically sets both the duplex mode settings to autonegotiation.

Defaults

parameter	default
full half auto	full

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- You can only configure one slot at a time. Repeat the command to configure additional slots.
- If a port is detected as Gigabit (1000 Mbps), half duplex mode is not supported on the Gigabit modules.
- Configuration changes done with the **interfaces duplex** command on the combo ports configured as either forced copper or preferred copper is applicable only on the copper RJ-45 ports and not the SFP fiber ports. See the [interfaces hybrid duplex](#) command for more information.

Examples

```
-> interfaces 3/1 duplex auto
-> interfaces 3 duplex half
-> interfaces 3/1-4 auto
```

Release History

Release 6.6.1; command introduced.

Related Commands

[interfaces speed](#)

Configures interface line speed. Set to **auto** to set speed and duplex mode to auto-sensing.

[show interfaces status](#)

Displays interface line settings (for example, speed, and mode).

MIB Objects

esmConfTable

 esmPortAutoDuplexMode

interfaces admin

Administratively enables or disables interfaces.

```
interfaces slot [/port[-port2]] admin {up | down}
```

Syntax Definitions

<i>slot</i>	Slot number you want to configure.
<i>port</i>	Port number of the interface you want to configure.
<i>port2</i>	Last port number in a range of ports you want to configure.
up	Enables the interface.
down	Disables the interface.

Defaults

parameter	default
up down	up

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

N/A

Examples

```
-> interfaces 3/1 admin up
-> interfaces 3 admin down
-> interfaces 3/1-4 admin up
```

Release History

Release 6.6.1; command introduced.

Related Commands

interfaces tdr-test-start	Displays general interface information (for example, hardware, MAC address, input errors, and output errors).
show interfaces port	Displays port status (up or down).

MIB Objects

```
ifTable
  ifAdminStatus
```

interfaces alias

Configures a description (alias) for a single port.

interfaces *slot/port* **alias** *description*

Syntax Definitions

<i>slot</i>	Slot number you want to configure.
<i>port</i>	Port number of the interface you want to configure.
<i>description</i>	A description for the port, which can be up to 40 characters long. Spaces must be contained within quotes (for example, "IP Phone").

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- You can only configure one port at time. You cannot configure an alias for multiple ports.
- To remove an alias use a description consisting of two quotes without any spaces (for example, "").
- On combo ports, the configuration changes made with the **interfaces alias** command apply to both the fiber SFP port and to the copper RJ-45 port. You cannot configure separate aliases.

Examples

```
-> interfaces 3/1 alias switch_port
-> interfaces 2/2 alias "IP Phone"
-> interfaces 3/1 alias ""
```

Release History

Release 6.6.1; command introduced.

Related Commands

interfaces tdr-test-start	Displays general interface information (for example, hardware, MAC address, input errors, and output errors).
show interfaces port	Displays port status (up or down) and any aliases for a port.

MIB Objects

ifXTable
ifAlias

interfaces ifg

Configures the inter-frame gap on Gigabit Ethernet interfaces.

interfaces *slot* [/port[-port2]] **ifg** *bytes*

Syntax Definitions

<i>slot</i>	Slot number you want to configure.
<i>port</i>	Port number of the interface you want to configure.
<i>port2</i>	Last port number in a range of ports you want to configure.
<i>bytes</i>	Inter-frame gap value, in bytes. Valid range is 9–12.

Defaults

parameter	default
<i>bytes</i>	12

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

You can only configure one slot at a time. Repeat the command to configure additional slots.

Examples

```
-> interfaces 3/1 ifg 10
-> interfaces 3 ifg 10
-> interfaces 3/1-4 ifg 10
```

Release History

Release 6.6.1; command introduced.

Related Commands

[show interfaces ifg](#) Displays the inter-frame gap value for one or more ports.

MIB Objects

esmConfTable
esmPortCfgIfg

interfaces no l2 statistics

Resets all statistics counters.

[stacking] interfaces slot [/port[-port2]] no l2 statistics

Syntax Definitions

stacking	Clears the counter statistics for the specified stack port.
<i>slot</i>	Slot number you want to configure.
<i>port</i>	Port number of the interface you want to configure.
<i>port2</i>	Last port number in a range of ports you want to configure.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- You can only configure one slot at a time. Repeat the command to configure additional slots.
- This command calls for an upper or lower case “L” character in front of the “2” character. Entering the digit “1” (one) results in an error message.
- The “**stacking**” parameter is not supported in OmniSwitch 6350, since it is a stand alone model.

Examples

```
-> interfaces 3/1 no l2 statistics
-> interfaces 3 no l2 statistics
-> interfaces 3/1-6 no l2 statistics
-> stacking interfaces 3/52 no l2 statistics
```

Release History

Release 6.6.1; command introduced.

Related Commands

- | | |
|--|---|
| interfaces tdr-test-start | Displays general interface information, including when statistics were last cleared. |
| show interfaces accounting | Displays interface accounting information (for example, packets received/transmitted and deferred frames received). |
| show interfaces counters | Displays interface counters information (for example, unicast, broadcast, and multi-cast packets received/transmitted). |
| show interfaces counters errors | Displays interface error frame information (for example, CRC errors, transit errors, and receive errors). |
| show interfaces collisions | Displays interface collision information (for example, number of collisions and number of retries). |

MIB Objects

```
alcetherStatsTable  
  alcetherClearStats  
  esmStackPortClearStats
```

interfaces max frame

Configures the maximum frame size for Gigabit Ethernet interfaces.

interfaces *slot* [/port[-port2]] **max frame** *bytes*

Syntax Definitions

<i>slot</i>	Slot number you want to configure.
<i>port</i>	Port number of the interface you want to configure.
<i>port2</i>	Last port number in a range of ports you want to configure.
max frame	Maximum frame size, in bytes. Valid range is 1518–9216.

Defaults

parameter	default
<i>bytes</i> (Gigabit Ethernet Packets)	9216
<i>bytes</i> (Ethernet Packets)	1553

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

N/A

Examples

```
-> interfaces 3/1 max frame 1518
-> interfaces 3 max frame 1518
-> interfaces 3/1-3 max frame 1518
```

Release History

Release 6.6.1; command introduced.

Related Commands

[interfaces tdr-test-start](#) Displays general interface information (for example, hardware, MAC address, input errors, and output errors).

MIB Objects

esmConfTable
esmPortCfgMaxFrameSize

interfaces flood enable

Enables flood rate limiting based on a storm type on the specified interface.

```
interfaces slot [/port[-port2]] flood {broadcast | multicast | unknown-unicast | all} {enable | disable}
```

Syntax Definitions

<i>slot</i>	Slot you want to configure (for example, 3).
<i>port</i>	Port number of the interface you want to configure.
<i>port2</i>	Last port number in a range of ports you want to configure.
all	Enables for all types of storms.
enable	Enables storm control.
disable	Disables storm control.

Defaults

parameter	default
broadcast	enable
unknown-unicast	enable
multicast	disable

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- You can only configure one slot at a time. Repeat the command to configure additional slots.
- Applying the peak flood rate value to multicast traffic also limits IP Multicast Switching (IPMS) and non-IPMS multicast traffic.
- The peak flood rate value is configurable through the [interfaces flood rate](#) command.
- When multicast rate limiting is disabled, the peak flood rate value for the interface is no longer applied to multicast traffic. This change does not prevent the normal flow of multicast traffic on the specified interface.

Examples

```
-> interfaces 4/1 flood unknown-unicast enable
-> interfaces 4/1 flood unknown-unicast disable
-> interfaces 4 flood all enable
```

Release History

Release 6.6.4; command introduced.

Related Commands

show interfaces flood rate

Displays interface peak flood rate settings.

interfaces flood rate

Configures the rate limit based on storm type. The measurement unit for rate limit is Mbps, PPS and percentage.

MIB Objects

```
esmConfTable  
  esmPortFloodMcastEnable  
  esmPortFloodBcastEnable  
  esmPortFloodUnknownUcastEnable
```

interfaces flood rate

Configures the rate limit based on storm type. The measurement unit for rate limit is Mbps, PPS and percentage.

```
interfaces slot [/port[-port2]] flood {broadcast | multicast | unknownunicast | all} rate {mbps num | pps num | percentage num | default}
```

Syntax Definitions

<i>slot</i>	Slot number you want to configure.
<i>port</i>	Port number of the interface you want to configure.
<i>port2</i>	Last port number in a range of ports you want to configure.
rate	Configures the rate limiting and high threshold value.
default	Configures default rate limit value.
all	Configures for all types of storm
<i>num</i>	Specify flood rate, in megabits per second (Mbps).
pps	Packets per second

Defaults

parameter	default
<i>Mbps</i> (10 Ethernet)	4
<i>Mbps</i> (100 Fast Ethernet)	49
<i>Mbps</i> (Gigabit Ethernet)	496
<i>Mbps</i> (10 Gigabit Ethernet)	997

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- If rate is configured in Mbps, then minimum value that can be configured is 1 and maximum is up to port bandwidth.
- In case of PPS, final rate will be calculated based on packet size of 512 bytes. For example, 244 is the minimum value that can be configured as it is equivalent to 1 Mbps (244*512*8 bits) and the maximum number for PPS can be configured is based on port current bandwidth.
- Rate limit value will be changed, if configured rate limit is greater than the detected port speed bandwidth. For example, if port speed bandwidth is 1000 Mbps and rate is configured for any storm type is 200 Mbps. If port comes up with 100 Mbps speed, then the rate limiting will converted to default value (49 Mbps) for 100 Mbps.
- The auto recovery is not enabled by default.

- If the port range contains invalid ports, no configuration will be applied for any of the port given in that range.

Examples

```
-> interfaces 4/1 flood unknown-unicast rate mbps 50
-> interfaces 4 flood broadcast rate pps 500
-> interfaces 4/1-2 flood multicast rate default
-> interfaces 4/1 flood all rate default
```

Release History

Release 6.6.4; command introduced.

Related Commands

show interfaces flood rate	Displays interface peak flood rate settings.
interfaces flood enable	Enables/disables flood rate limiting for multicast traffic on an interface.

MIB Objects

```
esmConfTable
  esmPortMaxFloodRate
  esmPortMaxUnknownUcastFloodRate
  esmPortMaxMcastFloodRate
  esmPortMaxFloodRateLimit
  esmPortMaxUnknownUcastFloodRateLimit
  esmPortMaxMcastFloodRateLimit
```

interfaces clear-violation-all

Clears all port violations set by various applications on the switch for the given port.

interfaces slot [/port[-port2]] clear-violation-all

Syntax Definitions

<i>slot</i>	Slot number you want to configure.
<i>port</i>	Port number of the interface you want to configure.
<i>port2</i>	Last port number in a range of ports you want to configure.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

All application violations associated with a specific port are cleared when this command is used.

Examples

```
-> interfaces 1/3 clear-violations-all
-> interfaces 1 clear-violations-all
-> interfaces 1/3-7 clear-violations-all
```

Release History

Release 6.6.1; command introduced.

Related Commands

[show interfaces port](#) Displays interface port status.

MIB Objects

esmConfTable
esmPortViolationClearAll

interfaces hybrid autoneg

Enables or disables autonegotiation on a single combo port, a range of combo ports, or all combo ports on a switch.

interfaces slot [/port[-port2]] **hybrid {fiber | copper} autoneg {enable | disable | on | off}**

Syntax Definitions

<i>slot</i>	Slot number you want to configure.
<i>port</i>	Port number of the interface you want to configure.
<i>port2</i>	Last port number in a range of ports you want to configure.
fiber	Specifies that configuration changes are made to the SFP ports.
copper	Specifies that changes are made to the copper RJ-45 ports.
enable	Enables autonegotiation.
disable	Disables autonegotiation.
on	Same as enable.
off	Same as disable.

Defaults

parameter	default
enable disable on off	enable

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

The MIB table and MIB object listed in the following “MIB Objects” section apply to the inactive configured media only. See the “MIB Objects” section in the [interfaces autoneg](#) section for the MIB table and MIB object for the active configured media.

Examples

```
-> interfaces 1/25 hybrid copper autoneg disable
-> interfaces 1/25-26 hybrid copper autoneg disable
-> interfaces 1 hybrid copper autoneg disable
```

Release History

Release 6.6.1; command introduced.

Related Commands

interfaces hybrid speed	Configures interface speed for combo ports.
interfaces hybrid crossover	Configures crossover port settings for combo ports.
interfaces hybrid speed	Enables or disables flow (pause).
show interfaces hybrid status	Displays interface line settings for combo ports.
show interfaces hybrid capability	Displays autonegotiation, speed, duplex, and crossover settings for combo ports.

MIB Objects

esmHybridConfTable
esmHybridPortCfgAutoNegotiation

interfaces hybrid crossover

Configures port crossover settings on a single port, a range of ports, or an entire Network Interface (NI).

```
interfaces slot [/port[-port2]] hybrid copper crossover {auto | mdix | mdi}
```

Syntax Definitions

<i>slot</i>	Slot number you want to configure.
<i>port</i>	Port number of the interface you want to configure.
<i>port2</i>	Last port number in a range of ports you want to configure.
copper	Specifies that changes are made to the copper RJ-45 ports.
auto	The interface automatically detects the crossover settings.
mdix	Sets the crossover configuration to Media Dependent Interface with Crossover (MDIX), which is the standard for hubs and switches.
mdi	Sets the crossover configuration to Media Dependent Interface (MDI), which is the standard for end stations.

Defaults

parameter	default
auto mdix mdi	auto

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- You cannot configure crossover settings on fiber ports. These ports use the MDI standard.
- The MIB table and MIB object listed in the following “MIB Objects” section apply to the inactive configured media only. See the “MIB Objects” section in the [interfaces crossover](#) section for the MIB table and MIB object for the active configured media.

Examples

```
-> interfaces 1/25 hybrid copper crossover disable  
-> interfaces 1/25-26 hybrid copper crossover mdix  
-> interfaces hybrid copper crossover auto
```

Release History

Release 6.6.1; command introduced.

Related Commands

interfaces hybrid speed	Configures interface speed for combo ports.
interfaces hybrid autoneg	Enables and disables autonegotiation for combo ports.
interfaces hybrid speed	Enables or disables flow (pause) for combo ports.
show interfaces hybrid status	Displays interface line settings for combo ports.
show interfaces hybrid capability	Displays autonegotiation, speed, duplex, and crossover settings for combo ports.

MIB Objects

esmHybridConfTable
esmHybridPortCfgCrossover

interfaces hybrid duplex

Configures duplex mode on combo ports. In full duplex mode, the interface transmits and receives data simultaneously. In half duplex mode, the interface can transmit *or* receive data at a given time. Auto duplex setting causes the switch to advertise all available duplex modes (half/full/both) for the port during autonegotiation.

```
interfaces slot[/port[-port2]] hybrid {fiber | copper} duplex {full | half | auto}
```

Syntax Definitions

<i>slot</i>	Slot number you want to configure.
<i>port</i>	Port number of the interface you want to configure.
<i>port2</i>	Last port number in a range of ports you want to configure.
fiber	Specifies that configuration changes are made to the SFP ports.
copper	Specifies that changes are made to the copper RJ-45 ports.
full	Sets interface to full duplex mode.
half	Sets interface to half duplex mode.
auto	Switch automatically sets both the duplex mode settings to autonegotiation.

Defaults

parameter	default
full half auto	auto

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

The MIB table and MIB object listed in the following “MIB Objects” section apply to the inactive configured media only. See the “MIB Objects” section in the [interfaces duplex](#) section for the MIB table and MIB object for the active configured media.

Examples

```
-> interfaces 1/25 hybrid copper duplex auto
-> interfaces 1/25-26 hybrid copper duplex half
-> interfaces 1 hybrid copper fiber full
```

Release History

Release 6.6.1; command introduced.

Related Commands

interfaces hybrid speed

Configures interface line speed for combo ports. Set to **auto** to set speed and duplex mode to auto-sensing.

show interfaces hybrid status

Displays interface line settings (for example, speed, mode) for combo ports.

MIB Objects

esmHybridConfTable

esmHybridPortCfgDuplexMode

interfaces hybrid speed

Configures interface line speed on combo ports.

```
interfaces slot[/port[-port2]] speed hybrid {fiber | copper} {auto | 10 | 100 | 1000 | 10000 | max {100 | 1000}}
```

Syntax Definitions

<i>slot</i>	Slot number you want to configure.
<i>port</i>	Port number of the interface you want to configure.
<i>port2</i>	Last port number in a range of ports you want to configure.
fiber	Specifies that configuration changes are made to the SFP ports.
copper	Specifies that changes are made to the copper RJ-45 ports.
auto	The switch automatically sets the line speed to match the attached device (auto-sensing).
10	Sets the interface to 10 Mbps.
100	Sets the interface to 100 Mbps.
1000	Sets the interface to one Gigabit.
10000	Sets the interface to ten Gigabit. This option is currently not supported.
max 100	Sets the maximum speed to 100 Mb.
max 1000	Sets the maximum speed to 1000 Mb (one Gigabit)

Defaults

parameter	default
auto 10 100 1000 10000 max 100 max 1000	auto

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

The MIB table and MIB object listed in the following “MIB Objects” section apply to the inactive configured media only. See the “MIB Objects” section in the [interfaces speed](#) section for the MIB table and MIB object for the active configured media.

Examples

```
-> interfaces 1/25 hybrid copper speed auto
-> interfaces 1/25-26 hybrid copper speed 100
-> interfaces 1/25 hybrid fiber speed 1000
```

Release History

Release 6.6.1; command introduced.

Related Commands

interfaces hybrid duplex	Configures duplex mode for combo ports.
interfaces hybrid autoneg	Enables and disables autonegotiation for combo ports.
show interfaces hybrid status	Displays interface line settings for combo ports.

MIB Objects

```
esmHybridConfTable
    esmHybridPortCfgSpeed
```

interfaces hybrid pause

Configures whether the switch honors or transmits and honors the flow control PAUSE frames on the specified combo port. PAUSE frames are used to pause the flow of traffic between two connected devices to help prevent packet loss when traffic congestion occurs between switches.

```
interfaces slot[/port[-port2]] hybrid {fiber | copper} pause {rx | tx-and-rx | disable}
```

Syntax Definitions

<i>slot</i>	Slot number you want to configure.
<i>port</i>	Port number of the interface you want to configure.
<i>port2</i>	Last port number in a range of ports you want to configure.
fiber	Specifies that configuration changes are made to the SFP ports.
copper	Specifies that changes are made to the copper RJ-45 ports.
rx	Allows interface to honor PAUSE frames from peer switches and temporarily stop sending traffic to the peer. Does not transmit PAUSE frames to peer switches.
tx-and-rx	Transmits and honors PAUSE frames when traffic congestion occurs between peer switches.
disable	Disables flow control on the interface.

Platforms Supported

OmniSwitch 6250, 6350, 6450

Defaults

By default, flow control is disabled on all combo ports.

Usage Guidelines

- Flow control is only supported on interfaces configured to run in full-duplex mode; half-duplex mode is not supported.

- If both autonegotiation and flow control are enabled on the same local interface, autonegotiation calculates operational flow control settings for that interface. The operational settings as shown in the following table, override the configured settings as long as both autonegotiation and flow control are enabled for the interface.

Configured Local Tx	Configured Local Rx	Configured Remote Tx	Configured Remote Rx	Negotiated Local Tx	Negotiated Local Rx
No	No	No	No	No	No
Yes	Yes	Yes	Yes	Yes	Yes
Yes	No	Yes	No	No	No
No	Yes	No	Yes	Yes	Yes
No	No	No	Yes	No	No
Yes	Yes	No	No	No	No
Yes	No	Yes	Yes	No	No
No	Yes	Yes	No	No	Yes
No	No	Yes	No	No	No
Yes	Yes	No	Yes	Yes	Yes
Yes	No	No	No	No	No
No	Yes	Yes	Yes	Yes	Yes
No	No	Yes	Yes	No	No
Yes	Yes	Yes	No	No	No
Yes	No	No	Yes	Yes	No
No	Yes	No	No	No	No

- If autonegotiation is disabled, the configured flow control setting is applied to the local interface.

Examples

```
-> interfaces 1 hybrid fiber tx-and-rx
-> interfaces 3/21-24 hybrid copper pause rx
-> interfaces 3/21-24 hybrid copper disable
```

Release History

Release 6.6.1; command introduced.

Related Commands

- [interfaces pause](#) Configures flow control settings for switch interfaces.
[show interfaces hybrid pause](#) Displays flow control settings for combo ports.

MIB Objects

```
esmHybridConfigTable  
    esmHybridPortCfgFlow  
dot3PauseTable  
    dot3PauseAdminMode
```

interfaces tdr-test-start

Initiates a Time Domain Reflectometry (TDR) cable diagnostics test on the specified port. The TDR feature sends a signal down a cable to determine the distance to a break or other discontinuity in the cable path. The length traveled in the time it takes for the signal to reach the break and return is used to estimate the distance to the discontinuity.

interfaces *slot/port* tdr-test-start

Syntax Definitions

<i>slot</i>	Slot number of the module.
<i>port</i>	Physical Port of the module.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- TDR is an on-demand, out-of-service test. The test is not automatically triggered; data and protocol traffic is interrupted.
- Only one TDR test can be run at any given time.
- TDR is not supported on link aggregate ports, fiber ports, combo ports or stacking ports.
- TDR test is not supported on 10 Mbps speed.
- No range support is provided in the configuration CLI as only one test can be started at a time.
- Last TDR results for a port will automatically get cleared on start of every new TDR test.
- TDR test takes approximately 12-15 seconds for execution, It is preferable to try the test multiple times till a result of either pass or fail is received.

Examples

```
-> interfaces 1/1 tdr-test-start
```

Release History

Release 6.6.4; command introduced.

Related Commands

- interfaces no tdr-statistics** Clears the statistics of the last test performed on the port
- show interfaces tdr-statistics** Displays the results of the last TDR test performed on a port.

MIB Objects

esmTdrPortTable
esmTdrPortTest

interfaces no tdr-statistics

Clears the statistics of the last test performed on the port.

interfaces [*slot* | *slot/port*[-*port2*]] **no tdr-statistics**

Syntax Definitions

<i>slot</i>	Slot number of the module.
<i>port</i>	Physical port of the module. For example, 3/1 specifies port 1 on slot 3.
port2	Physical port range of the module. For example, 3/1-7 specifies slot/port 1 - port2.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

There is no global command to clear TDR statistics for all ports on all slots; statistics are cleared at the slot or the slot/port level. This is in synchronization with existing interface commands. Highest level granularity supported for clear statistics is per slot.

Examples

```
-> interfaces 2/1 no tdr-statistics
-> interfaces 2 no tdr-statistics
-> interfaces 2/1-7 no tdr-statistics
```

Release History

Release 6.6.4; command introduced.

Related Commands

interfaces tdr-test-start	Initiates the cable diagnostics on a port.
show interfaces tdr-statistics	Displays the results of the last TDR test performed on a port.

MIB Objects

```
esmTdrPortTable
esmTdrPortClearResults
```

interfaces tdr-extended-test-start

Starts the extended cable diagnostics on a port.

interfaces [*slot* | *slot/port*] **tdr-extended-test-start**

Syntax Definitions

<i>slot</i>	Slot number of the module.
<i>slot/port</i>	Slot number for the module and the physical port number on that module. For example, 3/1 specifies port 1 on slot 3.

Defaults

N/A

Platforms Supported

OmniSwitch 6450

Usage Guidelines

- No range support is provided in the configuration CLI as only one test can be started at a time.
- Last extended TDR results for a port will automatically get cleared on start of every new extended TDR test.
- Extended TDR operations cannot be performed on fiber/stacking ports.
- After changing the port speed, pair swap output shows crossover for straight cable and vice-versa, due to the crossover functionality available in hardware to automatically correct errors in cable selection. The device makes the necessary adjustment prior to commencing auto-negotiation. If the device interoperates with a device that implements MDI/MDIX crossover, a random algorithm is used to decide whether local/remote end will perform the crossover.
- Extended TDR test is not supported on combo ports.

Examples

```
-> interfaces 1/1 tdr-extended-test-start
```

Release History

Release 6.6.4; command introduced.

Related Commands

- show interfaces tdr-extended-statistics** Displays the results of the last Extended TDR test performed on a port.
- interfaces no tdr-extended-statistics** Used to clear the statistics of the last test performed on the port.

MIB Objects

esmTdrPortTable
esmTdrPortTest

interfaces no tdr-extended-statistics

Clears the statistics of the last test performed on the port.

interfaces [*slot* | *slot/port*[-*port2*]] **no tdr-extended-statistics**

Syntax Definitions

<i>slot</i>	Slot number of the module.
<i>slot/port</i>	Slot number for the module and the physical port number on that module. For example, 3/1 specifies port 1 on slot 3.
<i>slot/port</i> [- <i>port2</i>]	Physical port of the module. For example, The slot and port number (3/1). Use a hyphen to specify a range of ports (3/1-3/10).

Defaults

N/A

Platforms Supported

OmniSwitch 6450

Usage Guidelines

There is no global statistics clear command. This is in synchronization with existing interface commands. Highest level granularity supported for clear statistics is per slot.

Examples

```
-> interfaces 2/1 no tdr-extended-statistics
-> interfaces 2 no tdr-extended-statistics
-> interfaces 2/1-7 no tdr-extended-statistics
```

Release History

Release 6.6.4; command introduced.

Related Commands

interfaces tdr-extended-test-start	Used to start the extended cable diagnostics on a port.
interfaces no tdr-extended-statistics	Clears the statistics of the last test performed on the port.

MIB Objects

```
esmTdrPortTable
  esmTdrPortClearResults
```

interfaces transceiver ddm

Configures the DDM administrative status.

```
interfaces transceiver ddm {enable | disable}
```

Syntax Definitions

enable	Enables DDM functionality.
disable	Disables DDM functionality.

Defaults

parameter	default
ddm	disable

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- DDM capability will vary based on the transceiver manufacturer.
- Information will be read sequentially from a different SFP at predefined polling intervals. The number of SFPs in the switch will determine how often each SFP is polled and could result in longer delayed read times of over a minute.

Examples

```
-> interfaces transceiver ddm enable  
-> interfaces transceiver ddm disable
```

Release History

Release 6.6.4; command was introduced.

Related Commands

[show interfaces transceiver](#) Displays the DDM information of the specified transceiver.

MIB Objects

```
ddmConfiguration  
  ddmConfig
```

interfaces eee

Enables or disabled Energy Efficient Ethernet.

```
interfaces slot[/port[-port2]] eee {enable | disable}
```

Syntax Definitions

<i>slot</i>	Slot to be configured (for example, 3).
<i>port</i>	Port number of the interface to be configured.
<i>port2</i>	Last port number in a range of ports to be configured.
enable	Enables EEE functionality.
disable	Disables EEE functionality.

Defaults

parameter	default
enable disable	disable

Platforms Supported

OmniSwitch 6450

Usage Guidelines

- EEE is not supported on fiber ports or copper ports operating at 10Mbps speed.
- For copper ports operating at 10M speed EEE configuration is allowed but will have no affect. If the port speed is later changed to 100/1000M then EEE functionality is enabled.
- Enabling EEE will start advertising EEE capability to peers ports. Disabling EEE will stop advertising EEE capability to peer ports.

Examples

```
-> interfaces 1/1 eee enable  
-> interfaces 2 eee disable
```

Release History

Release 6.6.4; command was introduced.

Related Commands

[show interfaces eee](#)

Displays the EEE information for the specified interface.

MIB Objects

esmConfTable

esmPortCfgEeeStatus

interfaces ptp

Enables or disables IEEE 1588 Precision Time Protocol (PTP) on the switch.

interfaces ptp {enable | disable}

Syntax Definitions

enable Enables IEEE 1588 Precision Time Protocol (PTP) functionality.
disable Disables IEEE 1588 Precision Time Protocol (PTP) functionality.

Defaults

parameter	default
enable disable	disable

Platforms Supported

OmniSwitch 6450 (OS6450-P10S and OS6450-U24S only)

Usage Guidelines

- After entering **interfaces ptp enable**, the switch must be rebooted for the changes to take effect.
- When PTP is enabled, switches operate as standalone units and cannot become part of a stack (applies to OS6450-U24S models only).
- For OS6450-U24S switches to become part of a stack, PTP must be disabled. (After entering **interfaces ptp disable**, the switch must be rebooted for the changes to take effect.)
- In order for PTP to remain enabled following subsequent reboots of the switch, **interfaces ptp enable** must be written to the **boot.cfg** file using the **write memory** command.
- If an OS6450-XNI-U2 expansion module is installed in an OS6450-U24S on boot up, the switch will assume that it is a part of a stack, regardless of whether **interfaces ptp enable** has been written to the **boot.cfg** file. To enable PTP, the expansion module must be removed from the chassis and the switch must be rebooted with PTP enabled.

Examples

```
-> interfaces ptp enable  
-> interfaces ptp disable
```

Release History

Release 6.6.5; command was introduced.

Related Commands

show interfaces ptp

Displays the current IEEE 1588 Precision Time Protocol (PTP) status on the switch.

show interfaces ptp-statistics

Displays IEEE 1588 Precision Time Protocol (PTP) ingress and egress statistics for each port.

MIB Objects

ptpConfiguration

show interfaces

Displays general interface information (for example, hardware, MAC address, input errors, and output errors).

show [stacking] interfaces [slot[/port[-port2]]]

Syntax Definitions

stacking	Displays information for stacking ports.
<i>slot</i>	Slot number you want to display.
<i>port</i>	Port number of the interface you want to display.
<i>port2</i>	Last port number in a range of ports you want to display.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- If no slot/port numbers are entered, information for all slots/ports on the switch is displayed.
- You can display a specific interface by entering the slot and port number (for example, 3/1).
- You can display a range of port numbers (for example, 3/1-4).
- You can display all interfaces in a slot by entering the slot number (for example, 3).

Examples

-> show interfaces 1/2

```
Slot/Port 1/2 :
Operational Status      : up,
Last Time Link Changed  : FRI DEC 27 15:10:40 ,
Number of Status Change: 1,
Type                    : Ethernet,
SFP/XFP                 : Not Present,
MAC address             : 00:d0:95:b2:39:85,
BandWidth (Megabits)    : 1000,                Duplex          : Full,
Autonegotiation         : 1 [ 1000-F 100-F 100-H 10-F 10-H ],
Long Frame Size(Bytes)  : 9216,                Runt Size(Bytes) : 64,
Rx                      :
Bytes Received          :          7967624, Unicast Frames :          0,
Broadcast Frames:      :          124186, M-cast Frames  :          290,
UnderSize Frames:      :          0, OverSize Frames:    :          0,
Lost Frames            :          0, Error Frames      :          0,
CRC Error Frames:      :          0, Alignments Err :    :          0,
Tx                    :
Bytes Xmitted          :          255804426, Unicast Frames :          24992,
Broadcast Frames:      :          3178399, M-cast Frames  :          465789,
UnderSize Frames:      :          0, OverSize Frames:    :          0,
Lost Frames            :          0, Collided Frames:    :          0,
Error Frames          :          0
```

-> show stacking interfaces

```
Slot/Port 1/51 :
Operational Status      : down,
Last Time Link Changed  : FRI MAY 22 19:47:09 ,
Number of Status Change: 0,
Type                    : Stacking,
BandWidth (Megabits)    :          - ,                Duplex          : - ,
Rx                      :
Bytes Received          :          0, Unicast Frames :          0,
Broadcast Frames:      :          0, M-cast Frames  :          0,
UnderSize Frames:      :          0, OverSize Frames:    :          0,
Lost Frames            :          0, Error Frames      :          0,
CRC Error Frames:      :          0, Alignments Err :    :          0,
Tx                    :
Bytes Xmitted          :          0, Unicast Frames :          0,
Broadcast Frames:      :          0, M-cast Frames  :          0,
UnderSize Frames:      :          0, OverSize Frames:    :          0,
Lost Frames            :          0, Collided Frames:    :          0,
Error Frames          :          0
```

```
Slot/Port 1/52 :
Operational Status      : up,
Last Time Link Changed  : FRI MAY 22 19:47:09 ,
Number of Status Change: 1,
Type                    : Stacking,
BandWidth (Megabits)    :          10000,                Duplex          : Full,
Rx                      :
Bytes Received          :          103100016, Unicast Frames :          85856,
Broadcast Frames:      :          0, M-cast Frames  :          12,
UnderSize Frames:      :          0, OverSize Frames:    :          0,
Lost Frames            :          0, Error Frames      :          0,
CRC Error Frames:      :          0, Alignments Err :    :          0,
Tx                    :
Bytes Xmitted          :          3883702, Unicast Frames :          45872,
Broadcast Frames:      :          1948, M-cast Frames  :          813,
```

```

UnderSize Frames:          0, OverSize Frames:          0,
Lost Frames      :          0, Collided Frames:          0,
Error Frames     :          0

```

output definitions

Slot/Port	Interface slot and port.
Operational Status	Interface status (up/down).
Type	Interface type (Ethernet/Fast Ethernet/Gigabit Ethernet/stacking).
MAC address	Interface MAC address.
Bandwidth	Bandwidth (in megabits).
Duplex	Duplex mode (Half/Full/Auto).
Autonegotiation	The autonegotiation settings for this interface.
Long Accept	Long Frames status (enable/disable).
Runt Accept	Runt Frames status (enable/disable).
Long Frame Size	Long Frame Size (in Bytes).
Runt Size	Runt Frame Size (in Bytes).
Bytes Received	Number of Bytes received.
Rx Unicast Frames	Number of unicast frames received.
Rx Broadcast Frames	Number of broadcast frames received.
Rx M-cast Frames	Number of multicast frames received.
Rx Undersize Frames	Number of undersized frames received.
Rx Oversize Frames	Number of oversized frames received.
Rx Lost Frames	Number of Lost Frames received.
Rx Error Frames	Number of error frames received.
Rx CRC Error Frames	Number of CRC error frames received.
Rx Alignments Err	Number of alignments error frames received.
Bytes Xmitted	Number of bytes transmitted.
Tx Unicast Frames	Number of unicast frames transmitted.
Tx Broadcast Frames	Number of broadcast frames transmitted.
Tx M-cast Frames	Number of multicast frames transmitted.
Tx Undersize Frames	Number of undersized frames transmitted.
Tx Oversize Frames	Number of oversized frames transmitted.
Tx Lost Frames	Number of lost frames transmitted.
Tx Collided Frames	Number of collision frames received or transmitted.
Tx Error Frames	Number of error frames transmitted.

Release History

Release 6.6.1; command introduced.

Related Commands

show interfaces accounting	Displays interface accounting information (for example, packets received or transmitted).
show interfaces counters	Displays interface counter information (for example, unicast packets received/transmitted).
show interfaces counters errors	Displays interface error frame information (for example, CRC errors, transit errors, and receive errors).
show interfaces collisions	Displays interface collision information (for example, number of collisions and number of retries).
show interfaces status	Displays the interface line settings (for example, speed, and mode).
show interfaces traffic	Displays interface traffic statistics (input/output bytes and packets).

MIB Objects

```

ifTable
  ifOperStatus
  ifType
  ifPhysAddress
  ifSpeed
  ifInDiscards
  IfOutDiscards
esmConfTable
  esmPortSlot
  esmPortIF
  esmPortCfgLongEnable
  esmPortCfgRuntEnable
  esmPortCfgMaxFrameSize
  esmPortCfgRuntSize
ifXTable
  ifHCInOctets
  ifHCInUcastPkts
  ifHCInBroadcastPkts
  ifHCInMulticastPkts
  IfHCOutOctets
  IfHCOutUcastPkts
  IfHCOutBroadcastPkts
  IfHCOutMulticastPkts
alcetherStatsTable
  alcetherStatsRxUndersizePkts
  alcetherStatsCRCAAlignErrors
  alcetherStatsTxUndersizePkts
  alcetherStatsTxOversizePkts
  alcetherStatsTxCollisions
dot3StatsTable
  dot3StatsFrameTooLong
  dot3StatsFCSErrors
  dot3StatsLateCollisions
esmStackPortConfEntry
  esmStackPortSlotNum
  esmStackPortInOctets
  esmStackPortOutOctets

```



```
esmStackPortInUcastPkts  
esmStackPortOutUcastPkts  
esmStackPortInMulticastPkts  
esmStackPortOutMulticastPkts  
esmStackPortInBroadcastPkts  
esmStackPortOutBroadcastPkts  
esmStackPortInPauseFrames  
esmStackPortOutPauseFrames  
esmStackPortStatsAlignmentErrors  
esmStackPortStatsFCSErrors  
esmStackPortInErrors  
esmStackPortOutErrors  
esmStackPortInDiscards  
esmStackPortOutDiscards  
esmStackPortTxCollisions  
esmStackPortRxUndersizePkts  
esmStackPortTxUndersizePkts  
esmStackPortRxOversizePkts  
esmStackPortTxOversizePkts  
esmStackPortAutoSpeed
```

show interfaces tdr-statistics

Displays results of the last TDR test performed on a port.

show interfaces [*slot* | *slot/port[-port2]*] **tdr-statistics**

Syntax Definitions

slot Slot number of the module.

slot/port[-port2] Physical port of the module. For example, The slot and port number (3/1). Use a hyphen to specify a range of ports (3/1-3/10).

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Enter a slot number to display information for all interfaces on a specific slot.
- Enter a slot and port number or a range of port numbers to display information for a specific interface or range of interfaces.

Examples

```
-> show interfaces 1/3 tdr-statistics
```

Legend: Pair Length accuracy may vary +/-2 meter

Pair 1 - Orange and White

Pair 2 - Green and White

Pair 3 - Blue and White

Pair 4 - Brown and White

Slot/ Pair4 Port Length	Pair1 Pair4 State State	Pair1 Result Length Length	Pair2 State	Pair2 Length	Pair3 State	Pair3
1/5	open	32	open	33	open	33
1/6	open	33	success	3	ok	3

-> show interfaces 1/1-2 tdr-statistics

Legend: Pair Length accuracy may vary +/-2 meter

Pair 1 - Orange and White

Pair 2 - Green and White

Pair 3 - Blue and White

Pair 4 - Brown and White

Slot/ Pair4 Port Length	Pair1 Pair4 State State	Pair1 Result Length Length	Pair2 State	Pair2 Length	Pair3 State	Pair3
1/1	open	2	ok	0	ok	0
impedanceMismatch	4	success				
1/2	unknown	0	unknown	0	unknown	0
unknown	0	unknown				
1/3	unknown	0	unknown	0	unknown	0
unknown	0	unknown				
1/4	unknown	0	unknown	0	unknown	0
unknown	0	unknown				
1/5	open	32	open	33	open	33
open	33	success				

-> show interfaces 1 tdr-statistics

Legend: Pair Length accuracy may vary +/-2 meter

Pair 1 - Orange and White

Pair 2 - Green and White

Pair 3 - Blue and White

Pair 4 - Brown and white

Slot/ Pair3 port Length	No of Pair4 pairs State	Cable Pair4 State Length	Pair1 Test Length Result	Pair1 State	Pair2 Length	Pair2 State	Pair2 Length	Pair3 State
1/1	4	ok	0	ok	3	ok	3	ok
3	ok	3	success					
1/2	4	open-short	0	open-short	3	open-short	3	open-
short	3	open-short	3	success				
1/3	4	open	0	open	3	open	3	
open	3	open	3	success				
1/4	4	Impedance-Mismatch	0	Impedance-Mismatch	3	Impedance-Mismatch	3	Impedance-
Mismatch	3	Impedance-Mismatch	3	Impedance-Mismatch	3	Impedance-Mismatch	3	success
1/5	4	short	0	short	3	short	3	
short	3	short	3	success				
1/6	4	unknown	0	unknown	0	unknown	0	
unknown	0	unknown	0	fail				
.								
.								
.								
.								
1/47	unknown		0	unknown	0	unknown	0	0
unknown		0	unknown					
1/48	unknown		0	unknown	0	unknown	0	0
unknown		0	unknown					
1/49	unknown		0	unknown	0	unknown	0	0
unknown		0	unknown					
1/50	unknown		0	unknown	0	unknown	0	0
unknown		0	unknown					

output definitions

Legend	Eight-conductor data cable contains 4 pairs of twisted Pair Copper Cable wires. Each pair consists of a solid (or predominantly) colored wire and a white wire with a strip of the same color. The pairs are twisted together.
Slot/Port	The interface slot and port number.
Cable State	State of a cable as returned by the TDR test. The state of the cable wire. (a) OK - Wire is working properly (b) Open - Wire is broken (c) Short - Pairs of wire are in contact with each other (d) Impedance Mismatch - <ul style="list-style-type: none"> • Two cable of different quality/resistance are connected to each other through patch connector. • If the pair is short in a cable, it may affect the resistance of another pair hence it will result Impedance mismatch on that particular pair. (e) Unknown - Cable diagnostic test unable to find the state of a cable. (f) Pair Swap - Determines the channel associated with the MDI pair (cross or not for each two MDI pairs). (g) Pair Polarity - Detects if the pairs are connected with reverse polarity (reverse on one side between two conductors in one pair). (h) Pair Skew -The skew among the four pairs of cable (delay between pairs, in n-seconds). (i) Cable Length - The length of the cable, in meters. (j) Downshift - Gives the downshift status of the port, when the Gigabit link cannot be established.
Pair1 State	The state of the Pair 1 cable wire (OK, Open, Short, Impedance Mismatch and Unknown)
Pair1 Length	The length of the Pair 1 cable at which the fault is detected, if the pair is faulty. Else, specifies the complete length of the cable.
Pair2 State	The state of the Pair 2 cable wire (OK, Open, Short, Impedance Mismatch and Unknown)
Pair2 Length	The length of the Pair 2 cable at which the fault is detected, if the pair is faulty. Else, specifies the complete length of the cable.
Pair3 State	The state of the Pair 3 cable wire (OK, Open, Short, Impedance Mismatch and Unknown)
Pair3 Length	The length of the Pair 3 cable at which the fault is detected, if the pair is faulty. Else, specifies the complete length of the cable.
Pair4 State	The state of the Pair 4 cable wire (OK, Open, Short, Impedance Mismatch and Unknown)
Pair4 Length	The length of the Pair 4 cable at which the fault is detected, if the pair is faulty. Else, specifies the complete length of the cable.
Test Result	The status of the TDR test performed, success or fail.

Release History

Release 6.6.4; command introduced.

Related Commands

[interfaces tdr-test-start](#)

Initiates the cable diagnostics on a port.

[interfaces no tdr-statistics](#)

Clears the statistics of the last test performed on the port.

MIB Objects

```
esmTdrPortTable  
  esmTdrPortPair1State,  
  esmTdrPortPair1Length,  
  esmTdrPortPair2State,  
  esmTdrPortPair2Length,  
  esmTdrPortPair3State,  
  esmTdrPortPair3Length,  
  esmTdrPortPair4State,  
  esmTdrPortPair4Length,  
  esmTdrResult
```

show interfaces tdr-extended-statistics

Displays the results of the last Extended TDR test performed on a port.

show interfaces [*slot* | *slot/port*[-*port2*]] **tdr-extended-statistics**

Syntax Definitions

<i>slot</i>	Slot number of the module.
<i>slot/port</i>	Slot number for the module and the physical port number on that module. For example, 3/1 specifies port 1 on slot 3.
<i>slot/port</i> [- <i>port2</i>]	Physical port of the module. For example, The slot and port number (3/1). Use a hyphen to specify a range of ports (3/1-3/10).

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

N/A

Examples

```
--> show interfaces 1/5 tdr-extended-statistics
Pair Swap
  Channel 1:straight
  Channel 2:straight
Pair Polarity
  Pair 1:positive
  Pair 2:positive
  Pair 3:positive
  Pair 4:positive
Pair Skew (in n-seconds)
  Pair 1:0
  Pair 2:0
  Pair 3:8
  Pair 4:0
Accurate Cable Length (in meters)
  Pair 1:15
  Pair 2:15
  Pair 3:15
  Pair 4:15
Downshift:No Downshift
```

output definitions

Pair Swap	Displays the channel associated with the MDI pair.
Pair Polarity	Displays if the pairs are connected with reverse polarity.
Pair Skew	Displays the skew among the four pairs of cable (delay between pairs, in n-seconds).
Accurate Cable Length	Displays the length of the cable, in meters.
Downshift	Displays the downshift status of the port, when the Gigabit link cannot be established.

Release History

Release 6.6.4; command introduced.

Related Commands

interfaces tdr-extended-test-start	Used to start the extended cable diagnostics on a port.
interfaces no tdr-extended-statistics	Used to clear the statistics of the last test performed on the port.

MIB Objects

```
esmTdrPortTable
  esmTdrPortPair1State,
  esmTdrPortPair1Length,
  esmTdrPortPair2State,
  esmTdrPortPair2Length,
  esmTdrPortPair3State,
  esmTdrPortPair3Length,
  esmTdrPortPair4State,
  esmTdrPortPair4Length,
  esmTdrResult
  esmTdrPortExtSwapTypePair1,
  esmTdrPortExtSwapTypePair2,
  esmTdrPortExtPolaritySwapPair1,
  esmTdrPortExtPolaritySwapPair2,
  esmTdrPortExtPolaritySwapPair3,
  esmTdrPortExtPolaritySwapPair4,
  esmTdrPortExtSkewPair1,
  esmTdrPortExtSkewPair2,
  esmTdrPortExtSkewPair3,
  esmTdrPortExtSkewPair4,
  esmTdrPortExtAccurateCableLenPair1,
  esmTdrPortExtAccurateCableLenPair2,
  esmTdrPortExtAccurateCableLenPair3,
  esmTdrPortExtAccurateCableLenPair4,
  esmTdrPortExtDownshiftStatus
```

show interfaces capability

Displays default autonegotiation, speed, duplex, flow, and cross-over settings for a single port, a range of ports, or all ports on a Network Interface (NI) module.

show interfaces [*slot*[/*port*[-*port2*]]] **capability**

Syntax Definitions

<i>slot</i>	Slot number you want to display.
<i>port</i>	Port number of the interface you want to display.
<i>port2</i>	Last port number in a range of ports you want to display.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

The **show interfaces capability** command displays default settings in two rows of data for each port. The first row of data, identified by the label **CAP**, displays the valid user-defined configuration settings available for the port. The second row, identified by the label **DEF**, displays the default settings for the port.

Examples

```
-> show interfaces 5/1 capability
Slot/Port  AutoNeg      Flow  Crossover      Speed  Duplex
-----+-----+-----+-----+-----+-----
 5/1  CAP      EN/DIS  EN/DIS  MDI/X/Auto  10/100/1G  Full/Half
 5/1  DEF          EN      EN      Auto        Auto        Auto
```

output definitions

Slot	The slot number.
Port	The port number
AutoNeg	In the row labeled CAP , the field displays the valid autonegotiation configurations for the port. In the row label DEF , the field displays the default autonegotiation settings for the port. The possible values are EN (enabled) or DIS (disabled).
Flow	In the row labeled CAP , the field displays the valid flow configurations for the port. In the row label DEF , the field displays the default flow settings for the port. The possible values are EN (enabled) or DIS (disabled).

output definitions (continued)

Crossover	In the row labeled CAP , the field displays the valid cross over configurations for the port. In the row label DEF , the field displays the default cross over settings for the port. The possible values are Auto , MDI/X/Auto (MDI/MDIX/Auto), or -- (not configurable and/or not applicable).
Speed	In the row labeled CAP , the field displays the valid line speed configurations for the port. In the row label DEF , the field displays the default line speed settings for the port. The possible values are 10/100 , 100 , 1 G , 10/100/1 G , 10 G , or Auto .
Duplex	In the row labeled CAP , the field displays the valid duplex configurations for the port. In the row label DEF , the field displays the default duplex settings for the port. The possible values are Full , Full/Half , or Auto .

Release History

Release 6.6.1; command introduced.

Related Commands

interfaces autoneg	Enables and disables autonegotiation.
interfaces crossover	Configures crossover port settings.
interfaces speed	Configures interface speed.
interfaces duplex	Configures duplex settings.
show interfaces status	Displays interface line settings.

MIB Objects

```
esmConfTable
  esmPortCfgAutoNegotiation
  esmPortCfgFlow
  esmPortCfgCrossover
  esmPortCfgSpeed
  esmPortAutoDuplexMode
```

show interfaces flow control

Displays interface flow control wait time settings.

show interfaces [*slot*[/*port*[-*port2*]]] **flow** [**control**]

Syntax Definitions

<i>slot</i>	Slot number you want to display.
<i>port</i>	Port number of the interface you want to display.
<i>port2</i>	Last port number in a range of ports you want to display.
control	Optional command syntax. It displays the same information as show interfaces flow .

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- If no slot/port numbers are entered, flow control wait time settings for all slots/ports on the switch are displayed.
- You can display a specific interface by entering the slot and port number, a range of ports by entering a slot and a range of ports. You can also display all interfaces in a slot by entering the slot number, or display all interfaces.

Examples

```
-> show interfaces 3/20-24 flow
Slot/Port  Active  Wait time(usec)  Cfg-Flow  Cfg-Cross
-----+-----+-----+-----+-----
3/20      -        0                Pause     MDIX
3/21      -        0                Pause     MDIX
3/22      -        0                Pause     MDIX
3/23      -        0                Go        MDIX
3/24      -        0                Go        MDIX
```

output definitions

Slot/Port	Interface slot and port number
Active	Interface status.
Wait time	Flow control wait time, in microseconds.
Cfg-Flow	Flow control status (Pause or Go).
Cfg-Cross	The user-configured cross-over setting (Auto , MDI , or MDIX).

Release History

Release 6.6.1; command introduced.

Related Commands

- [interfaces crossover](#) Configures crossover settings.
- [show interfaces hybrid flow control](#) Displays interface flow control wait time settings for combo ports.

MIB Objects

```
esmConfTable
  esmPortSlot
  esmPortIF
  esmPortPauseSlotTime
  esmPortCfgCrossover
dot3PauseTable
  dot3PauseSlotTime
```

show interfaces pause

Displays the flow control pause configuration for the specified interface.

show interfaces [*slot*[/*port*[-*port2*]]] **pause**

Syntax Definitions

<i>slot</i>	Slot number you want to display.
<i>port</i>	Port number of the interface you want to display.
<i>port2</i>	Last port number in a range of ports you want to display.

Defaults

If a specific slot or slot/port number is not entered with this command, the flow control pause configuration for all switch interfaces is displayed.

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Enter a slot and port number (for example, 3/21) or a range of port numbers (for example, 3/21-24) to display information for a specific port or a range of ports.
- Enter a slot number (for example, 1) to display information for all ports on a specific slot.

Examples

```
-> show interfaces pause
Slot/Port  Active  Wait time(usec)  Cfg-Pause  Cfg-Cross Hybrid Type
-----+-----+-----+-----+-----+-----+-----
 1/1       -        0                DIS        MDIX        -
 1/2       -        0                DIS        MDIX        -
 1/3       -        0                DIS        MDIX        -
 1/4       -        0                DIS        MDIX        -
 1/5       -        0                DIS        MDIX        -
 1/6       -        0                DIS        MDIX        -
 1/7       -        0                DIS        Auto        -
 1/8       -        0                DIS        Auto        -
 1/9       -        65535            DIS        Auto        NA
 1/10      -        0                DIS        Auto        -
 1/11      -        65535            DIS        Auto        NA
 1/12      -        0                DIS        Auto        -
 1/13      -        0                DIS        Auto        -
 1/14      -        0                DIS        Auto        -
 1/15      -        0                DIS        Auto        -
 1/16      -        0                DIS        Auto        -
 1/17      -        0                DIS        Auto        -
 1/18      -        0                DIS        Auto        -
 1/19      -        0                DIS        Auto        -
 1/20      -        0                DIS        Auto        -
 1/21      -        0                DIS        MDI        -
```

```

1/21      -          0      DIS      Auto      -
1/22      -          0      DIS      MDI       -
1/22      -          0      DIS      Auto      -
1/23      -          0      DIS      MDI       -
1/23      -          0      DIS      Auto      -
1/24      -          0      Tx       MDI       -
1/24      Active    65535  Tx-N-Rx  Auto      C

```

-> show interfaces 1/24 pause

```

Slot/Port  Active  Wait time(usec)  Cfg-Pause  Cfg-Cross  Hybrid  Type
-----+-----+-----+-----+-----+-----+-----
1/24      -          0      Tx       MDI       -
1/24      Active    65535  Tx-N-Rx  Auto      C

```

output definitions

Slot/Port	Interface slot and port number
Active	Interface status.
Wait time	The amount of time, in microseconds, the neighbor interface waits after receiving a PAUSE frame from the local interface.
Cfg-Pause	The flow control setting (Tx = transmit, Rx = receive, Tx-N-Rx = transmit and receive). Configured through the interfaces pause command.
Cfg-Cross	The user-configured cross-over setting (Auto , MDI , or MDIX). Configured through the interfaces crossover command.
Hybrid Type	The configured active media type for a hybrid port (F = fiber, C = copper, NA = not applicable).

Release History

Release 6.6.1; command introduced.

Related Commands

[show interfaces hybrid pause](#) Displays flow control pause settings for combo ports.

MIB Objects

```

esmConfTable
  esmPortSlot
  esmPortIF
  esmPortPauseSlotTime
  esmPortCfgCrossover
  esmPortActiveHybridType
dot3PauseTable
  dot3PauseSlotTime

```

show interfaces accounting

Displays interface accounting information (for example, packets received or transmitted, and deferred frames received).

show interfaces [*slot*[/*port*[-*port2*]]] **accounting**

Syntax Definitions

<i>slot</i>	Slot number you want to display.
<i>port</i>	Port number of the interface you want to display.
<i>port2</i>	Last port number in a range of ports you want to display.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- If no slot/port numbers are entered, accounting information for all slots/ports on the switch is displayed.
- You can display a specific interface by entering the slot and port number (for example, 3/1).
- You can display a range of port numbers (for example, 3/1-4).
- You can display all interfaces in a slot by entering the slot number (for example, 3).
- For combo ports configured as either forced fiber or preferred fiber, the accounting information for the SFP fiber ports and not the copper RJ-45 ports is displayed. See the [show interfaces hybrid accounting](#) command for more information.
- For combo ports configured as either forced copper or preferred copper, the accounting information for the copper RJ-45 ports and not the SFP fiber port is displayed. See the [show interfaces hybrid accounting](#) command for more information.

Examples

```
-> show interfaces 1/2 accounting
1/2 ,
  Rx undersize packets      =                0,
  Tx undersize packets      =                0,
  Rx oversize packets       =                0,
  Tx oversize packets       =                0,
  Rx packets 64 Octets      =            3073753,
  Rx packets 65To127 Octets =            678698,
  Rx packets 128To255 Octets =             21616,
  Rx packets 256To511 Octets =             21062,
  Rx packets 512To1023 Octets =                2,
  Rx packets 1024To1518 Octets =             84,
  Rx packets 1519to4095 Octets =                0,
  Rx packets 4096ToMax Octets =                0,
  Rx Jabber frames          =                0
```

output definitions

Rx undersize packets	Number of undersized packets received.
Tx undersize packets	Number of undersized packets transmitted.
Rx oversize packets	Number of oversized packets received.
Tx oversize packets	Number of oversized packets transmitted.
Rx packets Octets	Number of packets received in each listed octet range.
Rx Jabber frames	Number of jabber packets received (longer than 1518 octets).
Tx deferred frames	Number of packets for which transmission was delayed (Ethernet only).

Release History

Release 6.6.1; command introduced.

Related Commands

interfaces tdr-test-start	Displays general interface information (for example, hardware, MAC address, and input/output errors).
show interfaces counters	Displays interface counter information (for example, unicast packets received/transmitted).

MIB Objects

esmConfTable

esmPortSlot

esmPortIF

dot3StatsTable

dot3StatsFrameTooLong

dot3StatsDeferredTransmissions

alcetherStatsTable

alcetherStatRxsUndersizePkts

alcetherStatTxUndersizePkts

alcetherStatsTxOversizePkts

alcetherStatsPkts64Octets

alcetherStatsPkts65to127Octets

alcetherStatsPkts128to255Octets

alcetherStatsPkts256to511Octets

alcetherStatsPkts512to1023Octets

alcetherStatsPkts1024to1518Octets

gigaEtherStatsPkts1519to4095Octets

gigaEtherStatsPkts4096to9215Octets

 alcetherStatsRxJabber

show interfaces counters

Displays interface counters information (for example, unicast, broadcast, and multi-cast packets received or transmitted).

show [stacking] interfaces [slot[/port[-port2]]] counters

Syntax Definitions

stacking	Displays information for stacking ports.
<i>slot</i>	Slot number you want to display.
<i>port</i>	Port number of the interface you want to display.
<i>port2</i>	Last port number in a range of ports you want to display.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- If no slot/port numbers are entered, counter information for all slots/ports on the switch is displayed.
- You can display a specific interface by entering the slot and port number (for example, 3/1).
- You can display a range of port numbers (for example, 3/1-4).
- You can display all interfaces in a slot by entering the slot number (for example, 3).
- These counters do not apply to Gigabit Ethernet traffic.
- For combo ports configured as either forced fiber or preferred fiber, statistics for the SFP fiber ports and not the copper RJ-45 ports is displayed. See the [show interfaces hybrid counters](#) command for more information.
- For combo ports configured as either forced copper or preferred copper, statistics for the copper RJ-45 ports and not the SFP fiber port is displayed. See the [show interfaces hybrid counters](#) command for more information.
- This command is supported on transceiver based stacking ports.

Examples

-> show interfaces 3/1 counters

```
InOctets      = 54367578586897979, OutOctets      = 5.78E19,
InUcastPkts  = 55654265276,      OutUcastPkts  = 5.78E20,
InMcastPkts  = 58767867868768777, OutMcastPkts  = 5465758756856,
InBcastPkts  = 576567567567567576, OutBcastPkts  = 786876,
InPauseFrames = 567798768768767, OutPauseFrames = 786876,
```

-> show stacking interfaces counters

```
1/52,
  InOctets      =          108040828, OutOctets      =          4065016,
  InUcastPkts  =           89957, OutUcastPkts  =           48056,
  InMcastPkts  =            12, OutMcastPkts  =            868,
  InBcastPkts  =            0, OutBcastPkts  =           2006,
  InPauseFrames =            0, OutPauseFrames =            0,
  Sampling Interval 5 seconds
  InPkts/s     =             28, OutPkts/s     =             16,
  InBits/s     =          268016, OutBits/s     =             9720
4/27,
  InOctets      =          4012826, OutOctets      =         108129633,
  InUcastPkts  =           48045, OutUcastPkts  =           89945,
  InMcastPkts  =            868, OutMcastPkts  =            12,
  InBcastPkts  =           2006, OutBcastPkts  =            0,
  InPauseFrames =            0, OutPauseFrames =            0,
  Sampling Interval 5 seconds
  InPkts/s     =             16, OutPkts/s     =             29,
  InBits/s     =           9840, OutBits/s     =          270352
```

output definitions

InOctets	Number of octets received.
OutOctets	Number of octets transmitted.
InUcastPkts	Number of unicast packets received.
OutUcastPkts	Number of unicast packets transmitted.
InMcastPkts	Number of multicast packets received.
OutMcastPkts	Number of unicast packets transmitted.
InBcastPkts	Number of broadcast packets received.
OutBcastPkts	Number of unicast packets transmitted.
InPauseFrames	Number of MAC control frames received.
OutPauseFrames	Number of MAC control frames transmitted.

Release History

Release 6.6.1; command introduced.

Related Commands

show interfaces counters errors Displays interface error frame information (for example, CRC errors, transit errors, and receive errors).

MIB Objects

```
esmConfTable
  esmPortSlot
  esmPortIF
ifXTable
  IfHCInOctets
  IfHCOctets
  IfHCInUcastPkts
  IfHCOctetsUcastPkts
  IfHCInMulticastPkts
  IfHCOctetsMulticastPkts
  IfHCInBroadcastPkts
  IfHCOctetsBroadcastPkts
dot3PauseTable
  dot3InPauseFrame
  dot3OutPauseFrame
healthPortTable
  healthPortTxLatest
  healthPortTx1MinAvg
  healthPortTx1HrAvg
  healthPortTx1HrMax
```

show interfaces counters errors

Displays interface error frame information (for example, CRC errors, transit errors, and receive errors).

show [stacking] interfaces [slot[/port[-port2]]] counters errors

Syntax Definitions

stacking	Displays information for stacking ports.
<i>slot</i>	Slot number you want to display.
<i>port</i>	Port number of the interface you want to display.
<i>port2</i>	Last port number in a range of ports you want to display.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- If no slot/port numbers are entered, counter error information for all slots/ports on the switch is displayed.
- You can display a specific interface by entering the slot and port number (for example, 3/1).
- You can display a range of port numbers (for example, 3/1-4).
- You can display all interfaces in a slot by entering the slot number (for example, 3).
- These counters do not apply to Gigabit Ethernet traffic.
- For combo ports configured as either forced fiber or preferred fiber, statistics for the SFP fiber ports and not the copper RJ-45 ports is displayed. See the [show interfaces hybrid counters errors](#) command for more information.
- For combo ports configured as either forced copper or preferred copper, statistics for the copper RJ-45 ports and not the SFP fiber port is displayed. See the [show interfaces hybrid counters errors](#) command for more information.
- This command is supported on transceiver based stacking ports.

Examples

```
-> show interfaces 2/1 counters errors
```

```
02/01,
  Alignments Errors = 6.45E13,  FCS Errors = 7.65E12
  IfInErrors        = 6435346,  IfOutErrors= 5543,
  Undersize pkts    = 867568,  Oversize pkts= 5.98E8
```

```
-> show stacking interfaces counters errors
```

```
1/52,
  IfInErrors        =                0,
  Undersize pkts    =                0,  Oversize pkts =                0
4/27,
  IfInErrors        =                0,
  Undersize pkts    =                0,  Oversize pkts =                0
```

output definitions

Slot/Port	Interface slot and port number.
Alignments Errors	Number of Alignments errors.
FCS Errors	Number of Frame Check Sequence errors.
IfInErrors	Number of received error frames.
IfOutErrors	Number of transmitted error frames.
Undersize pkts	Number of undersized packets.
Oversize pkts	Number of oversized packets (more than 1518 octets).

Release History

Release 6.6.1; command introduced.

Related Commands

[show interfaces counters](#) Displays interface counters information (for example, unicast, broadcast, and multi-cast packets received/transmitted).

MIB Objects

```
esmConfTable
  esmPortSlot
  esmPortIF
ifTable
  ifInErrors
  ifOutErrors
alcetherStatsTable
  alcetherStatsRxUndersizePkts
dot3StatsTable
  dot3StatsAlignmentErrors
  dot3StatsFCSErrors
  dot3StatsFrameTooLong
```

show interfaces collisions

Displays interface collision information (for example, number of collisions and number of retries).

show interfaces [*slot*[/*port*[-*port2*]]] **collisions**

Syntax Definitions

<i>slot</i>	Slot number you want to display.
<i>port</i>	Port number of the interface you want to display.
<i>port2</i>	Last port number in a range of ports you want to display.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- If no slot/port numbers are entered, collision information for all slots/ports on the switch is displayed.
- You can display a specific interface by entering the slot and port number (for example, 3/1).
- You can display a range of port numbers (for example, 3/1-4).
- You can display all interfaces in a slot by entering the slot number (for example, 3).
- These counters do not apply to Gigabit Ethernet traffic.
- For combo ports configured as either forced fiber or preferred fiber, statistics for the SFP fiber ports and not the copper RJ-45 ports is displayed. See the [show interfaces hybrid collisions](#) command for more information.
- For combo port configured as either forced copper or preferred copper, statistics for the copper RJ-45 ports and not the SFP fiber port is displayed. See the [show interfaces hybrid collisions](#) command for more information.

Examples

```
-> show interfaces 2/1 collisions
```

```
02/01,  
  Rx Collisions = 6.56E18,  Rx Single Collision = 345464364,  
  Rx Multiple Collisions = 6325235326,  Rx Excessive Collisions = 5.65E19
```

output definitions

Slot/Port	Interface slot and port number.
Tx Collisions	Number of transmit collisions.

output definitions (continued)

Tx Single Collision	Number of successfully transmitted frames for which transmission was inhibited by one collision.
Tx Multiple Collisions	Number of successfully transmitted frames for which transmission was inhibited by multiple collisions.
Tx Excessive Retries	Number of frames for which transmission fails due to excessive collisions.
Rx Collisions	Number of receive collisions.
Rx Single Collision	Number of successfully received frames for which reception was inhibited by one collision.
Rx Multiple Collisions	Number of successfully received frames for which reception was inhibited by multiple collisions.
Rx Excessive Retries	Number of frames for which reception fails due to excessive collisions.

Release History

Release 6.6.1; command introduced.

Related Commands

[interfaces tdr-test-start](#) Displays general interface information (for example, hardware, MAC address, input errors, and output errors).

MIB Objects

```
esmConfTable
  esmPortSlot
  esmPortIF
alcetherStatsTable
  alcetherStatsRxCollisions
dot3StatsTable
  dot3StatsSingleCollisionFrames
  dot3StatsMultipleCollisionFrames
  dot3StatsExcessiveCollisions
```

show interfaces status

Displays interface line settings (for example, speed, and mode).

show [stacking] interfaces [slot[/port[-port2]]] status

Syntax Definitions

stacking	Displays information for stacking ports.
<i>slot</i>	Slot number you want to display.
<i>port</i>	Port number of the interface you want to display.
<i>port2</i>	Last port number in a range of ports you want to display.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- If no slot/port numbers are entered, line settings for all slots/ports on the switch are displayed.
- You can display a specific interface by entering the slot and port number (for example, 3/1).
- You can display a range of port numbers (for example, 3/1-4).
- You can display all interfaces in a slot by entering the slot number (for example, 3).
- The **show interfaces status** command displays the status and configuration of the active port in the first row and the status and configuration of the other port in the following row. See the [show interfaces hybrid status](#) command for more information.
- The hybrid mode for combo ports is not configurable; combo ports are set to preferred fiber by default. As a result, the Hybrid Mode field always displays preferred fiber (**PF**) for all combo ports. For non-combo ports, the Hybrid Type and Hybrid Mode fields display **NA**.
- This command is supported on transceiver based stacking ports.

Examples

The following is an example for a non-combo port:

```
-> show interfaces 1/2 status
                DETECTED                CONFIGURED
Slot/ AutoNego  Speed Duplex Hybrid  Speed  Duplex Hybrid  Trap
Port           (Mbps)                Type  (Mbps)                Mode  LinkUpDown
-----+-----+-----+-----+-----+-----+-----+-----
 1/2   Enable   1000   Full   NA     Auto   Auto   NA     -
```

The following is an example for a combo port:

```
-> show interfaces 1/25 status
                DETECTED                CONFIGURED
Slot/ AutoNego  Speed Duplex Hybrid  Speed  Duplex Hybrid  Trap
Port           (Mbps)                Type  (Mbps)                Mode  LinkUpDown
-----+-----+-----+-----+-----+-----+-----+-----
 1/25  Enable   -      -      -      1000  Full   PF   Enable
 1/25  Enable   -      -      -      100   Auto   PF   Enable
```

FF - ForcedFiber PF - PreferredFiber F - Fiber
 FC - ForcedCopper PC - PreferredCopper C - Copper

```
-> show stacking interfaces status
Slot/ AutoNego  Speed Duplex
Port           (Mbps)
-----+-----+-----+-----
 1/51  -      -      -
 1/52  -      10000  Full
 4/27  -      10000  Full
 4/28  -      -      -
```

output definitions

Slot/Port	Interface slot/port number.
AutoNego	Autonegotiation status (Enable/Disable).
Detected Speed	Detected line speed (10/100/Auto/1000/10000 Mbps).
Detected Duplex	Detected line duplex (Half duplex/Full duplex/Auto).
Detected Hybrid Type	The detected combo port type, which can be F (fiber) or C (copper).
Configured Speed	Configured line speed (10/100/Auto/1000/10000 Mbps).
Configured Duplex	Configured line duplex (Half duplex/Full duplex/Auto).
Configured Hybrid Mode	The configured combo port type, which is PF (Preferred Fiber). Configuring the Hybrid Mode is not supported.
Trap Link Up/Down	Trap Link status (up/down).

Release History

Release 6.6.1; command introduced.

Related Commands

[trap port link](#)

Enables/disables Trap LinkUpDown.

[interfaces speed](#)

Configures interface line speed, sets speed, and duplex mode to auto-sensing.

[interfaces duplex](#)

Configures interface duplex mode.

[interfaces clear-violation-all](#)

Configures one or more combo ports to use the fiber SFP ports instead of the equivalent copper RJ-45 ports when both ports are enabled and have a valid link.

MIB Objects

```
ifTable
  ifLinkUpDownTrapEnable
esmConfTable
  esmPortSlot
  esmPortIF
  esmPortAutoSpeed
  esmPortAutoDuplexMode
  esmPortCfgSpeed
  esmPortCfgDuplexMode
esmHybridConfTable
  esmPortCfgHybridMode
  esmPortCfgHybridType
```

show interfaces port

Displays the administrative status (up or down), link status, violations, recovery time, maximum recovery attempts, and the value of the wait-to-restore timer for the specified port or ports.

show interfaces [*slot* | *slot/port*[-*port2*]] **port**

Syntax Definitions

slot Slot number you want to display.

slot/port[-*port2*] The slot and port number (3/1). Use a hyphen to specify a range of ports (3/1-3/10).

Defaults

By default, information is displayed for all ports on all modules.

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Enter a slot number to display information for all interfaces on that slot.
- Enter a slot and port number or a range of port numbers to display information for a specific interface or a range of interfaces.
- On a combo port with SFP fiber ports, the status of the SFP ports is displayed. See the **show interfaces hybrid port** command for more information.

Examples

```
-> show interfaces 1/1 port
Legends: * - Permanent Shutdown
```

Slot/ Port	Admin Status	Link Status	Violations	Recovery Time	Recovery Max	Alias
1/1	enable	down	none	300	1	" "

```
-> show interfaces 1 port
Legends: * - Permanent Shutdown
```

Slot/ Port	Admin Status	Link Status	Violations	Recovery Time	Recovery Max	Alias
1/1	enable	down	none	300	10	" "
1/2	enable	down	none	300	10	" "
1/3	enable	down	none	300	10	" "
1/4	enable	down	none	300	10	" "
1/5	enable	down	none	300	10	" "
1/6	enable	down	none	300	10	" "
1/7	enable	down	none	300	10	" "
1/8	enable	down	none	300	10	" "
1/9*	enable	down	LinkMon	30	2	" "
.						
.						
.						
1/26	enable	down	none	0	0	" "

output definitions

Slot/Port	Interface slot and port number. An asterisk (*) with slot/port indicates that the port is permanently shutdown.
Admin Status	Port status - enable , disable . Configured through the interfaces admin command.
Link Status	Operational status - up , down .
Violations	Applications that have blocked the port due to a specific violation.
Recovery Time	The recovery time for the port. Configured through the interfaces violation-recovery-time command.
Recovery Max	The maximum recovery attempts for the port Configured through the interfaces violation-recovery-maximum command.
Alias	Interface alias. Configured through the interfaces alias command.

Release History

Release 6.6.1; command introduced.

Related Commands

interfaces admin	Enables/disables an interface.
interfaces clear-violation-all	Clears all port violations set by various applications on the switch.
interfaces alias	Configures an alias for a port.

MIB Objects

```
esmConfTable
  esmPortSlot
  esmPortIF
  esmPortViolationBitMap
ifXTable
  ifAdminStatus
```

```
ifOperStatus
ifAlias
alaPortViolationRecoveryTable
  alaPortViolationRecoveryTime
  alaPortViolationRecoveryMaximum
```

show interfaces ifg

Displays interface inter-frame gap values.

show interfaces [*slot*[/*port*[-*port2*]]] **ifg**

Syntax Definitions

<i>slot</i>	Slot number you want to display.
<i>port</i>	Port number of the interface you want to display.
<i>port2</i>	Last port number in a range of ports you want to display.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- If no slot/port numbers are entered, IFG values for all slots/ports on the switch are displayed.
- You can display a specific interface by entering the slot and port number (for example, 3/1).
- You can display a range of port numbers (for example, 3/1-4).
- You can display all interfaces in a slot by entering the slot number (for example, 3).

Examples

```
-> show interfaces ifg
Slot/Port   ifg(Bytes)
-----+-----
02/01           12
02/02           12
02/03           12
02/04           12
02/05           12
02/06           12
02/07           12
02/08           12
02/09           12
02/10           12
02/11           12
02/12           12
02/13           12
02/14           12
02/15           12
02/16           12
02/17           12
02/18           12
```

output definitions

Slot/Port	Interface slot and port numbers.
ifg	Inter-frame gap value (Gigabit Ethernet interface).

Release History

Release 6.6.1; command introduced.

Related Commands

[interfaces ifg](#) Configures the inter-frame gap value.

MIB Objects

esmConfTable
 esmPortSlot
 esmPortIF
 esmPortCfgIFG

show interfaces flood rate

Displays configured flood rate settings.

show interfaces [*slot*[/*port*[-*port2*]]] **flood rate** [**broadcast** | **multicast** | **unknown-unicast**]

Syntax Definitions

<i>slot</i>	Slot number you want to display.
<i>port</i>	Port number of the interface you want to display.
<i>port2</i>	Last port number in a range of ports you want to display.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- If no slot/port numbers are entered, peak rate settings for all slots/ports on the switch are displayed.
- You can display a specific interface by entering the slot and port number.
- You can display a range of port numbers (for example, 3/1-4).
- You can display all interfaces in a slot by entering the slot number only.

Examples

```
-> show interfaces 4 flood rate
```

Slot/ Port	Bcast Value	Bcast Type	Bcast Status	Ucast Value	Ucast Type	Ucast Status	Mcast Value	Mcast Type	Mcast Status
4/1	496	mbps	enable	496	mbps	enable	496	mbps	disable
4/2	49	mbps	enable	49	mbps	enable	49	mbps	disable
4/3	49	mbps	enable	49	mbps	enable	49	mbps	disable
4/4	49	mbps	enable	49	mbps	enable	49	mbps	disable
4/5	49	mbps	enable	49	mbps	enable	49	mbps	disable
4/6	49	mbps	enable	49	mbps	enable	49	mbps	disable
4/7	496	mbps	enable	496	mbps	enable	496	mbps	disable
4/8	496	mbps	enable	496	mbps	enable	496	mbps	disable
4/9	49	mbps	enable	49	mbps	enable	49	mbps	disable
4/10	49	mbps	enable	49	mbps	enable	49	mbps	disable

Release History

Release 6.6.4; command introduced.

Related Commands

[interfaces flood rate](#)

Configures the rate limit based on storm type. The measurement unit for rate limit is Mbps, PPS and percentage.

[interfaces flood enable](#)

Enables or disables flood rate limiting for multicast traffic on an interface.

MIB Objects

```
esmConfTable
  esmPortMaxFloodRate
  esmPortMaxUnknownUcastFloodRate
  esmPortMaxMcastFloodRate
  esmPortFloodMcastEnable
  esmPortFloodBcastEnable
  esmPortFloodUnknownUcastEnable
```

show interfaces traffic

Displays interface traffic statistics.

show interfaces [*slot*[/*port*[-*port2*]]] **traffic**

Syntax Definitions

slot Slot number you want to display.
port Port number of the interface you want to display.
port2 Last port number in a range of ports you want to display.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- If no slot/port numbers are entered, traffic settings for all slots/ports on the switch are displayed.
- You can display a specific interface by entering the slot and port number (for example, 3/1).
- You can display all interfaces in a slot by entering the slot number (for example, 3).

Examples

```
-> show interfaces traffic
```

Slot/Port	Input packets	Input bytes	Output packets	Output bytes
02/01	0	0	0	0
02/02	0	0	0	0
02/03	0	0	0	0
03/01	0	0	0	0
03/02	0	0	0	0

output definitions

Slot/Port	Interface slot and port numbers.
Input packets	Input packets detected.
Input bytes	Input bytes detected.
Output packets	Output packets detected.
Output bytes	Output bytes detected.

Release History

Release 6.6.1; command introduced.

Related Commands

[interfaces tdr-test-start](#)

Displays general interface information (for example, hardware, MAC address, and input/output errors).

[show interfaces counters](#)

Displays interface counter information (for example, unicast packets received or transmitted).

MIB Objects

esmConfTable

 esmPortSlot

 esmPortIF

ifXTable

 ifHCInOctets

 ifHCInUcastPkts

 ifHCInMulticastPkts

 ifHCInBroadcastPkts

 ifHCOctets

 ifHCOUcastPkts

 ifHCOMulticastPkts

 ifHCOBroadcastPkts

show interfaces hybrid

Displays general interface information (for example, hardware, MAC address, input errors, output errors) for combo ports.

```
show interfaces [slot[/port[-port2]]] hybrid {fiber |copper}
```

Syntax Definitions

<i>slot</i>	Slot number you want to display.
<i>port</i>	Port number of the interface you want to display.
<i>port2</i>	Last port number in a range of ports you want to display.
fiber	Specifies that the status of the SFP ports is displayed.
copper	Specifies that the status of the copper RJ-45 ports is displayed.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- If no slot/port numbers are entered, information for all slots/ports on the switch is displayed.
- You can display a specific interface by entering the slot and port number (for example, 3/1).
- You can display a range of port numbers (for example, 3/1-4).
- You can display all interfaces in a slot by entering the slot number (for example, 3).

Examples

```
-> show interfaces 1/25 hybrid fiber
Slot/Port 1/25 :
  Operational Status      : down,
  Last Time Link Changed  : FRI DEC 27 15:10:23 ,
  Number of Status Change: 0,
  Type                    : Ethernet,
  MAC address             : 00:d0:95:b2:39:b2,
  Bandwidth (Megabits)   : 1000,           Duplex           : -,
  Autonegotiation        : 1 [ 1000-F           ],
  Long Accept             : Enable,           Runt Accept      : Disable,
  Long Frame Size(Bytes) : 9216,           Runt Size(Bytes) : 64,
  Rx                      :
  Bytes Received         :                   0, Unicast Frames :           0,
  Broadcast Frames       :                   0, M-cast Frames  :           0,
  UnderSize Frames       :                   0, OverSize Frames:           0,
  Lost Frames            :                   0, Error Frames   :           0,
  CRC Error Frames       :                   0, Alignments Err :           0,
  Tx                      :
  Bytes Xmitted          :                   0, Unicast Frames :           0,
  Broadcast Frames       :                   0, M-cast Frames  :           0,
  UnderSize Frames       :                   0, OverSize Frames:           0,
  Lost Frames            :                   0, Collided Frames:           0,
  Error Frames           :                   0
```

output definitions

Slot/Port	Interface slot and port.
Operational Status	Interface status (up/down).
Last Time Link Changed	The last time the configuration for this interface was changed.
Number of Status Change	The total number of times that the configuration of this interface has changed.
Type	Interface type (Ethernet/Fast Ethernet/Gigabit Ethernet).
MAC address	Interface MAC address.
Bandwidth	Bandwidth (in megabits).
Duplex	Duplex mode (Half/Full/Auto).
Autonegotiation	The autonegotiation settings for this interface.
Long Accept	Long Frames status (enable/disable).
Runt Accept	Runt Frames status (enable/disable).
Long Frame Size	Long Frame Size (in Bytes).
Runt Size	Runt Frame Size (in Bytes).
Bytes Received	Number of Bytes received.
Rx Unicast Frames	Number of unicast frames received.
Rx Broadcast Frames	Number of broadcast frames received.
Rx M-cast Frames	Number of multicast frames received.
Rx Undersize Frames	Number of undersized frames received.
Rx Oversize Frames	Number of r oversized frames received.

output definitions (continued)

Rx Lost Frames	Number of Lost Frames received.
Rx Error Frames	Number of error frames received.
Rx CRC Error Frames	Number of CRC error frames received.
Rx Alignments Err	Number of Alignments Error frames received.
Bytes Xmitted	Number of Bytes transmitted.
Tx Unicast Frames	Number of unicast frames transmitted.
Tx Broadcast Frames	Number of broadcast frames transmitted.
Tx M-cast Frames	Number of multicast frames transmitted.
Tx Undersize Frames	Number of undersized frames transmitted.
Tx Oversize Frames	Number of oversized frames transmitted.
Tx Lost Frames	Number of Lost Frames transmitted.
Tx Collided Frames	Number of collision frames received or transmitted.
Tx Error Frames	Number of error frames transmitted.

Release History

Release 6.6.1; command introduced.

Related Commands

show interfaces hybrid accounting	Displays interface accounting information (for example, packets received/transmitted) for combo ports.
show interfaces hybrid counters	Displays interface counter information (for example, unicast packets received or transmitted) for combo ports.
show interfaces hybrid counters errors	Displays interface error frame information (for example, CRC errors, transit errors, receive errors) for combo ports.
show interfaces hybrid collisions	Displays interface collision information (for example, number of collisions, number of retries) for combo ports.
show interfaces hybrid status	Displays the interface line settings (for example, speed, mode) for combo ports.
show interfaces hybrid traffic	Displays interface traffic statistics (input or output bytes and packets) for combo ports.

MIB Objects

ifTable

- ifOperStatus
- ifType
- ifPhysAddress
- ifSpeed
- ifInDiscards
- IfOutDiscards

esmConfTable

- esmPortSlot
- esmPortIF
- esmPortCfgLongEnable
- esmPortCfgRuntEnable
- esmPortCfgMaxFrameSize
- esmPortCfgRuntSize

ifXTable

- ifHCInOctets
- ifHCInUcastPkts
- ifHCInBroadcastPkts
- ifHCInMulticastPkts
- IfHCOutOctets
- IfHCOutUcastPkts
- IfHCOutBroadcastPkts
- IfHCOutMulticastPkts

alcetherStatsTable

- alcetherStatsRxUndersizePkts
- alcetherStatsCRCAlignErrors
- alcetherStatsTxUndersizePkts
- alcetherStatsTxOversizePkts
- alcetherStatsTxCollisions

dot3StatsTable

- dot3StatsFrameTooLong
- dot3StatsFCSErrors
- dot3StatsLateCollisions

show interfaces hybrid status

Displays interface line settings (for example, speed, mode) for combo ports only.

show interfaces [*slot*[/*port*[-*port2*]]] **hybrid** {**fiber** |**copper**} **status**

Syntax Definitions

<i>slot</i>	Slot number you want to display.
<i>port</i>	Port number of the interface you want to display.
<i>port2</i>	Last port number in a range of ports you want to display.
fiber	Specifies that the status of the SFP ports is displayed.
copper	Specifies that the status of the copper RJ-45 ports is displayed.

Defaults

If a specific slot or slot/port number is not entered with this command, the status and configuration for all switch combo ports is displayed.

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Use the *slot*, *slot/port*, or *slot/port-port2* parameters to display the status and configuration for all ports on a slot, a specific port, or a range of ports.
- The hybrid mode for combo ports is not configurable; combo ports are set to preferred fiber by default. As a result, the Hybrid Mode field always displays preferred fiber (**PF**) for all combo ports.

Examples

```
-> show interfaces hybrid fiber status
                DETECTED                CONFIGURED
Slot/ AutoNego  Speed Duplex Hybrid  Speed  Duplex Hybrid  Trap
Port          (Mbps)                Type  (Mbps)                Mode  LinkUpDown
-----+-----+-----+-----+-----+-----+-----+-----+-----
 1/25 Enable      -      -      -      1000 Full    PF      -
 1/26 Enable      -      -      -      1000 Full    PF      -

FF - ForcedFiber  PF - PreferredFiber  F - Fiber
FC - ForcedCopper PC - PreferredCopper  C - Copper
```

output definitions

Slot/Port	Interface slot/port number.
AutoNego	Autonegotiation status (Enable/Disable).
Detected Speed	Detected line speed (10/100/Auto/1000/10000 Mbps).

output definitions (continued)

Detected Duplex	Detected line duplex (Half duplex/Full duplex/Auto).
Detected Hybrid Type	The detected combo port type, which can be F (fiber) or C (copper).
Configured Speed	Configured line speed (10/100/Auto/1000/10000 Mbps).
Configured Duplex	Configured line duplex (Half duplex/Full duplex/Auto).
Configured Hybrid Mode	The configured combo port type, which is PF (Preferred Fiber). Configuring the Hybrid Mode is not supported.
Trap Link Up/Down	Trap Link status (up/down).

Release History

Release 6.6.1; command introduced.

Related Commands

trap port link	Enables/disables Trap LinkUpDown.
interfaces hybrid speed	Configures interface line speed on combo ports.
interfaces hybrid duplex	Configures duplex mode on combo ports.
interfaces clear-violation-all	Configures one or more combo ports to use the fiber SFP ports instead of the equivalent copper RJ-45 ports when both ports are enabled and have a valid link.

MIB Objects

```
ifTable
  ifLinkUpDownTrapEnable
esmConfTable
  esmPortSlot
  esmPortIF
  esmPortAutoSpeed
  esmPortAutoDuplexMode
esmHybridConfTable
  esmPortCfgHybridMode
  esmPortCfgHybridType
  esmHybridPortCfgSpeed
  esmHybridPortCfgDuplexMode
```

show interfaces hybrid flow control

Displays interface flow control wait time settings for combo ports.

show interfaces [*slot*[/*port*[-*port2*]]] **hybrid** {**fiber** |**copper**} **flow control**

Syntax Definitions

<i>slot</i>	Slot number you want to display.
<i>port</i>	Port number of the interface you want to display.
<i>port2</i>	Last port number in a range of ports you want to display.
fiber	Specifies that the configuration of the SFP ports is displayed.
copper	Specifies that the configuration of the copper RJ-45 ports is displayed.

Defaults

If a specific slot or slot/port number is not entered with this command, the flow control wait time settings for all switch combo ports is displayed.

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

Use the *slot*, *slot/port*, or *slot/port-port2* parameters to display the flow control wait time settings for all ports on a slot, a specific port, or for a range of ports.

Examples

```
-> show interfaces hybrid fiber flow control
Slot/Port  Active  Wait time(usec)  Cfg-Flow  Cfg-Cross
-----+-----+-----+-----+-----
    1/25      -           0           Pause      MDI
    1/26      -           0           Pause      MDI
```

output definitions

Slot/Port	Interface slot and port number
Active	Interface status.
Wait time	Flow control wait time, in microseconds.
Cfg-Flow	Flow control status, which can be Pause or Go .
Cfg-Cross	The user-configured cross-over setting, which can be Auto , MDI , or MDIX .

Release History

Release 6.6.1; command introduced.

Related Commands

[interfaces hybrid crossover](#)

Configures crossover settings for combo ports.

[show interfaces flow control](#)

Displays interface flow control wait time settings.

MIB Objects

esmConfTable

 esmPortCfgSlot

 esmPortCfgIfIndex

esmHybridConfTable

 esmHybridPortCfgFlow

 esmHybridPortPauseSlotTime

 esmHybridPortCfgCrossover

show interfaces hybrid pause

Displays the flow control pause configuration for combo ports.

show interfaces [*slot*[/*port*[-*port2*]]] **hybrid** {**fiber** |**copper**} **pause**

Syntax Definitions

<i>slot</i>	Slot number you want to display.
<i>port</i>	Port number of the interface you want to display.
<i>port2</i>	Last port number in a range of ports you want to display.
fiber	Specifies that the configuration of the SFP ports is displayed.
copper	Specifies that the configuration of the copper RJ-45 ports is displayed.

Defaults

If a specific slot or slot/port number is not entered with this command, the flow control pause configuration for all switch combo ports is displayed.

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Enter a slot and port number or a range of port numbers to display information for a specific combo port or a range of combo ports.
- Enter a slot number to display information for all combo ports on a specific slot.

Examples

```
-> show interfaces hybrid fiber pause
Slot/Port  Active  Wait time(usec)  Cfg-Pause  Cfg-Cross  Hybrid  Type
-----+-----+-----+-----+-----+-----+-----
    1/25      -           0             DIS         MDI         -
    1/26      -           0             DIS         MDI         -
```

```
-> show interfaces hybrid copper pause
Slot/Port  Active  Wait time(usec)  Cfg-Pause  Cfg-Cross  Hybrid  Type
-----+-----+-----+-----+-----+-----+-----
    1/25      -           0             DIS         Auto        -
    1/26    Active    65535          Tx-N-Rx     Auto        C
```

output definitions

Slot/Port	Interface slot and port number
Active	Interface status.
Wait time	The amount of time, in microseconds, the neighbor interface waits after receiving a PAUSE frame from the local interface.

output definitions (continued)

Cfg-Pause	The flow control setting (Tx = transmit, Rx = receive, Tx-N-Rx = transmit and receive). Configured through the interfaces hybrid pause command.
Cfg-Cross	The user-configured cross-over setting (Auto , MDI , or MDIX). Configured through the interfaces hybrid crossover command.
Hybrid Type	The configured active media type for the hybrid port (F = fiber, C = copper, NA = not applicable).

Release History

Release 6.6.1; command introduced.

Related Commands

[show interfaces pause](#) Displays the interface flow control pause settings.

MIB Objects

```
esmConfTable
  esmPortCfgSlot
  esmPortCfgIF
  esmPortPauseSlotTime
  esmPortActiveHybridType
esmHybridConfTable
  esmHybridPortCfgFlow
  esmHybridPortCfgCrossover
dot3PauseTable
  dot3PauseSlotTime
```

show interfaces hybrid capability

Displays default autonegotiation, speed, duplex, flow, and cross-over settings for a single combo port, a range of combo ports, or all combo ports on a switch.

show interfaces [*slot*[/*port*[-*port2*]]] **hybrid** {**fiber** |**copper**} **capability**

Syntax Definitions

<i>slot</i>	Slot number you want to display.
<i>port</i>	Port number of the interface you want to display.
<i>port2</i>	Last port number in a range of ports you want to display.
fiber	Specifies that the configuration of the SFP ports is displayed.
copper	Specifies that the configuration of the copper RJ-45 ports is displayed.

Defaults

If a specific slot or slot/port number is not entered with this command, the information for all switch combo ports is displayed.

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Enter a slot and port number or a range of port numbers to display information for a specific combo port or a range of combo ports.
- Enter a slot number to display information for all combo ports on a specific slot.
- The **show interfaces hybrid capability** command displays defaults settings in two rows of data for each combo port. The first row of data, identified by the label **CAP**, displays the valid user-defined configuration settings available for the combo port. The second row, identified by the label **DEF**, displays the default settings for the combo port.

Examples

```
-> show interfaces 1/25 hybrid copper capability
  Slot/Port  AutoNeg  Flow  Crossover  Speed  Duplex
-----+-----+-----+-----+-----+-----
  1/25 CAP   EN/DIS  EN/DIS  MDI/X/Auto  10/100/1G  Full/Half
  1/25 DEF           EN      EN      Auto        Auto        Auto
```

output definitions

Slot	The slot number.
Port	The port number

output definitions (continued)

AutoNeg	In the row labeled CAP this field displays the valid autonegotiation configurations for the port. In the row label DEF this field displays the default autonegotiation settings for the port. The possible values are EN (enabled) or DIS (disabled).
Flow	In the row labeled CAP this field displays the valid flow configurations for the port. In the row label DEF this field displays the default flow settings for the port. The possible values are EN (enabled) or DIS (disabled).
Crossover	In the row labeled CAP this field displays the valid cross over configurations for the port. In the row label DEF this field displays the default cross over settings for the port. The possible values are Auto , MDI/X/Auto (MDI/MDIX/Auto), or -- (not configurable and/or not applicable).
Speed	In the row labeled CAP this field displays the valid line speed configurations for the port. In the row label DEF this field displays the default line speed settings for the port. The possible values are 10/100 , 100 , 1 G , 10/100/1 G , or Auto .
Duplex	In the row labeled CAP this field displays the valid duplex configurations for the port. In the row label DEF this field displays the default duplex settings for the port. The possible values are Full , Full/Half , or Auto .

Release History

Release 6.6.1; command introduced.

Related Commands

interfaces hybrid autoneg	Enables and disables autonegotiation for combo ports.
interfaces hybrid crossover	Configures crossover port settings for combo ports.
interfaces hybrid speed	Configures interface speed for combo ports.
interfaces hybrid duplex	Configures duplex settings for combo ports.
show interfaces hybrid status	Displays interface line settings for combo ports.

MIB Objects

```
esmConfTable
  esmPortCfgSlot
  esmPortCfgIfIndex
esmHybridConfTable
  esmHybridPortCfgAutoNegotiation
  esmHybridPortCfgFlow
  esmHybridPortCfgCrossover
  esmHybridPortCfgSpeed
  esmHybridPortCfgDuplex
```

show interfaces hybrid accounting

Displays interface accounting information (for example, packets received/transmitted, deferred frames received) for combo ports.

show interfaces [*slot*[/*port*[-*port2*]]] **hybrid** {**fiber** |**copper**} **accounting**

Syntax Definitions

<i>slot</i>	Slot number you want to display.
<i>port</i>	Port number of the interface you want to display.
<i>port2</i>	Last port number in a range of ports you want to display.
fiber	Specifies that statistics for the SFP ports is displayed.
copper	Specifies that statistics for the copper RJ-45 ports is displayed.

Defaults

If a specific slot or slot/port number is not entered with this command, the accounting information for all switch combo ports is displayed.

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Enter a slot and port number or a range of port numbers to display information for a specific combo port or a range of combo ports.
- Enter a slot number to display information for all combo ports on a specific slot.

Examples

```
-> show interfaces 1/25 hybrid copper accounting
1/25 ,
  Rx undersize packets           = 0,
  Tx undersize packets           = 0,
  Rx oversize packets            = 0,
  Tx oversize packets            = 0,
  Rx packets 64 Octets           = 3073753,
  Rx packets 65To127 Octets      = 678698,
  Rx packets 128To255 Octets     = 21616,
  Rx packets 256To511 Octets     = 21062,
  Rx packets 512To1023 Octets    = 2,
  Rx packets 1024To1518 Octets   = 84,
  Rx packets 1519to4095 Octets   = 0,
  Rx packets 4096ToMax Octets    = 0,
  Rx Jabber frames                = 0
```


output definitions

Rx undersize packets	Number of undersized packets received.
Tx undersize packets	Number of undersized packets transmitted.
Rx oversize packets	Number of oversized packets received.
Tx oversize packets	Number of oversized packets transmitted.
Rx packets Octets	Number of packets received in each listed octet range.
Rx Jabber frames	Number of jabber packets received (longer than 1518 octets).
Tx deferred frames	Number of packets for which transmission was delayed (Ethernet only).

Release History

Release 6.6.1; command introduced.

Related Commands

- show interfaces hybrid** Displays general interface information (for example, hardware, MAC address, input or output errors) for combo ports.
- show interfaces hybrid counters** Displays interface counter information (for example, unicast packets received or transmitted) for combo ports.

MIB Objects

```
esmConfTable
  esmPortCfgSlot
  esmPortCfgIfIndex
alcetherStatsTable
  alcetherStatRxsUndersizePkts
  alcetherStatTxUndersizePkts
  alcetherStatsTxOversizePkts
  alcetherStatsPkts64Octets
  alcetherStatsPkts65to127Octets
  alcetherStatsPkts128to255Octets
  alcetherStatsPkts256to511Octets
  alcetherStatsPkts512to1023Octets
  alcetherStatsPkts1024to1518Octets
  gigaEtherStatsPkts1519to4095Octets
  gigaEtherStatsPkts4096to9215Octets
  alcetherStatsRxJabber
dot3StatsTable
  dot3StatsFrameTooLong
  dot3StatsDeferredTransmissions
```

show interfaces hybrid counters

Displays interface counters information (for example, unicast, broadcast, multi-cast packets received or transmitted) for combo ports.

show interfaces [*slot*[/*port*[-*port2*]]] **hybrid** {**fiber** |**copper**} **counters**

Syntax Definitions

<i>slot</i>	Slot number you want to display.
<i>port</i>	Port number of the interface you want to display.
<i>port2</i>	Last port number in a range of ports you want to display.
fiber	Specifies that statistics for the SFP ports is displayed.
copper	Specifies that statistics for the copper RJ-45 ports is displayed.

Defaults

If a specific slot or slot/port number is not entered with this command, the interface counters for all switch combo ports is displayed.

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Enter a slot and port number or a range of port numbers to display information for a specific combo port or a range of combo ports.
- Enter a slot number to display information for all combo ports on a specific slot.
- These counters do not apply to Gigabit Ethernet traffic.

Examples

```
-> show interfaces 1/25 hybrid copper counters
```

```
InOctets      = 54367578586897979,  OutOctets      = 5.78E19,
InUcastPkts   = 55654265276,      OutUcastPkts   = 5.78E20,
InMcastPkts   = 58767867868768777, OutMcastPkts   = 5465758756856,
InBcastPkts   = 576567567567567576, OutBcastPkts   = 786876,
InPauseFrames = 567798768768767,  OutPauseFrames = 786876,
```

output definitions

InOctets	Number of octets received.
OutOctets	Number of octets transmitted.
InUcastPkts	Number of unicast packets received.
OutUcastPkts	Number of unicast packets transmitted.
InMcastPkts	Number of multicast packets received.
OutMcastPkts	Number of unicast packets transmitted.

output definitions (continued)

InBcastPkts	Number of broadcast packets received.
OutBcastPkts	Number of unicast packets transmitted.
InPauseFrames	Number of MAC control frames received.
OutPauseFrames	Number of MAC control frames transmitted.

Release History

Release 6.6.1; command introduced.

Related Commands

show interfaces hybrid counters errors Displays interface error frame information (for example, CRC errors, transit errors, receive errors).

MIB Objects

esmConfTable

- esmPortCfgSlot
- esmPortCfgIfIndex

ifXTable

- IfHCInOctets
- IfHCOctets
- IfHCInUcastPkts
- IfHCOctetsUcastPkts
- IfHCInMulticastPkts
- IfHCOctetsMulticastPkts
- IfHCInBroadcastPkts
- IfHCOctetsBroadcastPkts

dot3PauseTable

- dot3InPauseFrame
- dot3OutPauseFrame

show interfaces hybrid counters errors

Displays interface error frame information (for example, CRC errors, transit errors, receive errors) for combo ports.

show interfaces [*slot*[/*port*[-*port2*]]] **hybrid** {**fiber** |**copper**} **counters errors**

Syntax Definitions

<i>slot</i>	Slot number you want to display.
<i>port</i>	Port number of the interface you want to display.
<i>port2</i>	Last port number in a range of ports you want to display.
fiber	Specifies that statistics for the SFP ports is displayed.
copper	Specifies that statistics for the copper RJ-45 ports is displayed.

Defaults

If a specific slot or slot/port number is not entered with this command, the error frame information for all switch combo ports is displayed.

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Enter a slot and port number or a range of port numbers to display information for a specific combo port or a range of combo ports.
- Enter a slot number to display information for all combo ports on a specific slot.
- These counters do not apply to Gigabit Ethernet traffic.

Examples

```
-> show interfaces 1/25 hybrid copper counters errors
```

```
01/25,
  Alignments Errors = 6.45E13,  FCS Errors = 7.65E12
  IfInErrors        = 6435346,  IfOutErrors= 5543,
  Undersize pkts    = 867568,  Oversize pkts= 5.98E8
```

output definitions

Slot/Port	Interface slot and port number.
Alignments Errors	Number of Alignments errors.
FCS Errors	Number of Frame Check Sequence errors.
IfInErrors	Number of received error frames.
IfOutErrors	Number of transmitted error frames.

output definitions (continued)

Undersize pkts	Number of undersized packets.
Oversize pkts	Number of oversized packets (more than 1518 octets).

Release History

Release 6.6.1; command introduced.

Related Commands

show interfaces hybrid counters Displays interface counters information (for example, unicast, broadcast, multi-cast packets received/transmitted).

MIB Objects

```
esmConfTable
  esmPortCfgSlot
  esmPortCfgIfIndex
ifTable
  ifInErrors
  ifOutErrors
alcetherStatsTable
  alcetherStatsRxUndersizePkts
dot3StatsTable
  dot3StatsAlignmentErrors
  dot3StatsFCSErrors
  dot3StatsFrameTooLong
```

show interfaces hybrid collisions

Displays interface collision information (for example, number of collisions, number of retries) for combo ports.

show interfaces [*slot*[/*port*[-*port2*]]] **hybrid** {**fiber** |**copper**} **collisions**

Syntax Definitions

<i>slot</i>	Slot number you want to display.
<i>port</i>	Port number of the interface you want to display.
<i>port2</i>	Last port number in a range of ports you want to display.
fiber	Specifies that statistics for the SFP ports is displayed.
copper	Specifies that statistics for the copper RJ-45 ports is displayed.

Defaults

If a specific slot or slot/port number is not entered with this command, the information for all switch combo ports is displayed.

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Enter a slot and port number or a range of port numbers to display collision information for a specific combo port or a range of combo ports.
- Enter a slot number to display information for all combo ports on a specific slot.
- These counters do not apply to Gigabit Ethernet traffic.

Examples

```
-> show interfaces 1/25 hybrid copper collisions
```

```
01/25,  
  Rx Collisions = 6.56E18,  Rx Single Collision = 345464364,  
  Rx Multiple Collisions = 6325235326,  Rx Excessive Collisions = 5.65E19
```

output definitions

Slot/Port	Interface slot and port number.
Tx Collisions	Number of transmit collisions.
Tx Single Collision	Number of successfully transmitted frames for which transmission was inhibited by one collision.
Tx Multiple Collisions	Number of successfully transmitted frames for which transmission was inhibited by multiple collisions.
Tx Excessive Retries	Number of frames for which transmission fails due to excessive collisions.
Rx Collisions	Number of receive collisions.
Rx Single Collision	Number of successfully received frames for which reception was inhibited by one collision.
Rx Multiple Collisions	Number of successfully received frames for which reception was inhibited by multiple collisions.
Rx Excessive Retries	Number of frames for which reception fails due to excessive collisions.

Release History

Release 6.6.1; command introduced.

Related Commands

[show interfaces hybrid](#) Displays general interface information (for example, hardware, MAC address, input errors, output errors) for combo ports.

MIB Objects

```
esmConfTable
  esmPortCfgSlot
  esmPortCfgIfIndex
alcetherStatsTable
  alcetherStatsRxCollisions
dot3StatsTable
  dot3StatsSingleCollisionFrames
  dot3StatsMultipleCollisionFrames
  dot3StatsExcessiveCollisions
```

show interfaces hybrid traffic

Displays interface traffic statistics for combo ports.

show interfaces [*slot*[/*port*[-*port2*]]] **hybrid** {**fiber** |**copper**} **traffic**

Syntax Definitions

<i>slot</i>	Slot number you want to display.
<i>port</i>	Port number of the interface you want to display.
<i>port2</i>	Last port number in a range of ports you want to display.
fiber	Specifies that statistics for the SFP ports is displayed.
copper	Specifies that statistics for the copper RJ-45 ports is displayed.

Defaults

If a specific slot or slot/port number is not entered with this command, the traffic statistics for all switch combo ports is displayed.

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Enter a slot and port number or a range of port numbers to display information for a specific combo port or a range of combo ports.
- Enter a slot number to display information for all combo ports on a specific slot.

Examples

```
-> show interfaces hybrid fiber traffic
```

Slot/Port	Input packets	Input bytes	Output packets	Output bytes
01/25	0		0	0
01/26	0		0	0

output definitions

Slot/Port	Interface slot and port numbers.
Input packets	Input packets detected.
Input bytes	Input bytes detected.
Output packets	Output packets detected.
Output bytes	Output bytes detected.

Release History

Release 6.6.1; command introduced.

Related Commands

show interfaces hybrid

Displays general interface information (for example, hardware, MAC address, input/output errors) for combo ports.

show interfaces hybrid counters

Displays interface counter information (for example, unicast packets received/transmitted) for combo ports.

MIB Objects

esmConfTable

 esmPortCfgSlot

 esmPortCfgIfIndex

ifXTable

 ifHCInOctets

 ifHCInUcastPkts

 ifHCInMulticastPkts

 ifHCInBroadcastPkts

 ifHCOctets

 ifHCOUcastPkts

 ifHCOMulticastPkts

 ifHCOBroadcastPkts

show interfaces hybrid port

Displays interface port status (up or down) for combo ports.

show interfaces [*slot*[/*port*[-*port2*]]] **hybrid** {**fiber** |**copper**} **port**

Syntax Definitions

<i>slot</i>	Slot number you want to display.
<i>port</i>	Port number of the interface you want to display.
<i>port2</i>	Last port number in a range of ports you want to display.
fiber	Specifies that the status of the SFP ports is displayed.
copper	Specifies that the status of the copper RJ-45 ports is displayed.

Defaults

If a specific slot or slot/port number is not entered with this command, the port status for all switch combo ports is displayed.

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Enter a slot and port number or a range of port numbers to display information for a specific combo port or a range of combo ports.
- Enter a slot number to display information for all combo ports on a specific slot.

Examples

```
-> show interfaces 1/25 hybrid fiber port
Slot/Port  Admin Status  Link Status  Alias
-----+-----+-----+-----
  1/25           enable         down         " "
```

output definitions

Slot/Port	Interface slot and port number.
Admin Status	Port status (enable/disable).
Link Status	Operational status (enable/disable).
Alias	Interface alias.

Release History

Release 6.6.1; command introduced.

Related Commands

[interfaces admin](#)

Enables/disables an interface.

[interfaces alias](#)

Configures an alias for a port.

MIB Objects

esmConfTable

 esmPortCfgSlot

 esmPortCfgIfIndex

ifXTable

 ifAlias

ifTable

 ifAdminStatus

 ifOperStatus

show interfaces hybrid flood rate

Displays interface peak flood rate settings for combo ports.

show interfaces [*slot*[/*port*[-*port2*]]] **hybrid** {**fiber** |**copper**} **flood rate**

Syntax Definitions

<i>slot</i>	Slot number you want to display.
<i>port</i>	Port number of the interface you want to display.
<i>port2</i>	Last port number in a range of ports you want to display.
fiber	Specifies that the status of the SFP ports is displayed.
copper	Specifies that the status of the copper RJ-45 ports is displayed.

Defaults

If a specific slot or slot/port number is not entered with this command, the peak rate settings for all switch combo ports is displayed.

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Enter a slot and port number or a range of port numbers to display information for a specific combo port or a range of combo ports.
- Enter a slot number to display information for all combo ports on a specific slot.

Examples

```
-> show interfaces flood rate
```

Slot/Port	peak rate(Mb/second)	Enable
02/01	12	Flood only
02/02	47	Flood only
02/03	16	Flood only
02/04	47	Flood only
02/05	47	Flood only
02/06	47	Flood only
02/07	47	Flood only
02/08	47	Flood only
02/09	47	Flood only
02/10	47	Flood only
02/11	47	Flood only
02/12	47	Flood only
02/13	47	Flood only
02/14	47	Flood only
02/15	47	Flood only
02/16	47	Flood only
02/17	47	Flood only

02/18	47	Flood only
02/19	47	Flood only

output definitions

Slot/Port	Interface slot and port numbers.
Peak Rate (Mbps)	Configured peak flood rate.
Enable	Configuration enabled (Flood only/Flood Multicast/Multicast).

Release History

Release 6.6.1; command introduced.

Related Commands

interfaces flood rate Configures the rate limit based on storm type. The measurement unit for rate limit is Mbps, PPS and percentage.

interfaces flood enable Enables/disables flood multicasting on an interface.

MIB Objects

```
esmConfTable
  esmPortSlot
  esmPortIF
  esmPortMaxFloodRate
  esmPortFloodMcastEnable
```

show interfaces hybrid ifg

Displays interface inter-frame gap values for combo ports.

show interfaces [*slot*[/*port*[-*port2*]]] **hybrid** {**fiber** |**copper**} **ifg**

Syntax Definitions

<i>slot</i>	Slot number you want to display.
<i>port</i>	Port number of the interface you want to display.
<i>port2</i>	Last port number in a range of ports you want to display.
fiber	Specifies that statistics for the SFP ports is displayed.
copper	Specifies that statistics for the copper RJ-45 ports is displayed.

Defaults

If a specific slot or slot/port number is not entered with this command, the inter-frame gap values for all switch combo ports is displayed.

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Enter a slot and port number or a range of port numbers to display information for a specific combo port or a range of combo ports.
- Enter a slot number to display information for all combo ports on a specific slot.

Examples

```
-> show interfaces hybrid fiber ifg
Slot/Port   ifg(Bytes)
-----+-----
  1/25             12
  1/26             12
```

output definitions

Slot/Port	Interface slot and port numbers.
ifg	Inter-frame gap value (Gigabit Ethernet interface).

Release History

Release 6.6.1; command introduced.

Related Commands

[interfaces ifg](#)

Configures the inter-frame gap value.

MIB Objects

```
esmConfTable
  esmPortSlot
  esmPortIF
  esmPortCfgIFG
```

interfaces violation-recovery-time

Configures the time interval after which the port is automatically reactivated if the port was shut down for any violation. Recovery timer value is configurable on a global basis (applies to all ports on all modules) and on a per-slot or per-port basis.

interfaces [*slot* | *slot/port[-port2]*] **violation-recovery-time** {*seconds* | **default**}

interfaces {*slot* | *slot/port[-port2]*} **violation-recovery-time default**

Syntax Definitions

<i>slot</i>	The slot number for a specific module.
<i>slot/port[-port2]</i>	The slot and port number (3/1). Use a hyphen to specify a range of ports (3/1-3/10).
<i>seconds</i>	The number of seconds after which a port is reactivated. The valid range is 30-600 secs. Specify 0 to disable the recovery timer.
default	Sets the recovery time to the global value for the specified ports. This parameter is only available when a slot, port, or range of ports is specified with this command.

Defaults

- By default, this command configures the global recovery time. The global value applies to all ports on all modules in the switch.
- By default, the violation recovery time is set to 300 seconds.

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- When the recovery timer expires, the interface is operationally re-enabled, and the violation on the interface is cleared.
- The violation recovery timer value does not apply to interfaces that are in a permanent shutdown state. A port in this state is only recoverable using the **interfaces clear-violation-all** command.
- The interface violation recovery mechanism is not supported on link aggregates, but is supported on the link aggregate member ports.
- Set the recovery time to 0 to disable this violation recovery mechanism.
- Enter a slot number to configure the recovery time for all interfaces on a specific slot.
- Enter a slot and port number or a range of ports to configure the recovery time for a specific interface or a range of interfaces.
- When this command is used to configure the recovery time for all ports on a slot or for a specific port or range of ports, the value specified overrides the global maximum recovery time configured for the switch.

- When configuring the time for a specific slot, port, or range of ports, use the **default** parameter to reset this value to the global maximum number of attempts.

Examples

```
-> interfaces violation-recovery-time 600
-> interfaces 2 violation-recovery-time 100
-> interfaces 2/3 violation-recovery-time 200
-> interfaces 2/4-9 violation-recovery-time 500
-> interfaces 2/4-9 violation-recovery-maximum default
-> interfaces 2/3 violation-recovery-time 0
-> interfaces violation-recovery-time 0
```

Release History

Release 6.6.3; command introduced.

Related Commands

[interfaces violation-recovery-maximum](#)

Configures the maximum number of recovery attempts before a port is permanently shut down.

[show interfaces port](#)

Displays the administrative, operational, violation, and recovery status and configuration for the specified port.

[show interfaces violation-recovery](#)

Displays the globally configured recovery time, SNMP recovery trap enable/disable status and maximum recovery attempts.

MIB Objects

```
alaPortViolationRecoveryTable
  alaPortViolationRecoveryTime
```

interfaces violation-recovery-maximum

Configures the maximum number of recovery attempts allowed before the port is permanently shut down. This value is configurable on a global basis (applies to all ports on all modules) and on a per-slot or per-port basis.

interfaces [*slot* | *slot/port[-port2]*] **violation-recovery-maximum** *max_attempts*

interfaces {*slot* | *slot/port[-port2]*} **violation-recovery-maximum default**

Syntax Definitions

<i>slot</i>	The slot number for a specific module.
<i>slot/port[-port2]</i>	The slot and port number (3/1). Use a hyphen to specify a range of ports (3/1-3/10).
<i>max_attempts</i>	The maximum number of recovery attempts. Valid range is 0-50.
default	Sets the number of recovery attempts to the global value for the specified ports. This parameter is only available when a slot, port, or range of ports is specified with this command.

Defaults

By default, this command configures the global maximum number of recovery attempts. The global value applies to all ports on all modules in the switch.

parameter	default
<i>max_attempts</i>	10

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Set the maximum number of recovery attempts value to 0 to disable this recovery mechanism.
- Enter a slot number to configure the number of recovery attempts for all interfaces on a specific slot.
- Enter a slot and port number or a range of ports to configure the number of recovery attempts for a specific interface or a range of interfaces.
- When this command is used to configure the number of recovery attempts for all ports on a slot or for a specific port or range of ports, the value specified overrides the global maximum number of attempts configured for the switch.
- When configuring the number of recovery attempts for a specific slot, port, or range of ports, use the **default** parameter to reset this value to the global maximum number of attempts.
- The number of recovery attempts increments whenever a port recovers using automatic recovery timer mechanism. When the number of recovery attempts exceeds the configured threshold, the port is permanently shut down.

- Once an interface is permanently shut down, only the **interface clear-violations-all** command can be used to recover the interface.
- The recovery mechanism tracks the number of recoveries within a fixed time window (FTW). The $FTW = 2 * \text{maximum recovery number} * \text{recovery timer}$. For example, if the maximum number of recovery attempts is set to 4 and the recovery timer is set to 5, the FTW is 40 secs ($2 * 4 * 5=40$).

Examples

```
-> interfaces violation-recovery-maximum 25
-> interfaces 2 violation-recovery-maximum 10
-> interfaces 2/3 violation-recovery-maximum 20
-> interfaces 2/4-9 violation-recovery-maximum 50
-> interfaces 2/4-9 violation-recovery-maximum default
-> interfaces 2/3 violation-recovery-maximum 0
-> interfaces violation-recovery-maximum 0
```

Release History

Release 6.6.3; command introduced.

Related Commands

[interfaces violation-recovery-time](#)

Configures the time interval after which the port is automatically reactivated if the port was shut down for any violation.

[show interfaces port](#)

Displays the administrative, operational, violation, and recovery status and configuration for the specified port.

[show interfaces violation-recovery](#)

Displays the globally configured recovery time, SNMP recovery trap status, and maximum recovery attempts.

MIB Objects

```
alaPortViolationRecoveryTable
  alaPortViolationRecoveryMaximum
```

interfaces violation-recovery-trap

Enables or disables the sending of a violation recovery trap when any port is re-enabled after the violation recovery time has expired.

interface violation-recovery-trap {enable | disable}

Syntax Definitions

enable	Enables the ports to send violation recovery traps.
disable	Disables the ports from sending violation recovery traps.

Defaults

By default, the sending of a violation recovery trap is disabled.

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

This is a global command that is applied to all ports on all modules.

Examples

```
-> interfaces violation-recovery-trap enable
-> interfaces violation-recovery-trap disable
```

Release History

Release 6.6.3; command introduced.

Related Commands

interfaces violation-recovery-time	Configures the time interval to automatically re-enable the ports that were shut down due to a violation.
show interfaces violation-recovery	Displays the globally configured recovery time, SNMP recovery trap status, and maximum recovery attempts.

MIB Objects

```
esmViolationRecovery
  esmViolationRecoveryTrap
```

interfaces clear-violation-all

Clears all port violations set by various applications on the switch for the given port.

interfaces {*slot* | *slot/port[-port2]*} **clear-violation-all**

Syntax Definitions

<i>slot</i>	The slot number for a specific module.
<i>slot/port[-port2]</i>	The slot and port number (3/1). Use a hyphen to specify a range of ports (3/1-3/10).

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

All application violations associated with a specific port are cleared when this command is used.

Examples

```
-> interfaces 1/3 clear-violation-all
-> interfaces 1 clear-violation-all
-> interfaces 1/3-7 clear-violation-all
```

Release History

Release 6.6.3; command introduced.

Related Commands

[show interfaces port](#) Displays the administrative, operational, violation, and recovery status and configuration for the specified port.

MIB Objects

```
esmConfTable
  esmPortViolationClearAll
```

show interfaces violation-recovery

Displays the globally configured recovery time, SNMP recovery trap enable or disable status and maximum recovery attempts.

show interfaces violation-recovery

Syntax Definitions

N/A

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

N/A

Examples

```
-> show interfaces violation-recovery
UserPorts Shutdown Recovery Time      : 200,
UserPorts Shutdown Recovery Trap      : Enable,
UserPorts Shutdown Recovery Maximum   : 2
```

output definitions

UserPorts Shutdown Recovery Time	The recovery time configured.
UserPorts Shutdown Recovery Trap	SNMP recovery trap status: Enable or Disable.
UserPorts Shutdown Maximum Recovery	The maximum recovery attempts configured for the port before a port is permanently shut down.

Release History

Release 6.6.3; command introduced.

Related Commands

interfaces violation-recovery-time	Configures the time interval after which the port is automatically reactivated if the port was shut down for any violation.
interfaces violation-recovery-maximum	Configures the maximum number of recovery attempts before a port is permanently shut down.
show interfaces port	Displays the administrative, operational, violation, and recovery status and configuration for the specified port.

MIB Objects

```
esmViolationRecovery  
  esmViolationRecoveryTime  
  esmViolationRecoveryTrap  
  esmViolationRecoveryMaximum
```

show interfaces transceiver

Displays the DDM information for the specified transceivers.

show interfaces [*slot* | *slot/port[-port2]*] **transceiver** [**ddm** | **w-low** | **w-high** | **a-low** | **a-high** | **actual**]

Syntax Definitions

<i>slot</i>	The slot number for a specific module.
<i>slot/port[-port2]</i>	The slot and port number (3/1). Use a hyphen to specify a range of ports (3/1-3/10).
ddm	Displays the administrative status of the DDM feature.
w-low	Displays the Warning Low threshold for temperature, voltage, current, RX power and TX power.
w-high	Displays the Warning High threshold for temperature, voltage, current RX power and TX power.
a-low	Displays the Alarm Low threshold for temperature, voltage, current RX power and TX power.
a-high	Displays the Alarm High threshold for temperature, voltage, current RX power and TX power.
actual	Displays the Actual values for temperature, voltage, current RX power and TX power.

Defaults

By default, information is displayed for all ports on all modules and for all DDM parameter options.

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Transceiver DDM capability will vary based on the transceiver manufacturer.
- Enter a slot number to display information for all interfaces on a specific slot.
- Enter a slot and port number or a range of port numbers to display information for a specific interface or a range of interfaces.
- The transceiver DDM must be enabled with **interfaces transceiver ddm enable** command before using this command.

Examples

```
-> show interfaces transceiver w-low
```

```
Slot/Port Temp (C) Voltage(V) Current(mA) Output(dBm) Input(dBm)
-----+-----+-----+-----+-----+
1/1          48      5.15          50          2.50      2.50
1/2          47      5.35          49          2.43      2.43
1/3          NA       NA            NA           NA        NA
```

```
-> show interfaces transceiver a-high
```

```
Slot/Port Temp (C) Voltage(V) Current(mA) Output(dBm) Input(dBm)
-----+-----+-----+-----+-----+
1/1          50      5.75          75          3.22      3.22
1/2          50      5.95          65          3.22      3.22
1/3          NA       NA            NA           NA        NA
```

```
-> show interfaces 1/1 transceiver
```

```
Threshold      Temp (C) Voltage(V) Current(mA) Output(dBm) Input(dBm)
-----+-----+-----+-----+-----+
Actual          50      1.95(WL)      75          4.92(AH)      3.22
Alarm High     120      5.75          100         4.91           4.91
Warning High   90       3.00           90          4.77           4.77
Warning Low    10       2.00           60          0.00           0.00
Alarm Low      -5       1.75           20          -3.01          -10
```

```
-> show interfaces transceiver ddm
```

```
DDM Status      : enable
```

output definitions

Slot/Port	Interface slot and port numbers.
Temp (C)	The transceiver temperature, in degrees centigrade.
Voltage (V)	The transceiver supply voltage, in volts.
Current (mA)	The transceiver transmit bias current, in milliamps.
Output (dBm)	The transceiver output power, in decibels.
Input (dBm)	The transceiver received optical power, in decibels.
DDM Status	The administrative status of DDM.
Actual	The real-time values indicated by the transceiver. Values displayed in parentheses indicate the Warning or Alarm value that has been reached.
Alarm High (AH)	Indicates the value at which the transceiver's functionality may be affected.
Warning High (WH)	Indicates the transceiver is approaching the High Alarm value.
Warning Low (WL)	Indicates the transceiver is approaching the Low Alarm value.
Alarm Low (AL)	Indicates the value at which the transceiver's functionality may be affected.
N/A	Indicates the transceiver does support DDM.

Release History

Release 6.6.4; command was introduced.

Related Commands

interfaces transceiver ddm Configures the DDM administrative status.

MIB Objects

```
ddmNotifications
ddmTemperature
ddmTempLowWarning
ddmTempLowAlarm
ddmTempHiWarning
ddmTempHiAlarm
ddmSupplyVoltage
ddmSupplyVoltageLowWarning
ddmSupplyVoltageLowAlarm
ddmSupplyVoltageHiWarning
ddmSupplyVoltageHiAlarm
ddmTxBiasCurrent
ddmTxBiasCurrentLowWarning
ddmTxBiasCurrentLowAlarm
ddmTxBiasCurrentHiWarning
ddmTxBiasCurrentHiAlarm
ddmTxOutputPower
ddmTxOutputPowerLowWarning
ddmTxOutputPowerLowAlarm
ddmTxOutputPowerHiWarning
ddmTxOutputPowerHiAlarm
ddmRxOpticalPower
ddmRxOpticalPowerLowWarning
ddmRxOpticalPowerLowAlarm
ddmRxOpticalPowerHiWarning
ddmRxOpticalPowerHiAlarm
ddmInfoEntry
ddmConfigGroup
ddmInfoGroup
ddmInfoTable
ddmInfoEntry
```

show interfaces eee

Displays the EEE capability on the specified ports.

show interfaces [*slot* / *slot/port*[-*port2*]] **eee**

Syntax Definitions

<i>slot</i>	The slot number for a specific module.
<i>slot/port</i> [- <i>port2</i>]	The slot and port number (3/1). Use a hyphen to specify a range of ports (3/1-3/10).
eee	Displays the EEE capability on the specified ports.

Defaults

N/A

Platforms Supported

OmniSwitch 6450

Usage Guidelines

- For fiber ports NA will be displayed.
- A capability of 100M/1000M signifies that port is capable of EEE on both 100M and 1000M speeds.
- Autonegotiation is the current link speed on which the EEE is working.
- EEE is not supported on a port operating at 10M speed. Autonegotiation will display '-'

Examples

```
show interfaces 1 eee
```

```
-> show interfaces eee
Slot/   Status   Capability   Autonegotiation
Port
-----+-----+-----+-----
 1/1   disable  100M/1000M   -
 1/2   enable   100M/1000M   1000M
 1/3   enable   100M/1000M   100M
 1/4   enable   100M/1000M   -
 1/5   disable  100M/1000M   -
 1/6   disable  100M/1000M   -
```

output definitions

Slot/Port	Interface slot and port numbers.
Status	Whether EEE is enabled or disabled.

output definitions (continued)

Capability	Signifies that port is capable of EEE on both 100M and 1000M speed
Autonegotiation	The current link speed on which EEE is operating.

Release History

Release 6.6.4; command was introduced.

Related Commands

[interfaces eee](#) Enables or disabled Energy Efficient Ethernet.

MIB Objects

esmConfTable
 esmPortCfgEeeStatus
 esmPortCfgEeeAutoNegState
 esmPortCfgEeeCapability

show interfaces ptp

Displays the current IEEE 1588 Precision Time Protocol (PTP) status on the switch. When PTP is enabled, the switch provides IEEE 1588 support.

show interfaces ptp

Syntax Definitions

N/A

Defaults

By default, IEEE 1588 Precision Time Protocol (PTP) is disabled.

Platforms Supported

OmniSwitch 6450 (OS6450-P10S and OS6450-U24S only)

Usage Guidelines

N/A

Examples

```
-> show interfaces ptp
```

```
PTP Status      : enable
```

Release History

Release 6.6.5; command was introduced.

Related Commands

- | | |
|--|---|
| interfaces ptp | Enables or disables IEEE 1588 Precision Time Protocol (PTP) on the switch. |
| show interfaces ptp-statistics | Displays IEEE 1588 Precision Time Protocol (PTP) ingress and egress statistics for each port. |

MIB Objects

WRPesmShowInterfacesPtp

show interfaces ptp-statistics

Displays IEEE 1588 Precision Time Protocol (PTP) ingress and egress statistics for each port.

show interfaces [*slot* / *slot/port*[-*port2*]] **ptp-statistics**

Syntax Definitions

<i>slot</i>	The slot number for a specific module.
<i>slot/port</i> [- <i>port2</i>]	The slot and port number (1/6). Use a hyphen to specify a range of ports (1/6-1/10).
ptp-statistics	Displays the PTP statistics on the specified ports.

Defaults

N/A

Platforms Supported

OmniSwitch 6450 (OS6450-P10S and OS6450-U24S only)

Usage Guidelines

If PTP is disabled, an error displays when entering this command. To enable PTP, use the [interfaces ptp](#) command.

Examples

```
-> show interfaces ptp-statistics
```

Slot/ Port	Ingress PTPV2	Ingress PTPV1	Ingress Drop	Ingress piggy_back	Egress PTPV2	Egress PTPV1	Egress Drop	Egress Update_res
1/1	2761156	0	0	574017	1286446	0	0	1282435
1/2	257315	0	0	256514	3456655	0	0	1469152
1/3	257322	0	0	256521	3456658	0	0	1469148
1/4	257322	0	0	256521	3456703	0	0	1469167
1/5	1027309	0	0	256660	257344	0	0	256543
1/6	0	0	0	0	0	0	0	0
1/7	0	0	0	0	5797545	0	0	1940125
1/8	0	0	0	0	0	0	0	0
1/9	257250	0	0	256449	3457222	0	0	1469419
1/10	514932	0	0	513324	4485249	0	0	1726206

output definitions

Slot/Port	Interface slot and port numbers.
Ingress PTPV2	The number of PTP V2 packets ingressing the port.
Ingress PTPV1	The number of PTP V1 packets ingressing the port.
Ingress Drop	The number of PTP packets dropped at ingress by the port.
Ingress piggy_back	The number of PTP (ingress) packets timestamped at ingress (piggy back mode) in the port.
Egress PTPV2	The number of PTP V2 packets egressing the port.
Egress PTPV1	The number of PTP V1 packets egressing the port.

output definitions (continued)

Egress Drop	The number of PTP packets dropped at egress by the port.
Egress Update_res	The number of PTP packets in which residence times were updated when egressing port.

Release History

Release 6.6.5; command was introduced.

Related Commands

interfaces ptp	Enables or disables IEEE 1588 Precision Time Protocol (PTP) on the switch.
show interfaces ptp	Displays the current IEEE 1588 Precision Time Protocol (PTP) status on the switch.

MIB Objects

```
WRPesmShowStatisticsPtp
EsmPtpStatsEntry
esmPtpStatsTable
    esmPtpStatsIngPtpv2
    esmPtpStatsIngPtpv1
    esmPtpStatsIngPtpDrop
    esmPtpStatsIngPtpPigBag
    esmPtpStatsEgrPtpv2
    esmPtpStatsEgrPtpv1
    esmPtpStatsEgrPtpDrop
    esmPtpStatsEgrPtpUpdateRes
```

24 Port Mobility Commands

Port mobility allows dynamic VLAN port assignment based on VLAN rules that are applied to port traffic. By default, all switch ports are non-mobile ports that are manually assigned to a specific VLAN and can only belong to one VLAN at a time. When a port is defined as a mobile port, switch software compares traffic coming in on the port with configured VLAN rules. If any of the mobile port traffic matches any of the VLAN rules, the port and the matching traffic become a member of that VLAN. It is also possible for mobile ports to belong to more than one VLAN, when the port carries multiple traffic types that match different rules on different VLANs.

VLANs do not have a mobile or non-mobile distinction and there is no overall switch setting to invoke the mobile port feature. Instead, mobility is enabled on individual switch ports and rules are defined for individual VLANs to capture mobile port traffic. This chapter includes descriptions of Command Line Interface (CLI) commands used to define VLAN rules, enable or disable mobile port properties, and display mobile port configuration information.

MIB information for port mobility commands is as follows:

Filename: AlcatelIND1GroupMobility.MIB
Module: ALCATEL-IND1-GROUP-MOBILITY-MIB

A summary of the available commands is listed here:

- [vlan dhcp mac](#)
- [vlan dhcp mac range](#)
- [vlan dhcp port](#)
- [vlan dhcp generic](#)
- [vlan mac](#)
- [vlan mac range](#)
- [vlan ip](#)
- [vlan protocol](#)
- [vlan port](#)
- [vlan port mobile](#)
- [vlan port default vlan restore](#)
- [vlan port default vlan](#)
- [vlan port authenticate](#)
- [vlan port 802.1x](#)
- [show vlan rules](#)
- [show vlan port mobile](#)

vlan dhcp mac

Defines a DHCP MAC address rule for an existing VLAN. If a DHCP frame received on any mobile port contains a source MAC address that matches the MAC address specified in the rule, the frame's mobile port is temporarily assigned to the rule's VLAN.

vlan vid dhcp mac mac_address

vlan vid no dhcp mac mac_address

Syntax Definitions

<i>vid</i>	VLAN ID number (1–4094).
<i>mac_address</i>	Source MAC address (e.g., 00:00:39:59:f1:0C).

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Use the **no** form of this command to delete a DHCP MAC address rule from the specified VLAN.
- Port mobility software checks for and processes DHCP traffic first on an active mobile port. When a mobile port receives a DHCP frame that matches a DHCP rule, the port is temporarily assigned to the VLAN long enough to forward the DHCP requests within the VLAN broadcast domain. The source MAC address of the DHCP frame, however, is not learned for that VLAN port association.
- Once a DHCP device has obtained an IP address, its non-DHCP traffic must match other VLAN rules within the same VLAN for the device to remain a member of that VLAN. If this match occurs, then the frame source is learned in the matching rule VLAN.
- DHCP rules are most often used in combination with IP network address rules. A DHCP client has an IP address of all zeros (0.0.0.0) until it receives an IP address from a DHCP server, so it would not match any IP network address rules.
- Binding rules, MAC address rules, and protocol rules also capture DHCP client traffic. The exception to this is binding rules that specify an IP address as part of the rule, similar to IP network address rule definitions.
- Rules are only assigned to existing VLANs. Use the **vlan** command to create a new VLAN.

Examples

```
-> vlan 10 dhcp mac 00:00:39:59:0a:0c
-> vlan 20 dhcp mac 00:00:39:4f:f1:22
-> vlan 10 no dhcp mac 00:00:39:59:0a:0c
```

Release History

Release 6.6.1; command was introduced.

Related Commands

vlan dhcp mac range	Defines a DHCP MAC address range rule for an existing VLAN. Mobile ports that receive DHCP frames with a source MAC address that falls within the range specified by this rule are temporarily assigned to the VLAN.
vlan dhcp port	Defines a DHCP port rule for an existing VLAN. The mobile port specified by this rule is temporarily assigned to the VLAN when it receives DHCP frames.
vlan dhcp generic	Defines a generic DHCP rule for an existing VLAN. Mobile ports that receive DHCP frames that do not match other DHCP rules are temporarily assigned to the VLAN.
show vlan	Displays existing VLANs.
show vlan rules	Displays rules defined for VLANs.

MIB Objects

```
vDhcpMacRuleTable  
  vDhcpMacRuleAddr  
  vDhcpMacRuleVlanId  
  vDhcpMacRuleStatus
```

vlan dhcp mac range

Defines a DHCP MAC range rule for an existing VLAN. If a DHCP frame contains a source MAC address that matches the low or high end MAC or falls within the range defined by the low and high end MAC, the frame's mobile port is temporarily assigned to the rule's VLAN.

vlan vid dhcp mac range *low_mac_address high_mac_address*

vlan vid no dhcp mac range *low_mac_address*

Syntax Definitions

<i>vid</i>	VLAN ID number (1–4094).
<i>low_mac_address</i>	MAC address that defines the low end of the range (e.g., 00:00:39:59:f1:00).
<i>high_mac_address</i>	MAC address that defines the high end of the range (e.g., 00:00:39:59:f1:90).

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Use the **no** form of this command to delete a DHCP MAC range rule from the specified VLAN. It is only necessary to specify the low end MAC to identify which rule to delete; the high end MAC is not required.
- Only valid source MAC addresses are allowed for the low and high end boundary MACs. For example, multicast addresses (e.g., 01:00:00:c5:09:1a) are ignored even if they fall within a specified MAC range. To allow the use of a multicast address as either the low or high end boundary MAC would cause misleading DHCP MAC range rule results.
- Port mobility software checks for and processes DHCP traffic first on an active mobile port. When a mobile port receives a DHCP frame that matches a DHCP rule, the port is temporarily assigned to the VLAN long enough to forward the DHCP requests within the VLAN broadcast domain. The source MAC address of the DHCP frame, however, is not learned for that VLAN port association.
- Once a DHCP device has obtained an IP address, its non-DHCP traffic must match other VLAN rules within the same VLAN for the device to remain a member of that VLAN. If this match occurs, then the frame source is learned in the matching rule VLAN.
- DHCP rules are most often used in combination with IP network address rules. A DHCP client has an IP address of all zeros (0.0.0.0) until it receives an IP address from a DHCP server, so it would not match any IP network address rules.

- MAC address rules and protocol rules also capture DHCP client traffic.
- Rules are only assigned to existing VLANs. Use the **vlan** command to create a new VLAN.

Examples

```
-> vlan 10 dhcp mac range 00:00:39:59:0a:0c 00:00:39:59:0a:0f  
-> vlan 10 no dhcp mac range 00:00:39:59:0a:0c
```

Release History

Release 6.6.1; command was introduced.

Related Commands

vlan dhcp mac	Defines a DHCP MAC address rule for an existing VLAN. Mobile ports that receive DHCP frames with a source MAC address that matches the address specified by this rule are temporarily assigned to the VLAN.
vlan dhcp port	Defines a DHCP port rule for an existing VLAN. The mobile port specified by this rule is temporarily assigned to the VLAN when it receives DHCP frames.
vlan dhcp generic	Defines a generic DHCP rule for an existing VLAN. Mobile ports that receive DHCP frames that do not match other DHCP rules are temporarily assigned to the VLAN.
show vlan	Displays existing VLANs.
show vlan rules	Displays rules defined for VLANs.

vlan dhcp port

Defines a DHCP port rule for an existing VLAN. If a DHCP frame is received on a mobile port that matches the port specified in the rule, the mobile port is temporarily assigned to the rule's VLAN.

vlan vid dhcp port slot/port

vlan vid no dhcp port slot/port

Syntax Definitions

<i>vid</i>	VLAN ID number (1–4094).
<i>slot/port</i>	The slot number for the module and the physical mobile port number on that module (e.g., 3/1 specifies port 1 on slot 3). To enter multiple slots and ports in a single command, use a hyphen to specify a range of ports (e.g., 3/1-16) and a space to specify multiple slots (e.g., 3/1-16 5/10-20 8/2-9).

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Use the **no** form of this command to delete a DHCP port rule from the specified VLAN.
- Port mobility software checks for and processes DHCP traffic first on an active mobile port. When a mobile port receives a DHCP frame that matches a DHCP rule, the port is temporarily assigned to the VLAN long enough to forward the DHCP requests within the VLAN broadcast domain. The source MAC address of the DHCP frame, however, is not learned for that VLAN port association.
- Once a DHCP device has obtained an IP address, its non-DHCP traffic must match other VLAN rules within the same VLAN for the device to remain a member of that VLAN. If this match occurs, then the frame source is learned in the matching rule VLAN.
- DHCP rules are most often used in combination with IP network address rules. A DHCP client has an IP address of all zeros (0.0.0.0) until it receives an IP address from a DHCP server, so it would not match any IP network address rules.
- Binding rules, MAC address rules, and protocol rules also capture DHCP client traffic. The exception to this is binding rules that specify an IP address as part of the rule, similar to IP network address rule definitions.
- Rules are only assigned to existing VLANs. Use the **vlan** command to create a new VLAN.

Examples

```
-> vlan 10 dhcp port 3/1
-> van 20 dhcp port 4/1-16
-> vlan 30 dhcp port 5/1-32 6/5-10 8/7-22
-> vlan 10 no dhcp port 3/1
-> vlan 20 no dhcp port 4/1-16
```

Release History

Release 6.6.1; command was introduced.

Related Commands

vlan dhcp mac	Defines a DHCP MAC address rule for an existing VLAN. Mobile ports that receive DHCP frames with a source MAC address that matches the address specified by this rule are temporarily assigned to the VLAN.
vlan dhcp mac range	Defines a DHCP MAC address range rule for an existing VLAN. Mobile ports that receive DHCP frames with a source MAC address that falls within the range specified by this rule are temporarily assigned to the VLAN.
vlan dhcp generic	Defines a generic DHCP rule for an existing VLAN. Mobile ports that receive DHCP frames that do not match other DHCP rules are temporarily assigned to the VLAN.
show vlan	Displays existing VLANs.
show vlan rules	Displays rules defined for VLANs.

MIB Objects

```
vDhcpPortRuleTable
  vDhcpPortRuleIfIndex
  vDhcpPortRuleVlanId
  vDhcpPortRuleStatus
```

vlan dhcp generic

Defines a DHCP rule for an existing VLAN. If a DHCP frame does not match any other DHCP rule criteria, the frame's mobile port is temporarily assigned to the DHCP generic rule VLAN.

vlan *vid* dhcp generic

vlan *vid* no dhcp generic

Syntax Definitions

vid VLAN ID number (1–4094).

Platforms Supported

OmniSwitch 6250, 6350, 6450

Defaults

N/A

Usage Guidelines

- Use the **no** form of this command to delete a DHCP generic rule from the specified VLAN.
- Only one DHCP generic rule per switch is allowed.
- Port mobility software checks for and processes DHCP traffic first on an active mobile port. When a mobile port receives a DHCP frame that matches a DHCP rule, the port is temporarily assigned to the VLAN long enough to forward the DHCP requests within the VLAN broadcast domain. The source MAC address of the DHCP frame, however, is not learned for that VLAN port association.
- Once a DHCP device has obtained an IP address, its non-DHCP traffic must match other VLAN rules within the same VLAN for the device to remain a member of that VLAN. If this match occurs, then the frame source is learned in the matching rule VLAN.
- DHCP rules are most often used in combination with IP network address rules. A DHCP client has an IP address of all zeros (0.0.0.0) until it receives an IP address from a DHCP server, so it would not match any IP network address rules.
- Binding rules, MAC address rules, and protocol rules also capture DHCP client traffic. The exception to this is binding rules that specify an IP address as part of the rule, similar to IP network address rule definitions.
- Rules are only assigned to existing VLANs. Use the **vlan** command to create a new VLAN.

Examples

```
-> vlan 10 dhcp generic
-> vlan 10 no dhcp generic
```

Release History

Release 6.6.1; command was introduced.

Related Commands

vlan dhcp port	Defines a DHCP port rule for an existing VLAN. The mobile port specified by this rule is temporarily assigned to the VLAN when it receives DHCP frames.
vlan dhcp mac	Defines a DHCP MAC address rule for an existing VLAN. Mobile ports that receive DHCP frames with a source MAC address that matches the address specified by this rule are temporarily assigned to the VLAN.
vlan dhcp mac range	Defines a DHCP MAC address range rule for an existing VLAN. Mobile ports that receive DHCP frames with a source MAC address that falls within the range specified by this rule are temporarily assigned to the VLAN.
show vlan	Displays existing VLANs.
show vlan rules	Displays rules defined for VLANs.

MIB Objects

```
vDhcpGenericRuleTable  
  vDhcpGenericRuleVlanId  
  vDhcpGenericRuleStatus
```

vlan mac

Defines a MAC address rule for an existing VLAN. If the source MAC address of a device matches a MAC address specified in this rule, the device and its mobile port will join the VLAN when the device starts to send traffic.

```
vlan vid mac mac_address
```

```
vlan vid no mac mac_address
```

Syntax Definitions

<i>vid</i>	VLAN ID number (1–4094).
<i>mac_address</i>	MAC address (e.g., 00:00:39:59:f1:0c).

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Use the **no** form of this command to delete a MAC address rule from the specified VLAN.
- Once a device joins a MAC address rule VLAN, then it is not eligible to join multiple VLANs even if the device traffic matches other VLAN rules.
- Mac address rules take precedence behind DHCP and binding rules.
- MAC address rules also capture DHCP traffic, if no other DHCP rule exists that would classify the DHCP traffic into another VLAN. Therefore, it is not necessary to combine DHCP rules with MAC address rules for the same VLAN.
- If there are a large number of devices that must join a VLAN, try MAC range rules (see [vlan mac range command on page 24-12](#)).
- Rules are only assigned to existing VLANs. Use the **vlan** command to create a new VLAN.

Examples

```
-> vlan 10 mac 00:00:39:59:0a:0c
-> vlan 20 mac 00:00:39:4f:f1:22
-> vlan 10 no mac 00:00:39:59:0a:0c
```

Release History

Release 6.6.1; command was introduced.

Related Commands

vlan mac range

Defines a MAC range rule for an existing VLAN. Mobile ports that receive frames with a source MAC address that falls within the range specified by this rule are temporarily assigned to the VLAN.

show vlan

Displays existing VLANs.

show vlan rules

Displays rules defined for VLANs.

MIB Objects

vMacRuleTable

 vMacRuleAddr

 vMacRuleVlanId

 vMacRuleStatus

vlan mac range

Defines a MAC range rule for an existing VLAN. If the source MAC address of a device matches the low or high end MAC or falls within the range defined by the low and high end MAC, the device and its mobile port will join the VLAN when the device starts to send traffic.

```
vlan vid mac range low_mac_address high_mac_address
```

```
vlan vid no mac range low_mac_address
```

Syntax Definitions

<i>vid</i>	VLAN ID number (1–4094).
<i>low_mac_address</i>	MAC address that defines the low end of the range (e.g., 00:00:39:59:f1:00).
<i>high_mac_address</i>	MAC address that defines the high end of the range (e.g., 00:00:39:59:f1:90).

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Use the **no** form of this command to delete a MAC range rule from the specified VLAN. It is only necessary to enter the low end MAC address to identify which rule to delete; the high end MAC is not required.
- Only valid source MAC addresses are allowed for the low and high end boundary MACs. For example, multicast addresses (e.g., 01:00:00:c5:09:1a) are ignored even if they fall within a specified MAC range. To allow the use of a multicast address as either the low or high end boundary MAC would cause misleading MAC range rule results.
- Once a device joins a MAC range rule VLAN, then it is not eligible to join multiple VLANs even if the device traffic matches other VLAN rules.
- MAC range rules follow the same precedence as MAC address rules.
- MAC range rules also capture DHCP traffic, if no other DHCP rule exists that would classify the DHCP traffic into another VLAN. Therefore, it is not necessary to combine DHCP rules with MAC range rules for the same VLAN.
- Rules are only assigned to existing VLANs. Use the **vlan** command to create a new VLAN.

Examples

```
-> vlan 10 mac range 00:00:39:59:0a:0c 00:00:39:59:0a:0f  
-> vlan 10 no mac range 00:00:39:59:0a:0c
```

Release History

Release 6.6.1; command was introduced.

Related Commands

vlan mac

Defines a MAC address rule for an existing VLAN. Mobile ports that receive frames with a source MAC address that matches the address specified by this rule are temporarily assigned to the VLAN.

show vlan

Displays existing VLANs.

show vlan rules

Displays rules defined for VLANs.

MIB Objects

vMacRangeRuleTable

vMacRangeRuleLoAddr

vMacRangeRuleHiAddr

vMacRangeRuleVlanId

vMacRangeRuleStatus

vlan ip

Defines an IP network address rule for an existing VLAN. If a device sends traffic that matches the IP address specified in the rule, the device and its mobile port will join the rule's VLAN.

```
vlan vid ip ip_address [subnet_mask]
```

```
vlan vid no ip ip_address [subnet_mask]
```

Syntax Definitions

<i>vid</i>	VLAN ID number (1–4094).
<i>ip_address</i>	IP network address (e.g., 10.0.0.0, 171.15.0.0, 196.190.254.0)
<i>subnet_mask</i>	Class A, B, or C subnet mask (e.g., 255.0.0.0, 255.255.0.0, or 255.255.255.0).

Defaults

By default, the subnet mask is set to the default subnet mask value for the IP address class.

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Use the **no** form of this command to delete an IP network address rule from the specified VLAN.
- Network address rules take precedence behind DHCP, binding, and MAC address rules.
- Use DHCP rules in combination with IP network address rules to capture and forward DHCP traffic.
- Rules are only assigned to existing VLANs. Use the **vlan** command to create a new VLAN.

Examples

```
-> vlan 10 ip 51.0.0.0 255.0.0.0
-> vlan 20 ip 21.0.0.0
-> vlan 10 no ip 21.0.0.0 255.0.0.0
-> vlan 10 no ip 51.0.0.0
```

Release History

Release 6.6.1; command was introduced.

Related Commands

vlan dhcp mac	Defines a DHCP MAC address rule for an existing VLAN. Mobile ports that receive DHCP frames with a source MAC address that matches the address specified by this rule are temporarily assigned to the VLAN.
vlan dhcp mac range	Defines a DHCP MAC address range rule for an existing VLAN. Mobile ports that receive DHCP frames with a source MAC address that falls within the range specified by this rule are temporarily assigned to the VLAN.
vlan dhcp port	Defines a DHCP port rule for an existing VLAN. The mobile port specified by this rule is temporarily assigned to the VLAN when it receives DHCP frames.
vlan dhcp generic	Defines a generic DHCP rule for an existing VLAN. Mobile ports that receive DHCP frames that do not match other DHCP rules are temporarily assigned to the VLAN.
show vlan	Displays existing VLANs.
show vlan rules	Displays rules defined for VLANs.

MIB Objects

```
vIpNetRuleTable  
  vIpNetRuleAddr  
  vIpNetRuleMask  
  vIpNetRuleVlanId  
  vIpNetRuleStatus
```

vlan protocol

Defines a protocol rule for an existing VLAN. If a device sends traffic that matches the protocol value specified in the rule, the device and its mobile port will join the rule's VLAN.

```
vlan vid protocol {ip-e2 | ip-snap | decnet | appletalk |
ethertype type | dsapssap dsap/ssap | snap snatype}
```

```
vlan vid no protocol {ip-e2 | ip-snap | decnet | appletalk |
ethertype type | dsapssap dsap/ssap | snap snatype}
```

Syntax Definitions

<i>vid</i>	VLAN ID number (1–4094).
ip-e2	IP Ethernet-II protocol. Also captures Address Resolution Protocol (ARP).
ip-snap	IP Sub-network Access Protocol (SNAP) protocol.
decnet	DECNET Phase IV (6003) protocol.
appletalk	AppleTalk protocol. Also captures Datagram Delivery Protocol (DDP) and AppleTalk ARP (AARP).
<i>type</i>	A two-byte hex value between 0x600 and 0xffff that defines an Ethernet type (e.g., 0600, 0806, 6002).
<i>dsap/ssap</i>	A one-byte hex value between 0x00 and 0xff that defines Destination Service Access Protocol (DSAP) and Source Service Access Protocol (SSAP) header values. Specify both a DSAP and an SSAP value for this parameter variable (e.g., F0/F0, 04/04, BC/BC).
<i>snatype</i>	A two-byte hex value between 0x600 and 0xffff that defines a SNAP protocol.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Use the **no** form of this command to delete a protocol rule from the specified VLAN.
- Use the **ethertype**, **dsapssap**, or **snap** parameters if none of the generic protocol rule parameters (**ip-e2**, **ip-snap**, **decnet**, **appletalk**) provide the necessary rule definition for a specific traffic protocol.
- If an attempt is made to define an Ethertype rule with a protocol type value that is equal to the value already captured by one of the generic IP protocol rules, a message displays recommending the use of the IP generic rule.
- Protocol rules take precedence behind DHCP, binding, MAC address, and network address rules.

- IP protocol rules (ipE2 and ipSnap) also capture DHCP traffic, if no other DHCP rule exists that would classify the DHCP traffic into another VLAN. Therefore, it is not necessary to combine DHCP rules with protocol rules for the same VLAN.
- Rules are only assigned to existing VLANs. Use the **vlan** command to create a new VLAN.

Examples

```
-> vlan 10 protocol ip-e2
-> vlan 30 protocol ethertype 0600
-> vlan 40 protocol dsapssap F0/F0
-> vlan 50 protocol snap 6004
-> vlan 10 no protocol ip-snap
-> vlan 30 no protocol ethertype 0806
-> vlan 40 no protocol dsapssap 04/04
-> vlan 50 no protocol snap 80FE
```

Release History

Release 6.6.1; command was introduced.

Related Commands

show vlan	Displays existing VLANs.
show vlan rules	Displays rules defined for VLANs.

MIB Objects

```
vProtocolRuleTable
  vProtoRuleProtoClass
  vProtoRuleEthertype
  vProtoRuleDsapSsap
  vProtoRuleVlanId
  vProtoRuleStatus
```

vlan port

Defines a port rule for an existing VLAN. An active mobile port that is specified in a port rule, dynamically joins the VLAN even if traffic on that port does not get learned or matches any VLAN rules. The specified port becomes a VLAN member only for the purpose of forwarding broadcast traffic for a VLAN on that port. The advantage to this is that traffic from multiple VLANs can flood out on a single port.

vlan *vid* **port** *slot/port*

vlan *vid* **no port** *slot/port*

Syntax Definitions

<i>vid</i>	VLAN ID number (1–4094).
<i>slot/port</i>	The slot number for the module and the physical mobile port number on that module (e.g., 3/1 specifies port 1 on slot 3). To enter multiple slots and ports in a single command, use a hyphen to specify a range of ports (e.g., 3/1-16) and a space to specify multiple slots (e.g., 3/1-16 5/10-20 8/2-9).

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Use the **no** form of this command to delete a port rule from the specified VLAN.
- Port rules are for silent devices, such as printers, that require VLAN membership to receive traffic forwarded from the VLAN. These devices usually don't send traffic, so they do not trigger dynamic assignment of their mobile ports to a VLAN.
- Port rules do not classify incoming traffic on the specified mobile port. Incoming traffic is classified for VLAN assignment in the same manner as all other mobile port traffic.
- VLAN assignments that are defined using port rules are exempt from the port's default VLAN restore status.
- An alternative to port rules is to manually assign a port to a VLAN by using the [vlan port default](#) command. This applies to both mobile and non-mobile ports.
- Rules are only assigned to existing VLANs. Use the **vlan** command to create a new VLAN.

Examples

```
-> vlan 10 port 3/10
-> vlan 20 port 6/1-32
-> vlan 500 port 2/1-12 4/10-16 8/4-17
-> vlan 30 no port 9/11
-> vlan 40 no port 4/1-16
-> vlan 600 no port 2/14-20 7/1-9
```

Release History

Release 6.6.1; command was introduced.

Related Commands

show vlan	Displays existing VLANs.
show vlan rules	Displays rules defined for VLANs.

MIB Objects

```
vPortRuleTable
  vPortRuleIfIndes
  vPortRuleVlanId
  vPortRuleStatus
```

vlan port mobile

Configures Ethernet ports as mobile ports and enables or disables BPDU ignore. Mobile ports are eligible for dynamic VLAN assignment, which occurs when mobile port traffic matches a VLAN rule on one or more VLANs. Typically, mobility is applied to ports that do not send or receive BPDUs. However, enabling BPDU ignore allows BPDU ports to also participate in dynamic VLAN assignment.

Note. Enabling BPDU ignore is not recommended. In specific cases where it is required, such as connecting legacy networks to port mobility networks, make sure that ignoring BPDUs on a mobile port will not cause network loops to go undetected. Connectivity problems could also result if a mobile BPDU port dynamically moves out of its configured default VLAN where it provides traffic flow to and from another switch.

vlan port mobile *slot/port* [**bpdu ignore** {**enable** | **disable**}]

vlan no port mobile *slot/port*

Syntax Definitions

slot/port

The slot number for the module and the physical port number on that module (e.g., 3/1 specifies port 1 on slot 3). To enter multiple slots and ports in a single command, use a hyphen to specify a range of ports (e.g., 3/1-16) and a space to specify multiple slots (e.g., 3/1-16 5/10-20 8/2-9).

enable

Enables BPDU ignore on a mobile port.

disable

Disables BPDU ignore on a mobile port.

Defaults

By default, all ports are non-mobile (fixed) ports.

parameter	default
enable disable	disable

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Use the **no** form of this command to disable mobility on the specified port.
- Only 10/100 and Gigabit Ethernet ports are eligible for mobile port status.
- Mobile ports can join more than one VLAN. For example, if a device connected to a mobile port sends IP and Appletalk traffic and VLAN 10 has an IP protocol rule and VLAN 20 has an appletalk protocol rule, the mobile port and its device dynamically join both VLANs. However, certain rules, such as MAC address rules, can limit port membership to one VLAN.

- When a VLAN is administratively disabled, manual port and dynamic mobile port assignments are retained but traffic on these ports is not forwarded. However, VLAN rules remain active and continue to classify mobile port traffic for VLAN membership.
- When a BPDU is received on a mobile port and BPDU ignore is disabled, the port is changed to a fixed (non-mobile) port that is associated only with its configured default VLAN. Also, the BPDU port participates in the Spanning Tree algorithm. When BPDU ignore is enabled, a mobile port that receives a BPDU remains mobile and is not included in Spanning Tree topology calculations.
- Enabling mobility on an active port that sends or receives BPDU (e.g. ports that connect two switches and Spanning Tree is enabled on both the ports and their assigned VLANs) is not allowed. If mobility is required on this type of port, enable mobility and the BPDU ignore flag when the port is not active.

Examples

```
-> vlan port mobile 3/1
-> vlan port mobile 3/1-16
-> vlan port mobile 3/1-16 4/17-32 8/4-12
-> vlan port mobile 5/22 authenticate enable
-> vlan port mobile 6/12-16 authenticate disable
-> vlan no port mobile 2/1
-> vlan no port mobile 3/1-16
-> vlan no port mobile 4/17-32 8/4-12
```

Release History

Release 6.6.1; command was introduced.

Related Commands

vlan port default vlan restore	Enables default VLAN restore on a mobile port.
vlan port default vlan	Enables default VLAN membership for mobile port traffic that does not match any VLAN rules.
vlan port authenticate	Enables or disables authentication on a mobile port.
show vlan port mobile	Displays mobile port properties.

MIB Objects

```
vMobilePortTable
  vMobilePortIIIfIndex
  vMobilePortMobility
  vMobilePortIgnoreBPDU
```

vlan port default vlan restore

Enables or disables default VLAN restore for a mobile port. Use this command to specify if a mobile port should retain or drop its dynamic VLAN assignments after all MAC addresses learned on that port have aged out.

vlan port *slot/port* default vlan restore {enable | disable}

Syntax Definitions

<i>slot/port</i>	The slot number for the module and the physical mobile port number on that module (e.g., 3/1 specifies port 1 on slot 3). To enter multiple slots and ports in a single command, use a hyphen to specify a range of ports (e.g., 3/1-16) and a space to specify multiple slots (e.g., 3/1-16 5/10-20 8/2-9).
enable	Enable default VLAN restore for the specified mobile port. VLAN assignments are dropped when port traffic ages out.
disable	Disable default VLAN restore for the specified mobile port. VLAN assignments are retained when port traffic ages out.

Defaults

By default, VLAN restore is enabled on mobile ports.

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- If a hub is connected to a mobile port, enabling default VLAN restore on that port is recommended.
- If a VLAN port rule exists for a mobile port, it will remain a member of the port rule VLAN even if default VLAN restore is enabled for that port.
- When a mobile port link is disabled and then enabled, the port is always returned to its configured default VLAN. Switch ports are disabled when a device is disconnected from the port, a configuration change is made to disable the port, or switch power is turned off.

Examples

```
-> vlan port 3/1 default vlan restore enable
-> vlan port 5/2 default vlan restore disable
-> vlan port 6/1-32 8/10-24 9/3-14 default vlan restore enable
```

Release History

Release 6.6.1; command was introduced.

Related Commands

vlan port mobile	Configures Ethernet ports as mobile ports.
vlan port default vlan	Enables default VLAN membership for mobile port traffic that does not match any VLAN rules.
vlan port authenticate	Enables or disables authentication on a mobile port.
show vlan port mobile	Displays mobile port properties.

MIB Objects

```
vMobilePortTable  
  vMobilePortIIIfIndex  
  vMobilePortDefVlanRestore
```

vlan port default vlan

Enables or disables the forwarding of mobile port traffic on the configured default VLAN for the mobile port when the traffic does not match any VLAN rules.

vlan port *slot/port* **default vlan** {enable | disable}

Syntax Definitions

<i>slot/port</i>	The slot number for the module and the physical mobile port number on that module (e.g., 3/1 specifies port 1 on slot 3). To enter multiple slots and ports in a single command, use a hyphen to specify a range of ports (e.g., 3/1-16) and a space to specify multiple slots (e.g., 3/1-16 5/10-20 8/2-9).
enable	Enable the configured default VLAN for the specified mobile port.
disable	Disable the configured default VLAN for the specified mobile port.

Defaults

Default VLAN is enabled on mobile ports.

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- It is recommended that mobile ports with their default VLAN disabled should not share a VLAN with any other types of ports (e.g., mobile ports with default VLAN enabled or non-mobile, fixed ports).
- If the default VLAN is enabled for a mobile port, traffic that does not match any VLAN rules is forwarded on the default VLAN.
- If the default VLAN is disabled for the mobile port, traffic that does not match any VLAN rules is dropped.
- When a port (mobile or fixed) is manually assigned to a default VLAN or is still a member of default VLAN 1, then that association is referred to as the *configured* default VLAN for the port. If a mobile port is dynamically assigned to additional VLANs, these subsequent associations are referred to as secondary VLANs.

Examples

```
-> vlan port 3/1 default vlan enable
-> vlan port 5/2 default vlan disable
-> vlan port 6/1-32 8/10-24 9/3-14 default vlan enable
```

Release History

Release 6.6.1; command was introduced.

Related Commands

vlan port mobile	Configures Ethernet ports as mobile ports.
vlan port default vlan restore	Enables default VLAN restore on a mobile port.
vlan port authenticate	Enables or disables authentication on a mobile port.
show vlan port mobile	Displays mobile port properties.

MIB Objects

```
vMobilePortTable  
  vMobilePortIIIfIndex  
  vMobilePortDefVlanEnable
```

vlan port authenticate

Enables or disables authentication on a mobile port.

vlan port *slot/port* authenticate {enable | disable}

Syntax Definitions

<i>slot/port</i>	The slot number for the module and the physical mobile port number on that module (e.g., 3/1 specifies port 1 on slot 3). To enter multiple slots and ports in a single command, use a hyphen to specify a range of ports (e.g., 3/1-16) and a space to specify multiple slots (e.g., 3/1-16 5/10-20 8/2-9).
enable	Enable authentication on the specified mobile port.
disable	Disable authentication on the specified mobile port.

Defaults

By default, authentication is disabled on mobile ports.

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

At this time, authentication is only supported on mobile ports.

Examples

```
-> vlan port 3/1 authenticate enable
-> vlan port 5/2 authenticate disable
-> vlan port 6/1-32 8/10-24 9/3-14 authenticate enable
```

Release History

Release 6.6.1; command was introduced.

Release 6.6.2; command was deprecated.

Related Commands

vlan port mobile	Configures Ethernet ports as mobile ports.
vlan port 802.1x	Enables or disables 802.1X port-based access control on a mobile port.
show vlan port mobile	Displays mobile port properties.

MIB Objects

```
vMobilePortTable  
  vMobilePortIIIfIndex  
  vMobilePortAuthenticate
```

vlan port 802.1x

Enables or disables 802.1X port-based access control on a mobile port.

vlan port *slot/port* 802.1x {enable | disable}

Syntax Definitions

<i>slot/port</i>	The slot number for the module and the physical mobile port number on that module (e.g., 3/1 specifies port 1 on slot 3). To enter multiple slots and ports in a single command, use a hyphen to specify a range of ports (e.g., 3/1-16) and a space to specify multiple slots (e.g., 3/1-16 5/10-20 8/2-9).
enable	Enable 802.1x on the specified mobile port.
disable	Disable 802.1x on the specified mobile port.

Defaults

By default, 802.1x is disabled on mobile ports.

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- At this time, 802.1X is only supported on mobile ports.
- Authentication and 802.1X are mutually exclusive on a given mobile port.

Examples

```
-> vlan port 3/1 802.1x enable
-> vlan port 5/2 802.1x disable
-> vlan port 6/1-32 8/10-24 9/3-14 802.1x enable
```

Release History

Release 6.6.1; command was introduced.

Related Commands

vlan port mobile	Configures Ethernet ports as mobile ports.
vlan port authenticate	Enables or disables authentication on a mobile port.
show vlan port mobile	Displays mobile port properties.

MIB Objects`vMobilePortTable``vMobilePortIIIfIndex``vMobilePortAuthenticate`

show vlan rules

Displays VLAN rules for the specified VLAN.

show vlan [*vid*] rules

Syntax Definitions

vid VLAN ID number (1–4094).

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

If a *vid* is not specified, rules defined for all VLANs are displayed.

Examples

```
-> show vlan rules
```

Legend: * indicates a binding rule

type	vlan	rule
ip-net	7	143.113.0.0, 255.255.0.0
mac-addr	4000	00:00:00:00:10:10
mac-range	4001	00:00:00:10:00:00, 00:00:00:20:00:00
mac-port-proto*	4094	00:00:0e:00:12:34, 15/4, appletalk

```
-> show vlan 55 rules
```

Legend: * indicates a binding rule

type	vlan	rule
ip-net	55	143.113.0.0, 255.255.0.0
mac-addr	55	00:00:00:00:10:10
mac-range	55	00:00:00:10:00:00, 00:00:00:20:00:00
mac-port-proto*	55	00:00:0e:00:12:34, 15/4, appletalk

output definitions

Type	The type of rule defined. There are several types of VLAN rules: binding rules, MAC address rules, IP network address rules, protocol rules, port rules, custom rules, and DHCP rules.
*	Identifies a binding rule. The asterisk appears next to the rule type.

output definitions (continued)

VLAN	The VLAN ID number for the rule's VLAN.
Rule	The value for the type of rule defined. Switch software uses these rule values to determine mobile port VLAN assignment. If traffic coming in on a mobile port matches the value of a VLAN rule, then the mobile port is dynamically assigned to that VLAN.

Release History

Release 6.6.1; command was introduced.

Related Commands

show vlan	Displays a list of existing VLANs.
show vlan port	Displays VLAN port assignments for all VLANs, a specific VLAN, or for a specific port (mobile and fixed).

MIB Objects

N/A

show vlan port mobile

Displays current status of mobile properties for a switch port.

show vlan port mobile [*slot/port*]

Syntax Definitions

slot/port

The slot number for the module and the physical port number on that module (e.g., 3/1 specifies port 1 on slot 3). To enter multiple slots and ports in a single command, use a hyphen to specify a range of ports (e.g., 3/1-16) and a space to specify multiple slots (e.g., 3/1-16 5/10-20 8/2-9).

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- If a slot/port is not specified, then mobile properties for all ports are displayed.
- Note that the **show vlan port mobile** command only displays ports that are mobile or are eligible to become mobile ports. For example, ports that are part of a link aggregate or are configured for 802.1Q VLAN tagging are not included in the output of this command.

Examples

```
-> show vlan port mobile
```

```

           cfg
port  mobile def  authent  enabled  restore  ignore
-----+-----+-----+-----+-----+-----+-----+
12/12  on    1    off    on    off    off
12/13  off
12/14  off
12/15  on    10   on-8021x  off    on    off
12/16  on    10   on-8021x  on    off    on

```

output definitions

port	The slot number for the module and the physical mobile port number on that module.
mobile	The mobile status for the port (on or off). If set to on , the port is mobile and eligible for dynamic VLAN assignment. If set to off , the port is non-mobile and remains only a member of its configured default VLAN. Use the vlan port mobile to enable or disable mobility on a port.
cfg def	The configured default VLAN for the port, which is assigned using the vlan port default command.

output definitions (continued)

authent	The authentication status for the port (on-8021x , or off). Use the vlan port authenticate and vlan port 802.1x commands to change this status.
enabled	The default VLAN status for the port: on enables the forwarding of traffic that doesn't match any rules on the port's configured default VLAN; off disables the forwarding of such traffic and packets are discarded. Use the vlan port default vlan to change this status.
restore	The default VLAN restore status for the port: on indicates that the mobile port will not retain its VLAN assignments when qualifying traffic ages out on that port; off indicates that the mobile port will retain its dynamic VLAN assignments after qualifying traffic has aged out. Use the vlan port default vlan restore command to change this status.
ignore BPDU	The ignore BPDU status for the port: on indicates that if the mobile port receives BPDUs, they're ignored and the port remains eligible for dynamic VLAN assignment; off indicates that if a BPDU is seen on the port, mobility is disabled and the port is not eligible for dynamic assignment. The status of ignore BPDU is set when the vlan port mobile command is used to enable or disable mobility on a port.

Release History

Release 6.6.1; command was introduced.

Related Commands

show vlan port Displays VLAN port assignments for all VLANs, a specific VLAN, or for a specific port.

MIB Objects

N/A

25 VLAN Management Commands

VLAN management software handles VLAN configuration and the reporting of VLAN configuration changes to other switch tasks. A VLAN defines a broadcast domain that contains physical ports and can span across multiple switches. All switches contain a default VLAN 1. Physical switch ports are initially assigned to VLAN 1 until they are statically or dynamically assigned to other VLANs.

This chapter includes descriptions of VLAN management commands used to create, modify or remove VLANs. These commands allow you to enable or disable Spanning Tree Protocol (STP) and Authentication on a VLAN, add or remove virtual router interfaces, statically assign physical switch ports to a default VLAN, and display VLAN configuration information.

The VLAN management commands comply with RFC 2674.

MIB information is as follows:

Filename: AlcatelIND1VlanManager.mib
Module: ALCATEL-IND1-VLAN-MGR-MIB

A summary of the available commands is listed here:

vlan
vlan stp
vlan mobile-tag
vlan port default
vlan source-learning
show vlan
show vlan port
show vlan router mac status
show vlan gvrp
show vlan ipmvlan

vlan

Creates a new VLAN with the specified VLAN ID (VID) and an optional description.

vlan *vid* [**enable** | **disable**] [**name** *description*]

no vlan *vid*

Syntax Definitions

<i>vid</i>	A numeric value (2–4094) that uniquely identifies an individual VLAN. This value becomes the VLAN ID for the new VLAN.
<i>description</i>	Text string up to 32 characters. Use quotes around string if description contains multiple words with spaces between them (for example, “Alcatel-Lucent Marketing VLAN”).
enable	Enable VLAN administrative status.
disable	Disable VLAN administrative status.

Defaults

parameter	default
enable disable	enable
<i>description</i>	VLAN ID

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Use the **no** form of this command to delete a VLAN from the configuration. All VLAN ports and routers are detached before the VLAN is removed. Ports return to their default VLANs or VLAN 1, if the VLAN deleted is the port’s configured default VLAN.
- Note that specifying multiple VLAN IDs and/or a range of VLAN IDs on the same command line is allowed. Use a hyphen to indicate a contiguous range and a space to separate multiple VLAN ID entries (for example, `vlan 10-15 500-510 850`).
- A VLAN is not operationally active until at least one active port is assigned to the VLAN.
- When a VLAN is administratively disabled, static port and dynamic mobile port assignments are retained but traffic on these ports is not forwarded. However, VLAN rules remain active and continue to classify mobile port traffic for VLAN membership.
- Ports are manually configured or dynamically assigned to VLANs.

Examples

```
-> vlan 850 name "Marketing Admin"  
-> vlan 200  
-> vlan 720 disable  
-> no vlan 1020  
-> vlan 100-105 355 400-410 "Sales Admin"  
-> vlan 10 250-260  
-> vlan 250-260 disable  
-> no vlan 10-15  
-> no vlan 10 20 200-210
```

Release History

Release 6.6.1; command was introduced.

Related Commands

vlan port default	Statically assigns ports to a VLAN.
show vlan	Displays a list of existing VLANs.
show vlan port	Displays VLAN port assignments.

MIB Objects

```
vlanTable  
  vlanNumber  
  vlanDescription  
  vlanAdmStatus  
  vlanOperStatus  
  vlanStatus
```

vlan stp

Enables or disables the Spanning Tree status for a VLAN.

```
vlan vid [1x1 | flat] stp {enable | disable}
```

Syntax Definitions

<i>vid</i>	A VLAN ID number (1–4094).
1x1	Specifies that the Spanning Tree status for the VLAN applies when the switch is running in the 1x1 Spanning Tree mode.
flat	Specifies that the Spanning Tree status for the VLAN applies when the switch is running in the flat Spanning Tree mode.
enable	Enables Spanning Tree for the specified VLAN.
disable	Disables Spanning Tree for the specified VLAN.

Defaults

By default, the Spanning Tree status is enabled in both the 1x1 and flat mode when the VLAN is created.

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- STP is not active until at least one active port is assigned to the VLAN.
- If the *vid* specified is that of a VLAN that does not exist, the VLAN is automatically created.
- Note that specifying multiple VLAN ID entries and/or a range of VLAN IDs on the same command line is allowed. Use a hyphen to indicate a contiguous range and a space to separate multiple VLAN ID entries (for example, `vlan 10-15 500-510 850 stp enable`).
- Use the optional **1x1** or **flat** parameter with this command to configure the Spanning Tree status only for the Spanning Tree mode specified by the parameter. For example, if the **flat** parameter is specified when disabling STP for VLAN 10, then the Spanning Tree status for VLAN 10 is disabled when the switch is running in the flat mode. However, the current Spanning Tree status for VLAN 10 in the 1x1 mode remains unchanged.
- If this command is used without specifying the **1x1** or **flat** parameter, then the Spanning Tree status for the specified VLAN is changed for both operating modes.
- Up to 252 Spanning Tree instances per switch are supported in the 1x1 Spanning Tree mode. Since each VLAN with Spanning Tree enabled uses one of these instances, only 252 VLANs can have an active Spanning Tree instance at any given time.
- To create more than 252 VLANs in the 1x1 Spanning Tree mode, use the **vlan stp disable**, **vlan 1x1 stp disable**, or **vlan flat stp disable** command to create a VLAN with Spanning Tree disabled.
- When STP is disabled on a VLAN, it remains disabled even if the switch Spanning Tree operating mode is set to **1x1** (one STP instance per VLAN). In addition, all active ports for the disabled VLAN remain in a forwarding state in both the 1x1 and flat Spanning Tree modes.

- If a switch is running in the flat Spanning Tree mode, disabling Spanning Tree on VLAN 1 disables the instance across all VLANs. Disabling STP on any other VLAN disables the instance only for that VLAN.

Examples

```
-> vlan 850 stp enable
-> vlan 720 stp disable
-> vlan 500 1x1 stp disable
-> vlan 500 flat stp enable
-> vlan 100-110 stp disable
-> vlan 500-510 600 720-725 stp enable
-> vlan 250 350 400-410 stp 1x1 enable
-> vlan 10 20 stp flat disable
```

Release History

Release 6.6.1; command was introduced.

Related Commands

vlan	Creates a VLAN.
bridge mode	Selects a flat Spanning Tree or 1x1 Spanning Tree operating mode for a switch.
show vlan	Displays a list of existing VLANs.
show vlan port	Displays VLAN port assignments.

MIB Objects

```
vlanTable
  vlanNumber
  vlanStpStatus
  vlan1x1StpStatus
  vlanflatStpStatus
```

vlan mobile-tag

Enables or disables classification of tagged packets received on mobile ports. If a mobile port receives a tagged packet with a VLAN ID that matches the specified VLAN ID, the port and packet are dynamically assigned to that VLAN. If `vlan mobile-tag` is disabled, the packets tagged with a VLAN ID that does not match the mobile port's default VLAN or a rule VLAN that the traffic qualifies for, the packet is dropped.

vlan vid mobile-tag {enable | disable}

Syntax Definitions

<i>vid</i>	An existing VLAN ID number (1–4094).
enable	Enables dynamic assignment of tagged mobile port packets to the specified VLAN.
disable	Disables dynamic assignment of tagged mobile port packets to the specified VLAN.

Defaults

By default, mobile port tagging is disabled when a VLAN is created.

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Note that specifying multiple VLAN ID entries and/or a range of VLAN IDs on the same command line is allowed. Use a hyphen to indicate a contiguous range and a space to separate multiple VLAN ID entries (for example, `vlan 10-15 500-510 850 mobile-tag enable`).
- This command is VLAN based but only applies to tagged packets received on mobile ports.
- Packets received on mobile ports tagged with the VLAN ID are discarded.

Examples

```
-> vlan 850 mobile-tag enable
-> vlan 720 mobile-tag enable
-> vlan 1020 mobile-tag disable
-> vlan 500 410-420 mobile-tag enable
-> vlan 201-210 301-310 mobile-tag enable
-> vlan 450 550 mobile-tag disable
```

Release History

Release 6.6.1; command was introduced.

Related Commands

vlan	Creates a VLAN.
show vlan	Displays a list of existing VLANs.
show vlan port	Displays VLAN port assignments.

MIB Objects

```
vlanTable  
  vlanNumber  
  vlanTagMobilePortStatus
```

vlan port default

Configures a new default VLAN for a single port or an aggregate of ports. The VLAN specified with this command is referred to as the *configured default VLAN* for the port.

```
vlan vid port default {slot/port | link_agg_num}
```

```
vlan vid no port default {slot/port | link_agg_num}
```

Syntax Definitions

<i>vid</i>	An existing VLAN ID number (1–4094) of the VLAN to assign as the port's configured default VLAN.
<i>slot/port</i>	The slot number for the module and the physical port number on that module (for example, 3/1 specifies port 1 on slot 3). To enter multiple slots and ports in a single command, use a hyphen to specify a range of ports (for example, 3/1-16) and a space to specify multiple slots (for example, 3/1-16 5/10-20 8/2-9).
<i>link_agg_num</i>	The link aggregate ID number (0–31) to assign to the specified VLAN. See Chapter 12, “Link Aggregation Commands.”

Defaults

VLAN 1 is the default VLAN for all ports.

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Use the **no** form of this command to remove a port or link aggregate from its configured default VLAN and restore VLAN 1 as the default VLAN.
- Every switch port or link aggregate has only one configured default VLAN. Mobile and 802.1Q tagged ports, however, may have additional VLAN assignments, which are often referred to as *secondary VLANs*.
- Mobile ports that are assigned to a default VLAN other than VLAN 1 are still eligible for dynamic assignment to other VLANs.
- This command is also supported on an NNI interface.

Examples

```
-> vlan 10 port default 3/1
-> vlan 20 port default 4/1-24
-> vlan 30 port default 5/1-8 6/12-24
-> vlan 200 port default 29
-> vlan 10 no port default 3/1
-> vlan 20 no port default 4/1-24
-> vlan 30 no port default 5/1-8 6/12-24
-> vlan 200 no port default 29
```

Release History

Release 6.6.1; command was introduced.

Release 6.6.5; command supported on NNI interface.

Related Commands

vlan	Creates a VLAN.
show vlan	Displays list of existing VLANs.
show vlan port	Displays VLAN port assignments.

MIB Objects

vpaTable
 vpaVlanNumber
 vpaIfIndex
 vpaType
 vpaState
 vpaStatus

vlan source-learning

Configures the status of source learning on a VLAN, a range of VLANs, or on an IP Multicast VLAN (IMPVLAN).

vlan {*vid1*[-*vid2*] | **ipmvlan** *ipmvlan-id*} **source-learning** {**enable** | **disable**}

Syntax Definitions

<i>vid1</i>	The VLAN ID number (2–4094).
- <i>vid2</i>	The last VLAN ID number in a range of VLANs that you want to configure (for example, 10-12 specifies VLANs 10, 11, and 12).
<i>ipmvlan-id</i>	Specifies the IP Multicast VLAN number. The valid range is 1–4094.
enable	Enables source MAC address learning.
disable	Disables source MAC address learning.

Defaults

parameter	default
enable disable	enable

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- The **vlan ipmvlan source-learning** command does not accept multiple VLAN IDs.
- Disabling source learning on a VLAN or IMPVLAN clears all the dynamically learned MAC addresses associated with the VLAN or IMPVLAN from the MAC address table. It causes traffic to flood the VLAN.
- Static MAC addresses associated with a VLAN or IMPVLAN are *not* cleared when source learning is disabled for the VLAN or IMPVLAN.

Examples

```
-> vlan 10-15 source-learning disable
-> vlan ipmvlan 10 source-learning disable
```

Release History

Release 6.6.1; command was introduced.

Related Commands

show vlan

Displays the VLAN configuration for the switch.

show vlan ipmvlan

Displays IPMVLAN information for a specific IPMVLAN, a range of IPMVLANs, or all the IPMVLANs.

MIB Objects

vlanTable

 vlanEntry

 vlanNumber

 vlanStatus

 vlanMacLearningControlStatus

show vlan

Displays a list of VLANs configured on the switch.

show vlan [*vid*]

Syntax Definitions

vid VLAN ID number (1–4094).

Defaults

By default, a list of all VLANs is displayed.

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Specify a VLAN ID with this command to display information about a specific VLAN.
- Note that specifying a range of VLAN IDs is also allowed. Use a hyphen to indicate a contiguous range (for example, show vlan 10-15). Note that only one VLAN entry—a single VLAN ID or a range of VLAN IDs—is allowed with this command. Multiple entries are not accepted.
- The MAC Tunneling status for the SVLAN is displayed only when the specific VLAN ID is mentioned in the command.

Examples

```
-> show vlan
```

vlan	type	admin	oper	stree				ip	mble tag	src lrn	name
				1x1	flat	auth					
1	std	on	on	on	on	off	off	off	on	VLAN 1	
100	vstk	on	off	off	on	off	off	off	off	VLAN 100	

```
-> show vlan 1
```

```
Name : VLAN 1,
Administrative State: enabled,
Operational State : enabled,
1x1 Spanning Tree State : enabled,
Flat Spanning Tree State : enabled,
IP Router Port : off,
Mobile Tag : off,
Source Learning : enabled
```

```
-> show vlan 100
```

```
Name                : VLAN 100,
Administrative State: enabled,
Operational State   : disabled,
1x1 Spanning Tree State : disabled,
Flat Spanning Tree State : enabled,
IP Router Port      : off,
IP MTU              : 1500,
Mobile Tag          : off,
Source Learning     : disabled,
Traffic-Type        : ethernet-service Customer SVLAN,
Priority-Map         : x->0
MAC Tunneling       : disabled,
```

output definitions

vlan	The numerical VLAN ID. Use the vlan command to create or remove VLANs.
type	The type of VLAN (std , vstk , gvrp , or ipmv).
admin	VLAN administrative status: on enables VLAN functions to operate; off disables VLAN functions without deleting the VLAN. Use the vlan command to change the VLAN administrative status.
oper	VLAN operational status: on (enabled) or off (disabled). The operational status remains disabled until an active port is assigned to the VLAN. When the operational status is enabled, then VLAN properties (for example, router interfaces, Spanning Tree) are applied to ports and traffic flow. A VLAN must have an enabled administrative status before it can become operationally enabled.
stree 1x1	VLAN Spanning Tree status for the VLAN in the 1x1 mode: on (enabled) allows the Spanning Tree algorithm to determine the state of VLAN ports (forwarding or blocking); off (disabled) prevents Spanning Tree algorithm from controlling VLAN ports, leaving active ports in a forwarding state. Configured through the vlan stp command.
stree flat	VLAN Spanning Tree status for the VLAN in the flat mode: on (enabled) allows the Spanning Tree algorithm to determine the state of VLAN ports (forwarding or blocking); off (disabled) prevents Spanning Tree algorithm from controlling VLAN ports, leaving active ports in a forwarding state. Configured through the vlan stp command.
auth	VLAN Authentication status: on (enabled) or off (disabled). Note that this status is always off because configuring authenticated VLANs is not supported.
ip	IP router interface status: on (IP interface exists for the VLAN) or off (no IP router interface exists for the VLAN). Use the ip interface command to define an IP router interface for a VLAN.
mble tag	Mobile tagging status: on (enabled); off (disabled). Configured through the vlan mobile-tag command.
src lrn	Source learning status: on (enabled); off (disabled). Configured through the vlan source-learning command.
name	The user-defined text description for the VLAN. By default, the VLAN ID is specified for the VLAN description.

output definitions (continued)

Traffic-Type	Type of traffic passing through the VLAN. For example, customer traffic tunneled through a VLAN Stacking Ethernet Service VLAN (SVLAN). Note this VLAN Stacking is supported only on Metro switches.
Priority-Map	Priority map value set for the VLAN.
MAC Tunneling	Displays the MAC tunneling status of the SVLAN.

Release History

Release 6.6.1; command was introduced.
 Release 6.6.5; **MAC Tunneling** output field added.

Related Commands

show vlan port	Displays VLAN port assignments.
show vlan router mac status	Displays the current MAC router operating mode (single or multiple) and VLAN router interface statistics.
show vlan gvrp	Displays a list of VLANs learned through GVRP and their details.
show vlan ipmvlan	Displays IPMVLAN information for a specific IPMVLAN, a range of IPMVLANs, or all the IPMVLANs.
show ip interface	Displays IP router information.

MIB Objects

```

vlanMgrVlan
vlanTable
  vlanNumber
  vlanDescription
  vlanAdmStatus
  vlanOperStatus
  vlanStatus
  vlanStpStatus
  vlanAuthentStatus
  vlanIpAddress
  vlanIpMask
  vlanIpEnacp
  vlanIpForward
  vlanIpStatus
  vlanTagMobilePortStatus
  vlanSvlanMacTunnelStatus
  
```

show vlan port

Displays VLAN port associations (VPAs) for all VLANs, a specific VLAN, or for a specific port. Information is also included that shows the VPA type (configured default VLAN, 802.1Q tagged VLAN, dynamically assigned secondary VLAN, or mirrored port VLAN assignment) and the status of that association (inactive, blocking, forwarding, or filtering). Also displays the entire VLAN membership for the NNI interface.

show vlan [*vid*] **port** [*slot/port* / *link_agg*]

Syntax Definitions

<i>vid</i>	VLAN ID number (1–4094).
<i>slot/port</i>	Enter the slot number for the module and the physical port number on that module (for example, 3/1 specifies port 1 on slot 3).
<i>link_agg</i>	Enter the link aggregate ID number (0–31) to assign to the specified VLAN.

Defaults

If no parameters are specified with this command, a list of all VLANs and their assigned ports is displayed by default.

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- If the *vid* is specified without a *slot/port* or *link_agg*, then all port assignments for that VLAN are displayed.
- If the *slot/port* or *link_agg* is specified without a *vid*, then all VLAN assignments for that port are displayed.
- If both the *vid* and *slot/port* or *link_agg* are specified, then information only for that VLAN and slot/port or link aggregate ID is displayed.
- Specifying a range of VLAN IDs is also allowed. Use a hyphen to indicate a contiguous range (for example, show vlan 10-15 port). Note that only one VLAN entry—a single VLAN ID or a range of VLAN IDs is allowed with this command. Multiple entries are not accepted.

Examples

```
-> show vlan port
vlan   port      type      status
-----+-----+-----+-----+
  1     1/1     default   inactive
  2     1/2     default   blocking
        1/3     mobile    forwarding
        11/4    qtagged   forwarding
  3     1/2     qtagged   blocking
        11/4    default   forwarding
```

```

                2/5    dynamic    forwarding

-> show vlan 10 port
  port   type      status
+-----+-----+-----+
  1/1    default    forwarding
  1/2    qtagged    forwarding
  1/3    mobile     forwarding
  1/4    vstkQtag   forwarding

-> show vlan port 3/2
  vlan   type      status
+-----+-----+-----+
   1     default    forwarding
   2     qtagged    forwarding
   5     dynamic    blocking
   3     qtagged    blocking

-> show vlan 500 port 8/16
type      :default
status     :blocking
vlan admin :on
vlan oper  :off
port admin :on
port oper  :off

```

output definitions

vlan	Numerical VLAN ID. Identifies the port's VLAN assignment.
port	The slot number for the module and the physical port number on that module (for example, 3/1 specifies port 1 on slot 3).
type	The type of VPA: default (configured default VLAN assignment for the port), qtagged (802.1Q tagged secondary VLAN assignment for the port), vstkQtag (tagged 802.1q, QinQ, and untagged services using the same uplink NNI port) mobile (dynamic secondary VLAN assignment for the port), mirror (port is mirroring the VLAN assignment of another port), or dynamic (VPAs that are learned through GVRP).
status	The VPA status: inactive (port is not active), forwarding (traffic is forwarding on this VPA), blocking (traffic is not forwarding on this VPA), or filtering (a mobile port's VLAN is administratively off or the port's default VLAN status is disabled; does not apply to fixed ports).
vlan admin	VLAN administrative status: on enables VLAN functions to operate; off disables VLAN functions without deleting the VLAN. Use the vlan command to change the VLAN administrative status.
vlan oper	VLAN operational status: on (enabled) or off (disabled). The operational status remains disabled until an active port is assigned to the VLAN. When the operational status is enabled, then VLAN properties (for example, router interfaces, Spanning Tree) are applied to ports and traffic flow. A VLAN must have an enabled administrative status before it can become operationally enabled.

output definitions

port admin	Port administrative status: on (enabled) allows the port to send and receive data when it is active; off (disabled) prevents the port from sending and receiving traffic even if it has an active connection.
port oper	Port operational status: on (enabled) or off (disabled). If a port is currently in use, then the operational status is enabled. A port must have an enabled administrative status before it can become operationally enabled.

Release History

Release 6.6.1; command was introduced.
 Release 6.6.5; vstkQtag option introduced

Related Commands

show vlan	Displays list of VLANs configured on the switch.
show vlan router mac status	Displays the current MAC router operating mode (single or multiple) and VLAN router interface statistics.
show vlan gvrp	Displays a list of VLANs learned through GVRP and their details.
show vlan ipmvlan	Displays IPMVLAN information for a specific IPMVLAN, a range of IPMVLANs, or all the IPMVLANs.
show ip interface	Displays IP router information.

MIB Objects

```

vlanMgrVpa
vpaTable
  vpaVlanNumber
  vpaIfIndex
  vpaType
  vpaState
  vpaStatus
vlanMgrVlan
vlanTable
  vlanAdmStatus
  vlanOperStatus
  
```

show vlan router mac status

Displays current status of multiple MAC router mode, the number of VLANs configured on the switch, the number of VLANs with router interfaces and the number of IP router interfaces configured.

show vlan router mac status

Syntax Definitions

N/A

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Only single MAC router mode is supported at this time, so multiple MAC router mode always displays as disabled.
- In single MAC router mode, a maximum of 4094 VLANs can have IP router interfaces defined. Note that these limits are subject to the availability of switch resources.

Examples

```
-> show vlan router mac status
  router-mac-multiple  total vlans  router vlans  ip vlans
-----+-----+-----+-----
           disabled                5             1             1
```

output definitions

router-mac-multiple	Multiple MAC router mode status: enabled or disabled . If this mode is disabled, the switch is running in single MAC router mode.
total vlans	The total number of VLANs configured on the switch. Use the vlan command to create or remove VLANs.
router vlans	The total number of VLANs configured on the switch that have at least one router interface defined (IP). Use the ip interface command to define an IP router interface for a VLAN.
ip vlans	The total number of VLANs configured on the switch that have an IP router interface defined. Use the ip interface command to define an IP router for a VLAN.

Release History

Release 6.6.1; command was introduced.

Related Commands

show vlan	Displays list of VLANs configured on the switch.
show vlan port	Displays VLAN port assignments.
show ip interface	Displays VLAN IP router interface information.

MIB Objects

```
vlanMgrVlanSet
  vlanSetMultiRtrMacStatus
  vlanSetVlanCount
  vlanSetVlanRouterCount
  vlanSetIpRouterCount
```

show vlan gvrp

Displays a list of VLANs learned through GVRP and their details.

show vlan gvrp [*vlan-id* | *vlan-range*]

Syntax Definitions

vlan-id VLAN ID number you want to display (1–4094).
vlan-range The VLAN ID range (for example, 1-10).

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6450

Usage Guidelines

Use the *vlan-id* or *vlan-range* parameter with this command to display the details for a specific VLAN(s).

Examples

-> show vlan gvrp

```

          stree
vlan  type  admin oper  lxl  flat  auth  ip  mble  name
-----+-----+-----+-----+-----+-----+-----+-----+-----+-----
  5  gvrp   on    on   on   on   off  NA  off   GVRP1
  6  gvrp   on    on  off  off  off  NA  off   GVRP12

```

output definitions

vlan	The numerical VLAN ID. Use the vlan command to create or remove VLANs.
type	The type of VLAN (std , vstk , gvrp , or ipmv)
admin	VLAN administrative status: on enables VLAN functions to operate; off disables VLAN functions without deleting the VLAN. Use the vlan command to change the VLAN administrative status.
oper	VLAN operational status: on (enabled) or off (disabled). The operational status remains disabled until an active port is assigned to the VLAN. When the operational status is enabled, then VLAN properties (for example, router interfaces, Spanning Tree) are applied to ports and traffic flow. A VLAN must have an enabled administrative status before it can become operationally enabled.

output definitions (continued)

stree 1x1	VLAN Spanning Tree status for the VLAN in the 1x1 mode: on (enabled) allows the Spanning Tree algorithm to determine the state of VLAN ports (forwarding or blocking); off (disabled) prevents Spanning Tree algorithm from controlling VLAN ports, leaving active ports in a forwarding state. Configured through the vlan stp command.
stree flat	VLAN Spanning Tree status for the VLAN in the flat mode: on (enabled) allows the Spanning Tree algorithm to determine the state of VLAN ports (forwarding or blocking); off (disabled) prevents Spanning Tree algorithm from controlling VLAN ports, leaving active ports in a forwarding state. Configured through the vlan stp command.
ip	IP router interface status: on (IP interface exists for the VLAN) or off (no IP router interface exists for the VLAN). Use the ip interface command to define an IP router interface for a VLAN.
mble tag	Mobile tagging status: on (enabled); off (disabled). Configured through the vlan mobile-tag command.
name	The user-defined text description for the VLAN. By default, the VLAN ID is specified for the VLAN description.

Release History

Release 6.6.1; command was introduced.

Related Commands

show vlan	Displays a list of VLANs configured on the switch.
show vlan port	Displays VLAN port assignments.

MIB Objects

vlanMgrVlan

vlanTable

vlanNumber

vlanDescription

vlanAdmStatus

vlanOperStatus

vlanStatus

vlanStpStatus

vlanAuthentStatus

vlanIpAddress

vlanIpMask

vlanIpEnacp

vlanIpForward

vlanIpStatus

 vlanTagMobilePortStatus

show vlan ipmvlan

Displays IPMVLAN information for a specific IPMVLAN, a range of IPMVLANs, or all the IPMVLANs.

show vlan ipmvlan [*ipmvlan-id* | *ipmvlan-id1-ipmvlan-id2*]

Syntax Definitions

ipmvlan-id Specifies the IP Multicast VLAN number. The valid range is 2–4094.
ipmvlan-id1-ipmvlan-id2 Specifies the range of the IP Multicast VLAN numbers.

Defaults

By default, the details of all the IPMVLANs will be displayed.

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Use the *ipmvlan-id* parameter with this command to display details of a specific IPMVLAN.
- Use the *ipmvlan-id1-ipmvlan-id2* parameter with this command to display details of a range of IPMVLANs.

Examples

-> show vlan ipmvlan

vlan	type	admin	oper	stree		name
				1x1	flat	
1201	Vstk ipmtv	on	on	on	on	VLAN 1201
1202	Vstk ipmtv	on	on	off	off	VLAN 1202
1203	Entp ipmtv	on	on	off	off	VLAN 1203
1204	Vstk ipmtv	on	on	on	on	VLAN 1204
1205	Entp ipmtv	on	off	on	off	VLAN 1205

-> show vlan ipmvlan 1201-1203

vlan	type	admin	oper	stree		name
				1x1	flat	
1201	Vstk ipmtv	on	on	on	on	VLAN 1201
1202	Vstk ipmtv	on	on	off	off	VLAN 1202
1203	Entp ipmtv	on	on	off	off	VLAN 1203

-> show vlan ipmvlan 50

```
Name           : VLAN 50,
IPMV Mode      : Enterprise IPMVLAN
Administrative State: enabled,
Operational State : disabled,
```

```
1x1 Spanning Tree State : disabled,
Flat Spanning Tree State: disabled,
```

```
-> show vlan ipmvlan 51
```

```
Name                : VLAN 51,
IPMV Mode           : Vlan Stacking IPMVLAN
Administrative State : enabled,
Operational State   : disabled,
1x1 Spanning Tree State : enabled,
Flat Spanning Tree State: enabled,
```

output definitions

vlan	The IPMVLAN ID.
type	Indicates if the IPMVLAN is in Enterprise mode (Entp ipmtv) or VLAN Stacking mode (Vstk ipmtv).
admin	Indicates IPMVLAN administrative status: on (enables IPMVLAN functions to operate) or off (disables IPMVLAN functions without deleting the IPMVLAN).
oper	IPMVLAN operational status: on (enabled) or off (disabled). Operational status remains disabled until an active port is assigned to the IPMVLAN. When operational status is enabled, IPMVLAN properties (for example, router interfaces, Spanning Tree) are applied to ports and traffic flow. An IPMVLAN must have an enabled administrative status before it can become operationally enabled.
Name	The user-defined text description for the IPMVLAN. By default, the IPMVLAN ID is specified for the IPMVLAN description.
IPMV mode	Indicates the mode (Enterprise IPMVLAN or Vlan Stacking IPMVLAN) of the IPMVLAN.
Administrative State	Indicates the administrative status of the IPMVLAN, which can be enabled or disabled .
Operational State	Indicates the operational status of the IPMVLAN, which can be enabled or disabled .
stree 1x1	VLAN Spanning Tree status for the VLAN in the 1x1 mode: on (enabled) allows the Spanning Tree algorithm to determine the state of VLAN ports (forwarding or blocking); off (disabled) prevents Spanning Tree algorithm from controlling VLAN ports, leaving active ports in a forwarding state. Configured through the vlan stp command.
stree flat	VLAN Spanning Tree status for the VLAN in the flat mode: on (enabled) allows the Spanning Tree algorithm to determine the state of VLAN ports (forwarding or blocking); off (disabled) prevents Spanning Tree algorithm from controlling VLAN ports, leaving active ports in a forwarding state. Configured through the vlan stp command.

Release History

Release 6.6.1; command was introduced.

Related Commands

vlan ipmvlan	Creates an IP Multicast VLAN.
show vlan	Displays a list of VLANs configured on the switch.
show vlan port	Displays VLAN port assignments.

MIB Objects

```
vlanTable  
  vlanNumber  
  vlanDescription  
  vlanTrafficType  
  alavlanOperStatus  
  alavlanAdmStatus  
  alavlanStpStatus  
  alavlanxl1StpStatus  
  alavlanflatStpStatus
```

26 GVRP Commands

The GARP VLAN Registration Protocol (GVRP) facilitates control of virtual local area networks (VLANs) within a larger network. It is an application of General Attribute Registration Protocol (GARP) that provides the VLAN registration service. The GARP provides a generic framework whereby devices in a bridged LAN can register and de-register attribute values, such as VLAN identifiers.

GVRP is compliant with 802.1q and dynamically learns and further propagates VLAN membership information across a bridged network. It dynamically maintains and updates the registration and de-registration of VLANs and prunes unnecessary broadcast and unicast traffic. Through propagation of GVRP information, a switch can continuously update its knowledge on the set of VLANs that currently have active nodes and on ports through which those nodes can be reached.

A summary of the available commands is listed here:

- gvrp**
- gvrp port**
- gvrp transparent switching**
- gvrp maximum vlan**
- gvrp registration**
- gvrp applicant**
- gvrp timer**
- gvrp restrict-vlan-registration**
- gvrp restrict-vlan-advertisement**
- gvrp static-vlan restrict**
- clear gvrp statistics**
- show gvrp statistics**
- show gvrp last-pdu-origin**
- show gvrp configuration**
- show gvrp configuration port**
- show gvrp configuration linkagg/port**
- show gvrp timer**

gvrp

Enables GVRP on the switch globally.

gvrp

no gvrp

Syntax Definitions

N/A

Defaults

By default, GVRP is disabled on the switch.

Platforms Supported

OmniSwitch 6250, 6450

Usage Guidelines

- Use the **no** form of this command to disable GVRP globally on the switch.
- Disabling GVRP globally will delete all the learned VLANs.
- GVRP is supported only when the switch is operating in the flat Spanning Tree mode; it is not supported in the 1x1 mode.

Examples

```
-> gvrp
-> no gvrp
```

Release History

Release 6.6.1; command was introduced.

Related Commands

[show gvrp configuration](#) Displays the global configuration for GVRP.

MIB Objects

dot1qGvrpStatus

gvrp port

Enables GVRP on a specific port or an aggregate of ports on the switch.

```
gvrp {linkagg agg_num | port slot/port}
```

```
no gvrp {linkagg agg_num | port slot/port}
```

Syntax Definitions

<i>slot/port</i>	The slot number for the module and the physical port number on that module (e.g., 3/1 specifies port 1 on slot 3).
<i>agg_num</i>	The number corresponding to the aggregate group.

Defaults

By default, GVRP is disabled on the ports.

Platforms Supported

OmniSwitch 6250, 6450

Usage Guidelines

- Use the **no** form of this command to disable GVRP on the specified ports.
- GVRP can be enabled on ports regardless of whether it is globally enabled or not. However, for the port to become an active participant, you should enable GVRP globally on the switch.
- When GVRP is globally enabled on the switch and is not enabled on the port, that port is excluded from the GVRP process.
- GVRP can be enabled only on fixed ports, 802.1 Q ports, and aggregate ports. Other ports (mirror ports, aggregable ports, mobile ports, and MSTI Trunking ports) do not support GVRP.
- To use the *agg_num* parameter, the link aggregate group should be created and enabled.

Examples

```
-> gvrp port 3/2  
-> no gvrp port 3/2  
-> gvrp linkagg 2
```

Release History

Release 6.6.1; command was introduced.

Related Commands

- show gvrp configuration port** Displays the GVRP configuration for all the ports.
- show gvrp configuration linkagg/port** Displays the GVRP configuration for a specific port or an aggregate of ports.

MIB Objects

dot1qPortVlanTable
dot1qPortGvrpStatus

gvrp transparent switching

Enables transparent switching on the switch. When transparent switching is enabled, the switch propagates GVRP information to other switches but does not register itself in the GVRP process.

gvrp transparent switching

no gvrp transparent switching

Syntax Definitions

N/A

Defaults

By default, transparent switching is disabled on the switch.

Platforms Supported

OmniSwitch 6250, 6450

Usage Guidelines

- Use the **no** form of this command to disable transparent switching on the device.
- If GVRP is globally disabled and transparent switching is enabled, the router will flood the GVRP messages.
- If GVRP is globally disabled and transparent switching is disabled, the router will discard the GVRP messages.
- If GVRP is globally enabled transparent switching will not have any effect on the functional behavior of the device.

Examples

```
-> gvrp transparent switching  
-> no gvrp transparent switching
```

Release History

Release 6.6.1; command was introduced.

Related Commands

show gvrp configuration Displays the global configuration for GVRP.

MIB Objects

alaGvrpTransparentSwitching

gvrp maximum vlan

Configures the maximum number of dynamic VLANs that can be created by GVRP.

gvrp maximum vlan *vlanlimit*

Syntax Definitions

vlanlimit The maximum number of VLANs to be created by GVRP. The valid range is 32–4094.

Defaults

parameter	default
<i>vlanlimit</i>	256

Platforms Supported

OmniSwitch 6250, 6450

Usage Guidelines

- This command can be used even when GVRP is not enabled on the switch. However, GVRP should be enabled on the switch for creating dynamic VLANs.
- If the VLAN limit to be set is less than the current number of dynamically learned VLANs, then the new configuration will take effect only after the GVRP is disabled and enabled again on the switch. If this operation is not done, the VLANs learned earlier will be maintained.

Examples

```
-> gvrp maximum vlan 100
```

Release History

Release 6.6.1; command was introduced.

Related Commands

[show gvrp configuration](#) Displays the global configuration for GVRP.

MIB Objects

alaGvrpMaxVlanLimit

gvrp registration

Configures the GVRP registration mode for a specific port or an aggregate of ports.

gvrp registration {**normal** | **fixed** | **forbidden**} {**linkagg** *agg_num* | **port** *slot/port*}

no gvrp registration {**linkagg** *agg_num* | **port** *slot/port*}

Syntax Definitions

normal	Specifies that both registration and de-registration of VLANs are allowed. VLANs can be mapped either dynamically (through GVRP) or statically (through management application) on such a port.
fixed	Specifies that only static mapping of VLANs is allowed on the port but de-registration of previously created dynamic or static VLANs is not allowed.
forbidden	Specifies that dynamic VLAN registration or de-registration is not allowed on the port. Any dynamic VLAN created earlier will be de-registered.
<i>agg_num</i>	The number corresponding to the aggregate group.
<i>slot/port</i>	The slot number for the module and the physical port number on that module (e.g., 3/1 specifies port 1 on slot 3).

Defaults

parameter	default
normal fixed forbidden	normal

Platforms Supported

OmniSwitch 6250, 6450

Usage Guidelines

- Use the **no** form of this command to set the registration mode to the default value.
- GVRP should be enabled on the port before configuring the GVRP registration mode.
- The registration mode for the default VLANs of all the ports in the switch will be set to fixed.
- To use the *agg_num* parameter, the link aggregate group should be created and enabled.

Examples

```
-> gvrp registration forbidden port 3/2
-> no gvrp registration port 3/2
```

Release History

Release 6.6.1; command was introduced.

Related Commands

**show gvrp configuration
linkagg/port**

Displays the GVRP configuration for a specific port or an aggregate of ports.

MIB Objects

alaGvrpPortConfigtable
 alaGvrpPortConfigRegistrarMode

gvrp applicant

Configures the applicant mode of a specific port or an aggregate of ports on the switch. The applicant mode determines whether or not GVRP PDU exchanges are allowed on a port depending on the Spanning Tree state of the port.

gvrp applicant {**participant** | **non-participant** | **active**} {**linkagg** *agg_num* | **port** *slot/port*}

no gvrp applicant {**linkagg** *agg_num* | **port** *slot/port*}

Syntax Definitions

participant	Specifies that GVRP PDU exchanges are only allowed when the port is in the STP forwarding state.
non-participant	Specifies that no GVRP PDU exchanges are allowed on the port, regardless of the STP status of the port.
active	Specifies that GVRP PDU exchanges are allowed when the port is either in the STP forwarding or STP blocking state.
<i>agg_num</i>	The number corresponding to the aggregate group.
<i>slot/port</i>	The slot number for the module and the physical port number on that module (e.g., 3/1 specifies port 1 on slot 3).

Defaults

parameter	default
participant non-participant active	participant

Platforms Supported

OmniSwitch 6250, 6450

Usage Guidelines

- Use the **no** form of this command to set the applicant mode to the default value.
- GVRP should be enabled on the port before configuring the GVRP applicant mode.
- To use the *agg_num* parameter, the link aggregate group should be created and enabled.

Examples

```
-> gvrp applicant active port 2/2
-> no gvrp applicant port 2/2
```

Release History

Release 6.6.1; command was introduced.

Related Commands

**show gvrp configuration
linkagg/port**

Displays the GVRP configuration for a specific port or an aggregate of ports.

MIB Objects

alaGvrpPortConfigtable
 alaGvrpPortConfigApplicantMode

gvrp timer

Configures the Join, Leave, or LeaveAll timer values for the switch ports.

gvrp timer {**join** | **leave** | **leaveall**} *timer-value* {**linkagg** *agg_num* | **port** *slot/port*}

no gvrp timer {**join** | **leave** | **leaveall**} {**linkagg** *agg_num* | **port** *slot/port*}

Syntax Definitions

join	Specifies the value of the Join timer in milliseconds.
leave	Specifies the value of the Leave timer in milliseconds.
leaveall	Specifies the value of the LeaveAll timer in milliseconds.
<i>timer-value</i>	The value of the specified timer in milliseconds. The valid range is 1–2,147,483,647 for Join timer, 3–2,147,483,647 for Leave timer, and 3–2,147,483,647 for LeaveAll timer.
<i>agg_num</i>	The number corresponding to the aggregate group.
<i>slot/port</i>	The slot number for the module and the physical port number on that module (e.g., 3/1 specifies port 1 on slot 3).

Defaults

parameter	default
<i>timer-value</i> (join)	600 ms
<i>timer-value</i> (leave)	1800 ms
<i>timer-value</i> (leaveall)	30000 ms

Platforms Supported

OmniSwitch 6250, 6450

Usage Guidelines

- Use the **no** form of this command to set the timer for a particular slot or port to the default value.
- GVRP should be enabled on the port before configuring the timer value for that port.
- Leave timer value should be greater than or equal to three times the Join timer value.
- Leaveall timer value should be greater than or equal to the Leave timer value.
- To use the *agg_num* parameter, the link aggregate group should be created and enabled.

Examples

```
-> gvrp timer join 300 port 3/2
-> no gvrp timer join 3/2
-> gvrp timer leave 900 port 3/2
-> no gvrp timer leave port 3/2
-> gvrp timer leaveall 950 port 3/2
-> no gvrp timer leaveall port 3/2
```

Release History

Release 6.6.1; command was introduced.

Related Commands

show gvrp timer	Displays the timer values configured for all the ports or a specific port.
show gvrp configuration linkagg/port	Displays the GVRP configuration for a specific port or an aggregate of ports.

MIB Objects

```
alaGvrpPortConfigTable
  alaGvrpPortConfigJoinTimer
  alaGvrpPortConfigLeaveTimer
  alaGvrpPortConfigLeaveAllTimer
```

gvrp restrict-vlan-registration

Restricts GVRP processing from dynamically registering the specified VLAN(s) on the switch.

gvrp restrict-vlan-registration {linkagg *agg_num* | port *slot/port*} *vlan-list*

no gvrp restrict-vlan-registration {linkagg *agg_num* | port *slot/port*} *vlan-list*

Syntax Definitions

<i>agg_num</i>	The number corresponding to the aggregate group.
<i>slot/port</i>	The slot number for the module and the physical port number on that module (e.g., 3/1 specifies port 1 on slot 3).
<i>vlan-list</i>	The VLAN ID or the VLAN ID range (e.g., 1-10).

Defaults

By default, GVRP dynamic VLAN registration is not restricted.

Platforms Supported

OmniSwitch 6250, 6450

Usage Guidelines

- Use the **no** form of this command to allow registration of dynamic VLAN IDs through GVRP processing.
- GVRP should be enabled on the port before restricting dynamic VLAN registrations on that port.
- This command can be used only if the GVRP registration mode is set to normal.
- If the specified VLAN already exists on the switch, the VLAN is mapped to the receiving port.
- To use the *agg_num* parameter, the link aggregate group should be created and enabled.

Examples

```
-> gvrp restrict-vlan-registration port 3/1 5
-> no gvrp restrict-vlan-registration port 3/1 5
-> gvrp restrict-vlan-registration port 3/1 6-10
-> no gvrp restrict-vlan-registration port 3/1 6-10
```

Release History

Release 6.6.1; command was introduced.

Related Commands

gvrp registration

Configures the GVRP registration mode for the switch ports.

**show gvrp configuration
linkagg/port**

Displays the GVRP configuration for a specific port or an aggregate of ports.

MIB Objects

alaGvrpPortConfigTable

alaGvrpPortConfigRestrictedRegistrationBitmap

alaGvrpPortConfigAllowRegistrationBitmap

alaGvrpPortConfigRegistrationBitmap

gvrp restrict-vlan-advertisement

Restricts the advertisement of VLANs on a specific port or an aggregate of ports.

gvrp restrict-vlan-advertisement {linkagg *agg_num* | port *slot/port*} *vlan-list*

no gvrp restrict-vlan-advertisement {linkagg *agg_num* | port *slot/port*} *vlan-list*

Syntax Definitions

<i>agg_num</i>	The number corresponding to the aggregate group.
<i>slot/port</i>	The slot number for the module and the physical port number on that module (e.g., 3/1 specifies port 1 on slot 3).
<i>vlan-list</i>	The VLAN ID or the VLAN ID range (e.g., 1-10).

Defaults

By default, VLAN advertisement is not restricted.

Platforms Supported

OmniSwitch 6250, 6450

Usage Guidelines

- Use the **no** form of this command to allow the propagation of VLANs.
- GVRP should be enabled on the port before restricting VLAN advertisements on that port.
- This command affects the GVRP processing only if the applicant mode is set to participant or active.
- To use the *agg_num* parameter, the link aggregate group should be created and enabled.

Examples

```
-> gvrp restrict-vlan-advertisement port 3/1 4
-> no gvrp restrict-vlan-advertisement port 3/1 4
-> gvrp restrict-vlan-advertisement port 3/1 6-9
-> no gvrp restrict-vlan-advertisement port 3/1 6-9
-> gvrp restrict-vlan-advertisement linkagg 3 10
-> no gvrp restrict-vlan-advertisement linkagg 3 10
```

Release History

Release 6.6.1; command was introduced.

Related Commands

gvrp applicant

Configures the applicant mode for the switch port.

**show gvrp configuration
linkagg/port**

Displays the GVRP configuration for a specific port or an aggregate of ports.

MIB Objects

alaGvrpPortConfigTable

alaGvrpPortConfigRestrictedApplicantBitmap

alaGvrpPortConfigAllowApplicantBitmap

alaGvrpPortConfigApplicantBitmap

gvrp static-vlan restrict

Restricts a port from becoming a member of a statically created VLAN or a range of VLANs.

gvrp static-vlan restrict {linkagg *agg_num* | port *slot/port*} *vlan-list*

no gvrp static-vlan restrict {linkagg *agg_num* | port *slot/port*} *vlan-list*

Syntax Definitions

<i>agg_num</i>	The number corresponding to the aggregate group.
<i>slot/port</i>	The slot number for the module and the physical port number on that module (e.g., 3/1 specifies port 1 on slot 3).
<i>vlan-list</i>	The VLAN ID or the VLAN ID range (e.g., 1-10).

Defaults

By default, ports are assigned to the static VLAN based on GVRP PDU processing.

Platforms Supported

OmniSwitch 6250, 6450

Usage Guidelines

- Use the **no** form of this command to set the specified port and VLAN to the default value.
- GVRP should be enabled on the port before restricting static VLAN registrations on that port.
- This command does not apply to dynamic VLANs.
- To use the *agg_num* parameter, the link aggregate group should be created and enabled.

Examples

```
-> gvrp static-vlan restrict port 3/2 5
-> no gvrp static-vlan restrict port 3/2 5
-> gvrp static-vlan restrict port 3/2 6-9
-> no gvrp static-vlan restrict port 3/2 6-9
-> gvrp static-vlan restrict linkagg 3 4-5
-> no gvrp static-vlan aggregate linkagg 3 4-5
```

Release History

Release 6.6.1; command was introduced.

Related Commands

**show gvrp configuration
linkagg/port**

Displays the GVRP configuration for a specific port or an aggregate of ports.

MIB Objects

alaGvrpPortConfigTable

alaGvrpPortConfigRegistrationToStaticVlan

alaGvrpPortConfigRegistrationToStaticVlanLearn

alaGvrpPortConfigRegistrationToStaticVlanRestrict

clear gvrp statistics

Clears GVRP statistics for all the ports, an aggregate of ports, or a specific port.

clear gvrp statistics [**linkagg** *agg_num* | **port** *slot/port*]

Syntax Definitions

<i>agg_num</i>	The number corresponding to the aggregate group.
<i>slot/port</i>	The slot number for the module and the physical port number on that module (e.g., 3/1 specifies port 1 on slot 3).

Defaults

By default, the GVRP statistics are deleted for all the ports.

Platforms Supported

OmniSwitch 6250, 6450

Usage Guidelines

Use the *agg_num* or *slot/port* parameter with this command to clear GVRP statistics for a specific port.

Examples

```
-> clear gvrp statistics port 3/2
```

Release History

Release 6.6.1; command was introduced.

Related Commands

show gvrp statistics	Displays the GVRP statistics or all the ports, an aggregate of ports, or a specific port.
--------------------------------------	---

MIB Objects

```
alaGvrpGlobalClearStats  
alaGvrpPortStatsTable  
alaGvrpPortStatsClearStats
```

show gvrp statistics

Displays the GVRP statistics for all the ports, an aggregate of ports, or a specific port.

show gvrp statistics [**linkagg** *agg_num* | **port** *slot/port*]

Syntax Definitions

<i>agg_num</i>	The number corresponding to the aggregate group.
<i>slot/port</i>	The slot number for the module and the physical port number on that module (e.g., 3/1 specifies port 1 on slot 3).

Defaults

By default, the GVRP statistics are displayed for all ports.

Platforms Supported

OmniSwitch 6250, 6450

Usage Guidelines

Use the *agg_num* or *slot/port* parameter with this command to display GVRP statistics for a specific port.

Examples

```
-> show gvrp statistics port 1/21
Port 1/21:
  Join Empty Received      : 8290,
  Join In Received        : 1526,
  Empty Received          : 0,
  Leave Empty Received    : 1,
  Leave In Received       : 0,
  Leave All Received      : 283,
  Join Empty Transmitted  : 826,
  Join In Transmitted     : 1532,
  Empty Transmitted       : 39,
  Leave Empty Transmitted : 0,
  Leave In Transmitted    : 0,
  Leave All Transmitted   : 296,
  Failed Registrations    : 0,
  Garp PDU Received       : 1160,
  Garp PDU Transmitted    : 957,
  Garp Msgs Received      : 10100,
  Garp Msgs Transmitted   : 2693,
  Invalid Msgs Received   : 0
```

```
-> show gvrp statistics
Port 1/1:
  Join Empty Received      : 0,
  Join In Received        : 0,
  Empty Received          : 0,
  Leave Empty Received    : 0,
```



```

Leave In Received      : 0,
Leave All Received    : 0,
Join Empty Transmitted : 0,
Join In Transmitted  : 0,
Empty Transmitted    : 0,
Leave Empty Transmitted : 0,
Leave In Transmitted  : 0,
Leave All Transmitted : 0,
Failed Registrations : 0,
Garp PDU Received    : 0,
Garp PDU Transmitted : 0,
Garp Msgs Received   : 0,
Garp Msgs Transmitted : 0,
Invalid Msgs Received : 0

```

Port 1/2:

```

Join Empty Received   : 8330,
Join In Received     : 1526,
Empty Received       : 0,
Leave Empty Received  : 1,
Leave In Received     : 0,
Leave All Received    : 284,
Join Empty Transmitted : 830,
Join In Transmitted  : 1532,
Empty Transmitted    : 39,
Leave Empty Transmitted : 0,
Leave In Transmitted  : 0,
Leave All Transmitted : 297,
Failed Registrations : 0,
Garp PDU Received    : 1165,
Garp PDU Transmitted : 962,
Garp Msgs Received   : 10141,
Garp Msgs Transmitted : 2698,
Invalid Msgs Received : 0

```

Port 1/3:

```

Join Empty Received   : 0,
Join In Received     : 0,
Empty Received       : 0,

```

output definitions

Join Empty Received	The number of Join Empty messages received.
Join In Received	The number of Join In messages received.
Empty Received	The number of Empty messages received.
Leave Empty Received	The number of Leave Empty messages received.
Leave In Received	The number of Leave In messages received.
Leave All Received	The number of Leave All messages received.
Join Empty Transmitted	The number of Join Empty messages transmitted.
Join In Transmitted	The number of Join In messages transmitted.
Empty Transmitted	The number of Empty messages transmitted.
Leave Empty Transmitted	The number of Leave Empty messages transmitted.

output definitions

Join Empty Received	The number of Join Empty messages received.
Leave In Transmitted	The number of Leave In messages transmitted.
Leave All Transmitted	The number of Leave All messages transmitted.
Failed Registrations	The number of failed registrations.
Total PDU Received	The number of total PDUs received.
Total PDU Transmitted	The number of total PDUs transmitted.
Invalid Msgs Received	The number of invalid messages received.
Total Msgs Received	The number of total messages received.
Total Msgs Transmitted	The number of total messages transmitted.

Release History

Release 6.6.1; command was introduced.

Related Commands

clear gvrp statistics Clears GVRP statistics for all the ports, an aggregate of ports, or a specific port.

MIB Objects

alaGvrpPortStatsTable

```

alaGvrpPortStatsJoinEmptyReceived
alaGvrpPortStatsJoinInReceived
alaGvrpPortStatsEmptyReceived
alaGvrpPortStatsLeaveInReceived
alaGvrpPortStatsLeaveEmptyReceived
alaGvrpPortStatsLeaveAllReceived
alaGvrpPortStatsJoinEmptyTransmitted
alaGvrpPortStatsJoinInTransmitted
alaGvrpPortStatsEmptyTransmitted
alaGvrpPortStatsLeaveInTransmitted
alaGvrpPortStatsLeaveEmptyTransmitted
alaGvrpPortStatsLeaveAllTransmitted
dot1qPortGvrpFailedRegistrations
alaGvrpPortStatsTotalPDURceived
alaGvrpPortStatsTotalPDUTransmitted
alaGvrpPortStatsInvalidMsgsReceived
alaGvrpPortStatsTotalMsgsReceived
alaGvrpPortStatsTotalMsgsTransmitted

```

show gvrp last-pdu-origin

Displays the source MAC address of the last GVRP message received on a specific port or an aggregate of ports.

show gvrp last-pdu-origin {linkagg *agg_num* | port *slot/port*}

Syntax Definitions

agg_num The number corresponding to the aggregate group.
slot/port The slot number for the module and the physical port number on that module (e.g., 3/1 specifies port 1 on slot 3).

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6450

Usage Guidelines

N/A

Examples

```
-> show gvrp last-pdu-origin port 1/21  
Last-PDU Origin : 00:d0:95:ee:f4:64
```

output definitions

Last-PDU Origin	The source MAC address of the last PDU message received on the specific port.
------------------------	---

Release History

Release 6.6.1; command was introduced.

Related Commands

N/A

MIB Objects

Dot1qPortVlanTable
dot1qPortGvrpLastPduOrigin

show gvrp configuration

Displays the global configuration for GVRP.

show gvrp configuration

Syntax Definitions

N/A

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6450

Usage Guidelines

N/A

Examples

```
-> show gvrp configuration
GVRP Enabled                : yes,
Transparent Switching Enabled : no,
Maximum VLAN Limit          : 256
```

output definitions

GVRP Enabled	Indicates whether or not GVRP is globally enabled.
Transparent Switching Enabled	Indicates whether transparent switching is enabled (Yes) or disabled (No). When enabled, GVRP messages are flooded even if GVRP is disabled for the switch.
Maximum VLAN Limit	The maximum number of VLANs that can be learned by GVRP in the system.

Release History

Release 6.6.1; command was introduced.

Related Commands

gvrp	Enables GVRP on the device globally.
gvrp transparent switching	Enables transparent switching on the device.
gvrp maximum vlan	Configures the maximum number of dynamic VLANs that can be learned by GVRP.

MIB Objects

```
dot1qGvrpStatus  
alaGvrpTransparentSwitching  
alaGvrpMaxVlanLimit
```

show gvrp configuration port

Displays the GVRP configuration status for all the ports.

show gvrp configuration port

Syntax Definitions

N/A

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6450

Usage Guidelines

N/A

Examples

```
-> show gvrp configuration port
```

```
  Port      GVRP Status
-----+-----
  1/1       Disabled
  1/2       Disabled
  1/3       Disabled
  1/4       Disabled
  1/5       Disabled
  1/6       Disabled
  1/7       Disabled
  1/8       Disabled
  1/9       Enabled
  1/10      Disabled
  1/11      Disabled
  1/12      Disabled
  1/13      Disabled
  1/14      Disabled
  1/15      Disabled
  1/16      Disabled
  1/17      Disabled
  1/18      Disabled
  1/19      Disabled
  1/20      Disabled
  1/21      Enabled
  1/22      Disabled
  1/23      Disabled
  1/24      Disabled
  1/25      Disabled
  1/26      Disabled
  1/27      Disabled
  1/28      Disabled
```

```

1/29    Disabled
1/30    Disabled
1/31    Enabled
1/32    Disabled
1/33    Disabled
1/34    Disabled
1/35    Disabled
1/36    Disabled
1/37    Disabled
1/38    Disabled
1/39    Disabled
1/40    Disabled
1/41    Disabled
1/42    Disabled
1/43    Disabled
1/44    Disabled
1/45    Disabled
1/46    Disabled
1/47    Disabled
1/48    Disabled
1/49    Disabled
1/50    Disabled

```

output definitions

Port	Displays the slot/port number.
GVRP Status	Indicates if GVRP is Enabled or Disabled on the port.

Release History

Release 6.6.1; command was introduced.

Related Commands

gvrp port	Enables GVRP on a specific port or an aggregate of ports on the switch.
show gvrp configuration linkagg/port	Displays the GVRP configuration for a specific port or an aggregate of ports.

MIB Objects

```

Dot1qportvltantable
  dot1qPortGvrpStatus

```

53	LEARN	TRUE	FALSE
54	LEARN	TRUE	FALSE
55	LEARN	FALSE	TRUE
56	LEARN	FALSE	TRUE
57	LEARN	FALSE	FALSE
58	LEARN	FALSE	FALSE
59	LEARN	FALSE	FALSE
60	LEARN	FALSE	FALSE

output definitions

GVRP Enabled	Indicates whether or not GVRP is globally enabled (Yes or No).
Registrar Mode	Indicates the registrar mode (NORMAL , FIXED , or FORBIDDEN) of the port.
Applicant Mode	Indicates the applicant mode (PARTICIPANT , NON-PARTICIPANT , or ACTIVE) of the port.
Join Timer	Displays the Join timer value.
Leave Timer	Displays the Leave timer value.
LeaveAll Timer	Displays the LeaveAll timer value.
Legacy Bpdu	Indicates the status of conventional/customer BPDU processing on network ports (ENABLED or DISABLED).
VLAN Id	The numerical VLAN ID.
Static Registration	Indicates if the port is restricted (RESTRICT) or not restricted (LEARN) from becoming a member of the static VLAN.
Restricted Registration	Indicates if the VLAN is restricted (TRUE) or not restricted (FALSE) from dynamic registration on the port.
Restricted Applicant	Indicates if the restricted applicant mode is enabled (TRUE) or not (FALSE).

Release History

Release 6.6.1; command was introduced.

Related Commands

gvrp port	Enables GVRP on a specific port or an aggregate of ports on the switch.
gvrp registration	Configures the GVRP registration mode for a specific port or an aggregate of ports.
gvrp applicant	Configures the applicant mode of a specific port or an aggregate of ports on the switch.
gvrp timer	Configures the Join, Leave, or LeaveAll timer values for the switch ports.
gvrp restrict-vlan-registration	Restricts GVRP processing from dynamically registering the specified VLAN(s) on the switch.
gvrp restrict-vlan-advertisement	Restricts the advertisement of VLANs on a specific port or an aggregate of ports.
gvrp static-vlan restrict	Restricts a port from becoming a member of a statically created VLAN or a range of VLANs.
show gvrp configuration port	Displays the GVRP configuration status for all the ports.

MIB Objects

```

Dot1qportvlantable
  dot1qPortGvrpLastPduOrigin
  dot1qPortGvrpStatus
alaGvrpPortConfigTable
  alaGvrpPortConfigRegistrarMode
  alaGvrpPortConfigApplicantMode
  alaGvrpPortConfigJoinTimer
  alaGvrpPortConfigLeaveTimer
  alaGvrpPortConfigLeaveAllTimer
  alaGvrpPortConfigRestrictedRegistrationBitmap
  alaGvrpPortConfigRegistrationToStaticVlan
  alaGvrpPortConfigPropagateDynamicNonGvrpVlan

```

show gvrp timer

Displays the timer values configured for all the ports or a specific port.

```
show gvrp timer [[join | leave | leaveall] {linkagg agg_num | port slot/port}]
```

Syntax Definitions

join	Displays the Join timer value.
leave	Displays the Leave timer value.
leaveall	Displays the LeaveAll timer value.
<i>agg_num</i>	The number corresponding to the aggregate group.
<i>slot/port</i>	The slot number for the module and the physical port number on that module (e.g., 3/1 specifies port 1 on slot 3).

Defaults

By default the timer values configured on all the ports are displayed.

Platforms Supported

OmniSwitch 6250, 6450

Usage Guidelines

- Use the **join**, **leave**, or **leaveall** parameter with this command to view the specific timer values configured on all the ports.
- Use the *agg_num* or *slot/port* parameter with this command to display the timer values configured for a specific port.

Examples

```
-> show gvrp timer
Legend : All timer values are in milliseconds
Port      Join Timer    Leave Timer    LeaveAll Timer
-----+-----+-----+-----
1/1       600           1800           30000
1/2       600           1800           30000
1/3       600           1800           30000
1/4       600           1800           30000
1/5       600           1800           30000
1/6       600           1800           30000
1/7       600           1800           30000
1/8       600           1800           30000
1/9       600           1800           30000
1/10      600           1800           30000
1/11      600           1800           30000
1/12      600           1800           30000
1/13      600           1800           30000
1/14      600           1800           30000
1/15      600           1800           30000
1/16      600           1800           30000
```

1/17	600	1800	30000
1/18	600	1800	30000
1/19	600	1800	30000
1/20	600	1800	30000
1/21	600	1800	30000
1/22	600	1800	30000
1/23	600	1800	30000
1/24	600	1800	30000
1/25	600	1800	30000
1/26	600	1800	30000
1/27	600	1800	30000
1/28	600	1800	30000
1/29	600	1800	30000
1/30	600	1800	30000
1/31	600	1800	30000
1/32	600	1800	30000
1/33	600	1800	30000
1/34	600	1800	30000
1/35	600	1800	30000
1/36	600	1800	30000
1/37	600	1800	30000
1/38	600	1800	30000
1/39	600	1800	30000
1/40	600	1800	30000
1/41	600	1800	30000
1/42	600	1800	30000
1/43	600	1800	30000
1/44	600	1800	30000
1/45	600	1800	30000
1/46	600	1800	30000
1/47	600	1800	30000
1/48	600	1800	30000
1/49	600	1800	30000
1/50	600	1800	30000

```
-> show gvrp timer port 1/21
Join Timer (msec)      : 600,
Leave Timer (msec)     : 1800,
LeaveAll Timer (msec)  : 30000
```

```
-> show gvrp timer join port 1/21
Join Timer (msec) : 600
```

```
-> show gvrp timer leave port 1/21
Leave Timer (msec) : 1800
```

```
-> show gvrp timer leaveall port 1/21
LeaveAll Timer (msec) : 30000
```

```
-> show gvrp timer join
Legend : All timer values are in milliseconds
```

Port	Join Timer
1/1	600
1/2	600
1/3	600
1/4	600

```
1/5      600
1/6      600
1/7      600
1/8      600
1/9      600
1/10     600
1/11     600
1/12     600
1/13     600
1/14     600
1/15     600
1/16     600
1/17     600
1/18     600
1/19     600
1/20     600
1/21     600
1/22     600
1/23     600
1/24     600
1/25     600
1/26     600
1/27     600
1/28     600
1/29     600
1/30     600
1/31     600
1/32     600
1/33     600
1/34     600
1/35     600
1/36     600
1/37     600
1/38     600
1/39     600
1/40     600
1/41     600
1/42     600
1/43     600
1/44     600
1/45     600
1/46     600
1/47     600
1/48     600
1/49     600
1/50     600
```

```
-> show gvrp timer leave
```

```
Legend : All timer values are in milliseconds
```

```
Port      Leave Timer
-----+-----
1/1       1800
1/2       1800
1/3       1800
1/4       1800
1/5       1800
1/6       1800
1/7       1800
```

```
1/8      1800
1/9      1800
1/10     1800
1/11     1800
1/12     1800
1/13     1800
1/14     1800
1/15     1800
1/16     1800
1/17     1800
1/18     1800
1/19     1800
1/20     1800
1/21     1800
1/22     1800
1/23     1800
1/24     1800
1/25     1800
1/26     1800
1/27     1800
1/28     1800
1/29     1800
1/30     1800
1/31     1800
1/32     1800
1/33     1800
1/34     1800
1/35     1800
1/36     1800
1/37     1800
1/38     1800
1/39     1800
1/40     1800
1/41     1800
1/42     1800
1/43     1800
1/44     1800
1/45     1800
1/46     1800
1/47     1800
1/48     1800
1/49     1800
1/50     1800
```

```
-> show gvrp timer leaveall
```

```
Legend : All timer values are in milliseconds
```

```
Port      LeaveAll Timer
-----+-----
1/1       30000
1/2       30000
1/3       30000
1/4       30000
1/5       30000
1/6       30000
1/7       30000
1/8       30000
1/9       30000
1/10      30000
```

```
1/11 30000
1/12 30000
1/13 30000
1/14 30000
1/15 30000
1/16 30000
1/17 30000
1/18 30000
1/19 30000
1/20 30000
1/21 30000
1/22 30000
1/23 30000
1/24 30000
1/25 30000
1/26 30000
1/27 30000
1/28 30000
1/29 30000
1/30 30000
1/31 30000
1/32 30000
1/33 30000
1/34 30000
1/35 30000
1/36 30000
1/37 30000
1/38 30000
1/39 30000
1/40 30000
1/41 30000
1/42 30000
1/43 30000
1/44 30000
1/45 30000
1/46 30000
1/47 30000
1/48 30000
1/49 30000
1/50 30000
```

output definitions

Port	Displays the slot/port number.
Join Timer	Displays the Join timer value in milliseconds.
Leave Timer	Displays the Leave timer value in milliseconds.
LeaveAll Timer	Displays the LeaveAll timer value in milliseconds.

Release History

Release 6.6.1; command was introduced.

Related Commands

gvrp timer

Configures the Join, Leave, or LeaveAll timer values for the switch ports.

MIB Objects

```
alaGvrpPortConfigTable  
  alaGvrpPortConfigJoinTimer  
  alaGvrpPortConfigLeaveTimer  
  alaGvrpPortConfigLeaveAllTimer
```

27 MVRP Commands

MVRP (Multiple VLAN Registration Protocol) provides a mechanism for maintaining the contents of Dynamic VLAN Registration Entries for each VLAN, and for propagating the information they contain to other Bridges. MVRP uses MRP (Multiple Registration Protocol) as the underlying mechanism, for the maintenance and propagation of the VLAN information.

MVRP acts as an MRP application, sending and receiving MVRP information encapsulated in an Ethernet frame on a specific MAC address. MVRP allows both end stations and Bridges in a Bridged Local Area Network to issue and revoke declarations relating to membership of VLANs. Note that if MVRP is configured on a switch, GVRP cannot be configured on that switch.

A summary of the available commands is listed here:

- vlan registration-mode**
- mvrp**
- mvrp port**
- mvrp linkagg**
- mvrp transparent-switching**
- mvrp maximum vlan**
- mvrp registration**
- mvrp applicant**
- mvrp timer join**
- mvrp timer leave**
- mvrp timer leaveall**
- mvrp timer periodic-timer**
- mvrp periodic-transmission**
- mvrp restrict-vlan-registration**
- mvrp restrict-vlan-advertisement**
- mvrp static-vlan-restrict**
- show mvrp configuration**
- show mvrp port**
- show mvrp linkagg**
- show mvrp timer**
- show mvrp statistics**
- show mvrp last-pdu-origin**
- show vlan registration-mode**
- show mvrp vlan-restrictions**
- show vlan mvrp**
- mvrp clear-statistics**

vlan registration-mode

Configures VLAN dynamic registration mode to either GVRP or MVRP and deletes all static configuration of previous mode along with the dynamic data.

vlan registration-mode {gvrp | mvrp}

Syntax Definitions

gvrp Dynamic registration protocol mode is GVRP.
mvrp Dynamic registration protocol mode is MVRP.

Defaults

parameter	default
gvrp mvrp	mvrp

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Before configuring MVRP, change the VLAN registration mode to MVRP.
- When the mode is changed from MVRP to GVRP or GVRP to MVRP, all static and dynamic configurations of the previous mode is deleted.
- An INFO message “All [GVRP/MVRP] static and dynamic configurations has been deleted” is given to the user on changing the mode from GVRP to MVRP.
- On configuring the same mode, no INFO message is given to the user.
- While running in MVRP mode, all GVRP configurations is rejected and when in GVRP mode, all MVRP configuration is rejected.
- Even though the default mode of the switch is MVRP, when you are upgrading the image from a previous release which does not support MVRP, the GVRP commands is accepted by the switch. The VLAN registration mode is internally changed to GVRP.

Examples

```
-> vlan registration-mode mvrp
INFO: All GVRP configurations and learnings have been deleted.
```

```
-> vlan registration-mode gvrp
INFO: All MVRP configurations and learnings have been deleted.
```

Release History

Release 6.6.5; command introduced.

Related Commands

show vlan registration-mode Displays the VLAN registration operational mode.

MIB Objects

alaVlanRegistrationProtocolType

mvrp

Enables or disables MVRP globally on the switch.

mvrp {enable | disable}

Syntax Definitions

enable	Enables MVRP globally on the switch.
disable	Disables MVRP globally on the switch.

Defaults

By default, MVRP is disabled on the switch.

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Disabling MVRP globally will delete all the MVRP learned VLANs.
- MVRP is supported only when the switch is operating in the flat Spanning Tree mode and it is not supported in the 1x1 mode.

Examples

```
-> mvrp enable
-> mvrp disable
```

Release History

Release 6.6.5; command introduced.

Related Commands

vlan registration-mode	Configures VLAN dynamic registration mode to either GVRP or MVRP and deletes all static configuration of previous mode along with the dynamic data.
show mvrp configuration	Displays the global configuration for MVRP.

MIB Objects

alaMvrpGlobalStatus

mvrp port

Enables or disables MVRP on specific ports on the switch.

mvrp port *slot/port* [*- port2*] {**enable** | **disable**}

Syntax Definitions

<i>slot/port</i>	The slot number for the module and the physical port number on that module (For example, 3/1 specifies port 1 on slot 3).
enable	Enables MVRP on a port.
disable	Disables MVRP on a port.

Defaults

By default, mvrp is disabled on all the ports.

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- MVRP can be enabled on switch ports regardless of whether it is globally enabled on the switch. However, for the port to become an active participant in the MVRP operation, MVRP has to be enabled globally on the switch.
- When MVRP is globally enabled on the switch and is not enabled on the port, that port is excluded from the MVRP protocol operation.
- MVRP can be enabled only on fixed ports, 802.1 Q ports, aggregate ports, and VLAN Stacking Network ports. Other ports (mirroring ports, aggregable ports, mobile ports, VPLS Access ports, VLAN Stacking User ports) do not support MVRP.
- MVRP should not be enabled on ERP ring ports.

Examples

```
-> mvrp port 1/2 enable
-> mvrp port 1/2 disable
-> mvrp port 1/1-10 enable
-> mvrp port 1/1-10 disable
```

Release History

Release 6.6.5; command introduced.

Related Commands

show mvrp port

Displays the MVRP configurations for all the ports, including timer values, registration and applicant modes.

show mvrp statistics

Displays the MVRP statistics for all the ports, aggregates, or specific ports.

MIB Objects

alaMvrpPortConfigTable
alaMvrpPortStatus

mvrp linkagg

Enables or disables MVRP on specific aggregates on the switch.

```
mvrp linkagg agg_num [-agg_num2] {enable | disable}
```

Syntax Definitions

<i>agg_num</i>	The number corresponding to the aggregate group.
enable	Enables MVRP on a port.
disable	Disables MVRP on a port.

Defaults

By default, mvrp is disabled on all the ports.

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- MVRP can be enabled on switch ports regardless of whether it is globally enabled on the switch. However, for the port to become an active participant in the MVRP operation, MVRP has to be enabled globally on the switch.
- When MVRP is globally enabled on the switch and is not enabled on the port, that port is excluded from the MVRP protocol operation.
- MVRP can be enabled only on fixed ports, 802.1 Q ports, aggregate ports, and VLAN Stacking Network ports. Other ports (mirroring ports, aggregable ports, mobile ports, VPLS Access ports, VLAN Stacking User ports) do not support MVRP.
- To use the *agg_num* parameter, the link aggregate group has to be created.
- MVRP not supported on VFL aggregate. If mvrp is configured on a vfl linkagg, an error message is displayed informing that the port is an VFL aggregate.

Examples

```
-> mvrp linkagg 10 enable
-> mvrp linkagg 10 disable
-> mvrp linkagg 2-5 enable
-> mvrp linkagg 1-5 disable
```

Release History

Release 6.6.5; command introduced.

Related Commands

show mvrp port

Displays the MVRP configurations for all the ports, including timer values, registration and applicant modes.

show mvrp statistics

Displays the MVRP statistics for all the ports, aggregates, or specific ports.

MIB Objects

alaMvrpPortConfigTable
alaMvrpPortStatus

mvrp transparent-switching

Enables or disables transparent switching on the switch. When transparent switching is enabled, the switch propagates MVRP information to other switches but does not participate in the MVRP protocol.

mvrp transparent-switching {enable | disable}

Syntax Definitions

enable	Enables transparent switching globally on a switch.
disable	Disables transparent switching globally on a switch.

Defaults

By default, transparent switching is disabled on the switch.

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- If MVRP is globally disabled and transparent switching is enabled, the switch floods the MVRP messages.
- If MVRP is globally disabled and transparent switching is disabled, the switch discards the MVRP messages.
- If MVRP is globally enabled, transparent switching has no effect on the functional behavior of the switch.

Examples

```
-> mvrp transparent-switching enable  
-> mvrp transparent-switching disable
```

Release History

Release 6.6.5; command introduced.

Related Commands

[show mvrp configuration](#) Displays the global configuration for MVRP.

MIB Objects

alaMvrpTransparentSwitching

mvrp maximum vlan

Configures the maximum number of dynamic VLANs that can be created by MVRP.

mvrp maximum vlan *vlanlimit*

Syntax Definitions

vlanlimit The maximum number of VLANs to be created by MVRP. The valid range is 32-256.

Defaults

The default value is 256.

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- This command can be used even when MVRP is not enabled on the switch. However, MVRP has to be enabled on the switch for creating dynamic VLANs.
- If the VLAN limit to be set is less than the current number of dynamically learnt VLANs, then the new configuration takes effect only after the MVRP is disabled and enabled again on the switch. If this operation is not done, the VLANs learnt earlier is retained.

Examples

```
-> mvrp maximum vlan 100
```

Release History

Release 6.6.5; command introduced.

Related Commands

[show mvrp configuration](#) Displays the global configuration for MVRP.
[show vlan mvrp](#) Displays the list of VLANS learned through MVRP and their details.

MIB Objects

alaMvrpMaxVlanLimit

mvrp registration

Configures the MVRP registration mode for specific ports or aggregates.

mvrp {**port** *slot/port* [- *port2*] | **linkagg** *agg_num* [-*agg_num2*]} **registration** {**normal** | **fixed** | **forbidden**}

Syntax Definitions

<i>slot/port</i>	The slot number for the module and the physical port number on that module (For example, 3/1 specifies port 1 on slot 3).
<i>agg_num</i>	The number corresponding to the aggregate group.
normal	Specifies that both registration and de-registration of VLANs are allowed. VLANs can be mapped either dynamically (through MVRP) or statically (through management application) on such a port.
fixed	Specifies that only static mapping of VLANs is allowed on the port but de-registration of previously created dynamic or static VLANs is not allowed.
forbidden	Specifies that dynamic VLAN registration or de-registration is not allowed on the port. Any dynamic VLAN created earlier is deregistered.

Defaults

parameter	default
normal fixed forbidden	normal

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

To use the *agg_num* parameter, the link aggregate group has to be created and enabled.

Examples

```
-> mvrp port 1/2 registration forbidden
-> mvrp port 1/5 registration normal
-> mvrp linkagg 10 registration fixed
-> mvrp linkagg 20 registration forbidden
-> mvrp port 2/5-10 registration normal
```

Release History

Release 6.6.5; command introduced.

Related Commands

show mvrp port

Displays the MVRP configurations for all the ports, including timer values, registration and applicant modes.

show mvrp linkagg

Displays the MVRP configurations for all the link aggregates, including timer values, registration and applicant modes.

MIB Objects

alaMvrpPortConfigTable

alaMvrpPortConfigRegistrarMode

mvrp applicant

Configures the applicant mode of specific ports on the switch. The applicant mode determines whether MVRP PDU exchanges are allowed on a port depending on the Spanning Tree state of the port.

mvrp {port *slot/port* [- *port2*] | linkagg *agg_num* [-*agg_num2*]} **applicant** {**participant** | **non-participant** | **active**}

Syntax Definitions

<i>slot/port</i>	The slot number for the module and the physical port number on that module (For example, 3/1 specifies port 1 on slot 3).
<i>agg_num</i>	The number corresponding to the aggregate group.
participant	Specifies that MVRP PDU exchanges are only allowed when the port is in the STP forwarding state.
non-participant	Specifies that MVRP PDU's are not sent in this mode and PDU's received are processed and learning happens as expected.
active	Specifies that MVRP PDU exchanges are allowed when the port is in the STP forwarding state or STP blocking state. This is applicable for both advertisement and registration.

Defaults

parameter	default
participant non-participant active	active

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

To use the *agg_num* parameter, the link aggregate group has to be created and enabled.

Examples

```
-> mvrp port 1/2 applicant active
-> mvrp port 1/3 applicant participant
-> mvrp port 1/4 applicant non-participant
-> mvrp linkagg 10 applicant active
-> mvrp linkagg 15 applicant participant
-> mvrp linkagg 20 applicant non-participant
```

Release History

Release 6.6.5; command introduced.

Related Commands

show mvrp port

Displays the MVRP configurations for all the ports, including timer values, registration and applicant modes.

show mvrp linkagg

Displays the MVRP configurations for all the link aggregates, including timer values, registration and applicant modes.

MIB Objects

alaMvrpPortConfigtable
alaMvrpPortConfigApplicantMode

mvrp timer join

Specifies the join time interval between transmit opportunities for the dynamically registering VLANs on the switch.

mvrp {port *slot/port* [- *port2*] | linkagg *agg_num* [-*agg_num2*]} **timer join** *timer-value*

Syntax Definitions

<i>slot/port</i>	The slot number for the module and the physical port number on that module (For example, 3/1 specifies port 1 on slot 3).
<i>agg_num</i>	The number corresponding to the aggregate group.
<i>timer-value</i>	Specifies the value of the join timer in milliseconds. The valid range is 250 milliseconds to 1073741773 milliseconds.

Defaults

parameter	default
<i>timer-value</i>	600 milliseconds

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Use default timer settings unless there is a compelling reason to change the settings. Modifying timers to inappropriate values might cause an imbalance in the operation of MVRP.
- To use the *agg_num* parameter, the link aggregate group has to be created and enabled.

Examples

```
-> mvrp port 1/2 timer join 600
-> mvrp port 1/2-12 timer join 600
-> mvrp linkagg 3 timer join 600
-> mvrp linkagg 3-6 timer join 600
```

Release History

Release 6.6.5; command introduced.

Related Commands

show mvrp timer

Displays the timer values configured for all the ports or a specific port.

show mvrp port

Displays the MVRP configurations for all the ports, including timer values, registration and applicant modes.

MIB Objects

```
alaMvrpPortConfigTable  
  alaMvrpPortConfigJoinTimer  
  alaMvrpPortConfigLeaveTimer  
  alaMvrpPortConfigLeaveAllTimer  
  alaMvrpPortConfigPeriodicTimer
```

mvrp timer leave

Specifies the period of time that the switch has to wait in the Leave state before changing to the unregistered state.

mvrp {**port** *slot/port* [*- port2*] | **linkagg** *agg_num* [*-agg_num2*]} **timer leave** *timer-value*

Syntax Definitions

<i>slot</i>	The slot number for the module.
<i>port</i>	The physical port number on the module.
<i>agg_num</i>	The number corresponding to the aggregate group.
<i>timer-value</i>	Specifies the value of the Leave Timer in milliseconds. The valid range is 750 milliseconds to 2147483647 milliseconds.

Defaults

parameter	default
<i>timer-value</i>	<i>1800 milliseconds</i>

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Use default timer settings unless there is a compelling reason to change the settings. Modifying timers to inappropriate values might cause an imbalance in the operation of MVRP.
- Leave timer value has to be greater than or equal to twice the Join timer value, plus six times the timer resolution (that is, 16.66 milliseconds). Leave timer has to be at least be greater than twice the join timer plus 100 milliseconds.
- To use the *agg_num* parameter, the link aggregate group has to be created and enabled.

Examples

```
-> mvrp port 1/2 timer leave 1800
-> mvrp port 1/2-12 timer leave 1800
-> mvrp linkagg 3 timer leave 1800
-> mvrp linkagg 3-6 timer leave 1800
```

Release History

Release 6.6.5; command introduced.

Related Commands

show mvrp timer

Displays the timer values configured for all the ports or a specific port.

show mvrp port

Displays the MVRP configurations for all the ports, including timer values, registration and applicant modes.

MIB Objects

```
alaMvrpPortConfigTable  
  alaMvrpPortConfigJoinTimer  
  alaMvrpPortConfigLeaveTimer  
  alaMvrpPortConfigLeaveAllTimer  
  alaMvrpPortConfigPeriodicTime
```

mvrp timer leaveall

Specifies the frequency with which the LeaveAll messages are communicated.

mvrp {**port** *slot/port* [- *port2*] | **linkagg** *agg_num* [-*agg_num2*]} **timer leaveall** *timer-value*

Syntax Definitions

<i>slot</i>	The slot number for the module.
<i>port</i>	The physical port number on the module.
<i>agg_num</i>	The number corresponding to the aggregate group.
<i>timer-value</i>	Specifies the value of the LeaveAll Timer in milliseconds. The valid range is 750 milliseconds to 2147483647 milliseconds.

Defaults

parameter	default
<i>timer-value</i>	<i>30000 milliseconds</i>

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Use default timer settings unless there is a compelling reason to change the settings. Modifying timers to inappropriate values might cause an imbalance in the operation of MVRP.
- Leaveall timer value has to be greater than or equal to the Leave timer value. It is recommended to have the leaveall timer 15 times greater than the leave timer.
- To use the *agg_num* parameter, the link aggregate group has to be created and enabled.

Examples

```
-> mvrp port 1/2 timer leaveall 30000
-> mvrp port 1/2-12 timer leaveall 30000
-> mvrp linkagg 3 timer leaveall 30000
-> mvrp linkagg 3-6 timer leaveall 30000
```

Release History

Release 6.6.5; command introduced.

Related Commands

show mvrp timer

Displays the timer values configured for all the ports or a specific port.

show mvrp port

Displays the MVRP configurations for all the ports, including timer values, registration and applicant modes.

MIB Objects

```
alaMvrpPortConfigTable  
  alaMvrpPortConfigJoinTimer  
  alaMvrpPortConfigLeaveTimer  
  alaMvrpPortConfigLeaveAllTimer  
  alaMvrpPortConfigPeriodicTimer
```

mvrp timer periodic-timer

Specifies the MVRP periodic-timer time interval for the dynamically registering VLANs on the switch.

mvrp {**port** *slot/port* [*- port2*] | **linkagg** *agg_num* [*-agg_num2*]} **timer periodic-timer** *timer-value*

Syntax Definitions

<i>slot</i>	The slot number for the module.
<i>port</i>	The physical port number on the module.
<i>agg_num</i>	The number corresponding to the aggregate group.
<i>timer-value</i>	Specifies the value of the Periodic Timer in seconds. The valid range is between 1 to 2147483647 milliseconds.

Defaults

parameter	default
<i>timer-value</i>	<i>1 second</i>

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Use default timer settings unless there is a compelling reason to change the settings. Modifying timers to inappropriate values might cause an imbalance in the operation of MVRP.
- To use the *agg_num* parameter, the link aggregate group has to be created and enabled.

Examples

```
-> mvrp port 1/2 timer periodic-timer 1
-> mvrp port 1/2 timer periodic-timer 1
-> mvrp linkagg 3 timer periodic-timer 1
-> mvrp linkagg 3-6 timer periodic-timer 1
```

Release History

Release 6.6.5; command introduced.

Related Commands

show mvrp timer

Displays the timer values configured for all the ports or a specific port.

show mvrp port

Displays the MVRP configurations for all the ports, including timer values, registration and applicant modes.

MIB Objects

```
alaMvrpPortConfigTable  
  alaMvrpPortConfigJoinTimer  
  alaMvrpPortConfigLeaveTimer  
  alaMvrpPortConfigLeaveAllTimer  
  alaMvrpPortConfigPeriodicTimer
```

mvrp periodic-transmission

Enables the periodic transmission status on a port or aggregate of ports.

```
mvrp {port slot/port [- port2] | linkagg agg_num [-agg_num2]} periodic-transmission {enable | disable}
```

Syntax Definitions

<i>slot</i>	The slot number for the module.
<i>port</i>	The physical port number on the module.
<i>agg_num</i>	The number corresponding to the aggregate group.
enable	Enables periodic transmission status on a port.
disable	Disables periodic transmission status on a port.

Defaults

By default, periodic-transmission status would be disabled on all the ports.

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

To use the *agg_num* parameter, the link aggregate group has to be created and enabled.

Examples

```
-> mvrp port 1/2 periodic-transmission enable
-> mvrp port 1/2 periodic-transmission disable
-> mvrp linkagg 10 periodic-transmission enable
-> mvrp linkagg 10 periodic-transmission disable
```

Release History

Release 6.6.5; command introduced.

Related Commands

show mvrp port

Displays the MVRP configurations for all the ports, including timer values, registration and applicant modes.

show mvrp linkagg

Displays the MVRP configurations for all link aggregates, including timer values, registration and applicant modes.

MIB Objects

alaMvrpPortConfigTable

alaMvrpPortConfigPeriodicTransmissionStatus

mvrp restrict-vlan-registration

Restricts MVRP processing from dynamically registering the specified VLAN or VLANs on the switch.

mvrp {**port** *slot/port* [- *port2*] | **linkagg** *agg_num* [-*agg_num2*]} **restrict-vlan-registration** **vlan** *vlan-list*

no mvrp {**port** *slot/port* [- *port2*] | **linkagg** *agg_num* [-*agg_num2*]} **restrict-vlan-registration** **vlan** *vlan-list*

Syntax Definitions

<i>slot</i>	The slot number for the module.
<i>port</i>	The physical port number on the module.
<i>agg_num</i>	The number corresponding to the aggregate group.
<i>vlan-list</i>	The VLAN ID or the VLAN ID range (For example, 1-10).

Defaults

By default, MVRP dynamic VLAN registrations are not restricted.

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Use the **no** form of this command to allow registration of dynamic VLAN IDs through MVRP processing.
- If the specified VLAN exists on the switch, the VLAN is mapped to the receiving port.
- To use the *agg_num* parameter, the link aggregate group has to be created and enabled.

Examples

```
-> mvrp port 1/2 restrict-vlan-registration vlan 5
-> no mvrp port 1/2 restrict-vlan-registration vlan 5
-> mvrp linkagg 10 restrict-vlan-registration vlan 6-10
-> no mvrp port 3/1 restrict-vlan-registration vlan 6-10
```

Release History

Release 6.6.5; command introduced.

Related Commands

show mvrp port

Displays the MVRP configurations for all the ports, including timer values, registration and applicant modes.

show mvrp linkagg

Displays the MVRP configurations for all link aggregates, including timer values, registration and applicant modes.

MIB Objects

```
alaMvrpPortRestrictVlanConfigTable  
  alaMvrpPortRestrictRowStatus  
  alaMvrpPortRestrictVlanAttributeType  
  alaMvrpPortRestrictVlanID
```

mvrp restrict-vlan-advertisement

Restricts the advertisement of VLANs on a specific port or an aggregate of ports.

mvrp {port *slot/port* [-*port2*] | linkagg *agg_num* [-*agg_num2*]} **restrict-vlan-advertisement** **vlan** *vlan-list*

no mvrp { | port *slot/port* [-*port2*] | linkagg *agg_num* [-*agg_num2*]} **restrict-vlan-advertisement** **vlan** *vlan-list*

Syntax Definitions

<i>slot</i>	The slot number for the module.
<i>port</i>	The physical port number on the module.
<i>agg_num</i>	The number corresponding to the aggregate group.
<i>vlan_list</i>	The list of VLAN IDs or the VLAN ID range (For example, 1-10).

Defaults

By default, MVRP VLAN advertisement is not restricted.

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- This command affects the MVRP processing only if the applicant mode is set to participant or active.
- Use the **no** form of this command to allow the propagation of VLANs.
- To use the *agg_num* parameter, the link aggregate group has to be created and enabled.

Examples

```
-> mvrp port 1/2 restrict-vlan-advertisement vlan 5
-> no mvrp port 1/2 restrict-vlan-advertisement vlan 5
-> mvrp linkagg 10 restrict-vlan-advertisement vlan 6-10
-> no mvrp port 1/2 restrict-vlan-advertisement vlan 6-10
-> no mvrp port 1/1-2 restrict-vlan-advertisement vlan 6-10
```

Release History

Release 6.6.5; command introduced.

Related Commands

mvrp applicant	Configures the applicant mode of specific ports on the switch. The applicant mode determines whether MVRP PDU exchanges are allowed on a port depending on the Spanning Tree state of the port.
mvrp timer join	Configures the applicant mode of specific link aggregates on the switch. The applicant mode determines whether MVRP PDU exchanges are allowed on a port depending on the Spanning Tree state of the port.
show mvrp port	Displays the MVRP configurations for all the ports, including timer values, registration and applicant modes.
show mvrp linkagg	Displays the MVRP configurations for all the link aggregates, including timer values, registration and applicant modes.

MIB Objects

```
alaMvrpPortRestrictVlanConfigTable  
  alaMvrpPortRestrictRowStatus  
  alaMvrpPortRestrictVlanAttributeType  
  alaMvrpPortRestrictVlanID
```

mvrp static-vlan-restrict

Restricts a port from becoming a member of a statically created VLAN or a range of VLANs.

mvrp {**linkagg** *agg_num* [-*agg_num2*] | **port** *slot/port* [- *port2*]} **static-vlan-restrict** **vlan** *vlan-list*

no mvrp {**linkagg** *agg_num* [-*agg_num2*] | **port** *slot/port* [- *port2*]} **static-vlan-restrict** **vlan** *vlan-list*

Syntax Definitions

<i>agg_num</i>	The number corresponding to the aggregate group.
<i>slot</i>	The slot number for the module.
<i>port</i>	The physical port number on the module.
<i>vlan_list</i>	The list of VLAN IDs or the VLAN ID range (For example, 1-10).

Defaults

By default, ports are assigned to the static VLAN based on MVRP PDU processing.

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- This command applies only to static VLANs and does not apply to dynamic VLANs.
- Use the **no** form of this command to set the specified port and VLAN to the default value.
- Use the *agg_num* or *slot/port* parameter with this command to display GVRP statistics for a specific port.

Examples

```
-> mvrp port 1/2 static-vlan-restrict vlan 5
-> no mvrp port 1/2 static-vlan-restrict vlan 5
-> mvrp port 1/2 static-vlan-restrict vlan 6-9
-> no mvrp port 1/2 static-vlan-restrict vlan 6-9
-> mvrp linkagg 3 static-vlan-restrict vlan 4-5
-> no mvrp linkagg 3 static-vlan-restrict aggregate vlan 4-5
```

Release History

Release 6.6.5; command introduced.

Related Commands

show mvrp port

Displays the MVRP configurations for all the ports, including timer values, registration and applicant modes.

show mvrp linkagg

Displays the MVRP configurations for all the link aggregates, including timer values, registration and applicant modes.

MIB Objects

```
alaMvrpPortRestrictVlanConfigTable  
  alaMvrpPortRestrictRowStatus  
  alaMvrpPortRestrictVlanAttributeType  
  alaMvrpPortRestrictVlanID  
  alaMvrpPortConfigRegistrationToStaticVlan  
  alaMvrpPortConfigRegistrationToStaticVlanLearn  
  alaMvrpPortConfigRegistrationToStaticVlanRestrict
```

show mvrp configuration

Displays the global configuration for MVRP.

show mvrp configuration

Syntax Definitions

NA

Defaults

NA

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

NA

Examples

```
-> show mvrp configuration
MVRP Enabled           : yes,
Transparent Switching Enabled : no,
Maximum VLAN Limit     : 256
```

output definitions

MVRP Enabled	Indicates whether MVRP is globally enabled.
Transparent Switching Enabled	Indicates whether transparent switching is enabled (Yes) or disabled (No). When enabled, MVRP messages are flooded even if MVRP is disabled for the switch.
Maximum VLAN Limit	The maximum number of VLANs that can be learned by MVRP in the system.

Release History

Release 6.6.5; command introduced.

Related Commands

mvrp	Enables or disables MVRP globally on the switch.
vlan registration-mode	Configures VLAN dynamic registration mode to either GVRP or MVRP and deletes all static configuration of previous mode along with the dynamic data.
mvrp port	Enables or disables transparent switching on the switch. When transparent switching is enabled, the switch propagates MVRP information to other switches but does not participate in the MVRP protocol.
mvrp maximum vlan	Configures the maximum number of dynamic VLANs that can be created by MVRP.

MIB Objects

```
alaMvrpGlobalStatus  
alaMvrpTransparentSwitching  
alaMvrpMaxVlanLimit
```

show mvrp port

Displays the MVRP configurations for all the ports, including timer values, registration and applicant modes.

show mvrp port {*slot/port* [-*port2*]} [**enabled** | **disabled**]

Syntax Definitions

<i>slot</i>	The slot number for the module.
<i>port</i>	The physical port number on the module.
enabled	To display only the enabled ports.
disabled	To display only the disabled ports.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

N/A

Examples

-> show mvrp port enabled

Port	Join Timer (msec)	Leave Timer (msec)	LeaveAll Timer (msec)	Periodic Timer (sec)	Registration Mode	Applicant Mode	Periodic Tx Status
1/1	600	1800	30000	2	fixed	active	enabled
1/2	600	1800	30000	2	fixed	active	enabled
1/7	600	1800	30000	2	fixed	active	enabled
1/8	600	1800	30000	2	fixed	active	enabled
2/24	600	1800	30000	2	fixed	active	enabled

-> show mvrp port disabled

Port	Join Timer (msec)	Leave Timer (msec)	LeaveAll Timer (msec)	Periodic Timer (sec)	Registration Mode	Applicant Mode	Periodic Tx Status
1/9	600	1800	30000	2	fixed	active	enabled
1/10	600	1800	30000	2	fixed	active	enabled
2/1	600	1800	30000	2	fixed	active	enabled
2/2	600	1800	30000	2	fixed	active	enabled
...							
2/24	600	1800	30000	2	fixed	active	enabled

```
-> show mvrp port
```

Port	Status	Join Timer (msec)	Leave Timer (msec)	LeaveAll Timer (msec)	Periodic Timer (sec)	Registration Mode	Applicant Mode	Periodic Tx Status
1/1	disabled	600	1800	30000	2	fixed	participant	enabled
1/2	enabled	600	1800	30000	2	fixed	participant	enabled
1/3	enabled	600	1800	30000	2	fixed	active	enabled
1/4	enabled	600	1800	30000	2	fixed	active	enabled
2/24	enabled	600	1800	30000	2	fixed	active	enabled

```
-> show mvrp port 1/1-3
```

Port	Status	Join Timer (msec)	Leave Timer (msec)	LeaveAll Timer (msec)	Periodic Timer (sec)	Registration Mode	Applicant Mode	Periodic Tx Status
1/1	disabled	600	1800	30000	2	fixed	participant	enabled
1/2	enabled	600	1800	30000	2	fixed	participant	enabled
1/3	enabled	600	1800	30000	2	fixed	participant	enabled

```
-> show mvrp port 1/1
```

```
MVRP Enabled : no,
Registrar Mode : normal,
Applicant Mode : participant,
Join Timer (msec) : 600,
Leave Timer (msec) : 1800,
LeaveAll Timer (msec) : 30000,
Periodic Timer (sec) : 1,
Periodic Tx Status : enabled
```

```
-> show mvrp port 1/1 enabled
ERROR: MVRP is disabled on port 1/1
```

output definitions

Port	Displays the slot/port number.
Join Timer	Displays the value of Join Timer in milliseconds.
Leave Timer	Displays the value of the Leave Timer in milliseconds.
LeaveALL Timer	Displays the value of the LeaveAll Timer in milliseconds.
Periodic Timer	Displays the value of the Periodic Timer in seconds.
Registration Mode	Indicates the registration mode of the port. <ul style="list-style-type: none"> • Normal: Registrar responds normally to incoming MRP messages. • Fixed: Registrar ignores all MRP messages and remains in the IN state for all the dynamic VLAN-port associations. • Forbidden: Registrar ignores all MRP messages and remains in MT State.

output definitions (continued)

Applicant Mode	Indicates the applicant mode of the port. <ul style="list-style-type: none"> • Participant: MVRP PDU exchanges are only allowed when the port is in the STP forwarding state. • Non-participant: MVRP PDU's are not sent in this mode and PDU's received are processed and learning happens as expected. • Active: MVRP PDU exchanges are allowed when the port is in the STP forwarding state or STP blocking state.
Periodic Tx Status	The transmission status of MVRP, enabled or disabled .

Release History

Release 6.6.5; command introduced.

Related Commands

mvrp port	Enables or disables MVRP on specific ports on the switch.
mvrp transparent-switching	Enables or disables MVRP on specific aggregates on the switch
vlan registration-mode	Configures VLAN dynamic registration mode to either GVRP or MVRP and deletes all static configuration of previous mode along with the dynamic data.

MIB Objects

```

alaMvrpPortConfigTable
  alaMvrpPortStatus
  alaMvrpPortConfigRegistrarMode
  alaMvrpPortConfigApplicantMode
  alaMvrpPortConfigJoinTimer
  alaMvrpPortConfigLeaveTimer
  alaMvrpPortConfigLeaveAllTimer
  alaMvrpPortConfigPeriodicTimer
  alaMvrpPortConfigPeriodicTransmissionStatus

```

show mvrp linkagg

Displays the MVRP configurations for linkaggs, including timer values, registration and applicant modes.

show mvrp linkagg [*agg_num* [-*agg_num2*]] [**enabled** | **disabled**]

Syntax Definitions

agg_num The number corresponding to the aggregate group.

enabled To display only the enabled ports.

disabled To display only the disabled ports.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

N/A

Examples

```
-> show mvrp linkagg 1-3
```

Port	Status	Join Timer (msec)	Leave Timer (msec)	LeaveAll Timer (msec)	Periodic Timer (sec)	Registration Mode	Applicant Mode	Periodic Tx Status
0/1	enabled	600	1800	30000	2	fixed	participant	enabled
0/2	enabled	600	1800	30000	2	fixed	participant	enabled
0/3	enabled	600	1800	30000	2	fixed	participant	enabled

```
-> show mvrp linkagg 1
```

```
MVRP Enabled           : yes,
Registrar Mode         : normal,
Applicant Mode         : participant,
Join Timer (msec)      : 600,
Leave Timer (msec)      : 1800,
LeaveAll Timer (msec)   : 30000,
Periodic Timer (sec)   : 1,
Periodic Tx Status     : enabled
```

```
-> show mvrp linkagg 1 disabled
```

```
ERROR: MVRP is enabled on linkagg 0/1
```

Note. In the following command output, the MVRP status is not displayed as the command is only for enabled ports/linkagg.

```
-> show mvrp linkagg 10 enabled
Registrar Mode      : normal,
Applicant Mode     : participant,
Join Timer (msec)   : 600,
Leave Timer (msec)   : 1800,
LeaveAll Timer (msec) : 30000,
Periodic Timer (sec) : 1,
Periodic Tx status  : disabled
```

```
-> show mvrp linkagg 128 disabled
ERROR: Port 0/128 is a VFL aggregate. MVRP not supported on VFL aggregate
```

output definitions

Port	Displays the slot/port number.
Join Timer	Displays the value of Join Timer in milliseconds.
Leave Timer	Displays the value of the Leave Timer in milliseconds.
LeaveALL Timer	Displays the value of the LeaveAll Timer in milliseconds.
Periodic Timer	Displays the value of the Periodic Timer in seconds.
Registration Mode	Indicates the registration mode of the port. <ul style="list-style-type: none"> • Normal: Registrar responds normally to incoming MRP messages. • Fixed: Registrar ignores all MRP messages and remains in the IN state for all the dynamic VLAN-port associations. • Forbidden: Registrar ignores all MRP messages and remains in MT State.
Applicant Mode	Indicates the applicant mode of the port. <ul style="list-style-type: none"> • Participant: MVRP PDU exchanges are only allowed when the port is in the STP forwarding state. • Non-participant: MVRP PDU's are not sent in this mode and PDU's received are processed and learning happens as expected. • Active: MVRP PDU exchanges are allowed when the port is in the STP forwarding state or STP blocking state.
Periodic Tx Status	The transmission status of MVRP, enabled or disabled .

Release History

Release 6.6.5; command introduced.

Related Commands

mvrp port	Enables or disables MVRP on specific ports on the switch.
mvrp transparent-switching	Enables or disables MVRP on specific aggregates on the switch
vlan registration-mode	Configures VLAN dynamic registration mode to either GVRP or MVRP and deletes all static configuration of previous mode along with the dynamic data.

MIB Objects

```
alaMvrpPortConfigTable  
  alaMvrpPortStatus  
  alaMvrpPortConfigRegistrarMode  
  alaMvrpPortConfigApplicantMode  
  alaMvrpPortConfigJoinTimer  
  alaMvrpPortConfigLeaveTimer  
  alaMvrpPortConfigLeaveAllTimer  
  alaMvrpPortConfigPeriodicTimer  
  alaMvrpPortConfigPeriodicTransmissionStatus
```

show mvrp timer

Displays the timer values configured for all the ports or a specific port.

show mvrp {*port slot/port* [- *port2*] | **linkagg** *agg_num* [-*agg_num2*]} **timer** {**join** | **leave** | **leaveall** | **periodic-timer**}

Syntax Definitions

<i>slot</i>	The slot number for the module.
<i>port</i>	The physical port number on the module.
<i>agg_num</i>	The number corresponding to the aggregate group.
join	To display only the join timer.
leave	To display only the leave timer.
leaveall	To display only the leaveall timer.
periodic-timer	To display only the periodic-timer.

Defaults

NA

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Use the **join**, **leave**, **leaveall**, or **periodic-timer** parameter with this command to view the specific timer values configured on all the ports.
- Use the *agg_num* or *slot/port* parameter with this command to display the timer values configured for a specific port.

Examples

```
-> show mvrp timer
Port      Join Timer      Leave Timer      LeaveAll Timer    Periodic Timer
      (msec)          (msec)          (sec)             (msec)
-----+-----+-----+-----+-----
1/1       600             1800             30000             2
1/2       600             1800             30000             5
1/3       600             1800             30000             1
1/4       600             1800             30000             1
-> show mvrp port 1/21 timer
Join Timer (msec)      : 600,
Leave Timer (msec)     : 1800,
LeaveAll Timer (msec)  : 30000,
Periodic-Timer (sec)  : 1

-> show mvrp port 1/21 timer join
```

```

Join Timer (msec)      : 600

-> show mvrp port 1/21 timer leave
Leave Timer (msec)     : 1800

-> show mvrp port 1/21 timer leaveall
LeaveAll Timer (msec)  : 30000

-> show mvrp port 1/21 timer periodic-timer
Periodic-Timer (sec)  : 1

-> show mvrp timer join
Legend : All timer values are in milliseconds
Port      Join Timer
-----+-----
1/1       600
1/2       600
1/3       600

-> show mvrp timer leaveall
Legend : All timer values are in milliseconds
Port      LeaveAll Timer
-----+-----
1/1       1800
1/2       1800
1/3       1800

-> show mvrp timer leaveall
Legend : All timer values are in milliseconds
Port      LeaveAll Timer
-----+-----
1/1       30000
1/2       30000
1/3       30000

-> show mvrp timer periodic-timer
Port      Periodic Timer
-----+-----
1/1       1
1/2       1
1/3       1

```

output definitions

Port	Displays the slot/port number.
Join Timer	Displays the value of Join Timer in milliseconds.
Leave Timer	Displays the value of the Leave Timer in milliseconds.
LeaveALL Timer	Displays the value of the LeaveAll Timer in milliseconds.
Periodic Timer	Displays the value of the Periodic Timer in seconds.

Release History

Release 6.6.5; command introduced.

Related Commands

mvrp timer join	Specifies the join time interval between transmit opportunities for the dynamically registering VLANs on the switch.
mvrp timer leave	Specifies the period of time that the switch has to wait in the Leave state before changing to the unregistered state.
mvrp timer leaveall	Specifies the frequency with which the LeaveAll messages are communicated.
mvrp timer periodic-timer	Specifies the MVRP periodic-timer time interval for the dynamically registering VLANs on the switch.
show mvrp port	Displays the MVRP configurations for all the ports, including timer values, registration and applicant modes.

MIB Objects

```
alaMvrpPortConfigTable  
  alaMvrpPortConfigJoinTimer  
  alaMvrpPortConfigLeaveTimer  
  alaMvrpPortConfigLeaveAllTimer  
  alaMvrpPortConfigPeriodicTimer
```

show mvrp statistics

Displays the MVRP statistics for all the ports, aggregates, or specific ports.

show mvrp {*port slot/port* [- *port2*] | **linkagg** *agg_num* [-*agg_num2*] } **statistics**

Syntax Definitions

<i>slot</i>	The slot number for the module.
<i>port</i>	The physical port number on the module.
<i>agg_num</i>	The number corresponding to the aggregate group.

Defaults

NA

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- If no port or link aggregate is specified the MVRP statistics are displayed for all ports.
- Use the *agg_num* or *slot/port* parameter with this command to display the MVRP statistics for a specific port.

Examples

```
-> show mvrp port 1/21 statistics
Port 1/21:
New Received           : 0,
Join In Received      : 1526,
Join Empty Received   : 8290,
Leave Received         : 0,
In Received           : 1,
Empty Received        : 0,
Leave All Received     : 283,
New Transmitted       : 826,
Join In Transmitted   : 1532,
Join Empty Transmitted : 39,
Leave Transmitted      : 0,
In Transmitted        : 0,
Empty Transmitted     : 296,
LeaveAll Transmitted   : 23,
Failed Registrations  : 0,
Total Mrp PDU Received : 1160,
Total Mrp PDU Transmitted : 957,
Total Mrp Msgs Received : 10100,
Total Mrp Msgs Transmitted : 2693,
Invalid Msgs Received : 0
```

```

-> show mvrp statistics
Port 1/1:
New Received           : 0,
Join In Received       : 1526,
Join Empty Received    : 8290,
Leave Received          : 0,
In Received            : 1,
Empty Received         : 0,
Leave All Received      : 283,
New Transmitted        : 826,
Join In Transmitted    : 1532,
Join Empty Transmitted : 39,
Leave Transmitted       : 0,
In Transmitted         : 0,
Empty Transmitted      : 296,
LeaveAll Transmitted    : 23,
Failed Registrations   : 0,
Total Mrp PDU Received : 1160,
Total Mrp PDU Transmitted : 957,
Total Mrp Msgs Received : 10100,
Total Mrp Msgs Transmitted : 2693,
Invalid Msgs Received  : 0

```

```

Port 1/2:
New Received           : 0,
Join In Received       : 1526,
Join Empty Received    : 8290,
Leave Received          : 0,
In Received            : 1,
Empty Received         : 0,
Leave All Received      : 283,
New Transmitted        : 826,
Join In Transmitted    : 1532,
Join Empty Transmitted : 39,
Leave Transmitted       : 0,
In Transmitted         : 0,
Empty Transmitted      : 296,
LeaveAll Transmitted    : 23,
Failed Registrations   : 0,
Total Mrp PDU Received : 1160,
Total Mrp PDU Transmitted : 957,
Total Mrp Msgs Received : 10100,
Total Mrp Msgs Transmitted : 2693,
Invalid Msgs Received  : 0

```

output definitions

New Received	The number of new MVRP messages received on the switch.
Join In Received	The number of MVRP Join In messages received on the switch
Join Empty Received	The number of MVRP Join Empty messages received on the switch.
Leave In Received	The number of MVRP Leave In messages received on the switch.
In Received	The total MVRP messages received on the switch.
Empty Received	The number of MVRP Empty messages received on the switch.
Leave All Received	The number of MVRP Leave All messages received on the switch.
New Transmitted	The number of new MVRP messages sent by the switch.

output definitions (continued)

Join In Transmitted	The number of MVRP Join In messages sent by the switch
Join Empty Transmitted	The number of MVRP Join Empty messages sent by the switch.
Leave Transmitted	The number of MVRP Leave messages sent by the switch.
In Transmitted	The number of MVRP In messages sent by the switch.
Empty Transmitted	The number of MVRP empty messages sent by the switch.
LeaveAll Transmitted	The number of Leave All messages sent by the switch.
Failed Registrations	The number of failed registrations.
Total Mrp PDU Received	The number of total MRP PDUs received by the switch.
Total Mrp Msgs Received	The number of total MRP messages received by the switch.
Total Mrp Msgs Transmitted	The number of total MRP messages sent by the switch.
Invalid Msgs Received	The number of invalid messages received by the switch.

Release History

Release 6.6.5; command introduced.

Related Commands

show mvrp configuration	Clears MVRP statistics for all the ports, an aggregate of ports, or a specific port.
show mvrp port	Displays the MVRP configurations for all the ports, including timer values, registration and applicant modes.
show mvrp linkagg	Displays the MVRP configuration for a specific port or an aggregate of ports.

MIB Objects

```

alaMvrpPortStatsTable
  alaMvrpPortStatsNewReceived,
  alaMvrpPortStatsJoinInReceived,
  alaMvrpPortStatsJoinEmptyReceived,
  alaMvrpPortStatsLeaveReceived,
  alaMvrpPortStatsInReceived,
  alaMvrpPortStatsEmptyReceived,
  alaMvrpPortStatsLeaveAllReceived,
  alaMvrpPortStatsNewTransmitted,
  alaMvrpPortStatsJoinInTransmitted,
  alaMvrpPortStatsJoinEmptyTransmitted,
  alaMvrpPortStatsLeaveTransmitted,
  alaMvrpPortStatsInTransmitted,
  alaMvrpPortStatsEmptyTransmitted,
  alaMvrpPortStatsLeaveAllTransmitted,
  alaMvrpPortStatsTotalPDURceived,
  alaMvrpPortStatsTotalPDUTransmitted,
  alaMvrpPortStatsTotalMsgsReceived,
  alaMvrpPortStatsTotalMsgsTransmitted,
  alaMvrpPortStatsInvalidMsgsReceived,
  alaMvrpPortFailedRegistrations

```

show mvrp last-pdu-origin

Displays the source MAC address of the last MVRP message received on specific ports or aggregates.

show mvrp {port slot/port [- port2] | linkagg agg_num [-agg_num2]} last-pdu-origin

Syntax Definitions

<i>slot</i>	The slot number for the module.
<i>port</i>	The physical port number on the module.
<i>agg_num</i>	The number corresponding to the aggregate group.

Defaults

NA

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

None

Examples

```
-> show mvrp port 1/1-3 last-pdu-origin
```

```
Port      Last PDU Origin
-----+-----
1/1       00:d0:95:ee:f4:64
1/2       00:d0:95:ee:f4:65
1/3       00:d0:95:ee:f4:66
```

```
->show mvrp port 1/21 last-pdu-origin
```

```
Port      Last PDU Origin
-----+-----
1/1       00:d0:95:ee:f4:64
```

output definitions

Port	Displays the slot/port number.
Last PDU origin	The source MAC address of the last PDU message received on the specific port.

Release History

Release 6.6.5; command introduced.

Related Commands

show mvrp linkagg

Displays the MVRP configuration for a specific port or an aggregate of ports.

show mvrp port

Displays the MVRP configurations for all the ports, including timer values, registration and applicant modes.

MIB Objects

alaMvrpPortStatsTable
alaMvrpPortLastPduOrigin

show vlan registration-mode

Displays the VLAN registration operational mode.

show vlan registration-mode

Syntax Definitions

NA

Defaults

NA

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

None

Examples

```
-> show vlan registration-mode
VLAN dynamic registration mode : mvrp
```

output definitions

VLAN dynamic registration mode	Displays the VLAN dynamic registration mode, mvrp or gvrp .
---------------------------------------	--

Release History

Release 6.6.5; command introduced.

Related Commands

vlan registration-mode Configures VLAN dynamic registration mode to either GVRP or MVRP and deletes all static configuration of previous mode along with the dynamic data.

MIB Objects

alaVlanDynamicRegistrationProtocolType

show mvrp vlan-restrictions

Displays the VLAN MVRP configuration on a specific port or an aggregate of ports.

show mvrp {port slot/port [- port2] | linkagg agg_num [-agg_num2]} vlan-restrictions

Syntax Definitions

agg_num The number corresponding to the aggregate group.

slot The slot number for the module.

port The physical port number on the module.

Defaults

NA

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

Use the *agg_num* or *slot/port* parameter with this command to display the MVRP statistics for a specific port.

Examples

```
-> show mvrp port 1/21 vlan-restrictions
```

VLAN Id	Static Registration	Restricted Registration	Restricted Applicant
1	LEARN	FALSE	FALSE
2	LEARN	FALSE	FALSE
3	LEARN	FALSE	FALSE
4	LEARN	FALSE	FALSE
5	LEARN	FALSE	FALSE
6	LEARN	FALSE	FALSE
7	LEARN	FALSE	FALSE
11	RESTRICT	FALSE	FALSE
12	RESTRICT	FALSE	FALSE
53	LEARN	TRUE	FALSE
55	LEARN	FALSE	TRUE

output definitions

VLAN ID	The VLAN identification number for a preconfigured VLAN that handles the MVRP traffic for this port.
Static Registration	Indicates if the port is restricted (RESTRICT) or not restricted (LEARN) from becoming a member of the static VLAN.
Restricted Registration	Indicates if the VLAN is restricted (TRUE) or not restricted (FALSE) from dynamic registration on the port.
Restricted Applicant	Indicates if the VLAN is restricted for advertisement from the port (TRUE) or not (FALSE).

Release History

Release 6.6.5; command introduced.

Related Commands

show mvrp port	Displays the MVRP configurations for all the ports, including timer values, registration and applicant modes.
show mvrp linkagg	Displays the MVRP configuration for a specific port or an aggregate of ports.

MIB Objects

```

alaMvrpPortConfigTable
  alaMvrpPortConfigRestrictedRegistrationBitmap
  alaMvrpPortConfigRestrictedApplicantBitmap
  alaMvrpPortConfigRegistrationToStaticVlan

```

show vlan mvrp

Displays the list of VLANs learned through MVRP and their details.

show vlan mvrp [vlan-id | vlan-range]

Syntax Definitions

vlan-id VLAN ID number you want to display.

vlan-range The VLAN ID range (For example, 1-10)

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

None

Examples

-> show vlan mvrp

```

                                stree    mble
vlan  type admin oper 1x1  flat  auth  ip  ipx  tag  name
-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----
5      mvrp  on   on   on   on   off   NA  off  off  MVRP1
6      mvrp  on   on   off  off  off   NA  off  off  MVRP12

```

output definitions

VLAN	The VLAN ID. Use the vlan command to create or remove VLANs.
Type	The type of VLAN (std , vstk , gvrp , mvrp , or ipmv)
Admin	VLAN administrative status: on enables VLAN functions to operate; off disables VLAN functions without deleting the VLAN. Use the vlan command to change the VLAN administrative status.
Oper	VLAN operational status: on (enabled) or off (disabled). The operational status remains disabled until an active port is assigned to the VLAN. When the operational status is enabled, then VLAN properties (For example, router interfaces, Spanning Tree) are applied to ports and traffic flow. A VLAN has to have an enabled administrative status before it can become operationally enabled.
stree 1x1	Specifies that the MVRP status for the VLAN applies when the switch is running in the 1x1 MVRP mode.
stree Flat	Specifies that the MVRP status for the VLAN applies when the switch is running in the flat MVRP mode.

output definitions (continued)

Auth	VLAN Authentication status: on (enabled) or off (disabled). Use the vlan authentication command to change the VLAN Authentication status.
IP	IP router interface status: on (IP interface exists for the VLAN) or off (no IP router interface exists for the VLAN). Use the ip interface command to define an IP router interface for a VLAN.
mble Tag	Mobile tagging status: on (enabled); off (disabled). Configured through the vlan mobile-tag command.
Name	The user-defined text description for the VLAN. By default, the VLAN ID is specified for the VLAN description.

Release History

Release 6.6.5; command introduced.

Related Commands

mvrp maximum vlan Configures the maximum number of dynamic VLANs that can be created by MVRP.

MIB Objects

```
vlanMgrVlan
vlanTable
  vlanNumber
  vlanDescription
  vlanAdmStatus
  vlanOperStatus
  vlanStatus
  vlanStpStatus
  vlanAuthentStatus
  vlanIpAddress
  vlanIpMask
  vlanIpEnacp
  vlanIpForward
  vlanIpStatus
  vlanTagMobilePortStatus
```

mvrp clear-statistics

Clears MVRP statistics for all the ports, an aggregate of ports, or a specific port.

mvrp [**port** *slot/port* [-*port2*] | **linkagg** *agg_num* [-*agg_num2*]] **clear-statistics**

Syntax Definitions

<i>slot</i>	The slot number for the module.
<i>port</i>	The physical port number on the module.
<i>agg_num</i>	The number corresponding to the aggregate group.

Defaults

If no ports are specified, the MVRP statistics are deleted for all the ports.

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

Use the *agg_num* or *slot/port* parameter with this command to clear MVRP statistics for a specific port.

Examples

```
-> mvrp clear-statistics
-> mvrp port 1/2 clear-statistics
-> mvrp linkagg 10 clear-statistics
```

Release History

Release 6.6.5; command introduced.

Related Commands

[show mvrp statistics](#) Displays the MVRP statistics for all the ports, aggregates, or specific ports.

MIB Objects

```
alaMvrpGlobalClearStats
  alaMvrpPortStatsTable
  alaMvrpPortStatsClearStats
```

28 VLAN Stacking Commands

The VLAN Stacking feature provides a method for tunneling multiple customer VLANs (CVLAN) through a service provider network using one or more service provider VLANs by way of 802.1Q double tagging or VLAN Translation. This feature enables service providers to provide their customers with Transparent LAN Services (TLS). This service is multipoint in nature so as to support multiple customer sites or networks distributed over the edges of a service provider network.

Additionally, standard VLAN support on NNI ports' allows any standard (non-service) VLAN to be associated to NNI ports of type untagged or 802.1q tagged. However, VLAN 1, cannot be associated as untagged member to a NNI port. 802.1q services, QinQ service and untagged services can be configured using the same uplink NNI port. This allows the customer to use an untagged management VLAN to manage the switch through NNI ports.

MIB information for the VLAN Stacking commands is as follows:

Filename: AlcatelIND1VlanStacking.MIB
Module: Alcatel-IND1-VLAN-STACKING-MIB

Filename: AlcatelIND1VlanManager.MIB
Module: Alcatel-IND1-VLAN-MGR-MIB

A summary of the available commands is listed here:

VLAN Stacking Service Mode	ethernet-service ethernet-service custom-L2-protocol ethernet-service source-learning ethernet-service service-name ethernet-service svlan nni ethernet-service nni ethernet-service sap ethernet-service sap uni ethernet-service sap cvlan ethernet-service sap-profile ethernet-service sap sap-profile ethernet-service uni-profile ethernet-service uni uni-profile ethernet-service uni-profile custom-L2-protocol ethernet-service mac-tunneling ethernet-service untagged-cvlan-insert ethernet-service sap uni untagged-cvlan show ethernet-service mode show ethernet-service vlan show ethernet-service show ethernet-service sap show ethernet-service port show ethernet-service nni show ethernet-service nni l2pt-statistics clear ethernet-service nni l2pt-statistics show ethernet-service uni show ethernet-service uni l2pt-statistics clear ethernet-service uni l2pt-statistics show ethernet-service uni-profile show ethernet-service sap-profile clear ethernet-service uni-profile l2pt-statistics show ethernet-service uni-profile l2pt-statistics show ethernet-service untagged-cvlan-insert
Ethernet Service Hardware Loopback Test	loopback-test show loopback-test
Ethernet Service MAC-Tunneling	ethernet-service mac-tunneling ethernet-service svlan mac-tunneling

ethernet-service

Creates a VLAN Stacking VLAN (SVLAN) for tunneling customer traffic, a management SVLAN for provider traffic, or an SVLAN that the IP Multicast VLAN (IPMV) application will use to distribute multicast traffic.

ethernet-service {svlan | ipmvlan | management-vlan} svid1[-svid2] [enable | disable] [[1x1 | flat] stp {enable | disable}] [name *description*]

no ethernet-service {svlan | ipmvlan | management-vlan} svid1[-svid2]

Syntax Definitions

svlan	Creates an SVLAN for tunneling customer traffic.
ipmvlan	Creates an SVLAN used by IPMV to distribute multicast traffic.
management-vlan	Creates a management SVLAN for provider traffic.
<i>svid1</i>	The VLAN ID number identifying the SVLAN (2–4094).
<i>-svid2</i>	The last VLAN ID number in a range of SVLANs that you want to configure (for example, 10-12 specifies VLANs 10, 11, and 12).
enable	Enables the SVLAN administrative status.
disable	Disables the SVLAN administrative status, which blocks all ports bound to that SVLAN.
1x1	Specifies that the Spanning Tree status for the SVLAN applies when the switch is running in the 1x1 Spanning Tree mode.
flat	Specifies that the Spanning Tree status for the SVLAN applies when the switch is running in the flat Spanning Tree mode.
stp enable	Enables the SVLAN Spanning Tree status for the service provider network topology.
stp disable	Disables the SVLAN Spanning Tree status for the service provider network topology.
<i>description</i>	An alphanumeric string of up to 32 characters. Use quotes around the string if the VLAN name contains multiple words with spaces between them (for example, "Alcatel-Lucent Engineering").

Defaults

By default, the Spanning Tree status is enabled in both the 1x1 and flat mode when the SVLAN or IPMV is created

parameter	default
enable disable	enable
stp enable disable	enable
<i>description</i>	VLAN ID number

Platforms Supported

OmniSwitch 6250, 6450

Usage Guidelines

- Use the **no** form of this command to delete an SVLAN or a range of SVLANs. Note that SVLAN port associations are also removed when the SVLAN is deleted.
- This command does not work if the *svlan* specified already exists as a standard VLAN.
- Configure (tagged with standard VLAN) as NNI, using the command **ethernet-service svlan nni**.
- Use the optional **1x1** or **flat** parameter with this command to configure the Spanning Tree status only for the Spanning Tree mode specified by the parameter. For example, if the **flat** parameter is specified when disabling STP for SVLAN 10, then the Spanning Tree status for SVLAN 10 is disabled when the switch is running in the flat mode. However, the current Spanning Tree status for SVLAN 10 in the 1x1 mode remains unchanged.
- If this command is used without specifying the **1x1** or **flat** parameter, then the Spanning Tree status for the specified SVLAN is changed for both operating modes.
- Note that the Spanning Tree status for an SVLAN only applies to the Spanning Tree topology calculations for the service provider network. This status is not applied to customer VLANs (CVLANs) and does not affect the customer network topology.
- If the default VLAN is removed from the NNI interface, then the default VLAN must be changed to 4095.
- It is not possible to configure VLAN 1 as default VLAN of an NNI interface.

Examples

```
-> ethernet-service svlan 1001 name "Customer ABC"  
-> ethernet-service ipmvlan 255  
-> ethernet-service management-vlan 355  
-> no ethernet-service svlan 1001  
-> no ethernet-service ipmvlan 255  
-> no ethernet-service management-vlan 355
```

Release History

Release 6.3.1; command was introduced.

Related Commands

- | | |
|---|---|
| show ethernet-service vlan | Displays a list of SVLANs configured for the switch |
| ethernet-service custom-L2-protocol | Configures the source learning status for an SVLAN. |

MIB Objects

```
vlanTable  
  vlanNumber  
  vlanDescription  
  vlanSvlanTrafficType
```



```
vlanAdmStatus  
vlan1x1StpStatus  
vlanFlatStpStatus  
vlanStpStatus  
vlanStatus
```

ethernet-service custom-L2-protocol

Creates a custom-L2-protocol entry MAC address and optional mask or ether-type with optional subtype.

ethernet-service custom-L2-protocol *name* **mac** *mac-address* [**mask** *mask* | **ether-type** *ether-type*
subtype *sub-type* | **ssap/dsap** *ssap/dsap* **pid** *pid*]

no ethernet-service custom-L2-protocol *name*

Syntax Definitions

<i>name</i>	An alphanumeric string of maximum length 32 to identify the custom-L2-protocol entry.
<i>mac-address</i>	MAC address associated to custom-L2-protocol entry in hexadecimal format.
<i>mask</i>	Mask of the MAC address to specify the range of MAC address in the custom-L2-protocol entry in hexadecimal format.
<i>ether-type</i>	An integer ether-type value to specify generic ether-type.
<i>sub-type</i>	An integer sub-type value to specify ether sub-type.
<i>ssap/dsap</i>	Source service access point and destination service access point specific to LLC/SNAP in numerical or hexadecimal format.
<i>pid</i>	Protocol identifier.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6450

Usage Guidelines

- Use the **no** form of this command to delete the configured custom-L2-protocol entry.
- You cannot delete a custom-L2-protocol entry when the entry is associated to UNI profile on a UNI port.
- You cannot configure ether-type and ether-sub-type when MAC address mask is specified.
- If ether-type is not specified, then ether-sub-type configuration is not allowed.
- The MAC address must be a multicast MAC address. For example, 01:80:c2:00:00:00.
- The mask can be specified to configure a range of MAC address. For example, a mask of ff:ff:ff:ff:ff:00 configures the range of MAC addresses in that range.

- If custom-L2-protocol is configured only with the MAC address and no mask, then:
 - The MAC address cannot be a reserved IPV4/IPV6 multicast MAC address.
 - The MAC address cannot be a MAC-specific control protocol address such as 01-80-C2-00-00-01 or 01-80-C2-00-00-04.
 - The MAC address cannot be a service OAM address such as from 01-80-C2-00-00-30 to 01-80-C2-00-00-3F.
 - The MAC address configured for another custom L2-protocol cannot be used.
- If custom L2-protocol is configured only with a MAC address and a mask, then:
 - The MAC address range cannot overlap with the reserved IPV4 or IPV6 multicast MAC address ranges.
 - The MAC address range must not overlap with the MAC address range configured for another custom L2-protocol. Only nested MAC address ranges are allowed.
- If custom-L2-protocol is configured with an ether-type, and optionally with a sub-type, then:
 - The ether-type/sub-type cannot be configured for another custom-L2-protocol.
 - The ether-type/sub-type cannot be a well known L2 protocol (0x8809/1,0x8809/2, 0x8809/3, 0x888E, 0x88CC, 0x88F5).
- The MAC address, mask, ether-type, sub-type, SSAP/DSAP, and PID cannot be modified once the custom L2-protocol is created. The custom L2-protocol must be deleted and recreated with the new values required.

Examples

```
-> ethernet-service custom-L2-protocol All_IEEE mac 01:80:c2:00:00:00 mask
ff:ff:ff:ff:ff:00

-> ethernet-service custom-L2-protocol ELMI mac 01:80:c2:00:00:07 ethertype 0x88EE

-> ethernet-service custom-L2-protocol p1 mac 01:80:c2:00:11:11

-> ethernet-service custom-L2-protocol p1 mac 01:80:c2:00:11:11 mask
ff:ff:ff:ff:ff:00

-> ethernet-service custom-L2-protocol p1 mac 01:80:c2:00:11:11 ethertype 3555

-> ethernet-service custom-L2-protocol p1 mac 01:80:c2:00:11:11 ethertype 3556
subtype 120

-> ethernet-service custom-L2-protocol p1 mac 01:80:c2:00:11:11 ssap/dsap 43/43
pid 3

-> no ethernet-service custom-L2-protocol p1
```

Release History

Release 6.4.5; command introduced.

Related Commands

show ethernet-service sap

Displays configuration information of the specific custom-L2-protocol entry, if specified, or displays information of all the configured custom-L2-protocol entries in the system.

MIB Objects

```
alaEServiceL2CustomProtocolTable  
  AlaEServiceL2CustomProtocolEntry  
  alaEServiceL2CustomProtocolID  
  alaEServiceL2CustomProtocolMask  
  alaEServiceL2CustomProtocolEtherType  
  alaEServiceL2CustomProtocolEtherSubType  
  alaEServiceL2CustomProtocolSsap  
  alaEServiceL2CustomProtocolDsap  
  alaEServiceL2CustomProtocolPid  
  alaEServiceL2CustomProtocolRowStatus
```

ethernet-service source-learning

Configures the status of source learning on a VLAN Stacking VLAN (SVLAN) used for tunneling customer traffic or on an SVLAN that the IP Multicast VLAN (IPMV) application uses to distribute multicast network traffic.

ethernet-service {svlan | ipmvlan} svid1[-svid2] source-learning {enable| disable}

Syntax Definitions

svlan	Specifies an SVLAN for tunneling customer traffic.
ipmvlan	Specifies an SVLAN used by IP Multicast VLAN to distribute multicast traffic.
<i>svid1</i>	The VLAN ID number identifying the SVLAN (2–4094).
<i>-svid2</i>	The last VLAN ID number in a range of SVLANs that you want to configure (for example, 10-12 specifies SVLANs 10, 11, and 12).
enable	Enables source MAC address learning.
disable	Disables source MAC address learning.

Defaults

parameter	default
enable disable	enable

Platforms Supported

OmniSwitch 6250, 6450

Usage Guidelines

- By default, source MAC address learning is enabled on all the SVLANs.
- Disabling source learning on an SVLAN clears all the dynamically learned MAC addresses associated with the VLAN from the MAC address table.
- Static MAC addresses associated with an SVLAN are *not* cleared when source learning is disabled for the SVLAN.
- Configuring the source learning status is not supported on Management SVLANs.

Examples

```
-> ethernet-service svlan 120-150 source-learning disable
-> ethernet-service ipmvlan 320-350 source-learning disable
```

Release History

Release 6.4.2; command introduced.

Related Commands

- ethernet-service** Creates a VLAN Stacking VLAN (SVLAN).
show ethernet-service vlan Displays a list of SVLANs configured for the switch.

MIB Objects

```
vlanTable  
  vlanEntry  
  vlanNumber  
  vlanStatus  
  vlanMacLearningControlStatus
```

ethernet-service service-name

Creates a VLAN Stacking service and associates the service with an SVLAN or an IP Multicast VLAN (IPMV). The SVLAN or IPMV specified is the VLAN that will transport traffic for the service.

ethernet-service service-name *service-name* {svlan | ipmvlan} *svid*

no ethernet-service service-name *service-name* {svlan | ipmvlan} *svid*

Syntax Definitions

<i>service-name</i>	The name of the VLAN Stacking service; an alphanumeric string of up to 32 characters. Use quotes around string if the VLAN name contains multiple words with spaces between them (for example, "Alcatel-Lucent Engineering").
<i>svid</i>	The VLAN ID number that identifies an existing SVLAN or IPMV to associate with the VLAN Stacking service (2–4094).

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6450

Usage Guidelines

- Use the **no** form of this command to remove a VLAN Stacking service. Note that when a service is removed, the SVLAN or IPMV association with that service is also removed.
- If the VLAN Stacking service is associated with a Service Access Point (SAP) remove the SAP associations before attempting to remove the service.
- Each VLAN Stacking service is associated with one SVLAN or IPMV. Specifying an additional VLAN ID for an existing service is not allowed.

Examples

```
-> ethernet-service service-name Marketing svlan 10
-> ethernet-service service-name Finance ipmvlan 20
-> no ethernet-service service-name Marketing
```

Release History

Release 6.3.1; command was introduced.

Related Commands

ethernet-service

Creates an SVLAN for customer traffic, a management VLAN for provider traffic, or an IPMV for multicast traffic.

MIB Objects

```
alaEServiceTable  
  alaEServiceID  
  alaEServiceSVLAN  
  alaEServiceVlanType  
  alaEServiceRowStatus
```

ethernet-service svlan nni

Configures the switch port as a VLAN Stacking Network Network Interface (NNI) port and associates the port with a customer SVLAN or management SVLAN. A network port connects to another provider bridge and carries both customer and provider traffic.

ethernet-service svlan *svid1*[-*svid2*] **nni** {*slot/port1*[-*port2*] / **linkagg** *agg_num*} [**stp** | **erp**]

no ethernet-service svlan *svid1*[-*svid2*] **nni** {*slot/port1*[-*port2*] / **linkagg** *agg_num*}

Syntax Definitions

<i>svid1</i>	The VLAN ID number identifying the SVLAN (2–4094).
- <i>svid2</i>	The last VLAN ID number in a range of SVLANs that you want to specify (for example, 10-12 specifies VLANs 10, 11, and 12).
<i>slot/port1</i>	The slot number for the module and the physical port number on that module (for example, 3/1 specifies port 1 on slot 3).
- <i>port2</i>	The last port number in a range of ports that you want to configure on the same slot (for example, 3/1-4 specifies ports 1, 2, 3, and 4 on slot 3).
<i>agg_num</i>	The link aggregate ID number (0–31).
stp	Specifies Spanning Tree control for the SVLAN-NNI association.
erp	Specifies Ethernet Ring Protection (ERP) control for the SVLAN-NNI association.

Defaults

parameter	default
stp erp	stp

Platforms Supported

OmniSwitch 6250, 6450

Usage Guidelines

- Use the **no** form of this command to remove an association between an NNI port and an SVLAN. Note that when the last SVLAN association is removed, the NNI port reverts to a conventional switch port.
- This SVLAN ID specified with this command must exist in the switch configuration. Only SVLAN IDs are accepted; IPMVLAN IDs are not supported with this command.
- When this command is used, the default VLAN for the NNI port is changed to a VLAN reserved by the switch for applications such as VLAN Stacking. The reserved VLAN is not configurable using standard VLAN management commands.
- Associating a network port to an SVLAN is required.
- Some restrictions on NNI interface are:
 - NNI interface cannot be a mobile port.

- NNI interface cannot be an aggregable port.
- NNI interface cannot be a destination mirroring port.

Examples

```
-> ethernet-service svlan 10 nni 1/3
-> ethernet-service svlan 255 nni 2/10-15
-> ethernet-service svlan 500 nni linkagg 31
-> no ethernet-service svlan 10 nni 1/3
-> no ethernet-service svlan 255 nni 2/12
```

Release History

Release 6.3.1; command was introduced.

Release 6.3.4; **stp** and **erp** parameters added.

Related Commands

[ethernet-service](#)

Creates an SVLAN for customer traffic, a management VLAN for provider traffic, or an IPMV for multicast traffic.

[ethernet-service nni](#)

Configures the vendor TPID value, the legacy BPDU processing status, and the transparent bridging status for a VLAN Stacking Network Network Interface (NNI).

MIB Objects

```
alaEServiceNniSvlanTable
  alaEServiceNniSvlanNni
  alaEServiceNniSvlanSvlan
  alaEServiceNniSvlanRowStatus
```

ethernet-service nni

Configures the vendor TPID value, the legacy BPDU processing status, and the transparent bridging status for a VLAN Stacking Network Network Interface (NNI).

ethernet-service nni *{slot/port1[-port2] / agg_num}* [**tpid** *value*] [{**stp** | **gvrp** | **mvrp**} **legacy-bpdu** {**enable** | **disable**}] [**transparent-bridging** {**enable** | **disable**}]

Syntax Definitions

<i>slot/port1</i>	The slot number for the module and the physical port number on that module (for example, 3/1 specifies port 1 on slot 3).
<i>-port2</i>	The last port number in a range of ports that you want to configure on the same slot (for example, 3/1-4 specifies ports 1, 2, 3, and 4 on slot 3).
<i>agg_num</i>	The link aggregate ID number (0–31).
<i>value</i>	Specifies the TPID value of the port.
stp	Specifies Spanning Tree legacy BPDU support.
gvrp	Specifies GVRP legacy BPDU support.
mvrp	Specifies MVRP legacy BPDU support.
legacy-bpdu enable	Enables the specified legacy BPDU support.
legacy-bpdu disable	Disables the specified legacy BPDU support.
transparent-bridging enable	Enables transparent bridging.
transparent-bridging disable	Disables transparent bridging.

Defaults

parameter	default
<i>value</i>	0x8100
stp legacy-bpdu enable disable	disable
gvrp legacy-bpdu enable disable	disable
mvrp legacy-bpdu enable disable	disable
transparent-bridging enable disable	disable

Platforms Supported

OmniSwitch 6250, 6450

Usage Guidelines

- This command only applies to ports configured as VLAN Stacking NNI ports.
- Enable legacy BPDU support only on VLAN Stacking network ports that are connected to legacy BPDU switches. Enabling legacy BPDU between AOS switches may cause flooding or an unstable network.

- If legacy BPDU is enabled on a network port while at same time BPDU flooding is enabled on user ports, make sure that tagged customer BPDUs are not interpreted by intermediate switches in the provider network.
- Note that if the peer switch connected to the VLAN Stacking network port supports the Provider MAC address (that is, STP, 802.1ad/D6.0 MAC), then enabling legacy BPDU support is not required on the network port. Refer to the following table to determine the type of STP, GVRP, or MVRP MAC used:

STP

Customer MAC address	{0x01, 0x80, 0xc2, 0x00, 0x00, 0x00}
Provider MAC address (802.1ad/D6.0)	{0x01, 0x80, 0xc2, 0x00, 0x00, 0x08}
Provider MAC address (Legacy MAC)	{0x01, 0x80, 0xc2, 0x00, 0x00, 0x00}

GVRP

Customer MAC address	{0x01, 0x80, 0xc2, 0x00, 0x00, 0x21}
Provider MAC address	{0x01, 0x80, 0xc2, 0x00, 0x00, 0x0D}

MVRP

Customer MAC address	(0x01, 0x80, 0xc2, 0x00, 0x00, 0x21)
Provider MAC address	(0x01, 0x80, 0xc2, 0x00, 0x00, 0x0D)

- GVRP legacy BPDU are supported only on network ports that already have GVRP enabled for the port.
- MVRP legacy BPDU are supported only on network ports that already have MVRP enabled for the port.
- STP legacy BPDU and transparent bridging are supported only when the flat Spanning Tree mode is active on the switch.
- When transparent bridging is enabled, the NNI forwards SVLAN traffic without processing packet contents. As a result, the NNI port can also forward traffic for SVLANs that are not configured on the local switch, thus allowing for a greater number of NNI port associations with SVLANs.
- Note that enabling transparent bridging is recommended only on NNI ports that are known to and controlled by the network administrator.
- If the Spanning Tree operating mode for the switch is changed from flat mode to 1x1 mode, transparent bridging is automatically disabled on all NNI ports.
- An error message is displayed, if the user tries to configure TPID, other than 0x8100, on 802.1Q tagged NNI interface.

Examples

```
-> ethernet-service nni 2/10-15 tpid 88a8
-> ethernet-service nni 31 stp legacy-bpdu enable
-> ethernet-service nni 10 gvrp legacy-bpdu enable
-> ethernet-service nni 7/1 mvrp legacy-bpdu enable
-> ethernet-service nni 1/10 transparent bridging enable
```

Release History

Release 6.3.1; command was introduced.

Release 6.3.4; **transparent-bridging** parameter added.

Release 6.4.3; **mvrp** parameter added.

Related Commands

ethernet-service svlan nni Configures the switch port as a VLAN Stacking NNI port and associates the port with a customer SVLAN, management SVLAN, or an IP Multicast VLAN (IPMV).

show ethernet-service nni Displays configuration information for NNI ports.

MIB Objects

alaEServicePortTable

 alaEServicePortID

 alaEServicePortType

 alaEServicePortVendorTpid

 alaEServicePortLegacyStpBpdu

 alaEServicePortLegacyGvrpBpdu

 alaEServicePortLegacyMvrpBpdu

 alaEServicePortRowStatus

ethernet-service sap

Creates a VLAN Stacking Service Access Point (SAP) and associates the SAP with a VLAN Stacking service.

ethernet-service sap *sapid* **service-name** *service-name*

no ethernet-service sap *sapid*

Syntax Definitions

<i>sapid</i>	The SAP ID number identifying the service instance (1-1024).
<i>service-name</i>	The name of the service to associate with this SAP.

Defaults

The “default-sap-profile” profile is automatically associated with the SAP ID when the SAP is created.

Platforms Supported

OmniSwitch 6250, 6450

Usage Guidelines

- Use the **no** form of this command to delete a VLAN Stacking SAP. When a SAP is deleted, all port and CVLAN associations with the SAP are also deleted.
- The service name specified with this command must exist in the switch configuration. Use the **ethernet-service service-name** command to create a service to associate with the SAP.
- Each SAP ID is associated with only one service. However, it is possible to associate one service with multiple SAP IDs.

Examples

```
-> ethernet-service sap 10 service-name CustomerA  
-> no ethernet-service sap 11
```

Release History

Release 6.3.1; command was introduced.

Related Commands

ethernet-service service-name Creates a VLAN Stacking service and associates the service with an SVLAN or an IP Multicast VLAN (IPMV).

ethernet-service sap-profile Creates a VLAN Stacking SAP profile.

ethernet-service sap sap-profile Associates a SAP profile with a SAP ID.

MIB Objects

```
alaEServiceSapTable  
  alaEServiceSapID  
  alaEServiceSapService  
  alaEServiceSapRowStatus
```

ethernet-service sap uni

Configures the switch port as a VLAN Stacking User Network Interface (UNI) and associates the port with a VLAN Stacking Service Access Point (SAP). A UNI port is a customer facing port on which traffic enters the SAP.

```
ethernet-service sap sapid uni {slot/port1[-port2] / linkagg agg_num}
```

```
ethernet-service sap sapid no uni {slot/port1[-port2] / linkagg agg_num}
```

Syntax Definitions

<i>sapid</i>	The SAP ID number identifying the service instance (1–1024).
<i>slot/port1</i>	The slot number for the module and the physical port number on that module (for example., 3/1 specifies port 1 on slot 3).
<i>-port2</i>	The last port number in a range of ports that you want to configure on the same slot (for example, 3/1-4 specifies ports 1, 2, 3, and 4 on slot 3).
<i>agg_num</i>	The link aggregate ID number (0–31).

Defaults

A switch port or a link aggregate becomes a VLAN Stacking UNI port by default when the port or link aggregate is associated with a VLAN Stacking SAP.

Platforms Supported

OmniSwitch 6250, 6450

Usage Guidelines

- Use the **no** form of this command to remove an association between a UNI port and a SAP. Note that when the last SAP association is removed, the UNI port converts back to a conventional switch port.
- The SAP ID specified with this command must exist. Use the **ethernet-service sap** command to create a SAP.
- Note that if the SAP ID specified with this command is associated with an IPMVLAN, the SAP profile must specify CVLAN translation. In addition, multicast traffic is not associated with the IPMVLAN until the UNI port is associated with the IPMVLAN as a receiver port. For more information, see the “IP Multicast VLAN Commands” chapter in this guide.
- When this command is used, the default VLAN for the UNI port is changed to a reserved VLAN and all customer traffic received is dropped until the type of traffic for the port is configured using the **ethernet-service sap cvlan** command.

Examples

```
-> ethernet-service sap 10 uni 1/3
-> ethernet-service sap 10 uni 2/10-15
-> ethernet-service sap 10 uni linkagg 31
-> ethernet-service sap 10 no uni 1/3
-> ethernet-service sap 10 no uni linkagg 31
```


Release History

Release 6.3.1; command was introduced.

Related Commands

- ethernet-service sap** Creates a VLAN Stacking SAP and associates the SAP with a VLAN Stacking SAP profile and service.
- ethernet-service sap sap-profile** Creates a UNI profile that is used to specify how to process control packets ingressing on UNI ports.
- ethernet-service uni uni-profile** Associates a VLAN Stacking UNI profile with a UNI port.

MIB Objects

```
alaEServiceSapUniTable  
  alaEServiceSapUniSap  
  alaEServiceSapUniUni  
  alaEServiceSapUniRowStatus
```

ethernet-service sap cvlan

Associates customer VLAN (CVLAN) traffic with a VLAN Stacking Service Access Point (SAP). The parameter values configured with this command are applied to frames received on all SAP UNI ports and determines the type of customer traffic that is accepted on the UNI ports and processed by the service.

ethernet-service sap *sapid* cvlan {all / *cvid* | *cvid1-cvid2* / **untagged}**

ethernet-service sap *sapid* no cvlan {all / *cvid* | *cvid1-cvid2* / **untagged}**

Syntax Definitions

<i>sapid</i>	The SAP ID number (1–1024).
all	Applies the SAP profile to tagged and untagged frames.
<i>cvid1</i>	Applies the SAP profile to frames tagged with this CVLAN ID.
<i>cvid1-cvid2</i>	Applies the SAP profile to frames tagged with a CVLAN ID that falls within this range of CVLAN IDs (for example, 10-12 specifies frames tagged with CVLAN 10, 11, or 12).
untagged	Applies the SAP profile only to untagged frames.

Defaults

By default, no CVLAN traffic is associated with the SAP ID when the SAP is created.

Platforms Supported

OmniSwitch 6250, 6450

Usage Guidelines

- Use the **no** form of this command to remove a CVLAN ID or the designation for **all** or **untagged** frames from the SAP. Note that when the last CVLAN parameter is deleted from an SAP configuration, the SAP itself is not automatically deleted.
- The **all** and **untagged** parameters are configurable in combination with a CVLAN ID. For example, if **untagged** and a CVLAN ID are associated with the same SAP ID, then the SAP profile is applied to only untagged traffic *and* traffic tagged with the specified CVLAN ID. All other traffic is dropped.
- The SAP ID specified with this command must exist. Use the **ethernet-service sap** command to create a SAP.
- Note that this command is not supported with SAP IDs that are associated with an IPMVLAN.
- Configuring both the **all** and **untagged** parameter for the same SAP is not allowed. Specify only one of these two parameters per SAP.
- When either the **all** or **untagged** parameter is configured for the SAP, the default VLAN for the UNI ports associated with the SAP is changed to the VLAN assigned to the service that is associated with the SAP.
- Only one SAP with the **all** or **untagged** option per UNI is allowed. For example, if UNI port 1/17 is part of SAP 10 and SAP 20 and SAP 10 is configured for **all** traffic, then only **untagged** or a CVLAN ID is allowed for SAP 20.

Examples

```
-> ethernet-service sap 10 cvlan 200
-> ethernet-service sap 10 cvlan all
-> ethernet-service sap 11 cvlan 100-150
-> ethernet-service sap 11 cvlan untagged
-> ethernet-service sap 10 no cvlan 200
-> ethernet-service sap 10 no cvlan 100-150
```

Release History

Release 6.3.1; command was introduced.

Related Commands

[ethernet-service sap](#) Creates a VLAN Stacking Service Access Point (SAP) and associates the SAP with a VLAN Stacking service.

MIB Objects

```
alaEServiceSapCvlanTable
  alaEServiceSapUniSap
  alaEServiceSapUniUni
  alaEServiceSapUniRowStatus
```

ethernet-service sap-profile

Creates a profile for a VLAN Stacking Service Access Point (SAP). Profile attributes are used to define traffic engineering policies that are applied to traffic serviced by the SAP.

ethernet-service sap-profile *sap-profile-name*

[bandwidth not-assigned]

[egress-bandwidth *mbps*]

[{shared | not-shared} ingress-bandwidth *mbps*]

[cvlan-tag {preserve | translate}]

[priority [not-assigned | map-inner-to-outer-p | map-dscp-to-outer-p | fixed *value*]]

no ethernet-service sap-profile *sap-profile-name*

Syntax Definitions

<i>sap-profile-name</i>	Alphanumeric string of up to 32 characters. Use quotes around string if the profile name contains multiple words with spaces between them (for example, "Alcatel-Lucent Engineering").
bandwidth not-assigned	Specifies that the profile will not allocate switch resources to enforce bandwidth requirements. Applies only when the profile specifies the default ingress bandwidth value (zero).
egress-bandwidth <i>mbps</i>	The maximum amount of egress bandwidth, in megabits per second, to be allowed for SAP ports (0-9999).
shared	Shares the ingress bandwidth limit across all SAP ports and CVLANs.
not shared	Applies the ingress bandwidth limit to individual SAP ports and CVLANs; bandwidth is not shared.
ingress-bandwidth <i>mbps</i>	The maximum amount of ingress bandwidth, in megabits per second, to be allowed for SAP ports.
cvlan-tag preserve	Retains the customer VLAN ID (inner tag) and double tags the frame with the SVLAN ID (outer tag).
cvlan-tag translate	Replaces the customer VLAN ID with the SVLAN ID.
priority not-assigned	Specifies that the SAP profile will not allocate switch resources to enforce the priority mapping. Applies only when the profile specifies the default priority value (fixed).
priority map-inner-to-outer-p	Maps the customer VLAN (inner tag) priority bit value to the SVLAN (outer tag) priority bit value.
priority map-dscp-to-outer-p	Maps the customer VLAN (inner tag) DSCP value to the SVLAN (outer tag) priority bit value.
priority fixed <i>value</i>	Sets the SVLAN (outer tag) priority bit to the specified value. Values range from 0 (lowest priority) to 7 (highest priority).

Defaults

parameter	default
shared not shared	shared
<i>mbps</i>	0
preserve translate	preserve
not-assigned map-inner-to-outer-p map-dscp-to-outer-p fixed <i>value</i>	fixed 0

Platforms Supported

OmniSwitch 6250, 6450

Usage Guidelines

- Use the **no** form of this command to delete a SAP profile.
- If a profile is not specified when a SAP is created, a default profile (default-sap-profile) is automatically associated with the SAP.
- Use the **ethernet-service sap sap-profile** command to associate a profile to a VLAN Stacking SAP.
- Only one SAP profile name is associated with each SAP ID; however, it is possible to associate the same SAP profile name to multiple SAP IDs.
- By default, the **bandwidth not-assigned** and **priority not-assigned** parameters are not specified when a profile is created. This means that even if no bandwidth value is specified or the priority is set to fixed (the default), QoS still allocates switch resources to enforce bandwidth and priority settings for the profile. In addition, QoS policy rules cannot override the profile bandwidth or priority settings.
- Use the **bandwidth not-assigned** and **priority not-assigned** parameters to prevent the profile from triggering QoS allocation of switch resources. When a profile is created using these parameters, QoS policy rules/ACLs are then available to define more custom bandwidth and priority settings for profile traffic. For example, mapping several inner DSCP/ToS values to the same outer 802.1p value.
- Egress bandwidth can be configured only for SVLANs and not for IPMVLANs.
- A CVLAN-UNI combination associated with a SAP having egress bandwidth configuration is unique and it cannot be configured on any other SAP with egress bandwidth configuration.

Examples

```
-> ethernet-service sap-profile video1 egress-bandwidth 1000
-> ethernet-service sap-profile video1 ingress-bandwidth 10 cvlan translate
map-inner-to-outer-p
-> ethernet-service sap-profile voice1 not-shared ingress-bandwidth 10 cvlan
preserve fixed 1
-> ethernet-service sap-profile "QoS Mapping" bandwidth not-assigned priority
not-assigned
-> no ethernet-service sap-profile video1
```

Release History

Release 6.3.1; command was introduced.

Release 6.3.4; **bandwidth not-assigned** parameter added.

Release 6.4.2; **egress-bandwidth** parameter added.

Release 6.4.3; **priority not-assigned** parameter added.

Related Commands

ethernet-service sap Creates a VLAN Stacking SAP and associates the SAP with a service.

ethernet-service sap sap-profile Associates a SAP profile with a SAP ID.

MIB Objects

```
alaEServiceSapProfileTable
  alaEServiceSapProfileID
  alaEServiceSapProfileCVLANTreatment
  alaEServiceSapProfilePriorityMapMode
  alaEServiceSapProfileFixedPriority
  alaEServiceSapProfileIngressBW
  alaEServiceSapProfileEgressBW
  alaEServiceSapProfileBandwidthShare
  alaEServiceSapRowStatus
```

ethernet-service sap sap-profile

Associates a VLAN Stacking Service Access Point (SAP) with a SAP profile. This command is also used to change an existing SAP profile association.

ethernet-service sap *sapid* **sap-profile** *sap-profile-name*

Syntax Definitions

<i>sapid</i>	The SAP ID number (1–1024).
<i>sap-profile-name</i>	The name of the SAP profile to associate with this SAP ID.

Defaults

The “default-sap-profile” profile is automatically associated with the SAP ID when the SAP is created.

Platforms Supported

OmniSwitch 6250, 6450

Usage Guidelines

- If a profile association exists for the specified SAP ID, the current profile is replaced with the profile specified with this command.
- The SAP ID specified with this command must exist. Use the **ethernet-service sap** command to create a SAP.
- The SAP profile specified with this command must exist. Use the **ethernet-service sap-profile** command to create a SAP profile.
- To change the profile associated with the SAP back to the default profile, enter “default-sap-profile” with this command.
- Note that if the SAP ID specified with this command is associated with an IPMVLAN, the profile associated with the SAP ID must specify CVLAN tag translation. Double tagging is not supported with IPMVLAN SAPs that are also associated with a UNI port.
- Do not specify a service name; doing so will return an error message. This command is only for associating an existing profile to a VLAN Stacking SAP.

Examples

```
-> ethernet-service sap 10 sap-profile CustomerC  
-> ethernet-service sap 11 sap-profile CustomerD
```

Release History

Release 6.3.1; command was introduced.

Related Commands

- ethernet-service sap** Creates a VLAN Stacking SAP and associates the SAP with a VLAN Stacking SAP profile and service.
- ethernet-service sap-profile** Creates a VLAN Stacking SAP profile.

MIB Objects

alaEServiceSapTable
 alaEServiceSapID
 alaEServiceSapProfile
 alaEServiceSapRowStatus

ethernet-service uni-profile

Creates a User Network Interface (UNI) profile that is used to specify how to process control packets ingressing on UNI ports.

ethernet-service uni-profile *uni-profile-name* [**tunnel-mac** *mac-address*] [**I2-protocol** {**vtp** | **vlan** | **uplink** | **udld** | **stp** | **pvst** | **pagp** | **oam** | **mvrp** | **lacpmarker** | **gvrp** | **dtp** | **cdp** | **amap** | **802.3ad** | **802.1x** | **802.1ab** {**peer** | **discard** | **tunnel** | **mac-tunnel**}}

no ethernet-service uni-profile *uni-profile-name*

Syntax Definitions

<i>uni-profile-name</i>	Alphanumeric string of up to 32 characters. Use quotes around string if the profile name contains multiple words with spaces between them (for example, "Alcatel-Lucent Engineering").
<i>mac-address</i>	The mac address to be used when configuring a protocol for tunnel-mac.
vtp	Cisco's VTP Protocol.
vlan	Cisco's VLAN Protocol.
uplink	Cisco's Uplink Fast Protocol
udld	Cisco's UDLD Protocol.
stp	Spanning Tree BPDU.
pvst	Cisco's PVST Protocol.
pagp	Cisco's PAGP Protocol.
oam	OAM Protocol.
mvrp	MVRP Protocol.
lacpmarker	LACP Marker Protocol.
gvrp	Specifies how GARP VLAN Registration Protocol packets will be processed on the UNI port.
dtp	Cisco's DTP Protocol.
cdp	Cisco's DTP Protocol.
amap	Specifies how Alcatel Management Adjacency Protocol packets will be processed on the UNI port.
802.3ad	Specifies how 802.3ad and 802.3ah control frames will be processed on the UNI port.
802.1x	Specifies how 802.1x control frames will be processed on the UNI port.
802.1ab	Specifies how 802.1ab control frames will be processed on the UNI port.
peer	Allows the UNI port to participate in the specified protocol.
discard	Discards the specified PDU.
tunnel	Tunnels the specified PDU across the provider network without modifying the MAC address.
mac-tunnel	Changes the destination MAC address to either the configured or default tunnel MAC address before forwarding.

Defaults

parameter	default	Protocol DA MAC Address	Default Tunnel MAC	Other	Other
stp	tunnel	0180c2000000	0100ccdcdd0	-	
gvrp	tunnel	0180c2000021	0100ccdcdd0	-	
802.3ad	peer	0180c2000002	0100ccdcdd0	-	
802.1x	discard	-	-	-	
802.1ab	discard	0180c200000e	0100ccdcdd0	-	
amap	discard	0020da007004	0100ccdcdd0	-	
vtp	discard	0100ccccccc	0100ccdcdd0	-	-
vlan	discard	0100ccdcddce	0100ccdcdd0	-	-
uplink	discard	0100ccdcddcd	0100ccdcdd0	-	-
udld	discard	0100ccccccc	0100ccdcdd0	-	-
pvst	discard	0100ccccccd	0100ccdcdd0	-	-
pagp	discard	0100ccccccc	0100ccdcdd0	-	
oam	peer	0180c2000002	0100ccdcdd0	-	
mvrp	tunnel	-	0100ccdcdd0	-	
lacpmarker	peer	0180c2000002	0100ccdcdd0	-	
dtp	discard	0100ccccccc	0100ccdcdd0	-	-
cdp	discard	0100ccccccc	0100ccdcdd0	-	

Platforms Supported

OmniSwitch 6250, 6450

Usage Guidelines

- Use the **no** form of this command to delete a UNI profile.
- Remove any UNI profile associations with UNI ports before attempting to modify or delete the profile.
- If a protocol is configured with the **mac-tunnel** parameter and no mac address has been configured, the default Tunnel MAC address from the table above is used.
- Not all of the protocol parameters are currently supported with the **peer**, **tunnel**, and **discard** parameters. Use the following table to determine the parameter combinations that are supported:

	peer	discard	tunnel
stp	no	yes	yes
802.1x	no	yes	yes
802.1ab	yes	yes	yes
802.3ad	yes	yes	yes

	peer	discard	tunnel
gvrp	no	yes	yes
amap	yes	yes	yes
vtp	no	yes	yes
vlan	no	yes	yes
uplink	no	yes	yes
udld	yes	yes	yes
pvst	no	yes	yes
pagp	no	yes	yes
oam	yes	yes	yes
mvrp	no	yes	yes
lacpmarker	yes	yes	yes
dtp	no	yes	yes
cdp	no	yes	yes

- 802.3ad and 802.3ah control frames are processed the same. The **802.3ad** parameter specifies how both 802.3ad and 802.3ah control frames are to be processed on the UNI port.
- VLAN Stacking provider edge (PE) switch will not tunnel GVRP frames unless the GVRP feature and/or GVRP transparent switching functionality is enabled on the PE switch. This is true even if GVRP processing is enabled for the VLAN Stacking port.
- If a user-configured UNI profile is *not* associated with a UNI port, then the default profile (default-uni-profile) is used to process control packets ingressing on the port.

Examples

```
-> ethernet-service uni-profile uni_1 l2-protocol stp gvrp discard
-> ethernet-service uni-profile uni_1 l2-protocol vrp mac-tunnel
-> ethernet-service uni-profile uni_config_tunnel_mac tunnel-mac 00:00:00:00:00:99
-> ethernet-service uni-profile uni_config_tunnel_mac l2-protocol gvrp mac-tunnel
-> no ethernet-service uni-profile uni_1
```

Release History

Release 6.3.1; command was introduced.

Release 6.4.3; **tunnel-mac** and **mac-tunnel** parameters were added.

Related Commands

- ethernet-service uni uni-profile** Associates a VLAN Stacking UNI profile with a UNI port.
- ethernet-service sap uni** Configures the switch port as a VLAN Stacking UNI and associates the port with a VLAN Stacking Service Access Point (SAP).
- show ethernet-service nni l2pt-statistics** Displays the profile associations for VLAN Stacking UNI ports.
- show ethernet-service uni l2pt-statistics** Displays the profile attribute configuration for VLAN Stacking UNI profiles.

MIB Objects

```
alaEServiceUNIProfileTable
  alaEServiceUNIProfileID
  alaEServiceUNIProfileStpBpduTreatment
  alaEServiceUNIProfile8021xTreatment
  alaEServiceUNIProfile8021ABTreatment
  alaEServiceUNIProfile8023adTreatment
  alaEServiceUNIProfileGvrpTreatment
  alaEServiceUNIProfileAmapTreatment
  alaEServiceUNIProfileLacpTreatment
  alaEServiceUNIProfileLacpMarkerTreatment
  alaEServiceUNIProfileOamTreatment
  alaEServiceUNIProfileCiscoPagpTreatment
  alaEServiceUNIProfileCiscoUldTreatment
  alaEServiceUNIProfileCiscoCdpTreatment
  alaEServiceUNIProfileCiscoVtpTreatment
  alaEServiceUNIProfileCiscoDtpTreatment
  alaEServiceUNIProfileCiscoPvstTreatment
  alaEServiceUNIProfileCiscoVlanTreatment
  alaEServiceUNIProfileCiscoUplinkTreatment
alaEServiceUNIProfileProtocolTreatment
  alaEServiceUNIProfileTunnelMac
  alaEServiceUNIProfileRowStatus
```

ethernet-service uni uni-profile

Associates a VLAN Stacking User Network Interface (UNI) profile with a UNI port.

ethernet-service uni {*slot/port1*[-*port2*] / *agg_num*} **uni-profile** *uni-profile-name*

Syntax Definitions

<i>slot/port1</i>	The slot number for the module and the physical port number on that module (for example, 3/1 specifies port 1 on slot 3).
<i>-port2</i>	The last port number in a range of ports that you want to configure on the same slot (for example, 3/1-4 specifies ports 1, 2, 3, and 4 on slot 3).
<i>agg_num</i>	The link aggregate ID number (0–31).
<i>uni-profile-name</i>	Alphanumeric string of up to 32 characters. Use quotes around string if the profile name contains multiple words with spaces between them (for example, “Alcatel-Lucent Engineering”).

Defaults

The default profile (default-uni-profile) is used to process control packets ingressing on a UNI port. This profile is assigned at the time a port is configured as a VLAN Stacking UNI.

Platforms Supported

OmniSwitch 6250, 6450

Usage Guidelines

- This UNI specified with this command must exist in the switch configuration.
- To change the profile associated with a UNI port, use this command and specify a different profile name than the one currently associated with the port. The last profile associated with the port, is the profile that is applied to UNI port traffic.
- To change the profile associated with a UNI port back to the default profile, enter “default-uni-profile” with this command.

Examples

```
-> ethernet-service uni 1/3 uni-profile uni_1
-> ethernet-service uni 2/10-15 uni-profile default-uni-profile
-> no ethernet-service uni 1/3 uni-profile uni_1
```

Release History

Release 6.3.1; command was introduced.

Related Commands

ethernet-service sap sap-profile Creates a UNI profile that is used to specify how to process control packets ingressing on UNI ports.

ethernet-service sap uni Configures the switch port as a VLAN Stacking UNI and associates the port with a VLAN Stacking Service Access Point (SAP).

MIB Objects

```
alaEServicePortTable
  alaEServicePortID
  alaEServicePortType
  alaEServicePortUniProfile
  alaEServiceSapUniRowStatus
```

ethernet-service uni-profile custom-L2-protocol

Associates a custom-L2-protocol entry to a UNI profile.

ethernet-service uni-profile *uni-profile-name* **custom-L2-protocol** *custom-L2-protocol name*
{**tunnel** | **discard** | **mac-tunnel**}

no ethernet-service uni-profile *uni-profile-name* **custom-L2-protocol** *custom-L2-protocol name*

Syntax Definitions

<i>uni-profile-name</i>	Name of the configured UNI profile.
<i>custom-L2-protocol name</i>	Name of the configured custom L2-protocol entry name to be associated to the UNI profile.
tunnel	Tunnels the specified PDU across the provider network without modifying the MAC address. a packet with destination MAC configured in the custom-L2-protocol entry is transparently forwarded.
discard	Discards the specified PDU.
mac-tunnel	Changes the destination MAC address to the configured tunnel MAC address of the UNI profile before forwarding.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6450

Usage Guidelines

- Use the **no** form of this command to delete association of custom-L2-protocol entry from a UNI profile.
- Use the **mac-tunnel** action only when the custom-L2-protocol is set with an ether-type and optionally a sub-type.
- More than one custom-L2-protocol entry can be configured at a time.
- A custom-L2-protocol entry cannot be specified more than once in the command line.
- A custom-L2-protocol entry cannot be associated to a UNI profile if the UNI profile is associated to UNI port.
- UNI port recognizes L2 frames with TPID 0x8100, 0x9100 and 0x88a8. Frames with other TPIDs considered as untagged CVLAN frames.

Examples

```
-> ethernet-service uni-profile profile1 custom-L2-protocol tunnel-mac-ethertype  
mac-tunnel
```

```
-> ethernet-service uni-profile profile2 custom-L2-protocol tunnel-mac-range tunnel  
discard-mac discard
```

```
-> no ethernet-service uni-profile xxxxx custom-L2-protocol tunnel-mac-ethertype  
tunnel-mac-range
```

```
-> ethernet-service uni-profile profile1 custom-L2-protocol CP1 tunnel
```

```
-> ethernet-service uni-profile profile2 custom-L2-protocol CP2 mac-tunnel
```

```
-> ethernet-service uni-profile profile3 custom-L2-protocol CP3 discard
```

```
-> no ethernet-service uni-profile profile1 custom-L2-protocol CP1
```

Release History

Release 6.4.5; command introduced.

Related Commands

[ethernet-service mac-tunneling](#) Displays configuration information of the specific custom-L2-protocol entry if specified or displays information of all the configured custom-L2-protocol entries in the system.

MIB Objects

```
alaEServiceUNIProfileL2CustomProtocolTable  
  AlaEServiceUNIProfileL2CustomProtocolEntry  
  alaEServiceUNIProfileID  
  alaEServiceUNIProfileL2CustomProtocolID  
  alaEServiceUNIProfileL2CustomProtocolTreatment  
  alaEServiceUNIProfileL2CustomProtocolRowStatus
```

ethernet-service mac-tunneling

Configures the global mac-tunneling status.

ethernet-service mac-tunneling {enable | disable}

Syntax Definitions

enable	The mac-tunneling status is enabled globally.
disable	The mac-tunneling status is disabled globally.

Defaults

parameter	default
enable disable	

Platforms Supported

OmniSwitch 6250, 6450

Usage Guidelines

- When mac-tunneling is enabled globally, per SVLAN mac-tunneling configuration will not be active.
- When mac-tunneling is disabled globally, the MAC tunnel status of the SVLANs configured will be active.
- Any changes to the mac-tunneling status will be effective only on reload.

Examples

```
-> ethernet-service mac-tunneling enable
-> ethernet-service mac-tunneling disable
```

Release History

Release 6.6.5; command introduced.

Related Commands

[ethernet-service svlan mac-tunneling](#) Configures the mac-tunneling status for SVLAN.

MIB Objects

alaEServiceL2MacTunnel

ethernet-service untagged-cvlan-insert

Configures the global status for CVLAN insertion for untagged packets.

ethernet-service untagged-cvlan-insert {enable | disable}

Syntax Definitions

enable The CVLAN insertion for untagged packets is enabled.
disable The CVLAN insertion for untagged packets is disabled.

Defaults

parameter	default
enable disable	disable

Platforms Supported

OmniSwitch 6250, 6450

Usage Guidelines

- Use this command to enable CVLAN on untagged packets, before before specifying which CVLAN need to be added in all the incoming untagged frames on a specific uni port.
- Enabling **ethernet-service untagged-cvlan-insert** feature on the switch would imply that the existing-legacy behavior of UNI and NNI ports will no longer hold good.

Examples

```
-> ethernet-service untagged-cvlan-insert enable  
-> ethernet-service untagged-cvlan-insert disable
```

Release History

Release 6.6.5; command introduced.

Related Commands

ethernet-service sap uni untagged-cvlan Specifies which CVLAN needs to be added in all the incoming untagged frames on a specific uni port.

show ethernet-service untagged-cvlan-insert Displays the status of the CVLAN insertion for untagged packets

MIB Objects

alaEServiceUntaggedMode

ethernet-service sap uni untagged-cvlan

Specifies which CVLAN needs to be added in all the incoming untagged frames on a specific UNI port.

```
ethernet-service sap sap_id uni {slot/port | linkagg agg_num}untagged-cvlan cvlan_id
```

Syntax Definitions

<i>sap_id</i>	Specify the SAP ID number identifying the service instance.
<i>cvlan_id</i>	Specify the CVLAN that needs to be added inside the untagged frames for the frames that are incoming in this uni.
<i>slot/port</i>	The slot number for the module and the physical port number on that module (for example, 3/1 specifies port 1 on slot 3).
<i>agg_num</i>	The link aggregate ID number (0–31).

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6450

Usage Guidelines

- This command will be accepted only when CVLAN on untagged feature is enabled. Use the command [ethernet-service untagged-cvlan-insert](#) to enable CVLAN on untagged feature.
- For a specific UNI, only one CVLAN can be mapped when CVLAN on untagged feature is enabled.

Examples

```
-> ethernet-service sap 10 uni 1/7 untagged-cvlan 10  
-> ethernet-service sap 10 uni 1/9 untagged-cvlan 11
```

Release History

Release 6.6.5; command introduced.

Related Commands

ethernet-service untagged-cvlan-insert	Configures the global status for CVLAN insertion for untagged packets.
show ethernet-service untagged-cvlan-insert	Displays the status of the CVLAN insertion for untagged packets

MIB Objects

alaEServiceSapUniRowStatus

ethernet-service svlan mac-tunneling

Configures the mac-tunneling status for SVLAN.

```
ethernet-service svlan svid1[-svid2] mac-tunneling {enable | disable} [name description]
```

Syntax Definitions

<i>svid1</i>	The VLAN ID number identifying the SVLAN (2–4094).
- <i>svid2</i>	The last VLAN ID number in a range of SVLANs that you want to specify (for example, 10-12 specifies VLANs 10, 11, and 12).
enable	The mac-tunneling status is enabled globally.
disable	The mac-tunneling status is disabled globally.

Defaults

parameter	default
enable disable	disable

Platforms Supported

OmniSwitch 6250, 6450

Usage Guidelines

- When mac-tunneling is enabled globally, per SVLAN mac-tunneling configuration will not be active.
- When mac-tunneling is disabled globally, the MAC tunnel status of the SVLANs configured will be active.
- Maximum four SVLAN can have MAC tunnel enabled simultaneously.
- Mac-tunneling must be disabled globally before mac-tunneling is enabled on per SVLAN.

Examples

```
-> ethernet-service svlan 1000 mac-tunneling enable name "VLAN 1000"  
-> ethernet-service svlan 1000 mac-tunneling disable name "VLAN 1000"
```

Release History

Release 6.6.5; command introduced.

Related Commands

ethernet-service mac-tunneling Configures the global mac-tunneling status.

show vlan Displays a list of VLANs and their attributes configured on the switch.

MIB Objects

vlanTable

 vlanNumber

 vlanSvlanMacTunnelStatus

 vlanDescription

show ethernet-service custom-L2-protocol

Displays configuration information of the specific custom-L2-protocol entry if specified or displays information of all the configured custom-L2-protocol entries in the system.

show ethernet-service custom-L2-protocol *custom-L2-protocol*

Syntax Definitions

custom-L2-protocol Name of the configured custom-L2-protocol entry for which the information must be displayed.

Defaults

By default, the configuration information of all the configured custom-L2-protocol entries are displayed if a custom-L2-protocol entry name is not specified with this command.

Platforms Supported

OmniSwitch 6250, 6450

Usage Guidelines

Enter the name of a custom-L2-protocol entry for which the configuration information must be displayed.

Examples

```
-> show ethernet-service custom-l2-protocol
```

```
Custom
L2 Protocol      Mac                Mask                Ether-Type          Sub-Type
                  (or)              (or)
                  Ssap/Dsap         Pid
-----+-----+-----+-----+-----+
prof1            01:80:c2:01:02:03  -                   0xaa/aa             0x0003
prof2            01:80:c2:01:02:03  -                   0x0601              0xff
prof3            01:80:c2:01:02:03  -                   0x0601              -
prof4            01:80:c2:01:02:03  -                   -                   -
prof5            01:80:c2:01:02:03  ff:ff:ff:ff:ff:00  -                   -
```

output definitions

Custom L2 Protocol	The name of the configured custom L2-protocol entry.
MAC	Displays the MAC address associated to custom L2-protocol entry.
Mask	Displays the mask for the specified MAC address.
Ether-Type	Displays the ether-type value for generic ether-type.
Sub-Type	Displays the subtype value.

Release History

Release 6.4.5; command introduced.

Related Commands

ethernet-service custom-L2-protocol Creates a custom L2-protocol entry MAC address and optional mask or ether-type with optional subtype.

MIB Objects

```
alaEServiceL2CustomProtocolTable
  AlaEServiceL2CustomProtocolEntry
  alaEServiceL2CustomProtocolID
  alaEServiceL2CustomProtocolMac
  alaEServiceL2CustomProtocolMask
  alaEServiceL2CustomProtocolEtherType
  alaEServiceL2CustomProtocolEtherSubType
  alaEServiceL2CustomProtocolSsap
  alaEServiceL2CustomProtocolDsap
  alaEServiceL2CustomProtocolPid
```

show ethernet-service mode

Displays the active VLAN Stacking mode for the switch.

show ethernet-service mode

Syntax Definitions

N/A

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6450

Usage Guidelines

This command is available in both modes: Legacy or EServices.

Examples

```
-> show ethernet-service mode
Vlan Stacking Mode: Legacy Mode
```

```
-> show ethernet-service mode
Vlan Stacking Mode: EServices Mode
```

output definitions

Vlan Stacking Mode	Displays the current VLAN Stacking mode (Legacy Mode or EServices Mode).
---------------------------	--

Release History

Release 6.3.1; command was introduced.

Related Commands

[show ethernet-service](#) Displays configuration information for VLAN Stacking Ethernet services.

MIB Objects

```
alaEServiceInfo
  alaEServiceMode
```

show ethernet-service vlan

Displays a list of SVLANs configured for the switch.

show ethernet-services vlan [*svid1*-[*svid2*]]

Syntax Definitions

<i>svid1</i>	The VLAN ID number identifying the SVLAN (2–4094).
- <i>svid2</i>	The last VLAN ID number in a range of SVLANs that you want to specify (for example, 10-12 specifies VLANs 10, 11, and 12).

Defaults

By default, all SVLANs are displayed if an SVLAN or range of SVLANs is not specified with this command.

Platforms Supported

OmniSwitch 6250, 6450

Usage Guidelines

Specify a single SVLAN ID or a range of SVLAN IDs to display configuration information for a specific SVLAN or range of SVLANs.

Examples

```
-> show ethernet-services vlan
      vlan          Type          name
-----+-----+-----+
      4010         svlan          Customer ABC
      4011         ipmvlan         Video-Service
      4020         mgmt            Provider Management
      4021         svlan          Customer XYZ
      4030         ipmvlan         HBO
```

```
-> show ethernet-service vlan 4010
Name          : Customer ABC
Traffic Type  : svlan
```

output definitions

vlan	The SVLAN ID number identifying the instance.
Traffic Type	The type of SVLAN (svlan = customer traffic, mgmt = management traffic, or ipmvlan = IP Multicast VLAN traffic).
name	The user-defined text description for the SVLAN. By default, the SVLAN ID is specified for the description.

Release History

Release 6.3.1; command was introduced.

Related Commands

ethernet-service

Creates a VLAN Stacking VLAN (SVLAN) for tunneling customer traffic, a management SVLAN for provider traffic, or an SVLAN that the IP Multicast VLAN (IPMV) application will use to distribute multicast traffic.

show ethernet-service

Displays configuration information for VLAN Stacking Ethernet services.

MIB Objects

vlanTable

 vlanNumber

 vlanDescription

 vlanSvlanTrafficType

show ethernet-service

Displays configuration information for VLAN Stacking Ethernet services.

show ethernet-service [**service-name** *service-name* / **svlan** *svlan*]

Syntax Definitions

<i>service-name</i>	The name of an existing VLAN Stacking service; an alphanumeric string of up to 32 characters. Use quotes around string if the VLAN name contains multiple words with spaces between them (for example, "Alcatel-Lucent Engineering").
<i>svlan</i>	The VLAN ID number that identifies an existing SVLAN (2–4094).

Defaults

By default, all services are displayed if a service name or SVLAN ID is not specified with this command.

Platforms Supported

OmniSwitch 6250, 6450

Usage Guidelines

- Enter the name of a service to display configuration information for a specific service.
- Enter an SVLAN ID to display configuration information for all services that are associated with a specific SVLAN.

Examples

```
-> show ethernet-service
```

```
Service Name : VideoOne
  SVLAN      : 300
  NNI(s)     : 2/1, 3/2
  SAP Id     : 20
    UNIs      : 1/1, 1/2
    CVLAN(s)  : 10, 20
    sap-profile : sap-video1
  SAP Id     : 30
    UNIs      : 1/3
    CVLAN(s)  : untagged, 40
    sap-profile : sap-video2

Service Name : CustomerABC
  SVLAN      : 255
  NNI(s)     : 1/22
  SAP Id     : 10
    UNIs      : 2/10, 2/11
    CVLAN(s)  : 500, 600
    sap-profile : default-sap-profile
```

```

Service Name : ipmv_service
  IPMVLAN : 40
  NNI(s)   : No NNIs configured
  SAP Id   : 2
    UNIs    : 1/22
    CVLAN(s) : 100
    sap-profile : translate_profile

-> show ethernet-service service-name CustomerABC

```

```

Service Name : CustomerABC
  SVLAN     : 255
  NNI(s)    : 1/22
  SAP Id    : 10
    UNIs     : 2/10, 2/11
    CVLAN(s) : 500, 600
    sap-profile : default-sap-profile

```

```

-> show ethernet-service svlan 300

```

```

Service Name : VideoOne
  SVLAN     : 300
  NNI(s)    : 2/1, 3/2
  SAP Id    : 20
    UNIs     : 1/1, 1/2
    CVLAN(s) : 10, 20
    sap-profile : sap-video1
  SAP Id    : 30
    UNIs     : 1/3
    CVLAN(s) : 30, 40
    sap-profile : sap-video2

```

output definitions

Service Name	The name of the VLAN Stacking service.
SVLAN or IPMVLAN	Displays the SVLAN ID associated with the service. Note that SVLAN appears as the field name if the VLAN ID is an SVLAN; IPMVLAN appears as the field name if the VLAN ID is an IP Multicast SVLAN.
NNI(s)	VLAN Stacking Network Network Interface ports associated with the service to tunnel SVLAN customer traffic.
SAP Id	The ID number for the VLAN Stacking Service Access Point that is applied to the service (1-1024).
UNIs	VLAN Stacking User Network Interface ports that receive customer traffic.
CVLAN(s)	Customer VLAN IDs ingressing on UNI ports.
sap-profile	The name of the SAP profile associated with the SAP.

Release History

Release 6.3.1; command was introduced.

Related Commands

- ethernet-service service-name** Creates a VLAN Stacking service and associates the service with an SVLAN or an IPMVLAN.
- show ethernet-service vlan** Displays a list of all or a range of configured SVLANs or the parameters of a specified SVLAN.

MIB Objects

```
alaEServiceTable
  alaEServiceID
  alaEServiceSVLAN
alaEServiceNniSvlanTable
  alaEServiceNniSvlanNni
alaEServiceSapTable
  alaEServiceSapID
alaEServiceSapUniTable
  alaEServiceSapUniUni
alaEServiceSapCvlanTable
  alaEServiceSapCvlanCvlan
  alaEServiceSapCvlanMapType
alaEServiceSapProfileTable
  alaEServiceProfileID
```

output definitions

SAP Id	The ID number for the VLAN Stacking Service Access Point that is applied to the service.
UNIs	VLAN Stacking User Network Interface ports that receive customer traffic.
CVLAN(s)	Customer VLAN IDs ingressing on UNI ports.
sap-profile	The name of the SAP profile associated with the SAP.

Release History

Release 6.3.1; command was introduced.

Related Commands

ethernet-service sap	Creates a VLAN Stacking Service Access Point (SAP) and associates the SAP with a VLAN Stacking SAP profile and service.
show ethernet-service	Displays configuration information for VLAN Stacking Ethernet services.

MIB Objects

```

alaEServiceSapTable
  alaEServiceSapID
alaEServiceSapUniTable
  alaEServiceSapUniUni
alaEServiceSapCvlanTable
  alaEServiceSapCvlanCvlan
  alaEServiceSapCvlanMapType
alaEServiceSapProfileTable
  alaEServiceProfileID

```

show ethernet-service port

Displays configuration information for a VLAN Stacking service port.

show ethernet-services port {*slot/port* / **linkagg** *agg_num*}

Syntax Definitions

slot/port The slot number for the module and the physical port number on that module (for example, 3/1 specifies port 1 on slot 3).

agg_num The link aggregate ID number (0–31).

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6450

Usage Guidelines

Specifying a slot/port or link aggregate ID number is required with this command.

Examples

```
-> show ethernet-service port 1/10
```

```
Interface : 1/10
Port Type  : UNI
  UNI Profile : default-uni-profile
  Default SVLAN : 4095
```

```
Service Name : ipmv_service
  IPMVLAN : 40
  NNI(s) : No NNIs configured
  SAP Id : 2
    UNIs : 1/10
    CVLAN(s) : 100
  sap-profile : translate_profile
```

```
Service Name : svlan_service
  SVLAN : 20
  NNI(s) : No NNIs configured
  SAP Id : 1
    UNIs : 1/10
    CVLAN(s) : 200
  sap-profile : translate_profile
```



```

-> show ethernet-service port 1/22

Interface : 1/22
Port Type : NNI

Service Name : CustomerABC
  SVLAN      : 255
  NNI(s)     : 1/22
  SAP Id     : 10
  UNIs       : 2/10, 2/11
  CVLAN(s)   : 500, 600
  sap-profile : default-sap-profile

Service Name : Video-Service
  SVLAN      : 300
  NNI(s)     : 1/22, 3/2
  SAP Id     : 20
  UNIs       : 1/1, 1/2
  CVLAN(s)   : 10, 20
  sap-profile : sap-video1
  SAP Id     : 30
  UNIs       : 1/3
  CVLAN(s)   : 30, 40
  sap-profile : sap-video2

```

output definitions

Interface	The slot and port number or link aggregate ID for the specified interface.
Port Type	The type of VLAN Stacking port (UNI or NNI).
Service Name	The name of the VLAN Stacking service.
SVLAN or IPMVLAN	Displays the SVLAN ID associated with the service. Note that SVLAN appears as the field name if the VLAN ID is an SVLAN; IPMVLAN appears as the field name if the VLAN ID is an IP Multicast SVLAN.
NNI(s)	VLAN Stacking Network Network Interface ports associated with the service to tunnel SVLAN customer traffic.
SAP Id	The ID number for the VLAN Stacking Service Access Point that is applied to the service (1-1024).
UNIs	VLAN Stacking User Network Interface ports that receive customer traffic.
CVLAN(s)	Customer VLAN IDs ingressing on UNI ports.
sap-profile	The name of the SAP profile associated with the SAP.

Release History

Release 6.3.1; command was introduced.

Related Commands

ethernet-service svlan nni	Configures the switch port as a VLAN Stacking NNI port and associates the port with a customer SVLAN, management SVLAN, or an IP Multicast VLAN (IPMV).
ethernet-service sap uni	Configures the switch port as a VLAN Stacking UNI and associates the port with a VLAN Stacking SAP.
show ethernet-service	Displays configuration information for VLAN Stacking Ethernet services.

MIB Objects

```
alaEServiceTable
  alaEServiceID
  alaEServiceSVLAN
alaEServiceNniSvlanTable
  alaEServiceNniSvlanNni
alaEServiceSapTable
  alaEServiceSapID
alaEServiceSapUniTable
  alaEServiceSapUniUni
alaEServiceSapCvlanTable
  alaEServiceSapCvlanCvlan
  alaEServiceSapCvlanMapType
alaEServiceSapProfileTable
  alaEServiceProfileID
```

show ethernet-service nni

Displays configuration information for VLAN Stacking Network Network Interface (NNI) ports.

show ethernet-services nni [*slot/port* / **linkagg** *agg_num*]

Syntax Definitions

slot/port The slot number for the module and the physical port number on that module (for example, 3/1 specifies port 1 on slot 3).

agg_num The link aggregate ID number (0–31).

Defaults

By default, all NNI ports are displayed if a slot/port or link aggregate ID number is not specified.

Platforms Supported

OmniSwitch 6250, 6450

Usage Guidelines

Use the *slot/port* or **linkagg** *agg_num* parameter to display information for a specific switch port or link aggregate ID.

Examples

```
-> show ethernet-service nni
```

```
Port  TPID  Legacy STP BPDU Legacy GVRP BPDU Legacy MVRP BPDU Transparent Bridging
-----+-----+-----+-----+-----+-----+-----+-----
1/22  0x8100  Disable          Disable          Disable          Disable
1/23  0x8100  Disable          Disable          Disable          Disable
```

```
- show ethernet-service nni 1/23
```

```
Port  TPID  Legacy STP BPDU Legacy GVRP BPDU Legacy MVRP BPDU Transparent Bridging
-----+-----+-----+-----+-----+-----+-----+-----
1/23  0x8100  Disable          Disable          Disable          Disable
```

output definitions

Port	The slot/port number or link aggregate ID for the NNI port.
TPID	The vendor TPID value configured for the NNI port.
Legacy STP BPDU	Whether or not the NNI port will process STP legacy BPDU.
Legacy GVRP BPDU	Whether or not the NNI port will process GVRP legacy BPDU.
Legacy MVRP BPDU	Whether or not the NNI port will process MVRP legacy BPDU.
Transparent Bridging	Whether or not transparent bridging is enabled for the NNI port.

Release History

Release 6.3.1; command was introduced.

Release 6.3.4; **Transparent Bridging** field added.

Release 6.4.3: **Legacy MVRP BPDU** field added.

Related Commands

ethernet-service svlan nni	Configures the switch port as a VLAN Stacking NNI port and associates the port with a customer SVLAN, management SVLAN, or an IP Multicast VLAN (IPMV).
ethernet-service nni	Configures the vendor TPID value, the legacy BPDU processing status, and the transparent bridging status for a VLAN Stacking NNI port.
show ethernet-service	Displays configuration information for VLAN Stacking Ethernet services.

MIB Objects

```
alaEServicePortTable
  alaEServicePortID
  alaEServicePortVendorTpid
  alaEServicePortLegacyStpBpdu
  alaEServicePortLegacyGvrpBpdu
  alaEServicePortLegacyMvrpBpdu
```

show ethernet-service nni l2pt-statistics

Displays the statistics information of Network Network Interface (NNI) ports.

show ethernet-services nni [*slot/port* / **linkagg** *agg_num*] **l2pt-statistics**

Syntax Definitions

slot/port The slot number for the module and the physical port number on that module (for example, 3/1 specifies port 1 on slot 3).

agg_num The link aggregate ID number (0–31).

Defaults

By default, all NNI ports are displayed if a slot/port or link aggregate ID number is not specified.

Platforms Supported

OmniSwitch 6250, 6450

Usage Guidelines

Use the *slot/port* or **linkagg** *agg_num* parameter to display statistics information for a specific switch port or link aggregate ID.

Examples

```
-> show ethernet-service nni L2PT-statistics
```

```
Slot/Port   Rx Mac-Tunnel   Mac-tunnel discard
-----+-----+-----
1/23        1234            2
1/24        256             0
```

output definitions

Slot/Port	The slot/port number or link aggregate ID for the NNI port.
Rx Mac-Tunnel	The total number of frames trapped to CPU with tunnel MAC.
Mac-tunnel discard	The total number of discarded frames that are trapped to CPU with tunnel MAC.

Release History

Release 6.4.5; command was introduced.

Related Commands

ethernet-service svlan nni	Configures the switch port as a VLAN Stacking NNI port and associates the port with a customer SVLAN, management SVLAN, or an IP Multicast VLAN (IPMV).
ethernet-service nni	Configures the vendor TPID value, the legacy BPDU processing status, and the transparent bridging status for a VLAN Stacking NNI port.
show ethernet-service	Displays configuration information for VLAN Stacking Ethernet services.
clear ethernet-service nni l2pt-statistics	Clears all Network Network Interface (NNI) ports statistics.

MIB Objects

```
AlaEServiceUNIPortL2StatisticsEntry  
  alaEServiceNNIPortID  
  alaEServiceNNIPortL2RxMACTunneledFrames  
  alaEServiceNNIPortL2MACTunneledDiscardFrames
```

clear ethernet-service nni l2pt-statistics

Clears all Network Network Interface (NNI) ports statistics.

clear ethernet-services nni [**linkagg** *agg_num* | *slot/port* | *port range*] **l2pt-statistics**

Syntax Definitions

<i>agg_num</i>	The link aggregate ID number (0–31) for which the statistics is to be cleared.
<i>slot/port</i>	The slot number for the module and the physical port number on that module (for example, 3/1 specifies port 1 on slot 3) for which the statistics is to be cleared.
<i>port range</i>	Range of port for which the statistics is to be cleared.

Defaults

By default, statistics of all NNI ports are cleared if a slot/port or port range or link aggregate ID number is not specified.

Platforms Supported

OmniSwitch 6250, 6450

Usage Guidelines

Use the *slot/port* or port range or **linkagg** *agg_num* parameter to clear statistics information for a specific switch port or range of ports or link aggregate ID.

Examples

```
-> clear ethernet-service nni L2PT-statistics
```

Release History

Release 6.4.5; command was introduced.

Related Commands

ethernet-service svlan nni	Configures the switch port as a VLAN Stacking NNI port and associates the port with a customer SVLAN, management SVLAN, or an IP Multicast VLAN (IPMV).
ethernet-service nni	Configures the vendor TPID value, the legacy BPDU processing status, and the transparent bridging status for a VLAN Stacking NNI port.
show ethernet-service	Displays configuration information for VLAN Stacking Ethernet services.
show ethernet-service nni l2pt-statistics	Displays the statistics information of Network Network Interface (NNI) ports.

MIB Objects

```
AlaEServiceNNIPortL2ProtocolStatisticsEntry  
  alaEServiceNNIPortID  
  alaEServiceNNIPortL2ClearStats  
  alaEServiceNNIPortL2GlobalClearStatistics
```

show ethernet-service uni

Displays a list of UNI ports configured for the switch and the profile association for each port.

show ethernet-service uni [*slot/port* / **linkagg** *agg_num*]

Syntax Definitions

slot/port The slot number for the module and the physical port number on that module (for example, 3/1 specifies port 1 on slot 3).

agg_num The link aggregate ID number (0–31).

Defaults

By default, profile information for all UNI ports is displayed if a slot/port or link aggregate ID number is not specified.

Platforms Supported

OmniSwitch 6250, 6450

Usage Guidelines

Specify a slot/port or link aggregate ID number to display information for a single slot/port or link aggregate ID.

Examples

```
-> show ethernet-service uni

  Port    UNI Profile
+-----+-----+
  1/1    uni-profile-default
  1/2    multi-site
  1/3    multi-site

- show ethernet-service uni 1/3

  Port    UNI Profile
+-----+-----+
  1/3    multi-site
```

output definitions

Port	The slot/port number or link aggregate ID for the UNI port.
UNI Profile	The UNI profile associated with the port.

Release History

Release 6.3.1; command was introduced.

Related Commands

ethernet-service sap sap-profile Creates a UNI profile that is used to specify how to process control packets ingressing on UNI ports.

ethernet-service uni uni-profile Associates a VLAN Stacking UNI profile with a UNI port.

show ethernet-service uni l2pt-statistics Displays the profile attribute configuration for VLAN Stacking User Network Interface (UNI) profiles.

MIB Objects

```
alaEServiceUniProfileTable  
  alaEServicePortID  
  alaEServicePortProfileID
```

show ethernet-service uni l2pt-statistics

Displays the statistics of all protocols configured per UNI port.

show ethernet-service uni [*slot/port* / **linkagg** *agg_num*] **l2pt-statistics**

Syntax Definitions

slot/port The slot number for the module and the physical port number on that module (for example, 3/1 specifies port 1 on slot 3).

agg_num The link aggregate ID number (0–31).

Defaults

By default, statistics information for all UNI ports and associated L2 protocols is displayed if a slot/port or link aggregate ID number is not specified.

Platforms Supported

OmniSwitch 6250, 6450

Usage Guidelines

Specify a slot/port or link aggregate ID number to display information for a single slot/port or link aggregate ID.

Examples

```
-> show ethernet-service uni L2PT-statistics
```

Rx, Tunnel and Drop are counted only in software

Slot/Port	L2 Protocol	Rx	Tunnel	Drop	Peer	Mac Tunnel	Mac De-tunnel	Source MAC
1/1	STP	10	0	0	0	10	10	000000:000001
1/1	802.1x	10	0	0	0	10	10	000000:000001
1/1	802.3ad	10	0	0	10	0	0	000000:000001
1/1	802.1ab	0	0	0	0	0	0	-
1/1	GVRP	0	0	0	0	0	0	-
1/1	AMAP	0	0	0	0	0	0	-
1/1	OAM	0	0	0	0	0	0	-
1/1	LACPMARKER	0	0	0	0	0	0	-
1/1	UDLD	0	0	0	0	0	0	-
1/1	PAPG	10	10	0	0	0	0	000000:000001
1/1	CDP	10	0	10	0	0	0	000000:000001
1/1	VTP	10	0	0	0	10	0	000000:000001
1/1	DTP	10	10	0	0	0	10	000000:000001
1/1	PVST	0	0	0	0	0	0	-
1/1	VLAN	0	0	0	0	0	0	-
1/1	UPLINK	0	0	0	0	0	0	-
1/1	MVRP	0	0	0	0	0	0	-
1/1	STP	10	0	0	0	10	10	000000:000001
1/2	802.1x1	0	0	0	0	10	10	000000:000001
1/2	802.3ad	10	0	0	10	0	0	000000:000001

1/2	802.1ab	0	0	0	0	0	0	-
1/2	GVRP	0	0	0	0	0	0	-
1/2	AMAP	0	0	0	0	0	0	-
1/2	OAM	0	0	0	0	0	0	-
1/2	LACPMARKER	0	0	0	0	0	0	-
1/2	UDLD	0	0	0	0	0	0	-
1/2	PAPG	10	10	0	0	0	0	000000:000001
1/2	CDP	10	0	10	0	0	0	000000:000001
1/2	VTP	10	0	0	0	10	0	000000:000001
1/2	DTP	10	10	0	0	0	10	000000:000001
1/2	PVST	0	0	0	0	0	0	-
1/2	VLAN	0	0	0	0	0	0	-
1/2	UPLINK	0	0	0	0	0	0	-
1/2	MVRP	0	0	0	0	0	0	-
1/2	Custom 1	1	1	0	0	0	0	000000:000002

output definitions

Slot/Port	Service UNI port associated with an L2 protocol and L2 protocol statistics.
L2 Protocol	The l2 protocol associated with the service UNI port.
Rx	The total number of frames received by the protocol on the port and trapped in CPU.
Tunnel	The total number of tunneled frames received by the protocol on the port and trapped in CPU.
Drop	The total number of tunneled frames received by the protocol on the port and trapped in CPU and dropped.
Peer	The total number of tunneled frames received by the protocol on the port and trapped in CPU and peered.
Mac Tunnel	The total number of tunneled frames received by the protocol on the port and trapped in CPU and MAC tunneled.
Mac De-tunnel	The total number of tunneled frames received by the protocol on the port and trapped in CPU and MAC de-tunneled.
Source MAC	Specifies the source MAC address of the last frame of the protocol on the port trapped in CPU.

Release History

Release 6.4.5; command was introduced.

Related Commands

- ethernet-service sap sap-profile** Creates a UNI profile that is used to specify how to process control packets ingressing on UNI ports.
- ethernet-service uni uni-profile** Associates a VLAN Stacking UNI profile with a UNI port.
- show ethernet-service uni l2pt-statistics** Displays the profile attribute configuration for VLAN Stacking User Network Interface (UNI) profiles.
- clear ethernet-service uni l2pt-statistics** Clears the statistics of all protocols configured per UNI port.

MIB Objects

```
alaEServiceUNIPortL2ProtocolStatisticsTable
  AlaEServiceUNIPortL2StatisticsEntry
  alaEServiceUNIPortID
  alaEServiceUNIPortL2ProtocolID
  alaEServiceUNIPortL2RxFrames
  alaEServiceUNIPortL2TunneledFrames
  alaEServiceUNIPortL2DroppedFrames
  alaEServiceUNIPortL2PeeredFrames
  alaEServiceUNIPortL2MACTunneledFrames
  alaEServiceUNIPortL2MACDeTunneledFrames
  alaEServiceUNIPortL2LastSourceMAC
```

clear ethernet-service uni l2pt-statistics

Clears the statistics of all protocols configured per UNI port.

clear ethernet-service uni [**linkagg** *agg_num* / *slot/port* / *port range*] **l2pt-statistics**

Syntax Definitions

<i>agg_num</i>	The link aggregate ID number (0–31) for which the statistics is to be cleared.
<i>slot/port</i>	The slot number for the module and the physical port number on that module (for example, 3/1 specifies port 1 on slot 3) for which the statistics is to be cleared.
<i>port range</i>	Range of port for which the statistics is to be cleared.

Defaults

By default, statistics information for all UNI ports and associated L2 protocols is displayed if a slot/port or link aggregate ID number is not specified.

Platforms Supported

OmniSwitch 6250, 6450

Usage Guidelines

Specify a slot/port or port range or link aggregate ID number to clear statistics for a single slot/port or the range of port or link aggregate ID.

Examples

```
-> clear ethernet-service uni 1/1 L2PT-statistics
```

Release History

Release 6.4.5; command was introduced.

Related Commands

- ethernet-service sap sap-profile** Creates a UNI profile that is used to specify how to process control packets ingressing on UNI ports.
- ethernet-service uni uni-profile** Associates a VLAN Stacking UNI profile with a UNI port.
- show ethernet-service uni l2pt-statistics** Displays the profile attribute configuration for VLAN Stacking User Network Interface (UNI) profiles.
- show ethernet-service uni l2pt-statistics** Displays the statistics of all protocols configured per UNI port.

MIB Objects

```
AlaEServiceUNIPortL2ProtocolStatisticsClearEntry  
  alaEServiceUNIPortClearID  
  alaEServiceUNIPortL2ClearStats  
  alaEServiceUNIPortL2GlobalClearStatistics
```

show ethernet-service uni-profile

Displays the profile attribute configuration for VLAN Stacking User Network Interface (UNI) profiles.

show ethernet-service uni-profile [*uni-profile-name*]

Syntax Definitions

uni-profile-name Alphanumeric string of up to 32 characters. Use quotes around string if the profile name contains multiple words with spaces between them (for example, "Alcatel-Lucent Engineering").

Defaults

By default, all UNI profiles are displayed if a UNI profile name is not specified with this command.

Platforms Supported

OmniSwitch 6250, 6450

Usage Guidelines

Specify a UNI profile name to display attributes for a single UNI profile.

Examples

```
-> show ethernet-service uni-profile
Profile Name: default-uni-profile
Tunnel MAC : 01:00:0c:cd:cd:d0,
STP : tunnel,      802.1x : drop,      802.3ad : peer,      802.1ab : drop,
GVRP: tunnel,     AMAP  : drop,      OAM     : peer,      LACPMARKER : peer,
UDLD: drop,       PAGP  : drop,      CDP     : drop,      VTP     : drop,
DTP : drop,       PVST  : drop,      VLAN    : drop,      UPLINK  : drop,
MVRP: tunnel
```

```
-> show ethernet-service uni-profile ieee-drop-all
Profile Name: ieee-drop-all
All IEEE Mac Addresses : 01:80:C2:00:00:00 - 01:80:c2:00:00:0f : drop
```

```
-> show ethernet-service uni-profile ieee-fwd-all
Profile Name: ieee-fwd-all
All IEEE Mac Addresses: 01:80:C2:00:00:00 - 01:80:c2:00:00:ff : tunnel,
Pause frame : 01:80:C2:00:00:01 : drop,
MAC specific control frame : 01:80:C2:00:00:04 : drop
```

output definitions

Profile Name	The name of the UNI profile.
---------------------	------------------------------

output definitions

Tunnel MAC	The MAC address to be used for mac tunneling.
PROTOCOL: mode	The protocol and configured mode: peer - The UNI port is participating in the specified protocol. drop - Discards the specified PDU tunnel - The PDU is being tunneled across the provider network without modifying the MAC address. mac-tunnel - The PDU is being tunneled across the provider network after changing the destination MAC address.

Release History

Release 6.3.1; command was introduced.

Release 6.4.3; **Tunnel MAC** field and **mac-tunnel** mode were added.

Related Commands

ethernet-service uni-profile	Creates a UNI profile that is used to specify how to process control packets ingressing on UNI ports.
ethernet-service uni uni-profile	Associates a VLAN Stacking UNI profile with a UNI port.
show ethernet-service nni l2pt-statistics	Displays the profile associations for VLAN Stacking User Network Interface (UNI) ports.

MIB Objects

```

alaEServiceUNIProfileTable
  alaEServiceUNIProfileID
  alaEServiceUNIProfileStpBpduTreatment
  alaEServiceUNIProfile8021xTreatment
  alaEServiceUNIProfile8021ABTreatment
  alaEServiceUNIProfile8023adTreatment
  alaEServiceUNIProfileGvrpTreatment
  alaEServiceUNIProfileAmapTreatment
  alaEServiceUNIProfileLacpTreatment
  alaEServiceUNIProfileLacpMarkerTreatment
  alaEServiceUNIProfileOamTreatment
  alaEServiceUNIProfileCiscoPagpTreatment
  alaEServiceUNIProfileCiscoUlldTreatment
  alaEServiceUNIProfileCiscoCdpTreatment
  alaEServiceUNIProfileCiscoVtpTreatment
  alaEServiceUNIProfileCiscoDtpTreatment
  alaEServiceUNIProfileCiscoPvstTreatment
  alaEServiceUNIProfileCiscoVlanTreatment
  alaEServiceUNIProfileCiscoUplinkTreatment
alaEServiceUNIProfileProtocolTreatment
  alaEServiceUNIProfileTunnelMac
  alaEServiceUNIProfileRowStatus

```

show ethernet-service uni-profile l2pt- statistics

Displays the profile statistics for VLAN Stacking User Network Interface (UNI) profiles.

show ethernet-service uni-profile [*uni-profile-name*] **l2pt-statistics**

Syntax Definitions

uni-profile-name Alphanumeric string of up to 32 characters. Write string within quotes if the profile name contains multiple words with spaces between them, for example: "Alcatel-Lucent Engineering".

Defaults

By default, statistics of all UNI profiles are displayed if a UNI profile name is not specified with this command.

Platforms Supported

OmniSwitch 6250, 6450

Usage Guidelines

Specify a UNI profile name to display the statistics for a single UNI profile.

Examples

```
> show ethernet-service uni-profile l2pt-statistics
UNI Profile: Profile_1
Total RX:123456,
L2 Protocol:
STP
Rx:1234,
Hardware Action:CPU, 802.1x
Rx:1234,
Hardware Action:FWD, 802.3ad, OAM, LACPMARKER
Rx1234,
Hardware Action:CPU, 802.1ab
Rx1234,
Hardware Action:CPU,PAPG, UDLD, CDP, DTP, VTP, PVST, VLAN, UPLINK
Rx1234,
Hardware Action:CPU, GVRP, MVRP
Rx1234,
Hardware Action:DROP, AMAP
Rx1234,
Hardware Action:FWD,

UNI Profile: Profile_2
Total RX:18,
L2 Protocol:
STP
Rx:1234,
Hardware Action:CPU, 802.1x
Rx:1234,
```

```

Hardware Action:FWD, 802.3ad, OAM, LACPMARKER
Rx1234,
Hardware Action:CPU, 802.1ab
Rx1234,
Hardware Action:CPU, PAPG, UDLD, CDP, DTP, VTP, PVST, VLAN, UPLINK
Rx1234,
Hardware Action:CPU, GVRP, MVRP
Rx1234,
Hardware Action:DROP, AMAP
Rx1234,
Hardware Action:FWD,
Custom Protocol1 1234,
Hardware Action:FWD,
Custom Protocol2122,
Hardware Action:DROP

```

output definitions

UNI Profile	The UNI profile associated with the port.
STP	Spanning Tree Protocol
RX	The total number of frames received by the protocol on the port and trapped in CPU.
Hardware Action	
Custom Protocol	

Release History

Release 6.6.4; command was introduced.

Related Commands

ethernet-service uni-profile	Creates a UNI profile that is used to specify how to process control packets ingressing on UNI ports.
ethernet-service uni-profile custom-L2-protocol	Associates a custom-L2-protocol entry to a UNI profile.
ethernet-service uni uni-profile	Associates a VLAN Stacking UNI profile with a UNI port.
show ethernet-service nni l2pt-statistics	Displays the profile associations for VLAN Stacking User Network Interface (UNI) ports.

MIB Objects

```

AlaEServiceUNIProfileL2ProtocolTotalStatisticsEntry
alaEServiceUNIProfile
alaEServiceUNIProfileL2ProtocolTotalRxFrames

```

```

AlaEServiceUNIProfileCustomL2ProtocolStatisticsEntry
alaEServiceUNIProfileCustomL2StatsProfileID,
alaEServiceUNIProfileCustomL2ProtocolIndex,
alaEServiceUNIProfileCustomL2ProtocolRxFrames,
alaEServiceUNIProfileCustomL2ProtocolTreatment

```

```

AlaEServiceUNIProfileCustomL2ProtocolStatisticsEntry

```

```
alaEServiceUNIProfileCustomL2StatsProfileID,  
alaEServiceUNIProfileCustomL2ProtocolIndex,  
alaEServiceUNIProfileCustomL2ProtocolRxFrames,  
alaEServiceUNIProfileCustomL2ProtocolTreatment
```

show ethernet-service untagged-cvlan-insert

Displays the status of the CVLAN insertion for untagged packets.

show ethernet-service untagged-cvlan-insert

Syntax Definitions

N/A

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6450

Usage Guidelines

N/A

Examples

```
-> show ethernet-service untagged-cvlan-insert
    Cvlan insertion for untagged packets : Enabled
```

output definitions

Enabled	Specifies that the CVLAN insertion for untagged packets support status is enabled.
Disabled	Specifies that the CVLAN insertion for untagged packets support status is disabled.

Release History

Release 6.6.5; command was introduced.

Related Commands

ethernet-service untagged-cvlan-insert	Configures the global status for CVLAN insertion for untagged packets.
ethernet-service sap uni untagged-cvlan	Specifies which CVLAN needs to be added in all the incoming untagged frames on a specific uni port.

MIB Objects

N/A

clear ethernet-service uni-profile l2pt-statistics

Clears the statistics of all UNI profile.

clear ethernet-service uni-profile [*uni profile name*] **l2pt-statistics**

Syntax Definitions

uni-profile-name Name of the uni-profile whose statistics has to be displayed. It is an alphanumeric string of up to 32 characters. Use string within quotes if the profile name contains multiple words with spaces between them, for example: "Alcatel-Lucent Engineering".

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6450

Usage Guidelines

Use an existing uni-profile name with the clear command.

Examples

```
-> clear ethernet-service uni-profile uni-profile 1 l2pt-statistics
```

Release History

Release 6.4.4; command was introduced.

Related Commands

ethernet-service sap sap-profile Creates a UNI profile that is used to specify how to process control packets ingressing on UNI ports.

ethernet-service uni uni-profile Associates a VLAN Stacking UNI profile with a UNI port.

show ethernet-service uni l2pt-statistics Displays the profile attribute configuration for VLAN Stacking User Network Interface (UNI) profiles.

show ethernet-service uni l2pt-statistics Displays the statistics of all protocols configured per UNI port.

MIB Objects

```
AlaEServiceUNIPortL2ProtocolStatisticsClearEntry  
  alaEServiceUNIPortClearID  
  alaEServiceUNIPortL2ClearStats  
  alaEServiceUNIPortL2GlobalClearStatistics
```

show ethernet-service sap-profile

Displays the profile attribute configuration for VLAN Stacking Service Access Point (SAP) profiles.

show ethernet-service sap-profile *sap-profile-name*

Syntax Definitions

sap-profile-name Alphanumeric string of up to 32 characters. Use quotes around string if the profile name contains multiple words with spaces between them (for example, "Alcatel-Lucent Engineering").

Defaults

By default, all SAP profiles are displayed if a SAP profile name is not specified with this command.

Platforms Supported

OmniSwitch 6250, 6450

Usage Guidelines

- Specify a SAP profile name to display attributes for a single SAP profile.
- Egress bandwidth can be configured only for SVLANs and not for IPMVLANS.

Examples

```
-> show ethernet-service sap-profile
```

Profile Name	Ingr/Egr Bw	Ingr Bw Sharing	Inner Tag Option	Priority Mapping	Priority Value
audiosap	0/10	Disable	Preserve	fixed	0
default-sap-profile	0/0	Enable	Preserve	fixed	0
sap-video1	0/0	NA	Preserve	in-out	P
sap-conf-video2	10/20	Enable	Preserve	NA	NA

```
-> show ethernet-service sap-profile sap-video1
```

Profile Name	Ingr/Egr Bw	Ingr Bw Sharing	Inner Tag Option	Priority Mapping	Priority Value
sap-video1	0/0	NA	Preserve	in-out	P

output definitions

Profile Name	The name of the SAP profile.
Ingr/Egr Bw	The maximum amount of ingress-bandwidth (1=1,000,000 mbps) and egress-bandwidth (0-9999) allowed for SAP ports.

output definitions

Ingr Bw Sharing	The status of bandwidth sharing (enable , disable , or NA). If enabled, the ingress bandwidth value is shared across all SAP ports and CVLANs. If disabled, the bandwidth value is not shared and applied to individual SAP ports and CVLANs. If NA displays in this field, the bandwidth value for the profile is not assigned.
Inner Tag Option	Indicates how the CVLAN tag is processed (translate or preserve). If set to preserve , the CVLAN tag is retained and the SVLAN is added to the frame. If set to translate , the CVLAN tag is changed to the SVLAN tag.
Priority Mapping	Indicates how the priority value is configured for the SVLAN (in-ou , fixed , or NA). If set to in-out , the CVLAN priority value is mapped to the SVLAN. If set to fixed , a user-specified priority value is used for the SVLAN priority. If set to NA , the priority for the profile is not assigned.
Priority Value	Indicates the priority value mapped to the SVLAN (a number, P , DSCP , or NA). A number indicates a fixed, user-specified value is used; P indicates the CVLAN 802.1p bit value is used; DSCP indicates the CVLAN DSCP value is used; NA indicates the priority value for the profile is not assigned.

Release History

Release 6.3.1; command was introduced.

Release 6.4.2; **Egr** (egress bandwidth) field added along with **Ingr** (ingress bandwidth) field.

Release 6.4.3; **NA** used to indicate bandwidth/priority values for the profile are not assigned.

Related Commands

ethernet-service sap-profile	Creates a profile for a VLAN Stacking Service Access Point (SAP).
ethernet-service sap	Creates a VLAN Stacking SAP and associates the SAP with a service and SAP profile.
ethernet-service sap sap-profile	Specifies a different SAP profile for the SAP.
show ethernet-service sap	Displays configuration information for VLAN Stacking SAPs.

MIB Objects

```

alaEServiceSapProfileTable
  alaEServiceSapProfileID
  alaEServiceSapProfileCVLANTreatment
  alaEServiceSapProfilePriorityMapMode
  alaEServiceSapProfileFixedPriority
  alaEServiceSapProfileIngressBW
  alaEServiceSapProfileEgressBW
  alaEServiceSapProfileBandwidthShare

```

loopback-test

Configures a wire-speed Ethernet loopback test profile and enables or disables the activation of the profile. The loopback test profile specifies the switch attributes that are required to conduct an ingress or egress loopback operation on a switch port.

```
loopback-test profile_name source-mac src_address destination-mac dest_address vlan vlan_id  
loopback-port slot/port type {inward | outward}
```

```
loopback-test profile_name {enable | disable}
```

```
no loopback-test profile_name
```

Syntax Definitions

<i>profile_name</i>	Alphanumeric string of up to 31 characters. Use quotes around string if the profile name contains multiple words with spaces between them (for example, "Alcatel-Lucent Engineering").
<i>src_address</i>	A unique source MAC address for the test frame.
<i>dest_address</i>	A unique destination MAC address for the test frame.
<i>vlan_id</i>	The VLAN ID of the test frame. Always use the outer VLAN ID.
<i>slot/port</i>	The switch port number to use for the loopback test.
inward	Sets the type of loopback test to ingress.
outward	Sets the type of loopback test to egress.
enable	Enables the loopback test profile.
disable	Disables the loopback test profile.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6450

Usage Guidelines

- Use the **no** form of this command to delete a loopback profile.
- Use the **loopback-test enable** command to enable the loopback test profile on the specified port. When the profile is enabled, the loopback operation is enabled for the port.
- Use the **loopback-test disable** command to disable the loopback operation for the specified port.
- Once a UNI or NNI port is designated as a loopback port, the port is no longer eligible to participate in other switch functions. In addition, an outward loopback port goes "out-of-service" and will no longer carry customer traffic but remains active for test frame traffic. However, an inward loopback port remains "in-service" and will continue to carry customer traffic as well as test frame traffic.
- Only Layer 2 loopback tests are supported, so test frames are not routed. As a result, the loopback test operation will only swap the source and destination MAC address of bridged test frames.

- In a typical ingress loopback scenario, specifying the switch base MAC address as the destination address is recommended. In a typical egress loopback scenario, a customer premises equipment (CPE) MAC address can be used, but configuring and using a static MAC address on the egress loopback port is recommended.
- The port specified for an inward loopback test is the port on which test frames are received and looped back. The port specified for an outward test is the egress destination port on which test frames are looped back. The loopback operation performed on the specified port swaps the source and destination MAC address of the test frame and then forwards the frame back to the test head.
- The switch creates a static MAC address entry for the egress port when the outward loopback profile is applied on that port. The static address created is the destination MAC address specified in the profile. If the switch receives a non-test frame that contains the same MAC address, both the test and non-test frames are filtered even if they were received on different ports.
- If the MAC addresses specified in the loopback test profile are actual network address (for example, 02:da:95:e1:22:10, not aa:aa:aa:aa:aa:aa), flush the MAC address table for the switch when the loopback test is finished.

Examples

The following command examples create an ingress UNI and NNI test profile:

```
-> loopback-test PE1-inward-UNI source-mac 00:00:00:dd:aa:01 destination-mac  
00:00:00:cc:aa:bb vlan 1001 loopback-port 1/1 type inward
```

```
-> loopback-test PE2-inward-NNI source-mac 00:00:00:dd:aa:02 destination-mac  
00:00:00:cc:aa:bc vlan 1001 loopback-port 2/1 type inward
```

The following command examples create an egress UNI and NNI test profile:

```
-> loopback-test PE2-outward-UNI source-mac 00:00:00:dd:ab:01 destination-mac  
00:00:00:cc:ab:bb vlan 1001 loopback-port 1/1 type outward
```

```
-> loopback-test PE1-outward-NNI source-mac 00:00:00:cc:ab:bb destination-mac  
00:00:00:dd:ab:01b vlan 1001 loopback-port 2/1 type outward
```

The following command examples enable and disable a loopback test profile:

```
-> loopback-test PE1-outward-UNI enable  
-> loopback-test PE1-outward-UNI disable
```

Release History

Release 6.4.3; command was introduced.

Related Commands

ethernet-service sap-profile	Creates a profile for a VLAN Stacking Service Access Point (SAP).
show loopback-test	Displays the profile configuration for a loopback test profile.

MIB Objects

```
alaQoS_HwLoopbackProfileTable  
    alaQoS_HwLoopbackProfileName  
    alaQoS_HwLoopbackSourceMac
```

```
alaQoSHowLoopbackDestinationMac  
alaQoSHowLoopbackVlan  
alaQoSHowLoopbackPort  
alaQoSHowLoopbackType  
alaQoSHowLoopbackProfileStatus  
alaQoSHowLoopbackProfileRowStatus
```

show loopback-test

Displays the profile configuration for a hardware loopback test profile.

show loopback-test [*profile_name*]

Syntax Definitions

profile_name The name of an existing hardware loopback test profile.

Defaults

By default, all profiles are displayed if a profile name is not specified with this command.

Platforms Supported

OmniSwitch 6250, 6450

Usage Guidelines

Use the *profile_name* parameter to display the loopback test configuration for a specific profile.

Examples

```
-> show loopback-test
Profile-Name      Src-Mac          Dest-Mac          Vlan   Port  Type   Status
-----|-----|-----|-----|-----|-----+-----
pro1              00:d0:95:f3:63:58  00:00:00:00:00:0a  100    6/1   Inward Start
Total Entries = 1
```

output definitions

Profile Name	The name of the loopback test profile.
Src-Mac	The source MAC address of the test packet.
Dest-Mac	The destination MAC address of the test packet.
Vlan	The VLAN ID of the loopback port.
Port	The UNI or NNI loopback port.
Type	The type of loopback test; Inward (ingress) or Outward (egress).
Status	The status of the loopback test (Enable , Disable , or Config).

Release History

Release 6.4.3; command was introduced.

29 Ethernet OAM Commands

Service provider networks are large and complex with a wide user base, and they often involve different operators that must work together in order to provide end-to-end services to enterprise customers. Operations, Administration, and Maintenance (OAM) provides service assurance over a converged network that service providers are looking for in an Ethernet network. Ethernet OAM addresses areas such as availability, mean time to repair and more. Ethernet OAM focuses on two main areas that are most in need by service providers and are rapidly evolving in the standards bodies, Service OAM and Link OAM. These two OAM protocols have unique objectives but are complementary to each other. Service OAM provides monitoring and troubleshooting of end-to-end Ethernet service instances, while Link OAM allows a provider to monitor and troubleshoot an individual Ethernet link.

MIB information for the Ethernet OAM commands is as follows:

Filename: AlcatelIND1Eoam.MIB
Module: Alcatel-IND1-ETHERNET-OAM-MIB

Filename: IETF_802_1ag.MIB
Module: IEEE8021-CFM-MIB

A summary of the available commands is listed here:

EthOAM vlan Configuration Commands	ethoam vlan
EthOAM Domain Configuration Commands	ethoam domain ethoam domain mhf ethoam domain id-permission
EthOAM Management Association Configuration Commands	ethoam association ethoam association mhf ethoam association id-permission ethoam association ccm-interval ethoam association endpoint-list ethoam association allowed-cvlan-list clear ethoam statistics
EthOAM Default-Domain Configuration Commands	ethoam default-domain level ethoam default-domain mhf ethoam default-domain id-permission ethoam default-domain primary-vlan

EthOAM Management Point Configuration Commands	ethoam endpoint ethoam endpoint admin-state ethoam endpoint ccm ethoam endpoint priority ethoam endpoint lowest-defect-priority ethoam endpoint domain association direction ethoam endpoint ctag-priority
EthOAM Loopback and Linktrace Commands	ethoam loopback ethoam linktrace
EthOAM Timer Configuration Commands	ethoam fault-alarm-time ethoam fault-reset-time
EthOAM Performance Monitoring Configuration Commands	ethoam one-way-delay ethoam two-way-delay clear ethoam
EthOAM Monitoring Commands	show ethoam show ethoam domain show ethoam domain association show ethoam domain association end-point show ethoam default-domain show ethoam default-domain configuration show ethoam remote-endpoint domain show ethoam cfmstack show ethoam linktrace-reply domain association endpoint tran-id show ethoam linktrace-tran-id show ethoam vlan show ethoam statistics show ethoam config-error show ethoam one-way-delay show ethoam two-way-delay

ethoam vlan

Creates an association between Primary VID and Non-Primary VID(s).

ethoam vlan *vlanid-list* **primary-vlan** *vlan-id*

no ethoam vlan *vlanid-list*

Syntax Definitions

<i>vlanid-list</i>	VLAN Identifier List, for example, '10 30-40' or '10'
<i>vlan-id</i>	VLAN Identifier, for example, '20'

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6450

Usage Guidelines

- Each VLAN ID specified must be created before creating any association.
- Each VLAN ID specified must be between 1 and 4094.
- Each VLAN ID specified must be static.
- A Non-Primary VID can only be associated with single Primary VID only.
- Once Primary VID is associated with Non-Primary VID, then it can not be configured as Non-Primary VID. Its association must be removed before it is configured as Non-Primary VID.
- This CLI shall trigger Automip for this VLAN, if either 'mhf' is enabled for MA or default-MD with primary VLAN same as the primary VLAN of this VLAN.
- If the VLAN is deleted using VLAN CLI (no vlan <vid>) and VLAN is non-primary, then the entry for this VLAN in the VLAN table is deleted. This shall in turn delete all MEPs and MIPs associated with it. If the deleted VLAN is primary VLAN, then all its associated VLAN entries in the VLAN table shall be deleted. This shall in turn delete all MAs on this deleted VLAN.
- Use the **no** form of this command to dissociate Primary VID from the Non-Primary VID(s).

Examples

```
-> ethoam vlan 10 primary-vlan 20
-> ethoam vlan 11-15 primary-vlan 20
-> ethoam vlan 30 40-50 primary-vlan 20
-> no ethoam vlan 10
```

Release History

Release 6.6.2; command introduced

Related Commands

show ethoam vlan Displays the associations of the specified VLAN.

MIB Objects

```
dot1agCfmVlanTable  
  dot1agCfmVlanComponentId  
  dot1agCfmVlanVid  
  dot1agCfmVlanPrimaryVid  
  dot1agCfmVlanRowStatus
```

ethoam domain

Creates an Ethernet domain with a specific name.

ethoam domain *name* **format** {**none** | **dnsname** | **mac-address-unit** | **string**}
level *num*

no ethoam domain *name*

Syntax Definitions

<i>name</i>	Specifies the domain name used while creating the management domain for which this management association is created.
none	This format is supported for the inter-op with ITU-T Y.1731.
string	Character String.
mac-address-unit	MAC address + 2-octet (unsigned) integer.
dnsname	Domain Name like string, globally unique text string derived from a DNS name.
<i>num</i>	MD Level and it ranges from 0 to 7.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6450

Usage Guidelines

- Maximum domain length is 43.
- Use format as 'none' for inter-op with ITU-T Y.1731.
- Domain name is unique in a system.
- Deletion of MD shall result in the deletion of all MAs, MEPs and MIPs configured in it.

Examples

```
-> ethoam domain MD format none level 3  
-> ethoam domain MD1 format string level 4
```

Release History

Release 6.6.1; command introduced.

Release 6.6.2; *domain_name* | *mac_address*, *level_num* parameters replaced with *name,num* parameters; **none** parameter added.

Related Commands

show ethoam

Displays the information of all the Management Domains (MD) configured on the bridge.

show ethoam domain

Displays the information of a specific Management Domain configured on the bridge.

MIB Objects

```
dot1agCfmMdTable  
  dot1agCfmMdName  
  dot1agCfmMdFormat  
  dot1agCfmMdLevel
```

ethoam domain mhf

Configure the Mip Half Function (MHF) value for MD entry.

ethoam domain *name* **mhf** {**none** | **explicit** | **default**}

Syntax Definitions

<i>name</i>	Specifies the domain name used while creating the management domain for which this management association is created.
none	No MHFs can be created.
default	MHFs can be created.
explicit	MHFs can be created only if a MEP is created at some lower MD Level.

Defaults

parameter	default
mhf	none

Platforms Supported

OmniSwitch 6250, 6450

Usage Guidelines

Domain must be created before it is modified.

Examples

```
-> ethoam domain MD mhf default
```

Release History

Release 6.6.1; command introduced.

Release 6.6.2 *domain_name* / *mac_address* parameters replaced with *name* parameters.

Related Commands

show ethoam domain Displays the information of a specific Management Domain configured on the bridge.

MIB Objects

```
dotlagCfmMdTable
  dotlagCfmMdName
  dotlagCfmMdMhfCreation
```

ethoam domain id-permission

Configures the ID-permission value for MD entry.

ethoam domain *name* **id-permission** {**none** | **chassisid**}

Syntax Definitions

<i>name</i>	Specifies the domain name used while creating the management domain for which this management association is created.
none	Sender ID TLV is not to be sent.
chassisid	Chassis ID Length, Chassis ID Subtype and Chassis ID TLV are to be present. System name shall be filled as Chassis ID.

Defaults

parameter	default
id-permission	none

Platforms Supported

OmniSwitch 6250, 6450

Usage Guidelines

Domain must be created before it is modified.

Examples

```
-> ethoam domain MD id-permission chassisid
```

Release History

Release 6.6.2; command introduced.

Related Commands

show ethoam default-domain configuration	Displays the values of scalar Default-MD objects.
show ethoam domain	Displays the information of a specific Management Domain configured on the bridge.

MIB Objects

```
dotlagCfmMdTable
  dotlagCfmMdName
  dotlagCfmMdIdPermission
```

ethoam association

Creates Maintenance Association (MA) entry.

ethoam association *ma-name* **format** {**vpnid** | **unsignedint** | **string** | **primaryvid** | **icc-based**} **domain**
md-name **primary-vlan** *vlan-id*

no ethoam association *ma-name* **domain** *md-name*

Syntax Definitions

<i>ma-name</i>	Association name for the created Ethernet OAM Association.
vpnid	As specified in RFC 2685 VPN ID.
unsignedint	2-octet unsigned integer.
string	Character String.
primaryvid	Primary VLAN ID (12 bits represented in a 2-octet integer).
icc-based	This format is supported for inter-op with ITU-T.
<i>md-name</i>	Specifies the domain name used while creating the management domain for which this management association is created.
<i>vlan-id</i>	Primary VLAN Identifier

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6450

Usage Guidelines

- Maximum association name is name 44 minus the length of its domain name.
- Use format as 'icc-based' to inter-op with ITU-T Y.1731.
- Domain must be created before the creation of MA.
- VLAN must be created before the creation of MA.
- VLAN specified must be a primary VID.
- VLAN ID specified must be between 1 and 4094.
- Deletion of MA shall result in the deletion of MIPs and MEPs (on primary and non-primary VLAN) configured in it.

Examples

```
-> ethoam association MA format string domain MD primary-vlan 100
```

Release History

Release 6.6.1; command introduced.

Release 6.6.2; *association_name*, *domain_name* / *mac_address* parameters replaced with *ma-name*, *md-name* parameters; **unsignedint** and **icc-based** parameters added; **integer** parameter deleted.

Related Commands

show ethoam domain association

Displays the information of a specified MA in a Management Domain configured on the bridge.

MIB Objects

dotlagCfmMaNetTable

dotlagCfmMaNetFormat

dotlagCfmMaNetName

dotlagCfmMaNetRowStatus

dotlagCfmMaCompTable

dotlagCfmMaComponentId

dotlagCfmMaCompPrimaryVid

dotlagCfmMaCompRowStatus

ethoam association mhf

Configures the MIP Half Function (MHF) value for MA Entry.

ethoam association *ma-name* **domain** *md-name* **mhf** {**none** | **default** | **explicit** | **defer**}

Syntax Definitions

<i>ma-name</i>	Association name for the created Ethernet OAM Association.
<i>md-name</i>	Specifies the domain name used while creating the management domain for which this management association is created.
none	No MHFs can be created.
default	MHFs can be created.
explicit	MHFs can be created only if a MEP is created at some lower MD Level.
defer	The creation of MHFs is determined by the corresponding MD object 'dot1agCfmMdmhfCreation'.

Defaults

parameter	default
none explicit default defer	defer

Platforms Supported

OmniSwitch 6250, 6450

Usage Guidelines

- MA must be created before it is modified.
- On modification of 'mhf' for any MA, Automip shall also be invoked for all VLANs associated with this primary VID.

Examples

```
-> ethoam association MA domain MD mhf defer
```

Release History

Release 6.6.1; command introduced.

Release 6.6.2; *association_name*, *domain_name* / *mac_address* parameters replaced with *ma-name*, *md-name* parameters; **defer** parameter added.

Related Commands

- show ethoam domain association** Displays the information of a specified MA in a Management Domain configured on the bridge.
- show ethoam default-domain** Displays the information of the default MA.

MIB Objects

```
dot1agCfmMaNetTable  
    dot1agCfmMaNetName  
dot1agCfmMaCompTable  
    dot1agCfmMaCompMhfCreation
```

ethoam association id-permission

Configure id-permission value for MA Entry.

ethoam association *ma-name* **domain** *md-name* **id-permission** {**none** | **chassisid** | **defer**}

Syntax Definitions

<i>ma-name</i>	Association name for the created Ethernet OAM Association.
<i>md-name</i>	Specifies the domain name used while creating the management domain for which this management association is created.
none	Sender ID TLV is not to be sent.
chassisid	Chassis ID Length, Chassis ID Subtype and Chassis ID TLV are to be present.
defer	The contents of the Sender ID TLV are determined by the corresponding MD object 'dot1agCfmMdIdPermission'.

Defaults

parameter	default
none chassisid defer	defer

Platforms Supported

OmniSwitch 6250, 6450

Usage Guidelines

MA must be created before it is modified.

Examples

```
-> ethoam association MA domain MD id-permission defer
```

Release History

Release 6.6.2; command introduced.

Related Commands

**show ethoam domain
association**

Displays the information of a specified MA in a Management Domain configured on the bridge.

show ethoam domain

Displays the information of a specific Management Domain configured on the bridge.

MIB Objects

dot1agCfmMaNetTable

dot1agCfmMaNetName

dot1agCfmMaCompTable

dot1agCfmMaCompMidPermission

ethoam association ccm-interval

Modifies the Continuity Check Message (CCM) transmission interval of an Ethernet OAM Maintenance Association.

ethoam association *association_name* **domain** {*domain_name* | *mac_address*}
ccm-interval {**interval-invalid** | **interval100ms** | **interval1s** | **interval10s** | **interval1m** | **interval10m**}

Syntax Definitions

<i>association_name</i>	Name of the Ethernet OAM Association. Up to 48 (minus the domain name length) characters may be used.
<i>domain_name</i>	Specifies the domain name. For more information on the different formats of the domain name, refer to ethoam domain .
<i>mac_address</i>	Specifies the CFM system MAC address.
interval-invalid	Specifies that no CCMs are sent by a MEP
interval100ms	Specifies that CCMs are sent every 100 milli seconds.
interval1s	Specifies that CCMs are sent every 1 second.
interval10s	Specifies that CCMs are sent every 10 seconds.
interval1m	Specifies that CCMs are sent every minute.
interval10m	Specifies that CCMs are sent every 10 minutes.

Defaults

parameter	default
interval-invalid interval100ms interval1s interval10s interval1m interval10m	interval10s

Platforms Supported

OmniSwitch 6250, 6450

Usage Guidelines

- The *association_name* must be unique amid all those used by or available to the service provider within a domain.
- The domain and association must be created before configuring 100ms CC interval.

Examples

```
-> ethoam association alcatel-lucent-sales domain esd.alcatel-lucent.com
ccm-interval interval10s
-> ethoam association MA domain MD ccm-interval interval100ms
```

Release History

Release 6.6.1; command introduced.
Release 6.6.3; interval100ms added.

Related Commands

[show ethoam domain](#)

Displays the information of a specific Management Domain configured on the bridge.

MIB Objects

DotlagCfmMa

- dotlagCfmMaIndex
- dotlagCfmMaFormat
- dotlagCfmMaName
- dotlagCfmMaVid
- dotlagCfmMaMhfCreation
- dotlagCfmMaCcmInterval
- dotlagCfmMaRowStatus

ethoam association endpoint-list

Modifies the MEP list of an Ethernet OAM Maintenance Association.

ethoam association *association_name* **domain** {*domain_name* | *mac_address*}
endpoint-list *mep_id*[-*mep_id2*]

no ethoam association *association_name* **domain** {*domain_name* | *mac_address*}
endpoint-list *mep_id*[-*mep_id2*]

Syntax Definitions

<i>association_name</i>	Name of the Ethernet OAM Association. Up to 48 (minus domain name length) characters may be used.
<i>domain_name</i>	Specifies the domain name. For more information on the different formats of the domain name, refer to ethoam domain .
<i>mac_address</i>	Specifies the CFM system MAC address.
<i>mep_id</i>	Specifies the MEP number.
<i>mep_id2</i>	Last MEP number in a range of MEPs you want to configure.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6450

Usage Guidelines

- Use the **no** form of this command to remove the MEP list.
- Note that only the MEP that is associated with the MEP list of the MA can be configured locally on the bridge or monitored remotely.
- The *association_name* should be unique within a domain.

Examples

```
-> ethoam association alcatel-lucent-sales domain esd.alcatel-lucent.com endpoint-  
list 100-200  
-> no ethoam association alcatel-lucent-sales domain esd.alcatel-lucent.com  
endpoint-list 100-200
```

Release History

Release 6.6.1; command introduced.

Related Commands

show ethoam domain association

Displays the information of a specified MA in a Management Domain configured on the bridge.

MIB Objects

DotlagCfmMa

- dotlagCfmMaIndex
- dotlagCfmMaFormat
- dotlagCfmMaName
- dotlagCfmMaVid
- dotlagCfmMaMhfCreation
- dotlagCfmMaCcmInterval
- dotlagCfmMaRowStatus

DotlagCfmMaMepList

- dotlagCfmMaMepListIdentifier
- dotlagCfmMaMepListRowStatus

ethoam association allowed-cvlan-list

Allows to add or delete the allowed CVLANs on the Ethernet OAM Maintenance Association (MA).

ethoam association *association_name* **domain** {*domain_name* | *mac_address*}
allowed-cvlan-list *num* [-*num2*]

no ethoam association *association_name* **domain** {*domain_name* | *mac_address*}
allowed-cvlan-list *num* [-*num2*]

Syntax Definitions

<i>association_name</i>	Name of the Ethernet OAM Association. Up to 48 (minus domain name length) characters can be used.
<i>domain_name</i>	Specifies the domain name. For more information on the different formats of the domain name, refer to ethoam domain .
<i>mac_address</i>	Specifies the CFM system MAC address.
<i>num</i>	List of customer VLAN IDs allowed.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6450

Usage Guidelines

- Use the **no** form of this command to remove the allowed CVLAN ID list.
- Note that only the CVLANs in the Ethernet Service corresponding to the SVLAN of the MA can be associated to the CVLAN list of MA.

Examples

```
-> ethoam association MA domain MD allowed-cvlan-list 10-15  
-> no ethoam association MA domain MD allowed-cvlan-list 10-15
```

Release History

Release 6.6.5; command introduced.

Related Commands

**show ethoam domain
association**

Displays the information of a specified MA in a Management Domain configured on the bridge.

ethoam endpoint

Creates a Maintenance End Point (MEP) and a virtual MEP.

MIB Objects

dot1agCfmMaCvlanListTable

dot1agCfmMaCvlanListIdentifier

dot1agCfmMaCvlanListRowStatus

clear ethoam statistics

Clear statistics for all MEPs or for a particular MEP.

clear ethoam statistics [**domain** *domain* **association** *association* **endpoint** *mep-id*]

Syntax Definitions

<i>domain</i>	Specifies the domain name used while creating the management domain for which this management association is created.
<i>association</i>	Association name for the created Ethernet OAM Association.
<i>mep-id</i>	MEP Identifier. Valid Range is 1-8191.

Defaults

None

Platforms Supported

OmniSwitch 6250, 6450

Usage Guidelines

N/A

Examples

```
-> clear ethoam statistics
-> clear ethoam statistics domain MD association MA endpoint 10
```

Release History

Release 6.6.2; command introduced.

Related Commands

[show ethoam statistics](#) Displays the Ethernet OAM of all the Management Domains configured on the bridge. Also, displays the statistics of all the MAs and matching MEPs for all the MDs.

MIB Objects

```
dotlagCfmMdTable
    dotlagCfmMdName
dotlagCfmMaNetTable
    dotlagCfmMaNetName
dotlagCfmMepTable
    dotlagCfmMepIdentifier
    alaCfmMepClearStats
    alaCfmGlobalClearStats
```

ethoam default-domain level

Configures the effective value of 'level' for all Default Maintenance Domain (MD) entries with 'level' configured as '-1'.

ethoam default-domain level *num*

no ethoam default-domain

Syntax Definitions

num The MD level whose value range from 0-7.

Defaults

Default value is 0.

Platforms Supported

OmniSwitch 6250, 6450

Usage Guidelines

MD Level shall range from 0 to 7.

Examples

```
-> ethoam default-domain level 1
```

Release History

Release 6.6.2; command introduced.

Related Commands

show ethoam default-domain configuration Displays the values of scalar Default-MD objects.

MIB Objects

```
dot1agCfmDefaultMdDefLevel
```

ethoam default-domain mhf

Configures the effective 'mhf' value for all Default Maintenance Domain (MD) entries with 'mhf' configured as 'defer'.

ethoam default-domain mhf {none | default | explicit}

no ethoam default-domain

Syntax Definitions

none	No MHFs can be created.
default	MHFs can be created.
explicit	MHFs can be created only if a MEP is created at some lower MD Level. Defaults

Defaults

Default value is none.

Platforms Supported

OmniSwitch 6250, 6450

Usage Guidelines

N/A

Examples

```
-> ethoam default-domain mhf default
```

Release History

Release 6.6.2; command introduced.

Related Commands

show ethoam default-domain configuration Displays the values of scalar Default-MD objects.

MIB Objects

dot1agCfmDefaultMdDefMhfCreation

ethoam default-domain id-permission

Configures the effective 'id-permission' value for all Default MD entries with 'id-permission' configured as 'defer'.

ethoam default-domain id-permission {none | chassisid}

no ethoam default-domain

Syntax Definitions

none	Sender ID TLV is not to be sent.
chassisid	Chassis ID Length, Chassis ID Subtype and Chassis ID TLV are to be present.

Defaults

Default value is none.

Platforms Supported

OmniSwitch 6250, 6450

Usage Guidelines

N/A

Examples

```
-> ethoam default-domain id-permission chassisid
```

Release History

Release 6.6.2; command introduced.

Related Commands

show ethoam default-domain configuration Displays the values of scalar Default-MD objects.

MIB Objects

dot1agCfmDefaultMdDefIdPermission

ethoam default-domain primary-vlan

Configures the level, mhf and id-permission of a Default-MD entry for a specified VLAN.

ethoam default-domain primary-vlan {*vlan-id*} [**level** {*no-level* | *num*}] [**mhf** {**none** | **default** | **explicit** | **defer**}] [**id-permission** {**none** | **chassisid** | **defer**}]

no ethoam default-domain

Syntax Definitions

<i>vlan-id</i>	VLAN Identifier.
<i>no-level</i>	MD Level and its value is -1. So level is determined by scalar object 'dot1agCfmDefaultMdDefLevel'
<i>num</i>	MD Level and it ranges from 0 to 7
none	No MHFs can be created.
default	MHFs can be created.
explicit	MHFs can be created only if a MEP is created at some lower MD Level.
defer	The creation of MHFs is determined by the corresponding scalar object 'dot1agCfmDefaultMdDefMhfCreation'.
none	Sender ID TLV is not to be sent.
chassisid	Chassis ID Length, Chassis ID Subtype and Chassis ID TLV are to be present.
defer	The contents of the Sender ID TLV are determined by the corresponding scalar object 'dot1agCfmDefaultMdDefIdPermission'.

Defaults

parameter	default
<i>no-level</i> <i>num</i>	<i>no-level</i>
none explicit default defer	defer
none chassisid defer	defer

Platforms Supported

OmniSwitch 6250, 6450

Usage Guidelines

On modification of 'mhf' for any primary VID, Automip shall be invoked for all VLANS associated with this primary VID.

Examples

```
-> ethoam default-domain primary-vlan 10 id-permission chassisid level 3 mhf default.
-> ethoam default-domain primary-vlan 10 id-permission chassisid
-> ethoam default-domain primary-vlan 10 level 3
```

```
-> ethoam default-domain primary-vlan 10 mhf default
-> ethoam default-domain primary-vlan 10 level 3 mhf default
```

Release History

Release 6.6.2; command introduced.

Related Commands

show ethoam default-domain Displays the information of all the default MD.

MIB Objects

```
dotlagCfmDefaultMdTable
  dotlagCfmDefaultMdComponentId
  dotlagCfmDefaultMdPrimaryVid
  dotlagCfmDefaultMdLevel
  dotlagCfmDefaultMdMhfCreation
  dotlagCfmDefaultMdIdPermission
```

ethoam endpoint

Creates a Maintenance End Point (MEP) and a virtual MEP.

ethoam endpoint *mep-id* **domain** *md_name* **association** *ma_name* **direction** {**up** | **down**} {**port** {*slot/port* | **virtual** | **linkagg** *agg_id*} [**primary-vlan** *vlan_id* | **cvlan** *cvlan_id*]

no ethoam endpoint *mep-id* **domain** *md_name* **association** *ma_name*

Syntax Definitions

<i>mep_id</i>	Specifies the Maintenance Association End Point. The valid range is 1–8191.
<i>md_name</i>	Specifies the domain name used while creating the management domain for which the management association is created.
<i>ma_name</i>	Association name for the created Ethernet OAM Association.
up	The direction of the MEP is UP.
down	The direction of the MEP is DOWN.
<i>slot/port</i>	Physical slot and port number on which MEP needs to be created.
virtual	Creates a virtual MEP.
<i>agg_id</i>	Linkagg Identifier on which MEP needs to be created.
<i>vlan_id</i>	VLAN identifier.
<i>cvlan_id</i>	Customer VLAN Identifier

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6450

Usage Guidelines

- The domain and association must be created before MEP can be created.
- The *mep_id* must be a unique id.
- The direction for virtual MEP must always be UP.
- For creating a virtual MEP, the value of port must be given the keyword “virtual”.
- The CVLAN must be part of the allowed CVLAN list.
- The CVLAN must be configured only for UP MEPs and on User-Network (UNI) Ports.
- The CVLAN ID must be associated to the SVLAN (MA VLAN) and the UNI port using Ethernet service configuration.
- Use the **no** form of this command to delete the MEP.

Examples

```
-> ethoam endpoint 10 domain MD association MA direction up port 1/1
-> ethoam endpoint 10 domain MD association MA direction down linkagg 1
-> ethoam endpoint 10 domain MD association MA direction down linkagg 1 vlan 10
-> ethoam endpoint 1 domain md1 association ma1 direction up port virtual primary-
vlan 100
-> ethoam endpoint 10 domain MD association MA direction up port 1/1 cvlan 20
-> no ethoam endpoint 10 domain MD association MA
```

Release History

Release 6.6.2; command introduced.
Release 6.6.3; **virtual** parameter added.
Release 6.6.5; **cvlan** parameter added.

Related Commands

[show ethoam domain association end-point](#)

Displays the information of a specific MEP in a Management Domain configured on the bridge.

[ethoam association allowed-cvlan-list](#)

Allows to add or delete the allowed CVLANs on the Ethernet OAM Maintenance Association.

MIB Objects

```
dotlagCfmMdTable
  dotlagCfmMdName
dotlagCfmMaNetTable
  dotlagCfmMaNetName
dotlagCfmMepTable
  dotlagCfmMepIdentifier
  dotlagCfmMepDirection
  dotlagCfmMepIfIndex
  dotlagCfmMepPrimaryVid
  dotlagCfmMepCvlanId
```

ethoam endpoint admin-state

Configures the administrative state of MEP.

ethoam endpoint *mep_id* **domain** {*domain_name* | *mac_address*} **association** *association_name*
admin-state {**enable** | **disable**}

Syntax Definitions

<i>mep_id</i>	Specifies the Maintenance Association End Point. The valid range is 1–8191.
<i>domain_name</i>	Specifies the domain name. For more information on the different formats of the domain name, refer to ethoam domain .
<i>mac_address</i>	Specifies the CFM system MAC address.
<i>association_name</i>	Association name of the Ethernet OAM Association. Up to 48 (minus the domain name length) characters may be used.
enable	Administratively enables MEP.
disable	Administratively disables MEP.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6450

Usage Guidelines

The *mep_id* should be unique amid all those used by or available to the service provider in the specified MA.

Examples

```
-> ethoam endpoint 100 domain esd.alcatel-lucent.com association alcatel-lucent-  
sales admin-state enable
```

Release History

Release 6.6.1; command introduced.

Related Commands

show ethoam domain association end-point

Displays the information of a specific MEP in a Management Domain configured on the bridge.

MIB Objects

DotlagCfmMep

- dotlagCfmMepIndex
- dotlagCfmMepIdentifier
- dotlagCfmMepDirection
- dotlagCfmMepPortNumber
- dotlagCfmMepMacAddress
- dotlagCfmMepAdminStatus
- dotlagCfmMepFngState
- dotlagCfmMepCcmEnabled
- dotlagCfmMepCcmTransmitting
- dotlagCfmMepCcmLtmPriority
- dotlagCfmMepCcmNotReceived
- dotlagCfmMepCcmStreamError
- dotlagCfmMepCcmStreamOther
- dotlagCfmMepRdiReceived
- dotlagCfmMepLastCcmMaFault
- dotlagCfmMepLastCcmCrossConnFault
- dotlagCfmMepCcmOut
- dotlagCfmMepLbmNextSeqNumber
- dotlagCfmMepLbrIn
- dotlagCfmMepLbrInOutOfOrder
- dotlagCfmMepLbrOut
- dotlagCfmMepLtmNextSeqNumber
- dotlagCfmMepLtmIn
- dotlagCfmMepLtrOut
- dotlagCfmMepDefectsPresent
- dotlagCfmMepDefectsAbsent
- dotlagCfmMepRowStatus

ethoam endpoint ccm

Configures the MEP to generate Continuity Check Messages (CCM).

```
ethoam endpoint mep_id domain {domain_name | mac_address} association association_name  
ccm {enable | disable}
```

Syntax Definitions

<i>mep_id</i>	Specifies the Maintenance Association End Point. The valid range is 1–8191.
<i>domain_name</i>	Specifies the domain name. For more information on the different formats of the domain name, refer to ethoam domain .
<i>mac_address</i>	Specifies the CFM system MAC address.
<i>association_name</i>	Name of the Ethernet OAM association. Up to 48 (minus the domain name length) characters may be used.
enable	Enables MEP to generate CCMs.
disable	Disables MEP to generate CCMs.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6450

Usage Guidelines

- The *mep_id* should be unique amid all those used by or available to the service provider in the specified MA.
- Defects are logged when CCM generation is enabled and there is a loss in connectivity between two connected MEPs.

Examples

```
-> ethoam endpoint 100 domain esd.alcatel-lucent.com association  
alcatel-lucent-sales ccm enable
```

Release History

Release 6.6.1; command introduced.

Related Commands

[show ethoam domain association end-point](#)

Displays the information of a specific MEP in a Management Domain configured on the bridge.

MIB Objects

DotlagCfmMep

- dotlagCfmMepIndex
- dotlagCfmMepIdentifier
- dotlagCfmMepDirection
- dotlagCfmMepPortNumber
- dotlagCfmMepMacAddress
- dotlagCfmMepAdminStatus
- dotlagCfmMepFngState
- dotlagCfmMepCcmEnabled
- dotlagCfmMepCcmTransmitting
- dotlagCfmMepCcmLtmPriority
- dotlagCfmMepCcmNotReceived
- dotlagCfmMepCcmStreamError
- dotlagCfmMepCcmStreamOther
- dotlagCfmMepRdiReceived
- dotlagCfmMepLastCcmMaFault
- dotlagCfmMepLastCcmCrossConnFault
- dotlagCfmMepCcmOut
- dotlagCfmMepLbmNextSeqNumber
- dotlagCfmMepLbrIn
- dotlagCfmMepLbrInOutOfOrder
- dotlagCfmMepLbrOut
- dotlagCfmMepLtmNextSeqNumber
- dotlagCfmMepLtmIn
- dotlagCfmMepLtrOut
- dotlagCfmMepDefectsPresent
- dotlagCfmMepDefectsAbsent
- dotlagCfmMepRowStatus

ethoam endpoint priority

Configures the priority values for CCMs and Linktrace Messages (LTMs) transmitted by a MEP.

ethoam endpoint *mep_id* **domain** {*domain_name* | *mac_address*} **association** *association_name* **priority** *ccm_ltm_priority*

Syntax Definitions

<i>mep_id</i>	Specifies the Maintenance Association End Point. The valid range is 1–8191.
<i>domain_name</i>	Specifies the domain name. For more information on the different formats of the domain name, refer to ethoam domain .
<i>mac_address</i>	Specifies the CFM system MAC address.
<i>association_name</i>	Name of the Ethernet OAM Association. Up to 48 (minus the domain name length) characters may be used.
<i>ccm_ltm_priority</i>	Priority value for CCMs and LTMs transmitted by the MEP. The valid range is 0–7.

Defaults

parameter	default
<i>ccm_ltm_priority</i>	7

Platforms Supported

OmniSwitch 6250, 6450

Usage Guidelines

The *mep_id* should be unique amid all those used by or available to the service provider in the specified MA.

Examples

```
-> ethoam endpoint 100 domain esd.alcatel-lucent.com association alcatel-lucent-
sales priority 6
```

Release History

Release 6.6.1; command introduced.

Related Commands

[show ethoam domain association end-point](#)

Displays the information of a specific MEP in a Management Domain configured on the bridge.

MIB Objects

DotlagCfmMep

- dotlagCfmMepIndex
- dotlagCfmMepIdentifier
- dotlagCfmMepDirection
- dotlagCfmMepPortNumber
- dotlagCfmMepMacAddress
- dotlagCfmMepAdminStatus
- dotlagCfmMepFngState
- dotlagCfmMepCcmEnabled
- dotlagCfmMepCcmTransmitting
- dotlagCfmMepCcmLtmPriority
- dotlagCfmMepCcmNotReceived
- dotlagCfmMepCcmStreamError
- dotlagCfmMepCcmStreamOther
- dotlagCfmMepRdiReceived
- dotlagCfmMepLastCcmMaFault
- dotlagCfmMepLastCcmCrossConnFault
- dotlagCfmMepCcmOut
- dotlagCfmMepLbmNextSeqNumber
- dotlagCfmMepLbrIn
- dotlagCfmMepLbrInOutOfOrder
- dotlagCfmMepLbrOut
- dotlagCfmMepLtmNextSeqNumber
- dotlagCfmMepLtmIn
- dotlagCfmMepLtrOut
- dotlagCfmMepDefectsPresent
- dotlagCfmMepDefectsAbsent
- dotlagCfmMepRowStatus

ethoam endpoint lowest-defect-priority

Configures the lowest priority fault alarm for the lowest priority defect for a MEP.

ethoam endpoint *mep_id* **domain** {*domain_name* | *mac_address*} **association** *association_name* **lowest-defect-priority** *lowest_priority_defect*

Syntax Definitions

<i>mep_id</i>	Specifies the Maintenance Association End Point. The valid range is 1–8191.
<i>domain_name</i>	Specifies the domain name. For more information on the different formats of the domain name, refer to ethoam domain .
<i>mac_address</i>	Specifies the CFM system MAC address.
<i>association_name</i>	Name of the Ethernet OAM Association. Up to 48 (minus the domain name length) characters may be used.
<i>lowest_priority_defect</i>	The lowest priority defect that can generate a Fault alarm. Possible values are xcon, rem-err-xcon, no-defect, mac-rem-err-xcon, err-xcon, and all-defect.

Defaults

parameter	default
<i>lowest_priority_defect</i>	mac-rem-err-xcon

Platforms Supported

OmniSwitch 6250, 6450

Usage Guidelines

The *mep_id* should be unique amid all those used by or available to the service provider in the specified MA.

Examples

```
-> ethoam endpoint 100 domain esd.alcatel-lucent.com association alcatel-lucent-
sales lowest-defect-priority all-defect
```

Release History

Release 6.6.1; command introduced.

Related Commands

[show ethoam domain association end-point](#)

Displays the information of a specific MEP in a Management Domain configured on the bridge.

MIB Objects

DotlagCfmMep

- dotlagCfmMepIndex
- dotlagCfmMepIdentifier
- dotlagCfmMepDirection
- dotlagCfmMepPortNumber
- dotlagCfmMepMacAddress
- dotlagCfmMepAdminStatus
- dotlagCfmMepFngState
- dotlagCfmMepCcmEnabled
- dotlagCfmMepCcmTransmitting
- dotlagCfmMepCcmLtmPriority
- dotlagCfmMepCcmNotReceived
- dotlagCfmMepCcmStreamError
- dotlagCfmMepCcmStreamOther
- dotlagCfmMepRdiReceived
- dotlagCfmMepLastCcmMaFault
- dotlagCfmMepLastCcmCrossConnFault
- dotlagCfmMepCcmOut
- dotlagCfmMepLbmNextSeqNumber
- dotlagCfmMepLbrIn
- dotlagCfmMepLbrInOutOfOrder
- dotlagCfmMepLbrOut
- dotlagCfmMepLtmNextSeqNumber
- dotlagCfmMepLtmIn
- dotlagCfmMepLtrOut
- dotlagCfmMepDefectsPresent
- dotlagCfmMepDefectsAbsent
- dotlagCfmMepRowStatus

ethoam endpoint domain association direction

Creates a MEP.

ethoam endpoint *mep-id* **domain** *md-name* **association** *ma-name* **direction** { **up** | **down** } { **port** *slot/port* | **linkagg** *id* } [**primary-vlan** *vlan-id*]

Syntax Definitions

<i>mep-id</i>	Specifies the Maintenance Association End Point. The valid range is 1–8191.
<i>ma-name</i>	Association name for the created Ethernet OAM Association.
<i>md-name</i>	Specifies the domain name used while creating the management domain for which this management association is created.
up	For UP MEP.
down	For DOWN MEP.
<i>slot/port</i>	Physical slot and port number on which MEP needs to be created.
<i>id</i>	Linkagg Identifier on which MEP needs to be created.
<i>vlan-id</i>	VLAN identifier.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6450

Usage Guidelines

The *mep-id* should be unique amid all those used by or available to the service provider in the specified MA.

Examples

```
-> ethoam endpoint 10 domain MD association MA direction up port 1/1
-> ethoam endpoint 10 domain MD association MA direction down linkagg 1
-> ethoam endpoint 10 domain MD association MA direction down linkagg 1 vlan 10
```

Release History

Release 6.6.2; command introduced.

Related Commands

**show ethoam domain
association end-point**

Displays the information of a specific MEP in a Management Domain configured on the bridge.

MIB Objects

```
dotlagCfmMdTable  
  dotlagCfmMdName  
dotlagCfmMaNetTable  
  dotlagCfmMaNetName  
dotlagCfmMepTable  
  dotlagCfmMepIdentifier  
  dotlagCfmMepDirection  
  dotlagCfmMepIfIndex  
  dotlagCfmMepPrimaryVid
```

ethoam endpoint ctag-priority

Configures the priority value to be included in the inner tag of the CFM frames originating from CVLAN MEPs.

ethoam endpoint *mep-id* **domain** *md-name* **association** *ma-name* **ctag-priority** { **copy-outer-to-inner** | *num* }

Syntax Definitions

<i>mep_id</i>	Specifies the Maintenance Association End Point. The valid range is 1–8191.
<i>ma-name</i>	Association name for the created Ethernet OAM Association.
<i>md-name</i>	Specifies the domain name used while creating the management domain for which this management association is created.
copy-outer-to-inner	Copies the outer tag priority to the inner tag.
<i>num</i>	Specify an Inner tag Priority value. Valid range is 0 to 7.

Defaults

parameter	default
copy-outer-to-inner / <i>num</i>	copy-outer-to-inner

Platforms Supported

OmniSwitch 6250, 6450

Usage Guidelines

If the priority value is not specified, then the priority value of the inner tag will be the same as the priority value of the outer tag.

Examples

```
-> ethoam endpoint 1 domain md1 association ma1 ctag-priority 6
-> ethoam endpoint 1 domain md1 association ma1 ctag-priority copy-outer-to-inner
```

Release History

Release 6.6.5; command introduced.

Related Commands

**show ethoam domain
association end-point**

Displays the information of a specific MEP in a Management Domain configured on the bridge.

MIB Objects

```
dotlagCfmMepTable  
  dotlagCfmMepCtagPriority  
  dotlagCfmMepCtagSet
```

ethoam loopback

Enables the maintenance entity to initiate transmitting loopback messages (LBMs) and obtaining loopback replies.

ethoam loopback {**target-endpoint** *t-mepid* | **target-macaddress** *mac_add*} **source-endpoint** *s-mepid* **domain** *d-name* **association** *a-name* [**number** *num*] [**data** *string*] [**vlan-priority** *vlan-priority*] [**drop-eligible** {**true** | **false**}]

Syntax Definitions

<i>t-mepid</i>	Specifies the MEP for which the Loopback message is targeted. The valid range is 1–8191.
<i>mac_add</i>	Target MAC address to be transmitted.
<i>s-mepid</i>	Specifies the MEP that transmits the Loopback message. The valid range is 1–8191.
<i>d-name</i>	Specifies the domain name. For more information on the different formats of the domain name, refer to ethoam domain .
<i>a-name</i>	Name of the Ethernet OAM Association. Up to 48 (minus the domain name length) characters may be used.
num	Specifies the number of loopback messages to be transmitted. The range is 1–10.
string	Specifies the amount of data to be included in the Data Type Length Value (TLV), if the Data TLV is selected to be sent. The valid range is 1–255.
<i>vlan-priority</i>	Specifies the 3-bit value to be used in the VLAN tag, if present in the transmitted frame. The valid range is 0–7.
true	Sets the drop eligibility bit in the VLAN tag to true.
false	Sets the drop eligibility bit in the VLAN tag to false.

Defaults

parameter	default
<i>num</i>	1
true false	true
vlan-priority	CCM priority

Platforms Supported

OmniSwitch 6250, 6450

Usage Guidelines

- This command allows an operator to generate a loopback message for the specified MEP.
- This command signals the MEP that it should transmit loopback messages and detect the presence or lack of the corresponding loopback reply(s).
- Note that a loopback message is used for fault verification.
- This command also validates the connectivity between Maintenance End Points (MEP) and Maintenance Intermediate Points (MIP).

Examples

```
-> ethoam loopback target-endpoint 10 source-endpoint 20 domain MD association MA
number 3
Reply from 00:0E:B1:6B:43:89: bytes=64 seq=0 time=100ms
Reply form 00:0E:B1:6B:43:89: bytes=64 seq=0 time=112ms
Request timed out.
----00:E0:B1:6B:43:89 ETH-LB Statistics----
3 packets transmitted, 2 packets received, 33% packet loss
round-trip (ms) min/avg/max = 100/106/112
```

Release History

Release 6.6.1; command introduced.

Release 6.6.2; *tar_mep_id, mac_address, src_mep_id, domain_name | mac_address, association_name, number_of_messages, data_size, vlan_priority* parameters replaced with *t-mepid, mac_add, s-mepid, d-name, a-name, num, string, vlan-priority*.

Related Commands

[show ethoam domain](#)

Displays the information of a specified Management Domain configured on the bridge.

MIB Objects

```
dotlagCfmMdTable
    dotlagCfmMdName
dotlagCfmMaNetTable
    dotlagCfmMaNetName
dotlagCfmMepTable
    dotlagCfmMepIdentifier
    dotlagCfmMepTransmitLbmDestMacAddress
    dotlagCfmMepTransmitLbmDestMepId
    dotlagCfmMepTransmitLbmDestIsMepId
    dotlagCfmMepTransmitLbmMessages
    dotlagCfmMepTransmitLbmDataTlv
    dotlagCfmMepTransmitLbmVlanPriority
    dotlagCfmMepTransmitLbmVlanDropEnable
    dotlagCfmMepTransmitLbmStatus
```

ethoam linktrace

Enables the maintenance entity to initiate transmitting Link Trace Messages (LTM).

ethoam linktrace {**target-macaddress** *mac_address* | **target-endpoint** *tar_mep_id*} **source-endpoint** *src_mep_id* **domain** {*domain_name* | *mac_address*} **association** *association_name* [**flag** {**fdbonly** | **fdb-mpdb**}] [**hop-count** *hop_count*]

Syntax Definitions

<i>mac_address</i>	Target MAC address to be transmitted.
tar_mep_id	Specifies the MEP for which the Loopback message is targeted.
src_mep_id	Specifies the MEP that transmits the Loopback message. The valid range is 1–8191.
<i>domain_name</i>	Specifies the domain name. For more information on the different formats of the domain name, refer to ethoam domain .
domain <i>mac_address</i>	Specifies the CFM system MAC address.
<i>association_name</i>	Name of the Ethernet OAM Association. Up to 48 (minus the domain name length) characters may be used.
fdbonly	Specifies that only the MAC addresses learned in a bridge's active data forwarding table is used to decide the egress port.
fdb-mpdb	Specifies that if the bridge's forwarding table could not produce a unique egress port, then the information stored in MIPCCM's database is used to determine the egress port.
<i>hop_count</i>	Indicates the number of hops remaining in this LTM. Each bridge that handles the LTM decreases the value by 1. This decreased value is returned to the LTM. The valid range is 0-255.

Defaults

parameter	default
<i>hop_count</i>	64
flag	fdbonly

Platforms Supported

OmniSwitch 6250, 6450

Usage Guidelines

- This command allows an operator to generate a LTM for the specified MEP.
- This command signals the MEP that it should transmit a Linktrace message and detect the presence or lack of the corresponding Linktrace messages.

Examples

```
-> ethoam linktrace target-macaddress 10:aa:ac:12:12:ad source-endpoint 4 domain  
esd.alcatel-lucent.com association alcatel-lucent_sales flag fdbonly hop-count 32  
Transaction Id: 6943
```

```
-> ethoam linktrace target-endpoint 15 source-endpoint 4 domain esd.alcatel-  
lucent.com association alcatel-lucent_sales  
Transaction Id: 6943
```

Release History

Release 6.6.1; command introduced.
Release 6.6.2; **fdb-mpdb** parameter added.

Related Commands

show ethoam domain Displays the information of a specified Management Domain configured on the bridge.

MIB Objects

```
DotlagCfmMep  
  dotlagCfmMepIdentifier  
  dotlagCfmMepTransmitLtmFlags  
  dotlagCfmMepTransmitLtmTargetMacAddress  
  dotlagCfmMepTransmitLtmTargetMepId  
  dotlagCfmMepTransmitLtmTargetIsMepId  
  dotlagCfmMepTransmitLtmTtl  
  dotlagCfmMepTransmitLtmResult  
  dotlagCfmMepTransmitEgressIdentifier
```

ethoam fault-alarm-time

Configures the timeout value for the Fault Notification Generation Alarm time that specifies the time interval during which one or more defects should be detected before the fault alarm is issued.

ethoam fault-alarm-time *centiseconds* **endpoint** *endpoint_id* **domain** {*domain_name* | *mac_address*}
association *association_name*

no ethoam fault-alarm-time **endpoint** *endpoint_id* **domain** {*domain_name* | *mac_address*}
association *association_name*

Syntax Definitions

<i>centiseconds</i>	The Fault Notification Generation Alarm timeout value, in centi seconds. The valid range is 250–1000.
<i>endpoint_id</i>	Specifies the MEP of a specific MA. The valid range is 1–8191.
<i>mac_address</i>	Specifies the CFM system MAC address.
<i>domain_name</i>	Specifies the domain name. For more information on the different formats of the domain name, refer to ethoam domain .
<i>association_name</i>	Name of the Ethernet OAM Association. Up to 48 (minus the domain name length) characters may be used.

Defaults

parameter	default
<i>centiseconds</i>	250

Platforms Supported

OmniSwitch 6250, 6450

Usage Guidelines

- Use the **no** form of this command to restore the Fault Notification Generation Alarm timeout value to its default value.
- The Fault Notification Generation Alarm timeout value is configurable per MEP.

Examples

```
-> ethoam fault-alarm-time 10 endpoint 100 domain esd.alcatel-lucent.com associa-
tion alcatel-lucent_sales
-> no ethoam fault-alarm-time endpoint 100 domain esd.alcatel-lucent.com associa-
tion alcatel-lucent_sales
```

Release History

Release 6.6.1; command introduced.

Related Commands

**show ethoam domain
association end-point**

Displays the information of a specific MEP in a Management Domain configured on the bridge.

MIB Objects

DotlagCfmMep

dotlagCfmMepFngAlarmTime

ethoam fault-reset-time

Configures the timer value for the Fault Notification Generation Reset time that specifies the time interval, during which the fault alarm is re-enabled to process faults. The fault alarm is only re-enabled if no new faults are received during this time interval.

ethoam fault-reset-time *centiseconds* **endpoint** *endpoint_id* **domain** {*mac_address* | *domain_name*} **association** *association_name*

no ethoam fault-reset-time **endpoint** *endpoint_id* **domain** {*mac_address* | *domain_name*} **association** *association_name*

Syntax Definitions

<i>centiseconds</i>	The Fault Notification Generation Reset timer value, in centi seconds. The valid range is 250–1000.
<i>endpoint_id</i>	Specifies the MEP of a specific MA. The valid range is 1–8191.
<i>mac_address</i>	Specifies the CFM system MAC address.
<i>domain_name</i>	Specifies the domain name. For more information on the different formats of the domain name, refer to ethoam domain .
<i>association_name</i>	Name of the Ethernet OAM Association. Up to 48 (minus the domain name length) characters may be used.

Defaults

parameter	default
<i>centiseconds</i>	1000

Platforms Supported

OmniSwitch 6250, 6450

Usage Guidelines

- Use the **no** form of this command to restore the Fault Notification Generation Reset timeout value to its default value.
- The Fault Notification Generation Reset timer value is configurable per MEP.

Examples

```
-> ethoam fault-reset-time 10 end-point 100 domain esd.alcatel-lucent.com association alcatel-lucent_sales
-> no ethoam fault-reset-time end-point 100 domain esd.alcatel-lucent.com association alcatel-lucent_sales
```

Release History

Release 6.6.1; command introduced.

Related Commands

ethoam fault-alarm-time

Configures the timeout value for the Fault Notification Generation Alarm time.

show ethoam domain association end-point

Displays the information of a specific MEP in a Management Domain configured on the bridge.

MIB Objects

Dot1agCfmMep

dot1agCfmMepFngResetTime

ethoam one-way-delay

Initiates a one-way-delay measurement (1DM) to determine the one-way frame delay (latency) and delay variation (jitter) between two MEPs.

ethoam one-way-delay {**target-endpoint** *t-mepid* | **target-macaddress** *mac_add*} **source-endpoint** *s-mepid* **domain** *domain* **association** *association* [**vlan-priority** *vlan-priority*]

Syntax Definitions

<i>t-mepid</i>	Target MEP-ID. Valid Range 1-8191.
<i>mac_add</i>	Target MAC-Address.
<i>s-mepid</i>	Source MEP-ID. Valid Range 1-8191.
<i>domain</i>	The maintenance domain name.
<i>association</i>	The maintenance association name.
<i>vlan-priority</i>	VLAN Priority. Valid Range is 0-7.

Defaults

parameter	default
<i>vlan-priority</i>	7

Platforms Supported

OmniSwitch 6250, 6450

Usage Guidelines

- Source MEP-ID, MD and MA must be created before initiating 1DM.
- When **target-endpoint** is specified then entry must be present in the RMEP table, no matter if its status is RMEP_OK or RMEP_FAILED, before initiating 1DM. So target-macaddress can be used to bypass such a restriction.
- Although the OmniSwitch implementation of Ethernet frame delay measurement (ETH-DM) is compliant with ITU-T Y.1731, delay measurement can be performed for both ITU-T Y.1731 and IEEE 802.1ag MEPs.
- If the 1DM is initiated with a **target-macaddress** and an egress port is found for this MAC address, then the 1DM frames are transmitted from that port. Otherwise, 1DM frames are flooded in the MEP's VLAN.
- One-way delay measurement requires NTP clock synchronization between the sending and receiving MEPs.

Examples

```
-> ethoam one-way-delay target-endpoint 10 source-endpoint 12 domain MD associa-  
tion MA vlan-priority 4
```

```
-> ethoam one-way-delay target-macaddress 00:e0:b1:6a:52:4c source-endpoint 12  
domain MD association MA vlan-priority 4
```

Release History

Release 6.6.2; command was introduced

Related Commands

[show ethoam one-way-delay](#) Displays the one-way-delay and jitter parameters for all entries or for the MAC address of a specific MEP.

MIB Objects

```
dotlagCfmMdTable  
    dotlagCfmMdName  
dotlagCfmMaNetTable  
    dotlagCfmMaNetName  
dotlagCfmMepTable  
    dotlagCfmMepIdentifier  
alaCfmMepTable  
    alaCfmMepOWDTMacAddress  
    alaCfmMepOWDTMepIdentifier  
    alaCfmMepOWDTPriority
```

ethoam two-way-delay

Initiate a two-way-delay measurement to determine the round-trip latency and jitter between two MEPs. The initiating MEP sends delay measurement message (DMM) frames to the receiving MEP. The receiving MEP responds with delay measurement reply (DMR) frames.

ethoam two-way-delay {**target-endpoint** *t-mepid* | **target-macaddress** *mac_add*} **source-endpoint** *s-mepid* **domain** *domain* **association** *association* [**vlan-priority** *vlan-priority*]

Syntax Definitions

<i>t-mepid</i>	Target MEP-ID. Valid Range 1-8191.
<i>mac_add</i>	Target MAC-Address.
<i>s-mepid</i>	Source MEP-ID. Valid Range 1-8191.
<i>domain</i>	The maintenance domain name.
<i>association</i>	The maintenance association name.
<i>vlan-priority</i>	VLAN Priority. Valid Range is 0-7.

Defaults

parameter	default
<i>vlan-priority</i>	7

Platforms Supported

OmniSwitch 6250, 6450

Usage Guidelines

- Source MEP-ID, MD and MA must be created before initiating a two-way delay measurement.
- When **target-endpoint** is specified then entry must be present in the RMEP table, no matter if the status is RMEP_OK or RMEP_FAILED, before initiating two-way-delay. So **target-macaddress** can be used to bypass such a restriction.
- The CLI console will pause until all DMRs are received or maximum of 3 seconds to ensure that all the DMRs have been returned. If the operation fails, then the appropriate message is displayed. If the operation is successful, no message is displayed.
- If the DMM is initiated by UP MEP with a **target-macaddress** and the egress port is found for this MAC address, then DMM frames are transmitted from that port. Otherwise, DMM frames are flooded in the MEP's VLAN.
- Two-way delay measurement does *not* require NTP clock synchronization on the sending and receiving MEPs.
- Although the OmniSwitch implementation of Ethernet frame delay measurement (ETH-DM) is compliant with ITU-T Y.1731, delay measurement can be performed for both ITU-T Y.1731 and IEEE 802.1ag MEPs.

- This command initiates an on-demand OAM performance measurement. To set up continuous two-way delay measurement, see the “Service Assurance Agent Commands” chapter for information about how to configure a SAA for continuous two-way frame delay measurement.

Examples

```
-> ethoam two-way-delay target-endpoint 10 source-endpoint 12 domain MD associa-
tion MA vlan-priority 4
Reply from 00:0E:B1:6B:43:89 delay=2584us jitter=282us
-> ethoam two-way-delay target-macaddress 00:e0:b1:6a:52:4c source-endpoint 12
domain MD association MA vlan-priority 4
Reply form 00:E0:B1:6A:52:4C: delay=2584us jitter=282us
```

Release History

Release 6.6.2; command was introduced

Related Commands

show ethoam two-way-delay Displays the two-way-delay and jitter parameters for all entries or for the MAC address of a specific MEP.

MIB Objects

```
dotlagCfmMdTable
  dotlagCfmMdName
dotlagCfmMaNetTable
  dotlagCfmMaNetName
dotlagCfmMepTable
  dotlagCfmMepIdentifier
alaCfmMepTable
  alaCfmMepTWDTMacAddress
  alaCfmMepTWDTMepIdentifier
  alaCfmMepTWDTPriority
```

clear ethoam

Delete all the one-way-delay or two-way-delay entries

clear ethoam {one-way-delay-table | two-way-delay-table}

Syntax Definitions

one-way-delay-table	Clears one-way delay measurement (IDM) entries.
two-way-delay-table	Clears two-way delay measurement (DMM/DMR) entries.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6450

Usage Guidelines

N/A

Examples

```
-> clear ethoam one-way-delay-table  
-> clear ethoam two-way-delay-table
```

Release History

Release 6.6.2; command was introduced

Related Commands

ethoam one-way-delay	Initiates the two one-way-delay messages from a particular MEP to an RMEP.
--------------------------------------	--

MIB Objects

```
alaCfmGlobalOWDClear  
alaCfmGlobalTWDClear
```

show ethoam

Displays the information of all the Management Domains (MD) configured on the bridge.

show ethoam

Syntax Definitions

N/A

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6450

Usage Guidelines

This command displays all the MAs for all the MDs.

Examples

```
-> show ethoam
System Configuration
  Ethernet OAM system mac address: 00:D0:95:EC:84:B0,
  Number of Maintenance Domains: 1
  Maintenance Domain: esd.alcatel-lucent.com
  Maintenance Association: alcatel-lucent-sales
```

output definitions

Ethernet OAM system mac address	The MAC address of the Ethernet OAM system.
Number of Maintenance Domains	The number of maintenance domains configured on the bridge.
Maintenance Domain	The name of the maintenance domain.
Maintenance Association	The name of the maintenance association.

Release History

Release 6.6.1; command introduced.

Related Commands

[ethoam domain](#) Creates an Ethernet domain.

MIB Objects

DotlagCfmStack

dotlagCfmStackMacAddress

DotlagCfmMd

dotlagCfmMdName

DotlagCfmMa

 dotlagCfmMaName

show ethoam domain

Displays the information of a specific Management Domain configured on the bridge.

show ethoam domain *md-name*

Syntax Definitions

md-name Specifies the domain name used while creating the management domain.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6450

Usage Guidelines

N/A

Examples

```
-> show ethoam domain MD
Total number of MAs configured in this MD = 1
MD Attributes
  MD-Format : string,
  MD-Level : level-3,
  MD-MHFstatus : mhfNone,
  MD-IdPermission : sendIdNone
  Maintenance Association : MA
    MA-Format : string,
    Primary Vlan : 199,
    Associated Vlan-list : none,
    Total Number of Vlans : 1,
    MA-MHFstatus : mhfNone,
    MA-IdPermission : sendIdNone,
    CCM-interval : interval10s,
    MEP-List(MEP-Id) : 10
    CVLAN-List (CVLAN-Id) : 1-127 301
```

output definitions

MD-level	The level at which the MD was created.
MD-MHFstatus	Indicates whether the maintenance entity can create MHFs for this MD. Options include none , explicit , or default .
Maintenance Association	The name of the maintenance association.
Primary Vlan	The Primary VLAN ID monitored by this MA. If the MA is not attached to any VLAN, 0 is displayed.

output definitions (continued)

MA-MHFstatus	Indicates whether the maintenance entity can create MHFs for this MA. Options include none , explicit , or default .
CCM-interval	The interval between the CCM transmissions.
MEP-List (MEP-Id)	Indicates the Maintenance End Point.
CVLAN-List (CVLAN-Id)	The allowed CVLAN list configured for a MEP.

Release History

Release 6.6.1; command introduced.

Release 6.6.2; *domain_name* / *mac_address* parameters replaced with *md-name* parameter.

Release 6.6.5; CVLAN-List (CVLAN-Id) field added in the output.

Related Commands

show ethoam	Displays the information of all the Management Domains (MD) configured on the bridge.
ethoam domain	Creates an Ethernet domain with a specific name.
ethoam association allowed-cvlan-list	Allows to add or delete the allowed CVLANs on the Ethernet OAM Maintenance Association.

MIB Objects

DotlagCfmMd

dotlagCfmMdLevel
dotlagCfmMdMhfCreation
dotlagCfmMdTable
dotlagCfmMdName

DotlagCfmMa

dotlagCfmMaName
dotlagCfmMaVid
dotlagCfmMaMhfCreation
dotlagCfmMaCcmInterval

DotlagCfmMep

dotlagCfmMepIdentifier
dotlagCfmMaCvlanListEntry

show ethoam domain association

Displays the information of a specific MA in a Management Domain configured on the bridge.

show ethoam domain *md-name* **association** *ma-name*

Syntax Definitions

md-name Specifies the domain name.
ma-name Name of the Ethernet OAM Association.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6450

Usage Guidelines

N/A

Examples

```
-> show ethoam domain MD association MA
Total number of MEPs configured in this MA = 2
MA-Format : string,
Primary Vlan : 200,
Associated Vlan-list : none,
Total Number of Vlans : 1,
MA-MHFstatus : mhfDefault,
MA-IdPermission : sendIdDefer,
CCM-interval : interval10s,
MEP-List(MEP-Id) : 11-30,
CVLAN-List(CVLAN-Id) : 20-30
```

Legend: MEP-Id: * = Inactive Endpoint

MEP-ID	Admin State	Direction	Mac-Address	Port	Primary Vlan	Cvlan
11	enable	up	E8:E7:32:72:01:A4	1/1	200	30
12	enable	up	E8:E7:32:72:01:A4	1/2	200	20

output definitions

MA-MHFstatus	Indicates whether the maintenance entity can create MHFs for this MA. Options include none , explicit , and default .
CCM-interval	The interval between the CCM transmissions.
MEP-List (MEP-Id)	Indicates the MEP.
Admin State	Indicates the administrative state (enable or disable) of the MEP.
Direction	The direction of the MEP.

output definitions (continued)

MAC Address	The MAC address of the MEP.
Port	The slot/port number of the bridge port to which the MEP is attached.
Primary Vlan	The Primary VLAN ID monitored by the MA. If the MA is not attached to any VLAN, 0 is displayed.
CVLAN-List (CVLAN-Id)	The CVLAN configured for the MEPs in a MA.

Release History

Release 6.6.1; command introduced.

Release 6.6.2; *domain_name* / *mac_address*, *association_name* parameters replaced with *md-name*, *ma-name* parameters.

Release 6.6.5; CVLAN-List (CVLAN-Id) and Cvlan fields added in the output.

Related Commands

ethoam association	Creates an Ethernet OAM Maintenance Association in the specified domain.
ethoam endpoint	Creates a Maintenance End Point (MEP) and a virtual MEP.
ethoam association allowed-cvlan-list	Allows to add or delete the allowed CVLANs on the Ethernet OAM Maintenance Association.

MIB Objects

```

DotlagCfmMa
  dotlagCfmMaVid
  dotlagCfmMaMhfCreation
  dotlagCfmMaCcmInterval
DotlagCfmMaNetTable
  dotlagCfmMaNetName
dotlagCfmMdTable
  dotlagCfmMdName
DotlagCfmMep
  dotlagCfmMepIdentifier
  dotlagCfmMepActive
  dotlagCfmMepDirection
  dotlagCfmMepIfIndex
  dotlagCfmMepMacAddress
  dotlagCfmMepCvlanId

```

show ethoam domain association end-point

Displays the information of a specific MEP in a Management Domain configured on the bridge.

show ethoam domain *md-name* **association** *ma-name* **endpoint** *mep-id*

Syntax Definitions

<i>md-name</i>	Specifies the domain name.
<i>ma-name</i>	Name of the Ethernet OAM Association.
<i>mep-id</i>	Specifies the MEP of a specific MA. The valid range is 1–8191.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6450

Usage Guidelines

N/A

Examples

```
-> show ethoam domain MD association MA endpoint 10
Admin State : disable,
Direction : up,
Slot/Port: virtual,
Primary Vlan : 200,
C-vlan: 20,
MacAddress: 00:E0:B1:A0:78:A3,
Fault Notification : FNG_RESET,
CCM Enabled : disabled,
CCM Linktrace Priority : 7,
CCM Not Received : false,
CCM Error defect : false,
CCM Xcon defect : false,
MEP RDI defect : false,
MEP Last CCM Fault : not specified,
MEP Xcon Last CCM Fault : not specified,
MEP Error Mac Status : false,
MEP Lbm NextSeqNumber : 0,
MEP Ltm NextSeqNumber : 32157,
Fault Alarm Time : 250,
Fault Reset Time : 1000,
Lowest PrDefect Allowed : DEF_MAC_REM_ERR_XCON,
Highest PrDefect Present : DEF_NONE
```


output definitions

Admin State	Indicates the administrative state (enable or disable) of the MEP.
Direction	The direction of the MEP.
Slot/Port	The slot/port number of the bridge port to which the MEP is attached.
Primary Vlan	The Primary VLAN ID monitored by this MA. If the MA is not attached to any VLAN, 0 is displayed.
C-vlan	The CVLAN configured for a MEP if it's a CVLAN MEP. If the MEP is SVLAN then this field will be displayed as '-'.
MAC Address	The MAC address of the MEP.
Fault Notification	Indicates the current state of the MEP Fault Notification Generator State Machine, which can be FNG_RESET , FNG_DEFECT , FNG_REPORT_DEFECT , FNG_DEFECT_REPORTED , or FNG_DEFECT_CLEARING .
CCM Enabled	Indicates whether the MEP generates CCMs (enabled) or not (disabled).
CCM Linktrace Priority	Indicates the priority value for CCMs and LTM s transmitted by the MEP.
CCM Not Received	Indicates if CCMs are not being received (true) or received (false) from at least one of the configured remote MEPs.
CCM Error defect	Indicates if a stream of erroneous CCMs is being received (true) or not (false) from a MEP in this MA.
CCM Xcon defect	Indicates if a stream of CCMs is being received (true) or not (false) from a MEP that belongs to another MA.
MEP RDI Received	Indicates that any other MEP in this MA is transmitting the RDI bit. Options include true or false .
MEP Last CCM Fault	The last-received CCM that triggered a MA fault.
MEP Xcon Last CCM Fault	The last-received CCM that triggered a cross-connect fault.
MEP Error Mac Status	Indicates a port status TLV. Options include true or false .
MEP Lbm NextSeqNumber	The next Transaction Identifier or Sequence Number to be sent in an LBM.
MEP Ltm NextSeqNumber	The next Transaction Identifier or Sequence Number to be sent in an LTM.
Fault Alarm Time	The time interval during which one or more defects should be detected before the fault alarm is issued
Fault Reset Time	The time interval during which the fault alarm is re-enabled to process faults
Lowest PrDefect Allowed	The lowest priority defect that allowed to generate fault alarm.
Highest PrDefect Present	The highest priority defect since the MEPs Fault Notification Generator in reset state.

Release History

Release 6.6.1; command introduced.

Release 6.6.2; *domain_name* | *mac_address*, *association_name*, *endpoint_id* parameters replaced with *md-name*, *ma-name*, and *mep-id* parameters.

Release 6.6.5; C-vlan field added in the output.

Related Commands

- ethoam endpoint** Creates an Ethernet OAM Maintenance End Point in the specified MA.
- ethoam endpoint admin-state** Configures the administrative state of MEP.

MIB Objects

```
DotlagCfmMaNetTable
    dotlagCfmMaNetName
DotlagCfmMdTable
    dotlagCfmMdName
DotlagCfmMep
    dotlagCfmMepTable
    dotlagCfmMepIdentifier
    dotlagCfmMepActive
    dotlagCfmMepDirection
    dotlagCfmMepPortNumber
    dotlagCfmMepMacAddress
    dotlagCfmMepFngState
    dotlagCfmMepCcmEnabled
    dotlagCfmMepCcmLtmPriority
    dotlagCfmMepSomeRMepCcmDefect
    dotlagCfmMepErrorCcmDefect
    dotlagCfmMepXconCcmDefect
    dotlagCfmMepSomeRdiDefect
    dotlagCfmMepErrorCcmLastFailure
    dotlagCfmMepXconCcmLastFailure
    dotlagCfmMepErrMacStatus
    dotlagCfmMepLtmNextSeqNumber
    dotlagCfmMepFngAlarmTime
    dotlagCfmMepFngAlarmTime
    dotlagCfmMepLowPrDef
    dotlagCfmMepHighestPrDefect
    dotlagCfmMepCvlanId
```

show ethoam default-domain

Displays all the default MD information for all the VLANs or a specific VLAN.

show ethoam default-domain [**primary-vlan** *vlan_id*]

Syntax Definitions

vlan_id VLAN ID for which the default MD information is required. The valid range is 1–4094.

Defaults

By default, the default MD information for all VLANs is displayed.

Platforms Supported

OmniSwitch 6250, 6450

Usage Guidelines

Use the *vlan_id* parameter with this command to view information about the default MD for a specific VLAN.

Examples

```
-> show ethoam default-domain
Vlan  Mhf-creation  Level      Id-Permission  Status
-----+-----+-----+-----+-----
      1           none       none          none           true
     100         default        3          none           false

-> show ethoam default-domain primary-vlan 100
Vlan  Mhf-creation  Level      Id-Permission  Status
-----+-----+-----+-----+-----
     100         default        3          none           false
```

output definitions

Primary Vlan	The primary VLAN ID of the default MD.
Mhf-creation	Indicates the MHF value for a VLAN that is part of the default MD Options include none , explicit , or default .
Level	The level of the maintenance domain.
Id-Permission	The Id-Permission of the default MD for the primary VLAN ID specified or for all the VLANs. The options include none, chassisId, or defer.
Status	Indicates the status of the default MD level table entry.

Release History

Release 6.6.1; command introduced.

Release 6.6.2; **vlan** parameter replaced with **primary-vlan**.

Related Commands

ethoam default-domain level Modifies the default Ethernet OAM Maintenance Domain (MD).

MIB Objects

```
dotlagCfmDefaultMdTable
  dotlagCfmDefaultMdComponentId
  dotlagCfmDefaultMdPrimaryVid
  dotlagCfmDefaultMdStatus
  dotlagCfmDefaultMdLevel
  dotlagCfmDefaultMdLevelVid
  dotlagCfmDefaultMdLevelLevel
  dotlagCfmDefaultMdMhfCreation
  dotlagCfmDefaultMdIdPermission
```

show ethoam default-domain configuration

Displays the values of scalar Default-MD objects.

show ethoam default-domain configuration

Syntax Definitions

N/A

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6450

Usage Guidelines

N/A

Examples

```
-> show ethoam default-domain configuration
Level : 3,
MHF-Creation : default,
ID-Permission : none
```

output definitions

Level	The level assigned to the default domain. Configured through the ethoam default-domain level command.
MHF-creation	Indicates the MHF value for a VLAN that is part of the default MD. Options include none , explicit , or default .
ID-Permission	The ID permission of the default domain. Options include none or chassisId. Configured through the ethoam default-domain id-permission command.

Release History

Release 6.6.2; command introduced.

Related Commands

[ethoam default-domain level](#) Modifies the default Ethernet OAM Maintenance Domain (MD).

MIB Objects

```
dotlagCfmMaDefaultMdDefLevel
dotlagCfmMaDefaultMdDefMhfCreation
dotlagCfmMaDefaultMdDefIdPermission
```

show ethoam remote-endpoint domain

Displays the information of all remote MEPs learned as a part of the CCM message exchange.

show ethoam remote-endpoint domain *md_name* **association** *ma_name* **endpoint** *smep-id* [**remote-mep** *rmep-id*]

Syntax Definitions

<i>md_name</i>	Specifies the domain name.
<i>ma_name</i>	Specifies the name of the Ethernet OAM Association.
<i>smep-id</i>	Specifies the MEP of a specific MA. The valid range is 1–8191.
<i>rmep-id</i>	The remote MEP. The valid range is 1–8191.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6450

Usage Guidelines

N/A

Examples

```
-> show ethoam remote-endpoint domain MD association MA endpoint 10
Legends: PortStatusTlv: 1 = psBlocked, 2 = psUp, 3 = psNoTlv
         InterfaceStatusTlv: 1 = ifUp, 2 = ifDown, 3 = ifUnknown
         Chassisid Subtype: 7 = Locally Assigned
RMEP-ID RMEP      OkFailed  Mac Address  P/S  I/f  RDI  Ch-id  Ch-id
         Status    Time
-----+-----+-----+-----+-----+-----+-----+-----+-----+-----
    20  RMEP_OK    634600  00:E0:B1:6E:41:65  2   1  false  7     DUT-1
    30  RMEP_OK    334600  00:E0:B1:6E:41:64  2   1  false  7     DUT-2
```

output definitions

RMEP-ID	Indicates the remote Maintenance End Point.
RMEP Status	The operational state of the remote MEP Remote State machines for this MEP, which can be RMEP_IDLE , RMEP_START , RMEP_FAILED , or RMEP_OK .
OkFailed Time	The time (SysUpTime) when the Remote MEP state machine last entered either the RMEP_FAILED or RMEP_OK .
MacAddress	The MAC address of the remote MEP.
Port Status Tlv	Port status Tlv last received.
I/f Status Tlv	The interface status TLV last received.
RDI value	State of the RDI bit in the last received CCM.

output definitions (continued)

Ch-id Subtype	Indicates the format of chassis id received in last CCM.
Ch-id	Indicates the chassis id.

Release History

Release 6.6.1; command introduced.

Release 6.6.2; *domain_name* / *mac_address*, *association_name*, *endpoint_id*, *remote_mepid* parameters replaced with *d_name*, *a_name*, *s-mepid*, *r-mepid*.

Related Commands

show ethoam domain association end-point Displays the information of a specific MEP in a Management Domain configured on the bridge.

MIB Objects

```
dotlagCfmMepDbTable
  dotlagCfmMepDbRMepIdentifier
  dotlagCfmMepDbRMepState
  dotlagCfmMepDbRMepFailedOkTime
  dotlagCfmMepDbRdi
  dotlagCfmMepDbPortStatusTlv
  dotlagCfmMepDbInterfaceStatusTlv
  dotlagCfmMepDbChassisIdSubtype
  dotlagCfmMepDbChassisId
```

show ethoam cfmstack

Displays the contents of CFM Stack Managed Object that determines the relationship among MEPs and MIPs on a specific bridge port.

show ethoam cfmstack [**port**{*slot/port* | *virtual*} | **linkagg** *agg_num*]

Syntax Definitions

<i>slot/port</i>	Slot and port number for which the contents of the configured MEP or MIP is displayed.
<i>agg_num</i>	The aggregate ID for which the contents of the configured MEP or MIP must be displayed.
<i>virtual</i>	Displays the information for virtual UP MEP.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6450

Usage Guidelines

N/A

Examples

```
-> show ethoam cfmstack port 1/3
Up MHF Configured:
  Vlan-id: 100,
  C-vlan: 20,
  Direction: up,
  MAC-Address: 00:D0:95:EC:84:B0,
  Maintenance Association: alcatel-lucent-sales,
  Maintenance Domain: esd.alcatel-lucent.com,
  MD-level: 3

Down MHF Configured:
  Vlan-id: 100,
  Direction: down,
  MAC-Address: 00:D0:95:F6:33:DA,
  Maintenance Association: alcatel-lucent-sales,
  Maintenance Domain: esd.alcatel-lucent.com,
  MD-level: 3

-> show ethoam cfmstack port virtual
MEP-Id 32 - Vlan 30:
  C-vlan: 30,
  Direction: up,
  MAC-Address: 00:E0:B1:A5:F2:34,
  Maintenance Association: MA4,
```



```
Maintenance Domain: MD4,
MD-level: 4
```

output definitions

Vlan-id	The VLAN ID to which the MEP is attached.
C-vlan	The CVLAN configured for a MEP if it's a CVLAN MEP. If the MEP is SVLAN then this field will be displayed as '-'.
Direction	Indicates the direction (Inward or Outward) of the Maintenance Point (MP) on the Bridge port.
MAC-Address	For UP MEP, the MAC-Address displayed is the System MAC address. For Down MEP, the MAC-Address displayed is of the port on which MEP ID is configured.
Maintenance Domain	The name of the maintenance domain.
Maintenance Association	The name of the maintenance association.
MD-level	The MD level at which the MD was created.

Release History

Release 6.6.1; command introduced.

Release 6.6.3; **virtual** parameter introduced.

Release 6.6.5; C-vlan field added in the output displayed for **port** information.

Related Commands

ethoam endpoint

Creates an Ethernet OAM MEP in the specified MA.

MIB Objects

DotlagCfmMd

dotlagCfmMdName

DotlagCfmMa

dotlagCfmMaName

DotlagCfmStack

dotlagCfmStackVlanIdOrNone

dotlagCfmStackDirection

dotlagCfmStackMacAddress

dotlagCfmStackMdLevel

dotlagCfmMepCvlanId

show ethoam linktrace-reply domain association endpoint tran-id

Displays the content of the Linktrace reply (LTR) returned by a previously transmitted LTM. This command displays the LTR based on the transaction identifier or sequence number of the LTM for which the LTR is to be displayed.

show ethoam linktrace-reply domain *d-name* **association** *a-name* **endpoint** *s-mepid* **tran-id** *num*

Syntax Definitions

<i>d-name</i>	Specifies the domain name.
<i>a-name</i>	Name of the Ethernet OAM Association.
<i>s-mepid</i>	Specifies the MEP for which LTR is to be displayed. The valid range is 1-8191.
<i>num</i>	Specifies the Transaction ID or sequence number returned from a previously transmitted LTM.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6450

Usage Guidelines

- “LTM operation successful. Target is reachable.” – This message suggests that LTM has reached the target and all the expected LTRs have been received.
- “LTM operation unsuccessful. Target not reachable.” – This message suggests that LTM is successfully initiated but the target is not reachable.
- “LTM operation unsuccessful. Target is reachable.” – This message suggest that Target is reachable but at least one of the LTR from intermediate hop is not received.
- “LTM operation in progress.” – This message suggests that LTM operation is in progress. This message appears if show CLI is fired before LTM Time-out time.
- “LTM Timed out.”- This message suggests that either LTM is not initiated properly or when none of the expected LTRs is received in LTM Time-out duration which is 5 seconds.

Examples

```
-> show ethoam linktrace-reply domain MD association MA endpoint 10 tran-id 1256
Ttl : 63,
  LTM Forwarded : no,
  Terminal MEP : yes,
  Last Egress Identifier : 00:00:00:D0:95:EA:79:62,
  Next Egress Identifier : 00:00:00:D0:95:EA:9E:BA,
  Relay Action : RLY_HIT,
  Chassis ID Subtype : LOCALLY_ASSIGNED,
  Chassis ID : DUT-1,
```

```

Ingress Action : ING_OK,
Ingress Mac : 00:D0:95:EA:9E:D4,
Ingress Port ID Subtype : LOCALLY_ASSIGNED,
Ingress Port ID : 1/1,
Egress Action : EGR_NONE,
Egress Mac : 00:00:00:00:00:00,
Egress Port ID Subtype : 0,
Egress Port ID : not-specified

```

output definitions

Ttl	Time to live field for the returned LTR.
LTM Forwarded	Indicates whether the LTM was forwarded or not.
Terminal MEP	Indicates whether the MP reported in the reply Ingress/Egress TLV is a MEP.
Last Egress Identifier	Identifies the MEP linktrace initiator that originated, or the responder that forwarded, the LTM to which this LTR is the response.
Next Egress Identifier	Identifies the linktrace responder that transmitted this LTR, and can forward the LTM to the next hop.
Relay Action	Indicates how the dataframe targeted by the LTM would be passed to Egress bridge port. Options include RLY_HIT , RLY_FDB , or RLY_MPDB .
Chassis ID Subtype	Indicates the format of chassis id received in last CCM.
Chassis ID	Indicates the chassis id.
Ingress Action	Indicates how the dataframe targeted by the LTM would be received on the receiving MP. Options include ING_NONE , ING_OK , ING_DOWN , ING_BLOCKED , or ING_VID .
Ingress Mac	The MAC address returned in the ingress MAC address field.
Ingress Port ID Subtype	Indicates the format of the ingress port ID.
Ingress Port ID	Ingress port.
Egress Action	Indicates how the dataframe targeted by the LTM would be passed through Egress bridge port. Options include ING_NONE , ING_OK , ING_DOWN , ING_BLOCKED , or ING_VID .
Egress Mac	The MAC address returned in the egress MAC address field.
Egress Port ID Subtype	Indicates the format of the egress port ID.
Egress Port ID	Egress port.

Release History

Release 6.6.1; command introduced.

Release 6.6.2; *domain_name* / *mac_address*, *association_name*, *mep_id*, *transaction_id* parameters replaced with *d-name*, *a-name*, *s-mepid* and *num*.

Related Commands

ethoam linktrace

Enables the maintenance entity to initiate transmitting of Link Trace Messages (LTM).

MIB Objects

```
dotlagCfmLtrTable
  dotlagCfmLtrTtl
  dotlagCfmLtrForwarded
  dotlagCfmLtrTerminalMep
  dotlagCfmLtrLastEgressIdentifier
  dotlagCfmLtrNextEgressIdentifier
  dotlagCfmLtrRelay
  dotlagCfmLtrChassisIdSubtype
  dotlagCfmLtrChassisId
  dotlagCfmLtrIngress
  dotlagCfmLtrIngressMac
  dotlagCfmLtrIngressPortIdSubtype
  dotlagCfmLtrIngressPortId
  dotlagCfmLtrEgress
  dotlagCfmLtrEgressMac
  dotlagCfmLtrEgressPortIdSubtype
  dotlagCfmLtrEgressPortId
```

show ethoam linktrace-tran-id

Displays the transaction identifiers returned by previously generated LTMs from a specified MEP.

show ethoam linktrace-tran-id domain {*domain_name* / *mac_address*} **association** *association_name*
endpoint *mep_id*

Syntax Definitions

<i>domain_name</i>	Specifies the domain name.
<i>mac_address</i>	Specifies the CFM system MAC address.
<i>association_name</i>	Name of the Ethernet OAM Association.
<i>mep_id</i>	Specifies the MEP for which LTR is to be displayed. The valid range is 1-8191.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6450

Usage Guidelines

N/A

Examples

```
-> show ethoam linktrace-tran-id domain esd.alcatel-lucent.com association alcatel-
lucent-sales endpoint 3
S.No  Transaction Id
-----+-----
      1    13357,
      2    13358,
      3    13359,
```

output definitions

S.No	Indicates the sequence number.
Transaction Id	Indicates the Transaction Identifier returned from a previously transmitted LTM.

Release History

Release 6.6.1; command introduced.

Related Commands

ethoam linktrace

Enables the maintenance entity to initiate transmitting of Link Trace Messages (LTM).

MIB Objects

DotlagCfmLtr

dotlagCfmLtrSeqNumber

show ethoam vlan

Displays the associations of the specified VLAN.

show ethoam vlan *vlan-id*

Syntax Definitions

vlan-id VLAN ID, primary or non-primary VID (for example, '10')

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6450

Usage Guidelines

N/A

Examples

```
-> show ethoam vlan 10
Primary Vlan : 10,
Associated Vlan-list : 15-20 25 50-80
```

```
-> show ethoam vlan 15
Primary Vlan : 10,
Associated Vlan-list : 15-20 25 50-80
```

Release History

Release 6.6.2; command introduced.

Related Commands

ethoam endpoint domain association direction Enables the maintenance entity to initiate transmitting loopback messages (LBMs) and obtaining loopback replies.

MIB Objects

```
dotlagCfmMaVlanTable
  dotlagCfmVlanVid
  dotlagCfmVlanPrimaryVid
```

show ethoam statistics

Displays the Ethernet OAM statistics of all the Management Domains configured on the bridge. Also, displays the statistics of all the MAs and matching MEPs for all the MDs.

show ethoam statistics domain {*domain_name* / *mac_address*} [**association** *association_name*] [**end-point** *endpoint_id*]

Syntax Definitions

<i>domain_name</i>	Specifies the domain name.
<i>mac_address</i>	Specifies the CFM system MAC address.
<i>association_name</i>	Specifies the name of Ethernet OAM Association.
<i>endpoint_id</i>	Specifies a MEP for a specific MA.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6450

Usage Guidelines

N/A

Examples

```
-> show ethoam statistics domain esd.alcatel-lucent.com association alcatel-lucent-sales
```

MEP-ID	CCM Out	CCM Seq Error	LBR In	LBR Out of order	LBR Out	LBR Bad MSDU	Unexpected LTR In
3	105	0	0	0	0	0	0

```
-> show ethoam statistics domain esd.alcatel-lucent.com
```

MEP-ID	CCM Out	CCM Seq Error	LBR In	LBR Out of order	LBR Out	LBR Bad MSDU	Unexpected LTR In	MA
3	105	0	0	0	0	0	0	MA

```
-> show ethoam statistics domain esd.alcatel-lucent.com association alcatel-lucent-sales endpoint 3
```

MEP-ID	CCM Out	CCM Seq Error	LBR In	LBR Out of order	LBR Out	LBR Bad MSDU	Unexpected LTR In
3	105	0	0	0	0	0	0

output definitions

MEP-Id	The MEP ID configured in the specified MA.
CCM Out	The total number of CCMs transmitted.
CCM Seq Error	The total number of out-of-sequence CCMs received from all remote MEPs.
LBR In	The total number of valid, in-order LBRs received.
LBR Out of order	The total number of valid, out-of-order LBRs received.
LBR Out	The total number of LBRs transmitted.
LBR Bad MSDU	The total number of LBRs received whose mac_service_data_unit did not match.
Unexpected LTR In	The total number of unexpected LTRs received.

Release History

Release 6.6.1; command introduced.

Related Commands

[ethoam endpoint domain association direction](#)

Enables the maintenance entity to initiate transmitting loopback messages (LBMs) and obtaining loopback replies.

MIB Objects

DotlagCfmMep

```
dotlagCfmMepIdentifier
dotlagCfmMepCcmOut
dotlagCfmMepRCcmSequenceErrors
dotlagCfmMepLbrIn
dotlagCfmMepLbrInOutOfOrder
dotlagCfmMepLbrOut
dotlagCfmMepLbrBadMsdu
dotlagCfmMepUnexpltrIn
```

show ethoam config-error

Displays the configuration error for a specified VLAN and port or linkagg.

show ethoam config-error [**vlan** vid] [{**port** slot/port | **linkagg** aggid}]

Syntax Definitions

vid VLAN Identifier.
slot/port Physical slot and port.
aggid Logical Linkagg Identifier.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6450

Usage Guidelines

N/A

Examples

```
-> show ethoam config-error
Vlan    Port    Error-type
-----+-----
10      1/2     CFMleak
10      1/10    CFMleak
30      1/2     CFMleak
```

```
-> show ethoam config-error vlan 10
vlan    port    error-type
-----+-----
10      1/2     CFMleak
10      1/10    CFMleak
```

```
-> show ethoam config-error port 1/2
vlan    port    error-type
-----+-----
10      1/2     CFMleak
30      1/2     CFMleak
```

```
-> show ethoam config-error vlan 10 port 1/2
vlan    port    error-type
-----+-----
10      1/2     CFMleak
```

output definitions

vlan	VLAN identifier number.
port	Physical slot and port number.
error-type	Type of an error.

Release History

Release 6.6.2; command introduced.

Related Commands

ethoam linktrace Enables the maintenance entity to initiate transmitting of Link Trace Messages (LTM).

MIB Objects

dotlagCfmConfigErrorListTable
dotlagCfmConfigErrorListVid
dotlagCfmConfigErrorListIfIndex
dotlagCfmConfigErrorListErrorType

show ethoam one-way-delay

Displays the one-way ETH-DM delay (latency) and jitter parameters either for all entries or for a specified MAC address for a particular source MEP-ID.

show ethoam one-way-delay domain *domain* **association** *association* **endpoint** *s-mepid* [**mac-address** *mac-add*]

Syntax Definitions

<i>domain</i>	Specifies the domain name used while creating the management domain for which this management association is created.
<i>association</i>	Association name for the created Ethernet OAM Association.
<i>s-mepid</i>	Source MEP-ID. Valid Range 1-8191.
<i>mac-add</i>	MAC-Address of the remote MEP.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6450

Usage Guidelines

- Dash ('-') in the output in Jitter column signifies that the value can not be calculated as the previous delay value is unknown. This happens only when 1DM is received for the first time.
- Maximum entries that Delay Result table can store are 1024. After that, the oldest entry is deleted from the table whenever a new entry is required.

Examples

```
-> show ethoam one-way-delay domain MD association MA endpoint 10
Legend: Jitter: - = undefined value
```

Remote Mac address	Delay (us)	Jitter (us)
00:d0:95:ef:44:44	2369	1258
00:d0:95:ef:66:88	5896	282
00:d0:95:ef:88:88	2584	-
00:d0:95:ef:66:55	2698	4782

```
-> show ethoam one-way-delay domain MD association MA endpoint 10 mac-address
00:d0:95:ef:44:44
Legend: Jitter: - = undefined value
```

Remote Mac address	Delay (us)	Jitter (us)
00:d0:95:ef:44:44	2369	1258

output definitions

Remote Mac address	Remote MAC address.
Delay	Physical slot and port number.
Jitter	Type of an error.

Release History

Release 6.6.2; command introduced.

Related Commands

ethoam one-way-delay Initiates one-way-delay messages from a particular MEP to an RMEP.

MIB Objects

```

dotlagCfmMdTable
    dotlagCfmMdName
dotlagCfmMaNetTable
    dotlagCfmMaNetName
dotlagCfmMepTable
    dotlagCfmMepIdentifier
alaDotlagCfmMepDelayRsltTable
    alaDotlagCfmMepDelayRMepMacAddress
    alaCfmMepDelayTestType
    alaCfmMepDelayTestDelay
    alaCfmMepDelayVariation

```

show ethoam two-way-delay

Displays the two-way ETH-DM delay and jitter parameters for a specific remote MAC-Address or for all the MAC-Addresses for which two-way-delay was initiated for a particular source MEP-ID.

show ethoam two-way-delay domain *domain* **association** *association* **endpoint** *s-mepid* [**mac-address** *mac-add*]

Syntax Definitions

<i>domain</i>	Specifies the domain name used while creating the management domain for which this management association is created.
<i>association</i>	Association name for the created Ethernet OAM Association.
<i>s-mepid</i>	Source MEP-ID. Valid Range 1-8191.
<i>mac-add</i>	MAC-Address of the remote MEP.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6450

Usage Guidelines

- If '0' appears in the output in RMEP-ID column signifies that the DMM was initiated with target-macaddress. As multiple RMEPs can have same mac-address.
- If a dash ('-') appears in the output in Jitter column signifies that the value can not be calculated as the previous delay value is unknown, that is, if only one reply for DMM (DMR) is received and this was the first time DMM was initiated from the MEP, then jitter is not calculated.
- Maximum entries that Delay Result table can store are 1024. After that, the DMM request shall be rejected if a new entry needs to be created for the MEP. If entry for the MEP already exists in the table, that entry shall be updated with the new one.

Examples

```
-> show ethoam two-way-delay domain MD association MA endpoint 10 mac-address
00:d0:95:ef:44:44
Legend: Jitter: - = undefined value
        : RMEP-ID: 0 = two-way-delay was initiated with target mac-address
```

Remote Mac address	RMEP-ID	Delay (us)	Jitter (us)
00:d0:95:ef:44:44	12	2369	1258

```
-> show ethoam two-way-delay domain MD association MA endpoint 10 remote-mep 0
```

```
Legend: Jitter: - = undefined value
```

```
: RMEP-ID: 0 = two-way-delay was initiated with target mac-address
```

Remote Mac address	RMEP-ID	Delay (us)	Jitter (us)
00:d0:95:ef:66:88	0	5896	282
00:d0:95:ef:88:88	0	2584	1856

```
-> show ethoam two-way-delay domain MD association MA endpoint 10 remote-mep 15
```

```
Legend: Jitter: - = undefined value
```

```
: RMEP-ID: 0 = two-way-delay was initiated with target mac-address
```

Remote Mac address	RMEP-ID	Delay (us)	Jitter (us)
00:d0:95:ef:66:55	15	2736	-

```
-> show ethoam two-way-delay domain MD association MA endpoint 10
```

```
Legend: Jitter: - = undefined value
```

```
: RMEP-ID: 0 = two-way-delay was initiated with target mac-address
```

Remote Mac address	RMEP-ID	Delay (us)	Jitter (us)
00:d0:95:ef:44:44	12	2369	1258
00:d0:95:ef:66:88	0	5896	282
00:d0:95:ef:88:88	0	2584	1856
00:d0:95:ef:66:55	15	2736	-

output definitions

Remote Mac address	Remote MAC address.
RMEP-ID	Value of RMEP-ID
Delay	Physical slot and port number.
Jitter	Type of an error.

Release History

Release 6.6.2; command introduced.

Related Commands

[ethoam two-way-delay](#)

Initiate two-way-delay messages from a particular MEP to an RMEP using target-endpoint or target-MAC address.

MIB Objects

```
dotlagCfmMdTable
  dotlagCfmMdName
dotlagCfmMaNetTable
  dotlagCfmMaNetName
dotlagCfmMepTable
  dotlagCfmMepIdentifier
alaDotlagCfmMepDelayRsltTable
  alaCfmMepDelayRMepMacAddress
```

```
alaCfmMepDelayTestType  
alaCfmMepDelayTestDelay  
alaDotlagCfmMepDelayVariation
```

30 Service Assurance Agent Commands

Service Assurance Agent (SAA) enables customers to assure new business-critical applications, as well as services that utilize data, voice, and video.

With Service Assurance Agents, users can verify service guarantees, increase network reliability by validating network performance, proactively identify network issues, and increase return on investment (ROI) by easing the deployment of new services. Service Assurance Agent uses active monitoring to generate traffic in a continuous, reliable, and predictable manner, thus enabling the measurement of network performance and health.

IP SAAs enhance the service level monitoring to become IP application-aware by measuring both end-to-end and at the IP layer. IP SAA would allow performance measurement against any IP addresses in the network (switch, server, pc). ETH-LB/DMM can be used to measure delay and jitter by sending out frames with DM information to the peer MEP and receiving frames with DM information from the peer MEP.

MIB information for the SAA commands is as follows:

Filename: AlcatelIND1Eoam.MIB
Module: Alcatel-IND1-ETHERNET-OAM-MIB

Filename: IETF_802_1ag.MIB
Module: IEEE8021-CFM-MIB

Filename: Alcatel-IND1-SAA-MIB.MIB
Module: ALCATEL-IND1-SAA-MIB

A summary of the available commands is listed here:

EthOAM SAA Configuration Commands	saa saa type ethoam-loopback saa type ethoam-two-way-delay saa start saa stop
IP SAA Configuration Command	saa type ip-ping
Layer 2 SAA Configuration Command	saa type mac-ping
EthOAM SAA Show Commands	show saa show saa type config show saa statistics

saa

Configures a Service Assurance Agent (SAA).

saa *string* [**descr** *description*] [**interval** *interval*]

no saa *string*

Syntax Definitions

<i>string</i>	SAA ID string up to 32 characters. Use quotes around string if SAA ID contains multiple words with spaces between them (for example “SAA 10”).
<i>description</i>	Text string up to 32 characters. Use quotes around string if description contains multiple words with spaces between them (for example “Alcatel-Lucent Marketing SAA”).
<i>interval</i>	The amount of time, in minutes, between two iterations of the SAA test. Valid range is from 1, 2, 5, 10 to 1500.

Defaults

parameter	default
<i>description</i>	DEFAULT
<i>interval</i>	150

Platforms Supported

OmniSwitch 6250, 6450

Usage Guidelines

- Use the **no** form of this command to remove an SAA from the switch configuration. Note that the SAA must be stopped before it can be deleted.
- The **descr** and **interval** parameters are optional. If these values are specified, the SAA is created with those values. If these values are not specified, the SAA is created with the default values.
- If the **descr** and/or **interval** parameters are specified for an existing SAA, then the values of the existing parameters are updated with those specified.
- If the session time interval is changed for an SAA that is already running and active, the interval value is immediately updated in the database but is not applied to the SAA until after the next iteration.
- If none of the optional parameters are specified and the given SAA exists, the CLI will return an error message, as duplicate entries are not allowed.
- Any number of SAAs can be configured (MAX 127). It is recommended not to start many aggressive SAAs (having session interval <= 10). To achieve proper scheduling of all the started SAA (aggressive and relaxed) it is recommended not to start more than 50 SAAs.

Examples

```
-> saa saa1 descr "saa for ip-ping"  
-> saa saa2 descr "Monitoring Default VRF-interface" interval 160  
-> saa saa2 interval 120  
-> no saa saa1
```

Release History

Release 6.6.2; command was introduced.

Related Commands

show saa	Displays SAA configuration information.
show saa statistics	Displays SAA statistics.

MIB Objects

```
alaSaaCtrlTable  
  alaSaaCtrlTestIndex  
  alaSaaCtrlRowStatus  
  alaSaaCtrlDescr  
  alaSaaCtrlInterval
```

saa type ip-ping

Configure SAA for IP including the number of packets and inter-packet delay parameters.

```
saa string type ip-ping destination-ip ipv4 addr source-ip ipv4 addr type-of-service tos [num-pkts count] [inter-pkt-delay delay] [payload-size size]
```

Syntax Definitions

<i>string</i>	SAA ID string up to 32 characters. Use quotes around string if SAA ID contains multiple words with spaces between them (for example “SAA 10”).
<i>ipv4 addr</i>	The IPv4 address of the destination to ping.
<i>ipv4 addr</i>	The IPv4 address of the source.
<i>tos</i>	The type of service. Valid range is 0 – 255.
<i>count</i>	The number of packets to send in one ping iteration. Valid range is 1–100.
<i>delay</i>	The delay between packets sent during a ping iteration, in milliseconds. Valid range is from 100 ms to 1000 ms in multiples of 100 ms.
<i>size</i>	The size of the ICMP payload to be used for the ping iteration. Valid range is 24–1472 bytes.

Defaults

parameter	default
<i>count</i>	5
<i>delay</i>	1000 ms
<i>size</i>	24 bytes

Platforms Supported

OmniSwitch 6250, 6450

Usage Guidelines

- The **num-pkts**, **inter-pkt-delay**, and **payload-size** are optional parameters. If these values are specified, the SAA is created with the values entered. If none of them are specified, the SAA is created with the default values. The **num-pkts** and **inter-pkt-delay** can be modified, but **payload-size** cannot be modified later.
- The **num-pkts** and **inter-pkt-delay** parameters can be configured only if the total execution time (number of packets * inter-pkt-delay) is less than 10 sec.
- The SAA must not be in a ‘started’ state at the time the **num-pkts** or **inter-pkt-delay** parameters are modified. Make sure the SAA is stopped before attempting to modify these parameters.
- The SAA must exist before issuing the CLI. If the SAA does not exist, the CLI will return an error.

- Do not specify a broadcast or multicast address for the source or destination IP. In addition, do not use 0.0.0.0 as the destination IP address.
- The timeout for each ping request packet is 1 sec. This value is not configurable.

Examples

```
-> saa saa1 type ip-ping destination-ip 123.32.45.76 source-ip 123.35.42.124
type-of-service 4
-> saa saa2 type ip-ping destination-ip 123.32.45.77 source-ip 123.35.42.124
type-of-service 5
-> saa saa3 type ip-ping destination-ip 123.32.55.27 source-ip 123.35.42.125
type-of-service 8 inter-pkt-delay 1000
-> saa saa4 type ip-ping destination-ip 123.46.45.77 source-ip 123.35.42.125
type-of-service 2 num-pkts 5
-> saa saa5 type ip-ping destination-ip 12.53.45.77 source-ip 123.35.42.125
type-of-service 35 payload-size 1518
-> saa saa6 type ip-ping destination-ip 123.22.45.66 source-ip 123.35.42.125
type-of-service 5 inter-pkt-delay 1500 num-pkts 8 pkt-size 1000
```

Release History

Release 6.6.2; command was introduced.

Related Commands

- | | |
|-------------------------------------|---|
| show saa | Displays SAA configuration information. |
| show saa statistics | Displays SAA statistics. |

MIB Objects

```
alaSaaIpCtrlTable
  alaSaaIpCtrlTestIndex
  alaSaaIpCtrlRowStatus
  alaSaaIpCtrlTestMode
  alaSaaIpCtrlTgtAddress
  alaSaaIpCtrlSrcAddress
  alaSaaIpCtrlTypeOfService
  alaSaaIpCtrlInterPktDelay
  alaSaaIpCtrlPayloadSize
  alaSaaIpCtrlNumPkts
```

saa type mac-ping

Configure SAA for a MAC address including the VLAN, VLAN ID, number of packets and inter-packet delay parameters.

```
saa string type mac-ping destination-macaddress mac vlan vlan-id [vlan-priority vlan-priority]
[drop-eligible {true | false}] [data data] [num-pkts count] [inter-pkt-delay delay] [payload-size size]
```

Syntax Definitions

<i>string</i>	SAA ID string up to 32 characters. Use quotes around string if SAA ID contains multiple words with spaces between them (for example “SAA 10”).
<i>mac</i>	The destination MAC address to ping.
<i>vlan-id</i>	The VLAN on which the L2 SAA Packets will be sent out. Valid range is 1-4094.
<i>vlan-priority</i>	Specifies both the internal priority of the Mac ping and the 802.1p value on the vlan tag header. Valid range is 0-7.
true / false	Specifies both the internal drop precedence of the MAC ping and the CFI bit on the vlan tag header. Default is false.
<i>data</i>	User specified string to be included in the packet.
<i>count</i>	The number of packets to send in one ping iteration. Valid range is 1–100.
<i>delay</i>	The delay between packets sent during a ping iteration, in milliseconds. Valid range is from 100 ms to 1000 ms in multiples of 100 ms.
<i>size</i>	The size of the ICMP payload to be used for the ping iteration. Valid range is 36–1500 bytes.

Defaults

parameter	default
<i>vlan-priority</i>	0
<i>drop-eligible</i>	false
<i>count</i>	5
<i>delay</i>	1000 ms
<i>size</i>	36 bytes

Platforms Supported

OmniSwitch 6250, 6450

Usage Guidelines

- The **num-pkts**, **inter-pkt-delay**, and **payload-size** are optional parameters. If these values are specified, the SAA is created with the values entered. If none of them are specified, the SAA is created

with the default values. The **num-pkts** and **inter-pkt-delay** can be modified, but **payload-size** cannot be modified later.

- The **num-pkts** and **inter-pkt-delay** parameters can be configured only if the total execution time (number of packets * inter-pkt-delay) is less than 10 sec.
- The SAA must not be in a 'started' state at the time the **num-pkts** or **inter-pkt-delay** parameters are modified. Make sure the SAA is stopped before attempting to modify these parameters.
- The SAA must exist before issuing the CLI. If the SAA does not exist, the CLI will return an error.
- The timeout for each ping request packet is 1 sec. This value is not configurable.
- If data-TLV is specified & payload size is not specified, then payload size will be increased internally to accommodate the data TLV.
- If data TLV & payload size both are specified and payload size is less than [dataTLV + 36] bytes (for time-stamping and other packet info), then the CLI will be rejected.
- Destination-MAC cannot be broadcast/multicast address.
- Timeout for each ping request packet is 1 sec. This value is non-configurable.

Examples

```
-> saa saa1 type mac-ping destination-macaddress 00:11:11:11:11:11 vlan 10
-> saa saa2 type mac-ping destination-macaddress 00:11:11:11:11:11 vlan 10
data "test_data"
-> saa saa3 type mac-ping destination-macaddress 00:11:11:11:11:11 vlan 10
drop-eligible true
-> saa saa4 type mac-ping destination-macaddress 00:11:11:11:11:11 vlan 10
inter-pkt-delay 100
-> saa saa5 type mac-ping destination-macaddress 00:11:11:11:11:11 vlan 10
num-pkts 10
-> saa saa6 type mac-ping destination-macaddress 00:11:11:11:11:11 vlan 10
payload-size 400
-> saa saa7 type mac-ping destination-macaddress 00:11:11:11:11:11 vlan 10
vlan-priority 3
-> saa saa8 type mac-ping destination-macaddress 00:11:11:11:11:11 vlan 10
data "asdf" drop-eligible true vlan-priority 3 num-pkts 4
```

Release History

Release 6.6.2; command was introduced.

Related Commands

- | | |
|-------------------------------------|---|
| show saa | Displays SAA configuration information. |
| show saa statistics | Displays SAA statistics. |

MIB Objects

```
alaSaaMacCtrlTable
  alaSaaMacCtrlDstAddress
  alaSaaMacCtrlVlan
  alaSaaMacCtrlVlanPriority
  alaSaaMacCtrlPktData
```



```
alaSaaMacCtrlDropEligible  
alaSaaMacCtrlPayloadSize  
alaSaaMacCtrlNumPkts  
alaSaaMacCtrlInterPktDelay
```

saa type ethoam-loopback

Configures the SAA for ETH-LB, including the number of packets and inter-packet delay parameters.

```
saa string type ethoam-loopback {target-endpoint tmep_id | target-mac address mac} source-endpoint
smep_id domain domain association assoc vlan-priority priority [drop-eligible {true | false}] [data
data] [num-pkts num] [inter-pkt-delay delay]
```

Syntax Definitions

<i>string</i>	SAA ID string up to 32 characters. Use quotes around string if SAA ID contains multiple words with spaces between them (for example “SAA 10”).
<i>tmep-id</i>	The ID of the destination MEP
<i>mac</i>	The MAC address of the destination.
<i>smep-id</i>	The ID of the source MEP.
<i>domain</i>	The domain to which the source MEP belongs.
<i>assoc</i>	The association to which the source MEP belongs.
<i>priority</i>	The VLAN priority to be used for the outgoing packet. Valid range is 0 – 7.
drop-eligible true	Sets the drop enable bit in the VLAN tag of the outgoing packet to true.
drop-eligible false	Sets the drop enable bit in the VLAN tag of the outgoing packet to false.
<i>data</i>	User specified string that is included in the packet.
<i>delay</i>	The delay between packets sent during a ping iteration in milliseconds. Valid range is 100 ms - 1000 ms in multiples of 100 ms.
<i>num</i>	The number of packets to be sent during loopback. Valid range is 1 - 100.

Defaults

parameter	default
drop-eligible true false	false
<i>num-pkts</i>	5
<i>delay</i>	1000

Platforms Supported

OmniSwitch 6250, 6450

Usage Guidelines

- The SAA must exist before issuing the CLI. If the SAA does not exist, the CLI will return error.
- Source MEP-ID, MD and MA must be created before initiating loopback.
- If the source MEP-Id/MA/MD does not exist, the configuration will be accepted and no error will be returned.
- When **target-endpoint** is specified then it must be learned before initiating loopback.
- When **target-endpoint** is specified and learned, Ethernet Loopback will be transmitted irrespective of whether the RMEP state is OK or failed.
- The **drop-eligible**, **data**, **num-pkts**, and **inter-pkt-delay** are optional parameters. If these values are specified, the entry will be created with these values. If none of them are specified, the SAA will be created with default values. The **num-pkts** and **inter-pkt-delay** can be modified later.
- The **num-pkts** and **inter-pkt-delay** parameters can be configured only if the total execution time (number of packets * inter-pkt-delay) is less than 10 sec.
- The SAA must not be in a 'started' state at the time the **num-pkts** or **inter-pkt-delay** parameters are modified. Make sure the SAA is stopped before attempting to modify these parameters.
- The Target MEP/MAC, source MEP, domain, association, and priority parameters are mandatory. If they are not specified, the CLI will return an error.
- The **data** parameter is optional. If this parameter is not specified, then it is not sent in the loopback message.
- The timeout value for each LB packet is one second. This value is not configurable.

Examples

```
-> saa saa1 type ethoam-loopback target-endpoint 10 source endpoint 1 domain md1
association mal vlan-priority 5 drop-eligible false
-> saa saa2 type ethoam-loopback target-endpoint 10 source endpoint 2 domain md1
association mal vlan-priority 5 drop-eligible true data « monitor association mal »
num-pkts 6 inter-pkt-delay 500
-> saa saa3 type ethoam-loopback target-endpoint 15 source endpoint 1 domain md1
association mal vlan-priority 5 drop-eligible false data « monitor association mal
» num-pkts 6
-> saa saa4 type ethoam-loopback target-endpoint 10 source endpoint 2 domain md1
association mal vlan-priority 5 drop-eligible true inter-pkt-delay 500
```

Release History

Release 6.6.2; command was introduced.

Related Commands

- show saa** Displays SAA configuration information.
- show saa statistics** Displays SAA statistics.

MIB Objects

```
alaSaaEthoamCtrlTable  
  alaSaaEthoamCtrlTestIndex  
  alaSaaEthoamCtrlRowStatus  
  alaSaaEthoamCtrlTestMode  
  alaSaaEthoamCtrlTgtMAC  
  alaSaaEthoamCtrlSrcMepId  
  alaSaaEthoamCtrlDomainName  
  alaSaaEthoamCtrlAssociationName  
  alaSaaEthoamCtrlNumPkts  
  alaSaaEthoamCtrlInterPktDelay  
  alaSaaEthoamCtrlPktData  
  alaSaaEthoamCtrlVlanPriority
```

saa type ethoam-two-way-delay

Configures SAA for ETH-DMM, including the number of packets and inter-packet delay parameters.

```
saa string type {ethoam-two-way-delay} {target-endpoint tmep_id | target-mac address mac} source-  
endpoint smep_id domain domain association assoc vlan-priority priority [num-pkts num] [inter-pkt-  
delay delay]
```

Syntax Definitions

<i>string</i>	SAA ID string up to 32 characters. Use quotes around string if SAA ID contains multiple words with spaces between them (for example “SAA 10”).
<i>tmep-id</i>	The ID of the destination MEP.
<i>mac</i>	The MAC address of the destination.
<i>smep-id</i>	The ID of the source MEP.
<i>domain</i>	The domain to which the source MEP belongs.
<i>assoc</i>	The association to which the source MEP belongs.
<i>priority</i>	The VLAN priority to be used for the outgoing packet. Valid range is 0–7.
<i>delay</i>	The delay between packets sent during a ping iteration, in milliseconds. Valid range is 100 ms - 1000 ms in multiples of 100 ms.
<i>num</i>	The number of packets to be sent during loopback. Valid range is 1–100.

Defaults

parameter	default
<i>num</i>	5
<i>delay</i>	1000

Platforms Supported

OmniSwitch 6250, 6450

Usage Guidelines

- The SAA should exist before issuing the CLI. If the SAA does not exist, the CLI will return error.
- The source MEP-ID, MD, and MA must be created before initiating DMM.
- If the source MEP-Id/MA/MD does not exist, the configuration will be accepted and no error will be returned.
- When the **target-endpoint** parameter is specified, then it must be learned before initiating DMM.
- When the **target-endpoint** parameter is specified and learned, ETH-DMM will be transmitted irrespective of whether the RMEP state is OK or failed.

- The **num-pkts** and **inter-pkt-delay** parameters are optional. If these values are specified, the entry will be created with those values. If none of them are specified, the SAA will be created with default values. The **num-pkts** and **inter-pkt-delay** values can be modified, but the **pkt-size** value cannot be modified later.
- The **num-pkts** and **inter-pkt-delay** parameters can be configured only if the total execution time (number of packets * inter-pkt-delay) is less than 10 sec.
- The SAA must not be in a 'started' state at the time the **num-pkts** or **inter-pkt-delay** parameters are modified. Make sure the SAA is stopped before attempting to modify these parameters.
- Target MEP/MAC, source MEP, domain, association, and priority parameters are mandatory. If they are not specified, the CLI will return an error.
- The timeout for each DMM packet is 1 sec. This value is not configurable.

Examples

```
-> saa saa1 type ethoam-two-way-delay target-endpoint 10 source endpoint 1 domain
md1 association mal vlan-priority 5
-> saa saa2 type ethoam-two-way-delay target-endpoint 10 source endpoint 2 domain
md1 association mal vlan-priority 5 num-pkts 6 inter-pkt-delay 500
-> saa saa3 type ethoam-two-way-delay target-endpoint 15 source endpoint 1 domain
md1 association mal vlan-priority 5 num-pkts 6
-> saa saa4 type ethoam-two-way-delay target-endpoint 10 source endpoint 2 domain
md1 association mal vlan-priority 5 inter-pkt-delay 500
```

Release History

Release 6.6.2; command was introduced.

Related Commands

- | | |
|-------------------------------------|---|
| show saa | Displays SAA configuration information. |
| show saa statistics | Displays SAA statistics. |

MIB Objects

```
alaSaaEthoamCtrlTable
  alaSaaEthoamCtrlTestIndex
  alaSaaEthoamCtrlRowStatus
  alaSaaEthoamCtrlTestMode
  alaSaaEthoamCtrlTgtMAC
  alaSaaEthoamCtrlSrcMepId
  alaSaaEthoamCtrlDomainName
  alaSaaEthoamCtrlAssociationName
  alaSaaEthoamCtrlNumPkts
  alaSaaEthoamCtrlInterPktDelay
  alaSaaEthoamCtrlVlanPriority
```

saa start

Starts the SAA test.

saa string start [**at** *yyyy-mm-dd,hh:mm:ss.ds*]

Syntax Definitions

<i>string</i>	An existing SAA ID string.
<i>yyyy-mm-dd,hh:mm:ss.ds</i>	The date and time to start the SAA.

Defaults

By default, the SAA test is started immediately.

Platforms Supported

OmniSwitch 6250, 6450

Usage Guidelines

- An existing SAA with the SAA type configured must be specified with this command.
- Use the **saa stop** command to stop an SAA test that is already running.
- Use the **at** option to specify a date and time for the test to start.
- If an SAA is scheduled to start at a specified time and another **saa start** command with a different value is given before the specified time, the subsequent command will over-ride the previous command.
- If the **saa start** command is given after an SAA is started, then the CLI will return error.
- If the SAA type is configured with a source IP that does not exist or is not active, then the packet will not be transmitted and no error will be returned. Swlogs will be updated.
- ICMP must be enabled on the switch. If ICMP is disabled and an SAA of type 'ip-ping' is started, then the iteration will timeout and will be treated as failed iteration.
- Immediately after a CMM restart (reboot or takeover), the command to start SAA will be accepted, but the actual execution of the iteration will start 5 minutes after the CMM restart.
- If the SAA type is configured with a source MEP that does not exist or is not active (admin down), then the packet will not be transmitted and no error will be returned on the CLI console. Swlogs will be updated.
- It is recommended that all the SAAs be rescheduled if the system time is being changed.

Examples

```
-> saa saa2 start at 2009-09-12,09:00:00
-> saa saa4 start
```

Release History

Release 6.6.2; command was introduced.

Related Commands

show saa Displays SAA configuration information.
show saa statistics Displays SAA statistics.

MIB Objects

alaSaaCtrlTable
 alaSaaCtrlTestIndex
 alaSaaCtrlStartAt

saa stop

Stops the SAA test.

```
saa string stop [never | at yyyy-mm-dd,hh:mm:ss.ds]
```

Syntax Definitions

<i>string</i>	An existing SAA ID string.
never	Specifies that the SAA test will not be stopped unless the saa stop command is used with the at option.
<i>yyyy-mm-dd,hh:mm:ss.ds</i>	The date and time to stop the SAA test.

Defaults

By default, the test is stopped immediately.

Platforms Supported

OmniSwitch 6250, 6450

Usage Guidelines

- An existing SAA with the SAA type configured must be specified with this command.
- The SAA must be in a 'started' state before giving the command unless the start and stop times are scheduled. If the SAA is not in a 'started' state, the CLI will return an error.
- Use the **at** option to specify a date and time for the test to stop.
- If the **never** option is specified, the SAA test will keep on running until the **saa stop** command is entered again with the **at** option.
- If SAA test is stopped while it is running an iteration, the current iteration is pre-empted. The statistics and history are updated for the partial iteration run.
- If an SAA is scheduled to stop at a specified time and another **saa stop** command with a different value is given before the specified time, the subsequent command will over-ride the previous command.

Examples

```
-> saa saa1 stop  
-> saa saa2 stop never
```

Release History

Release 6.6.2; command was introduced.

Related Commands

- show saa** Displays SAA configuration information.
- show saa statistics** Displays SAA statistics.

MIB Objects

alaSaaCtrlTable
 alaSaaCtrlTestIndex
 alaSaaCtrlStopAt

show saa

Displays SAA configuration information.

show saa [*string* / {**descr** *description*}]

Syntax Definitions

string An existing SAA ID string.
description An existing SAA description string.

Defaults

By default, information is displayed for all configured SAAs.

Platforms Supported

OmniSwitch 6250, 6450

Usage Guidelines

Use the *string* or *description* parameter to display information for a specific SAA.

Examples

```
-> show saa saa31
Legend: eth-lb = ethoam-loopback
       : eth-dmm = ethoam-two-way-delay
SAA   Type   Status Interval(Min.)Time of Last-Run Last-Run Result Description
-----+-----+-----+-----+-----+-----+-----+-----
Saa31 ip-ping started 180 2010-01-12,21:30:05.0 failed Datacenter1

-> show saa
Legend: eth-lb = ethoam-loopback
       : eth-dmm = ethoam-two-way-delay
SAA   Type   Status Interval(Min.)Time of Last-Run Last-Run Result Description
-----+-----+-----+-----+-----+-----+-----+-----
Saa20 ip-ping started 130 2010-01-15,09:31:53.0 success DEFAULT
Saa31 ip-ping started 180 2010-01-12,21:30:05.0 failed Datacenter1
Saa89 ip-ping stopped 180 2010-01-12,09:45:00.0 success Datacenter5
Saa90 eth-lb stopped 150 NOT RUN undetermined Ethernet LB
Saa95 eth-lb stopped 300 2010-01-16,11:31:53.0 success Ethernet LB1
Saa98 eth-dmm stopped 120 NOT RUN failed DEFAULT
Saa99 eth-dmm started200 2010-01-16,15:20:05.0 success Two way test
```

Release History

Release 6.6.2; command was introduced.

Related Commands

saa Configures an SAA.

MIB Objects

```
alaSaaCtrlTable  
  alaSaaCtrlTestIndex  
  alaSaaCtrlDescr  
  alaSaaCtrlInterval  
  alaSaaCtrlTestMode  
  alaSaaCtrlLastRunTime  
  alaSaaCtrlLastRunResult  
  alaSaaCtrlAdminStatus
```

show saa type config

Displays the SAA configuration for the specified SAA type.

show saa [*string*] **type** {**mac-ping** | **ip-ping** | **ethoam-loopback** | **ethoam-two-way-delay**} **config**

Syntax Definitions

<i>string</i>	An existing SAA ID string.
mac-ping	Displays MAC Ping SAAs
ip-ping	Displays IP Ping SAAs.
ethoam-loopback	Displays ETH-LB SAAs.
ethoam-two-way-delay	Displays ETH-DMM SAAs.

Defaults

By default, all SAAs with the specified type are displayed.

Platforms Supported

OmniSwitch 6250, 6450

Usage Guidelines

- Use the *string* parameter to display information for a specific SAA
- If the SAA ID string specified does not match the specified SAA type, the CLI will return an error.

Examples

```
-> show saa type ip-ping config
SAA : saa20
  SAA-type           : ip-ping,
  Status             : started,
  Start At           : -
  Stop At            : 2010-02-08,12:00:00.0
  Description        : datacenter1,
  Interval(minutes)  : 130,
  Source-IP          : 0.0.0.0,           Destination-IP      : 172.21.161.65,
  Payload-Size (bytes) : 24,           Type-of-Service    : 0,
  Num-pkts           : 5,             Inter-pkt-delay    : 1000
SAA : saa31
  SAA-type           : ip-ping,
  Status             : started,
  Start At           : -
  Stop At            : -
  Description        : datacenter8,
  Interval(minutes)  : 180,
  Source-IP          : 0.0.0.0,           Destination-IP      : 172.21.161.65,
  Payload-Size (bytes) : 24,           Type-of-Service    : 0,
  Num-pkts           : 5,             Inter-pkt-delay    : 1000
SAA-ID : 81
  SAA-type           : ip-ping,
```

```

Status          : stopped,
Start At        : -
Stop At         : -
Description     : abcdsdfsdfsfs,
Interval(minutes) : 300,
Source-IP       : 0.0.0.0,           Destination-IP       : 172.21.161.65,
Payload-Size (bytes): 24,           Type-of-Service     : 0,
Num-pkts       : 5,                 Inter-pkt-delay     : 1000
SAA : saa82
SAA-type        : ip-ping,
Status          : stopped,
Start At        : 2010-02-09,11:00:00.0,
Stop At         : -,
Description     : abcdsdfsdfsfs,
Interval(minutes) : 300,
Source-IP       : 0.0.0.0,           Destination-IP       : 172.21.161.65,
Payload-Size (bytes): 24,           Type-of-Service     : 0,
Num-pkts       : 5,                 Inter-pkt-delay     : 1000

```

-> show saa "saa20" type ip-ping config

```

SAA : saa20
SAA-type        : ip-ping,
Status          : started,
Start At        : -
Stop At         : -
Description     : datacenter1,
Interval(minutes) : 130,
Source-IP       : 0.0.0.0,           Destination-IP       : 172.21.161.65,
Payload-Size (bytes): 24,           Type-of-Service     : 0,
Num-pkts       : 5,                 Inter-pkt-delay     : 1000

```

-> show saa type ethoam-loopback config

Legend: Destination Mep: - = SAA configured with target mac-address
Destination MAC: - = SAA configured with target mep-id

```

SAA : saa90
SAA-type        : ethoam-loopback,
Status          : started,
Description     : SAA for ethernet-loopback,
Interval(minutes) : 300,
Destination MAC : -,
Destination Mep : 5,                 Source Mep          : 1,
Domain         : alcatel,           Association         : ma1,
Num-pkts       : 7,                 Inter-pkt-delay    : 1000,
Vlan-priority  : 2
SAA : saa99
SAA-type        : ethoam-loopback,
Status          : started,
Description     : SAA for ethernet-loopback,
Interval(minutes) : 300,
Destination MAC : 00:d0:b2:12:3c:a5,
Destination Mep : -,                 Source Mep          : 5,
Domain         : alcatel,           Association         : ma2,
Num-pkts       : 5,                 Inter-pkt-delay    : 500,
Vlan-priority  : 7

```

-> show saa type ethoam-two-way-delay config

Legend: Destination Mep: - = SAA configured with target mac-address
Destination MAC: - = SAA configured with target mep-id

SAA : saa100

```

SAA-type           : ethoam-two-way-delay,
Status             : stopped,
Description        : SAA for ethernet-two-way-test,
Interval(minutes) : 200,
Destination MAC    : 00:d0:b2:12:3c:a5,
Destination Mep    : -,                      Source Mep       : 4,
Domain            : aricent                  Association     : ma1,
Num-pkts          : 5,                      Inter-pkt-delay : 500,
Vlan-priority     : 4
SAA : saall10
SAA-type           : ethoam-two-way-delay,
Status             : started,
Description        : SAA for ethernet-two-way-delay,
Interval(minutes) : 300,
Destination MAC    : -,
Destination Mep    : 5,                      Source Mep       : 1,
Domain            : aricent                  Association     : ma2,
Num-pkts          : 7,                      Inter-pkt-delay : 800,
Vlan-priority     : 5

```

Release History

Release 6.6.2; command was introduced.

Related Commands

[saa type mac-ping](#) Configures a MAC ping SAA.
[saa type ip-ping](#) Configures an IP ping SAA.
[saa type ethoam-loopback](#) Configures an ETH-LB SAA.
[saa type ethoam-two-way-delay](#) Configures an ETH-DMM SAA.

MIB Objects

```

alaSaaCtrlTable
  alaSaaCtrlTestIndex
  alaSaaCtrlDescr
  alaSaaCtrlInterval
  alaSaaCtrlTestMode
alaSaaMacCtrlTable
  alaSaaMacCtrlDstAddress
  alaSaaMacCtrlPayloadSize
  alaSaaMacCtrlInterPktDelay
  alaSaaMacCtrlNumPkts
alaSaaIpCtrlTable
  alaSaaIpCtrlTgtAddress
  alaSaaIpCtrlSrcAddress
  alaSaaIpCtrlPayloadSize
  alaSaaIpCtrlTypeOfService
  alaSaaIpCtrlInterPktDelay
  alaSaaIpCtrlNumPkts
alaSaaEthoamCtrlTable
  alaSaaEthoamCtrlTestMode
  alaSaaEthoamCtrlAdminStatus
  alaSaaEthoamCtrlTgtMepId
  alaSaaEthoamCtrlTgtMAC

```

```
alaSaaEthoamCtrlSrcMepId  
alaSaaEthoamCtrlNumPkts  
alaSaaEthoamCtrlInterPktDelay
```

show saa statistics

Display SAA statistics.

show saa [*string*] **statistics** [**aggregate** | **history**]

Syntax Definitions

<i>string</i>	An existing SAA ID string.
aggregate	Displays aggregate results for the specified SAA.
history	Displays a results history for the specified SAA.

Defaults

By default, statistics are displayed for all SAAs and only for the most recent SAA test run.

Platforms Supported

OmniSwitch 6250, 6450

Usage Guidelines

- If the **aggregate** parameter is specified, then only the aggregate results are displayed.
- If the **history** parameter is specified, then only the history results are displayed.
- Since results are only kept for the last five iterations, using the **history** option displays only the last five iterations of each SAA test and in each SAA history, iteration information of first 20 received packets are stored.
- Use the *string* parameter to display statistics for a specific SAA.
- Statistics and history do not persist across a switch reboot or takeover.
- An aggregated record is maintained for each SAA. This record maintains aggregated information of all the iterations that are run and is updated after every iteration. After Nth iteration, the record is updated as shown below:

RTT Min	Minimum (delayOfIteration1,delayOfIteration2,....., delayOfIterationN)
RTT Avg	$\frac{[(\text{avgDelayIteration1} * \text{pktsRcvdInIteration1})+(\text{avgDelayIteration2} * \text{pktsRcvdInIteration2})+ \dots +(\text{avgDelayIterationN} * \text{pktsRcvdInIterationN})]}{(\text{pktsRcvdInIteration1} + \text{pktsRcvdInIteration2} + \dots + \text{pktsRcvdInIterationN})}$
RTT Max	(delayOfIteration1, delayOfIteration2,....., delayOfIterationN)
Jitter Min	Minimum (jitterOfIteration1, jitterOfIteration2,....., jitterOfIterationN)
Jitter Avg	$\frac{[(\text{avgJitterIteration1} * \{\text{pktsRcvdInIteration1} - 1\}) + (\text{avgJitterIteration2} * \{\text{pktsRcvdInIteration2} - 1\}) + \dots + (\text{avgJitterIterationN} * \{\text{pktsRcvdInIterationN} - 1\})]}{(\{\text{pktsRcvdInIteration1} - 1\} + \{\text{pktsRcvdInIteration2} - 1\} + \dots + \{\text{pktsRcvdInIterationN} - 1\})}$
Jitter Max	Maximum (jitterOfIteration1, jitterOfIteration2,....., jitterOfIterationN)

When a new iteration is run, the record is updated as shown below:

RTT Min	Minimum (previousDelay, latestIterationDelay)
RTT Avg	$[(\text{aggregatedDelay} * \text{totalNumPktsRcvd}) + (\text{latestIterationDelay} * \text{latestNumPktsRcvd})] / (\text{totalNumPktsRcvd} + \text{latestNumPktsRcvd})$
RTT Max	Maximum (previousDelay, latestIterationDelay)
Jitter Min	Minimum (previousJitter, latestIterationJitter)
Jitter Avg	$\{\text{aggregatedJitter} * (\text{totalJitterSamplesRcvd})\} + \{\text{latestIterationJitter} * (\text{latestNumPktsRcvd} - 1)\} / \{(\text{totalJitterSamplesRcvd}) + (\text{latestPktsRcvd} - 1)\}$

Note: totalJitterSamplesRcvd represents total number of jitter samples received. A jitter sample is obtained when at least two replies are received. E.g. 5 replies received will provide 4 jitter samples in an iteration.

Jitter Max Maximum (previousJitter, latestIterationJitter).

For failed iterations, i.e. iterations in which no reply is received, both the delay and jitter statistics are not updated. For iterations in which only one reply is received, only the delay statistics are updated and jitter statistics are not. For iterations in which more than one reply are received, for example, if 'n' replies are received, then 'n' delays and 'n-1' jitter values are calculated and used for statistics update.

Examples

```
-> show saa statistics
```

```
Legend: eth-lb = ethoam-loopback
```

```
       : eth-dmm = ethoam-two-way-delay
```

```
Legend: - = Delay or jitter value not available
```

```
Latest Record:
```

SAA	Type	Time of Last-Run	RTT	RTT	RTT	Jitter	Jitter	Jitter
Packets	Description		Min	Avg	Max	Min	Avg	Max
Sent	Rcvd							

```
-----+-----+-----+-----+-----+-----+-----+-----+-----+
-----+-----+-----+-----+-----+-----+-----+-----+-----+
saa1 ip-ping 2009-09-05,20:18:34.0 970 1067 1432 1 99 455
7 7 DEFAULT
saa2 ip-pin 2009-09-05,20:18:48.0 1022 1180 1914 0 349 892
7 7 DEFAULT
saa3 ip-ping 2009-09-05,20:19:15.0 1016 1583 3794 8 703 2767
5 5 DEFAULT
saa4 eth-lb 2009-09-05,22:15:30.0 - - - - -
8 0 DEFAULT
saa5 eth-lb 2009-09-05,22:30:40.0 1243 1537 2166 23 42 96
6 6 DEFAULT
saa6 eth-dmm 2009-09-05,22:45:15.0 1563 2654 3574 15 27 173
5 5 DEFAULT
```

SAA	Type	Time of Last-Run	RTT	RTT	RTT	Jitter	Jitter	Jitter
Packets	Description		Min	Avg	Max	Min	Avg	Max
Sent	Rcvd							

```
-----+-----+-----+-----+-----+-----+-----+-----+-----+
```

```

-----+-----+-----+-----+-----+
saa1 ip-ping 2009-09-05,20:18:34.0 970 1067 1432 1 99 455
7 7 DEFAULT

```

-> show saa statistics aggregate

Legend: eth-lb = ethoam-loopback
: eth-dmm = ethoam-two-way-delay
Legend: - = Delay or jitter value not available
Aggregate Record:

Type	Time of Last-Run	RTT	RTT	RTT	Jitter	Jitter	
Jitter	Packets	Description	Min	Avg	Max	Min	Avg
Max	Sent	Rcvd					
ip-ping	2009-09-05,20:28:34.0	970	1067	1432	1	99	
455	7	7	DEFAULT				
ip-ping	2009-09-05,20:28:24.0	1007	1846	4737	0	917	
3730	7	7	DEFAULT				
ip-ping	2009-09-05,20:28:16.0	989	1121	1546	16	164	
533	6	6	DEFAULT				
ip-ping	2009-09-05,22:28:09.0	1006	1136	1696	10	284	
690	6	6	DEFAULT				
ip-ping	2009-09-05,22:18:34.0	970	1067	1432	1	99	
455	7	7	DEFAULT				

-> show saa statistics history

Legend: eth-lb = ethoam-loopback
: eth-dmm = ethoam-two-way-delay
Legend: - = Delay or jitter value not available
History records SAA : saa1

Type	Time of Last-Run	RTT	RTT	RTT	Jitter	Jitter	
Jitter	Packets	Description	Min	Avg	Max	Min	Avg
Max	Sent	Rcvd					
ip-ping	2009-09-05,20:18:34.0	970	1067	1432	1	99	
455	7	7	DEFAULT				
ip-ping	2009-09-05,20:28:24.0	1007	1846	4737	0	917	
3730	7	7	DEFAULT				
ip-ping	2009-09-05,20:28:16.0	989	1121	1546	16	164	
533	6	6	DEFAULT				
ip-ping	2009-09-05,20:28:09.0	1006	1136	1696	10	284	
690	6	6	DEFAULT				
ip-ping	2009-09-05,20:18:34.0	970	1067	1432	1	99	
455	7	7	DEFAULT				

History records SAA : saa2

Type	Time of Last-Run	RTT	RTT	RTT	Jitter	Jitter	Jitter	Pack-
ets	Description	Min	Avg	Max	Min	Avg	Max	
Sent	Rcvd							
ip-ping	TUE 2010-09-05,20:18:48.0	1022	1180	1914	0	349	892	
7	7	DEFAULT						

History records SAA : saa3

Type	Time of Last-Run	RTT	RTT	RTT	Jitter	Jitter	Jitter	Pack-
------	------------------	-----	-----	-----	--------	--------	--------	-------

```

ets Description
                Min   Avg   Max   Min   Avg   Max
Sent Rcvd
-----+-----+-----+-----+-----+
-----+-----+-----+-----+
ip-ping TUE 2010-09-05,20:19:15.0 1016 1583 3794 8 703 2767
5 5 DEFAULT

```

History records SAA : saa4

```

Type   Time of Last-Run      RTT   RTT   RTT   Jitter Jitter Jitter
Packets Description
                Min   Avg   Max   Min   Avg   Max
Sent Rcvd
-----+-----+-----+-----+-----+
-----+-----+-----+-----+
eth-lb  2010-09-05,22:15:30.0   986  1023 1145  40   56   132
8 8  DEFAULT
eth-lb  2010-09-05,22:30:40.0 1243  1537 2166  23   42   96
8 8  DEFAULT

```

History records SAA : saa5

```

Type   Time of Last-Run      RTT   RTT   RTT   Jitter Jitter Jitter
Packets Description
                Min   Avg   Max   Min   Avg   Max
Sent Rcvd
-----+-----+-----+-----+-----+
-----+-----+-----+-----+
eth-dmm 2009-09-05,22:45:15.0  1563 2654 3574  15   27   173
5 5  DEFAULT

```

-> show saa saal statistics aggregate

```

SAA: saal
Total numbers of iterations      : 5
Aggregated Record:
Total Packets Sent                : 33,
Total Packets Received            : 33,
Avg RTT-Min/Avg/Max (micro sec)  : 970/1252/4737,
Avg Jitter-Min/Avg/Max (micro sec): 0/309/3730,
Timestamp-Min RTT                 : 2009-10-05,10:15:30.0,
Timestamp-Max RTT                 : 2009-10-05,08:15:30.0,
Timestamp-Min Jitter              : 2009-10-05,13:15:30.0,
Timestamp-Max Jitter              : 2009-10-05,20:28:39.0

```

-> show saa saal0 statistics

```

SAA: saal0
Total numbers of iterations      : 5
Latest Record:
Time of Run                       : 2009-09-05,20:28:39.0,
Total Packets Sent                : 5,
Total Packets Received            : 5,
RTT-Min/Avg/Max (micro sec)      : 995/1059/1310,
Jitter-Min/Avg/Max (micro sec)   : 5/56/267

```

-> show saa saa4 statistics aggregate

```

SAA: saa4
Total numbers of iterations      : 2
Aggregated Record:
Total Packets Sent                : 16,
Total Packets Received            : 16,

```

```

Avg RTT-Min/Avg/Max (micro sec)      : 790/1185/2654,
Avg Jitter-Min/Avg/Max (micro sec)   : 37/583/1257,
Timestamp-Min RTT                    : 2009-10-05,10:15:30.0,
Timestamp-Max RTT                    : 2009-10-05,08:15:30.0,
Timestamp-Min Jitter                 : 2009-10-05,13:15:30.0,
Timestamp-Max Jitter                 : 2009-10-05,09:30:39.0

```

```
-> show saa saal4 statistics
```

```
SAA: saal4
```

```

Total numbers of iterations      : 5
Latest Record:
  Time of Run                    : 2009-10-15,09:30:39.0,
  Total Packets Sent             : 10,
  Total Packets Received        : 8,
  RTT-Min/Avg/Max (micro sec)   : 882/1547/2175,
  Jitter-Min/Avg/Max (micro sec): 15/87/165

```

Release History

Release 6.6.2; command was introduced.

Related Commands

[saa](#) Configures a SAA.

MIB Objects

alaSaaIpResultsTable

```

alaSaaIpResultsPktsSent
alaSaaIpResultsPktsRcvd
alaSaaIpResultsRunResultReason
alaSaaIpResultsRunTime
alaSaaIpResultsMinRTT
alaSaaIpResultsAvgRTT
alaSaaIpResultsMaxRTT
alaSaaIpResultsMinJitter
alaSaaIpResultsAvgJitter
alaSaaIpResultsMaxJitter

```

alaSaaEthoamResultsTable

```

alaSaaEthoamResultsPktsSent
alaSaaEthoamResultsPktsRcvd
alaSaaEthoamResultsRunResultReason
alaSaaEthoamResultsRunTime
alaSaaEthoamResultsMinRTT
alaSaaEthoamResultsAvgRTT
alaSaaEthoamResultsMaxRTT
alaSaaEthoamResultsMinJitter
alaSaaEthoamResultsAvgJitter
alaSaaEthoamResultsMaxJitter

```

alaSaaIpCtrlTable

```

alaSaaIpCtrlTotalPktsSent
alaSaaIpCtrlTotalPktsRcvd
alaSaaIpCtrlMinRTT
alaSaaIpCtrlAvgRTT
alaSaaIpCtrlMaxRTT
alaSaaIpCtrlMinJitter

```

```
alaSaaIpCtrlAvgJitter
alaSaaIpCtrlMaxJitter
alaSaaEthoamCtrlTable
  alaSaaEthoamCtrlTotalPktsRcvd
  alaSaaEthoamCtrlTotalPktsSent
  alaSaaEthoamCtrlMinRTT
  alaSaaEthoamCtrlAvgRTT
  alaSaaEthoamCtrlMaxRTT
  alaSaaEthoamCtrlMinJitter
  alaSaaEthoamCtrlAvgJitter
  alaSaaEthoamCtrlMaxJitter
```

31 LINK OAM Commands

Ethernet in the First Mile (EFM), also known as LINK OAM, is a collection of protocols specified in IEEE 802.3ah, defining Ethernet in the access networks that connects subscribers to their immediate service provider. EFM, EFM-OAM and LINKOAM refers to IEEE 802.3ah standard.

LINK OAM (operation, administration, and maintenance) is a tool which monitors Layer-2 link status on the network by sending OAM protocol data units (OAMPDUs) between the network devices. OAMPDUs contain control and status information used to monitor, test and troubleshoot OAM-enabled links. By enabling LINK OAM on switch ports, network administrators can monitor the link-related issues on the first mile. LINK OAM provides network administrators the ability to monitor link performance, remote fault detection and remote loopback control.

Note. EFM (LINK OAM) does not include functions such as station management, bandwidth allocation or provisioning functions.

MIB information for the EFM (LINK OAM) commands is as

Filename: alcatel-ind1-dot3-oam-mib.mib
Module: ALCATEL-IND1-DOT3-OAM-MIB

Filename: dot3-oam-mib.mib
Module: DOT3-OAM-MIB

A summary of the available commands is listed here:

Global Configuration Commands	efm-oam efm-oam multiple-pdu-count efm-oam errored-frame-seconds-summary efm-oam errored-frame-period efm-oam errored-frame
Port Status Commands	efm-oam port status efm-oam port mode efm-oam port propagate-events
Port Event Notification Commands	efm-oam errored-frame efm-oam errored-frame-period efm-oam errored-frame-seconds-summary
Timer Interval Commands	efm-oam port keepalive-interval efm-oam port hello-interval

Remote Loopback Commands	<code>efm-oam port remote-loopback</code> <code>efm-oam port remote-loopback start</code> <code>efm-oam port l1-ping</code>
Show Commands	<code>show efm-oam port</code> <code>show efm-oam port detail</code> <code>show efm-oam port remote detail</code> <code>show efm-oam port history</code> <code>show efm-oam port l1-ping detail</code> <code>show efm-oam port statistics</code> <code>show efm-oam configuration</code>
Clear Commands	<code>clear efm-oam statistics</code> <code>clear efm-oam log-history</code>

efm-oam

Enables or disables the LINK OAM protocol on the switch.

efm-oam {enable | disable}

Syntax Definitions

enable	Enables the LINK OAM protocol.
disable	Disables the LINK OAM protocol.

Defaults

By default, the LINK OAM protocol is disabled for the switch.

Platforms Supported

OmniSwitch 6250, 6450

Usage Guidelines

- LINK OAM must be enabled globally for the OAM to be functional on all the ports.
- When LINK OAM is disabled globally, all dynamically learned information on the port, including peer information, is deleted. However, the LINK OAM configuration for the port is retained.

Examples

```
-> efm-oam enable
-> efm-oam disable
```

Release History

Release 6.6.1; command was introduced.

Related Commands

efm-oam port status	Enables or disables LINK OAM protocol on the specified port or on a range of ports.
efm-oam port mode	Configures the LINK OAM mode on the port or on the range of ports to active or passive.
show efm-oam configuration	Displays the global LINK OAM configuration.

MIB Objects

alaDot3OamStatus

efm-oam port status

Enables or disables LINK OAM protocol on the specified port or on a range of ports.

efm-oam port *slot/port* [-*port2*] **status** {**enable** | **disable**}

Syntax Definitions

<i>slot/port</i>	The slot number of the module and the physical port number on that module.
<i>-port2</i>	Specifies the last port in the range of ports.
enable	Enables LINK OAM protocol on the specified port.
disable	Disables LINK OAM protocol on the specified port.

Defaults

By default, the LINK OAM protocol is disabled on all ports for the switch.

Platforms Supported

OmniSwitch 6250, 6450

Usage Guidelines

- LINK OAM must be enabled globally for the OAM to be functional on all the ports.
- If LINK OAM is disabled for the port or globally disabled for the switch, any OAMPDUs received are discarded.
- When LINK OAM is disabled for the port, all dynamically learned information on the port, including peer information, is deleted. However, the LINK OAM configuration for the port is retained.
- LINK OAM is not supported on the mirroring ports.
- In link aggregates, LINK OAM is supported on an individual aggregable port only.

Examples

```
-> efm-oam port 1/1 status enable
-> efm-oam port 1/1 status disable
-> efm-oam port 2/1-10 status enable
-> efm-oam port 2/1-4 status disable
```

Release History

Release 6.6.1; command was introduced.

Related Commands

efm-oam port mode	Configure a LINK OAM mode on the port or on the range of ports to active or passive.
show efm-oam configuration	Displays the global LINK OAM configuration.
show efm-oam port	Displays the status of LINK OAM on all the ports in the system, along with other relevant information such as OAM mode, operational status and loopback status of the port.
show efm-oam port detail	Displays the configuration and other related parameters for a port.

MIB Objects

dot3OamTable
dot3OamAdminState

efm-oam port mode

Configures the LINK OAM mode on the port or on the range of ports to active or passive.

efm-oam port *slot/port*[-*port2*] mode {active | passive}

Syntax Definitions

<i>slot/port</i>	The slot number for the module and the physical port number on that module (e.g. 3/1 specifies port 1 on slot 3).
<i>-port2</i>	Specifies the last port in the range of ports.
active	Configures the LINK OAM mode to active.
passive	Configures the LINK OAM mode to passive.

Defaults

By default, LINK OAM mode is set to active on all ports.

Platforms Supported

OmniSwitch 6250, 6450

Usage Guidelines

- LINK OAM discovery process is never initiated from a port when it is in passive mode. At least one of the two peer ports should be in active mode.
- An active port will respond to Loopback-control OAMPDUs only if the peer EFM-OAM client is also in active mode.

Examples

```
-> efm-oam port 1/1 mode active
-> efm-oam port 1/1 mode passive
-> efm-oam port 2/1-10 mode active
-> efm-oam port 2/1-4 mode passive
```

Release History

Release 6.6.1; command was introduced.

Related Commands

- efm-oam port status** Enables or disables LINK OAM protocol on the specified port or on a range of ports.
- show efm-oam port** Displays the status of LINK OAM on all the ports in the system, along with other relevant information such as OAM mode, operational status and loopback status of the port.
- show efm-oam configuration** Displays the global LINK OAM configuration.

MIB Objects

dot3OamTable
dot3OamMode

efm-oam port keepalive-interval

Configures the timeout interval for the dynamically learned neighboring devices on a port or on a range of ports. Keepalive-interval is the maximum time period for which a LINK OAM port shall wait for a hello message from its peer before resetting a discovery session.

efm-oam port *slot/port[-port2]* **keepalive-interval** *seconds*

Syntax Definitions

<i>slot/port</i>	The slot number for the module and the physical port number on that module (e.g. 3/1 specifies port 1 on slot 3).
<i>-port2</i>	Specifies the last port in the range of ports.
<i>seconds</i>	Specifies the keep-alive interval value in seconds. The range for this interval is 5 to 120 seconds.

Defaults

By default, the keep-alive interval value is 5 seconds.

Platforms Supported

OmniSwitch 6250, 6450

Usage Guidelines

- Even if unsupported OAMPDU is received on the port, keep-alive timer is reset on the port.
- To set the timer to its default value, set 5 seconds as the keepalive-interval.

Examples

```
-> efm-oam port 1/1 keepalive-interval 10
-> efm-oam port 2/1-10 keepalive-interval 10
```

Release History

Release 6.6.1; command was introduced.

Related Commands

efm-oam port hello-interval	Configures the time interval (in seconds) by which the information OAMPDUs are transmitted out of a LINK OAM enabled port.
show efm-oam port detail	Displays the configuration and other related parameters for a port.

MIB Objects

```
alaDot3OamTable
  alaDot3OamKeepAliveInterval
```

efm-oam port hello-interval

Configures the time interval (in seconds) by which the information OAMPDUs are transmitted out of an LINK OAM enabled port.

efm-oam port *slot/port*[-*port2*] **hello-interval** *seconds*

Syntax Definitions

<i>slot/port</i>	The slot number for the module and the physical port number on that module (e.g. 3/1 specifies port 1 on slot 3).
<i>-port2</i>	Specifies the last port in the range of ports.
<i>seconds</i>	Specifies the time interval (in seconds) this port waits before sending out the next hello packet. The range for this timer is 1 to 60 seconds.

Defaults

By default, the hello-interval value is set to 1 second.

Platforms Supported

OmniSwitch 6250, 6450

Usage Guidelines

- Use the hello-interval value of 1 second to reset the timer to its default value.
- On a given port, hello interval time period should not be more than half of keep alive timer on the peer port.

Examples

```
-> efm-oam port 1/1 hello-interval 5  
-> efm-oam port 2/1-10 hello-interval 10
```

Release History

Release 6.6.1; command was introduced.

Related Commands

efm-oam port hello-interval	Configures the time interval (in seconds) by which the information OAMPDUs are transmitted out of a LINK OAM enabled port.
efm-oam port keepalive-interval	Configures the timeout interval for the dynamically learned neighboring devices on a port or on a range of ports. Keepalive-interval is the maximum time period for which a LINK OAM port shall wait for a hello message from its peer before resetting a discovery session.
show efm-oam port detail	Displays the configuration and other related parameters for a port.

MIB Objects

```
alaDot3OamTable  
  alaDot3OamHelloInterval
```

efm-oam port remote-loopback

Specifies whether loopback requests from peers are processed or ignored on the specified port.

efm-oam port *slot/port*[-*port2*] **remote-loopback** {**process** | **ignore**}

Syntax Definitions

<i>slot/port</i>	The slot number for the module and the physical port number on that module (e.g. 3/1 specifies port 1 on slot 3).
<i>-port2</i>	Specifies the last port in the range of ports.
process	Processes incoming loopback request from peer LINK OAM port.
ignore	Ignore (discard) incoming loopback requests.

Defaults

By default, the incoming loopback requests are ignored.

Platforms Supported

OmniSwitch 6250, 6450

Usage Guidelines

- When the remote-loopback is in **process** mode, the session started by peer LINK OAM client will be processed by local LINK OAM port. As a result, remote port will be in remote-loopback state and the local port will be local-loopback state.
- When the remote-loopback is in **ignore** mode, the session started by peer LINK OAM will not be processed by the local port.

Examples

```
-> efm-oam port 1/1 remote-loopback process
-> efm-oam port 1/1 remote-loopback ignore
-> efm-oam port 2/1-10 remote-loopback process
-> efm-oam port 2/1-4 remote-loopback ignore
```

Release History

Release 6.6.1; command was introduced.

Related Commands

- efm-oam port remote-loopback start** Initiates the loopback control PDU towards the peer port to start or stop the loopback session on the specified port.
- show efm-oam port detail** Displays the LINK OAM configuration and other related parameters for a port.
- show efm-oam port remote detail** Displays the configuration and details of the related parameters of the remote port.

MIB Objects

dot3OamLoopbackTable
dot3OamLoopbackIgnoreRx

efm-oam port remote-loopback start

Initiates the loopback control PDU towards the peer port to start or stop the loopback session on the specified port.

efm-oam port *slot/port* remote-loopback {start | stop}

Syntax Definitions

<i>slot/port</i>	The slot number for the module and the physical port number on that module (e.g. 3/1 specifies port 1 on slot 3).
start	Specifies whether to start the loopback request.
stop	Specifies whether to stop the loopback request.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6450

Usage Guidelines

- Before issuing this command, the LINK OAM port has to be in active mode and discovery of peer ports has to be completed.
- When loopback is started from a port towards a peer port which is configured to ignore the loopback request, the loopback response timer will timeout and no error is displayed. In such case, verify the loopback-state of two ports by using the command **show efm-oam port remote detail**.
- The maximum number of simultaneous loopback sessions supported per network interface is 2. If a third loopback is started through CLI, an error will be displayed at the CLI prompt.

Examples

```
-> efm-oam port 1/1 remote-loopback start
-> efm-oam port 1/1 remote-loopback stop
```

Release History

Release 6.6.1; command was introduced.

Related Commands

- efm-oam port remote-loopback** Specifies an action that should perform when a loopback request is received from the peer on a port or on a range of ports.
- show efm-oam port remote detail** Displays the configuration and details of the related parameters of the remote port.
- show efm-oam configuration** Displays the global LINK OAM configuration.

MIB Objects

dot3OamLoopbackTable
dot3OamLoopbackStatus

efm-oam port propagate-events

Configures whether or not the specified port or range of ports will propagate local event notifications to the remote peer.

efm-oam port *slot/port*[-*port2*] propagate-events {critical-event | dying-gasp} {enable | disable}

Syntax Definitions

<i>slot/port</i>	The slot number for the module and the physical port number on that module (e.g. 3/1 specifies port 1 on slot 3).
<i>-port2</i>	Specifies the last port in the range of ports.
critical-event	Configures the notification status for critical events.
dying-gasp	Configures the notification status for dying gasp events.
enable	Enables the notification of critical-event or dying-gasp events to the peer.
disable	Disables the notification of critical-event or dying-gasp events to the peer.

Defaults

By default, the notification status for both critical-event and dying-gasp events is set to enabled.

Platforms Supported

OmniSwitch 6250, 6450

Usage Guidelines

- When the system is set for critical event or a dying-gasp event, the local OAM entity indicates the event through the OAMPDU flags to its peer OAM entity.
- In case of port admin down, the OAM IFU-PDU with dying-gasp bit set will be sent to peer as soon as a failure is detected and transmission will continue till the specific port actually goes down.
- In case of takeover or reload of the switch, the OAM IFU-PDU with dying-gasp bit set will be sent to peer as soon as a failure is detected and transmission will continue till the specific device actually goes down.
- The information PDUs with dying gasp bit set is transmitted towards peer as soon as link-down is detected at NI. However, if there is a link flap (i.e link comes again) before the expiry of link-flap timer, then normal information PDU transmission with dying-gasp bit reset shall resume. This will cause clearing of alarms or trap on the peer port.

Examples

```
-> efm-oam port 1/1 propagate-events critical-event enable
-> efm-oam port 1/1 propagate-events critical-event disable
-> efm-oam port 2/1-10 propagate-events dying-gasp enable
-> efm-oam port 2/1-4 propagate-events dying-gasp disable
```

Release History

Release 6.6.1; command was introduced.

Related Commands

show efm-oam port remote detail

Displays the configuration and details of the related parameters of the remote port.

show efm-oam port statistics

Displays the LINK OAM statistics on a port, or a range of ports or on all ports.

MIB Objects

dot3OamEventConfigTable

dot3OamDyingGaspEnable

dot3OamCriticalEventEnable

efm-oam errored-frame-period

Configures the threshold, window frame values and the status for notification when the number of frame-errors exceed the threshold in a given period of time (specified) by window. When the number of frame errors exceeds a threshold within a given window defined by a number of frames (for example, 10 frames out of 1000 had errors), an Errored Frame Period event is generated.

efm-oam port *slot/port*[-*port2*] **errored-frame-period** [**threshold** *threshold_symbols*] [**window** *window_frames*] [**notify** {**enable** | **disable**}]

Syntax Definitions

<i>slot/port</i>	The slot number for the module and the physical port number on that module (e.g. 3/1 specifies port 1 on slot 3).
<i>-port2</i>	The last port number in a range of ports that you want to configure on the same slot. (e.g. 3/1-4 specifies ports 1,2,3 and 4 on slot 3).
<i>threshold_symbols</i>	Specifies the frame error threshold number. The range supported is 1 to maximum 4 byte integer value (4294967295).
<i>window_frames</i>	Specifies the number of frames used to define a window within which the frame period errors are measured.
enable	Enables notification of the Errored Frame Period event.
disable	Disables notification of the Errored Frame Period event.

Defaults

parameter	default
<i>threshold_symbols</i>	1 frame error
enable disable	enable

The default for *window_frames* depends on the port-types. The default, minimum and maximum supported values for various port-types are:

port-type	default value	minimum value	maximum value
100 mbps	200000	20000	12000000
1000 X	2000000	200000	120000000
1000 T	2000000	200000	120000000
10 Gig	20000000	2000000	1200000000

Platforms Supported

OmniSwitch 6250, 6450

Usage Guidelines

- The command can be issued in any order like window, threshold, and notify. However, at least one option needs to be entered.

- To enter many ports in a single command, use a hyphen to specify a range of ports (e.g. 3/1-16).

Examples

```
-> efm-oam port 1/1 errored-frame-period threshold 1 window 3000000 notify enable
-> efm-oam port 1/1 errored-frame-period notify disable
-> efm-oam port 2/1-4 errored-frame-period threshold 1 window 3000000 notify enable
-> efm-oam port 2/1-2 errored-frame-period notify disable
```

Release History

Release 6.6.1; command was introduced.

Related Commands

[efm-oam errored-frame](#)

Configures the threshold, window and notify-status for errored-frame on a port. The frame-period measures the frame-errors, within a specified window of time.

[efm-oam errored-frame-seconds-summary](#)

Configures the threshold, window and notify-status for errored-frame-seconds-summary on a port. The Errored Seconds are the time in seconds in which at least one frame error has occurred.

[show efm-oam port detail](#)

Displays the Errored Frame Period Event threshold, window, and notification parameter values for a port.

MIB Objects

```
dot3OamEventConfigTable
  dot3OamErrFramePeriodWindow
  dot3OamErrFramePeriodThreshold
  dot3OamErrFramePeriodEvNotifEnable
```

efm-oam errored-frame

Configures an error frame threshold or window on a LINK OAM port and set notification status for errored frame events. When the number of frame errors exceeds a threshold within a given window defined by a period of time (for example, 10 frames in 1 second had errors), an Errored Frame Event is generated.

efm-oam port *slot/port[-port2]* **errored-frame** [**threshold** *threshold_symbols*] [**window** *window_seconds*] [**notify** {**enable** | **disable**}]

Syntax Definitions

<i>slot/port</i>	The slot number for the module and the physical port number on that module (e.g. 3/1 specifies port 1 on slot 3).
<i>-port2</i>	The last port number in a range of ports that you want to configure on the same slot (e.g 3/1-4 specifies ports 1,2,3,and 4 on slot 3).
<i>threshold_symbols</i>	Specifies the frame error threshold number.
<i>window_seconds</i>	Specifies the window of time, in which the frame errors will be measured. The duration should be in units of 100ms.
enable	Enables notification of the Errored Frame event.
disable	Disables notification of the Errored Frame event.

Defaults

parameter	default
<i>threshold_symbols</i>	1 frame error
<i>window_seconds</i>	1 second (10 dsec)
enable disable	enable

Platforms Supported

OmniSwitch 6250, 6450

Usage Guidelines

- The various options, threshold, window and notify can be issued in any order. However, at least one option has to be entered.
- To enter many ports in a single command, use a hyphen to specify a range of ports (e.g. 3/1-16).

Examples

```
-> efm-oam port 1/1 errored-frame threshold 10 window 32 notify enable
-> efm-oam port 1/1 errored-frame notify disable
-> efm-oam port 2/1-4 errored-frame threshold 10 window 32 notify enable
-> efm-oam port 2/1-2 errored-frame notify disable
```

Release History

Release 6.6.1; command was introduced.

Related Commands

- | | |
|---|--|
| efm-oam errored-frame-seconds-summary | Configures the threshold, window and notify-status for errored-frame-seconds-summary on a port. |
| efm-oam errored-frame-period | Configures the threshold, window and notify-status for errored-frame-period errors on a port. The errored-frame-period measures the frame-errors, within a specified window of frames. |
| show efm-oam port statistics | Displays the LINK OAM statistics on a port, or a range of ports or on all ports. |

MIB Objects

```
dot3OamEventConfigTable
dot3OamErrFrameWindow
dot3OamErrFrameThreshold
dot3OamErrFrameEvNotifEnable
```

efm-oam errored-frame-seconds-summary

Configures the threshold, window and notify-status for errored-frame-seconds-summary on a port. The Errored Seconds are the time in seconds in which at least one frame error has occurred.

efm-oam port *slot/port[-port2]* **errored-frame-seconds-summary** [**threshold** *threshold_seconds*] [**window** *window_seconds*] [**notify** {**enable** | **disable**}]

Syntax Definitions

<i>slot/port</i>	The slot number for the module and the physical port number on that module (e.g. 3/1 specifies port 1 on slot 3).
<i>-port2</i>	The last port number in a range of ports that you want to configure on the same slot (e.g 3/1-4 specifies ports 1,2,3, and 4 on slot 3).
<i>threshold_symbols</i>	Specifies the frame error threshold number.
<i>window_seconds</i>	Specifies the window of time in which the frame errors will be measured.
enable	Enables notification of the Errored Frame Seconds Summary event.
disable	Disables notification of the Errored Frame Seconds Summary event.

Defaults

parameter	default
<i>threshold_symbols</i>	1 errored frame second
<i>window_seconds</i>	60 seconds. (600 dsec).
enable disable	enable

Platforms Supported

OmniSwitch 6250, 6450

Usage Guidelines

- The various options, threshold, window and notify can be issued in any order. However, at least one option has to be entered.
- To enter many ports in a single command, use a hyphen to specify a range of ports (e.g. 3/1-16).

Examples

```
-> efm-oam port 1/1 errored-frame-seconds-summary threshold 1 window 700 notify
enable
-> efm-oam port 1/1 errored-frame-seconds-summary notify disable
-> efm-oam port 2/1-4 errored-frame-seconds-summary threshold 1 window 700 notify
enable
-> efm-oam port 2/1-2 errored-frame-seconds-summary notify disable
```

Release History

Release 6.6.1; command was introduced.

Related Commands

- | | |
|-------------------------------------|--|
| efm-oam errored-frame | Configures the threshold, window and notify-status for errored-frame on a port. The frame-period measures the frame-errors, within a specified window of time. |
| efm-oam errored-frame-period | Configures the threshold, window and notify-status for errored-frame-period errors on a port. The errored-frame-period measures the frame-errors, within a specified window of frames. |
| show efm-oam port statistics | Displays the LINK OAM statistics on a port, or a range of ports or on all ports. |

MIB Objects

```
dot3OamEventConfigTable
  dot3OamErrFrameSecsSummaryWindow
  dot3OamErrFrameSecsSummaryThreshold
  dot3OamErrFrameSecsEvNotifEnable
```

efm-oam multiple-pdu-count

Configures the value of multiple PDU count. When multiple PDU count is set to a specific number in case of any of the threshold cross events, the same event notification PDU will be transmitted that many times towards the peer.

efm-oam multiple-pdu-count *count*

Syntax Definitions

count Specifies the number of PDUs that have to be sent in case of event-notification TLVs. The range is 1 to 10 PDUs.

Defaults

By default, the PDU-count value is set to 3.

Platforms Supported

OmniSwitch 6250, 6450

Usage Guidelines

N/A

Examples

```
-> efm-oam multiple-pdu-count 5
```

Release History

Release 6.6.1; command was introduced.

Related Commands

show efm-oam configuration Displays the global LINK OAM configuration.

show efm-oam port remote detail Displays the configuration and details of the related parameters of the remote port.

MIB Objects

alaDot3OamMultiplePduCount

efm-oam port l1-ping

Configures the number of frames to be sent by the current LINK OAM port to the remote port's MAC address (l1 ping) and the delay between each consecutive sent frames and to start the ping operation.

efm-oam port *slot/port* l1-ping [num-frames *number*] [delay *milliseconds*] [start]

Syntax Definitions

<i>slot/port</i>	Specifies the slot number for the module and the physical port number on that module (e.g. 3/1 specifies port 1 on slot 3).
<i>number</i>	Specifies the number of frames that needs to be sent during ping operation. The allowed range of numbers is between 1 to 20.
<i>milliseconds</i>	Specifies time interval between two consecutive PDUs. The allowed range of delay is between 100 to 1000 milliseconds.
start	Specifies to start the ping operation.

Defaults

parameter	default
<i>number</i>	5 frames
<i>milliseconds</i>	1000 milliseconds

Platforms Supported

OmniSwitch 6250, 6450

Usage Guidelines

- The command is valid only when the LINK OAM is enabled globally, port is in active mode, discovery is done, and the port is in remote loopback mode.
- L1 ping can be started only when the port is in remote loopback mode.

Examples

```
-> efm-oam port 1/12 l1-ping num-frames 6 delay 300 start
-> efm-oam port 1/20 l1-ping num-frames 12 delay 500 start
-> efm-oam port 1/15 l1-ping num-frames 5 delay 100 start
-> efm-oam port 1/15 l1-ping num-frames 4 delay 200 start
-> efm-oam port 1/5 l1-ping num-frames 100 delay 300 start
```

Release History

Release 6.6.1; command was introduced.

Related Commands

- show efm-oam port l1-ping detail** Displays the frames lost during a loopback session.
- show efm-oam port statistics** Displays the LINK OAM statistics on a port, or a range of ports or on all ports.

MIB Objects

```
alaDot3OamLoopbackTable  
  alaDot3OamPortL1PingFramesConf  
  alaDot3OamPortL1PingFramesDelay  
  alaDot3OamPortL1PingStatus  
  alaDot3OamPortL1PingFramesSent  
  alaDot3OamPortL1PingFramesReceived  
  alaDot3OamPortL1PingAverageRoundTripDelay
```

show efm-oam configuration

Displays the global LINK OAM configuration.

show efm-oam configuration

Syntax Definitions

N/A

Defaults

N/A.

Platforms Supported

OmniSwitch 6250, 6450

Usage Guidelines

Use this command to display the global configuration of LINK OAM.

Examples

```
-> show efm-oam configuration
EFM OAM Status           : enabled,
Multiple PDU Count       : 5
```

Output fields are described here:

output definitions

EFM OAM status	The current administrative status of LINK OAM on this switch (Enabled or Disabled).
Multiple PDU Count	The number of PDUs sent when LINK OAM needs to send multiple Event Notification.

Release History

Release 6.6.1; command was introduced.

Related Commands

[efm-oam](#)

Enables or disables the LINK OAM protocol on the switch.

[show efm-oam port detail](#)

Displays the LINK OAM configuration and other related parameters for a port.

MIB Objects

```
alaDot3OamStatus
  alaDot3OamMultiplePduCount
```

show efm-oam port

Displays the status of LINK OAM on all the ports in the system, along with other relevant information such as OAM mode, operational status and loopback status of the port.

show efm-oam port [*slot/port1-port2*] [**enable** | **disable**] [**active** | **passive**]

Syntax Definitions

<i>slot/port1</i>	The slot number for the module and the physical port number on that module (e.g. 3/1 specifies port 1 on slot 3).
<i>-port2</i>	The last port number in a range of ports that you want to configure on the same slot (e.g. 3/1-4 specifies ports 1,2,3, and 4 on slot 3).
enable	Specifies whether to display the LINK OAM enabled ports.
disable	Specifies whether to display the LINK OAM disabled ports.
active	Specifies whether to display the LINK OAM active ports.
passive	Specifies whether to display the LINK OAM passive ports.

Defaults

By default, displays the LINK OAM status on all ports.

Platforms Supported

OmniSwitch 6250, 6450

Usage Guidelines

Use this command to display the state of LINK OAM on the basis of enabled or disabled port and on the basis of active or passive port.

Examples

```
-> show efm-oam port
Port   EFM-OAM Status   Mode   Operational Status   Loopback Status
-----+-----+-----+-----+-----
  1/1      enabled    active    operational           remoteLoopback
  1/2      disabled    active    activeSendLocal       noLoopback
  1/3      enabled    passive   activeSendLocal       noLoopback
  1/4      disabled    active    activeSendLocal       noLoopback
  1/5      disabled    active    activeSendLocal       noLoopback
  1/6      disabled    active    activeSendLocal       noLoopback
  1/7      disabled    active    activeSendLocal       noLoopback
```

```
-> show efm-oam port 1/1-5
Port   EFM-OAM Status   Mode   Operational Status   Loopback Status
-----+-----+-----+-----+-----
  1/1      enabled    active    operational           remoteLoopback
  1/2      disabled    active    activeSendLocal       noLoopback
  1/3      enabled    passive   activeSendLocal       noLoopback
  1/4      disabled    active    activeSendLocal       noLoopback
  1/5      disabled    active    activeSendLocal       noLoopback
```

```
-> show efm-oam port 1/1-3 enabled
```

```
Port   Mode      Operational Status  Loopback Status
-----+-----+-----+-----+-----
  1/1   active    operational         remoteLoopback
  1/3   passive   activeSendLocal    noLoopback
```

```
-> show efm-oam port enabled
```

```
Port   Mode      Operational Status  Loopback Status
-----+-----+-----+-----+-----
  1/1   active    activeSendLocal    remoteLoopback
  1/3   passive   activeSendLocal    noLoopback
  1/7   passive   activeSendLocal    noLoopback
```

```
-> show efm-oam port disabled
```

```
Port   Mode      Operational Status  Loopback Status
-----+-----+-----+-----+-----
  1/2   active    activeSendLocal    noLoopback
  1/4   passive   activeSendLocal    noLoopback
  1/5   active    activeSendLocal    noLoopback
```

```
-> show efm-oam port enabled passive
```

```
Port   Operational Status  Loopback Status
-----+-----+-----+-----+-----
  1/3   activeSendLocal    noLoopback
  1/7   activeSendLocal    noLoopback
```

```
-> show efm-oam port active
```

```
Port   EFM-OAM Status  Operational Status  Loopback Status
-----+-----+-----+-----+-----
  1/1   enabled         activeSendLocal    remoteLoopback
  1/2   disabled        activeSendLocal    noLoopback
  1/3   enabled         activeSendLocal    noLoopback
  1/4   disabled        activeSendLocal    noLoopback
  1/5   disabled        activeSendLocal    noLoopback
  1/6   disabled        activeSendLocal    noLoopback
  1/7   disabled        activeSendLocal    noLoopback
```

Output fields are described here:

output definitions

Port	Displays the slot/port number.
EFM-OAM Status	The state of the EFM-OAM. LINK OAM instance can have any of the following status. <ul style="list-style-type: none"> • Enabled : Specifies that the LINK OAM is disabled on the interface. • Disabled : Specifies that the LINK OAM is disabled on the interface.

output definitions (continued)

Operational Status	The status of the port in discovering whether the peer has LINK OAM capability or not. It has the following states: <ul style="list-style-type: none"> <li data-bbox="686 317 1398 411">• activeSendLocal: Specifies that the LINK OAM port is actively trying to discover whether the peer has LINK OAM capability but has not yet made that determination. <li data-bbox="686 436 1406 590">• sendLocalAndRemote: Specifies that the local LINK OAM port has discovered the peer but has not yet accepted or rejected the configuration of the peer. The local device will then decide that the peer device is acceptable or unacceptable and then accept or decline LINK OAM peering. <li data-bbox="686 615 1377 672">• sendLocalAndRemoteOk: Specifies the state when LINK OAM peering is allowed by the local port. <li data-bbox="686 697 1377 753">• oamPeeringLocallyRejected: Specifies the state when the local OAM entity rejects the peer OAM entity. <li data-bbox="686 779 1406 835">• oamPeeringRemotelyRejected: Specifies the state when the remote LINK OAM port rejects the peering. <li data-bbox="686 861 1390 955">• operational: Specifies the state when the local LINK OAM port learns that both the local LINK OAM entity and the remote LINK OAM entity have accepted the peering. <li data-bbox="686 980 1425 1171">• nonOperHalfDuplex: Specifies the value nonOperHalfDuplex is returned whenever LINK OAM is enabled. Since LINK OAM functions are not designed to work completely over half-duplex interfaces, the value nonOperHalfDuplex is returned whenever LINK OAM is enabled but the interface is in half-duplex operation. <li data-bbox="686 1197 1425 1253">• linkFault: Specifies that the link between the host and the peer has detected a fault. <li data-bbox="686 1278 1349 1335">• passiveWait: Specifies that the LINK OAM ports are in passive mode.
Loopback Status	The state of remote loopback. It can be initiatingLoopback , terminatingLoopback , localLoopback , remoteLoopback , noLoopback , or unknown .
Mode	The state of LINK OAM mode, active or passive .

Release History

Release 6.6.1; command was introduced.

Related Commands

efm-oam multiple-pdu-count Configures the value of multiple PDU count. When multiple PDU count is set to a specific number in case of any of the threshold cross events, the same event notification PDU will be transmitted that many times towards the peer.

MIB Objects

dot3OamTable
 dot3OamAdminState
 dot3OamMode
 dot3OamOperStatus
 dot3OamLoopbackTable
 dot3OamLoopbackStatus

show efm-oam port detail

Displays the LINK OAM configuration and other related parameters for a port.

show efm-oam port *slot/port* detail

Syntax Definitions

slot/port The slot number for the module and the physical port number on that module (e.g. 3/1 specifies port 1 on slot 3).

Defaults

N/A.

Platforms Supported

OmniSwitch 6250, 6450

Usage Guidelines

Use this command when you want to get LINK OAM configuration details for a specific port.

Examples

```
-> show efm-oam port 1/1 detail
OAM Status           : enable,
Operational Status   : activeSendLocal,
Mode                 : active,
Max OamPDU size      : 1518,
Config Revision      : 0,
Functions Supported  : loopback,event notification,
Loopback Status      : noLoopback,
Loopback Rx Status   : ignore,
Max OamPDUs          : 10,
KeepAlive Interval(seconds) : 10,
Hello Interval(seconds) : 5,
Dying Gasp Notify Status : enable,
Critical Event Notify Status : enable
```

Link Monitoring	Window	Threshold (errors)	Notify Status
errored-frame	10 dsec	10 frames	enable
errored-frame-period	2000000 frames	10 frames	enable
errored-frame-seconds-summary	600 dsec	1 framesec	enable

Output fields are described here:

output definitions

OAM Status	The state of LINK OAM on the port.
Operational Status	The state of the port in discovering whether the peer has LINK OAM capability or not.

output definitions (continued)

Mode	The state of LINK OAM mode on the port, active or passive .
Max OamPDU size	Displays the maximum OAMPDU that the LINK OAM port can support.
Config Revision	Displays the configuration revision of the LINK OAM port as reflected in the latest OAMPDU sent by the peer port.
Functions Supported	Displays the LINK OAM functions supported by the specified port.
Loopback Status	Displays the loopback status of the specified LINK OAM port.
Loopback Rx Status	The action that should be performed by the LINK OAM port when a loopback request is received from the peer port.
Max OamPDUs	Specifies the maximum OAMPDUs that can be exchanged between two peers.
KeepAlive Interval	Displays the timeout interval of the specified LINK OAM port for the dynamically learned peer port.
Hello Interval	Displays the time interval between two OAMPDUs in seconds.
Dying Gasp Notify Status	The state of notification for dying gasp events, enable or disable .
Critical Event Notify Status	The state of notification for critical events, enable or disable .
Link Monitoring	Displays the errors detected on the remote link.
Window	The frame error event window in the received OAMPDU.
Threshold	The number of errored frames in the period required for the event to be generated.
Notify Status	The state of notification for LINK OAM errors on the port, enable or disable .

Release History

Release 6.6.1; command was introduced.

Related Commands

show efm-oam port	Displays the status of LINK OAM on all the ports in the system, along with other relevant information like OAM mode, operational status and loopback status of the port.
-----------------------------------	--

MIB Objects

```
dot3OamTable
  dot3OamAdminState
  dot3OamOperStatus
  dot3OamMode
  dot3OamMaxOamPduSize
  dot3OamConfigRevision
  dot3OamFunctionsSupported
alaDot3OamTable
  alaDot3OamKeepAliveInterval
  alaDot3OamHelloInterval
dot3OamLoopbackTable
  dot3OamLoopbackStatus
```

```
dot3OamLoopbackIgnoreRx
dot3OamEventConfigTable
dot3OamDyingGaspEnable
dot3OamCriticalEventEnable
dot3OamErrFramePeriodWindow
dot3OamErrFramePeriodThreshold
dot3OamErrFramePeriodEvNotifEnable
dot3OamErrFrameWindow
dot3OamErrFrameThreshold
dot3OamErrFrameEvNotifEnable
dot3OamErrFrameSecsSummaryWindow
dot3OamErrFrameSecsSummaryThreshold
dot3OamErrFrameSecsEvNotifEnable
```

show efm-oam port statistics

Displays the LINK OAM statistics on a port, or a range of ports or on all ports.

show efm-oam port *slot/port*[-*port2*] statistics

show efm-oam port statistics

Syntax Definitions

<i>slot/port</i>	Specifies the slot number for the module and the physical port number on that module (e.g. 3/1 specifies port 1 on slot 3).
<i>-port2</i>	The last port number in a range of ports that you want to configure on the same slot (e.g. 3/1-4 specifies ports 1,2,3, and 4 on slot 3).

Defaults

By default, the statistics of all ports are displayed.

Platforms Supported

OmniSwitch 6250, 6450

Usage Guidelines

Use the **port** parameter to display the statistics of a specific port.

Examples

```
-> show efm-oam port 1/1 statistics
Port 1/1:
  Information OAMPDU Tx           : 1035,
  Information OAMPDU Rx           : 988,
  Unique Event Notification OAMPDU Tx : 0,
  Unique Event Notification OAMPDU Rx : 0,
  Duplicate Event Notification OAMPDU TX : 0,
  Duplicate Event Notification OAMPDU Rx : 0,
  Loopback Control OAMPDU Tx      : 1,
  Loopback Control OAMPDU Rx      : 0,
  Unsupported OAMPDU Tx           : 0,
  Unsupported OAMPDU Rx           : 0,
  Frames Lost due to OAM          : 0
```

```
-> show efm-oam port 1/1-4 statistics
Port 1/1:
  Information OAMPDU Tx           : 1035,
  Information OAMPDU Rx           : 988,
  Unique Event Notification OAMPDU Tx : 0,
  Unique Event Notification OAMPDU Rx : 0,
  Duplicate Event Notification OAMPDU TX : 0,
  Duplicate Event Notification OAMPDU Rx : 0,
  Loopback Control OAMPDU Tx      : 1,
  Loopback Control OAMPDU Rx      : 0,
  Unsupported OAMPDU Tx           : 0,
```



```
Unsupported OAMPDU Rx          : 0,
Frames Lost due to OAM        : 0

Port 1/2:
Information OAMPDU Tx          : 1035,
Information OAMPDU Rx          : 988,
Unique Event Notification OAMPDU Tx : 0,
Unique Event Notification OAMPDU Rx : 0,
Duplicate Event Notification OAMPDU Tx : 0,
Duplicate Event Notification OAMPDU Rx : 0,
Loopback Control OAMPDU Tx     : 1,
Loopback Control OAMPDU Rx     : 0,
Unsupported OAMPDU Tx          : 0,
Unsupported OAMPDU Rx          : 0,
Frames Lost due to OAM        : 0

Port 1/3:
Information OAMPDU Tx          : 1035,
Information OAMPDU Rx          : 988,
Unique Event Notification OAMPDU Tx : 0,
Unique Event Notification OAMPDU Rx : 0,
Duplicate Event Notification OAMPDU Tx : 0,
Duplicate Event Notification OAMPDU Rx : 0,
Loopback Control OAMPDU Tx     : 1,
Loopback Control OAMPDU Rx     : 0,
Unsupported OAMPDU Tx          : 0,
Unsupported OAMPDU Rx          : 0,
Frames Lost due to OAM        : 0

Port 1/4:
Information OAMPDU Tx          : 1035,
Information OAMPDU Rx          : 988,
Unique Event Notification OAMPDU Tx : 0,
Unique Event Notification OAMPDU Rx : 0,
Duplicate Event Notification OAMPDU Tx : 0,
Duplicate Event Notification OAMPDU Rx : 0,
Loopback Control OAMPDU Tx     : 1,
Loopback Control OAMPDU Rx     : 0,
Unsupported OAMPDU Tx          : 0,
Unsupported OAMPDU Rx          : 0,
Frames Lost due to OAM        : 0
```

-> show efm-oam statistics

```
Port 1/1:
Information OAMPDU Tx          : 1035,
Information OAMPDU Rx          : 988,
Unique Event Notification OAMPDU Tx : 0,
Unique Event Notification OAMPDU Rx : 0,
Duplicate Event Notification OAMPDU Tx : 0,
Duplicate Event Notification OAMPDU Rx : 0,
Loopback Control OAMPDU Tx     : 1,
Loopback Control OAMPDU Rx     : 0,
Unsupported OAMPDU Tx          : 0,
Unsupported OAMPDU Rx          : 0,
Frames Lost due to OAM        : 0
```

Port 1/2:

```

Information OAMPDU Tx           : 1035,
Information OAMPDU Rx           : 988,
Unique Event Notification OAMPDU Tx : 0,
Unique Event Notification OAMPDU Rx : 0,
Duplicate Event Notification OAMPDU TX : 0,
Duplicate Event Notification OAMPDU Rx : 0,
Loopback Control OAMPDU Tx      : 1,
Loopback Control OAMPDU Rx      : 0,
Unsupported OAMPDU Tx           : 0,
Unsupported OAMPDU Rx           : 0,
Frames Lost due to OAM         : 0

```

Port 1/3:

```

Information OAMPDU Tx           : 1035,
Information OAMPDU Rx           : 988,
Unique Event Notification OAMPDU Tx : 0,
Unique Event Notification OAMPDU Rx : 0,
Duplicate Event Notification OAMPDU TX : 0,
Duplicate Event Notification OAMPDU Rx : 0,
Loopback Control OAMPDU Tx      : 1,
Loopback Control OAMPDU Rx      : 0,
Unsupported OAMPDU Tx           : 0,
Unsupported OAMPDU Rx           : 0,
Frames Lost due to OAM         : 0

```

Output fields are described here:

output definitions

Information OAMPDU Tx	The number of OAM PDUx transmitted by the port.
Information OAMPDU Rx	The number of OAM PDUx received by the port.
Unique Event Notification OAMPDU Tx	The number of unique event notification OAM PDUs transmitted by the port.
Unique Event Notification OAMPDU Rx	The number of unique event notification OAM PDUs received by the port.
Duplicate Event Notification OAMPDU TX	The number of duplicate event notification OAM PDUs transmitted by the port.
Duplicate Event Notification OAMPDU Rx	The number of duplicate event notification OAM PDUs received by the port.
Unsupported OAMPDU Tx	The number of unsupported OAM PDUs transmitted by the port.
Unsupported OAMPDU Rx	The number of unsupported OAM PDUs received by the port.
Frames Lost due to OAM	The number of frames discarded by the OAM port.

Release History

Release 6.6.1; command was introduced.

Related Commands

show efm-oam port history

Displays the log of events that have occurred on a port. This command can also be used to display specific event logs on a port.

MIB Objects

```
dot3OamStatsTable  
  dot3OamInformationTx  
  dot3OamInformationRx  
  dot3OamUniqueEventNotificationTx  
  dot3OamUniqueEventNotificationRx  
  dot3OamDuplicateEventNotificationTx  
  dot3OamDuplicateEventNotificationRx  
  dot3OamLoopbackControlTx  
  dot3OamLoopbackControlRx  
  dot3OamUnsupportedCodesTx  
  dot3OamUnsupportedCodesRx  
  dot3OamFramesLostDueToOam
```

show efm-oam port remote detail

Displays the LINK OAM configuration and details of the related parameters of the remote port.

show efm-oam port *slot/port* remote detail

Syntax Definitions

slot/port Specifies the slot number for the module and the physical port number on that module (e.g. 3/1 specifies port 1 on slot 3).

Defaults

N/A.

Platforms Supported

OmniSwitch 6250, 6450

Usage Guidelines

N/A.

Examples

```
-> show efm-oam port 1/1 remote detail
Remote MAC address   : 00:30:96:fd:6b:fa,
Remote Vendor (info): 0x15a1
Remote Vendor (oui)  : XYZ
Mode                  : active,
Max OAMPDU size      : 1518,
Config Revision      : 0,
Functions Supported  : loopbackSupportEventSupport
```

Output fields are described here:

output definitions

Remote MAC address	Displays the MAC address of the remote peer.
Remote Vendor (info)	Displays the vendor number in hexadecimal of the remote peer.
Remote Vendor (oui)	Displays the Organizationally Unique Identifier (OUI) number of the remote peer.
Mode	The state of LINK OAM mode on the remote port, active or passive .
Max OAMPDU size	Displays the maximum OAMPDU size that the remote LINK OAM port can support.
Config Revision	Displays the configuration revision of the remote LINK OAM port.
Functions Supported	Displays the LINK OAM functions supported by the remote port.

Release History

Release 6.6.1; command was introduced.

Related Commands

- show efm-oam port history** Displays the log of events that have occurred on a port. This command can also be used to display specific event logs on a port.
- clear efm-oam statistics** Clears the LINK OAM statistics on a port.

MIB Objects

```
dot3OamPeerTable  
  dot3OamPeerMacAddress  
  dot3OamPeerVendorOui  
  dot3OamPeerVendorInfo  
  dot3OamPeerMode  
  dot3OamPeerMaxOamPduSize  
  dot3OamPeerConfigRevision  
  dot3OamPeerFunctionsSupported
```

show efm-oam port history

Displays the log of events that have occurred on a port. Use this command to display specific event logs on a port.

show efm-oam port *slot/port* history [log-type { link-fault | errored-frame | errored-frame-period | errored-frame-seconds | dying-gasp | critical}]

Syntax Definitions

<i>slot/port</i>	Specifies the slot number for the module and the physical port number on that module (e.g. 3/1 specifies port 1 on slot 3).
link-fault	Displays link fault event logs. Specifies the loss of signal is detected by the receiver. This is sent once per second in the Information OAMPDU
errored-frame	Displays errored-frame event log. an errored frame event occurs when the number of detected error frames over a specific interval exceeds the predefined threshold.
errored-frame-period	Displays an errored-frame-period event logs. An errored frame period event occurs if the number of frame errors in specific number of received frames exceeds the predefined threshold.
errored-frame-seconds	Displays errored-frame-seconds event logs. When the number of error frame seconds detected on a port over a detection interval reaches the error threshold, an errored frame seconds event occurs.
dying-gasp	Specifies an unrecoverable condition (e.g., a power failure).
critical	Specifies a crucial event that has occurred on the port.

Defaults

By default, all log types are displayed.

Platforms Supported

OmniSwitch 6250, 6450

Usage Guidelines

Timestamp will be in following format:

DAY MON Date hh:mm:ss yyyy

Examples

```
-> show efm-oam port 1/1 history
Legend: Location: * - Remote, # - Local
LogID   TimeStamp                Log Type                Event
                                     Total
-----+-----+-----+-----+-----+-----+
*   1   TUE JAN 06 19:44:51 2009   linkFault              1
#   2   TUE JAN 06 19:45:51 2009   erroredFrame           1
```

```

-> show efm-oam port 1/1 history log-type link-fault
Legend: Location: * - Remote, # - Local
LogID   TimeStamp                               Event
                                               Total
-----+-----+-----+-----+-----+
*   1   TUE JAN 06 19:46:51 2009           1
#   2   TUE JAN 06 19:46:51 2009           1

```

Output fields are described here:

output definitions

LogID	Specifies individual events within the event log.
Timestamp	The value of actual time at the time of the logged event.
Log Type	Specifies the type of event log.
Event Total	Specifies the total number of times one or more of these occurrences have resulted in an Event Notification.

Release History

Release 6.6.1; command was introduced.

Related Commands

- show efm-oam port statistics** Displays the LINK OAM statistics on a port, or a range of ports or on all ports.
- clear efm-oam log-history** Clears the LINK OAM event logs history on a port.

MIB Objects

```

dot3OamEventLogTable
  dot3OamEventLogIndex
  dot3OamEventLogTimestamp
  dot3OamEventLogOui
  dot3OamEventLogType
  dot3OamEventLogLocation
  dot3OamEventLogWindowHi
  dot3OamEventLogWindowLo
  dot3OamEventLogThresholdHi
  dot3OamEventLogThresholdLo
  dot3OamEventLogValue
  dot3OamEventLogRunningTotal
  dot3OamEventLogEventTotal

```

show efm-oam port l1-ping detail

Displays the frames lost during a loopback session.

show efm-oam port *slot/port* l1-ping detail

Syntax Definitions

slot/port Specifies the slot number for the module and the physical port number on that module (e.g. 3/1 specifies port 1 on slot 3).

Defaults

N/A.

Platforms Supported

OmniSwitch 6250, 6450

Usage Guidelines

The command can also be used even on a port on which LINK OAM is not enabled.

Examples

```
-> show efm-oam port 1/1 l1-ping detail
frames configured      = 5,
frames delay(msec)    = 100,
L1 ping status        = Successful,
frames sent           = 4,
frames received       = 4,
avg delay (msec)      = 5

-> show efm-oam port 1/4 l1-ping detail
frames configured      = 5,
frames delay(msec)    = 200,
L1 ping status        = Successful,
frames sent           = 4,
frames received       = 2,
avg delay (msec)      = 15
```

Output fields are described here:

output definitions

frames configured	Specifies the number of frames that are sent during l1-ping.
delay configured	Specifies the delay between transmission of two consecutive frames during L1 ping.
L1 ping status	The status of the L1 ping operation. The status can be Successful , Unsuccessful or default .
frames sent	Specifies the frames sent during last L1 ping.
frames received	Specifies the frames received during last L1 ping.
average delay	Specifies the average delay taken by frames during last L1 ping.

Release History

Release 6.6.1; command was introduced.

Related Commands

[efm-oam port l1-ping](#)

Configures the number of frames that needs to be sent during L1-ping, the delay between each consecutive sent frames and to start the L1-ping operation.

MIB Objects

```
alaDot3OamLoopbackTable  
  alaDot3OamPortL1PingFramesConf  
  alaDot3OamPortL1PingFramesDelay  
  alaDot3OamPortL1PingStatus  
  alaDot3OamPortL1PingFramesSent  
  alaDot3OamPortL1PingFramesReceived  
  alaDot3OamPortL1PingAverageRoundTripDelay
```

clear efm-oam statistics

Clears the LINK OAM statistics on a port, range of ports or all ports.

clear efm-oam statistics *port slot/port[-port2]*

Syntax Definitions

slot/port The slot number for the module and the physical port number on that module (e.g. 3/1 specifies port 1 on slot 3).

-port2 Specifies the last port in the range of ports.

Defaults

By default, the statistics are cleared for all the ports if no port is specified in the command.

Platforms Supported

OmniSwitch 6250, 6450

Usage Guidelines

Use the port parameter with this command to clear the statistics for a specific port or range of ports.

Examples

```
-> clear efm-oam statistics
-> clear efm-oam statistics port 1/1
-> clear efm-oam statistics port 2/1-3
```

Release History

Release 6.6.1; command was introduced.

Related Commands

show efm-oam port statistics Displays the LINK OAM statistics on a port, or a range of ports or on all ports.

clear efm-oam log-history Clears the LINK OAM event logs history on a port.

MIB Objects

```
alaDot3OamGlobalClearStats
alaDot3OamStatsTable
alaDot3OamPortClearStats
```

clear efm-oam log-history

Clears the LINK OAM event logs history a port, range of ports or all ports.

clear efm-oam log-history *port slot/port[-port2]*

Syntax Definitions

slot/port The slot number for the module and the physical port number on that module (e.g. 3/1 specifies port 1 on slot 3).

-port2 Specifies the last port in the range of ports.

Defaults

By default, the event logs are cleared for all the ports if no port is specified in the command.

Platforms Supported

OmniSwitch 6250, 6450

Usage Guidelines

Use the port parameter with this command to clear the statistics for a specific port or range of ports.

Examples

```
-> clear efm-oam log-history
-> clear efm-oam log-history port 1/1
-> clear efm-oam log-history port 2/1-3
```

Release History

Release 6.6.1; command was introduced.

Related Commands

show efm-oam port statistics Displays the LINK OAM statistics on a port, or a range of ports or on all ports.

show efm-oam port history Displays the log of events that have occurred on a port. Use this command to display specific event logs on a port.

MIB Objects

alaDot3OamGlobalClearEventLogs
alaDot3OamEventLogTable
alaDot3OamPortClearEventLogs

32 UDLD Commands

This chapter describes the CLI commands used to configure the UDLD (UniDirectional Link Detection) protocol. UDLD operates at Layer 2 in conjunction with IEEE 802.3 Layer 1 fault detection mechanism. It is a protocol used for detecting and disabling unidirectional Ethernet fiber or copper connections to avoid interface malfunctions, Spanning Tree loops, media faults, etc. It operates in two main modes normal and aggressive.

The two basic mechanisms that UDLD follows are:

- Advertises port's identity and learns about its neighbors. This information is maintained in a cache table.
- It sends continuous echo messages when fast notifications are required.

MIB information for the UDLD commands is as follows:

Filename: AlcatelIND1UDLD.mib
Module: ALCATEL-IND1-UDLD-MIB

A summary of available commands is listed here:

udld
udld port
udld mode
udld probe-timer
udld echo-wait-timer
clear udld statistics port
interfaces clear-violation-all
show udld configuration
show udld configuration port
show udld statistics port
show udld neighbor port
show udld status port

Configuration procedures for UDLD are explained in the “Configuring UDLD” chapter of the *OmniSwitch AOS Release 6250/6350/6450 Network Configuration Guide*.

udld

Globally enables or disables UDLD protocol on the switch.

udld {enable | disable}

Syntax Definitions

enable	Globally enables UDLD on the switch.
disable	Globally disables UDLD on the switch.

Defaults

parameter	default
enable disable	disable

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

The port that was shutdown by this command can be reset by using the **interfaces admin** command.

Examples

```
-> udld enable
-> udld disable
```

Release History

Release 6.6.1; command was introduced.

Related Commands

udld port	Enables or disables UDLD status on a specific port or a range of ports.
show udld configuration	Displays the global status of UDLD configuration.
show udld configuration port	Displays the configuration information for all UDLD ports or for a particular UDLD port on the switch.

MIB Objects

alaUdldGlobalStatus

udld port

Enables or disables UDLD status on a specific port or a range of ports.

udld port *slot/port*[-*port2*] {**enable** | **disable**}

Syntax Definitions

<i>slot/port</i>	The slot number for the module and the physical port number on that module (e.g., 3/1 specifies port 1 on slot 3).
<i>port2</i>	The last port number in a range of ports that you want to configure on the same slot (e.g, 3/1-4 specifies ports 1-4 on slot 3).
enable	Enables UDLD status on a port.
disable	Disables UDLD status on a port.

Defaults

parameter	default
enable disable	disable

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

The UDLD protocol must be enabled before using this command.

Examples

```
-> udld port 1/3 enable
-> udld port 1/6-10 enable
-> udld port 2/4 disable
```

Release History

Release 6.6.1; command was introduced.

Related Commands

udld	Globally enables or disables UDLD protocol on the switch.
show udld configuration port	Displays the configuration information for all UDLD ports or for a particular UDLD port on the switch.

MIB Objects

```
alaUdldPortConfigTable
    alaUdldConfigUdldStatus
```

udld mode

Configures the operational mode of UDLD on a specific port, a range of ports, or all the ports.

udld port [*slot/port*[-*port2*]] **mode** {**normal** | **aggressive**}

Syntax Definitions

<i>slot/port</i>	The slot number for the module and the physical port number on that module (e.g., 3/1 specifies port 1 on slot 3).
<i>port2</i>	The last port number in a range of ports that you want to configure on the same slot (e.g, 3/1-4 specifies ports 1-4 on slot 3).
normal	Specifies UDLD operation in the normal mode.
aggressive	Specifies UDLD operation in the aggressive mode.

Defaults

parameter	default
normal aggressive	normal

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- The UDLD protocol must be enabled before using this command.
- The UDLD protocol is not supported on aggregate ports.
- When two UDLD enabled ports that are configured in aggressive mode of operation gets the link-up asynchronously, then the UDLD port which gets the link-up indication first is considered to be in the shutdown state. In such case, the link should be configured manually after both the links are up to start UDLD detection.
- In case of faulty cable connection, the port which is configured in normal mode of operation is determined to be in the shutdown state.

Examples

```
-> udld mode aggressive
-> udld mode normal
-> udld port 1/3 mode aggressive
-> udld port 2/4 mode normal
-> udld port 2/9-18 mode aggressive
```

Release History

Release 6.6.1; command was introduced.

Related Commands

- udld** Globally enables or disables UDLD protocol on the switch.
- show udld configuration port** Displays the configuration information for all UDLD ports or for a particular UDLD port on the switch.

MIB Objects

alaUdldPortConfigTable
 alaUdldPortConfigUdldMode

udld probe-timer

Configures the probe-message advertisement timer on a specific port, a range of ports, or all the ports. Probe-messages are transmitted periodically after this timer expires.

udld port [*slot/port*[-*port2*]] **probe-timer** *seconds*

no udld port [*slot/port*[-*port2*]] **probe-timer**

Syntax Definitions

<i>slot/port</i>	The slot number for the module and the physical port number on that module (e.g., 3/1 specifies port 1 on slot 3).
<i>port2</i>	The last port number in a range of ports that you want to configure on the same slot (e.g, 3/1-4 specifies ports 1-4 on slot 3).
<i>seconds</i>	The probe-message transmission interval, in seconds (7-90).

Defaults

parameter	default
<i>seconds</i>	15

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Use the **no** form of this command to reset the probe-message timer to the default value. Note that it is not necessary to specify the probe-message interval to reset it.
- The UDLD protocol must be enabled before using this command.
- Configure probe-advertisement timer with values varying in a range of 12-18 seconds for better convergence time and to avoid burst of probe advertisements.

Examples

```
-> udld probe-timer 20
-> udld port 1/3 probe-timer 16
-> udld port 1/8-21 probe-timer 18
-> no udld probe-timer
-> no udld port 1/3 probe-timer
```

Release History

Release 6.6.1; command was introduced.

Related Commands

udld	Globally enables or disables UDLD protocol on the switch.
show udld configuration port	Displays the configuration information for all UDLD ports or for a particular UDLD port on the switch.

MIB Objects

alaUdldPortConfigTable
alaUdldPortConfigUdldProbeIntervalTimer

udld echo-wait-timer

Configures the echo based detection timer on a specific port, a range of ports, or all the ports. This is known as link detection period.

udld port [*slot/port*[-*port2*]] **echo-wait-timer** *seconds*

no udld port [*slot/port*[-*port2*]] **echo-wait-timer**

Syntax Definitions

<i>slot/port</i>	The slot number for the module and the physical port number on that module (e.g., 3/1 specifies port 1 on slot 3).
<i>port2</i>	The last port number in a range of ports that you want to configure on the same slot (e.g, 3/1-4 specifies ports 1-4 on slot 3).
<i>seconds</i>	The echo based detection period, in seconds (4-15).

Defaults

parameter	default
<i>seconds</i>	8

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Use the **no** form of this command to reset the echo based detection timer to the default value. Note that it is not necessary to specify the echo based timer to reset it.
- The UDLD protocol must be enabled before using this command.
- An echo message is expected in reply from the neighbor within this time duration, otherwise, the port is considered as faulty.

Examples

```
-> udld echo-wait-timer 9
-> udld port 1/5 echo-wait-timer 12
-> udld port 1/7-16 echo-wait-timer 12
-> no udld echo-wait-timer
-> no udld port 1/3 echo-wait-timer
```

Release History

Release 6.6.1; command was introduced.

Related Commands

udld	Globally enables or disables UDLD protocol on the switch.
show udld configuration port	Displays the configuration information for all UDLD ports or for a particular UDLD port on the switch.

MIB Objects

alaUdldPortConfigTable
alaUdldPortConfigUdldDetectionPeriodTimer

clear uddl statistics port

Clears the UDLD statistics for a specific port or for all the ports.

clear uddl statistics [**port** *slot/port*]

Syntax Definitions

slot/port

The slot number for the module and the physical port number on that module (e.g., 3/1 specifies port 1 on slot 3).

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

If the slot/port option is not specified, UDLD statistics for the switch is cleared.

Examples

```
-> clear uddl statistics port 1/4
-> clear uddl statistics
```

Release History

Release 6.6.1; command was introduced.

Related Commands

udld	Globally enables or disables UDLD protocol on the switch.
show uddl statistics port	Displays the UDLD statistics for a specific port.

MIB Objects

alaUddlGlobalClearStats

interfaces clear-violation-all

Brings the port out of shutdown state.

interfaces *slot/port*[-*port2*] **clear-violation-all**

Syntax Definitions

<i>slot/port</i>	The slot number for the module and the physical port number on that module (e.g., 3/1 specifies port 1 on slot 3).
<i>port2</i>	The last port number in a range of ports that you want to configure on the same slot (e.g, 3/1-4 specifies ports 1-4 on slot 3).

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- If any interface is in the admin down state because of UDLD, then the status of the interface can be confirmed using the **show interfaces port** command. The violation field indicates the reason of violation.
- The port may again go into shutdown state if the UDLD operation determine that UDLD violation is still not cleared.

Examples

```
-> interfaces 1/8 clear-violation-all
-> interfaces 1/10-14 clear-violation-all
```

Release History

Release 6.6.1; command was introduced.

Related Commands

[show interfaces port](#) Displays interface port status (up or down).

MIB Objects

```
alaUdldPortStatsTable
  alaUdldPortStatsClear
```

show udld configuration

Displays the global status of UDLD configuration.

show udld configuration

Syntax Definitions

N/A

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

N/A

Examples

```
-> show udld configuration
Global UDLD Status : Disabled
```

output definitions

Global UDLD Status	Indicates the UDLD status on the switch. Options include enabled or disabled .
---------------------------	--

Release History

Release 6.6.1; command was introduced.

Related Commands

udld	Globally enables or disables UDLD protocol on the switch.
show udld configuration port	Displays the configuration information for all UDLD ports or for a particular UDLD port on the switch.

MIB Objects

alaUdldGlobalStatus

show udld configuration port

Displays the configuration information for all UDLD ports or for a particular UDLD port on the switch.

show udld configuration port [*slot/port*]

Syntax Definitions

slot/port The slot number for the module and the physical port number on that module (e.g., 3/1 specifies port 1 on slot 3).

Defaults

By default, a list of all UDLD ports is displayed.

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

N/A

Examples

```
-> show udld configuration port
Slot/Port   Admin State   Oper Mode     Probe-Timer   Echo-Wait-Timer
-----+-----+-----+-----+-----
1/1         disabled     normal        15             10
1/2         disabled     normal        45             10
1/17        disabled     normal        33             8
1/18        disabled     normal        33             8
1/19        disabled     normal        33             8
1/20        disabled     aggressive    55             8
1/21        disabled     aggressive    55             8
1/22        disabled     aggressive    55             8
1/41        disabled     aggressive    77             8
1/42        enabled      aggressive    77             8
1/43        enabled      aggressive    77             8
1/44        enabled      aggressive    77             8
1/45        enabled      aggressive    77             8
```

```
-> show udld configuration port 1/44
Global UDLD Status      : enabled,
Port UDLD Status        : enabled,
Port UDLD State         : bidirectional,
UDLD Op-Mode            : aggressive,
Probe Timer (Sec)       : 77,
Echo-Wait Timer (sec)   : 8
```

output definitions

Slot/Port	Slot number for the module and physical port number on that module.
UDLD-State	Indicates the state of interface determined by UDLD operation, which can be notapplicable , shutdown , undetermined or bidirectional .
Oper-Mode	Indicates the operational mode of UDLD protocol. Options include normal or aggressive .
Global UDLD Status	Indicates the UDLD status on the switch. Options include enabled or disabled .
Port UDLD Status	Indicates the UDLD status on a port. Options include enable or disable .
Probe Timer	The probe-message expected after this time period.
Echo-Wait Timer	The detection of neighbor is expected with in this time period.

Release History

Release 6.6.1; command was introduced.

Related Commands

udld mode	Configures the operational mode of UDLD on a specific port, a range of ports, or all the ports.
udld probe-timer	Configures the probe-message advertisement timer on a specific port, a range of ports, or all the ports.
udld echo-wait-timer	Configures the echo based detection timer on a specific port, a range of ports, or all the ports.

MIB Objects

```

alaUdldGlobalStatus
alaUdldPortConfigTable
  alaUdldPortConfigUdldOperationalStatus
  alaUdldPortConfigUdldMode
  alaUdldPortConfigUdldStatus
  alaUdldPortConfigUdldProbeintervalTimer
  alaUdldPortConfigUdldDetectionPeriodTimer
alaUdldPortNeighborStatsTable
  alaUdldNeighborName

```

show udd statistics port

Displays the UDLD statistics for a specific port.

show udd statistics port *slot/port*

Syntax Definitions

slot/port The slot number for the module and the physical port number on that module (e.g., 3/1 specifies port 1 on slot 3).

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

N/A

Examples

```
-> show udd statistics port 1/42
UDLD Port Statistics
  Hello Packet Send      :8,
  Echo Packet Send       :8,
  Flush Packet Recvd     :0
UDLD Neighbor Statistics
  Neighbor ID      Hello Pkts Recv      Echo Pkts Recv
-----+-----+-----
      1              8                  15
      2              8                  15
      3              8                  21
      4              8                  14
      5              8                  15
      6              8                  20
```

output definitions

Hello Packet Send	The number of hello messages sent by a port.
Echo Packet Send	The number of echo messages sent by a port.
Flush Packet Recvd	The number of UDLD-Flush message received by a port.
Neighbor ID	The name of the neighbor.
Hello Pkts Recv	The number of hello messages received from the neighbor.
Echo Pkts Recv	The number of echo messages received from the neighbor.

Release History

Release 6.6.1; command was introduced.

Related Commands

udld probe-timer

Configures the probe-message advertisement timer on a specific port, a range of ports, or all the ports.

udld echo-wait-timer

Configures the echo based detection timer on a specific port, a range of ports, or all the ports.

MIB Objects

alaUddPortNeighborStatsTable

alaUddNeighborName
alaUddNumHelloSent
alaUddNumHelloRcvd
alaUddNumEchoSent
alaUddNumEchoRcvd
alaUddNumFlushRcvd

show udd neighbor port

Displays the UDLD neighbor ports.

show udd neighbor port *slot/port*

Syntax Definitions

slot/port The slot number for the module and the physical port number on that module (e.g., 3/1 specifies port 1 on slot 3).

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

N/A

Examples

```
-> show udd neighbor port 1/42
Neighbor ID          Device Id           Port Id
-----+-----+-----
1                   00:d0:95:ea:b2:48  00:d0:95:ea:b2:78
2                   00:d0:95:ea:b2:48  00:d0:95:ea:b2:79
3                   00:d0:95:ea:b2:48  00:d0:95:ea:b2:74
4                   00:d0:95:ea:b2:48  00:d0:95:ea:b2:75
5                   00:d0:95:ea:b2:48  00:d0:95:ea:b2:76
6                   00:d0:95:ea:b2:48  00:d0:95:ea:b2:77
```

output definitions

Neighbor ID	The name of the neighbor.
Device ID	The device ID.
Port ID	The port ID.

Release History

Release 6.6.1; command was introduced.

Related Commands

udld echo-wait-timer

Configures the echo based detection timer on a specific port, a range of ports, or all the ports. This is known as link detection period.

show udd statistics port

Displays the UDLD statistics for a specific port.

MIB Objects

alaUddPortNeighborStatsTable

alaUddNeighborName

show udld status port

Displays the UDLD status for all ports or for a specific port.

show udld status port [*slot/port*]

Syntax Definitions

slot/port The slot number for the module and the physical port number on that module (e.g., 3/1 specifies port 1 on slot 3).

Defaults

By default, a list of all UDLD ports is displayed.

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

N/A

Examples

```
-> show udld status port
  Slot/Port      Admin State      Operational State
-----+-----+-----
    1/1          disabled        not applicable
    1/2          disabled        not applicable
    1/3          disabled        not applicable
    1/21         disabled        not applicable
    1/40         disabled        not applicable
    1/41         disabled        not applicable
    1/42         enabled         bidirectional
    1/43         enabled         bidirectional
    1/44         enabled         bidirectional
    1/45         enabled         bidirectional
    1/46         enabled         bidirectional
    1/47         enabled         bidirectional
    1/48         enabled         bidirectional
```

```
-> show udld status port 1/44
Admin State      : enabled,
Operational State : bidirectional
```

output definitions

Slot/Port	Slot number for the module and physical port number on that module.
Admin State	Indicates whether UDLD is administratively enabled or disabled .
Operational State	Indicates the state of interface determined by UDLD operation, which can be notapplicable , shutdown , undetermined or bidirectional .

Release History

Release 6.6.1; command was introduced.

Related Commands

- | | |
|------------------------------------|--|
| udld port | Enables or disables UDLD status on a specific port or a range of ports. |
| show udd configuration port | Displays the configuration information for all UDLD ports or for a particular UDLD port on the switch. |

MIB Objects

alaUddGlobalStatus
alaUddPortConfigTable
alaUddPortConfigUddOperationalStatus

33 Port Mapping Commands

Port Mapping is a security feature, which controls the peer users from communicating with each other. Each session comprises a session ID and a set of user ports and/or a set of network ports. The user ports within a session cannot communicate with each other and can only communicate through network ports. In a Port Mapping session with user port set A and network port set B, ports in set A can communicate with ports in set B only. If set B is empty, the ports in set A can communicate with the rest of the ports in the system.

A port mapping session can be configured in a unidirectional or bidirectional mode. In the unidirectional mode, the network ports can communicate with each other within the same session. In the bidirectional mode, the network ports cannot communicate with each other. Network ports of a unidirectional port mapping session can be shared with other unidirectional sessions, but cannot be shared with any session configured in bidirectional mode. Network ports of different sessions can communicate with each other.

MIB information for the Port Mapping commands is as follows:

Filename: AlcatelIND1PortMapping.mib
Module: ALCATEL-IND1-PORT-MAPPING

A summary of the available commands is listed here:

port mapping user-port network-port
port mapping (configures port mapping status)
port mapping (configures port mapping direction)
port mapping dynamic-proxy-arp
show port mapping status
show port mapping

port mapping user-port network-port

Creates a port mapping session either with or without the user ports, network ports, or both. Use the **no** form of the command to delete ports or an aggregate from a session.

```
port mapping session_id [no] [user-port {slot slot | slot/port[-port2]} | linkagg agg_num]
[network-port {slot slot | slot/port[-port2]} | linkagg agg_num]
```

Syntax Definitions

<i>session_id</i>	The port mapping session ID. Valid range is 1 to 8.
user-port	Specifies a user port of the mapping session.
network-port	Specifies a network port of the mapping session.
slot	Specifies a slot to be assigned to the mapping session.
<i>slot</i>	Slot number you want to configure.
<i>port</i>	Port number you want to configure.
<i>port2</i>	Last port number in a range of ports you want to configure.
linkagg	Specifies a link aggregation group to be assigned to the mapping session.
<i>agg_num</i>	Link aggregation number.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- User ports that are part of one session cannot communicate with each other and can communicate only through network ports of the session to the rest of the system.
- User ports can be part of one Port Mapping session only.
- An aggregable port of a link aggregation group cannot be a mapped port and a mapped port cannot be an aggregable port of a link aggregation group.
- A mirrored port cannot be a mapped port and a mapped port cannot be a mirrored port.
- A mobile port cannot be configured as a network port of a mapping session.

Examples

```
-> port mapping 3 user-port 2/3 network-port 6/4
-> port mapping 4 user-port 2/5-8
-> port mapping 5 user-port 2/3 network-port slot 3
-> port mapping 5 no user-port 2/3
-> port mapping 6 no network-port linkagg 7
```

Release History

Release 6.6.3; command was introduced.

Related Commands

port mapping	Enables, disables, or deletes a port mapping session.
port mapping	Configures the direction of a port mapping session.
show port mapping	Displays the configuration of one or more port mapping session.

MIB Objects

```
PortMappingSessionTable
    pmapSessionNumber
portMappingTable
    pmapPortIfindex
    pmapPortType
```

port mapping

Enables, disables, or deletes a port mapping session.

port mapping *session_id* {**enable** | **disable**}

no port mapping *session_id*

Syntax Definitions

<i>session_id</i>	The port mapping session ID. Valid range is 1 to 8.
enable	Enables a port mapping session.
disable	Disables a port mapping session.

Defaults

parameter	default
enable disable	disable

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

To be enabled, a session should have a minimum of two ports.

Examples

```
-> port mapping 3 enable
-> port mapping 4 disable
-> no port mapping 5
```

Release History

Release 6.6.3; command was introduced.

Related Commands

port mapping user-port network-port	Creates a port mapping session with or without the user ports, network ports, or both.
port mapping	Configures the direction of a port mapping session.
port mapping dynamic-proxy-arp	Displays the status of one or more port mapping session.
show port mapping	Displays the configuration of one or more port mapping session.

MIB Objects

PortMappingSessionTable
 pmapSessionNumber
 pmapSessionStatus

port mapping

Configures the direction of a port mapping session.

port mapping *session_id* {**unidirectional** | **bidirectional**}

Syntax Definitions

<i>session_id</i>	The port mapping session ID. Valid range is 1 to 8.
unidirectional	Specifies unidirectional port mapping.
bidirectional	Specifies bidirectional port mapping.

Defaults

parameter	default
unidirectional bidirectional	bidirectional

Platform Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- In the bidirectional mode, the network ports of a session cannot communicate with each other. Also, the network ports of that session cannot be a part of a network port set of another session.
- In the unidirectional mode, the network ports of a session can communicate with each other. Also, the network ports of that session can be part of a network port set of another session, which is also in the unidirectional mode.
- To change the direction of an active session with network ports, delete the network ports of the session, change the direction, and recreate the network ports.

Examples

```
-> port mapping 5 unidirectional
-> port mapping 6 bidirectional
```

Release History

Release 6.6.3; command was introduced.

Related Commands

**port mapping user-port
network-port**

Creates a port mapping session with or without the user ports, network ports or both.

port mapping

Enables, disables, or deletes a port mapping session.

show port mapping

Displays the configuration of one or more port mapping session.

MIB Objects

PortMappingSessionTable

 PmapSessionNumber

 PmapSessionDirection

port mapping dynamic-proxy-arp

Enables or disables the dynamic proxy arp functionality for the port mapping session.

port mapping *port_mapping_session id* **dynamic-proxy-arp** {**enable** | **disable**}

Syntax Definitions

port_mapping_session id The port mapping session for which the dynamic proxy arp status is to be configured.

enable Enables the dynamic proxy arp status.

disable Disables the dynamic proxy arp status.

Defaults

parameter	default
enable disable	disable

Platform Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Clients must be connected to the user-ports and the head end routers connected to the network-ports of the port mapping session for dynamic proxy arp to function properly.
- DHCP snooping must be enabled for dynamic proxy arp to function.
- Using dynamic-proxy-arp in conjunction with DHCP snooping allows for the configuration of the MAC Forced Forwarding feature.

Examples

```
-> portmapping 1 dynamic-proxy-arp enable
-> portmapping 1 dynamic-proxy-arp disable
```

Release History

Release 6.6.3; command was introduced.

Related Commands

port mapping user-port network-port	Creates a port mapping session with or without the user ports, network ports or both.
port mapping	Enables, disables, or deletes a port mapping session.
show port mapping	Displays the configuration of one or more port mapping session.
show port mapping status	Displays the status of one or more port mapping session.

MIB Objects

portMappingSessionTable
pmapSessionDynProxyARP

show port mapping status

Displays the status of one or more port mapping session.

show port mapping [*session_id*] **status**

Syntax definitions

session_id The port mapping session ID. Valid range is 1 to 8.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

If you do not specify the port mapping session ID, then the status of all the port mapping sessions will be displayed.

Examples

-> show port mapping status

SessionID	Direction	Status	DPA Status
8	bi	disable	disable

output definitions

SessionID	Displays the port mapping session ID.
Direction	Displays the direction of a port mapping session.
Status	Displays status of a port mapping session.
DPA Status	Displays the status of Dynamic proxy ARP on the port mapping session.

Release History

Release 6.6.3; command was introduced.

Related Commands

**port mapping user-port
network-port**

Creates a port mapping session with or without the user ports, network ports, or both.

port mapping

Enables, disables, or deletes a port mapping session.

MIB Objects

PortMappingSessionTable

PmapSessionNumber

PmapSessionDirection

pmapSessionStatus

show port mapping

Displays the configuration of one or more port mapping session.

show port mapping [*session_id*]

Syntax Definitions

session_id The port mapping session ID. Valid range is 1 to 8.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

If you do not specify the port mapping session ID, then the configuration for all the port mapping sessions will be displayed.

Examples

-> show port mapping 3

SessionID	USR-PORT	NETWORK-PORT
8	1/2	1/3
8	1/6	
8	1/7	

output definitions

SessionID	Displays the port mapping session ID.
USR-PORT	Displays the set of user ports of a port mapping session.
NETWORK-PORT	Displays the set of network ports of a port mapping session.

Release History

Release 6.6.3; command was introduced.

Related Commands

**port mapping user-port
network-port**

Creates a port mapping session with or without the user ports, network ports, or both.

port mapping

Enables, disables, or deletes a port mapping session.

MIB Objects

PortMappingSessionTable

 PmapSessionNumber

 portMappingTable

 pmapPortIfindex

 pmapPortType

34 IP Commands

This chapter details Internet Protocol (IP) commands for the switch. IP is a network-layer (Layer 3) protocol that contains addressing information and some control information that enables packets to be forwarded. IP is documented in RFC 791 and is the primary network-layer protocol in the Internet protocol suite. Along with the Transmission Control Protocol (TCP), IP represents the heart of the Internet protocols.

IP is enabled on the switch by default and there are few options that can, or need to be, configured. This chapter provides instructions for basic IP configuration commands. It also includes commands for some Layer 3 and Layer 4 protocols that are associated with IP:

- Address Resolution Protocol (ARP)—Used to match the IP address of a device with its physical (MAC) address.
- Internet Control Message Protocol (ICMP)—Specifies the generation of error messages, test packets, and informational messages related to IP. ICMP supports the [ping](#) command. The ping command is used to determine whether network hosts are online.
- Transmission Control Protocol (TCP)—A major data transport mechanism that provides reliable, connection-oriented, full-duplex data streams. While the role of TCP is to add reliability to IP, TCP relies upon IP to do the actual delivering of datagrams.
- User Datagram Protocol (UDP)—A secondary transport-layer protocol that uses IP for delivery. UDP is not connection-oriented and does not provide reliable end-to-end delivery of datagrams. But some applications can safely use UDP to send datagrams that do not require the extra overhead added by TCP.
- The Two-Way Active Measurement Protocol (TWAMP)—An open protocol for measurement of two-way metrics. TWAMP provides a standard technique to measure network performance metrics. Unlike ICMP Ping, TWAMP also measures round trip delay/Jitter apart from the RTT.

The IP commands also include protection from Denial of Service (DoS) attacks. The goal of this feature is to protect a switch from well-known DoS attacks and to notify the administrator or manager when an attack is underway. Also, notifications can be sent when port scans are being performed.

Note.

Data packets can be forwarded using IP when all devices are on the same VLAN or if IP interfaces are created on multiple VLANs to enable routing of packets.

However, IP routing requires the Routing Information Protocol (RIP). See [Chapter 39, “RIP Commands,”](#) for the appropriate CLI commands. For more information on VLANs and RIP, see the applicable chapters in the *OmniSwitch AOS Release 6250/6350/6450 Network Configuration Guide*.

MIB information for the IP commands is as follows:

Filename: IpForward.mib
Module: IpForward

Filename: Ip.mib
Module: Ip

Filename: AlcatelIND1Ip.mib
Module: alcatelIND1IPMIB

Filename: AlcatelIND1Iprm.mib
Module: alcatelIND1IPRMMIB

A summary of the available commands is listed here:

IP	<ul style="list-style-type: none"> ip interface Ip interface cvlan ip managed-interface ip interface dhcp-client ip router primary-address ip router router-id ip static-route ip route-pref ip default-ttl ping tracert ip directed-broadcast ip service show ip traffic show ip interface show ip interface cvlan show ip managed-interface show ip route show ip route-pref show ip redist show ip access-list show ip route-map show ip router database show ip config show ip protocols show ip service
IP Route Map Redistribution	<ul style="list-style-type: none"> ip redist ip access-list ip access-list address ip route-map action ip route-map match ip address ip route-map match ipv6 address ip route-map match ip-nexthop ip route-map match ipv6-nexthop ip route-map match tag ip route-map match ipv4-interface ip route-map match ipv6-interface ip route-map match metric ip route-map set metric ip route-map set tag ip route-map set ip-nexthop ip route-map set ipv6-nexthop show ip redist show ip access-list show ip route-map
ARP	<ul style="list-style-type: none"> arp clear arp-cache ip dos arp-poison restricted-address arp filter clear arp filter ip arp-limit default ip arp-limit extend show arp show ip dynamic-proxy-arp show arp filter show ip dos arp-poison

ICMP	icmp type icmp unreachable icmp echo icmp timestamp icmp addr-mask icmp messages show icmp control show icmp statistics
TWAMP	twamp server show twamp server info show twamp server connections
TCP	show tcp statistics show tcp ports
UDP	show udp statistics show udp ports
Denial of Service (DoS)	ip dos scan close-port-penalty ip dos scan tcp open-port-penalty ip dos scan udp open-port-penalty ip dos scan threshold ip dos trap ip dos scan decay show ip dos config show ip dos statistics

ip interface

Configures an IP interface to enable IP routing on a VLAN. Without an IP interface, traffic is bridged within the VLAN or across connections to the same VLAN on other switches.

ip interface *name* [**address** *ip_address*] [**mask** *subnet_mask*] [**admin** [**enable** | **disable**]] [**vlan** *vid*] [**forward** | **no forward**] [**local-proxy-arp** | **no local-proxy-arp**] [**eth2** | **snap**] [**primary** | **no primary**] **local-host-dbcast** [**enable** | **disable**]

no ip interface *name*

Syntax Definitions

<i>name</i>	Text string up to 20 characters. Use quotes around string if description contains multiple words with spaces between them (for example “Alcatel-Lucent Marketing”). Note: This value is case sensitive.
<i>ip_address</i>	An IP host address (for example 10.0.0.1, 171.15.0.20) to specify the IP router network.
<i>subnet_mask</i>	A valid IP address mask (for example, 255.0.0.0, 255.255.0.0) to identify the IP subnet for the interface.
enable	Enables the administrative status for the IP interface.
disable	Disables the administrative status for the IP interface.
<i>vid</i>	An existing VLAN ID number. The valid range is 1 to 4094.
forward	Enables forwarding of IP frames to other subnets.
no forward	Disables forwarding of IP frames. The router interface still receives frames from other hosts on the same subnet.
local-proxy-arp	Enables Local Proxy ARP on the specified interface.
no local-proxy-arp	Disables Local Proxy ARP on the specified interface.
eth2	Specifies Ethernet-II encapsulation.
snap	SNAP encapsulation.
primary	Designates the specified IP interface as the primary interface for the VLAN.
no primary	Removes the configured primary IP interface designation for the VLAN. The first interface bound to the VLAN becomes the primary by default.
local-host-dbcast enable	Accepts and processes packets destined for the directed broadcast address of the interface.
local-host-dbcast disable	Drops packets destined for the directed broadcast address of the interface.

Defaults

parameter	default
<i>ip_address</i>	0.0.0.0
<i>subnet_mask</i>	IP address class
enable disable	enable
<i>vid</i>	none (unbound)
forward no forward	forward
local-proxy-arp no local-proxy-arp	no local-proxy-arp
eth2 snap	eth2
primary no primary	First interface bound to a VLAN.
local-host-dbcast [enable disable]	disable

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Use the **no** form of this command to remove an IP interface.
- IP multinetting is supported. As a result, it is possible to configure up to eight IP interfaces per VLAN. Each interface is configured with a different subnet, thus allowing traffic from each configured subnet to coexist on the same VLAN.

Note:

When Local Proxy ARP is enabled for any one IP router interface associated with a VLAN, the feature is applied to the entire VLAN. It is not necessary to enable it for each interface. However, if the IP interface enabled with Local Proxy ARP is moved to another VLAN, Local Proxy ARP is enabled for the new VLAN and must be enabled on another interface for the old VLAN.

- When Local Proxy ARP is enabled, all traffic is routed instead of bridged within the VLAN. ARP requests return the MAC address of the IP router interface. Note that the same MAC address is assigned to each interface configured for a VLAN.
- Local Proxy ARP takes precedence over any switch-wide ARP or Proxy ARP function. It is not necessary to have Proxy ARP configured in order to use Local Proxy ARP. The two features are independent of each other.
- By default, the first interface bound to a VLAN becomes the primary interface for that VLAN. Use the **primary** keyword with this command to configure a different IP interface as the primary.
- To create an IP interface for network management purposes, specify **Loopback0** (case sensitive) as the name of the interface. The Loopback0 interface is not bound to any VLAN, so it always remains operationally active.

Examples

```
-> ip interface "Marketing"  
-> ip interface "Payroll address" address 18.12.6.3 mask 255.255.255.0 vlan 255  
-> ip interface "Human Resources" address 10.200.12.101 vlan 500 no forward snap  
-> ip interface "Distr" address 11.255.14.102/24 vlan 500 local-proxy-arp primary
```

Release History

Release 6.6.1; command introduced.
Release 6.6.4; **local-host-dbcast** parameter added.

Related Commands

[show ip interface](#) Displays the status and configuration of IP interfaces.

MIB Objects

```
alaIpInterfaceTable  
  alaIpInterfaceName  
  alaIpInterfaceAddress  
  alaIpInterfaceMask  
  alaIpInterfaceAdminState  
  alaIpInterfaceDeviceType  
  alaIpInterfaceVlanID  
  alaIpInterfaceIpForward  
  alaIpInterfaceEncap  
  alaIpInterfaceLocalProxyArp  
  alaIpInterfacePrimCfg  
  alaIpInterfaceOperState  
  alaIpInterfaceOperReason  
  alaIpInterfaceRouterMac  
  alaIpInterfaceBcastAddr  
  alaIpInterfacePrimAct
```

Ip interface cvlan

Configures the SVLAN interface using which the SVLAN can be mapped to the CVLAN.

ip interface *name* [**address** *ipv4_address*] [**mask** *subnet_mask*] **cvlan** *cvlan_id* **vlan** *vlan_id*

no ip interface *name*

Syntax Definitions

<i>name</i>	Text string up to 20 characters. Use quotes around string if description contains multiple words with spaces between them (for example “Alcatel-Lucent Marketing”). Note: This value is case sensitive.
<i>ip_address</i>	An IP host address (for example 10.0.0.1, 171.15.0.20) to specify the IP router network.
<i>subnet_mask</i>	A valid IP address mask (for example, 255.0.0.0, 255.255.0.0) to identify the IP subnet for the interface.
<i>cvlan_id</i>	Specify the CVLAN that needs to be added inside the single tagged frames, which needs to be sent using that mapped interface.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- There is no dependency for this command upon untagged-cvlan insertion. It can be configured even when CVLAN on untagged feature is disabled.
- For a specific UNI, only one CVLAN can be mapped when CVLAN on untagged feature is enabled.

Examples

```
-> ip interface "vlan10" address 10.10.10.1 mask 255.255.255.0 cvlan 10 vlan 1001
```

Release History

Release 6.6.5; command introduced.

Related Commands

show ip interface

Displays the status and configuration of IP interfaces.

MIB Objects

alaIpInterfaceCVlanID

ip managed-interface

Specifies the source IP address for the outgoing packets sent by the applications.

ip managed-interface {*Loopback0* | *interface-name*} **application** [**ldap-server**] [**tacacs**] [**radius**] [**snmp**] [**sflow**] [**ntp**] [**syslog**] [**dns**] [**telnet**] [**ftp**] [**ssh**] [**tftp**] [**all**]

no ip managed-interface {*Loopback0* | *interface-name*} **application** [**ldap-server**] [**tacacs**] [**radius**] [**snmp**] [**sflow**] [**ntp**] [**syslog**] [**dns**] [**telnet**] [**ftp**] [**ssh**] [**tftp**] [**all**]

Syntax Definitions

<i>Loopback0</i>	Specifies the Loopback0 IP address, if configured.
<i>Interface-name</i>	Specifies the name of the interface.
ldap-server	Configures the source IP address to be used by the LDAP Server.
tacacs	Configures the source IP address to be used by TACACS.
radius	Configures the source IP address to be used by RADIUS.
snmp	Configures the source IP address to be used by SNMP.
sflow	Configures the source IP address to be used by sFlow.
ntp	Configures the source IP address to be used by NTP.
syslog	Configures the source IP address to be used by Syslog.
dns	Configures the source IP address to be used by DNS.
telnet	Configures the source IP address to be used by TELNET.
ftp	Configures the source IP address to be used by FTP.
ssh	Configures the source IP address to be used by SSH.
tftp	Configures the source IP address to be used by TFTP.
all	Configures the source IP address to be used by all the application protocols.

Defaults

Application	Default behavior (selecting the source IP address)
<i>LDAP-SERVER</i>	Loopback0, if configured or the outgoing interface
<i>TACACS</i>	Outgoing interface
<i>RADIUS</i>	Loopback0, if configured or the outgoing interface
<i>SNMP</i>	Loopback0, if configured or the outgoing interface
<i>sFlow</i>	Loopback0, if configured or the outgoing interface
<i>NTP</i>	Loopback0, if configured or the outgoing interface
<i>Syslog</i>	Outgoing interface
<i>DNS</i>	Outgoing interface
<i>Telnet</i>	Outgoing interface
<i>FTP</i>	Outgoing interface
<i>SSH</i>	Outgoing interface
<i>TFTP</i>	Outgoing interface

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Use this command to configure the source IP address to be used by the application to send the outgoing packets.
- Use the **no** form of this command to revert to its default behavior of choosing the source IP address.
- Use **all** in this command to configure a common source IP address to the applications that use the default source IP address.

Examples

```
-> ip managed-interface loopback0 application ntp  
-> no ip managed-interface loopback0 application ntp
```

Release History

Release 6.6.2; command introduced.

Related Commands

show ip route	Displays the application name and the corresponding interface name.
show ip interface	Displays the configuration and status of IP interfaces.
ip interface	Configures an IP interface to enable IP routing on a VLAN.

MIB Objects

```
alaIpManagedIntfTable  
  AlaIpManagedIntfAppIndex  
  alaIpManagedIntfEntry  
  alaIpManagedIntfName  
  alaIpManagedRowStatus
```

ip interface dhcp-client

Configures a DHCP client IP interface that is to be assigned an IP address from a DHCP server.

ip interface dhcp-client [**vlan** *vid* **ifindex** *id*] [**vsi-accept-filter** *filter-string*] [**firewall-vlan** *vid*][**release** | **renew**] [**option-60** *opt60_string*] [**admin** {**enable** | **disable**}]

no ip interface dhcp-client

Syntax Definitions

dhcp-client	Reserved IP interface name, indicates the interface must use DHCP to obtain an IP address from a DHCP server.
<i>vid</i>	An existing VLAN ID number. The valid range is 1 to 4094. The DHCP client will be created on this VLAN.
<i>id</i>	ifindex ID for the configured VLAN.
<i>filter-string</i>	String that matches with option-43 field of the DHCPACK to prefer the desired OXO server. By default the filter-string will be empty string (“”).
release	Releases the DHCP server assigned IP address.
renew	Renews the DHCP server assigned IP address.
<i>opt60_string</i>	The option-60 field value to be included in DHCP discover or request packets.
enable	Enables the administrative status for the IP interface.
disable	Disables the administrative status for the IP interface.
firewall-vlan	Designates a VLAN to be a firewall VLAN.

Defaults

parameter	default
<i>opt60_string</i>	OmniSwitch 6250
enable disable	enable
<i>filter-string</i>	“ “

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Use the **no** form of this command to remove the dhcp-client IP interface.
- If the system name is not configured, it is updated using the option-12 field.
- If the length of option-12 string is greater than 19 characters the remaining characters are truncated.
- The minimum lease time accepted on the dhcp-client interface is five minutes.

- The VSI filter-string once configured cannot be deleted. It can be overwritten or modified. It can be configured as empty string (“”).
- The VSI accept filter is case-sensitive. The maximum length of a vsi-accept-filter can be of 64 character length.
- In order to retain the same OXO server which was configured before RCL, the VSI filter must match the hard coded string “alcatel.a4400.0”.
- To create an IP interface for firewall VLAN, use the **firewall-vlan** keyword, followed by the VLAN ID.

Examples

```
-> ip interface dhcp-client vlan 100
-> ip interface dhcp-client admin enable
-> ip interface dhcp-client release
-> ip interface dhcp-client renew
-> ip interface dhcp-client option-60 OmniSwitch
-> no ip interface dhcp-client
-> ip interface dhcp-client vlan 1 ifindex 1
-> ip interface dhcp-client vsi-accept-filter "alcatel.a4400.0"
-> ip interface firewall address 11.1.1.1 firewall-vlan 173
```

Release History

Release 6.6.2; command introduced.

Release 6.6.4; **vsi-accept-filter** parameters included.

Related Commands

[show ip interface](#) Displays the status and configuration of IP interfaces.

MIB Objects

```
alaIpInterfaceTable
  alaIpInterfaceDhcpStatus
  alaIpInterfaceDhcpIpRelease
  alaIpInterfaceDhcpIpRenew
  alaIpInterfaceDhcpVsiAcceptFilterString
  alaIpInterfaceDhcpOption60String
  alaIpInterfaceFirewallVlanID
```

ip router primary-address

Configures the router primary IP address. By default, the router primary address is derived from the first IP interface that becomes operational on the router.

ip router primary-address *ip_address*

Syntax Definitions

ip_address 32-bit IP address.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- The router primary address must be a valid IP unicast host address.
- The router primary IP address is used by BGP to derive its unique BGP Identifier, if the router router-id is not a valid IP unicast address.
- It is recommended that the primary address be explicitly configured on dual CMM chassis or stacked routers.

Examples

```
-> ip router primary-address 172.22.2.115
```

Release History

Release 6.6.1; command introduced.

Related Commands

[ip router router-id](#) Configures the router ID for the router.

MIB Objects

alaDcrTmConfig
 alaDrcTmIpRouterPrimaryAddress

ip router router-id

Configures the router ID for the router. By default, the router primary address of the router is used as the router ID. However, if a primary address has not been explicitly configured, the router ID defaults to the address of the first IP interface that becomes operational.

ip router router-id *ip_address*

Syntax Definitions

ip_address 32-bit IP address.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- The router ID can be any 32-bit number.
- If the router ID is not a valid IP unicast host address, the BGP identifier is derived from the router primary address.
- It is recommended that the router ID be explicitly configured on dual CMM chassis or stacked routers.

Examples

```
-> ip router router-id 172.22.2.115
```

Release History

Release 6.6.1; command introduced.

Related Commands

ip router primary-address Configures the router primary IP address.

MIB Objects

alaDcrTmConfig
 alaDrcTmIpRouterId

ip static-route

Creates or deletes an IP static route. Static routes are user-defined; they carry a higher priority than routes created by dynamic routing protocols. That is, static routes always have priority over dynamic routes, regardless of the metric value.

ip static-route *ip_address* [**mask** *mask*] **gateway** *gateway* [**metric** *metric*]

no ip static-route *ip_address* [**mask** *mask*] **gateway** *ip_address* [**metric** *metric*]

Syntax Definitions

<i>ip_address</i>	Destination IP address of the static route.
<i>mask</i>	Subnet mask corresponding to the destination IP address.
gateway <i>ip_address</i>	IP address of the next hop used to reach the destination IP address.
<i>metric</i>	Metric or cost (hop count) for the static route. You can set a priority for the static route by assigning a metric value. The lower the metric value, the higher the priority. Valid range is 1–15.

Defaults

parameter	default
<i>metric</i>	1

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Static routes do not age out of the routing tables; however, they can be deleted. Use the **no** form of this command to delete a static route.
- A static route is not active unless the gateway it is using is active.
- The subnet mask is not required if you want to use the natural subnet mask. By default, the switch imposes a natural mask on the IP address.
- Use the **ip static-route** command to configure default route. For example, to create a default route through gateway 171.11.2.1, you would enter: **ip static-route 0.0.0.0 mask 0.0.0.0 gateway 171.11.2.1**.
- Multiple static routes can be added to a subnet of directly connected network. Use **show ip route** command to view the static routes added.

Examples

```
-> ip static-route 171.11.0.0 gateway 171.11.2.1
-> ip static-route 0.0.0.0 mask 0.0.0.0 gateway 171.11.2.1
```

Release History

Release 6.6.1; command introduced.

Related Commands

- | | |
|---|---|
| show ip route | Displays the IP Forwarding table. |
| show ip router database | Displays the IP router database contents. |

MIB Objects

```
alaIprmStaticRoute
  alaIprmStaticRouteDest
  alaIprmStaticRouteMask
  alaIprmStaticRouteNextHop
  alaIprmStaticRouteMetric
  alaIprmStaticRouteStatus
```

ip route-pref

Configures the route preference of a router.

ip route-pref {**static** | **rip** | **ebgp** | **ibgp**} *value*

Syntax Definitions

static	Configures the route preference of static routes.
rip	Configures the route preference of RIP routes.
ebgp	Configures the route preference of external BGP routes.
ibgp	Configures the route preference of internal BGP routes.
<i>value</i>	Route preference value.

Defaults

parameter	default
static <i>value</i>	2
rip <i>value</i>	120
ebgp <i>value</i>	190
ibgp <i>value</i>	200

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

Route preference of local routes cannot be changed.

Examples

```
-> ip route-pref ebgp 20  
-> ip route-pref rip 60
```

Release History

Release 6.6.3; command introduced.

Related Commands

show ip route-pref

Displays the configured route-preference of a router.

MIB Objects

```
alaIprmRtPrefTable  
  alaIprmRtPrefLocal  
  alaIprmRtPrefStatic  
  alaIprmRtPrefRip  
  alaIprmRtPrefEbgp  
  alaIprmRtPrefIbgp
```

ip default-ttl

Configures the Time To Live value (TTL) for IP packets. The TTL value is the maximum number of hops an IP packet can travel before being discarded.

ip default-ttl *hops*

Syntax Definitions

hops TTL value, in hops. Valid range is 1–255.

Defaults

parameter	default
<i>hops</i>	64

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

This value represents the default value inserted into the TTL field of the IP header for datagrams originating from this switch whenever a TTL value is not supplied by the transport layer protocol.

Examples

```
-> ip default-ttl 30
```

Release History

Release 6.6.3; command introduced.

Related Commands

[show ip config](#) Displays IP configuration parameters.

MIB Objects

IpDefaultTTL

ping

Tests whether an IP destination can be reached from the local switch. This command sends an ICMP echo request to a destination and then waits for a reply. To ping a destination, enter the **ping** command and enter either the destination IP address or hostname. The switch pings the destination using the default frame count, packet size, interval, and timeout parameters (6 frames, 64 bytes, 1 second, and 5 seconds respectively). You can also customize any or all of these parameters as described in the command.

```
ping {ip_address | hostname} [source-interface ip_interface] [[sweep-range start_size | end_size / diff_size] | [count count] [size packet_size]] [interval seconds] [timeout seconds] [tos tos_val] [dont-fragment] [data-pattern string]
```

Syntax Definitions

<i>ip_address</i>	IP address of the system to ping.
<i>hostname</i>	DNS name of the system to ping.
<i>ip_interface</i>	IP interface name of the source interface.
<i>start_size</i>	Size of the first echo packet that is sent. The valid range is from 4 to 60000.
<i>end_size</i>	Maximum size of the echo packet that is sent. The range is greater than the start size and less than 60000.
<i>diff_size</i>	The increment factor of size for the next echo packet. The diff size must be greater than 0 and less than end size.
<i>count</i>	Number of packets to be transmitted. The range is between 1 and 4294967295 (0xFFFFFFFF).
<i>packet_size</i>	Size of the data portion of the packet sent for this ping, in bytes. The valid range is 4–60000.
interval <i>seconds</i>	The time interval in seconds with which the ICMP packets are sent out. The range is between 1 and the maximum integer value (4294967295).
timeout <i>seconds</i>	Number of seconds the program has to wait for a response before timing out. The range is between 1 and the maximum integer value (4294967295).
<i>tos_val</i>	Specifies the type of service for the probe. The valid range is between 0 and 255.
dont-fragment	Specifies whether the Don't Fragment (DF) bit is to be set on the ping packet. The value 1 sets the Don't Fragment bit in the packet and 0 unsets the same.
<i>hex_string</i>	Specifies the data pattern in a plain string of two characters. Different data patterns are used to troubleshoot framing errors and clocking problems on serial lines. For example, ab , xy , 12 , and so on.

Defaults

parameter	default
<i>ip_interface</i>	Outgoing IP interface as per route lookup
<i>count</i>	6

parameter	default
<i>packet_size</i>	64 bytes (default 6)
interval <i>seconds</i>	1
timeout <i>seconds</i>	1
<i>tos_val</i>	0
dont-fragment	0
<i>hex_string</i>	Repeating sequence of ASCII characters from 0x4 to 0xff

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Modifying the default values for the ping command is applied only for the current ping. When command is used again for the next time, the default values are used unless modified with different values.
- When specifying the source-interface, specify either the name of any operational interface or the Loopback0 interface. The IP address of the source interface must be reachable from the destination.
- When you specify the *sweep-range* in the **ping** command, you cannot configure the *count* and *size* parameters.
- If the Don't Fragment (DF) bit is set, and the IP packet is larger than the MTU, the IP packet is dropped.
- The Ping command does not support Loose, Strict, and route record options.

Examples

```
-> ping 20.1.1.2 source-interface Loopback0 interval 2 data-pattern ab sweep-range  
500 1000 100 tos 7 dont-fragment
```

```
PING 20.1.1.2: 500 data bytes  
508 bytes from 20.1.1.2: icmp_seq=0. time=69. ms  
608 bytes from 20.1.1.2: icmp_seq=1. time=70. ms  
708 bytes from 20.1.1.2: icmp_seq=2. time=69. ms  
808 bytes from 20.1.1.2: icmp_seq=3. time=69. ms  
908 bytes from 20.1.1.2: icmp_seq=4. time=69. ms
```

Release History

Release 6.6.3; command introduced.

Related Commands**traceroute**

Finds the path taken by an IP packet from the local switch to a specified destination.

MIB Object

N/A

traceroute

Finds the path taken by an IP packet from the local switch to a specified destination. This command is used to discover the paths that packets take to a remote destination, as well as at which point the routing breaks down.

traceroute {*ip_address* | *hostname*} [**source-interface** *ip_interface*] [**min-hop** *min_hop_count*] [**max-hop** *max_hop_count*] [**probes** *probe_count*] [**time-out** *seconds*] [**port-number** *port_number*]

Syntax Definitions

<i>ip_address</i>	IP address of the host whose route you want to trace.
<i>hostname</i>	DNS name of the host whose route you want to trace.
<i>ip_interface</i>	IP interface name of the source interface.
<i>min_hop_count</i>	Minimum hop count for the first traceroute packet. The value must be greater than 0 and less than the max hop count.
<i>max_hop_count</i>	Maximum hop count for the destination address. The range is between 1 and the maximum integer value (4294967295).
<i>probe_count</i>	The number of probes to be sent at each TTL level hop-count. The range is between 1 and the maximum integer value (4294967295).
<i>seconds</i>	The period in seconds to wait for the response of each probe packet.
<i>port_number</i>	The destination port number used for probing packets. The value must be greater than 1024. This value is incremented by one in each probe. The valid range is between 1024 and 65535.

Defaults

parameter	default
<i>min_hop_count</i>	1
<i>max_hop_count</i>	30
<i>probe_count</i>	3
<i>seconds</i>	5 seconds
<i>port_number</i>	33334

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- When using this command, enter the name of the destination as part of the command line (either the IP address or host name).
- When specifying the source-interface, specify either the name of any operational interface or Loop-back0 interface. The IP address of the source interface must be reachable from the destination.
- Use the optional **max-hop** parameter to set a maximum hop count to the destination. If the trace reaches this maximum hop count without reaching the destination, the trace stops.

Examples

```
-> traceroute 135.254.170.199 max-hop 5 min-hop 1 port-number 1025  
source-interface Loopback0 timeout 5
```

```
traceroute to 135.254.170.199, 5 hops max, 40 byte packets  
 1  10.135.33.1  2 ms  2 ms  11 ms  
 2  135.250.9.97  6 ms  6 ms  4 ms  
 3  135.250.9.153 4 ms  4 ms  3 ms  
 4  135.254.170.199 3 ms  3 ms  3 ms
```

Release History

Release 6.6.3; command introduced.

Related Commands

[show ip route](#) Displays the IP Forwarding table.

MIB Object

N/A

ip directed-broadcast

Enables or disables IP directed broadcasts routed through the switch. An IP directed broadcast is an IP datagram that has all 0 or all 1 in the host portion of the destination address. The packet is sent to the broadcast address of a subnet to which the sender is not directly attached.

ip directed-broadcast {on | off}

Syntax Definitions

N/A

Defaults

The default value is **off**.

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

Directed broadcasts are used in denial-of-service “smurf” attacks. A continuous stream of ping requests are sent from a falsified source address to a directed broadcast address in a smurf attack. This stream of requests result in a large stream of replies, which can overload the host of the source address. By default, the switch drops directed broadcasts. Typically, directed broadcasts must not be enabled.

Examples

```
-> ip directed-broadcast off
```

Release History

Release 6.6.3; command introduced.

Related Commands

show ip interface	Displays the status and configuration of IP interfaces.
show ip route	Displays the IP Forwarding table.
show ip config	Displays IP configuration parameters.

MIB Objects

alaIpDirectedBroadcast

ip service

Enables (opens) or disables (closes) well-known TCP/UDP service ports (SSH, telnet, FTP, and so on). Selectively enabling or disabling these types of ports provides an additional method for protecting against denial of service (DoS) attacks.

ip service {**all** | *service_name* | **port** *service_port*}

no ip service {**all** | *service_name* | **port** *service_port*}

Syntax Definitions

all	Configures access to all TCP/UDP ports.
<i>service_name</i>	The name of the TCP/UDP service to enable or disable. (Refer to the table in the following “Usage Guidelines” section for a list of supported service names.)
<i>service_port</i>	A TCP/UDP service port number. Configures access by port number rather than by service name. (Refer to the table in the following “Usage Guidelines” section for a list of supported service names.)

Defaults

All TCP/UDP ports are open by default.

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- This command only applies to TCP/UDP service ports opened by default. It does not affect ports that are opened by applications, such as RIP, BGP, and so on
- Use the **all** option with this command to configure access to all well-known TCP/UDP service ports.
- To designate which port to enable or disable, specify either the name of a service or the well-known port number associated with that service. Specifying a name and a port number in a single command line is not supported.
- When using service names, it is possible to specify more than one service in a single command line by entering each service name separated by a space. See the following examples.
- When specifying a service port number, the **port** keyword is required and that only one port number is allowed in a single command.
- The following table lists the **ip service** command options for specifying TCP/UDP services and also includes the well-known port number associated with each service:

service name	port	Status
ftp	21	enabled
ssh	22	enabled

service name	port	Status
telnet	23	enabled
udp-relay	67	enabled
http	80	enabled
network-time	123	enabled
snmp	161	enabled
secure-http	443	enabled

Examples

```
-> ip service all
-> ip service ftp telnet snmp
-> ip service port 1024
-> no ip service ftp snmp
-> no ip service all
```

Release History

Release 6.6.3; command introduced.

Related Commands

[show ip service](#)

Displays a list of all well-known TCP/UDP ports and their current status (enabled or disabled).

MIB Objects

```
alaIpServiceTable
  alaIpServiceType
  alaIpServicePort
  alaIpServiceStatus
alaIpPortServiceTable
  alaIpPortServicePort
  alaIpPortServiceStatus
```

ip redist

Controls the conditions for redistributing IPv4 routes between different protocols.

ip redist {local | static | rip} into {rip} route-map *route-map-name* [status {enable | disable}]

no ip redist {local | static | rip} into {rip} [route-map *route-map-name*]

Syntax Definitions

local	Redistributes local routes.
static	Redistributes static routes.
rip	Specifies RIP as the source or destination protocol.
<i>route-map-name</i>	Name of an existing route map that will control the redistribution of routes between the source and destination protocol.
enable	Enables the administrative status of the redistribution configuration.
disable	Disables the administrative status of the redistribution configuration.

Defaults

parameter	default
enable disable	enable

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Use the **no** form of this command to remove a route map redistribution configuration. If a route map name is not specified, all route maps associated with the redistribution configuration are removed.
- The source and destination protocols must be loaded and enabled before redistribution occurs.
- If the metric calculated for the redistributed route is greater than 15 (RIP_UNREACHABLE) or greater than the metric of an existing pure RIP route, the new route is not redistributed.
- Use the **ip route-map** commands described in this chapter to create a route map. Refer to the “Configuring IP” chapter in the *OmniSwitch AOS Release 6250/6350/6450 Network Configuration Guide* for more information about how to create a route map.

Examples

```
-> ip redist rip into static route-map rip-to-static1
-> ip redist rip into static route-map rip-to-static2
-> no ip redist rip into static route-map rip-to-static2
-> ip redist static into rip route-map static-to-rip
-> ip redist static into rip route-map static-to-rip disable
```

Release History

Release 6.6.3; command introduced.

Related Commands

show ip redist

Displays the route map redistribution configuration.

ip route-map action

Creates a route map for redistribution and sets the status of the route map to permit or deny.

MIB Objects

```
alaRouteMapRedistProtoTable
  alaRouteMapRedistSrcProtoId
  alaRouteMapRedistDestProtoId
  alaRouteMapRedistRouteMapIndex
  alaRouteMapRedistStatus
  alaRouteMapRedistAddressType
  alaRouteMapRedistRowStatus
```

ip access-list

Creates an access list for adding multiple IPv4 addresses to route maps.

ip access-list *access-list-name*

no ip access-list *access-list-name*

Syntax Definitions

access-list-name Name of the access list. The access list name can have a maximum length of 20 characters.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

Use the **no** form of this command to delete the access list.

Examples

```
-> ip access-list access1  
-> no ip access-list access1
```

Release History

Release 6.6.3; command introduced.

Related Commands

[ip access-list address](#) Adds IPv4 addresses to the specified IPv4 access list.
[show ip access-list](#) Displays the details of the access list.

MIB Objects

```
alaRouteMapAccessListNameTable  
  alaRouteMapAccessListName  
  alaRouteMapAccessListNameIndex  
  alaRouteMapAccessListNameAddressType  
  alaRouteMapAccessListNameRowStatus
```

ip access-list address

Adds multiple IPv4 addresses to the specified IPv4 access list.

ip access-list *access-list-name* **address** *address/prefixLen* [**action** {**permit** | **deny**}]
[**redist-control** {**all-subnets** | **no-subnets** | **aggregate**}]

no ip access-list *access-list-name* **address** *address/prefixLen*

Syntax Definitions

<i>access-list-name</i>	Name of the access list.
<i>address/prefixLen</i>	IP address/prefix length to be added to the access list.
permit	Permits the IP address for redistribution.
deny	Denies the IP address for redistribution.
all-subnets	Redistributes or denies all the subnet routes that match the network portion of the IP address as specified by the mask length
no-subnets	Redistributes or denies only the routes that exactly match the IP address and the mask length.
aggregate	Redistributes an aggregate route if there are one or more routes that match or are subnets of this address.

Defaults

parameter	default
permit deny	permit
all-subnets no-subnets aggregate	all-subnets

Usage Guidelines

- Use the **no** form of this command to delete the address from the access list.
- The *access-list-name* must exist before you add multiple addresses to it.
- The **action** parameters (**permit** and **deny**) determine if a route that matches the **redist-control** configuration for the IP address is allowed or denied redistribution.
- The **redist-control** parameters (**all-subnets**, **no-subnets**, and **aggregate**) defines the criteria used to determine if a route matches an address in the access list.

Note. Configuring the combination of **redist-control aggregate** with **action deny** is not allowed.

- Use this command multiple times with the same access list name to add multiple addresses to the existing access list.

Examples

```
-> ip access-list access1 address 10.0.0.0/8 action permit
-> ip access-list access1 address 11.1.0.0/16 action permit
-> ip access-list access1 address 10.1.1.0/24 redist-control aggregate
-> no ip access-list access1 address 10.0.0.0/8
```

Release History

Release 6.6.3; command introduced.

Related Commands

ip access-list	Creates an access list for adding multiple IPv4 addresses to route maps.
show ip access-list	Displays the contents of an IPv4 access list.

MIB Objects

```
alaRouteMapAccessListTable
  alaRouteMapAccessListIndex
  alaRouteMapAccessListAddress
  alaRouteMapAccessListAddressType
  alaRouteMapAccessListPrefixLength
  alaRouteMapAccessListAction
  alaRouteMapAccessListRedistControl
  alaRouteMapAccessListRowStatus
```

ip route-map action

Creates a route map for redistribution and sets the status of the route map to permit or deny.

ip route-map *route-map-name* [**sequence-number** *number*] **action** {**permit** | **deny**}

no ip route-map *route-map-name* [**sequence-number** *number*]

Syntax Definitions

<i>route-map-name</i>	The name of the route map (up to 20 characters).
<i>number</i>	A number that links together the route maps. The valid range is 1 to 100.
permit	Permits route redistribution.
deny	Denies route redistribution.

Defaults

parameter	default
<i>number</i>	50
permit deny	permit

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Use the **no** form of this command to delete the entire route map by specifying only the *route-map-name*.
- Use the **no** form of this command to delete a specific sequence in the route map by specifying the **sequence-number**.
- All route maps having the same name but different sequence numbers are linked together and processed in order of increasing sequence number.
- Use this command to change the status of an existing route map to permit or deny.

Examples

```
-> ip route-map routel sequence-number 10 action permit  
-> no ip route-map routel
```

Release History

Release 6.6.3; command introduced.

Related Commands

show ip route-map Displays the configured IP route maps.

MIB Objects

```
alaRouteMapSequenceTable  
  alaRouteMapSequenceIndex  
  alaRouteMapSequenceNumber  
  alaRouteMapSequenceAction  
  alaRouteMapSequenceRowStatus
```

ip route-map match ip address

Matches the route with the specified IPv4 address or an address defined in the specified IPv4 access list.

ip route-map *route-map-name* [**sequence-number** *number*] **match ip-address** {*access-list-name* | *ip_address/prefixLen*} [**redist-control** {**all-subnets** | **no-subnets** | **aggregate**}] [**permit** | **deny**]

no ip route-map *route-map-name* [**sequence-number** *number*] **match ip-address** {*access-list-name* | *ip_address/prefixLen*} [**redist-control** {**all-subnets** | **no-subnets** | **aggregate**}] [**permit** | **deny**]

Syntax Definitions

<i>route-map-name</i>	The name of the route map (up to 20 characters).
<i>number</i>	A number that links together the route maps. The range is 1–100.
<i>access-list-name</i>	The name of an IPv4 access list that contains IPv4 addresses to match.
<i>ip_address/prefixLen</i>	The destination IP address along with the prefix length of the routes to be redistributed.
all-subnets	Redistributes all the subnet routes that match the network portion of the IP address as specified by the mask length.
no-subnets	Redistributes only the routes that exactly match the IP address and the mask length.
aggregate	Redistributes an aggregate route if there are one or more routes that match the IP address.
permit	Permits a route based on the IP address or prefix constrained by redist-control.
deny	Denies a route based on the IP address or prefix constrained by redist-control.

Defaults

parameter	default
<i>number</i>	50
permit deny	permit

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Use the **no** form of this command to delete the **match ip-address redist-control** parameter in the route map.
- Specify either the name of an existing IPv4 access list or an IPv4 address/prefix length with this command.

Note. Configuring the combination of **redist-control aggregate** with **action deny** is not allowed.

- Multiple addresses in the same route map sequence are matched using the longest prefix match.
- If the best matching address is type **deny**, then the route is not redistributed. If the best matching address is type **permit** and the route map action is **deny**, the route is not redistributed.
- All route maps having the same name but different sequence numbers are linked together and processed in order of increasing sequence number.
- The *route-map-name*, **sequence-number**, and *access-list-name* (if used) must exist before you configure this **match** criteria.

Examples

```
-> ip route-map 3 match ip-address 10.1.1.1/8 redist-control no-subnets deny
-> no ip route-map 3 match ip-address 10.1.1.1 redist-control no-subnets deny
-> ip route-map route1 sequence-number 10 match ip-address list1
-> no ip route-map route1 sequence-number 10 match ip-address list1
```

Release History

Release 6.6.3; command introduced.

Related Commands

ip route-map action	Creates a route map for redistribution and sets the status of the route map to permit or deny.
ip access-list	Creates an access list for adding multiple IPv4 addresses to route maps.
ip access-list address	Adds IPv4 addresses to the specified IPv4 access list.
show ip route-map	Displays the configured IP route maps.

MIB Objects

```
alaRouteMapTable
  alaRouteMapIndex
  alaRouteMapSequence
  alaRouteMapType
  alaRouteMapValue
  alaRouteMapRowStatus
```

ip route-map match ipv6 address

Matches the route with the specified IPv6 address or an address defined in the specified IPv6 access list.

ip route-map *route-map-name* [**sequence-number** *number*] **match ipv6-address** { *access-list-name* | *ipv6_address/prefixLen* [**redist-control** { **all-subnets** | **no-subnets** | **aggregate**}] [**permit** | **deny**]

no ip route-map *route-map-name* [**sequence-number** *number*] **match ipv6-address** *ipv6_address/prefixLen* [**redist-control** { **all-subnets** | **no-subnets** | **aggregate**}] [**permit** | **deny**]

Syntax Definitions

<i>route-map-name</i>	The name of the route map (up to 20 characters).
<i>number</i>	A number that links together the route maps. The range is 1–100.
<i>access-list-name</i>	The name of an IPv4 access list that contains IPv4 addresses to match.
<i>ipv6_address/prefixLen</i>	The destination IPv6 address along with the prefix length of the routes to be redistributed.
all-subnets	Redistributes all the subnet routes that match the network portion of the IP address as specified by the mask length.
no-subnets	Redistributes only the routes that exactly match the IP address and the mask length.
aggregate	Redistributes an aggregate route if there are one or more routes that match the IPv6 address.
permit	Permits a route based on the IPv6 address or prefix constrained by redist-control .
deny	Denies a route based on the IPv6 address or prefix constrained by redist-control .

Defaults

parameter	default
<i>number</i>	50
permit deny	permit

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Use the **no** form of this command to delete the **match ipv6-address redist-control** parameter in the route map.
- Specify either the name of an existing IPv6 access list or an IPv6 address/prefix length with this command.

Note. Configuring the combination of **redist-control aggregate** with **action deny** is not allowed.

- Multiple addresses in the same route map sequence are matched using the longest prefix match.
- If the best matching address is type **deny**, then the route is not redistributed. If the best matching address is type **permit** and the route map action is **deny**, the route is not redistributed.
- All route maps having the same name but different sequence numbers are linked together and processed in order of increasing sequence number.
- The *route-map-name* and **sequence-number** must exist before you configure this **match** criteria.

Examples

```
-> ip route-map 3 match ipv6-address 2001::1/64 redist-control no-subnets deny
-> no ip route-map 3 match ipv6-address 2001::1/64 redist-control no-subnets deny
-> ip route-map routel sequence-number 10 match ipv6-address list1
-> no ip route-map routel sequence-number 10 match ipv6-address list1
```

Release History

Release 6.6.3; command introduced.

Related Commands

ip route-map action	Creates a route map for redistribution and sets the status of the route map to permit or deny.
ipv6 access-list	Creates an access list for adding multiple IPv6 addresses to route maps.
ipv6 access-list address	Adds IPv6 addresses to the specified IPv6 access list.
show ip route-map	Displays the configured IP route maps.

MIB Objects

```
alaRouteMapTable
  alaRouteMapIndex
  alaRouteMapSequence
  alaRouteMapType
  alaRouteMapValue
  alaRouteMapRowStatus
```

ip route-map match ip-nexthop

Matches any routes that have a next-hop router address permitted by the specified access list name or the IP address specified in the route map.

ip route-map *route-map-name* [**sequence-number** *number*] **match ip-nexthop** {*access-list-name* | *ip_address/prefixLen* [**permit** | **deny**]}

no ip route-map *route-map-name* [**sequence-number** *number*] **match ip-nexthop** {*access-list-name* | *ip_address/prefixLen* [**permit** | **deny**]}

Syntax Definitions

<i>route-map-name</i>	The name of the route map (up to 20 characters).
<i>number</i>	A number that links together the route maps. The range is 1–100.
<i>access-list-name</i>	The access list that matches the route nexthop IP address.
<i>ip_address/prefixLen</i>	The IP address along with the prefix length that matches any nexthop IP address within the specified subnet.
permit	Permits a route based on the IP nexthop.
deny	Denies a route based on the IP nexthop.

Defaults

parameter	default
<i>number</i>	50
permit deny	permit

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Use the **no** form of this command to delete the **match ip-nexthop** parameter in the route map.
- If the best matching nexthop is type **deny**, then the route is not redistributed. If the best matching nexthop is type **permit** and the route map action is **deny**, the route is not redistributed.
- All route maps having the same name but different sequence numbers are linked together and processed in order of increasing sequence number.
- The *route-map-name*, **sequence-number**, and *access-list-name* must exist before you configure this **match** criteria.

Examples

```
-> ip route-map routel sequence-number 10 match ip-nexthop list1
-> no ip route-map routel sequence-number 10 match ip-nexthop list1
-> ip route-map routel sequence-number 10 match ip-nexthop 10.0.0.0/8
-> no ip route-map routel sequence-number 10 match ip-nexthop 10.0.0.0/8
```

Release History

Release 6.6.3; command introduced.

Related Commands

ip access-list	Creates an access list for adding multiple IPv4 addresses to route maps.
ip route-map action	Creates a route map for redistribution and sets the status of the route map to permit or deny.
show ip route-map	Displays the configured IP route maps.

MIB Objects

```
alaRouteMapTable
  alaRouteMapIndex
  alaRouteMapSequence
  alaRouteMapType
  alaRouteMapValue
  alaRouteMapRowStatus
```

ip route-map match ipv6-nexthop

Matches any routes that have an IPv6 next-hop router address permitted by the specified access list name or the IPv6 address specified in the route map.

ip route-map *route-map-name* [**sequence-number** *number*] **match ipv6-nexthop** {*access-list-name* | *ipv6_address/prefixLen* [**permit** | **deny**]}

no ip route-map *route-map-name* [**sequence-number** *number*] **match ipv6-nexthop** {*access-list-name* | *ipv6_address/prefixLen* [**permit** | **deny**]}

Syntax Definitions

<i>route-map-name</i>	The name of the route map (up to 20 characters).
<i>number</i>	A number that links together the route maps. The range is 1–100.
<i>access-list-name</i>	The access list that matches the route nexthop IPv6 address.
<i>ipv6_address/prefixLen</i>	The IPv6 address along with the prefix length that matches any nexthop IPv6 address within the specified subnet.
permit	Permits a route based on the IPv6 nexthop.
deny	Denies a route based on the IPv6 nexthop.

Defaults

parameter	default
<i>number</i>	50
permit deny	permit

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Use the **no** form of this command to delete the **match ipv6-nexthop** parameter in the route map.
- If the best matching nexthop is type **deny**, then the route is not redistributed. If the best matching nexthop is type **permit** but the route map action is **deny**, the route is not redistributed.
- All route maps having the same name but different sequence numbers are linked together and processed in order of increasing sequence number.
- The *route-map-name*, **sequence-number**, and *access-list-name* must exist before you configure this **match** criteria.

Examples

```
-> ip route-map routel sequence-number 10 match ipv6-nexthop list1
-> no ip route-map routel sequence-number 10 match ipv6-nexthop list1
-> ip route-map routel sequence-number 10 match ipv6-nexthop 2001::/64
-> no ip route-map routel sequence-number 10 match ipv6-nexthop 2001::/64
```

Release History

Release 6.6.3; command introduced.

Related Commands

ipv6 access-list	Creates an access list for adding multiple IPv6 addresses to route maps.
ipv6 access-list address	Adds IPv6 addresses to the specified IPv6 access list.
ip route-map action	Creates a route map for redistribution and sets the status of the route map to permit or deny.
show ip route-map	Displays the configured IP route maps.

MIB Objects

```
alaRouteMapTable
  alaRouteMapIndex
  alaRouteMapSequence
  alaRouteMapType
  alaRouteMapValue
  alaRouteMapRowStatus
```

ip route-map match tag

Matches the tag value specified in the route map with the one that the routing protocol learned the route on.

ip route-map *route-map-name* [**sequence-number** *number*] **match tag** *tag-number*

no ip route-map *route-map-name* [**sequence-number** *number*] **match tag** *tag-number*

Syntax Definitions

<i>route-map-name</i>	The name of the route map (up to 20 characters).
<i>number</i>	A number that links together the route maps. The range is 1–100.
<i>tag-number</i>	The tag number.

Defaults

parameter	default
<i>number</i>	50

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Use the **no** form of this command to delete the **match tag** parameter in the route map.
- All route maps having the same name but different sequence numbers are linked together and processed in order of increasing sequence number.
- The *route-map-name* and **sequence-number** must exist before you configure this **match** criteria.

Examples

```
-> ip route-map routel sequence-number 10 match tag 4  
-> no ip route-map routel sequence-number 10 match tag 4
```

Release History

Release 6.6.3; command introduced.

Related Commands

ip route-map action	Creates a route map for redistribution and sets the status of the route map to permit or deny.
show ip route-map	Displays the configured IP route maps.

MIB Objects

alaRouteMapTable

 alaRouteMapIndex

 alaRouteMapSequence

 alaRouteMapType

 alaRouteMapValue

 alaRouteMapRowStatus

ip route-map match ipv4-interface

Matches the IPv4 interface name specified in the route map with the one that the routing protocol learned the route on.

ip route-map *route-map-name* [**sequence-number** *number*] **match ipv4-interface** *interface-name*

no ip route-map *route-map-name* [**sequence-number** *number*] **match ipv4-interface** *interface-name*

Syntax Definitions

<i>route-map-name</i>	The name of the route map (up to 20 characters).
<i>number</i>	A number that links together the route maps. The range is 1–100.
<i>interface-name</i>	Specifies the interface name of the route outgoing interface.

Defaults

parameter	default
<i>number</i>	50

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Use the **no** form of this command to delete the **match ipv4-interface** parameter in the route map.
- All route maps having the same name but different sequence numbers are linked together and processed in order of increasing sequence number.
- The *route-map-name* and **sequence-number** must exist before you configure this **match** criteria.

Examples

```
-> ip route-map routel sequence-number 10 match ipv4-interface int4  
-> no ip route-map routel sequence-number 10 match ipv4-interface int4
```

Release History

Release 6.6.3; command introduced.

Related Commands

ip route-map action	Creates a route map for redistribution and sets the status of the route map to permit or deny.
show ip route-map	Displays the configured IP route maps.

MIB Objects

alaRouteMapTable

 alaRouteMapIndex

 alaRouteMapSequence

 alaRouteMapType

 alaRouteMapValue

 alaRouteMapRowStatus

ip route-map match ipv6-interface

Matches the IPv6 interface name specified in the route map with the one that the routing protocol learned the route on.

ip route-map *route-map-name* [**sequence-number** *number*] **match ipv6-interface** *interface-name*

no ip route-map *route-map-name* [**sequence-number** *number*] **match ipv6-interface** *interface-name*

Syntax Definitions

<i>route-map-name</i>	The name of the route map (up to 20 characters).
<i>number</i>	A number that links together the route maps. The range is 1–100.
<i>interface-name</i>	Specifies the interface name of the route outgoing interface.

Defaults

parameter	default
<i>number</i>	50

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Use the **no** form of this command to delete the **match ipv6-interface** parameter in the route map.
- All route maps having the same name but different sequence numbers are linked together and processed in order of increasing sequence number.
- The *route-map-name* and **sequence-number** must exist before you configure this **match** criteria.

Examples

```
-> ip route-map routel sequence-number 10 match ipv6-interface int6  
-> no ip route-map routel sequence-number 10 match ipv6-interface int6
```

Release History

Release 6.6.3; command introduced.

Related Commands

ip route-map action	Creates a route map for redistribution and sets the status of the route map to permit or deny.
show ip route-map	Displays the configured IP route maps.

MIB Objects

alaRouteMapTable

 alaRouteMapIndex

 alaRouteMapSequence

 alaRouteMapType

 alaRouteMapValue

 alaRouteMapRowStatus

ip route-map match metric

Matches the metric value specified in the route map with the actual metric value of the route.

ip route-map *route-map-name* [**sequence-number** *number*] **match metric** *metric* [**deviation** *deviation*]

no ip route-map *route-map-name* [**sequence-number** *number*] **match metric** *metric* [**deviation** *deviation*]

Syntax Definitions

<i>route-map-name</i>	The name of the route map (up to 20 characters).
<i>number</i>	A number that links together the route maps. The range is 1–100.
<i>metric</i>	The metric value that matches a specified metric.
<i>deviation</i>	The deviation value. If deviation is included, the route metric can have any value within the range (metric-deviation to metric+deviation).

Defaults

parameter	default
<i>number</i>	50

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Use the **no** form of this command to delete the **match metric** parameter in the route map.
- All route maps having the same name but different sequence numbers are linked together and processed in order of increasing sequence number.
- The *route-map-name* and **sequence-number** must exist before you configure this **match** criteria.

Examples

```
-> ip route-map routel sequence-number 10 match metric 4
-> no ip route-map routel sequence-number 10 match metric 4
```

Release History

Release 6.6.3; command introduced.

Related Commands

ip route-map action	Creates a route map for redistribution and sets the status of the route map to permit or deny.
show ip route-map	Displays the configured IP route maps.

MIB Objects

```
alaRouteMapTable  
  alaRouteMapIndex  
  alaRouteMapSequence  
  alaRouteMapType  
  alaRouteMapValue  
  alaRouteMapRowStatus
```

ip route-map set metric

Configures the metric value of the route being distributed.

ip route-map *route-map-name* [**sequence-number** *number*] **set metric** *metric*
[**effect** {**add** | **subtract** | **replace** | **none**}]

no ip route-map *route-map-name* [**sequence-number** *number*] **set metric** *metric*
[**effect** {**add** | **subtract** | **replace** | **none**}]

Syntax Definitions

<i>route-map-name</i>	The name of the route map (up to 20 characters).
<i>number</i>	A number that links together the route maps. The range is 1–100.
<i>metric</i>	Configures the metric value of the route being distributed. A value of 0 is not allowed.
add	Adds the configured metric value to the actual metric value.
subtract	Subtracts the configured metric value from the actual metric value.
replace	Replaces the actual metric value with the configured metric value.
none	Redistributes the actual metric value. The configured metric value is ignored. Use any value except 0.

Defaults

parameter	default
<i>number</i>	50

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Use the **no** form of this command to delete the **set metric** parameter in the route map.
- All route maps having the same name but different sequence numbers are linked together and processed in order of increasing sequence number.
- The *route-map-name* and **sequence-number** must exist before you configure this **set** criteria.

Examples

```
-> ip route-map 111 sequence-number 50 set metric 30 effect add
-> no ip route-map 111 sequence-number 50 set metric 30 effect add
```

Release History

Release 6.6.3; command introduced.

Related Commands

ip route-map action	Creates a route map for redistribution and sets the status of the route map to permit or deny.
show ip route-map	Displays the configured IP route maps.

MIB Objects

```
alaRouteMapTable  
  alaRouteMapIndex  
  alaRouteMapSequence  
  alaRouteMapType  
  alaRouteMapValue  
  alaRouteMapRowStatus
```

ip route-map set tag

Configures the tag value of the route being distributed.

ip route-map *route-map-name* [**sequence-number** *number*] **set tag** *tag-number*

no ip route-map *route-map-name* [**sequence-number** *number*] **set tag** *tag-number*

Syntax Definitions

<i>route-map-name</i>	The name of the route map (up to 20 characters).
<i>number</i>	A number that links together the route maps. The range is 1–100.
<i>tag-number</i>	Configures the tag number.

Defaults

parameter	default
<i>number</i>	50

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Use the **no** form of this command to delete the **set tag** parameter in the route map.
- All route maps having the same name but different sequence numbers are linked together and processed in order of increasing sequence number.
- The *route-map-name* and **sequence-number** must exist before you configure this **set** criteria.

Examples

```
-> ip route-map 111 sequence-number 50 set tag 23  
-> no ip route-map 111 sequence-number 50 set tag 23
```

Release History

Release 6.6.3; command introduced.

Related Commands

ip route-map action	Creates a route map for redistribution and sets the status of the route map to permit or deny.
show ip route-map	Displays the configured IP route maps.

MIB Objects

alaRouteMapTable

 alaRouteMapIndex

 alaRouteMapSequence

 alaRouteMapType

 alaRouteMapValue

 alaRouteMapRowStatus

ip route-map set ip-nexthop

Configures the IP address of the next hop in a route map.

```
ip route-map route-map-name [sequence-number number] set ip-nexthop ip_address
```

```
no ip route-map route-map-name [sequence-number number] set ip-nexthop ip_address
```

Syntax Definitions

<i>route-map-name</i>	The name of the route map (up to 20 characters).
<i>number</i>	A number that links together the route maps. The range is 1–100.
<i>ip_address</i>	IP address of the next hop.

Defaults

parameter	default
<i>number</i>	50

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Use the **no** form of this command to delete the **set ip-nexthop** parameter in the route map.
- All route maps having the same name but different sequence numbers are linked together and processed in order of increasing sequence number.
- The *route-map-name* and **sequence-number** must exist before you configure this **set** criteria.

Examples

```
-> ip route-map 222 sequence-number 50 set ip-nexthop 128.251.17.224  
-> no ip route-map 222 sequence-number 50 set ip-nexthop 128.251.17.224
```

Release History

Release 6.6.3; command introduced.

Related Commands

ip route-map action	Creates a route map for redistribution and sets the status of the route map to permit or deny.
show ip route-map	Displays the configured IP route maps.

MIB Objects

```
alaIPRouteMapTable  
  alaRouteMapIndex  
  alaRouteMapSequence  
  alaRouteMapType  
  alaRouteMapValue  
  alaRouteMapRowStatus
```

ip route-map set ipv6-nexthop

Configures the IPv6 address of the next hop in a route map.

ip route-map *route-map-name* [**sequence-number** *number*] **set ipv6-nexthop** *ipv6_address*

no ip route-map *route-map-name* [**sequence-number** *number*] **set ipv6-nexthop** *ipv6_address*

Syntax Definitions

<i>route-map-name</i>	The name of the route map (up to 20 characters).
<i>number</i>	A number that links together the route maps. The range is 1–100.
<i>ipv6_address</i>	IPv6 address of the next hop.

Defaults

parameter	default
<i>number</i>	50

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Use the **no** form of this command to delete the **set ipv6-nexthop** parameter in the route map.
- All route maps having the same name but different sequence numbers are linked together and processed in order of increasing sequence number.
- The *route-map-name* and **sequence-number** must exist before you configure this **set** criteria.

Examples

```
-> ip route-map 222 sequence-number 50 set ipv6-nexthop 2001::1  
-> no ip route-map 222 sequence-number 50 set ipv6-nexthop 2001::1
```

Release History

Release 6.6.3; command introduced.

Related Commands

ip route-map action	Creates a route map for redistribution and sets the status of the route map to permit or deny.
show ip route-map	Displays the configured IP route maps.

MIB Objects

```
alaIPRouteMapTable  
  alaRouteMapIndex  
  alaRouteMapSequence  
  alaRouteMapType  
  alaRouteMapValue  
  alaRouteMapRowStatus
```

arp

Adds a permanent entry to the ARP table. To forward packets, the switch dynamically builds an ARP Table to match the IP address of a device with its physical (MAC) address. These entries age out of the table when the timeout value is exceeded. This command is used to add a permanent entry to the table. Permanent entries do not age out of the table.

arp *ip_address hardware_address* [**alias**]

no arp *ip_address* [**alias**]

Syntax Definitions

<i>ip_address</i>	IP address of the device you are adding to the ARP table.
<i>hardware_address</i>	MAC address of the device in hexadecimal format (for example, 00.00.39.59.f1.0c).
alias	Specifies that the switch must act as an alias (or proxy) for this IP address. When the alias option is used, the switch responds to all ARP requests for the specified IP address with its own MAC address. You can also enable the proxy feature for an IP interface using the ip interface command. When enabled, ARP requests return the MAC address of the IP router interface and all traffic within the VLAN is routed.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Use the **no** form of this command to delete a permanent ARP entry.

Note. Using the **arp alias** command is not related to proxy ARP as defined in RFC 925. Configuring **arp alias** is similar to the Local Proxy ARP feature, except that it is used to configure the switch as a proxy for only *one* IP address.

- Since most hosts support the use of address resolution protocols to determine cache address information (called dynamic address resolution), you generally do not need to specify permanent ARP cache entries.
- Only the IP address is required when deleting an ARP entry from the table.

Examples

```
-> arp 171.11.1.1 00:05:02:c0:7f:11
```

Release History

Release 6.6.3; command introduced.

Related Commands

clear arp-cache

Deletes all dynamic entries from the ARP table.

ip interface

Enables or disables the Local Proxy ARP feature for an IP interface. When enabled, all traffic within the VLAN is routed. ARP requests return the MAC address of the IP router interface.

show arp

Displays the ARP table.

MIB Objects

```
ipNetToMediaTable
  ipNetToMediaIfIndex
  ipNetToMediaNetAddress
  ipNetToMediaPhyAddress
  ipNetToMediaType
alaIpNetToMediaTable
  alaIpNetToMediaPhyAddress
  alaIpNetToMediaProxy
```

clear arp-cache

Deletes all dynamic entries from the ARP table.

clear arp-cache

Syntax Definitions

N/A

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- This commands only clears dynamic entries. If permanent entries are added to the table, they must be removed using the **no** form of the [ip service](#) command.
- Dynamic entries remain in the ARP table until they time out. The switch uses the MAC Address table timeout value as the ARP timeout value. Use the [mac-address-table aging-time](#) command to set the timeout value.

Examples

```
-> clear arp-cache
```

Release History

Release 6.6.1; command introduced.

Related Commands

ip service	Adds a permanent entry to the ARP table.
show arp	Displays the ARP table.

MIB Objects

alaIpClearArpCache

ip dos arp-poison restricted-address

Adds or deletes an ARP Poison restricted address.

ip dos arp-poison restricted-address *ip_address*

no ip dos arp-poison restricted-address *ip_address*

Syntax Definitions

ip_address 32-bit IP address.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

Use the **no** form of the command to remove an already configured ARP Poison restricted address.

Examples

```
-> ip dos arp-poison restricted-address 192.168.1.1
-> no ip dos arp-poison restricted-address 192.168.1.1
```

Release History

Release 6.6.1; command introduced.

Related Commands

show ip dos arp-poison Displays the number of attacks detected for configured ARP poison restricted-addresses.

MIB Objects

```
alaDoSArpPoisonTable
  alaDoSArpPoisonIpAddr
  alaDosArpPoisonRowStatus
```

arp filter

Configures an ARP filter that determines if ARP Request packets containing a specific IP address are processed or discarded by the switch.

arp filter *ip_address* [**mask** *ip_mask*] [*vid*] [**sender** | **target**] [**allow** | **block**]

no arp filter *ip_address*

Syntax Definitions

<i>ip_address</i>	The IP address to use for filtering ARP packet IP addresses.
<i>ip_mask</i>	An IP mask that identifies which part of the ARP packet IP address is examined for filtering (for example mask 255.0.0.0 filters on the first octet of the ARP packet IP address).
<i>vid</i>	A VLAN ID that specifies that only ARP packets for a specific VLAN are filtered.
sender	The sender IP address in the ARP packet is used for ARP filtering.
target	The target IP address in the ARP packet is used for ARP filtering.
allow	ARP packets that meet filter criteria are processed.
block	ARP packets that meet filter criteria are discarded.

Defaults

parameter	default
<i>vid</i>	0 (no VLAN)
<i>ip_mask</i>	255.255.255.255
sender target	target
allow block	block

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Use the **no** form of this command to delete an ARP filter.
- If there are no filters configured for the switch, all ARP Request packets received are processed.
- Up to 200 filters are allowed on each switch.
- If sender or target IP address in an ARP Request packet does not match any filter criteria, the packet is processed by the switch.
- ARP filtering is used in conjunction with the Local Proxy ARP application; however, ARP filtering is available for use on its own and/or with other applications.

Examples

```
-> arp filter 171.11.1.1
-> arp filter 172.0.0.0 mask 255.0.0.0
-> arp filter 198.0.0.0 mask 255.0.0.0 sender
-> arp filter 198.172.16.1 vlan 200 allow
-> no arp filter 171.11.1.1
```

Release History

Release 6.6.1; command introduced.

Related Commands

clear arp filter	Clears all ARP filters from the filter database.
ip interface	Enables or disables the Local Proxy ARP feature on an IP interface. When enabled, all traffic within the VLAN is routed. ARP requests return the MAC address of the IP router interface.
show arp filter	Displays the ARP filter configuration.

MIB Objects

```
alaIpArpFilterTable
  alaIpArpFilterIpAddr
  alaIpArpFilterIpMask
  alaIpArpFilterVlan
  alaIpArpFilterMode
  alaIpArpFilterType
```

clear arp filter

Clears the ARP filter database of all entries.

clear arp-cache

Syntax Definitions

N/A

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

This command clears all ARP filters configured on the switch. To remove an individual filter entry, use the **no** form of the [arp filter](#) command.

Examples

```
-> clear arp filter
```

Release History

Release 6.6.1; command introduced.

Related Commands

arp filter	Configures an ARP filter to allow or block the processing of specified ARP Request packets.
show arp filter	Displays the ARP filter configuration.

MIB Objects

alaIpClearArpFilter

ip arp-limit default

This command is used to change the ARP mode from extend to default mode.

ip arp-limit default

Syntax Definitions

N/A

Defaults

Default ARP mode can store a total of 512 entries in switch and the ECMP limit is 4.

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Use this command to change the ARP mode from extend to default mode.
- Only Static and Dynamic ARP entries are stored in hardware table and the maximum limit is a combination of Static and Dynamic ARP entries.
- Make sure that less than 512 are static ARP entries configured on switch, when changing ARP mode from extend to default.
- After using this command, save the configurations using the [write memory](#) command and reload the switch, to reflect the ARP mode changes in the switch.

Examples

```
-> ip arp-limit default
```

Release History

Release 6.6.5; command introduced.

Related Commands

[ip arp-limit extend](#)

This command is used to change the ARP mode from default to extend mode.

MIB Objects

N/A

ip arp-limit extend

This command is used to change the ARP mode from default to extend mode.

ip arp-limit extend

Syntax Definitions

N/A

Defaults

Extend ARP mode can store a total of 1024 entries in switch and the ECMP limit is 2.

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Use this command to change the ARP mode from default to extend mode.
- Only Static and Dynamic ARP entries are stored in hardware table and the maximum limit is a combination of Static and Dynamic ARP entries.
- After using this command, save the configurations using the **write memory** command and reload the switch, to reflect the ARP mode changes in the switch.

Examples

```
-> clear arp filter
```

Release History

Release 6.6.5; command introduced.

Related Commands

ip arp-limit default

This command is used to change the ARP mode from extend to default mode.

MIB Objects

N/A

icmp type

Enables or disables a specific type of ICMP message, and sets the minimum packet gap. The minimum packet gap is the number of microseconds that must pass between ICMP messages of the same type.

icmp type *type* **code** *code* **{{enable | disable} | min-pkt-gap** *gap*

Syntax Definitions

<i>type</i>	The ICMP packet type. The type value along with the ICMP code determines the category of ICMP message being specified.
<i>code</i>	The ICMP code type. The ICMP code used in conjunction with the ICMP type determines the category of ICMP message being specified.
enable	Enables the specified ICMP message.
disable	Disables the specified ICMP message.
<i>gap</i>	The number of microseconds required between ICMP messages of this type.

Defaults

parameter	default
enable disable	disabled
<i>gap</i>	0

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- This command allows the use to enable or disable all types of ICMP messages, and set the minimum packet gap between messages of the specified type. The ICMP message types are specified in RFC 792, and are as follows:

ICMP Message	Type	Code
echo reply	0	0
network unreachable	0	3
host unreachable	3	1
protocol unreachable	3	2
port unreachable	3	3
frag needed but DF bit set	3	4
source route failed	3	5
destination network unknown	3	6
destination host unknown	3	7
source host isolated	3	8
dest network admin prohibited	3	9
host admin prohibited by filter	3	10
network unreachable for TOS	3	11
host unreachable for TOS	3	12
source quench	4	0
redirect for network	5	0
redirect for host	5	1
redirect for TOS and network	5	2
redirect for TOS and host	5	3
echo request	8	0
router advertisement	9	0
router solicitation	10	0
time exceeded during transmit	11	0
time exceeded during reassembly	11	1
ip header bad	12	0
required option missing	12	1
timestamp request	13	0
timestamp reply	14	0
information request (obsolete)	15	0
information reply (obsolete)	16	0
address mask request	17	0
address mask reply	18	0

- While this command can be used to enable or disable all ICMP message, some of the more common ICMP messages have their own CLI commands, as described in the following pages. The following ICMP messages have specific commands to enable and disable:

ICMP Message	Command
Network unreachable (type 0, code 3)	icmp unreachable
Host unreachable (type 3, code 1)	icmp unreachable
Protocol unreachable (type 3, code 2)	icmp unreachable
Port unreachable (type 3, code 3)	icmp unreachable
Echo reply (type 0, code 0)	icmp echo
Echo request (type 8, code 0)	icmp echo
Timestamp request (type 13, code 0)	icmp timestamp
Timestamp reply (type 14, code 0)	icmp timestamp
Address Mask request (type 17, code 0)	icmp addr-mask
Address Mask reply (type 18, code 0)	icmp addr-mask

- Enabling **Host unreachable** and **Network unreachable** messages are not recommended as it can cause the switch instability. The switch can become unstable due to high-CPU conditions due to high volume of traffic caused by these messages.

Examples

```
-> icmp type 4 code 0 enabled
-> icmp type 4 code 0 min-pkt-gap 40
-> icmp type 4 code 0 disable
```

Release History

Release 6.6.1; command introduced.

Related Commands

[icmp messages](#)

Enables or disables all ICMP messages.

[show icmp control](#)

Allows the viewing of the ICMP control settings.

MIB Objects

```
alaIcmpCtrlTable
  alaIcmpCtrlType
alaIcmpCtrlTable
  alaIcmpCtrlCode
  alaIcmpCtrlStatus
  alaIcmpCtrlPktGap
```

icmp unreachable

Enables or disables ICMP messages pertaining to unreachable destinations, and sets the minimum packet gap. The minimum packet gap is the number of microseconds that must pass between ICMP messages of the same type.

icmp unreachable [**net-unreachable** | **host-unreachable** | **protocol-unreachable** | **port-unreachable**]
 {{**enable** | **disable**} | **min-pkt-gap** *gap*}

Syntax Definitions

net-unreachable	Sets the unreachable network ICMP message.
host-unreachable	Sets the unreachable host ICMP message.
protocol-unreachable	Sets the unreachable protocol ICMP message.
port-unreachable	Sets the unreachable port ICMP message.
enable	Enables the specified ICMP message.
disable	Disables the specified ICMP message.
<i>gap</i>	The number of microseconds required between ICMP messages of this type.

Defaults

parameter	default
enable disable	disabled
<i>gap</i>	0

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- This command enables ICMP messages relating to unreachable destinations. Unreachable networks, hosts, protocols, and ports can all be specified.
- Enabling **host-unreachable** and **net-unreachable** messages are not recommended as it can cause the switch instability due to high-CPU conditions depending upon the volume of traffic required by these messages.
- The unreachable ICMP messages can also be enabled, disabled, and modified using the [icmp type](#) command. See the [icmp type](#) command information on the type and code for the unreachable ICMP messages.

Examples

```
-> icmp unreachable net-unreachable enable
-> icmp unreachable host-unreachable enable
-> icmp unreachable protocol-unreachable enable
-> icmp unreachable port-unreachable enable
-> icmp unreachable port-unreachable min-pkt-gap 50
```

Release History

Release 6.6.1; command introduced.

Related Commands

show icmp control Allows the viewing of the ICMP control settings.

MIB Objects

```
alaIcmpCtrlTable
  alaIcmpCtrlType
alaIcmpCtrlTable
  alaIcmpCtrlCode
  alaIcmpCtrlStatus
  alaIcmpCtrlPktGap
```

icmp echo

Enables or disables ICMP echo messages, and sets the minimum packet gap. The minimum packet gap is the number of microseconds that must pass between ICMP messages of the same type.

icmp echo [**request** | **reply**] **{{enable | disable}** | **min-pkt-gap** *gap*}

Syntax Definitions

request	Specifies the echo request ICMP message.
reply	Specifies the echo reply ICMP message.
enable	Enables the specified ICMP message.
disable	Disables the specified ICMP message.
<i>gap</i>	The number of microseconds required between ICMP messages of this type.

Defaults

parameter	default
enable disable	enable
<i>gap</i>	0

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- This command sets the ICMP echo messages. An echo request is sent to a destination, and must be responded to with an echo reply message that contains the original echo request.
- Using this command without specifying a request or reply enables, disables, or sets the minimum packet gap for both types.
- The echo ICMP messages can also be enabled, disabled, and modified using the [icmp type](#) command. See the [icmp type](#) command information on the type and code for the echo ICMP messages.

Examples

```
-> icmp echo reply enable
-> icmp echo enable
-> icmp echo request enable
-> icmp echo request min-pkt-gap 50
```

Release History

Release 6.6.1; command introduced.

Related Commands

show icmp control

Allows the viewing of the ICMP control settings.

MIB Objects

alaIcmpCtrlTable

 alaIcmpCtrlType

alaIcmpCtrlTable

 alaIcmpCtrlCode

 alaIcmpCtrlStatus

 alaIcmpCtrlPktGap

icmp timestamp

Enables or disables ICMP timestamp messages, and sets the minimum packet gap. The minimum packet gap is the number of microseconds that must pass between ICMP messages of the same type.

icmp timestamp [**request** | **reply**] {{**enable** | **disable**} | **min-pkt-gap** *gap*}

Syntax Definitions

request	Specifies timestamp request messages.
reply	Specifies timestamp reply messages.
enable	Enables the specified ICMP message.
disable	Disables the specified ICMP message.
<i>gap</i>	The number of microseconds required between ICMP messages of this type.

Defaults

parameter	default
enable disable	enable
<i>gap</i>	0

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- The data received (a timestamp) in the message is returned in the reply together with an additional timestamp. The timestamp is 32 bits of milliseconds since midnight UT. The **Originate** timestamp is the time the sender last touched the message before sending it, the **Receive** timestamp is the time the echoer first touched it on receipt, and the **Transmit** timestamp is the time the echoer last touched the message on sending it.
- Using this command without specifying a request or reply, enables, disables, or sets the minimum packet gap for both types.
- The timestamp ICMP messages can also be enabled, disabled, and modified using the [icmp type](#) command. See the [icmp type](#) command information on the type and code for the timestamp ICMP messages.

Examples

```
-> icmp timestamp reply enable
-> icmp timestamp enable
-> icmp timestamp request enable
-> icmp timestamp request min-pkt-gap 50
```

Release History

Release 6.6.1; command introduced.

Related Commands

show icmp control Allows the viewing of the ICMP control settings.

MIB Objects

```
alaIcmpCtrlTable  
  alaIcmpCtrlType  
alaIcmpCtrlTable  
  alaIcmpCtrlCode  
  alaIcmpCtrlStatus  
  alaIcmpCtrlPktGap
```

icmp addr-mask

Enables or disables ICMP address mask messages, and sets the minimum packet gap. The minimum packet gap is the number of microseconds that must pass between ICMP messages of the same type.

icmp add-mask [**request** | **reply**] {{**enable** | **disable**} | **min-pkt-gap** *gap*}

Syntax Definitions

request	Specifies request address mask messages.
reply	Specifies reply address mask messages.
enable	Enables the specified ICMP message.
disable	Disables the specified ICMP message.
<i>gap</i>	The number of microseconds required between ICMP messages of this type.

Defaults

parameter	default
enable disable	enable
<i>gap</i>	0

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- A gateway receiving an address mask request must return it with the address mask field set to the 32-bit mask of the bits identifying the subnet and network, for the subnet on which the request was received.
- Using this command without specifying a request or reply, enables, disables, or sets the minimum packet gap for both types.
- The address mask ICMP messages can also be enabled, disabled, and modified using the [icmp type](#) command. See the [icmp type](#) command information on the type and code for the address mask ICMP messages.

Examples

```
-> icmp addr-mask reply enable
-> icmp addr-mask enable
-> icmp addr-mask request enable
-> icmp addr-mask request min-pkt-gap 50
```

Release History

Release 6.6.1; command introduced.

Related Commands

show icmp control

Allows the viewing of the ICMP control settings.

MIB Objects

alaIcmpCtrlTable

 alaIcmpCtrlType

alaIcmpCtrlTable

 alaIcmpCtrlCode

 alaIcmpCtrlStatus

 alaIcmpCtrlPktGap

icmp messages

Enables or disables all Internet Control Message Protocol (ICMP) messages.

icmp messages {enable | disable}

Syntax Definitions

enable Enables ICMP messages.
disable Disables ICMP messages.

Defaults

parameter	default
enable disable	enable

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

N/A

Examples

```
-> icmp messages enable  
-> icmp messages disable
```

Release History

Release 6.6.1; command introduced.

Related Commands

[icmp type](#) Enables or disables a specific type of ICMP message, and sets the minimum packet gap.
[show icmp control](#) Allows the viewing of the ICMP control settings.

MIB Objects

alaIcmpCtrl
alaIcmpAllMsgStatus

twamp server

Configures a TWAMP server on the switch.

twamp server [**port** *port-number*] [**inactivity-timeout** *mins*] [**allowed-client** *ipv4-address ip-mask*]

no twamp server

Syntax Definitions

port	The TCP port on which the TWAMP server will listen for the client connection or requests. The TCP port can be configured in the range 30000 to 30999.
inactivity-timeout	The inactivity timer (in minutes) for the control session in case no packets are received in the established session. The timer can be configured in the range 1 to 30. The session is closed if no packets are received within the configured inactivity-timeout period.
allowed-client	The client IP address or range and mask which shall be allowed to establish connection with the server. Upto 32 client IPs can be configured.

Defaults

parameter	default
port	862
inactivity-timeout	15

Platforms Supported

OmniSwitch 6250, 6450

Usage Guidelines

- When TWAMP server is configured on the switch, the loopback0 IP address will be taken as the IP address of the server.
- Only one TWAMP server can be configured on a switch at a given point of time.
- When TWAMP server port is reconfigured, a system reload is needed for the reconfigured port to come into effect.
- Maximum 32 control sessions are allowed per switch. A control sessions can have 128 test sessions.
- When configuring large number of test sessions, the timeout value should be configured in the client side such that there is enough gap between multiple test session timeouts to avoid interrupts and loss of messages at interrupt level.
- Use the **no** form of this command to remove the TWAMP server configuration.

Examples

```
-> twamp server port 30333 inactivity-timeout 20 allowed-client 172.16.1.1/16
-> no twamp server
```


Release History

Release 6.7.1 R02; command introduced.

Related Commands

show twamp server info

Displays the configuration details of the TWAMP server on the switch.

show twamp server connections

Displays the TWAMP Client connections established with the TWAMP server on the switch at a given point of time. The TWAMP connections can also be viewed for a specific client.

MIB Objects

```
alcatelIND1TWAMP
  twampServerTable
  twampPortNumber
  twampInactivityTimeout
  twampClientIpAddress
  twampClientIpAddressMask
```

ip dos scan close-port-penalty

Assigns a penalty value to be added to the Denial of Service penalty scan value when a TCP or UDP packet is received on a closed port.

ip dos scan close-port-penalty *penalty_value*

Syntax Definitions

penalty_value A penalty value added to the penalty scan value. This value can be any non-negative integer.

Defaults

parameter	default
<i>penalty_value</i>	10

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

This command creates a point value that is added to the total port scan penalty value when a TCP or UDP packet is received that is destined for a closed port.

Examples

```
-> ip dos scan close-port-penalty 25
```

Release History

Release 6.6.1; command introduced.

Related Commands

[ip dos scan threshold](#) Sets the threshold for the port scan value, at which a DoS attack is recorded.

[ip dos trap](#) Sets whether the switch generates SNMP DoS traps when an attack is detected.

MIB Objects

alaDoSConfig
alaDoSPortScanClosePortPenalty

ip dos scan tcp open-port-penalty

Assigns a penalty value to be added to the Denial of Service penalty scan value when a TCP packet is received on an open port.

ip dos scan tcp open-port-penalty *penalty_value*

Syntax Definitions

penalty_value A penalty value added to the penalty scan value. This value can be any non-negative integer.

Defaults

parameter	default
<i>penalty_value</i>	0

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- This command creates a point value that is added to the total port scan penalty value when a TCP packet is received that is destined for an open port.
- The switch does not distinguish between a legal TCP packet and a port scan packet.

Examples

```
-> ip dos scan tcp open-port-penalty 10
```

Release History

Release 6.6.1; command introduced.

Related Commands

- [ip dos scan threshold](#) Sets the threshold for the port scan value, at which a DoS attack is recorded.
- [ip dos trap](#) Sets whether the switch generates SNMP DoS traps when an attack is detected.

MIB Objects

alaDoSConfig
alaDoSPortScanTcpOpenPortPenalty

ip dos scan udp open-port-penalty

Assigns a penalty value to be added to the Denial of Service penalty scan value when a UDP packet is received on an open port.

ip dos scan udp open-port-penalty *penalty_value*

Syntax Definitions

penalty_value A penalty value added to the penalty scan value. This value can be any non-negative integer.

Defaults

parameter	default
<i>penalty_value</i>	0

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- This command creates a point value that is added to the total port scan penalty value when a UDP packet is received that is destined for an open port.
- The switch does not distinguished between a legal UDP packet and a port scan packet.

Examples

```
-> ip dos scan udp open-port-penalty 15
```

Release History

Release 6.6.1; command introduced.

Related Commands

- ip dos scan threshold** Sets the threshold for the port scan value, at which a DoS attack is recorded.
- ip dos trap** Sets whether the switch generates SNMP DoS traps when an attack is detected.

MIB Objects

alaDoSConfig
alaDoSPortScanUdpOpenPortPenalty

ip dos scan threshold

Sets the threshold for the port scan value, at which a DoS attack is recorded.

ip dos scan threshold *threshold_value*

Syntax Definitions

threshold_value

A numerical value representing the total acceptable penalty before a DoS attack is noted. This value can be any non-negative integer.

Defaults

parameter	default
<i>threshold_value</i>	1000

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- If the total port scan penalty value exceeds this value, a port scan attack is recorded.
- The penalty value is incremented by recording TCP or UDP packets that are bound for open or closed ports. Such packets are given a penalty values that are added together. The commands for setting the packet penalty value are the [twamp server](#), [ip dos scan tcp open-port-penalty](#), and [ip dos scan udp open-port-penalty](#) commands.

Examples

```
-> ip dos scan threshold 1200
```

Release History

Release 6.6.1; command introduced.

Related Commands

twamp server

Assigns a penalty value to be added to the Denial of Service penalty scan value when a TCP or UDP packet is received on a closed port.

ip dos scan tcp open-port-penalty

Assigns a penalty value to be added to the Denial of Service penalty scan value when a TCP packet is received on an open port.

ip dos scan udp open-port-penalty

Assigns a penalty value to be added to the Denial of Service penalty scan value when a UDP packet is received on an open port.

show ip dos config

Displays the configuration parameters of the DoS scan for the switch.

MIB Objects

alaDoSConfig

 alaDoSPortScanThreshold

ip dos trap

Sets whether the switch generates SNMP DoS traps when an attack is detected.

ip dos trap {enable | disable}

Syntax Definitions

enable	Enables the generation of DoS traps.
disable	Disables the generation of DoS traps.

Defaults

parameter	default
enable disable	enable

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

This command controls whether the switch generates an SNMP trap when a DoS attack is detected. It is assumed a DoS attack has occurred when the port scan penalty threshold is exceeded. This value is set using the [ip dos scan threshold](#) command.

Examples

```
-> ip dos trap enable
-> ip dos trap disable
```

Release History

Release 6.6.1; command introduced.

Related Commands

ip dos scan threshold	Sets the threshold for the port scan value, at which a DoS attack is recorded.
show ip dos config	Displays the configuration parameters of the DoS scan for the switch.

MIB Objects

```
alaDoSConfig
  alaDoSTrapCnt1
```

ip dos scan decay

Sets the decay speed of the port scan penalty value for the switch when calculating DoS attacks.

ip dos scan decay *decay_value*

Syntax Definitions

decay_value The decay value amount for reducing the port scan penalty. This value can be any non-negative integer.

Defaults

parameter	default
<i>decay_value</i>	2

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

The port scan penalty value is reduced every minute by dividing by the amount set in using this command. For example, if the decay value is set to 10, every minute the total port scan penalty value is divided by 10.

Examples

```
-> ip dos scan decay 10
```

Release History

Release 6.6.1; command introduced.

Related Commands

- [ip dos scan threshold](#) Sets the threshold for the port scan value, at which a DoS attack is recorded.
- [show ip dos config](#) Displays the configuration parameters of the DoS scan for the switch.

MIB Objects

alaDoSConfig
 alaDoSPortScanDecay

show ip traffic

Displays IP datagram traffic and errors.

show ip traffic

Syntax Definitions

N/A

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- The statistics show the cumulative totals since the last time the switch was powered on or since the last reset of the switch was executed.
- Packets received on a member port of the UserPorts group are dropped if they contain a source IP network address that does not match the IP subnet for the port. This is done to block spoofed IP traffic. If the UserPorts group function is active and spoofed traffic was detected and blocked, the output display of this command includes statistics regarding the spoofed traffic.

Note. The presence of spoofing event statistics in the output display of this command indicates that an attack was prevented, not that the switch is currently under attack.

- If statistics for spoofed traffic are not displayed, then a spoofing attempt has not occurred since the last time this command was issued.

Examples

```
-> show ip traffic
```

```
IP statistics
```

```
Datagrams received
  Total                = 621883,
  IP header error      = 0,
  Destination IP error = 51752,
  Unknown protocol     = 0,
  Local discards       = 0,
  Delivered to users   = 567330,
  Reassemble needed    = 0,
  Reassembled          = 0,
```

```

Reassemble failed      =          0

Datagrams sent
  Forwarded            =    2801,
  Generated             =   578108,
  Local discards       =          0,
  No route discards   =          9,
  Fragmented          =    2801,
  Fragment failed     =          0,
  Fragments generated =          0

Event      Source      Total      Last 33 seconds
-----+-----+-----+-----
spoof     5/26   18          2      last mac 00:08:02:e2:17:70

```

output definitions

Total	Total number of input datagrams received including datagrams received in error.
IP header error	Number of IP datagrams discarded due to errors in the IP header (for example, bad checksums, version number mismatch, other format errors, time-to-live exceeded, errors discarded in processing IP options).
Destination IP error	Number of IP datagrams discarded because the IP header destination field contained an invalid address. This count includes invalid addresses (for example, 0.0.0.0) and addresses of unsupported classes (for example, Class E).
Unknown protocol	Number of local-addressed datagrams received successfully but discarded because of an unknown or unsupported protocol.
Local discards	Number of IP datagrams received that were discarded, even though they had no errors to prevent transmission (for example, lack of buffer space). This does not include any datagrams discarded while awaiting reassembly. Typically, this value must be zero.
Delivered to users	Total number of datagrams received that were successfully delivered to IP user protocols (including ICMP).
Reassemble needed	Number of IP fragments received that had to be reassembled.
Reassembled	Number of IP datagrams received that were successfully reassembled.
Reassemble failed	Number of IP failures detected by the IP reassembly algorithm for all reasons (for example, timed out, error). This value is not necessarily a count of discarded IP fragments since some algorithms (notably the algorithm in RFC 815) can lose track of the number of fragments by combining them as they are received.
Fragmented	Number of successfully fragmented IP datagrams.
Fragment failed	Number of packets received and discarded by IP because they could not be fragmented. This situation could happen if a large packet has the "Don't Fragment" flag set.
Forwarded	Number of IP datagrams forwarded by the switch.
Generated	Total number of IP datagrams that local IP user protocols (including ICMP) generated in response to requests for transmission. This does not include any datagrams counted as "Forwarded."

output definitions (continued)

Local discards	Number of output IP datagrams that were discarded, even though they had no errors to prevent transmission (for example, lack of buffer space). This number includes datagrams counted as “Forwarded” if the packets are discarded for these reasons.
No. route discards	Number of IP datagrams received and discarded by IP because no route could be found to transmit them to their destination. Forwarded packets are also counted if they are discarded. It also includes any datagrams that a host cannot route because all of its default routers are down.
Fragments generated	The of IP datagram fragments generated as a result of fragmentation.
Routing entry discards	Number of packets received and discarded by IP even though no problems were encountered to prevent their transmission to their destination (for example, discarded because of lack of buffer space).
Event	The type of event (spoof).
Source	The slot and port number of the port that has received spoofed packets and is also a member of the UserPorts group. Ports are configured as members of the UserPorts group through the policy port group command.
Total	The total number of spoofed packets received on the source port.
Last <i>xx</i> seconds	The number of spoofed packets blocked in the last number of seconds indicated. Also includes the source MAC address of the last spoofed packet received.

Release History

Release 6.6.1; command introduced.

Related Commands

show icmp statistics Displays ICMP statistics and errors.

show ip interface

Displays the status and configuration of IP interfaces.

show ip interface [*name* / **vlan** *vlan id* / **dhcp-client**]

Syntax Definitions

<i>name</i>	The name associated with the IP interface.
<i>vlan_id</i>	VLAN ID (displays a list of IP interfaces associated with the VLAN).
dhcp-client	Displays the configuration and status of the DHCP-Client interface.

Defaults

By default, all IP interfaces are displayed.

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- The basic **show ip interface** command displays information about all configured IP interfaces on the switch.
- Use the optional **vlan** parameter to display the list of interfaces configured for the specified VLAN.
- Specify an optional interface *name* to display detailed information about an individual interface.

Examples

```
-> show ip interface
Total 13 interfaces
```

Name	IP Address	Subnet Mask	Status	Forward	Device
EMP	172.22.16.115	255.255.255.0	UP	NO	EMP
GMRULE	40.1.1.1	255.255.255.0	DOWN	NO	vlan 40
Loopback	127.0.0.1	255.0.0.0	UP	NO	Loopback
dhcp-client	172.16.105.10	255.255.255.0	UP	NO	vlan 60
firewall	11.1.1.1	255.0.0.0	UP	YES	firewall 173
gbps	5.5.5.5	255.255.255.0	DOWN	NO	vlan 7
if222	30.1.5.1	255.0.0.0	UP	YES	vlan 222
ldap_client1	173.22.16.115	255.255.255.0	UP	YES	vlan 173
ldap_server1	174.22.16.115	255.255.255.0	UP	YES	vlan 174
radius_client3	110.1.1.101	255.255.255.0	UP	YES	vlan 30
vlan-2	0.0.0.0	0.0.0.0	DOWN	NO	unbound
vlan-23	23.23.23.1	255.255.255.0	UP	YES	vlan 23

output definitions

Name	Interface name. Generally, the name configured for the interface is specified (for example, Accounting). EMP refers to the Ethernet Management Port. Loopback refers to a loopback interface configured for testing.
IP Address	IP address of the interface. Configured through the ip interface command.
Subnet Mask	IP subnet mask for the interface IP address. Configured through the ip interface command.
Status	Interface status: <ul style="list-style-type: none"> • UP—Interface is ready to pass packets. • DOWN—Interface is down.
Forward	Indicates whether the interface is actively forwarding packets (YES or NO).
Device	The type of device bound to the interface: <ul style="list-style-type: none"> • unbound—No device is bound to the interface. • vlan—The VLAN ID that is bound to the interface. • EMP—The Ethernet Management Port is bound to the interface. • Loopback—A loopback interface is configured for testing. Configured through the ip interface command.

```
-> show ip interface Marketing
Interface Name = Marketing
SNMP Interface Index      = 13600007,
IP Address                 = 172.16.105.10,
Subnet Mask                = 255.255.0.0,
Broadcast Address         = 172.16.255.255,
Device                    = vlan 200,
Forwarding                 = disabled,
Administrative State       = enabled,
Operational State         = down,
Operational State Reason  = device-down,
Router MAC                 = 00:d0:95:6a:f4:5c,
Local Proxy ARP           = disabled,
Maximum Transfer Unit     = 1500,
```

```
-> show ip interface dhcp-client
Interface Name = dhcp-client
SNMP Interface Index      = 13600012,
IP Address                 = 172.16.105.10,
Subnet Mask                = 255.255.0.0,
Broadcast Address         = 172.16.255.255,
Device                    = vlan 60,
Encapsulation              = eth2,
Forwarding                 = disabled,
Administrative State       = enabled,
Operational State         = up,
Operational State Reason  = unbound,
Router MAC                 = 00:d0:95:6a:f4:55,
Local Proxy ARP           = disabled,
Maximum Transfer Unit     = 1500,
```

```

Primary (config/actual)      = yes/yes,
Vsi Accept Filter            = "alcatel.a4400.0"
DHCP-CLIENT Parameter Details
Client Status                = Active,
Server IP                    = 198.206.181.55,
Router Address                = N.A.,
Lease Time Remaining         = 2 Days 10 Hours 20 Min,
Option-60                    = Option60_example,
HostName                     = TechPubs,
Time Zone                    = 0

```

output definitions

SNMP Interface Index	Interface index.
IP Address	IP address associated with the interface. Configured through the ip interface command.
Subnet Mask	IP subnet mask for the interface. Configured through the ip interface command.
Broadcast Address	Broadcast address for the interface.
Device	The type of device bound to the interface: <ul style="list-style-type: none"> • unbound—No device is bound to the interface. • vlan—The VLAN ID that is bound to the interface. • EMP—The Ethernet Management Port is bound to the interface. • Loopback—A loopback interface is configured for testing. <p>Configured through the ip interface command.</p>
Forwarding	Indicates whether IP forwarding is active for the interface (enabled or disabled). Configured through the ip interface command.
Administrative State	Administrative state of the IP interface (enabled or disabled), which is independent of the state of the underlying device. Configured through the ip interface command.
Operational State	Indicates whether the interface is active (up or down).
Operation State Reason	Indicates why the operational state of the interface is down: <ul style="list-style-type: none"> • unbound—No device is bound to the interface. • device-down—Device bound to the interface is down. • admin-down—The admin state of the interface is down. • no-such-device—Device does not exist. • no-router-mac—No MAC address available for the interface. • tunnel-src-invalid—Tunnel source IP address is invalid. • tunnel-dst-unreachable—Tunnel destination IP address is not reachable. <p>Note: The Operational State Reason field is only included in the display output when the operational state of the interface is down.</p>
Router MAC	Switch MAC address assigned to the interface. Note: Each interface assigned to the same VLAN will share the same switch MAC address.
Local Proxy ARP	Indicates whether Local Proxy ARP is active for the interface (enabled or disabled). Configured through the ip interface command.
Maximum Transfer Unit	The Maximum Transmission Unit size set for the interface. Configured through the ip interface command.
DHCP-CLIENT Parameter Details	(The following parameters are only applicable to the 'dhcp-client' interface)

output definitions (continued)

Client Status	DHCP Client Status (In-active, Active)
Server IP	The IP address of the DHCP server.
Lease Time Remaining	The lease time remaining for the DHCP client IP address.
Option-60	The option-60 string that shall be included in DHCP discover or request packets.
HostName	The system name of the OmniSwitch.

The following are examples of the output display on OmniSwitch stackable and chassis-based switches:

```
-> show ip interface ipip-1
Interface Name = ipip-1
  SNMP Interface Index      = 13600001,
  IP Address                = 25.25.25.1,
  Subnet Mask               = 255.255.255.0,
  Device                   = IPIP Tunnel,
  Tunnel Source Address     = 23.23.23.1
  Tunnel Destination Address = 23.23.23.2,
  Forwarding                = enabled,
  Administrative State     = enabled,
  Operational State        = up,
  Maximum Transfer Unit    = 1480,
```

output definitions

SNMP Interface Index	Interface index.
IP Address	IP address associated with the interface. Configured through the ip interface command.
Subnet Mask	IP subnet mask for the interface. Configured through the ip interface command.
Device	The type of device bound to the interface: <ul style="list-style-type: none"> • unbound—No device is bound to the interface. • vlan—The VLAN ID that is bound to the interface. • EMP—The Ethernet Management Port is bound to the interface. • Loopback—A loopback interface is configured for testing. Configured through the ip interface command.
Tunnel Source Address	The source IP address for the tunnel.
Tunnel Destination Address	The destination IP address for the tunnel.
Forwarding	Indicates whether IP forwarding is active for the interface (enabled or disabled). Configured through the ip interface command.
Administrative State	Administrative state of the IP interface (enabled or disabled), which is independent of the state of the underlying device. Configured through the ip interface command.
Operational State	Indicates whether the interface is active (up or down).

output definitions (continued)

Operational State Reason	<p>Indicates why the operational state of the interface is down:</p> <ul style="list-style-type: none"> • interface-up—The admin state of the interface is up. • unbound—No device is bound to the interface. • device-down—Device bound to the interface is down. • admin-down—The admin state of the interface is down. • no-such-device—Device does not exist. • no-router-mac—No MAC address available for the interface. • tunnel-src-invalid—Tunnel source IP address is invalid. • tunnel-dst-unreachable—Tunnel destination IP address is not reachable. <p>Note: This field is only included in the display output when the operational state of the interface is down.</p>
Maximum Transfer Unit	<p>The Maximum Transmission Unit size set for the interface. Configured through the ip interface command.</p>

Release History

Release 6.6.1; command was introduced.

Release 6.6.2; DHCP Client options added.

Release 6.6.4; Vsi Accept Filter field added in output.

Related Commands

ip interface	Configures an IP interface to enable IP routing on a VLAN. Without an IP interface, traffic is bridged within the VLAN or across connections to the same VLAN on other switches.
ip interface dhcp-client	Configures a DHCP client IP interface that is to be assigned an IP address from a DHCP server.
show icmp statistics	Displays ICMP statistics and errors.

MIB Objects

```

alaIpInterfaceTable
  alaIpInterfaceName
  alaIpInterfaceAddress
  alaIpInterfaceMask
  alaIpInterfaceAdminState
  alaIpInterfaceDeviceType
  alaIpInterfaceVlanID
  alaIpInterfaceIpForward
  alaIpInterfaceEncap
  alaIpInterfaceLocalProxyArp
  alaIpInterfacePrimCfg
  alaIpInterfaceDhcpVsiAcceptFilterString
  alaIpInterfaceOperState
  alaIpInterfaceOperReason
  alaIpInterfaceRouterMac
  alaIpInterfaceBcastAddr
  alaIpInterfacePrimAct
  alaIpInterfaceMtu
  alaIpInterfaceTunnelSrc
  alaIpInterfaceTunnelDst

```

show ip interface cvlan

Displays the SVLAN to CVLAN mapped interfaces..

show ip interface cvlan

Syntax Definitions

N/A

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

N/A

Examples

```
-> show ip interface cvlan
```

Name	IP	Address	Subnet	Mask	Status	Forward	Device	CVLAN
v10		10.10.10.2		255.255.255.0	UP	YES	vlan 1000	10

Release History

Release 6.6.5; command introduced.

Related Commands

[Ip interface cvlan](#)

Configures the SVLAN interface using which the SVLAN can be mapped to the CVLAN.

MIB Objects

N/A

show ip managed-interface

Displays the application name and the corresponding interface name.

show ip managed-interface

Syntax Definitions

N/A.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

Use this command to view the interface name used by the application.

Examples

```
-> show ip managed-interface
Application      Interface-Name
-----+-----
tacacs          -
sflow           -
ntp             Loopback0
syslog          -
dns             -
telnet          management
ssh             -
tftp            -
ldap-server     -
radius          -
snmp            -
ftp             -
```

Release History

Release 6.6.1; command introduced.

Related Commands

ip managed-interface

Specifies the source IP address for the outgoing packets that are sent by the applications.

MIB Objects

```
alaIpManagedIntfTable
  AlaIpManagedIntfAppIndex
  alaIpManagedIntfEntry
  alaIpManagedIntfName
  alaIpManagedRowStatus
```

show ip route

Displays the IP Forwarding table.

show ip route [summary]

Syntax Definitions

summary Displays a summary of routing protocols that appear in the IP Forwarding table.

Defaults

By default, all routes are displayed.

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- The IP Forwarding table includes static routes as well as all routes learned through routing protocols (for example, RIP).
- Use the optional **summary** keyword to display a list of routing protocols and the number of routes for each protocol that appear in the IP Forwarding table.

Examples

```
-> show ip route
```

```
+ = Equal cost multipath routes
```

```
Total 4 routes
```

Dest Address	Subnet Mask	Gateway Addr	Age	Protocol
0.0.0.0	0.0.0.0	10.255.11.254	01:50:33	NETMGMT
10.255.11.0	255.255.255.0	10.255.11.225	01:50:33	LOCAL
127.0.0.1	255.255.255.255	127.0.0.1	01:51:47	LOCAL
212.109.138.0	255.255.255.0	212.109.138.138	00:33:07	LOCAL

```
-> show ip route summary
```

Protocol	Route Count
All	4
Local	3
Netmgmt	1
RIP	0
Other	0

output definitions

Dest Addr	Destination IP address.
Subnet Mask	Destination IP address IP subnet mask.
Gateway Addr	IP address of the gateway from which this address was learned.
Age	Age of the entry. If the entry is less than a day old, it is displayed in <i>hh/mm/ss</i> format. If it is more than a day old, it is displayed in <i>dd/hh</i> format (for example, a route that is 2 days and 12 hours old is displayed as 2d12h).
Protocol	Protocol by which this IP address was learned (for example, RIP). NETMGT indicates a static route. LOCAL indicates a local interface.
Route Count	The number of routes that appear in the IP Forwarding table for each protocol type listed.

Release History

Release 6.6.1; command introduced.

Related Commands

ping	Used to test whether an IP destination can be reached from the local switch.
traceroute	Used to find the path taken by an IP packet from the local switch to a specified destination.
show ip route	Displays a list of all routes (static and dynamic) that exist in the IP router database.

MIB Object

N/A

show ip route-pref

Displays the IPv4 routing preferences of a router.

show ip route-pref

Syntax Definitions

N/A

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

N/A

Examples

```
-> show ip route-pref
  Protocol      Route Preference Value
-----+-----
  Local         1
  Static        2
```

Release History

Release 6.6.1; command introduced.

Related Commands

ip route-pref Configures the route preference of a router.

MIB Objects

```
alaIprmRtPrefTable
  alaIprmRtPrefLocal
  alaIprmRtPrefStatic
  alaIprmRtPrefRip
```

show ip redistrib

Displays the IPv4 route map redistribution configuration.

show ipv6 redistrib [rip]

Syntax Definitions

rip Displays route map redistribution configurations that use RIP as the destination (into) protocol.

Defaults

By default all route map redistribution configurations are shown.

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

Specify a destination protocol with this command to display only the configurations that redistribute routes into the specified protocol.

Release History

Release 6.6.1; command introduced.

Examples

```
-> show ip redistrib
```

Source Protocol	Destination Protocol	Status	Route Map
RIP	Static	Enabled	ipv4rm

```
-> show ip redistrib rip
```

Source Protocol	Destination Protocol	Status	Route Map
Static	RIP	Enabled	ipv4rm

output definitions

Source Protocol	The protocol from which the routes are learned.
Destination Protocol	The protocol into which the source protocol routes are redistributed.

output definitions

Status	The administrative status (Enabled or Disabled) of the route map redistribution configuration.
Route Map	The name of the route map that is applied with this redistribution configuration.

Related Commands

ip redistrib	Controls the conditions for redistributing different IPv6 routes between protocols.
---------------------	---

MIB Objects

```
alaRouteMapRedistProtoTable  
  alaRouteMapRedistSrcProtoId  
  alaRouteMapRedistDestProtoId  
  alaRouteMapRedistRouteMapIndex  
  alaRouteMapRedistStatus  
  alaRouteMapRedistAddressType  
  alaRouteMapRedistRowStatus
```

show ip access-list

Displays the details of the access list.

show ip access-list [*access-list-name*]

Syntax Definitions

access-list-name Name of the access list.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

If the *access-list-name* is not specified in this command, all the access lists are displayed.

Examples

```
-> show ip access-list
```

Name	Address / Prefix Length	Effect	Redistribution Control
al_3	10.0.0.0/8	permit	all-subnets
al_3	11.0.0.0/8	permit	all-subnets
al_4	1.0.0.0/8	permit	no-subnets
al_4	10.0.0.0/8	permit	all-subnets

```
-> show ip access-list al_4
```

Name	Address / Prefix Length	Effect	Redistribution Control
al_4	1.0.0.0/8	permit	no-subnets
al_4	10.0.0.0/8	permit	all-subnets

output definitions

Name	Name of the access list.
Address/Prefix Length	IP address that belongs to the access list.
Effect	Indicates whether the IP address is permitted or denied for redistribution.
Redistribution Control	Indicates the conditions specified for redistributing the matched routes.

Release History

Release 6.6.1; command introduced

Related Commands

- | | |
|--|--|
| ip access-list | Creates an access list for adding multiple IPv4 addresses to route maps. |
| ip access-list address | Adds multiple IPv4 addresses to the access list. |

MIB objects

```
alaRouteMapAccessListIndex  
alaRouteMapAccessListAddressType  
alaRouteMapAccessListAddress  
alaRouteMapAccessListPrefixLength  
alaRouteMapAccessListAction  
alaRouteMapAccessListRedistControl
```

show ip route-map

Displays the IP route maps configured on the switch.

```
show ip route-map [route-map-name]
```

Syntax Definitions

route-map-name The name of the specific route map.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

If the *route-map-name* is not specified in this command, all the route maps are displayed.

Examples

```
-> show ip route-map
Route Maps: configured: 1 max: 200
Route Map: Route_map1 Sequence Number: 50 Action permit
  match ip address 10.0.0.0/8 redistrib-control all-subnets permit
  set metric 100 effect replace
```

Release History

Release 6.6.1; command introduced.

Related Commands

ip route-map action	Creates a route map for redistribution and sets the status of route map to permit or deny.
ip route-map match ip address	Matches the route with the specified IPv4 address or with addresses contained in an IPv4 access list specified by the access list name.
ip route-map match ipv6 address	Matches the route with the specified IPv6 address or with addresses contained in an IPv6 access list specified by the access list name.
ip route-map match ip-nexthop	Matches the routes that have a next-hop router address permitted by the specified access list.
ip route-map match ipv6-nexthop	Matches the routes that have an IPv6 next-hop router address permitted by the specified access list.
ip route-map match tag	Permits or denies a route based on the specified next-hop IP address.
ip route-map match tag	Matches the tag value specified in the route map with the one that the routing protocol learned the route on.
ip route-map match metric	Matches the metric value specified in the route map with the one that the routing protocol learned the route on.

MIB Objects

```
alaRouteMapRedistProtoTable
  alaRouteMapRedistRouteMapIndex
alaRouteMapTable
  alaRouteMapIndex
  alaRouteMapSequence
  alaRouteMapType
  alaRouteMapValue
  alaRouteMapRowStatus
```

show ip router database

Displays a list of all routes (static and dynamic) that exist in the IP router database. This database serves as a central repository where routes are first processed for redistribution and where duplicate routes are compared to determine the best route to use. If a route does not appear in the IP router database list, then the switch does not know about it. In the case of dynamically learned routes, this could indicate that the route was never received by the switch.

```
show ip router database [protocol type / gateway ip_address / dest {ip_address/prefixLen | ip_address}]
```

Syntax Definitions

<i>type</i>	Routing protocol type (local, static, or RIP).
<i>ip_address</i>	Destination IP address.
<i>ip_address/prefixLen</i>	The destination IP address along with the prefix length of the routes processed for redistribution.

Defaults

By default, all routes are displayed.

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Command options are not mutually exclusive. You can use them on the same command line to narrow and/or customize the output display of this command. For example, use the **protocol** and **dest** options to display only the routes that are of a specific protocol type and have the specified destination network.
- The IP forwarding table is derived from IP router database processing performed by the switch and contains only unique routes that the switch currently uses. Use the **show ip route** command to view the forwarding table.
- If an expected route does not appear in the IP forwarding table, use the **show ip router database** command to see if the switch knows about the route and/or if a duplicate route with a higher precedence was selected instead.
- The switch compares the protocol of duplicate routes to determine which one to use. Regardless of whether a route has a higher priority metric value, the protocol determines precedence. Local routes are given the highest level of precedence followed by static, then RIP routes. As a result, a route that is known to the switch may not appear in the IP forwarding table if a duplicate route with a higher protocol precedence exists.
- A list of inactive static routes is also included in the **show ip router database** output display. A route becomes inactive if the interface for its gateway goes down. Inactive routes are unable to get to their destination and further investigation is warranted to determine why their gateway is unavailable.
- Static routes that appear as inactive are not included in the main IP router database listing. If an inactive route becomes active, however, it is removed from the inactive list and added to the active route list.

Examples

-> show ip router database

Destination	Gateway	Protocol	Metric	VLAN
10.212.59.0/24	10.212.59.17	LOCAL	1	45
10.212.60.0/24	10.212.60.17	LOCAL	1	44
10.212.61.0/24	10.212.61.17	LOCAL	1	43
10.212.66.0/24	10.212.66.17	LOCAL	1	46
143.209.92.0/24	172.28.6.254	STATIC	1	N/A
172.28.6.0/24	172.28.6.2	LOCAL	1	6

Inactive Static Routes

Destination	Gateway	Metric
1.0.0.0/8	8.4.5.3	1

output definitions

Destination	Destination IP address. Also includes the mask prefix length notation after the address to indicate the subnet mask value. For example, /24 indicates the destination IP address has a 24-bit mask (255.255.255.0).
Gateway	IP address of the gateway from which this route was learned.
Protocol	Protocol by which this IP address was learned: LOCAL, STATIC, RIP).
Metric	RIP metric or cost (hop count) for the route. Indicates a priority for the route. The lower the metric value, the higher the priority.
VLAN	The VLAN on which the route was <i>learned</i> , not forwarded. Note. N/A appears in this field for static routes as they are not learned on a VLAN.

Release History

Release 6.6.1; command introduced.

Related Commands

[show ip route](#) Displays the IP Forwarding table.

MIB Object

N/A

show ip config

Displays IP configuration parameters.

show ip config

Syntax Definitions

N/A

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

N/A

Examples

```
-> show ip config
IP directed-broadcast = OFF,
IP default TTL       = 64
```

output definitions

IP directed-broadcast	Indicates whether the IP directed-broadcast feature is on or off.
IP default TTL	IP default TTL interval.

Release History

Release 6.6.1; command introduced.

Related Commands

- ip directed-broadcast** Enables or disables IP directed broadcasts routed through the switch.
- ip default-ttl** Sets TTL value for IP packets.
-

show ip protocols

Displays switch routing protocol information and status.

show ip protocols

Syntax Definitions

N/A

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

This command also displays the switch primary IP address and router ID, if configured, and debug information.

Examples

```
-> show ip protocols
Router ID           = 10.255.11.243,
Primary addr       = 10.255.11.243,

RIP status         = Not Loaded,

Debug level        = 1,
Debug sections     = error,
```

output definitions

Router ID	The set routing ID. The router ID is how the router is identified in IP.
Primary addr	The primary interface address the route uses.
RIP status	Whether RIP is loaded or not.
Debug level	What the current router debug level is.
Debug sections	What types of debugging information are being tracked.

Release History

Release 6.6.1; command introduced.

Related Commands

- ip router primary-address** Configures the router primary IP address.
ip router router-id Configures the router ID for the router.

MIB Objects

alaIpRouteSumTable
 alaIpRouteProtocol

show ip service

Displays the current status of TCP/UDP service ports.

show ip service

Syntax Definitions

N/A

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

The display output from this command also includes the service port number.

Examples

```
-> show ip service
```

Name	Port	Status
ftp	21	enabled
ssh	22	disabled
telnet	23	disabled
udp-relay	67	disabled
http	80	disabled
network-time	123	disabled
snmp	161	disabled
secure_http	443	enabled

output definitions

Name	Name of the TCP/UDP service.
Port	The TCP/UDP well-known port number associated with the service.
Status	The status of the well-known service port: enabled (port is closed) or disabled (port is open).

Release History

Release 6.6.1; command introduced.

Related Commands

ip service

Enables (opens) or disables (closes) well-known TCP/UDP service ports.

MIB Objects

```
alaIpServiceTable
  alaIpServiceType
  alaIpServicePort
  alaIpServiceStatus
alaIpPortServiceTable
  alaIpPortServicePort
  alaIpPortServiceStatus
```

show arp

Displays the ARP table. The ARP table contains a listing of IP addresses and their corresponding translations to physical MAC addresses.

show arp [*ip_address* | *hardware_address*]

Syntax Definitions

ip_address IP address of the entry you want to view.
hardware_address MAC address of the entry you want to view.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

Use the basic command (**show arp**) to view all of the entries in the table. Enter a specific IP address or MAC address to view a specific entry.

Examples

```
-> show arp
Total 8 arp entries
Flags (P=Proxy)
```

IP Addr	Hardware Addr	Type	Flags	Port	Interface	Name
10.255.11.59	00:50:04:b2:c9:ee	DYNAMIC		3/20	vlan 1	
10.255.11.48	00:50:04:b2:ca:11	DYNAMIC		3/20	vlan 1	
10.255.11.201	00:10:83:03:e7:e4	DYNAMIC		3/20	vlan 1	
10.255.11.14	00:10:5a:04:19:a7	DYNAMIC		3/20	vlan 1	
10.255.11.64	00:b0:d0:62:fa:f1	DYNAMIC		3/20	vlan 1	
10.255.11.25	00:b0:d0:42:80:24	DYNAMIC		3/20	vlan 1	
10.255.11.26	00:b0:d0:42:82:59	DYNAMIC		3/20	vlan 1	
10.255.11.254	11:50:04:11:11:11	STATIC		3/20	vlan 1	demoarp

output definitions

IP Address	Device IP address.
Hardware Addr	MAC address of the device that corresponds to the IP address.
Type	Indicates whether the ARP cache entries are dynamic or static.
Flags	Indicates the type of entry: <ul style="list-style-type: none"> • P = Proxy
Port	The port on the switch attached to the device identified by the IP address.

output definitions (continued)

Interface	The interface to which the entry belongs (for example, VLAN, EMP).
Name	User configured name of static arp entry.

Release History

Release 6.6.3; command introduced.

Related Commands

ip service	Adds a permanent entry to the ARP table.
clear arp-cache	Deletes all dynamic entries from the ARP table.

MIB Objects

```
ipNetToMediaTable
  ipNetToMediaIfIndex
  ipNetToMediaNetAddress
  ipNetToMediaPhyAddress
  ipNetToMediaType
ipNetToMediaAugTable
  ipNetToMediaSlot
  ipNetToMediaPort
alaIpNetToMediaTable
  alaIpNetToMediaPhyAddress
  alaIpNetToMediaProxy
  alaIpNetToMediaAuth
```

show ip dynamic-proxy-arp

Displays the dynamic proxy ARP table. The ARP table contains a listing of router IP addresses and their corresponding translations to physical MAC addresses.

show ip dynamic-proxy-arp

Syntax Definitions

N/A

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- OmniSwitch provides the proxy-arp functionality for the addresses contained in this table.
- Dynamic-proxy-arp is used in conjunction with the DHCP Snooping and Port Mapping features.

Examples

```
-> show ip dynamic-proxy-arp
```

Router IP Addr	Hardware Addr	VLAN	Interfaces
172.18.16.1	00:d0:95:3a:e8:08	10	1/1
172.18.16.100	00:1a:92:42:ac:63	20	3/2

output definitions

Router IP Addr	The IP address of the router.
Hardware Addr	The MAC address of the router.
VLAN	The VLAN the entry is learned on.
Interface	The interface the entry is learned on.

Release History

Release 6.6.3; command introduced.

Related Commands

port mapping dynamic-proxy-arp Enables or disables the dynamic proxy arp functionality on a port mapping session.

ip helper dhcp-snooping Enables or disables dhcp snooping.

MIB Objects

```
alaIpNetToMediaDpGroup
  alaIpNetToMediaDpaPhysAddress
  alaIpNetToMediaDpaIpType
  alaIpNetToMediaDpaIp
  alaIpNetToMediaDpaSlot
  alaIpNetToMediaDpaPort
```

show arp filter

Displays a list of ARP filters configured for the switch.

show arp filter [*ip_address*]

Syntax Definitions

ip_address IP address of the filter entry you want to view.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- If an IP address is not specified with this command, a list of all ARP filters is displayed.
- Enter a specific IP address to view the configuration for an individual filter.

Examples

```
-> show arp filter
  IP Addr      IP Mask          Vlan  Type      Mode
-----+-----+-----+-----+-----
171.11.1.1    255.255.255.255    0    target    block
172.0.0.0     255.0.0.0          0    target    block
198.0.0.0     255.0.0.0          0    sender    block
198.172.16.1  255.255.255.255   200   target    allow
```

```
-> show arp filter 198.172.16.1
  IP Addr      IP Mask          Vlan  Type      Mode
-----+-----+-----+-----+-----
198.0.0.0     255.0.0.0          0    sender    block
198.172.16.1  255.255.255.255   200   target    allow
```

output definitions

IP Addr	The ARP packet IP address to which the filter is applied.
IP Mask	The IP mask that specifies which part of the IP address to which the filter is applied.
Vlan	A VLAN ID. The filter is applied only to ARP packets received on ports associated with this VLAN.
Type	Indicates which IP address in the ARP packet (sender or target) is used to identify if a filter exists for that address.
Mode	Indicates whether to block or allow a switch response to an ARP packet that matches the filter.

Release History

Release 6.6.1; command introduced.

Related Commands

arp filter

Adds a permanent entry to the ARP table.

clear arp filter

Deletes all dynamic entries from the ARP table.

MIB Objects

alaIpArpFilterTable

 alaIpArpFilterIpAddr

 alaIpArpFilterIpMask

 alaIpArpFilterVlan

 alaIpArpFilterMode

 alaIpArpFilterType

show icmp control

Allows the viewing of the ICMP control settings.

show icmp control

Syntax Definitions

N/A

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

Use this command to view the status of the various ICMP messages. It is also useful to determine the type and code of the less common ICMP messages.

Examples

```
-> show icmp control
```

Name	Type	Code	Status	min-pkt-gap(us)
echo reply	0	0	enabled	0
network unreachable	3	0	enabled	0
host unreachable	3	1	enabled	0
protocal unreachable	3	2	enabled	0
port unreachable	3	3	enabled	0
frag needed but DF bit set	3	4	enabled	0
source route failed	3	5	enabled	0
destination network unknown	3	6	enabled	0
destination host unknown	3	7	enabled	0
source host isolated	3	8	enabled	0
dest network admin prohibited	3	9	enabled	0
host admin prohibited by filter	3	10	enabled	0
network unreachable for TOS	3	11	enabled	0
host unreachable for TOS	3	12	enabled	0
source quench	4	0	enabled	0
redirect for network	5	0	enabled	0
redirect for host	5	1	enabled	0
redirect for TOS and network	5	2	enabled	0
redirect for TOS and host	5	3	enabled	0
echo request	8	0	enabled	0
router advertisement	9	0	enabled	0
router solicitation	10	0	enabled	0
time exceeded during transmit	11	0	enabled	0
time exceeded during reassembly	11	1	enabled	0
ip header bad	12	0	enabled	0
required option missing	12	1	enabled	0

timestamp request	13	0	enabled	0
timestamp reply	14	0	enabled	0
information request(obsolete)	15	0	enabled	0
information reply(obsolete)	16	0	enabled	0
address mask request	17	0	enabled	0
address mask reply	18	0	enabled	0

output definitions

Name	The name of the ICMP message.
Type	The ICMP message type. The type value along with the ICMP code specify the variety of ICMP message.
Code	The ICMP message code. The code value along with the ICMP type specify the variety of ICMP message.
Status	Whether this message is Enabled or Disabled .
min-pkt-gap	The minimum packet gap, in microseconds, for this ICMP message. The minimum packet gap is the amount of time that must pass between ICMP messages of like types.

Release History

Release 6.6.1; command introduced.

Related Commands

icmp type	Enables or disables a specific type of ICMP message, and sets the minimum packet gap.
icmp unreachable	Enables or disables ICMP messages pertaining to unreachable destinations, and sets the minimum packet gap.
icmp echo	Enables or disables ICMP echo messages, and sets the minimum packet gap.
icmp timestamp	Enables or disables ICMP timestamp messages, and sets the minimum packet gap.
icmp addr-mask	Enables or disables ICMP address mask messages, and sets the minimum packet gap.
icmp messages	Enables or disables all ICMP messages.

show icmp statistics

Displays Internet Control Message Protocol (ICMP) statistics and errors. ICMP is a network layer protocol within the IP protocol suite that provides message packets to report errors and other IP packet processing information back to the source. ICMP generates several kinds of useful messages, including Destination Unreachable, Echo Request and Reply, Redirect, Time Exceeded, and Router Advertisement and Solicitation.

show icmp [statistics]

Syntax Definitions

statistics Optional syntax.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Use the ICMP Table to monitor and troubleshoot the switch.
- If an ICMP message cannot be delivered, a second message is not generated. This is to avoid an endless flood of ICMP messages.

Examples

```
-> show icmp
Messages
```

	Received	Sent
Total	2105	2105
Error	0	0
Destination unreachable	0	0
Time exceeded	0	0
Parameter problem	0	0
Source quench	0	0
Redirect	0	0
Echo request	2105	0
Echo reply	0	2105
Time stamp request	0	0
Time stamp reply	0	0
Address mask request	0	0
Address mask reply	0	0

output definitions

Total	Total number of ICMP messages the switch received or attempted to send. This counter counts all the messages.
Error	Number of ICMP messages the switch sent/received but was unable to process because of ICMP-specific errors (for example, bad ICMP checksums, bad length).

output definitions (continued)

Destination unreachable	Number of “destination unreachable” messages that were sent/received by the switch.
Time exceeded	Number of “time exceeded” messages that were sent/received by the switch. These messages are generated when a packet is dropped and the TTL counter reaches zero. When a large number of Time exceeded messages occur, it implies that the packets are looping and the congestion is severe, or that the TTL counter value is set too low. These messages also occur when all the fragments trying to be reassembled do not arrive before the reassembly timer expires.
Parameter problem	Number of messages sent/received which indicate that an illegal value has been detected in a header field. These messages can indicate a problem in the sending host IP software or possibly the gateway software.
Source quench	Number of messages sent/received that tell a host that it is sending too many packets. A host must attempt to reduce its transmissions upon receiving these messages.
Redirect	Number of ICMP redirect messages sent/received by the switch.
Echo request	Number of ICMP echo messages sent/received by the switch to see if a destination is active and unreachable.
Echo reply	Number of echo reply messages received by the switch.
Time stamp request	Number of time stamp request messages sent/received by the switch.
Time stamp reply	Number of time stamp reply messages sent/received by the switch.
Address mask request	Number of address mask request messages that were sent/received by the switch in an attempt to determine the subnet mask for the network.
Address mask reply	Number of address mask reply messages that were sent/received by the switch.

Release History

Release 6.6.1; command introduced.

Related Commands

[show udp statistics](#) Displays UDP errors and statistics.

MIB Object

N/A

show twamp server info

Displays the configuration details of the TWAMP server on the switch.

show twamp server info

Syntax Definitions

N/A

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6450

Usage Guidelines

This command displays TWAMP server information only if TWAMP server is configured on the switch, else an error message is displayed.

Examples

```
-> show twamp server info
TWAMP Server
Port: 30333
Inactivity timeout: 20 mins
Allowed-Client: 172.16.1.1/16
```

output definitions

Port	Displays the TCP port on which the server is listening.
Inactivity timeout	Displays the time to wait in minutes if no packet associated with the connection is received.
Allowed-Client	Displays the client IP or range and mask which shall be allowed to establish connection with the server.

```
-> show twamp server info
ERROR: No Twamp server configured
```

Release History

Release 6.7.1 R02; command introduced.

Related Commands

twamp server

Configures a TWAMP server on the switch.

MIB Object

```
twampServerTableEntry  
  twampPortNumber  
  twampInactivityTimeout  
  twampClientIpAddress
```

show twamp server connections

Displays the TWAMP client connections established with the TWAMP server on the switch at a given point of time. The TWAMP connections can also be viewed for a specific client.

show twamp server connections [**client** *ipv4-address*]

Syntax Definitions

client Specify the TWAMP client IP to view the specific client session details for that client.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6450

Usage Guidelines

- To view the TWAMP client connections for a specific client, specify the client IP address. The information is displayed if the connection exists.
- The client connections are displayed only for the established sessions. Other intermediate connection status for greeting sent and setup response is not displayed in the CLI output.
- The statistics details for the established connections is updated every two minutes.
- The statistics for maximum of 128 test sessions after the timeout value from the client side is updated with the connection status as "ENDED".

Examples

```
-> show twamp server connections client 200.200.1.1
Client IP   Conn Status   Time of Last Run   Pkts Sent   Pkts Received   Session Identifier
-----
200.200.1.1 SETUP_DONE   THU OCT 08 2015   19:39:13 10             10             2eb0b7b6a5c405df
200.200.1.1 SETUP_DONE   THU OCT 08 2015   19:39:13 10             10             2eb0b7b6fe7fb742
```

output definitions

Client IP	Displays the IP address of the TWAMP client connected to the TWAMP server.
Conn Status	Displays the connection status of the TWAMP client. The connection status is displayed as SETUP_DONE when the control connection is established and the test sessions are started. Other intermediate connection status for greeting sent and setup response is not displayed.
Time of Last Run	Displays the time details of the TWAMP client session when it was last run.
Pkts Sent	Displays the number of packets sent during the TWAMP client session.

output definitions

Pkts Received	Displays the number of packets received during the TWAMP client session.
Session Identifier	Displays the session ID for the TWAMP client session.

Release History

Release 6.7.1 R02; command introduced.

Related Commands

twamp server	Configures a TWAMP server on the switch.
show twamp server info	Displays the configuration details of the TWAMP server on the switch.

MIB Object

```
twampServerConnectionTable
  twampServerConnClientIP
  twampServerConnSessionId
  twampServerConnTimeOfLastRun
  twampServerConnPktsSent
  twampServerConnPktsRecvd
  twampServerConnectionStatus
```

show tcp statistics

Displays TCP statistics.

show tcp statistics

Syntax Definitions

N/A

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

N/A

Examples

```
-> show tcp statistics
Total segments received = 235080,
Error segments received = 0,
Total segments sent = 363218,
Segments retransmitted = 38,
Reset segments sent = 97,
Connections initiated = 57185,
Connections accepted = 412,
Connections established = 1,
Attempt fails = 24393,
Established resets = 221
```

output definitions

Total segments received	Total number of segments received, including the segments received in error. This count includes segments received on currently established connections.
Error segments received	Total number of segments received in error (for example, bad TCP checksums).
Total segments sent	Total number of segments sent, including the segments available on current connections but excluding those containing only retransmitted octets.
Segments retransmitted	Number of TCP segments transmitted containing one or more previously transmitted octets.
Reset segments sent	Number of TCP segments containing the reset flag.
Connections initiated	Number of connections attempted.
Connections accepted	Number of connections allowed.
Connections established	Number of successful connections.

output definitions (continued)

Attempt fails	Number of times attempted TCP connections have failed.
Established resets	Number of times the TCP connections have been reset from the "Established" or "Close Wait" state to the "Closed" state.

Release History

Release 6.6.1; command introduced.

Related Commands

show icmp statistics	Displays ICMP statistics and errors.
show tcp ports	Displays the TCP connection table.

MIB Object

N/A

show tcp ports

Displays the TCP connection table.

show tcp ports

Syntax Definitions

N/A

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

Use this table to check the current available TCP connections.

Examples

-> show tcp ports

Local Address	Local Port	Remote Address	Remote Port	State
0.0.0.0	21	0.0.0.0	0	LISTEN
0.0.0.0	23	0.0.0.0	0	LISTEN
0.0.0.0	80	0.0.0.0	0	LISTEN
0.0.0.0	260	0.0.0.0	0	LISTEN
0.0.0.0	261	0.0.0.0	0	LISTEN
0.0.0.0	443	0.0.0.0	0	LISTEN
0.0.0.0	6778	0.0.0.0	0	LISTEN
10.255.11.223	23	128.251.16.224	1867	ESTABLISHED
10.255.11.223	2509	10.255.11.33	389	TIME-WAIT
10.255.11.223	2510	10.255.11.25	389	TIME-WAIT
10.255.11.223	2513	10.255.11.33	389	TIME-WAIT
10.255.11.223	2514	10.255.11.25	389	TIME-WAIT
10.255.11.223	2517	10.255.11.33	389	TIME-WAIT
10.255.11.223	2518	10.255.11.25	389	TIME-WAIT
10.255.11.223	2521	10.255.11.33	389	TIME-WAIT
10.255.11.223	2522	10.255.11.25	389	TIME-WAIT
10.255.11.223	2525	10.255.11.33	389	TIME-WAIT
10.255.11.223	2526	10.255.11.25	389	TIME-WAIT
10.255.11.223	2529	10.255.11.33	389	TIME-WAIT
10.255.11.223	2530	10.255.11.25	389	TIME-WAIT

output definitions

Local Address	Local IP address for this TCP connection. If a connection is in the LISTEN state and accepts connections for any IP interface associated with the node, IP address 0.0.0.0 is used.
Local Port	Local port number for this TCP connection. The range is 0–65535.
Remote Address	Remote IP address for this TCP connection.

output definitions (continued)

Remote Port

Remote port number for this TCP connection. The range is 0–65535.

State

State of the TCP connection, as defined in RFC 793. A connection progresses through a series of states during its lifetime:

- Listen—Waiting for a connection request from any remote TCP and port.
 - Syn Sent—Waiting for a matching connection request after having sent a connection request.
 - Syn Received—Waiting for a confirming connection request acknowledgment after having both received and sent a connection request.
 - Established—Open connection. Data received can be delivered to the user. This is the normal state for the data transfer phase of the connection.
 - Fin Wait 1—Waiting for a connection termination request from the remote TCP, or an acknowledgment of the connection termination request previously sent.
 - Fin Wait 2—Waiting for a connection termination request from the remote TCP.
 - Close Wait—Waiting for a connection termination request from the local user.
 - Closing—Waiting for a connection termination request acknowledgment from the remote TCP.
 - Last Ack—Waiting for an acknowledgment of the connection termination request previously sent to the remote TCP (which includes an acknowledgment of its connection termination request).
 - Time Wait—Waiting for enough time to pass to be sure the remote TCP received the acknowledgment of its connection termination request.
 - Closed—No connection state.
-

Release History

Release 6.6.1; command introduced.

Related Commands

[show ip interface](#)

Displays the status and configuration of IP interfaces.

[show twamp server info](#)

Displays TCP statistics.

MIB Object

N/A

show udp statistics

Displays UDP errors and statistics.

show udp statistics

Syntax Definitions

N/A

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

This command displays cumulative statistics since the last time the switch was powered on or since the last reset of the switch.

Examples

```
-> show udp statistics
Total datagrams received = 214937,
Error datagrams received = 0,
No port datagrams received = 32891,
Total datagrams sent = 211884
```

output definitions

Total datagrams received	Total number of UDP datagrams delivered to UDP applications.
Error datagrams received	Number of UDP datagrams that could not be delivered for any reason.
No port datagrams received	Number of UDP datagrams that could not be delivered for reasons other than lack of application at the destination.
Total datagrams sent	Total number of UDP datagrams sent from this switch.

Release History

Release 6.6.1; command introduced.

Related Commands

[show udp ports](#) Displays the UDP Listener table.

MIB Object

N/A

show udp ports

Displays the UDP Listener table. The table shows the local IP addresses and the local port number for each UDP listener.

show udp ports

Syntax Definitions

N/A

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- An IP address of zero (0.0.0.0) indicates that it is listening on all interfaces.
- This table contains information about the UDP end-points on which a local application is currently accepting datagrams.

Examples

```
-> show udp port
Local Address      Local Port
-----+-----
 0.0.0.0           67
 0.0.0.0           161
 0.0.0.0           520
```

output definitions

Local Address	Local IP address for this UDP connection.
Local Port	Local port number for this UDP connection.

Release History

Release 6.6.1; command introduced.

Related Commands

[show udp statistics](#) Displays UDP errors and statistics.

MIB Object

N/A

show ip dos config

Displays the configuration parameters of the DoS scan for the switch.

show ip dos config

Syntax Definitions

N/A

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

This command allows the user to view the configuration parameters of the DoS scan. The scan keeps a record of the penalties incurred by certain types of packets on TCP and UDP ports. When the set penalty threshold is reached, it is assumed a DoS attack is in progress, and a trap is generated to inform the system administrator.

Examples

```
-> show ip dos config
```

Dos type	Status
-----+-----	
port scan	ENABLED
tcp sync flood	ENABLED
ping of death	ENABLED
smurf	ENABLED
pepsi	ENABLED
land	ENABLED
teardrop/bonk/boink	ENABLED
loopback-src	ENABLED
invalid-ip	ENABLED
invalid-multicast	ENABLED
unicast dest-ip/multicast-mac	ENABLED
ping overload	DISABLED
arp flood	ENABLED
arp poison	ENABLED
DoS trap generation	= ENABLED,
DoS port scan threshold	= 1000,
DoS port scan decay	= 2,
DoS port scan close port penalty	= 10,
DoS port scan TCP open port penalty	= 0,
DoS port scan UDP open port penalty	= 0,
Dos MAXimum Ping Rate	= 100
Dos Maximum ARP Request Rate	= 500

output definitions

DoS trap generation	Displays the status of DoS trap generation. It is either ENABLED or DISABLED . This value is set using the ip dos trap command.
DoS port scan threshold	The penalty threshold setting. When enough packets have increased the penalty number to this setting, a trap is generated to warn the administrator that a DoS attack is in progress. This is set using the ip dos scan threshold command.
DoS port scan decay	The decay value for the switch. The penalty value of the switch is decreased by this number every minute. This value is set using the ip dos scan decay command.
DoS port scan close port penalty	The penalty value for packets received on closed UDP and TCP ports. The penalty number for the switch is increased by this amount every time a packet is received on a closed UDP or TCP port. This is set using the twamp server command.
DoS port scan TCP open port penalty	The penalty value for packets received on open TCP ports. The penalty number for the switch is increased by this amount every time a packet is received on an open TCP port. This value is set using the ip dos scan tcp open-port-penalty command.
DoS port scan UDP open port penalty	The penalty value for packets received on open UDP ports. The penalty number for the switch is increased by this amount every time a packet is received on an open UDP port. This value is set using the ip dos scan udp open-port-penalty command.

Release History

Release 6.6.1; command introduced.

Related Commands

show ip dos statistics Displays the statistics on detected DoS attacks for the switch.

MIB Objects

alaDosTable
alaDoSType

show ip dos statistics

Displays the statistics on detected DoS attacks for the switch.

show ip dos statistics

Syntax Definitions

N/A

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- This command displays the number of attacks the switch has detected for several types of DoS attacks.
- Just because an attack is detected and reported, doesn't necessarily mean an attack occurred. The switch assumes a DoS attack is underway anytime the penalty threshold is exceeded. It is possible for this threshold to be exceeded when no attack is in progress.

Examples

```
-> show ip dos statistics
DoS type                Attacks detected
-----+-----
port scan                0
tcp sync flood           0
ping of death            0
smurf                    0
pepsi                     0
land                      0
teardrop/bonk/boink     0
loopback-src             0
invalid-ip               0
invalid-multicast       0
unicast dest-ip/multicast-mac 0
ping overload            0
arp flood                0
arp poison               0
```

output definitions

DoS type	The type of DoS attack. The most common seven are displayed.
Attacks detected	The number of attacks noted for each DoS type.

Release History

Release 6.6.1; command introduced.

Related Commands

[show ip dos config](#)

Displays the configuration parameters of the DoS scan for the switch.

MIB Objects

alaDoSTable

alaDoSType

show ip dos arp-poison

Displays the number of attacks detected for configured ARP poison restricted-addresses.

show ip dos arp-poison

Syntax Definitions

N/A

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

N/A

Examples

```
-> show ip dos arp-poison
  IP Address                               Attacks
-----+-----
192.168.1.1                               0
192.168.1.2                               0
192.168.1.3                               0
```

output definitions

IP Address	The configured ARP Poison restricted-addresses.
Attacks detected	The number of ARP Poison attacks detected for each address.

Release History

Release 6.6.1; command introduced.

Related Commands

[ip dos arp-poison restricted-address](#) Adds or deletes an ARP Poison restricted address.

MIB Objects

```
alaDoSArpPoisonTable
  alaDoSArpPoisonIpAddr
  alaDoSArpPoisonDetected
```

35 IPv6 Commands

This chapter details Internet Protocol Version 6 (IPv6) commands for the switch (including RIPng commands). IPv6 (documented in RFC 2460) is designed as a successor to IPv4. The changes from IPv4 to IPv6 fall primarily into the following categories:

Expanded Routing and Addressing Capabilities - IPv6 increases the IP address size from 32 bits to 128 bits, to support more levels of addressing hierarchy and a much greater number of addressable nodes, and simpler auto-configuration of addresses. The scalability of multicast routing is improved by adding a "scope" field to multicast addresses.

Header Format Simplification - Some IPv4 header fields were dropped or made optional, to reduce the common-case processing cost of packet handling and to keep the bandwidth cost of the IPv6 header as low as possible despite the increased size of the addresses. Even though the IPv6 addresses are four times longer than the IPv4 addresses, the IPv6 header is only twice the size of the IPv4 header.

Anycast Addressing - A new type of address called a "anycast address" is defined, to identify sets of nodes where a packet sent to an anycast address is delivered to one of the nodes. The use of anycast addresses in the IPv6 source route allows nodes to control the path on which their traffic flows.

Improved Support for Options - Changes in the way IP header options are encoded allows for more efficient forwarding, less stringent limits on the length of options, and greater flexibility for introducing new options in the future.

Authentication and Privacy Capabilities - IPv6 includes the definition of extensions which provide support for authentication, data integrity, and confidentiality. This is included as a basic element of IPv6 and will be included in all implementations.

MIB information for the IPv6 and RIPng commands is as follows:

Filename: Ipv6.mib
Module: Ipv6-MIB, Ipv6-TCP-MIB, Ipv6-UDP-MIB

Filename: AlcatelIND1Ipv6.mib
Module: alcatelIND1IPv6MIB

Filename: AlcatelIND1Iprmv6.mib
Module: alcatelIND1Iprmv6MIB

Filename: AlcatelIND1Ripng.mib
Module: alcatelIND1RipngMIB

A summary of the IPv6 commands is listed here:

IPv6	<ul style="list-style-type: none"> ipv6 interface ipv6 address ipv6 dad-check ipv6 hop-limit ipv6 pmtu-lifetime ipv6 host ipv6 neighbor stale-lifetime ipv6 neighbor ipv6 prefix ipv6 route ipv6 static-route ipv6 route-pref ipv6 ra-filter ipv6 ra-filter clear counters ping6 traceroute6 show ipv6 hosts show ipv6 icmp statistics show ipv6 interface show ipv6 pmtu table clear ipv6 pmtu table show ipv6 neighbors clear ipv6 neighbors show ipv6 prefixes show ipv6 routes show ipv6 route-pref show ipv6 router database show ipv6 tcp ports show ipv6 traffic clear ipv6 traffic show ipv6 udp ports show ipv6 information show ipv6 ra-filter vlan show ipv6 ra-filter counters
IPv6 Route Map Redistribution	<ul style="list-style-type: none"> ipv6 redistrib ipv6 access-list ipv6 access-list address show ipv6 redistrib show ipv6 access-list
IPv6 RIP	<ul style="list-style-type: none"> ipv6 load rip ipv6 rip status ipv6 rip invalid-timer ipv6 rip garbage-timer ipv6 rip holddown-timer ipv6 rip jitter ipv6 rip route-tag ipv6 rip update-interval ipv6 rip triggered-sends ipv6 rip interface ipv6 rip interface metric ipv6 rip interface recv-status ipv6 rip interface send-status ipv6 rip interface horizon show ipv6 rip show ipv6 rip interface show ipv6 rip peer show ipv6 rip routes

ipv6 interface

Configures an IPv6 interface on a VLAN.

```

ipv6 interface if_name vlan vid [enable | disable]
[base-reachable-time time]
[ra-send {yes | no}]
[ra-max-interval interval]
[ra-managed-config-flag {true | false}]
[ra-other-config-flag {true | false}]
[ra-reachable-time time]
[ra-retrans-timer time]
[ra-default-lifetime time / no ra-default-lifetime]
[ra-send-mtu] {yes | no}

```

```

no ipv6 interface if_name

```

Syntax Definitions

<i>if_name</i>	IPv6 interface name.
vlan	Creates a VLAN interface.
<i>vid</i>	VLAN ID number.
base-reachable-time <i>time</i>	Base value used to compute the reachable time for neighbors reached via this interface.
ra-send	Specifies whether the router advertisements are sent on this interface.
ra-max-interval <i>interval</i>	Maximum time, in seconds, allowed between the transmission of unsolicited multicast router advertisements in this interface. The range is 4 - 1800.
ra-managed-config-flag	Value to be placed in the managed address configuration flag field in router advertisements sent on this interface.
ra-other-config-flag	Value to be placed in the other stateful configuration flag in router advertisements sent on this interface.
ra-reachable-time <i>time</i>	Value, in milliseconds, to be placed in the reachable time field in router advertisements sent on this interface. The range is 0 - 3600000. The special value of zero indicates that this time is unspecified by the router.
ra-retrans-timer <i>time</i>	Value, in milliseconds, to be placed in the retransmit timer field in router advertisements sent on this interface. The value zero indicates that the time is unspecified by the router.
ra-default-lifetime <i>time</i>	Value, in seconds, to be placed in the router lifetime field in router advertisements sent on this interface. The time must be zero or between the value of "ra-max-interval" and 9000 seconds. A value of zero indicates that the router is not to be used as a default router. The "no ra-default-lifetime" option will calculate the value using the formula (3 * ra-max-interval).
enable disable	Administratively enable or disable the interface.
ra-send-mtu	Specifies whether the MTU option is included in the router advertisements sent on the interface.

Defaults

parameter	default
ra-send	yes
ra-max-interval	600
ra-managed-config-flag	false
ra-reachable-time	0
ra-retrans-timer	0
ra-default-lifetime	no
ra-send-mtu	no

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Use the **no** form of this command to delete an interface.
- When you create an IPv6 interface, it is enabled by default.
- All IPv6 interfaces must have a name.
- When creating an IPv6 interface you must specify a VLAN ID. When modifying or deleting an interface, you do not need to specify one of these options unless the name assigned to the interface is being changed. If it is present with a different value from when the interface was created, the command will be in error.
- To enable IPv6 routing you must first create a VLAN, then create an IPv6 interface on the VLAN. See [Chapter 25, “VLAN Management Commands,”](#) for information on creating VLANs.

Examples

```
-> ipv6 interface Test vlan 1  
-> no ipv6 interface Test
```

Release History

Release 6.6.1; command was introduced.

Related Commands

[show ipv6 interface](#) Displays IPv6 Interface Table.

MIB Objects

```
IPv6IfIndex  
alaIPv6InterfaceTable  
    alaIPv6InterfaceName  
    alaIPv6InterfaceMtu  
    alaIPv6InterfaceSendRouterAdvertisements  
    alaIPv6InterfaceMaxRtrAdvInterval  
    alaIPv6InterfaceAdvManagedFlag  
    alaIPv6InterfaceAdvOtherConfigFlag  
    alaIPv6InterfaceAdvRetransTimer  
    alaIPv6InterfaceAdvDefaultLifetime  
    alaIPv6InterfaceAdminStatus  
    alaIPv6InterfaceAdvReachableTime  
    alaIPv6InterfaceBaseReachableTime  
    alaIPv6InterfaceAdvSendMtu  
    alaIPv6InterfaceRowStatus
```

ipv6 address

Configures an IPv6 address for an IPv6 interface on a VLAN. There are different formats for this command depending on the address type.

```
ipv6 address ipv6_address /prefix_length [anycast] {if_name | loopback}
```

```
no ipv6 address ipv6_address [anycast] {if_name | loopback}
```

```
ipv6 address ipv6_prefix eui-64 {if_name | loopback}
```

```
no ipv6 address ipv6_prefix eui-64 {if_name | loopback}
```

Syntax Definitions

<i>ipv6_address</i>	IPv6 address.
<i>/prefix_length</i>	The number of bits that are significant in the IPv6 address (mask) (3–128).
anycast	Indicates the address is an anycast address.
eui-64	Append an EUI-64 identifier to the prefix.
<i>if_name</i>	Name assigned to the interface.
loopback	Configures the loopback interface.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Use the **no** form of this command to delete an address.
- You can assign multiple IPv6 addresses to an IPv6 interface.
- No default value for prefix length.
- The “eui” form of the command is used to add or remove an IPv6 address for a VLAN using an EUI-64 interface ID in the low order 64 bits of the address.
- To enable IPv6 routing you must first create a VLAN, then create an IPv6 interface on the VLAN. See [Chapter 25, “VLAN Management Commands,”](#) for information on creating VLANs.

Examples

```
-> ipv6 address 4132:86::19A/64 Test_Lab  
-> ipv6 address 2002:d423:2323::35/64 Test_Engr
```

Release History

Release 6.6.1; command was introduced.

Related Commands

show ipv6 interface Displays IPv6 Interface Table.

MIB Objects

IPv6IfIndex

alaIPv6InterfaceAddressTable

 alaIPv6InterfaceAddress

 alaIPv6InterfaceAddressAnycastFlag

 alaIPv6InterfaceEUI64AddressPrefixLength

 alaIPv6InterfaceEUI64AddressrowStatus

For EUI-64 Addresses:

alaIPv6InterfaceEUI64AddresssTable

 alaIPv6InterfaceEUI64Address

 alaIPv6InterfaceEUI64AddressPrefixLength

 alaIPv6InterfaceEUI64AddressRowStatus

ipv6 dad-check

Runs a Duplicate Address Detection (DAD) check on an address that was marked as duplicated.

```
ipv6 dad-check ipv6_address if_name
```

Syntax Definitions

<i>ipv6_address</i>	IPv6 address.
<i>if_name</i>	Name assigned to the interface.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

The switch performs DAD check when an interface is attached to the stack and its VLAN first enters the active state. Use this command to rerun a DAD check on an address that was marked as duplicated.

Examples

```
-> ipv6 dad-check fe80::2d0:95ff:fe6a:f458/64 Test_Lab
```

Release History

Release 6.6.1; command was introduced.

Related Commands

N/A

MIB Objects

```
alaIPv6InterfaceAddressTable  
  alaIPv6InterfaceAddressDADStatus
```

ipv6 hop-limit

Configures the value placed in the hop limit field in the header of all IPv6 packets that are originated by the switch. It also configures the value placed in the hop limit field in router advertisements.

ipv6 hop-limit *value*

no ipv6 hop-limit

Syntax Definitions

value Hop limit value. The range is 0 - 255.

Defaults

parameter	default
<i>value</i>	64

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Use the **no** form of this command to return the hop limit to its default value.
- Inputting the value 0 (zero) will result in the default (64) hop-limit.

Examples

```
-> ipv6 hop-limit 64
```

Release History

Release 6.6.1; command was introduced.

Related Commands

[show ipv6 information](#) Displays IPv6 information.

MIB Objects

ipv6MibObjects
Ipv6DefaultHopLimit

ipv6 pmtu-lifetime

Configures the minimum lifetime for entries in the path MTU Table.

ipv6 pmtu-lifetime *time*

Syntax Definitions

time Minimum path MTU entry lifetime, in minutes. Valid range is 10–1440.

Defaults

parameter	default
<i>time</i>	60

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

N/A

Examples

```
-> ipv6 pmtu-lifetime 30
```

Release History

Release 6.6.1; command was introduced.

Related Commands

show ipv6 pmtu table	Displays the IPv6 path MTU Table.
show ipv6 information	Displays IPv6 information.
clear ipv6 pmtu table	Removes all the entries from the IPv6 path MTU Table.

MIB Objects

alaIPv6ConfigTable
alaIPv6PMTUMinLifetime

ipv6 host

Configures a static host name to IPv6 address mapping to the local host table.

ipv6 host *name ipv6_address*

no ipv6 host *name ipv6_address*

Syntax Definitions

<i>name</i>	Host name associated with the IPv6 address (1 - 255 characters).
<i>ipv6_address</i>	IPv6 address.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

Use the **no** form of this command to remove the mapping from the host table.

Examples

```
-> ipv6 host Lab 4235::1200:0010
```

Release History

Release 6.6.1; command was introduced.

Related Commands

show ipv6 hosts Displays IPv6 Local Hosts Table.

MIB Objects

```
alaIPv6HostTable  
  alaIPv6HostName  
  alaIPv6HostAddress  
  alaIPv6HostRowStatus
```

ipv6 neighbor stale-lifetime

Configures the minimum lifetime for all neighbor entries.

ipv6 neighbor stale-lifetime *stale-lifetime*

Syntax Definitions

stale-lifetime Minimum lifetime for neighbor entries in the stale state (5–2800).

Defaults

parameter	default
<i>stale-lifetime</i>	1440

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

N/A

Examples

```
-> ipv6 neighbor stale-lifetime 1400
```

Release History

Release 6.6.1; command was introduced.

Related Commands

[show ipv6 neighbors](#) Displays IPv6 Neighbor Table.
[show ipv6 information](#) Displays IPv6 information.

MIB Objects

IPv6IfIndex
alaIPv6NeighborTable
alaIPv6NeighborStaleLifetime

ipv6 neighbor

Configures a static entry in IPv6 Neighbor Table.

ipv6 neighbor *ipv6_address hardware_address if_name slot/port*

no ipv6 neighbor *ipv6_address if_name*

Syntax Definitions

<i>ipv6_address</i>	IPv6 address that corresponds to the hardware address.
<i>hardware_address</i>	MAC address in hex format (e.g., 00:00:39:59:F1:0C).
<i>if_name</i>	Name assigned to the interface on which the neighbor resides.
<i>slot/port</i>	Slot/port used to reach the neighbor.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

Use the **no** form of this command to remove an entry from IPv6 Neighbor Table.

Examples

```
-> ipv6 neighbor 4132:86::203 00:d0:c0:86:12:07 Test 1/1
```

Release History

Release 6.6.1; command was introduced.

Related Commands

show ipv6 neighbors	Displays IPv6 Neighbor Table.
show ipv6 information	Displays IPv6 information.

MIB Objects

IPv6IfIndex

alaIPv6NeighborTable

alaIPv6NeighborNetAddress

alaIPv6NeighborPhysAddress

alaIPv6NeighborSlot

alaIPv6NeighborPort

alaIPv6NeighborRowStatus

 alaIPv6NeighborStaleLifetime

ipv6 prefix

Configures an IPv6 prefix on an interface. Used for configuring prefixes for router advertisements.

```

ipv6 prefix ipv6_address /prefix_length if_name
[valid-lifetime time]
[preferred-lifetime time]
[on-link-flag {true | false}]
[autonomous-flag {true | false}] if_name
no ipv6 prefix ipv6_address /prefix_length if_name

```

Syntax Definitions

<i>ipv6_address</i>	IPv6 address of the interface.
<i>/prefix_length</i>	The number of bits that are significant in the IPv6 address (mask). (1...127).
valid-lifetime <i>time</i>	Length of time, in seconds, that this prefix will remain valid, i.e. time until deprecation. A value of 4294967295 represents infinity.
preferred-lifetime <i>time</i>	Length of time, in seconds, that this prefix will remain preferred, i.e. time until deprecation. A value of 4294967295 represents infinity.
on-link-flag	On-link configuration flag. When “true” this prefix can be used for on-link determination.
autonomous-flag	Autonomous address configuration flag. When “true”, indicates that this prefix can be used for autonomous address configuration (i.e., can be used to form a local interface address).
<i>if_name</i>	Name assigned to the interface.

Defaults

parameter	default
valid-lifetime <i>time</i>	2592000
preferred-lifetime <i>time</i>	604800
on-link-flag	true
autonomous-flag	true

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

Use the **no** form of this command to delete a prefix.

Examples

```
-> ipv6 prefix 4132:86::/64 Test
```

Release History

Release 6.6.1; command was introduced.

Related Commands

show ipv6 prefixes Displays IPv6 prefixes used in router advertisements.

MIB Objects

```
IPv6IfIndex  
alaIPv6InterfacePrefixTable  
  alaIPv6InterfacePrefix  
  alaIPv6InterfacePrefixLength  
  alaIPv6InterfacePrefixValidLifetime  
  alaIPv6InterfacePrefixPreferredLifetime  
  alaIPv6InterfacePrefixonLinkFlag  
  alaIPv6InterfacePrefixAutonomousFlag  
  alaIPv6InterfacePrefixRowStatus
```

ipv6 route

Configures a static entry in the IPv6 route. *This command is currently not supported. Please use the new [ipv6 static-route](#) command.*

ipv6 route *ipv6_prefix/prefix_length ipv6_address [if_name]*

no ipv6 route *ipv6_prefix/prefix_length ipv6_address [if_name]*

Syntax Definitions

<i>ipv6_prefix</i>	IPv6 network that is the destination of this static route.
<i>/prefix_length</i>	The number of bits that are significant in the IPv6 address (mask). (0...128).
<i>ipv6_address</i>	IPv6 address of the next hop used to reach the specified network.
<i>if_name</i>	If the next hop is a link-local address, the name of the interface used to reach it.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

Use the **no** form of this command to remove a static route.

Examples

```
-> ipv6 route 212:95:5::/64 fe80::2d0:95ff:fe6a:f458 v6if-137
```

Release History

Release 6.6.1; command was introduced.

Related Commands

[show ipv6 routes](#) Displays IPv6 Forwarding Table.

MIB Objects

```
alaIPv6StaticRouteTable  
  alaIPv6StaticRouteNextHop  
  alaIPv6StaticRouteIfIndex  
  alaIPv6StaticRouteDest  
  alaIPv6StaticRoutePrefixLength  
  alaIPv6StaticRouteRowStatus
```

ipv6 static-route

Creates/deletes an IPv6 static route. Static routes are user-defined; they carry a higher priority than routes created by dynamic routing protocols. That is, static routes always have priority over dynamic routes, regardless of the metric value.

ipv6 static-route *ipv6_prefix/prefix_length* **gateway** *ipv6_address* [*if_name*] [**metric** *metric*]

no ipv6 static-route *ipv6_prefix/prefix_length* **gateway** *ipv6_address* [*if_name*]

Syntax Definitions

<i>ipv6_prefix</i>	IPv6 network that is the destination of this static route.
<i>/prefix_length</i>	The number of bits (0...128) that are significant in the IPv6 address (mask).
gateway <i>ipv6_address</i>	IPv6 address of the next hop used to reach the destination IPv6 address.
<i>if_name</i>	If the next hop is a link-local address, the name of the interface used to reach it.
<i>metric</i>	Metric or cost (hop count) for the static route. You can set a priority for the static route by assigning a metric value. The lower the metric value, the higher the priority. Valid range is 1–15.

Defaults

parameter	default
<i>metric</i>	1

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

Use the **no** form of this command to remove a static route.

Examples

```
-> ipv6 static-route 212:95:5::/64 gateway fe80::2d0:95ff:fe6a:f458 v6if-137 metric 3
```

Release History

Release 6.6.1; command was introduced.

Related Commands

show ipv6 routes

Displays IPv6 Forwarding Table.

show ipv6 router database

Displays a list of all routes (static and dynamic) that exist in the IPv6 router database.

MIB Objects

```
alaIprmv6StaticRouteTable
  alaIprmv6StaticRouteDest
  alaIprmv6StaticRoutePrefixLength
  alaIprmv6StaticRouteNextHop
  alaIprmv6StaticRouteIfIndex
  alaIprmv6StaticRouteMetric
  alaIprmv6StaticRouteRowStatus
```

ipv6 route-pref

Configures the route preference of a router.

```
ipv6 route-pref {static | rip} value
```

Syntax Definitions

static	Configures the route preference of static routes.
rip	Configures the route preference of RIPng routes.
<i>value</i>	Route preference value.

Defaults

parameter	default
static <i>value</i>	2
rip <i>value</i>	120

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Route preference of local routes cannot be changed.
- The valid route preference range is 1–255.
- The IPv6 version of BGP is not supported currently.

Examples

```
-> ipv6 route-pref static 2
-> ipv6 route-pref rip 60
```

Release History

Release 6.6.1; command was introduced.

Related Commands

[show ipv6 route-pref](#) Displays the configured route preference of a router.

MIB Objects

```
alaIprmRtPrefTable
  alaIprmRtPrefLocal
  alaIprmRtPrefStatic
  alaIprmRtPrefRip
```

ipv6 ra-filter

Configures the Router Advertisement (RA) filtering on an IPv6 VLAN. When RA filtering is enabled on a VLAN, router advertisements received on any port or linkagg are discarded. If one or more trusted ports or linkaggs are configured, RAs received on them will be accepted and sent on to any connected IPv6 nodes.

```
ipv6 ra-filter vlan vlan-number [{trusted-port slot/port | trusted-linkagg id}]
```

Syntax Definitions

<i>vlan-number</i>	Specify the VLAN on which RA filtering is being configured.
<i>slot/port</i>	Specify a trusted port.
linkagg <i>id</i>	Specify a trusted linkagg.

Defaults

By default, RA filtering feature is disabled.

By default, all ports and linkaggs are untrusted.

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Use the **no** form of this command to disable RA filtering on a VLAN.
- RAF will only allow filtering of router advertisements on a per-port basis.
- A maximum of 32 VLANs can be configured for RA filtering.
- RA filtering feature cannot be enabled on VLAN which is used as an openflow VLAN, Ethernet service VLAN and as an IPMvlan and vice-versa.
- RA filtering feature cannot be enabled on port which is a mirrored port and openflow enabled port and vice-versa.

Examples

```
-> ipv6 ra-filter vlan 5  
-> ipv6 ra-filter vlan 5 trusted-port 1/22  
-> ipv6 ra-filter vlan 5 trusted-linkagg 2
```

The following command returns port 1/22 to the untrusted state.

```
-> no ipv6 ra-filter vlan 5 trusted-port 1/22
```

The following command disables RA filtering on VLAN 5.

```
-> no ipv6 ra-filter vlan 5
```

Release History

Release 6.7.1; command introduced.

Related Commands

ipv6 ra-filter clear counters	Clear the router advertisement filtering counter statistics.
show ipv6 ra-filter vlan	Displays the list of VLANs configured for RA filtering.
show ipv6 ra-filter counters	Displays the counter statistics of the NIs which are up.

MIB Objects

```
alaipv6rafvlantable  
  alaIpv6RafVlan  
  alaIpv6RafPortIfIndex
```

ipv6 ra-filter clear counters

Clear the router advertisement filtering counter statistics.

ipv6 ra-filter clear counters

Syntax Definitions

N/A

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

N/A

Examples

```
-> ipv6 ra-filter clear counters
```

Release History

Release 6.7.1; command introduced.

Related Commands

[show ipv6 ra-filter counters](#) Displays the counter statistics of the NIs which are up.

MIB Objects

```
alaIPv6Config  
alaIPv6ClearRafCounters
```

ping6

Tests whether an IPv6 destination can be reached from the local switch. This command sends an ICMPv6 echo request to a destination and then waits for a reply. To ping a destination, enter the **ping6** command and enter either the destination's IPv6 address or hostname. The switch will ping the destination using the default frame count, packet size, and interval (6 frames, 64 bytes, and 1 second respectively). You can also customize any or all of these parameters as described below.

```
ping6 {ipv6_address / hostname} [if_name] [count count] [size data_size] [interval seconds]
```

Syntax Definitions

<i>ipv6_address</i>	IP address of the system to ping.
<i>hostname</i>	DNS name of the system to ping.
<i>if_name</i>	If the target is a link-local address, the name of the interface used to reach it.
<i>count</i>	Number of packets to be transmitted.
<i>size</i>	Size of the data portion of the packet sent for this ping, in bytes.
<i>seconds</i>	Interval, in seconds, at which ping packets are transmitted.

Defaults

parameter	default
<i>count</i>	6
<i>size</i>	56
interval <i>seconds</i>	1

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- If you change the default values, they will only apply to the current ping. The next time you use the ping command, the default values will be used unless you again enter different values.
- When the next hop address is a local link address, the name of the interface used to reach the destination must be specified.

Examples

```
-> ping6 fe80::2d0:95ff:fe6a:f458/64
```

Release History

Release 6.6.1; command was introduced.

Related Commands

[traceroute6](#)

Finds the path taken by an IPv6 packet from the local switch to a specified destination.

MIB Objects

N/A

tracert6

Finds the path taken by an IPv6 packet from the local switch to a specified destination. This command displays the individual hops to the destination as well as some timing information.

tracert6 {*ipv6_address* | *hostname*} [*if_name*] [**max-hop** *hop_count*] [**wait-time** *time*] [**port** *port_number*] [**probe-count** *probe*]

Syntax Definitions

<i>ipv6_address</i>	Destination IPv6 address. IPv6 address of the host whose route you want to trace.
<i>hostname</i>	DNS name of the host whose route you want to trace.
<i>if_name</i>	If the target is a link-local address, the name of the interface used to reach it.
<i>hop_count</i>	Maximum hop count for the trace.
<i>time</i>	Delay time, in seconds between probes
<i>port</i>	Specific UDP port destination. By default, the destination port is chosen by tracert6.
<i>probe</i>	Number of probes to be sent to a single hop.

Defaults

parameter	default
<i>hop_count</i>	30
<i>time</i>	5
<i>probe</i>	3

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- When using this command, you must enter the name of the destination as part of the command line (either the IPv6 address or hostname).
- Use the optional **max-hop** parameter to set a maximum hop count to the destination. If the trace reaches this maximum hop count without reaching the destination, the trace stops.

Examples

```
-> tracert6 41EA:103::65C3
```

Release History

Release 6.6.1; command was introduced.

Related Commands

ping6

Tests whether an IPv6 destination can be reached from the local switch.

MIB Objects

N/A

show ipv6 hosts

Displays IPv6 Local Hosts Table.

show ipv6 hosts [*substring*]

Syntax Definitions

substring Limits the display to host names starting with the specified substring.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

If you do not specify a substring, all IPv6 hosts are displayed.

Examples

-> show ipv6 hosts

Name	IPv6 Address
-----+-----	
ipv6-test1.alcatel-lucent.com	4235::1200:0010
ipv6-test2.alcatel-lucent.com	4235::1200:0020
otheripv6hostname	4143:1295:9490:9303:00d0:6a63:5430:9031

output definitions

Name	Name associated with the IPv6 address.
IPv6 Address	IPv6 address associated with the host name.

Release History

Release 6.6.1; command was introduced.

Related Commands

[ipv6 host](#) Configures a static host name to the IPv6 address mapping to the local host table.

MIB Objects

alaIPv6HostTable
 alaIPv6HostName
 alaIPv6HostAddress

show ipv6 icmp statistics

Displays IPv6 ICMP statistics.

show ipv6 icmp statistics [*if_name*]

Syntax Definitions

if_name Display statistics only for this interface.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

Use the ICMP table to monitor and troubleshoot the switch.

Examples

-> show ipv6 icmp statistics

Message	Received	Sent
-----	-----	-----
Total	0	0
Errors	0	0
Destination Unreachable	0	0
Administratively Prohibited	0	0
Time Exceeded	0	0
Parameter Problems	0	0
Packet Too Big	0	0
Echo Requests	0	0
Echo Replies	0	0
Router Solicitations	0	0
Router Advertisements	0	0
Neighbor Solicitations	0	0
Neighbor Advertisements	0	0
Redirects	0	0
Group Membership Queries	0	0
Group Membership Responses	0	0
Group Membership Reductions	0	0

output definitions

Total	Total number of ICMPv6 messages the switch received or attempted to send.
Errors	Number of ICMPv6 messages the switch sent or received but was unable to process because of ICMPv6-specific errors (bad checksums, bad length, etc.).

output definitions (continued)

Destination Unreachable	Number of Destination Unreachable messages that were sent or received by the switch.
Administratively Prohibited	Number of Destination Unreachable/Communication Administratively Prohibited messages sent or received by the switch.
Time Exceeded	Number of Time Exceeded messages sent or received by the switch.
Parameter Problems	Number of Parameter Problem messages sent or received by the switch.
Packet Too Big	Number of Packet Too Big messages sent or received by the switch.
Echo Requests	Number of Echo Request messages sent or received by the switch.
Echo Replies	Number of Echo Reply messages sent or received by the switch.
Router Solicitations	Number of Router Solicitations sent or received by the switch.
Router Advertisements	Number of Router Advertisements sent or received by the switch.
Neighbor Solicitations	Number of Neighbor Solicitations sent or received by the switch.
Neighbor Advertisements	Number of Neighbor Advertisements sent or received by the switch.
Redirects	Number of Redirect messages sent or received by the switch.
Group Membership Queries	Number of Group Membership Queries sent or received by the switch.
Group Membership Responses	Number of Group Membership Responses sent or received by the switch.
Group Membership Reductions	Number of Group Membership Reductions sent or received by the switch.

Release History

Release 6.6.1; command was introduced.

Related Commands

show ipv6 traffic Displays IPv6 traffic statistics.

MIB Objects

```
ipv6IfIcmpTable
  ipv6IfIcmpInMsgs
  ipv6IfIcmpInErrors
  ipv6IfIcmpInDestUnreachs
  ipv6IfIcmpInAdminProhibs
  ipv6IfIcmpInTimeExcds
  ipv6IfIcmpInParmProblems
  ipv6IfIcmpInPktTooBig
  ipv6IfIcmpInEchos
  ipv6IfIcmpInEchoReplies
  ipv6IfIcmpInRouterSolicits
  ipv6IfIcmpInRouterAdvertisements
  ipv6IfIcmpInNeighborSolicits
  ipv6IfIcmpInNeighborAdvertisements
  ipv6IfIcmpInRedirects
  ipv6IfIcmpInGroupMembQueries
  ipv6IfIcmpInGroupMembResponses
  ipv6IfIcmpInGroupMembReductions
  ipv6IfIcmpOutMsgs
  ipv6IfIcmpOutErrors
  ipv6IfIcmpOutDestUnreachs
  ipv6IfIcmpOutAdminProhibs
  ipv6IfIcmpOutTimeExcds
  ipv6IfIcmpOutParmProblems
  ipv6IfIcmpOutPktTooBig
  ipv6IfIcmpOutEchos
  ipv6IfIcmpOutEchoReplies
  ipv6IfIcmpOutRouterSolicits
  ipv6IfIcmpOutRouterAdvertisements
  ipv6IfIcmpOutNeighborSolicits
  ipv6IfIcmpOutNeighborAdvertisements
  ipv6IfIcmpOutRedirects
  ipv6IfIcmpOutGroupMembQueries
  ipv6IfIcmpOutGroupMembResponses
  ipv6IfIcmpOutGroupMembReductions
```

show ipv6 interface

Displays IPv6 Interface Table.

show ipv6 interface [*if_name* / **loopback**]

Syntax Definitions

if_name Interface name. Limits the display to a specific interface.

loopback Limits display to loopback interfaces.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- If you do not specify an interface name, all IPv6 interfaces are displayed.
- Specify an interface name (e.g., VLAN 12) to obtain a more detailed information about a specific interface.

Examples

-> show ipv6 interface

Name	IPv6 Address/Prefix Length	Status	Device
smbif-5	fe80::2d0:95ff:fe12:f470/64	Active	VLAN 955
	212:95:5::35/64		
	212:95:5::/64		
v6if-to-eagle	fe80::2d0:95ff:fe12:f470/64	Disabled	VLAN 1002
	195:35::35/64		
	195:35::/64		
loopback	::1/128	Active	loopback

output definitions

Name	Interface name. This is usually the VLAN on which the interface is configured.
IPv6 Address/Prefix Length	IPv6 address and prefix length assigned to the interface. If an interface has more than one IPv6 address assigned to it, each address is shown on a separate line.
Status	Interface status (e.g., Active/Inactive).
Device	The device on which the interface is configured (e.g., VLAN 955).

-> show ipv6 interface smbif-5

smbif-5

```

IPv6 interface index          = 16777216(0x01000000)
Administrative status        = Enabled
Operational status          = Active
  Hardware address           = 00:E0:B1:C2:EE:87
Link-local address(es):
  fe80::2d0:95ff:fe12:f470/64
Global unicast address(es):
  212:95:5::35/64
Anycast address(es):
  212:95:5::/64
Joined group addresses:
  ff02::1:ff00:0
  ff02::2:93da:681b
  ff02::1
  ff02::1:ff00:35
Maximum Transfer Unit (MTU)  = 1500
Neighbor reachable time (sec) = 538
Base reachable time (sec)    = 360
Retransmit timer (ms)       = 1000
DAD transmits                = 1
Send Router Advertisements  = No
Maximum RA interval (sec)    = 600
Minimum RA interval (sec)    = 198
RA managed config flag      = False
RA other config flag        = False
RA reachable time (ms)       = 30000
RA retransmit timer (ms)    = 1000
RA default lifetime (sec)   = 1800
RA hop limit                 = 64
RA send MTU option          = No
RA clock skew (sec)         = 600
Packets received            = 215686
Packets sent                 = 2019
Bytes received               = 14108208
Bytes sent                   = 178746
Input errors                 = 0
Output errors                = 0
Collisions                   = 0
Dropped                     = 0

```

output definitions

IPv6 interface index	IPv6IfIndex value that should be used in SNMP requests pertaining to this interface.
Administrative status	Administrative status of this interface (Enabled/Disabled).
Operational status	Indicates whether the physical interface is connected to a device (Active/Inactive).
Hardware address	Interface's MAC address.
Link-local address	Link-local address assigned to the interface.
Global unicast address(es)	Global unicast address(es) assigned to the interface.
Joined group address(es)	Addresses of the multicast groups that this interface has joined.
Maximum Transfer Unit	Interface MTU value.
Send Router Advertisements	Indicates if the router sends periodic router advertisements and responds to router solicitations on the interface.

output definitions (continued)

Maximum RA interval (sec)	Maximum time between the transmission of unsolicited router advertisements over the interface.
Minimum RA interval (sec)	Minimum time between the transmission of unsolicited router advertisements over the interface (0.33 * Maximum RA Interval).
RA managed config flag	True/False value in the managed address configuration flag field in router advertisements.
RA other config flag	The True/False value in the other stateful configuration flag field in router advertisements sent over this interface.
RA reachable time (ms)	Value placed in the reachable time field in the router advertisements sent over this interface.
RA retransmit timer (ms)	Value placed in the retransmit timer field in router advertisements sent over this interface.
RA default lifetime (ms)	The value placed in the router lifetime field in the router advertisements sent over this interface.
Packets received	Number of IPv6 packets received since the last time the counters were reset.
Packets sent	Number of IPv6 packets sent since the last time the counters were reset.
Bytes received	Number of bytes of data received since the last time the counters were reset.
Bytes sent	Number of bytes of data sent since the last time the counters were reset.
Input errors	Number of input errors received since the last time the counters were reset.
Output errors	Number of output errors received since the last time the counters were reset.
Collisions	Number of collisions since the last time the counters were reset.
Dropped	Number of packets dropped since the last time the counters were reset.

Release History

Release 6.6.1; command was introduced.

Related Commands

ipv6 address	Configures an IPv6 address on a VLAN.
ipv6 interface	Configures an IPv6 interface on a VLAN.

MIB Objects

ipv6InterfaceTable

- ipv6AdminStatus
- ipv6PhysicalAddress
- ipv6InterfaceAddress
- ipv6Address
- ipv6AddressPrefix
- ipv6IfEffectiveMtu
- ipv6IfStatsInReceives
- ipv6IfStatsOutRequests
- ipv6IfStatsOutForwDatagrams

alaIPv6InterfaceTable

- alaIPv6InterfaceName
- alaIPv6InterfaceAddress
- alaIPv6InterfaceAdminStatus
- alaIPv6InterfaceRowStatus
- alaIPv6InterfaceDescription
- alaIPv6InterfaceMtu
- alaIPv6InterfaceType
- alaIPv6InterfaceAdminStatus
- alaIPv6InterfaceSendRouterAdvertisements
- alaIPv6InterfaceMaxRtrAdvInterval
- alaIPv6InterfaceAdvManagedFlag
- alaIPv6InterfaceAdvOtherConfigFlag
- alaIPv6InterfaceAdvReachableTime
- alaIPv6InterfaceAdvRetransTimer
- alaIPv6InterfaceAdvDefaultLifetime
- alaIPv6InterfaceName
- alaIPv6InterfaceAdvSendMtu

show ipv6 pmtu table

Displays the IPv6 Path MTU Table.

show ipv6 pmtu table

Syntax Definitions

N/A

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

N/A

Examples

```
-> show ipv6 pmtu table
```

```
1-PMTU Entry
```

```
PMTU entry minimum lifetime = 10m
```

Destination Address	MTU	Expires
-----	-----	-----
fe80::02d0:c0ff:fe86:1207	1280	1h 0m

output definitions

Destination Address	IPv6 address of the path's destination.
MTU	Path's MTU.
Expires	Minimum remaining lifetime for the entry.

Release History

Release 6.6.1; command was introduced.

Related Commands

ipv6 pmtu-lifetime

Configures the minimum lifetime for entries in the path MTU Table.

clear ipv6 pmtu table

Removes all the entries from the IPv6 path MTU Table.

MIB Objects

alaIPv6ConfigTable

alaIPv6PMTUDest

alaIPv6PMTUexpire

clear ipv6 pmtu table

Removes all the entries from the IPv6 path MTU Table.

clear ipv6 pmtu table

Syntax Definitions

N/A

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

N/A

Examples

```
-> clear ipv6 pmtu table
```

Release History

Release 6.6.1; command was introduced.

Related Commands

- | | |
|--------------------------------------|--|
| ipv6 pmtu-lifetime | Configures the configure the minimum lifetime for entries in the path MTU Table. |
| show ipv6 pmtu table | Displays the IPv6 path MTU Table. |

MIB Objects

```
alaIPv6ConfigTable  
  alaIPv6ClearPMTUTable
```

show ipv6 neighbors

Displays IPv6 Neighbor Table.

show ipv6 neighbors [*ipv6_prefix/prefix_length* | *if_name* | **hw** *hardware_address* | **static**]

Syntax Definitions

<i>ipv6_prefix/prefix_length</i>	IPv6 prefix. Restricts the display to those neighbors starting with the specified prefix.
<i>if_name</i>	Interface name. Restricts the display to those neighbors reached via the specified interface.
<i>hardware_address</i>	MAC address. Restricts the display to the specified MAC address.
static	Restricts display to statically configured neighbors.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

If you do not specify an option (e.g., *if_name*), all IPv6 neighbors are displayed.

Examples

-> show ipv6 neighbors

IPv6 Address	Hardware Address	State	Type	Port	Interface
fe80::02d0:c0ff:fe86:1207	00:d0:c0:86:12:07	Probe	Dynamic	1/15	vlan_4
fe80::020a:03ff:fe71:fe8d	00:0a:03:71:fe:8d	Reachable	Dynamic	1/ 5	vlan_17

output definitions

IPv6 Address	The neighbor's IPv6 address.
Hardware Address	The MAC address corresponding to the IPv6 address.
State	The neighbor's state: - Unknown - Incomplete - Reachable - Stale - Delay - Probe .
Type	Indicates whether the neighbor entry is a Static or Dynamic entry.
Port	The port used to reach the neighbor.
Interface	The neighbor's interface name (e.g., <i>vlan_1</i>)

Release History

Release 6.6.1; command was introduced.

Related Commands

ipv6 neighbor

Configures a static entry in the IPv6 Neighbor Table.

MIB Objects

ipv6IfIndex

alaIPv6NeighborTable

 alaIPv6NeighborNetAddress

 alaIPv6NeighborPhysAddress

 alaIPv6NeighborSlot

 alaIPv6NeighborPort

 alaIPv6NeighborType

 alaIPv6NeighborState

clear ipv6 neighbors

Removes all entries, except static entries, from IPv6 Neighbor Table.

clear ipv6 neighbors

Syntax Definitions

N/A

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

This commands only clears dynamic entries. If static entries have been added to the table, they must be removed using the **no** form of the [ipv6 neighbor](#) command.

Examples

```
-> clear ipv6 neighbors
```

Release History

Release 6.6.1; command was introduced.

Related Commands

ipv6 neighbor	Configures a static entry in IPv6 Neighbor Table.
show ipv6 neighbors	Displays IPv6 Neighbor Table.

MIB Objects

```
alaIPv6NeighborTable  
  alaIPv6ClearNeighbors
```

show ipv6 prefixes

Displays IPv6 prefixes used in router advertisements.

show ipv6 prefixes

Syntax Definitions

N/A

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

N/A

Examples

```
-> show ipv6 prefixes
```

Legend: Flags: A = Autonomous Address Configuration, L = OnLink

Name	IPv6 Address/Prefix Length	Valid Lifetime	Preferred Lifetime	Flags	Source
vlan 955	212:95:5::/64	2592000	604800	LA	dynamic
vlan 1002	195:35::/64	2592000	604800	LA	dynamic

output definitions

Name	The interface name. This is usually the VLAN on which the interface is configured.
IPv6 Address/Prefix Length	The IPv6 prefix and prefix length for a Router Advertisement Prefix Option.
Valid Lifetime	Length of time, in seconds, that this prefix will remain valid (i.e., time until deprecation). A value of 4294967295 represents infinity.
Preferred Lifetime	Length of time, in seconds, that this prefix will remain preferred (i.e. time until deprecation). A value of 4294967295 represents infinity.
Flags	L - Prefix can be used for onlink determination. A - Prefix can be used for autonomous address configuration (i.e., can be used to form a local interface address).
Source	config - Prefix has been configured by management. dynamic - Router Advertisements are using interface prefixes.

Release History

Release 6.6.1; command was introduced.

Related Commands

ipv6 prefix

Configures an IPv6 prefix on an interface. Used for configuring prefixes for router advertisements.

MIB Objects

IPv6AddrPrefixTable

- IPv6AddressPrefixEntry
- IPv6AddressPrefixLength
- IPv6AddressPrefixLinkFlag
- IPv6AddressPrefixAdvvalidLifetime
- IPv6AddressPrefixAdvPreferredLifetime

alaIPv6InterfacePrefixTable

- alaIPv6InterfacePrefix
- alaIPv6InterfacePrefixLength
- alaIPv6InterfacePrefixValidLifetime
- alaIPv6InterfacePrefixPreferredLifetime
- alaIPv6InterfacePrefixOnLinkFlag
- alaIPv6InterfacePrefixsource

show ipv6 routes

Displays IPv6 Forwarding Table.

show ipv6 routes [*ipv6_prefix/prefix_length* | **static**]

Syntax Definitions

ipv6_prefix/prefix_length IPv6 prefix. Restricts the display to those routes starting with the specified prefix.

static Restricts display to statically configured routes.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

If you do not specify an option (e.g., “static”), all IPv6 interfaces are displayed.

Examples

-> show ipv6 routes

Legend:Flags:U = Up, G = Gateway, H = Host, S = Static, C = Cloneable, D = Dynamic,
M = Modified, R = Unreachable, X = Externally resolved, B = Discard,
L = Link-layer, 1 = Protocol specific, 2 = Protocol specific

Destination Prefix	Gateway Address	Interface	Age	Protocol	Flags
195:35::/64	fe80::2d0:95ff:fe12:f470	v6if-to-eagle	18h 51m 55s	Local	UC
212:95:5::/64	fe80::2d0:95ff:fe12:f470	smbif-5	18h 51m 55s	Local	UC

output definitions

Destination Prefix	IPv6 destination address and prefix.
Gateway Address	IPv6 address of the gateway used to reach the destination network.
Interface	The IPv6 interface name or loopback.
Age	Age of the entry. Entries less than 1 day old are displayed in hh:mm:ss format. Entries more than 1 day old are displayed in dd:hh format.
Protocol	Protocol by which the route was learned.

Release History

Release 6.6.1; command was introduced.

Related Commands

ipv6 route Configures a static entry in the IPv6 route.

MIB Objects

```
IPv6RouteTable
  IPv6Routes
  IPv6RoutesPrefix
  IPV6RoutesStatic
alaIPv6StaticRouteTable
  alaIPv6StaticRouteEntry
```

show ipv6 route-pref

Displays the IPv6 routing preference of the router.

show ipv6 route-pref

Syntax Definitions

N/A

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

N/A

Examples

```
-> show ipv6 route-pref
  Protocol      Route Preference Value
-----+-----
  Local         1
  Static        2
  RIP           120
```

Release History

Release 6.6.1; command was introduced.

Related Commands

[ipv6 route-pref](#) Configures the IPv6 route preference of a router.

MIB Objects

N/A

show ipv6 router database

Displays a list of all routes (static and dynamic) that exist in the IPv6 router database. This database serves as a central repository where routes are first processed for redistribution and where duplicate routes are compared to determine the best route to use. If a route does not appear in the IPv6 router database list, then the switch does not know about it. In the case of dynamically learned routes, this could indicate that the route was never received by the switch.

show ipv6 router database [**protocol** *type* / **gateway** *ipv6_address* / **dest** *ipv6_prefix/prefix_length*]

Syntax Definitions

<i>type</i>	Routing protocol type (local, static, or RIP).
gateway <i>ipv6_address</i>	IPv6 address of the next hop used to reach the destination IPv6 address.
<i>ipv6_prefix</i>	IPv6 network that is the destination of this static route.
<i>/prefix_length</i>	The number of bits that are significant in the IPv6 address (mask). (0...128).

Defaults

By default, all routes are displayed.

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- The IPv6 forwarding table is derived from IPv6 router database processing performed by the switch and contains only unique routes that the switch currently uses. Use the **show ipv6 routes** command to view the forwarding table.
- If an expected route does not appear in the IPv6 forwarding table, use the **show ipv6 router database** command to see if the switch knows about the route and/or if a duplicate route with a higher precedence was selected instead.
- The switch compares the protocol of duplicate routes to determine which one to use. Regardless of whether or not a route has a higher priority metric value, protocol determines precedence. Local routes are given the highest level of precedence followed by static, then RIP routes. As a result, a route that is known to the switch may not appear in the IP forwarding table if a duplicate route with a higher protocol precedence exists.
- A list of inactive static routes is also included in the **show ipv6 router database** output display. A route becomes inactive if the interface for its gateway goes down. Inactive routes are unable to get to their destination and further investigation is warranted to determine why their gateway is unavailable.
- Routes that appear as inactive are not included in the main IP router database listing. If an inactive route becomes active, however, it is removed from the inactive list and added to the active route list.

Examples

-> show ipv6 router database
 Legend: + indicates routes in use

Total IPRM IPv6 routes: 5

Destination/Prefix	Gateway Address	Interface	Protocol	Metric
195:35::/64	fe80::2d0:95ff:fe12:f470	v6if-to-eagle	RIP	2
212:95:5::/64	fe80::2d0:95ff:fe12:f470	smbif-5	Local	1

Inactive Static Routes:

VLAN	Destination/Prefix	Gateway Address	Metric
1510	212:95:5::/64	fe80::2d0:95ff:fe6a:f458	1

output definitions

Destination/Prefix	IPv6 destination address and prefix.
Gateway Address	IPv6 address of the gateway used to reach the destination network.
Interface	The IPv6 interface name or loopback.
Protocol	Protocol by which this IPv6 address was learned (LOCAL, STATIC, RIP).
Metric	RIP metric or cost (hop count) for the route. Indicates a priority for the route. The lower the metric value, the higher the priority.
VLAN	The VLAN on which the route was <i>learned</i> , not forwarded. Note that N/A appears in this field for static routes as they are not learned on a VLAN.

Release History

Release 6.6.1; command was introduced.

Related Commands

show ipv6 routes Displays the IPv6 Forwarding Table.

MIB Objects

N/A

show ipv6 tcp ports

Displays TCP Over IPv6 Connection Table. This table contains information about existing TCP connections between IPv6 endpoints.

show ipv6 tcp ports

Syntax Definitions

N/A

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

Only connections between IPv6 addresses are contained in this table.

Examples

-> show ipv6 tcp ports

Local Address	Port	Remote Address	Port	Interface	State
::	21	::	0		listen
::	23	::	0		listen
2002:d423:2323::35	21	212:61:61:0:2b0:d0ff:fe43:d4f8	34144	v6if-6to4-137	established
2002:d423:2323::35	49153	212:61:61:0:2b0:d0ff:fe43:d4f8	34144	v6if-6to4-137	established

output definitions

Local Address	Local address for this TCP connection. For ports in the “Listen” state, which accepts connections on any IPv6 interface, the address is ::0.
Port	Local port number for the TCP connection.
Remote Address	Remote IPv6 address for the connection. If the connection is in the “Listen” state, the address is ::0.
Port	Remote port number for the TCP connection. If the connection is in the “Listen” state, the port number is 0.
Interface	Name of the interface (or “unknown”) over which the connection is established.
State	State of the TCP connection as defined in RFC 793.

Release History

Release 6.6.1; command was introduced.

Related Commands

show ipv6 udp ports Displays the UDP Over IPv6 Listener Table.

MIB Objects

IPv6TcpConnTable
 IPv6TcpConnEntry
 IPv6TcpConnLocalAddress
 IPv6TcpConnLocalPort
 IPv6TcpConnRemAddress
 IPv6TcpConnRemPort
 IPv6TcpConnIfIndex
 IPv6TcpConnState

show ipv6 traffic

Displays IPv6 traffic statistics.

show ipv6 traffic [*if_name*]

Syntax Definitions

if_name Interface name. Restricts the display to the specified interface instead of global statistics.

Defaults

N/A.

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

The statistics show the cumulative totals since the last time the switch was powered on, the last reset of the switch was executed or the traffic statistics were cleared using the command.

Examples

```
-> show ipv6 traffic
```

```
Global IPv6 Statistics
  Packets received
    Total                = 598174
    Header errors        = 0
    Too big              = 12718
    No route             = 4
    Address errors      = 0
    Unknown protocol    = 0
    Truncated packets   = 0
    Local discards      = 0
    Delivered to users  = 582306
    Reassembly needed   = 0
    Reassembled         = 0
    Reassembly failed   = 0
    Multicast Packets   = 118
  Packets sent
    Forwarded           = 3146
    Generated           = 432819
    Local discards      = 0
    Fragmented         = 0
    Fragmentation failed = 0
    Fragments generated = 0
    Multicast packets   = 265
```

output definitions

Total	Total number of input packets received, including those received in error.
Header errors	Number of input packets discarded due to errors in their IPv6 headers (e.g., version number mismatch, other format errors, hop count exceeded, and errors discovered in processing their IPv6 options).
Too big	Number of input packets that could not be forwarded because their size exceeded the link MTU of the outgoing interface.
No route	Number of input packets discarded because no route could be found to transmit them to their destination.
Address errors	Number of input packets discarded because the IPv6 address in their IPv6 header's destination field was not a valid address to be received at this entity. This count includes invalid addresses (e.g., ::0) and unsupported addresses (e.g., addresses with unallocated prefixes).
Unknown protocol	Number of locally-addressed packets received successfully but discarded because of an unknown or unsupported protocol.
Truncated packets	Number of input packets discarded because the packet frame did not carry enough data.
Local discards	Number of input IPv6 packets for which no problems were encountered to prevent their continued processing, but which were discarded (e.g., for lack of buffer space). Note that this counter does not include any packets discarded while awaiting re-assembly.
Delivered to users	Total number of packets successfully delivered to IPv6 user protocols (including ICMP).
Reassembly needed	Number of IPv6 fragments received that needed to be reassembled.
Reassembled	Number of IPv6 packets successfully reassembled.
Reassembly failed	Number of failures detected by the IPv6 reassembly algorithm (for whatever reason: timed out, errors, etc.).
Multicast packets	Number of multicast packets received.
Forwarded	Number of output packets that this entity received and forwarded to their final destinations.
Generated	Total number of IPv6 packets that local IPv6 user-protocols (including ICMP) supplied to IPv6 in requests for transmission. Note that this counter does not include any packets counted by the Forwarded statistic.
Local discards	Number of output IPv6 packets for which no problem was encountered to prevent their transmission to their destination, but were discarded (e.g., for lack of buffer space). Note that this counter would include packets counted by the Forwarded statistic if any such packets met this (discretionary) discard criterion.
Fragmented	Number of IPv6 packets successfully fragmented.
Fragmentation failed	Number of IPv6 packets discarded because they needed to be fragmented but could not be.
Fragments generated	Number of output packet fragments generated as a result of fragmentation.
Multicast packets	Number of multicast packets transmitted.

Release History

Release 6.6.1; command was introduced.

Related Commands

show ipv6 icmp statistics Displays IPv6 ICMP statistics.

MIB Objects

```
ipv6IfStatsTable
  ipv6IfStatsInReceives
  ipv6IfStatsInHdrErrors
  ipv6IfStatsInTooBigErrors
  ipv6IfStatsInNoRoutes
  ipv6IfStatsInAddrErrors
  ipv6IfStatsInUnknownProtos
  ipv6IfStatsInTruncatedPkts
  ipv6IfStatsInDiscards
  ipv6IfStatsInDelivers
  ipv6IfStatsOutForwDatagrams
  ipv6IfStatsOutRequests
  ipv6IfStatsOutDiscards
  ipv6IfStatsOutFragOKs
  ipv6IfStatsOutFragFails
  ipv6IfStatsOutFragCreates
  ipv6IfStatsReasmReqds
  ipv6IfStatsReasmOKs
  ipv6IfStatsReasmFails
  ipv6IfStatsInMcastPkts
  ipv6IfStatsOutMcastPkts
```

clear ipv6 traffic

Resets all IPv6 traffic counters.

clear ipv6 traffic

Syntax Definitions

N/A

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

Use the [show ipv6 traffic](#) command to view current IPv6 traffic statistics.

Examples

```
-> clear ipv6 traffic
```

Release History

Release 6.6.1; command was introduced.

Related Commands

[show ipv6 traffic](#) Displays IPv6 traffic statistics.

MIB Objects

```
alaIPv6ConfigTable  
  alaIPv6ClearTraffic
```

show ipv6 udp ports

Displays UDP Over IPv6 Listener Table. This table contains information about UDP/IPv6 endpoints.

show ipv6 udp ports

Syntax Definitions

N/A

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

Only endpoints utilizing IPv6 addresses are displayed in this table.

Examples

```
-> show ipv6 udp ports
```

```
Local Address                               Port  Interface
-----+-----+-----
::                                           521
```

output definitions

Local Address	Local IPv6 address for this UDP listener. If a UDP listener accepts packets for any IPv6 address associated with the switch, the value is ::0.
Port	Local Port number for the UDP connection.
Interface	Name of the interface the listener is using or “unknown.”

Release History

Release 6.6.1; command was introduced.

Related Commands

[show ipv6 tcp ports](#) Displays TCP Over IPv6 Connection Table.

MIB Objects

```
IPv6UdpTable
  IPv6UdpEntry
  IPv6UdpLocalAddress
  IPv6UdpLocalPort
```

IPv6UdpIfIndex

show ipv6 information

Displays IPv6 information.

show ipv6 information

Syntax Definitions

N/A

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

N/A

Examples

```
-> show ipv6 information
```

```
Default hop limit           = 64
Path MTU entry minimum lifetime (min) = 60
Neighbor stale lifetime (min) = 1440
```

output definitions

Default hop limit	The value placed in the hop limit field in router advertisements
Path MTU entry minimum lifetime	Minimum lifetime for entries in the path MTU.
Neighbor stale lifetime	Minimum lifetime for neighbor entries in the stale state.

Release History

Release 6.6.1; command was introduced.

Related Commands

ipv6 neighbor	Configures a static entry in the IPv6 Neighbor Table.
ipv6 pmtu-lifetime	Configures the minimum lifetime for entries in the path MTU Table.
ipv6 hop-limit	Configures the value placed in the hop limit field in the header of all IPv6 packet.

MIB Objects

ipv6MibObjects

Ipv6DefaultHopLimit

alaIPv6ConfigTable

alaIPv6PMTUMinLifetime

alaIPv6NeighborTable

 alaIPv6NeighborStaleLifetime

show ipv6 ra-filter vlan

Displays the list of VLANs configured for RA filtering.

show ipv6 ra-filter vlan [*number*]

Syntax Definitions

number VLAN on which RA filtering is enabled.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

N/A

Examples

```
-> show ipv6 ra-filter vlan
vlan status
-----+-----
10 active
15 active
```

output definitions

VLAN	The VLAN on which RA filtering is enabled.
Status	Status of the VLAN.

Release History

Release 6.7.1; command introduced.

Related Commands

[ipv6 ra-filter](#) Configures the Router Advertisement (RA) filtering on an IPv6 VLAN.

MIB Objects

```
alaIpv6RafVlanTable
  alaIpv6RafVlan
```

show ipv6 ra-filter counters

Displays the counter statistics of the NIs which are up.

show ipv6 ra-filter counters

Syntax Definitions

N/A

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

N/A

Examples

```
-> show ipv6 ra-filter counters
NI      Untrusted Packet Count
-----+-----
1       0
```

output definitions

NI	Displays the NI in which RA filtering is enabled.
Untrusted Packet Count	Displays the dropped packets count in untrusted port.

Release History

Release 6.7.1; command introduced.

Related Commands

[ipv6 ra-filter](#) Configures the Router Advertisement (RA) filtering on an IPv6 VLAN.

MIB Objects

```
alaIpv6RafCounterStatsTable
  alaIpv6RafNi
  alaIpv6RafUntrustedPktCnt
```

ipv6 redist

Controls the conditions for redistributing IPv6 routes between different protocols.

ipv6 redist {local | static | rip} into {rip} route-map *route-map-name*
[status {enable | disable}]

no ipv6 redist {local | static} into {rip} [route-map *route-map-name*]

Syntax Definitions

local	Redistributes local IPv6 routes.
static	Redistributes static IPv6 routes.
<i>route-map-name</i>	Name of an existing route map that will control the redistribution of routes between the source and destination protocol.
enable	Enables the administrative status of the redistribution configuration.
disable	Disables the administrative status of the redistribution configuration.

Defaults

parameter	default
enable disable	enable

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Use the **no** form of this command to remove a route map redistribution configuration. Note that if a route map name is not specified, all route maps associated with the redistribution configuration are removed.
- The source and destination protocols must be loaded and enabled before redistribution occurs.
- Use the **ip route-map** commands described in the “IP Commands” chapter of this guide to create a route map. Refer to the “Configuring IP” chapter in the *OmniSwitch AOS Release 6250/6350/6450 Network Configuration Guide* for more information about how to create a route map.

Examples

```
-> ipv6 redist rip into static route-map rip-to-static1
-> ipv6 redist rip into static route-map rip-to-static2
-> no ipv6 redist rip into static route-map rip-to-ospf2
-> ipv6 redist local into rip route-map local-to-rip
-> ipv6 redist local into rip route-map local-to-rip disable
```

Release History

Release 6.6.1; command was introduced.

Related Commands

show ipv6 redist

Displays the route map redistribution configuration.

MIB Objects

```
alaRouteMapRedistProtoTable  
  alaRouteMapRedistSrcProtoId  
  alaRouteMapRedistDestProtoId  
  alaRouteMapRedistRouteMapIndex  
  alaRouteMapRedistStatus  
  alaRouteMapRedistAddressType  
  alaRouteMapRedistRowStatus
```

ipv6 access-list

Creates an IPv6 access list that is used to specify multiple IPv6 addresses for a route map configuration.

ipv6 access-list *access-list-name*

no ipv6 access-list *access-list-name*

Syntax Definitions

access-list-name Name of the IPv6 access list (up to 20 characters).

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

Use the **no** form of this command to delete the access list.

Examples

```
-> ipv6 access-list access1  
-> no ipv6 access-list access1
```

Release History

Release 6.6.1; command was introduced.

Related Commands

[ipv6 access-list address](#) Adds IPv6 addresses to an existing IPv6 access list.

[show ipv6 access-list](#) Displays the contents of an IPv6 access list.

MIB Objects

```
alaRouteMapAccessListNameTable  
  alaRouteMapAccessListName  
  alaRouteMapAccessListNameIndex  
  alaRouteMapAccessListNameAddressType  
  alaRouteMapAccessListNameRowStatus
```

ipv6 access-list address

Adds IPv6 addresses to the specified IPv6 access list.

ipv6 access-list *access-list-name* **address** *address/prefixLen* [**action** {**permit** | **deny**}]
[**redist-control** {**all-subnets** | **no-subnets** | **aggregate**}]

no ipv6 access-list *access-list-name* **address** *address/prefixLen*

Syntax Definitions

<i>access-list-name</i>	Name of the IPv6 access list (up to 20 characters).
<i>address/prefixLen</i>	IPv6 address along with the prefix length to be added to the access list.
permit	Permits the IPv6 address for redistribution.
deny	Denies the IPv6 address for redistribution.
all-subnets	Redistributes or denies all the subnet routes that match the network portion of the IP address as specified by the mask length.
no-subnets	Redistributes or denies only those routes that exactly match the IP address and the mask length.
aggregate	Redistributes an aggregate route if there are one or more routes that match or are subnets of this address.

Defaults

parameter	default
permit deny	permit
all-subnets no-subnets aggregate	all-subnets

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Use the **no** form of this command to delete the address from the access list.
- The *access-list-name* should exist before you add multiple IPv6 addresses to the IPv6 access list.
- The **action** parameters (**permit** and **deny**) determine if a route that matches the **redist-control** configuration for the IP address is allowed or denied redistribution.
- The **redist-control** parameters (**all-subnets**, **no-subnets**, and **aggregate**) defines the criteria used to determine if a route matches an address in the access list.
- Note that configuring the combination of **redist-control aggregate** with **action deny** is not allowed.
- Use this command multiple times with the same access list name to add multiple addresses to the existing IPv6 access list.

Examples

```
-> ipv6 access-list access1 address 2001::1/64 action permit
-> ipv6 access-list access1 address 2001::1/64 redist-control aggregate
-> no ipv6 access-list access1 address 2001::1/64
```

Release History

Release 6.6.1; command was introduced.

Related Commands

ipv6 access-list	Creates an IPv6 access list that is used to specify multiple IPv6 addresses for a route map configuration.
show ipv6 access-list	Displays the contents of an IPv6 access list.

MIB Objects

```
alaRouteMapAccessListTable
  alaRouteMapAccessListIndex
  alaRouteMapAccessListAddress
  alaRouteMapAccessListAddressType
  alaRouteMapAccessListPrefixLength
  alaRouteMapAccessListAction
  alaRouteMapAccessListRedistControl
  alaRouteMapAccessListRowStatus
```

show ipv6 redist

Displays the IPv6 route map redistribution configuration.

show ipv6 redist [rip]

Syntax Definitions

rip Displays the route map redistribution configurations that specify RIP as the destination (into) protocol.

Defaults

By default all route map redistribution configurations are shown.

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Specify a destination protocol with this command to display only those configurations that redistribute routes into the specified protocol.
- The IPv6 version of BGP is not supported currently.

Release History

Release 6.6.1; command was introduced.

Examples

```
-> show ipv6 redist
```

```
Source      Destination
Protocol    Protocol    Status      Route Map
-----+-----+-----+-----
localIPv6   RIPng       Enabled     ipv6rm
```

output definitions

Source Protocol	The protocol from which the routes are learned.
Destination Protocol	The protocol into which the source protocol routes are redistributed..
Status	The administrative status (Enabled or Disabled) of the route map redistribution configuration.
Route Map	The name of the route map that is applied with this redistribution configuration.

Related Commands

ipv6 redistrib

Controls the conditions for redistributing IPv6 routes between different protocols.

MIB Objects

```
alaRouteMapRedistProtoTable  
  alaRouteMapRedistSrcProtoId  
  alaRouteMapRedistDestProtoId  
  alaRouteMapRedistRouteMapIndex  
  alaRouteMapRedistStatus  
  alaRouteMapRedistAddressType  
  alaRouteMapRedistRowStatus
```

show ipv6 access-list

Displays the contents of the specified IPv6 access list.

show ip access-list [*access-list-name*]

Syntax Definitions

access-list-name Name of the IPv6 access list.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

If the *access-list-name* is not specified in this command, all the access lists will be displayed.

Examples

```
-> show ipv6 access-list
```

Name	Address / Prefix Length	Effect	Redistribution Control
al_3	128::/64	permit	all-subnets
al_4	124::/64	permit	no-subnets

```
-> show ipv6 access-list 4
```

Name	Address / Prefix Length	Effect	Redistribution Control
al_4	124::/64	permit	no-subnets

output definitions

Name	Name of the IPv6 access list.
Address/Prefix Length	IPv6 address that belongs to the access list.
Effect	Indicates whether the IPv6 address is permitted or denied for redistribution.
Redistribution Control	Indicates the conditions specified for redistributing the matched routes.

Release History

Release 6.6.1; command was introduced

Related Commands

- ipv6 access-list** Creates an IPv6 access list for adding multiple IPv6 addresses to route maps.
- ipv6 access-list address** Adds multiple IPv6 addresses to the IPv6 access list.

MIB objects

```
alaRouteMapAccessListIndex  
  alaRouteMapAccessListAddressType  
  alaRouteMapAccessListAddress  
  alaRouteMapAccessListPrefixLength  
  alaRouteMapAccessListAction  
  alaRouteMapAccessListRedistControl
```

ipv6 load rip

Loads RIPng into memory. When the switch is initially configured, you must load RIPng into memory to enable RIPng routing.

ipv6 load rip

Syntax Definitions

N/A

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6450

Usage Guidelines

- RIPng will support a maximum of 1,000 routes.
- RIPng will support a maximum of 20 interfaces.
- Use the [ipv6 rip status](#) command to enable RIPng on the switch.

Examples

```
-> ipv6 load rip
```

Release History

Release 6.6.1; command was introduced.

Related Commands

[ipv6 rip status](#)

Enables/disables RIPng routing on the switch.

[show ipv6 rip](#)

Displays RIPng status and general configuration parameters.

MIB Objects

alaDrcTmConfig

alaDrcTmIPRipngStatus

ipv6 rip status

Enables or disables RIPng on the switch.

ipv6 rip status {enable | disable}

Syntax Definitions

N/A

Defaults

parameter	default
enable disable	disable

Platforms Supported

OmniSwitch 6250, 6450

Usage Guidelines

RIPng must be loaded on the switch ([ipv6 load rip](#)) to enable RIP on the switch.

Examples

```
-> ipv6 rip status enable
```

Release History

Release 6.6.1; command was introduced.

Related Commands

[ipv6 load rip](#)

Loads RIPng into memory.

[show ipv6 rip](#)

Displays RIPng status and general configuration parameters.

MIB Objects

alaProtocolripng

 alaRipngProtoStatus

ipv6 rip invalid-timer

Configures the amount of time a route remains active in RIB before being moved to the "Garbage" state.

ipv6 rip invalid-timer *seconds*

Syntax Definitions

seconds Time, in seconds, that a route will remain in an "Active" state. Valid range is 1 - 300.

Defaults

parameter	default
<i>seconds</i>	180

Platforms Supported

OmniSwitch 6250, 6450

Usage Guidelines

This timer is reset each time a routing update is received.

Examples

```
-> ipv6 rip invalid-timer 300
```

Release History

Release 6.6.1; command was introduced.

Related Commands

[ipv6 rip garbage-timer](#) Configures the RIPng garbage timer value.
[ipv6 rip holddown-timer](#) Configures the amount of time a route is placed in a holddown state.

MIB Objects

alaProtocolripng
alaRipngInvalidTimer

ipv6 rip garbage-timer

Configures the RIPng garbage timer value. When a route in the RIB exceeds the configured Invalid Timer Value, the route is moved to a “Garbage” state in the the RIB. The garbage timer is the length of time a route will stay in this state before it is flushed from the RIB.

ipv6 rip garbage-timer *seconds*

Syntax Definitions

seconds Time, in seconds, that a route will remain in the RIPng Routing Table before it is flushed from the RIB. Valid range is 0 - 180.

Defaults

parameter	default
<i>seconds</i>	120

Platforms Supported

OmniSwitch 6250, 6450

Usage Guidelines

Use the [ipv6 rip invalid-timer](#) command to set the Invalid Timer Value.

Examples

```
-> ipv6 rip garbage-timer 180
```

Release History

Release 6.6.1; command was introduced.

Related Commands

- [ipv6 rip invalid-timer](#) Configures the amount of time a route remains active in RIB before being moved to the "Garbage" state.
- [ipv6 rip holddown-timer](#) Configures the amount of time a route is placed in a holddown state.

MIB Objects

alaProtocolripng
alaRipngGarbageTimer

ipv6 rip holddown-timer

Configures the amount of time a route is placed in a holddown state. Whenever a route is seen from the same gateway with a higher metric than the route in RIB, the route goes into holddown. This excludes route updates with an INFINITY metric.

ipv6 rip holddown-timer *seconds*

Syntax Definitions

seconds Time, in seconds, that a route will remain in a holddown state. Valid range is 0 - 120.

Defaults

parameter	default
<i>seconds</i>	0

Platforms Supported

OmniSwitch 6250, 6450

Usage Guidelines

While in holddown, the route continues being announced as usual and used in RIB. This interval is used to control route flap dampening.

Examples

```
-> ipv6 rip holddown-timer 60
```

Release History

Release 6.6.1; command was introduced.

Related Commands

[ipv6 rip invalid-timer](#) Configures the amount of time a route remains active in RIB before being moved to the "Garbage" state.

[ipv6 rip garbage-timer](#) Configures the RIPng garbage timer value.

MIB Objects

alaProtocolripng
alaRipngHolddownTimer

ipv6 rip jitter

Configures an offset value for RIPng updates. This is the maximum (positive or negative) value that can be used to offset the update interval. For example, with an update interval of 30 seconds, and a jitter value of 5 seconds, the RIPng update packet would be sent somewhere (random) between 25 and 35 seconds from the previous update.

ipv6 rip jitter *value*

Syntax Definitions

value Time, in seconds, that a routing update is offset. Valid range is 0 to one-half the updated interval value (e.g., if the updated interval is 30, the range would be 0 - 300).

Defaults

parameter	default
<i>value</i>	5

Platforms Supported

OmniSwitch 6250, 6450

Usage Guidelines

As you increase the number of RIPng interfaces/peers, it is recommended that you increase the Jitter value to reduce the number of RIPng updates being sent over the network.

Examples

```
-> ipv6 rip jitter 10
```

Release History

Release 6.6.1; command was introduced.

Related Commands

[ipv6 rip update-interval](#) Configures the RIPng update interval.
[show ipv6 rip](#) Displays RIPng status and general configuration information.

MIB Objects

alaProtocolripng
alaRipngJitter

ipv6 rip route-tag

Configures the route tag value for RIP routes generated by the switch.

ipv6 rip route-tag *value*

Syntax Definitions

value Route tag value. Valid range is 0 – 65535.

Defaults

parameter	default
<i>value</i>	0

Platforms Supported

OmniSwitch 6250, 6450

Usage Guidelines

This value does not apply to routes learned from other routers. For these routes, the route tag propagates with the route.

Examples

```
-> ipv6 rip route-tag 30
```

Release History

Release 6.6.1; command was introduced.

Related Commands

[show ipv6 rip](#) Displays RIPng status and general configuration information.

MIB Objects

alaProtocolripng
alaRipngRouteTag

ipv6 rip update-interval

Configures the RIPng update interval. This is the interval, in seconds, that RIPng routing updates will be sent out.

ipv6 rip update-interval *seconds*

Syntax Definitions

seconds Interval, in seconds, that RIPng routing updates are sent out. Valid range is 0–120.

Defaults

parameter	default
<i>seconds</i>	30

Platforms Supported

OmniSwitch 6250, 6450

Usage Guidelines

Use this command, along with the [ipv6 rip jitter](#) command to configure RIPng updates.

Examples

```
-> ipv6 rip update-interval 30
```

Release History

Release 6.6.1; command was introduced.

Related Commands

[ipv6 rip jitter](#) Configures an offset value for RIPng updates.
[show ipv6 rip](#) Displays RIPng status and general configuration information.

MIB Objects

alaRipng
alaRipngUpdateInterval

ipv6 rip triggered-sends

Configures the behavior of triggered updates.

ipv6 rip triggered-sends {**all** | **updated-only** | **none**}

Syntax Definitions

all	All RIPng routes are added to any triggered updates.
updated-only	Only route changes that are causing the triggered update are included in the update packets.
none	RIPng routes are not added to triggered updates.

Defaults

parameter	default
all updated-only none	updated-only

Platforms Supported

OmniSwitch 6250, 6450

Usage Guidelines

- If set to **all**, all routes are sent in the update, not just route changes, which increases RIPng traffic on the network.
- If set to **none**, no triggered updates are sent, which can cause delays in network convergence.

Examples

```
-> ipv6 rip triggered-sends none
```

Release History

Release 6.6.1; command was introduced.

Related Commands

[show ipv6 rip](#) Displays RIPng status and general configuration information.

MIB Objects

alaProtocolripng
alaRipngTriggeredSends

ipv6 rip interface

Creates or deletes a RIPng interface.

ipv6 rip interface *if_name*

[no] ipv6 rip interface *if_name*

Syntax Definitions

if_name IPv6 interface name.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6450

Usage Guidelines

- By default, a RIPng interface is created in the enabled state.
- Routing is enabled on a VLAN when you create a router port. However, to enable RIPng routing, you must also configure and enable a RIPng routing interface on the VLAN's IP router port. For more information on VLANs and router ports, see [Chapter 25, "VLAN Management Commands"](#).
- RIPng will support a maximum of 20 interfaces.

Examples

```
-> ipv6 rip interface Test_Lab
```

Release History

Release 6.6.1; command was introduced.

Related Commands

ipv6 redist	Loads RIPng into memory.
ipv6 rip status	Enables or disables RIPng on the switch.
ipv6 rip interface rcv-status	Configures IPv6 RIPng interface “Receive” status. When this status is set to "enable", packets can be received on this interface.
ipv6 rip interface send-status	Configures IPv6 RIPng interface “Send” status. When this status is set to "enable", packets can be sent on this interface.
show ipv6 rip interface	Displays information for all or specified RIPng interfaces.

MIB Objects

alaRipngInterfaceTable
 alaRipngInterfaceStatus

ipv6 rip interface metric

Configures the RIPng metric or cost for a specified interface. You can set priorities for routes generated by a switch by assigning a metric value to routes generated by that switch's RIPng interface. For example, routes generated by a neighboring switch may have a hop count of 1. However, you can lower the priority of routes generated by that switch by increasing the metric value for routes generated by the RIPng interface.

ipv6 rip interface *if_name* **metric** *value*

Syntax Definitions

if_name IPv6 interface name.
value Metric value. Valid range is 1 - 15.

Defaults

parameter	default
<i>value</i>	1

Platforms Supported

OmniSwitch 6250, 6450

Usage Guidelines

When you configure a metric for a RIPng interface, this metric cost is added to the metric of the incoming route.

Examples

```
-> ipv6 rip Test_Lab metric 1
```

Release History

Release 6.6.1; command was introduced.

Related Commands

[ipv6 rip interface](#) Creates or deletes a RIPng interface.
[show ipv6 rip interface](#) Displays information for all or specified RIPng interfaces.

MIB Objects

alaRipngInterfaceTable
 alaRipngInterfaceMetric

ipv6 rip interface recv-status

Configures IPv6 RIPng interface “Receive” status. When this status is set to "enable", packets can be received on this interface. When it is set to "disable", packets will not be received on this interface.

ipv6 rip interface *if_name* recv-status {enable | disable}

Syntax Definitions

if_name IPv6 interface name.
enable | disable Interface “Receive” status.

Defaults

parameter	default
enable disable	enable

Platforms Supported

OmniSwitch 6250, 6450

Usage Guidelines

RIPng must be loaded ([ipv6 load rip](#)) and enabled ([ipv6 rip status](#)) on the switch to send or receive packets on the interface.

Examples

```
-> ipv6 rip interface Test_Lab recv-status disable
```

Release History

Release 6.6.1; command was introduced.

Related Commands

[ipv6 redist](#) Loads RIPng into memory.
[ipv6 rip status](#) Enables/disables RIPng on the switch.
[ipv6 rip interface send-status](#) Configures IPv6 RIPng interface “Send” status.

MIB Objects

alaRipngInterfaceTable
 alaRipngInterfaceRecvStatus

ipv6 rip interface send-status

Configures IPv6 RIPng interface “Send” status. When this status is set to "enable", packets can be sent from this interface. When it is set to "disable", packets will not be sent from this interface.

ipv6 rip interface *if_name* send-status {enable | disable}

Syntax Definitions

if_name IPv6 interface name.
enable | disable Interface “Send” status.

Defaults

parameter	default
enable disable	enable

Platforms Supported

OmniSwitch 6250, 6450

Usage Guidelines

RIPng must be loaded ([ipv6 load rip](#)) and enabled ([ipv6 rip status](#)) on the switch to send or receive packets on the interface.

Examples

```
-> ipv6 rip interface Test_Lab send-status enable
```

Release History

Release 6.6.1; command was introduced.

Related Commands

[ipv6 redistrib](#) Loads RIPng into memory.
[ipv6 rip status](#) Enables/disables RIPng on the switch.
[ipv6 rip interface rcv-status](#) Configures IPv6 RIPng interface “Receive” status.

MIB Objects

alaRipngInterfaceTable
 alaRipngInterfaceSendStatus

ipv6 rip interface horizon

Configures the routing loop prevention mechanisms.

```
ipv6 rip interface if_name horizon {none | split-only | poison}
```

Syntax Definitions

<i>if_name</i>	IPv6 interface name.
none split-only poison	<p>none - Disables loop prevention mechanisms.</p> <p>split-only - Enables split-horizon, without poison-reverse.</p> <p>poison - Enables split-horizon with poison-reverse.</p>

Defaults

parameter	default
none split-only poison	poison

Platforms Supported

OmniSwitch 6250, 6450

Usage Guidelines

- If set to **none** the route is not sent back to the peer.
- If set to **split-only**, the route received from the peer is sent back with an increased metric.
- If set to **poison** the route received from the peer is sent back with an “infinity” metric.

Examples

```
-> ipv6 rip interface Test_Lab none
```

Release History

Release 6.6.1; command was introduced.

Related Commands

show ipv6 rip interface	Displays information for all or specified RIPng interfaces.
show ipv6 rip routes	Displays all or a specific set of routes in the RIPng Routing Table.

MIB Objects

```
alaRipngInterfaceTable
  alaRipngInterfaceHorizon
```

show ipv6 rip

Displays the RIPng status and general configuration parameters.

show ipv6 rip

Syntax Definitions

N/A

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6450

Usage Guidelines

N/A

Examples

```
-> show ipv6 rip
```

```
Status                = Enabled,
Number of routes      = 10,
Route tag             = 0,
Update interval      = 30,
Invalid interval     = 180,
Garbage interval     = 120,
Holddown interval    = 0,
Jitter interval      = 5,
Triggered Updates    = All Routes,
```

output definitions

Status	RIPng protocol status (enabled or disabled).
Number of routes	Number of RIPng routes in Forwarding Information Base (FIB).
Route tag	Route tag value for RIP routes generated by the switch. Valid range is 0-65535. Default is 0.
Invalid interval	Invalid Timer setting, in seconds.
Garbage interval	Garbage Timer setting, in seconds.
Holddown interval	Holddown Timer setting, in seconds.
Jitter interval	Jitter setting.
Triggered updates	Triggered Updates setting (All Routes, Updated Routes, and None).

Release History

Release 6.6.1; command was introduced.

Related Commands

ipv6 rip status	Enables or disables RIPng routing on the switch.
ipv6 rip route-tag	Configures the route tag value for RIP routes generated by the switch.
ipv6 rip update-interval	Configures the Interval, in seconds, so that RIPng routing updates are sent out.
ipv6 rip invalid-timer	Configures the amount of time a route remains active in RIB before being moved to the "garbage" state.
ipv6 rip invalid-timer	Configures the RIPng garbage timer value. Routes move into the garbage collection state because the timer expired or a route update with an INFINITY metric was received.
ipv6 rip holddown-timer	Configures the amount of time a route is placed in a holddown state.
ipv6 rip jitter	Configures an offset value for RIPng updates. This is the maximum (positive or negative) value that can be used to offset the update interval.
ipv6 rip triggered-sends	Configures the behavior of triggered updates.

MIB Objects

```
alaRipngInterfaceTable  
  alaRipngInterfaceStatus  
  alaRipngRouteTag  
  laRipngInvalidTimer  
  alaRipngGarbageTimer  
  alaRipngHolddownTimer  
  alaRipngJitter  
  alaRipngTriggeredSends
```

show ipv6 rip interface

Displays information for all or specified RIPng interfaces.

show ipv6 rip interface [*if_name*]

Syntax Definitions

if_name IPv6 interface name.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6450

Usage Guidelines

If you do not specify an interface, all IPv6 RIP interfaces are displayed.

Examples

```
-> show ipv6 rip interface
```

Interface Name	Status	Packets		Metric
		Recv'd	Sent	
Test_Lab	Active	12986	12544	1
Test_Lab_2	Active	12556	12552	1

```
-> show ipv6 rip interface if3
```

```
Name = Test_Lab,
IPv6 interface index = 3,
Interface status = Active,
Next Update = 27 secs,
Horizon Mode = Split and Poison-reverse,
MTU size = 1500,
Metric = 1,
Send status = Enabled,
Receive status = Enabled,
Packets received = 12986,
Packets sent = 12544,
```

output definitions

Interface name	Interface name.
IPv6 interface index	IPv6 index of this interface.
Status	Interface status (Active/Inactive).
Packets Recvd	Number of packets received by the interface.

output definitions (continued)

Packets Sent	Number of packets sent by the interface.
Metric	RIPng metric (cost) configured for the interface.
IPv6 interface index	IPv6 interface index number.
Interface status	Interface status (Active/Inactive).
Next update	Seconds remaining until the next update on this interface.
Horizon mode	Interface Horizon Mode (routing loop prevention mechanisms). Displayed modes are none/split-only/poison-reverse.
MTU size	Maximum transmission size for RIPng packets on the interface.
Send status	Interface "Send" status. When this status is set to "enable", packets can be sent from this interface. When it is set to "disable", packets will not be sent from this interface.
Receive status	Interface "Receive" status. When this status is set to "enable", packets can be received by this interface. When it is set to "disable", packets cannot be received by this interface.
Packets received	Number of packets received by the interface.
Packets sent	Number of packets sent by the interface.

Release History

Release 6.6.1; command was introduced.

Related Commands

ipv6 rip interface	IPv6 interface name.
ipv6 rip status	Enables or disables RIPng routing on the switch.
ipv6 rip interface rcv-status	Configures the interface "Receive" status. When this status is set to "enable", packets can be received by this interface. When it is set to "disable", packets cannot be received by this interface.
ipv6 rip interface send-status	Configures the interface "Send" status. When this status is set to "enable", packets can be sent from this interface. When it is set to "disable", packets will not be sent from this interface.
ipv6 rip interface metric	Configures the RIPng metric (cost) for the interface.
ipv6 rip interface horizon	Configures the interface Horizon Mode (routing loop prevention mechanisms).
show ipv6 rip	Displays RIPng status and general configuration parameters (e.g., force holddown timer).

MIB Objects

```
alaRipngInterfaceTable
  alaRipngInterfaceEntry
  alaRipngInterfaceStatus
  alaRipngInterfacePacketsRcvd
  alaRipngInterfacePacketsSent
  alaRipngInterfaceMetric
  alaRipngInterfaceIndex
  alaRipngInterfaceNextUpdate
  alaRipngInterfaceHorizon
  alaRipngInterfaceMTU
  alaRipngInterfaceSendStatus
  alaRipngInterfaceRecvStatus
```

show ipv6 rip peer

Displays a summary of the observed RIPng peers, or specific information about a peer when a peer address is provided.

show ipv6 rip peer [*ipv6_address*]

Syntax Definitions

ipv6_address IPv6 address of the peer.

Defaults

N/A.

Platforms Supported

OmniSwitch 6250, 6450

Usage Guidelines

If you do not specify a peer, all IPv6 RIP peers are displayed.

Examples

```
-> show ipv6 peer
```

Address	Seen on Interface	Packets Recv	Last Update
fe80::200:39ff:fe1f:710c	vlan172	23	20
fe80::2d0:95ff:fe12:da40	bkbone20	33	2
fe80::2d0:95ff:fe12:da40	vlan150	26	25
fe80::2d0:95ff:fe6a:5d41	nssa23	20	25

```
-> show ipv6 rip peer fe80::2d0:95ff:fe12:da40
```

```
Peer#1 address      = fe80::2d0:95ff:fe12:da40,
Seen on interface   = bkbone20,
Last Update         = 8 secs,
Received packets    = 33,
Received bad packets = 0
Received routes     = 5,
Received bad routes = 0
```

```
Peer#2 address      = fe80::2d0:95ff:fe12:da40,
Seen on interface   = vlan150,
Last Update         = 1 secs,
Received packets    = 27,
Received bad packets = 0
Received routes     = 2,
Received bad routes = 0
```

output definitions

Address	IPv6 address of the peer.
Seen on Interface	Interface used to reach the peer.
Packets Recvd	Number of packets received from the peer.
Last Update	Number of seconds since the last update was received from the peer.
Peer address	Peer IPv6 address.
Received packets	Number of packets received from the peer.
Received bad packets	Number of bad packets received from the peer.
Received routes	Number of RIPng routes received from the peer.
Received bad routes	Number of bad RIPng routes received from the peer.

Release History

Release 6.6.1; command was introduced.

Related Commands

show ipv6 rip interface	Displays all or specified RIPng interface status.
show ipv6 rip routes	Displays all or a specific set of routes in RIPng Routing Table.

MIB Objects

```
alaRipngPeerTable
  alaRipngPeerEntry
  alaRipngPeerAddress
  alaRipngPeerIndex
  alaRipngPeerLastUpdate
  alaRipngPeerNumUpdates
  alaRipngPeerBadPackets
  alaRipngPeerNumRoutes
  alaRipngPeerBadRoutes
```

show ipv6 rip routes

Displays all or a specific set of routes in RIPng Routing Table.

show ipv6 rip routes [**dest** <ipv6_prefix/prefix_length>] / [**gateway** <ipv6_addr>] | [**detail** <ipv6_prefix/prefix_length>]

Syntax Definitions

dest	Displays all routes whose destination matches the IPv6 prefix/prefix length.
gateway	Displays all routes whose gateway matches the specified IPv6 address.
detail	Displays detailed information about a single route matching the specified destination.
<i>ipv6_addr</i>	IPv6 address.
<i>ipv6_prefix/prefix length</i>	IPv6 address and prefix/prefix length.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6450

Usage Guidelines

If you do not enter one of the optional parameters, all IPv6 RIP routes are displayed.

Examples

```
-> show ipv6 rip routes
```

Legends: State: A = Active, H = Holddown, G = Garbage

Destination	Gateway	State	Metric	Proto
100::1/128	+fe80::200:39ff:fe1f:710c	A	2	Rip
100::100:1/128	+fe80::200:39ff:fe1f:710c	A	2	Rip
400::/100	+fe80::2d0:95ff:fe12:e050	A	1	Local
900::/100	+fe80::2d0:95ff:fe12:e050	A	1	Local
8900::/100	+fe80::2d0:95ff:fe12:da40	A	2	Rip
9800::/100	+fe80::2d0:95ff:fe12:da40	A	2	Rip
9900::/100	+fe80::2d0:95ff:fe12:e050	A	1	Local


```
-> show ipv6 rip routes detail 9900::/100
```

```

Destination      = 9900::,
Mask length      = 100,
Gateway(1)       = fe80::2d0:95ff:fe12:e050,
Protocol         = Local,
Out Interface    = nssa23,
Metric           = 1,
Status           = Installed,
State            = Active,
Age              = 10544s,
Tag              = 0,
Gateway(2)       = fe80::2d0:95ff:fe12:da40,
Protocol         = Rip,
Out Interface    = bkbone20,
Metric           = 2,
Status           = Not Installed,
State            = Active,
Age              = 15s,
Tag              = 0,

```

output definitions

Destination	IPv6 address/address length of the destination.
Gateway	IPv6 gateway used to reach the destination.
State	Route status (Active/Inactive).
Metric	Routing metric for this route.
Protocol	Protocol used to learn the route.
Mask Length	Prefix Length.
Out Interface	The interface used to reach the destination.
Status	Route status (Active/Inactive).
Age	The number of seconds since the route was last updated.
Tag	The route tag value for the route.

Release History

Release 6.6.1; command was introduced.

Related Commands

ipv6 rip interface	Creates/deletes a RIPng interface.
ipv6 rip interface metric	Configures the RIPng metric or cost for a specified interface.
show ipv6 rip interface	Displays all or specified RIPng interface status.

MIB Objects

```
alaRipngRouteTable  
  alaRipngRouteEntry  
  alaRipngRoutePrefixLen  
  alaRipngRouteNextHop  
  alaRipngRouteType  
  alaRipngRouteAge  
  alaRipngRouteTag  
  alaRipngRouteStatus  
  alaRipngRouteMetric
```

36 RDP Commands

This chapter details Router Discovery Protocol (RDP) commands for the switch. RDP is an extension of the Internet Control Message Protocol (ICMP) that provides a mechanism for end hosts to discover at least one router in the same network.

This implementation of RDP is based on the router requirements specified in RFC 1256. Switches that serve as a router can enable RDP to advertise themselves to clients on the same network at random intervals between a configurable range of time and in response to client solicitations.

MIB information for the RDP commands is as follows:

Filename: AlcatelIND1Rdp.mib
Module: alcatelIND1RDPMIB

A summary of the available commands is listed here:

ip router-discovery
ip router-discovery interface
ip router-discovery interface advertisement-address
ip router-discovery interface max-advertisement-interval
ip router-discovery interface min-advertisement-interval
ip router-discovery interface advertisement-lifetime
ip router-discovery interface preference-level
show ip router-discovery
show ip router-discovery interface

ip router-discovery

Enables or disables the Router Discovery Protocol (RDP) for the switch.

ip router-discovery {enable | disable}

Syntax Definitions

enable	Enables RDP on the switch.
disable	Disables RDP on the switch.

Defaults

By default, RDP is disabled on the switch.

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

The **ip router-discovery** command only activates RDP for the switch. No advertisements occur until an IP interface is configured with RDP.

Examples

```
-> ip router-discovery enable  
-> ip router-discovery disable
```

Release History

Release 6.6.1; command was introduced.

Related Commands

[ip router-discovery interface](#) Enables or disables an RDP interface.

MIB Objects

```
alaRDPConfig  
  alaRDPStatus
```

ip router-discovery interface

Enables or disables RDP for the specified IP interface. An RDP interface is created for the specified IP interface name, which is then advertised by RDP as an active router on the local network.

ip router-discovery interface *name* [**enable** | **disable**]

no router-discovery interface *name*

Syntax Definitions

<i>name</i>	The IP interface name that was defined at the time the IP interface was configured.
enable	Enables an RDP interface for the specified IP interface.
disable	Disables an RDP interface for the specified IP interface.

Defaults

parameter	default
enable disable	enable

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Use the **no** form of this command to remove the RDP interface from the switch configuration.
- Do *not* use the **enable** option the first time this command is used to create an RDP interface, as it is not necessary and will return an error message. Once RDP is enabled and then is subsequently disabled, however, the **enable** option is then required the next time this command is used to enable the RDP interface.
- The RDP interface is not active unless RDP is also enabled for the switch.

Examples

```
-> ip router-discovery interface Marketing
-> ip router-discovery interface Marketing disable
-> ip router-discovery interface Marketing enable
-> no ip router-discovery interface Marketing
```

Release History

Release 6.6.1; command was introduced.

Related Commands

[ip router-discovery](#)

Enables or disables RDP for the switch.

[ip interface](#)

Configures an IP router interface.

MIB Objects

alaRDPIfTable

 alaRDPIfStatus

ip router-discovery interface advertisement-address

Configures the destination address to which RDP will send router advertisement packets from the specified interface. Advertisement packets are sent at configurable intervals by routers to announce their IP addresses on the network.

ip router-discovery interface *name* advertisement-address {all-systems-multicast | broadcast}

Syntax Definitions

<i>name</i>	The IP interface name that was defined at the time the IP interface was configured.
all-systems-multicast	Specifies 224.0.0.1 as the destination address for RDP advertisement packets.
Broadcast	Specifies 255.255.255.255 as the destination address for RDP advertisement packets. Use this address if IP multicast links are not available.

Defaults

parameter	default
all-systems-multicast broadcast	all-systems-multicast

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- The RDP interface advertisement address is not active unless RDP is enabled on the switch and the specified interface is also enabled.
- RFC 1256 recommends the use of **all-system-multicast** on all links with “listening hosts” that support IP multicast.

Examples

```
-> ip router-discovery interface Marketing advertisement-address all-systems-multi-
cast
-> ip router-discovery interface Accounting advertisement-address broadcast
```

Release History

Release 6.6.1; command was introduced.

Related Commands

- ip router-discovery** Enables or disables RDP on the switch.
- ip router-discovery interface** Enables or disables an RDP interface.

MIB Objects

alaRDPIfTable
alaRDPIfAdvtAddress

ip router-discovery interface max-advertisement-interval

Configures the maximum time, in seconds, RDP allows between each advertisement packet the router transmits on the specified interface.

ip router-discovery interface *name* **max-advertisement-interval** *seconds*

Syntax Definitions

<i>name</i>	The IP interface name that was defined at the time the IP interface was configured.
<i>seconds</i>	The maximum amount of time allowed before the next advertisement occurs. The range is 4 to 1800 seconds.

Defaults

parameter	default
<i>seconds</i>	600

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- The RDP interface maximum advertisement time is not active unless RDP is enabled on the switch and the specified interface is also enabled.
- Do not specify a value for the maximum advertisement interval that is *less* than the value specified for the minimum advertisement interval. To set the minimum advertisement interval value, use the **ip router-discovery interface min-advertisement-interval** command.
- Note that the minimum and maximum advertisement values define an interval of time in which RDP transmits advertisement packets. RDP transmits packets at random times within this interval, waiting no longer than the maximum time specified and no sooner than the minimum time specified before the next transmission.

Examples

```
-> ip router-discovery interface Marketing max-advertisement-interval 350
-> ip router-discovery interface Accounting max-advertisement-interval 20
```

Release History

Release 6.6.1; command was introduced.

Related Commands

ip router-discovery	Enables or disables RDP on the switch.
ip router-discovery interface	Enables or disables an RDP interface.
ip router-discovery interface min-advertisement-interval	Configures the minimum time, in seconds, RDP allows between each advertisement packet the router transmits on the specified interface.
ip router-discovery interface advertisement-lifetime	Configures the maximum amount of time, in seconds, that router IP addresses received in advertisement packets are considered valid.

MIB Objects

alaRDPIfTable
alaRDPIfMaxAdvtInterval

ip router-discovery interface min-advertisement-interval

Configures the minimum time, in seconds, RDP allows between each advertisement packet the router transmits on the specified interface.

ip router-discovery interface *name* **min-advertisement-interval** *seconds*

Syntax Definitions

<i>name</i>	The IP interface name that was defined at the time the IP interface was configured.
<i>seconds</i>	The minimum amount of time allowed before the next advertisement occurs. The range is 3 seconds to the value set for the maximum advertisement interval.

Defaults

parameter	default
<i>seconds</i>	0.75 * maximum advertisement interval

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- The RDP interface minimum advertisement time is not active unless RDP is enabled on the switch and the specified interface is also enabled.
- Do not specify a value for the minimum advertisement interval that is *greater* than the value specified for the maximum advertisement interval. To set the maximum advertisement interval value, use the **ip router-discovery interface max-advertisement-interval** command.
- Note that the minimum and maximum advertisement values define an interval of time in which RDP transmits advertisement packets. RDP transmits packets at random times within this interval, waiting no longer than the maximum time specified and no sooner than the minimum time specified before the next transmission.

Examples

```
-> ip router-discovery interface Marketing min-advertisement-interval 20
-> ip router-discovery interface Accounting min-advertisement-interval 3
```

Release History

Release 6.6.1; command was introduced.

Related Commands

ip router-discovery	Enables or disables RDP on the switch.
ip router-discovery interface	Enables or disables an RDP interface.
ip router-discovery interface max-advertisement-interval	Configures the maximum time, in seconds, RDP allows between each advertisement packet the router transmits on the specified interface.
ip router-discovery interface advertisement-lifetime	Configures the maximum amount of time, in seconds, that router IP addresses received in advertisement packets are considered valid.

MIB Objects

alaRDPIfTable
alaRDPIfMinAdvtInterval

ip router-discovery interface advertisement-lifetime

Configures the maximum amount of time, in seconds, that router IP addresses advertised from the specified interface are considered valid. This value is set in the lifetime field of the advertisement packets transmitted on the specified RDP interface.

ip router-discovery interface *name* **advertisement-lifetime** *seconds*

Syntax Definitions

<i>name</i>	The IP interface name that was defined at the time the IP interface was configured.
<i>seconds</i>	The length of time, in seconds, that advertised IP addresses are considered valid by the receiving host. The range is the value set for the maximum advertisement interval to 9000.

Defaults

parameter	default
<i>seconds</i>	3 * maximum advertisement interval

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- The RDP interface advertisement lifetime value is not active unless RDP is enabled on the switch, and the specified interface is also enabled.
- Do not specify an advertisement lifetime value that is less than the value specified for the maximum advertisement interval. To set the maximum advertisement interval value, use the **ip router-discovery interface max-advertisement-interval** command.

Examples

```
-> ip router-discovery interface Marketing advertisement-lifetime 2000  
-> ip router-discovery interface Accounting advertisement-lifetime 750
```

Release History

Release 6.6.1; command was introduced.

Related Commands

ip router-discovery	Enables or disables RDP on the switch.
ip router-discovery interface	Enables or disables an RDP interface.
ip router-discovery interface min-advertisement-interval	Configures the minimum time, in seconds, RDP allows between each advertisement packet the router transmits on the specified interface.
ip router-discovery interface max-advertisement-interval	Configures the maximum time, in seconds, RDP allows between each advertisement packet the router transmits on the specified interface.

MIB Objects

alaRDPIfTable

alaRDPIfAdvLifeTime

ip router-discovery interface preference-level

Configures the preference level for each IP address advertised on the specified RDP interface. The end host selects the address with the highest preference level to use as its default router, if the host is not already redirected or configured to use another default router for a particular destination.

ip router-discovery interface *name* **preference-level** *level*

Syntax Definitions

<i>name</i>	The IP interface name that was defined at the time the IP interface was configured.
<i>level</i>	Any positive, integer value. The higher the value, the higher the precedence.

Defaults

parameter	default
<i>level</i>	0

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- The RDP interface preference level value is not active unless RDP is enabled on the switch and the specified interface is also enabled.
- Set the preference level higher to encourage the use of an advertised router IP address.
- Set the preference level lower to discourage the use of an advertised router IP address.
- The preference level of an advertised router IP address is compared only to the preference levels of other addresses on the same subnet.

Examples

```
-> ip router-discovery interface Marketing preference-level 10
-> ip router-discovery interface Accounting preference-level 50
```

Release History

Release 6.6.1; command was introduced.

Related Commands

- ip router-discovery** Enables or disables RDP on the switch.
ip router-discovery interface Enables or disables an RDP interface.

MIB Objects

alaRDPIfTable
 alaRDPIfPrefLevel

show ip router-discovery

Displays the current RDP status and related statistics for the entire switch.

show ip router-discovery

Syntax Definitions

N/A

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Each time RDP is enabled on the switch, all statistic parameter values are reset to zero for the new session. For example, if the RDP uptime was 160000 seconds when RDP was last disabled, the uptime starts out at zero the next time RDP is enabled.
- Use the **show ip router-discovery interface** command to display information about a specific RDP interface.

Examples

```
-> show ip router-discovery
Status                = Enabled,
RDP uptime            = 161636 secs
#Packets Tx           = 4,
#Packets Rx           = 0,
#Send Errors          = 0,
#Recv Errors          = 0,
```

output definitions

Status	The status of RDP. Enabled allows RDP interfaces to advertise router IP addresses; Disabled stops RDP traffic on all switch interfaces. Use the ip router-discovery command to enable or disable RDP on the switch.
RDP uptime	Indicates the amount of time, in seconds, that RDP has remained active on the switch.
#Packets Tx	The number of RDP packets transmitted from all active RDP interfaces on the switch.
#Packets Rx	The number of RDP packets received on all active RDP interfaces on the switch.
#Send Errors	The number of RDP packet transmission errors that have occurred.
#Recv Errors	The number of errors that occurred when receiving RDP packets.

Release History

Release 6.6.1; command was introduced.

Related Commands

[show ip router-discovery interface](#)

Displays the current RDP status and related statistics for one or more switch router port interfaces.

MIB Objects

alaRDPConfig

 alaRDPStatus

show ip router-discovery interface

Displays the current RDP status, related parameter values, and RDP traffic statistics for one or more switch router interfaces.

show ip router-discovery interface [*name*]

Syntax Definitions

name The IP interface name that was defined at the time the IP interface was configured.

Defaults

By default, the information for all RDP interfaces is displayed with this command.

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- When an optional IP interface name is specified with this command, additional information about the RDP interface is displayed.
- Use the **show ip router-discovery** command to display global RDP status and statistics for the entire switch.

Examples

```
-> show ip router-discovery interface
      IP i/f   RDP i/f   Next   #Pkts
      Name     status   status  Advt  sent/recvd
-----+-----+-----+-----+-----
Marketing    Disabled Enabled   9     0     0
Accounting   Disabled Enabled   3     0     0
```

output definitions

Name	The user-defined IP interface name defined at the time the IP interface was configured.
IP i/f status	The IP status for this interface (Enabled or Disabled).
RDP i/f status	The RDP status for this interface (Enabled or Disabled).
Next Advt	Time remaining until the next advertisement is sent.
#Pkts sent/recvd	Number of advertisement packets sent from this interface; the number of solicitation packets received on this interface.

```

-> show ip router-discovery interface Marketing
Name = Marketing,
IP Address = 11.255.4.1,
IP Mask = 255.0.0.0,
IP Interface status = Enabled,
RDP Interface status = Enabled,
Advertisement address = 224.0.0.1,
Max Advertisement interval = 600 secs,
Min Advertisement interval = 450 secs,
Advertisement lifetime = 1800 secs,
Preference Level = 0x0,
#Packets sent = 3,
#Packets received = 0,

```

output definitions

Name	The user-defined IP interface name defined at the time the IP interface was configured.
IP Address	The IP address associated with the IP interface name.
IP Mask	The subnet mask associated with the interface IP address.
IP Interface status	The IP status for this interface (Enabled or Disabled).
RDP Interface status	The RDP status for this interface (Enabled or Disabled).
Advertisement address	The destination address for RDP advertisement packets: 224.0.0.1 (all-systems-multicast) or 255.255.255.255 (broadcast). Configured using the ip router-discovery interface advertisement-address command.
Max Advertisement interval	The maximum time, in seconds, RDP allows between each advertisement packet the router transmits from this interface. Configured using the ip router-discovery interface max-advertisement-interval command.
Min Advertisement interval	The minimum time, in seconds, RDP allows between each advertisement packet the router transmits from this interface. Configured using the ip router-discovery interface min-advertisement-interval command.
Advertisement lifetime	The maximum amount of time, in seconds, that router IP addresses advertised from this interface are considered valid. Configured using the ip router-discovery interface advertisement-lifetime command.
Preference Level	The preference level, displayed in hex, for each IP address advertised on this interface. Configured using the ip router-discovery interface preference-level command.
#Packets sent	The number of advertisement packets transmitted from this interface.
#Packets received	The number of solicitation packets received on this interface.

Release History

Release 6.6.1; command was introduced.

Related Commands

[show ip router-discovery](#)

Displays the current RDP status and related statistics for the entire switch.

MIB Objects

alaRDPIfTable

- alaRDPIfAdvtAdress
- alaRDPIfMaxAdvtInterval
- alaRDPIfMinAdvtInterval
- alaRDPIfAdvLifeTime
- alaRDPIfPrefLevel

37 DHCP Relay Commands

Bootstrap Protocol (BOOTP) and Dynamic Host Configuration Protocol (DHCP) packets contain configuration information for network hosts. DHCP Relay enables forwarding of BOOTP/DHCP packets between networks. This allows routing of DHCP traffic between clients and servers. It is not necessary to enable DHCP Relay if DHCP traffic is bridged through one network (clients and servers are on the same physical network).

This chapter includes a description of DHCP Relay commands that are used to define the IP address of DHCP servers, maximum number of hops, and forward delay time. Configure DHCP Relay on the switch where routing of BOOTP/DHCP packets occur.

MIB information for DHCP Relay commands is as follows:

Filename: AlcatelIND1UDPRelay.MIB
Module: ALCATEL-IND1-UDP-RELAY-MIB

A summary of the available DHCP Relay commands is listed here.

DHCP Relay Commands	ip helper address ip helper address vlan ip helper standard ip helper avlan only ip helper per-vlan only ip helper forward delay ip helper maximum hops ip helper agent-information ip helper agent-information policy ip helper pxe-support ip helper dhcp-snooping ip helper dhcp-snooping trap-mode ip helper dhcp-snooping option-82 data-insertion ip helper dhcp-snooping option-82 format ip helper dhcp-snooping option-82 format ascii circuit-id ip helper dhcp-snooping option-82 format ascii remote-id ip helper dhcp-snooping bypass option-82-check ip helper dhcp-snooping vlan ip helper dhcp-snooping port ip helper dhcp-snooping linkagg ip helper dhcp-snooping port traffic-suppression ip helper dhcp-snooping port ip-source-filter ip helper dhcp-snooping binding ip helper dhcp-snooping ip-source-filter ip helper dhcp-snooping binding timeout ip helper dhcp-snooping binding action ip helper dhcp-snooping binding persistency ip helper boot-up ip helper boot-up enable ip udp relay ip udp relay vlan dhcp-server dhcp-server restart show ip helper show ip helper stats show ip helper dhcp-snooping vlan show ip helper dhcp-snooping port show ip helper dhcp-snooping binding show ip udp relay service show ip udp relay statistics show ip udp relay destination clear dhcp-server statistics show dhcp-server leases show dhcp-server statistics show ip helper dhcp-snooping ip-source-filter
----------------------------	---

A summary of the available DHCPv6 Relay commands are listed here:

DHCPv6 Relay commands	ipv6 helper address ipv6 helper address vlan ipv6 helper standard ipv6 helper per-vlan only ipv6 helper maximum hops ipv6 helper dhcp-snooping ipv6 helper dhcp-snooping vlan ipv6 helper dhcp-snooping port ipv6 helper dhcp-snooping linkagg ipv6 helper dhcp-snooping binding ipv6 helper dhcp-snooping binding timeout ipv6 helper dhcp-snooping binding action ipv6 helper dhcp-snooping binding persistency ipv6 helper dhcp-snooping ip-source-filter ipv6 helper interface-id prefix ipv6 helper remote-id format show ipv6 helper show ipv6 helper stats show ipv6 helper dhcp-snooping vlan show ipv6 helper dhcp-snooping port show ipv6 helper dhcp-snooping binding show ipv6 helper dhcp-snooping ip-source-filter show ipv6 helper dhcp-snooping ip-source-filter binding
------------------------------	---

ip helper address

Adds or deletes a DHCP server IP address. DHCP Relay forwards BOOTP/DHCP broadcasts to and from the specified address. If multiple DHCP servers are used, configure one IP address for each server.

ip helper address *ip_address*

ip helper no address [*ip_address*]

Syntax Definitions

ip_address DHCP server IP address (e.g. 21.0.0.10).

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Using this command enables a Global DHCP Relay service on the switch. When the DHCP Relay is specified by the DHCP server IP address, the service is called Global DHCP.
- When the DHCP Relay is specified by the VLAN number of the DHCP request, the service is referred to as Per-VLAN DHCP.
- Global DHCP and Per-VLAN DHCP are mutually exclusive. You may only configure one or the other.
- Use the **no** form of this command to delete an IP address from the DHCP Relay service. If an address is not specified, then all addresses are deleted.
- UPD Relay is automatically enabled on a switch when a DHCP server IP address is defined. There is no separate command for enabling or disabling the relay service.
- Configure DHCP Relay on switches where packets are routed between IP networks.
- You can configure up to 256 server IP addresses for one relay service.

Examples

```
-> ip helper address 75.0.0.10  
-> ip helper no address 31.0.0.20
```

Release History

Release 6.6.1; command was introduced.

Related Commands

ip helper address vlan	Specifies or deletes DHCP Relay based on the VLAN of the DHCP request.
ip helper forward delay	Sets the forward delay time value. DHCP Relay will not process a client packet unless the packet contains an elapsed boot time value that is equal to or greater than the configured value of the forward delay time.
ip helper maximum hops	Sets the maximum number of hops value to specify how many relays a BOOTP/DHCP packet can traverse.
show ip helper	Displays current DHCP Relay configuration information.
show ip helper stats	Displays DHCP Relay statistics, including the number of client packets received and transmitted to the DHCP server and packets dropped due to forward delay time and maximum hops violations.

MIB Objects

```
iphelperTable  
    iphelperService  
    iphelperForwAddr
```

ip helper address vlan

Configures a DHCP Relay service for the specified VLAN. This command is used when a per-VLAN only relay service is active on the switch. It does not apply when using a standard relay service.

ip helper address *ip_address* **vlan** *vlan_id*

ip helper no address *ip_address* **vlan** *vlan_id*

Syntax Definitions

<i>ip_address</i>	IP address (e.g. 21.0.0.10) of the DHCP server VLAN.
<i>vlan_id</i>	VLAN identification number (e.g. 3) of the DHCP server VLAN.

Defaults

If no VLAN identification number is entered, VLAN ID 0 is used by default.

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Use the **no** form of this command to delete the DHCP server VLAN from the DHCP Relay.
- Specifying multiple VLAN IDs and/or a range of VLAN IDs on the same command line is allowed. Use a hyphen to indicate a contiguous range and a space to separate multiple VLAN ID entries (e.g., 10-15 500-510 850).
- The **ip helper address vlan** command does not work if the **per-vlan only** forwarding option is not active. Use the **ip helper per-vlan only** command to enable this option.
- Configure DHCP Relay on switches where packets are routed between IP networks.
- The per-VLAN only relay service supports a maximum of 256 VLANs.

Examples

```
-> ip helper address 75.0.0.10 vlan 3
-> ip helper no address 31.0.0.20 vlan 4
-> ip helper address 198.206.15.2 vlan 250-255
-> ip helper address 10.11.4.1 vlan 550-555 1500 1601-1620
-> ip helper no address 198.206.15.2 vlan 1601-1620
```

Release History

Release 6.6.1; command was introduced.

Related Commands

ip helper per-vlan only

Sets the DHCP Relay forwarding option to process only DHCP packets received from a specific, identified VLAN.

show ip helper

Displays current DHCP Relay configuration information.

show ip helper stats

Displays DHCP Relay statistics, including the number of client packets received and transmitted to the DHCP server and packets dropped due to forward delay time and maximum hops violations.

MIB Objects

iphelperTable

 iphelperService

 iphelperVlan

ip helper standard

Sets DHCP Relay forwarding option to standard. All DHCP packets are processed by a global relay service.

ip helper standard

Syntax Definitions

N/A

Defaults

By default, the DHCP Relay forwarding option is set to **standard**.

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- To limit forwarding of DHCP packets to only packets that originate from authenticated ports, use the **ip helper avlan only** command.
- To process DHCP packets on a per VLAN basis, use the **ip helper per-vlan only** command.

Examples

```
-> ip helper standard
```

Release History

Release 6.6.1; command was introduced.

Related Commands

show ip helper

Displays current DHCP Relay configuration information.

show ip helper stats

Displays DHCP Relay statistics, including the number of client packets received and transmitted to the DHCP server and packets dropped due to forward delay time and maximum hops violations.

MIB Objects

```
iphelperStatTable  
iphelperForwOption
```

ip helper avlan only

Sets DHCP Relay forwarding option to process only DHCP packets received on authenticated VLAN ports.

ip helper avlan only

Syntax Definitions

N/A

Defaults

By default, the UDP forwarding option is set to **standard**.

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

When the forwarding option is set to **avlan only**, all other DHCP packets are not processed.

Examples

```
-> ip helper avlan only
```

Release History

Release 6.6.1; command was introduced.

Related Commands

ip helper standard	Sets DHCP Relay forwarding option to standard. All DHCP packets are processed.
ip helper per-vlan only	Sets the DHCP Relay forwarding option to process only DHCP packets received on authenticated ports from a specific, identified VLAN.
ip helper forward delay	Sets the forward delay time value. DHCP Relay will not process a client packet unless the packet contains an elapsed boot time value that is equal to or greater than the configured value of the forward delay time.
ip helper maximum hops	Sets the maximum number of hops value to specify how many relays a BOOTP/DHCP packet can traverse.
show ip helper	Displays current DHCP Relay configuration information.
show ip helper stats	Displays DHCP Relay statistics, including the number of client packets received and transmitted to the DHCP server and packets dropped due to forward delay time and maximum hops violations.

MIB Objects

iphelperStatTable
iphelperForwOption

ip helper per-vlan only

Sets the DHCP Relay forwarding option to process only DHCP packets received from a specific, identified VLAN. This option allows each VLAN to have its own relay.

ip helper per-vlan only

Syntax Definitions

N/A

Defaults

By default, the UDP forwarding option is set to **standard**.

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- When the forwarding option is set to **per-vlan only**, the **standard** (global) DHCP relay service is not available. These two types of services are mutually exclusive.
- Using the **per-vlan only** forwarding option requires you to specify a DHCP server IP address for each VLAN that will provide a relay service. The **ip helper address vlan** command performs this function and at the same time enables relay for the specified VLAN.

Examples

```
-> ip helper per-vlan only
```

Release History

Release 6.6.1; command was introduced.

Related Commands

ip helper address vlan	Configures a DHCP Relay service for the specified VLAN.
ip helper standard	Sets DHCP Relay forwarding option to standard. All DHCP packets are processed.
ip helper avlan only	Sets DHCP Relay forwarding option to process only DHCP packets received on authenticated VLAN ports from clients that are not yet authenticated.
show ip helper	Displays current DHCP Relay configuration information.
show ip helper stats	Displays DHCP Relay statistics, including the number of client packets received and transmitted to the DHCP server and packets dropped due to forward delay time and maximum hops violations.

MIB Objects

iphelperStatTable
iphelperForwOption

ip helper forward delay

Sets the forward delay time value for the DHCP Relay configuration. The BOOTP/DHCP packet the client sends contains the elapsed boot time. This is the amount of time, in seconds, since the client last booted. DHCP Relay will not process the packet unless the client's elapsed boot time value is equal to or greater than the configured value of the forward delay time.

ip helper forward delay *seconds*

Syntax Definitions

seconds Forward delay time value in seconds (1–65535). Do not use commas in the value.

Defaults

By default, the forward delay time is set to three seconds.

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- The time specified applies to all defined IP helper addresses.
- If a packet contains an elapsed boot time value that is less than the specified forward delay time value, DHCP Relay discards the packet.

Examples

```
-> ip helper forward delay 300  
-> ip helper forward delay 120
```

Release History

Release 6.6.1; command was introduced.

Related Commands

ip helper address	Adds or deletes one or more DHCP server IP addresses to the DHCP Relay configuration.
ip helper maximum hops	Sets the maximum number of hops value to specify how many relays a BOOTP/DHCP packet can traverse.
show ip helper	Displays current DHCP Relay configuration information.
show ip helper stats	Displays DHCP Relay statistics, including the number of client packets received and transmitted to the DHCP server and packets dropped due to forward delay time and maximum hops violations.

MIB Objects

iphelperStatTable
iphelperForwDelay

ip helper maximum hops

Sets the maximum number of hops value for the DHCP Relay configuration. This value specifies the maximum number of relays a BOOTP/DHCP packet is allowed to traverse until it reaches its server destination. Limiting the number of hops that can forward a packet prevents packets from looping through the network.

ip helper maximum hops *hops*

Syntax Definitions

hops The maximum number of relays (1–16).

Defaults

By default, the maximum hops value is set to four hops.

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- If a packet contains a hop count equal to or greater than the *hops* value, DHCP Relay discards the packet.
- The maximum hops value only applies to DHCP Relay and is ignored by other services.

Examples

```
-> ip helper maximum hops 1  
-> ip helper maximum hops 10
```

Release History

Release 6.6.1; command was introduced.

Related Commands

[ip helper address](#)

Adds or deletes one or more DHCP server IP addresses to the DHCP Relay configuration.

[ip helper forward delay](#)

Sets the forward delay time value. DHCP Relay will not process a client packet unless the packet contains an elapsed boot time value that is equal to or greater than the configured value of the forward delay time.

[show ip helper](#)

Displays current DHCP Relay configuration information.

[show ip helper stats](#)

Displays DHCP Relay statistics, including the number of client packets received and transmitted to the DHCP server and packets dropped due to forward delay time and maximum hops violations.

MIB Objects

iphelperStatTable
iphelperMaxHops

ip helper agent-information

Enables or disables the DHCP relay agent information option (Option-82) feature. When this feature is enabled, local relay agent information is inserted into client DHCP packets when the agent forwards these packets to a DHCP server.

ip helper agent-information {enable | disable}

Syntax Definitions

enable Enables the relay agent Option-82 feature for the switch.
disable Disables the relay agent Option-82 feature for the switch.

Defaults

By default, this feature is disabled on the switch.

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- This command enables the DHCP Option-82 feature for the entire switch; it is not configurable on a per-VLAN basis.
- When the DHCP Option-82 feature is enabled, DHCP Snooping is not available. These two features are mutually exclusive.
- When the relay agent receives a DHCP packet that already contains the Option-82 field, it will process the packet based on the agent information policy configured for the switch. This policy is configured using the **ip help agent-information policy** command.

Examples

```
-> ip helper agent-information enable  
-> ip helper agent-information disable
```

Release History

Release 6.6.1; command was introduced.

Related Commands

ip helper agent-information policy	Configures a policy to determine how the relay agent handles DHCP packets that already contain the Option-82 field.
show ip helper	Displays current DHCP Relay configuration information.
show ip helper stats	Displays DHCP Relay statistics, including the number of client packets received and transmitted to the DHCP server and packets dropped due to forward delay time and maximum hops violations.

MIB Objects

`iphelperAgentInformation`

ip helper agent-information policy

Configures a policy that determines how the DHCP relay agent will handle DHCP packets that already contain an Option-82 field.

ip helper agent-information policy {drop | keep | replace}

Syntax Definitions

drop	Drop DHCP packets that already contain an Option-82 field.
keep	Keep the existing Option-82 field information and continue to relay the DHCP packet.
replace	Replace the existing Option-82 field information with local relay agent information and continue to relay the DHCP packet.

Defaults

By default, DHCP packets that already contain an Option-82 field are dropped.

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- The policy configured with this command is only applied if the DHCP Option-82 feature is enabled for the switch.
- The agent information policy is not applied if the DHCP relay agent receives a DHCP packet from a client that contains a non-zero value for the gateway IP address (giaddr). In this case, the agent will not insert the relay agent information option into the DHCP packet and will forward the packet to the DHCP server.
- Note that if a DHCP packet contains a gateway IP address (giaddr) value that matches a local subnet and also contains the Option-82 field, the packet is dropped by the relay agent.

Examples

```
-> ip helper agent-information policy drop
-> ip helper agent-information policy keep
-> ip helper agent-information policy replace
```

Release History

Release 6.6.1; command was introduced.

Related Commands

ip helper agent-information	Enables the insertion of relay agent information Option-82 into DHCP packets.
show ip helper	Displays current DHCP Relay configuration information.
show ip helper stats	Displays DHCP Relay statistics, including the number of client packets received and transmitted to the DHCP server and packets dropped due to forward delay time and maximum hops violations.

MIB Objects

iphelperAgentInformationPolicy

ip helper pxe-support

Enables or disables relay agent support for Preboot Execution Environment (PXE) devices.

ip helper pxe-support {enable | disable}

Syntax Definitions

enable	Enables PXE support.
disable	Disables PXE support.

Defaults

By default, PXE support is disabled for the switch.

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

PXE support was enabled by default in previous releases. Note that PXE is currently disabled by default and is now a user-configurable option using the **ip helper pxe-support** command.

Examples

```
-> ip helper pxe-support enable
-> ip helper pxe-support disable
```

Release History

Release 6.6.1; command was introduced.

Related Commands

show ip helper	Displays current DHCP Relay configuration information.
ip helper dhcp-snooping	Enables or disables DHCP Snooping for the switch.
ip helper dhcp-snooping vlan	Enables or disables DHCP Snooping on a per VLAN basis.
show ip helper	Displays the current DHCP configuration for the switch.

MIB Objects

```
iphelperPXESupport
iphelperTrafficSuppressionStatus
```

ip helper dhcp-snooping

Globally enables or disables DHCP Snooping for the switch. When this feature is enabled, all DHCP packets received on all switch ports are filtered.

ip helper dhcp-snooping {enable | disable}

Syntax Definitions

enable	Enables DHCP Snooping for the switch.
disable	Disables DHCP Snooping for the switch.

Defaults

By default, this feature is disabled.

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- If the DHCP relay agent Option-82 feature is enabled, DHCP Snooping is not available. These two features are mutually exclusive.
- If the DHCP Snooping feature is globally enabled for the switch, then configuring snooping on a per-VLAN basis is not allowed. The opposite is also true; invoking VLAN based snooping prevents the use of switch level snooping.
- When DHCP Snooping is enabled at the switch level, MAC address verification and Option-82 data insertion are enabled by default. In addition, the trust mode for all ports is set to the DHCP client only mode.

Examples

```
-> ip helper dhcp-snooping enable
-> ip helper dhcp-snooping disable
```

Release History

Release 6.6.1; command was introduced.

Related Commands

ip helper dhcp-snooping vlan	Enables or disables DHCP Snooping on a per VLAN basis.
show ip helper	Displays the current DHCP configuration for the switch.

MIB Objects

`iphelperDhcpSnooping`

ip helper dhcp-snooping trap-mode

Globally configures the DHCP Snooping trap-mode settings for the switch.

ip helper dhcp-snooping trap-mode {default | reverse-enable | hardware | software}

Syntax Definitions

default	Default DHCP snooping functionality is followed. Only the source packets are trapped to the CPU.
reverse-enable	Disable DHCP binding entry on a trusted port. The binding table will not be built for the unicast BOOTP packets sent on the trusted ports.
hardware	The packets sent with 67/67 pair will not be trapped to the CPU during DHCP snooping.
software	The DHCP packets with 67/67 pair is trapped to the CPU in addition to 67/68 and 68/67.

Defaults

By default, the DHCP snooping trap-mode is set to default.

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

The DHCP Snooping feature must be globally enabled for the switch to use the global mode settings.

Examples

```
-> ip helper dhcp-snooping trap-mode default
-> ip helper dhcp-snooping trap-mode reverse-enable
-> ip helper dhcp-snooping trap-mode hardware
-> ip helper dhcp-snooping trap-mode software
```

Release History

Release 6.7.1 R02; command was introduced.

Related Commands

ip helper dhcp-snooping	Globally enables or disables DHCP Snooping for the switch.
show ip helper	Displays the current DHCP configuration for the switch.

MIB Objects

iphelperDhcpSnoopingTrapStatus

ip helper dhcp-snooping mac-address verification

Globally enables or disables MAC address verification for incoming DHCP traffic. When this feature is enabled, the source MAC address is compared to the client hardware MAC address in the DHCP packet. If these two addresses do not match, the DHCP packet is dropped.

ip helper dhcp-snooping mac-address verification {enable | disable}

Syntax Definitions

enable	Enables DHCP MAC address verification for the switch.
disable	Disables DHCP MAC address verification for the switch.

Defaults

By default, this feature is disabled.

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- When DHCP Snooping is enabled at the switch level, MAC address verification and Option-82 data insertion are enabled by default. In addition, the trust mode for all ports is set to the DHCP client only mode.
- Changing the enabled or disabled status for MAC address verification is only allowed when DHCP Snooping is globally enabled for the switch.

Examples

```
-> ip helper dhcp-snooping mac-address verification enable
-> ip helper dhcp-snooping mac-address verification disable
```

Release History

Release 6.6.1; command was introduced.

Related Commands

ip helper dhcp-snooping	.Globally enables or disables DHCP Snooping for the switch.
ip helper dhcp-snooping option-82 data-insertion	Globally enables or disables DHCP Option-82 data insertion for DHCP packets.

MIB Objects

iphelperDhcpSnoopingMacAddressVerificationStatus

ip helper dhcp-snooping option-82 data-insertion

Globally enables or disables DHCP Option-82 data insertion for DHCP packets. When this feature is enabled, the relay agent inserts the Option-82 field into DHCP packets before forwarding them to the DHCP server.

ip helper dhcp-snooping option-82 data-insertion {enable | disable}

Syntax Definitions

enable Enables inserting the DHCP Option-82 field into DHCP packets.
disable Disables inserting the DHCP Option-82 field into DHCP packets.

Defaults

By default, this feature is disabled.

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

When DHCP Snooping is enabled at the switch level, Option-82 data insertion and MAC address verification are enabled by default. In addition, the trust mode for all ports is set to the DHCP client only mode.

Examples

```
-> ip helper dhcp-snooping option-82 data-insertion enable
-> ip helper dhcp-snooping option-82 data-insertion disable
```

Release History

Release 6.6.1; command was introduced.

Related Commands

[ip helper dhcp-snooping option-82 format](#) Configures the type of information that is inserted in both the Circuit ID and Remote ID suboption of the Option-82 field.

[ip helper dhcp-snooping](#) .Globally enables or disables DHCP Snooping for the switch.

[ip helper dhcp-snooping binding](#) Enables or disables the DHCP Snooping binding table functionality

[show ip helper](#) Displays the current DHCP configuration for the switch.

MIB Objects

iphelperDhcpSnoopingOpt82DataInsertionStatus

ip helper dhcp-snooping option-82 format

Configures the type of information that is inserted in both the Circuit ID and Remote ID suboption fields of the Option-82 field.

ip helper dhcp-snooping option-82 data-insertion format [**base-mac** | **system-name** | **user-string** *string*]

Syntax Definitions

base-mac	The base MAC address of the switch.
system-name	The system name of the switch.
<i>string</i>	A user-defined text string up to 64 characters.

Defaults

parameter	value
base-mac system-name user-string <i>string</i>	base-mac

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- The *string* parameter specifies user-defined information to insert into the Circuit ID and Remote ID fields.
- When entering a *string* for user-defined Option-82 information, quotes are required around ambiguous characters, such as hex characters, spaces, etc, so they are interpreted as text. For example, the *string* “Building B Server” requires quotes because of the spaces between the words.
- The data specified with this command is added to the Circuit ID and Remote ID fields only when DHCP Option-82 data insertion is enabled for the switch.
- When DHCP Snooping is enabled at the switch level, Option-82 data insertion is enabled by default.

Examples

```
-> ip helper dhcp-snooping option-82 format user-string "Building B Server"  
-> ip helper dhcp-snooping option-82 format system-name  
-> ip helper dhcp-snooping option-82 format base-mac
```

Release History

Release 6.6.1; command was introduced.

Related Commands

**ip helper dhcp-snooping
option-82 data-insertion**

Globally enables or disables DHCP Option-82 data insertion for DHCP packets.

ip helper dhcp-snooping

.Globally enables or disables DHCP Snooping for the switch.

show ip helper

Displays the current DHCP configuration for the switch.

MIB Objects

iphelperDhcpSnoopingOption82FormatType
iphelperDhcpSnoopingOption82StringValueu

ip helper dhcp-snooping option-82 format ascii circuit-id

Configures the type of information that is inserted into the Option-82 Circuit ID suboption. The information is inserted into the Circuit ID field in ASCII text string format.

```
ip helper dhcp-snooping option-82 format ascii circuit-id {base-mac | system-name | vlan |  
user-string string / interface-alias | auto-interface-alias | cvlan} {delimiter character}
```

```
no ip helper dhcp-snooping option-82 format ascii circuit-id
```

Syntax Definitions

base-mac	The base MAC address of the switch.
system-name	The system name of the switch.
vlan	The VLAN ID of which the client is a member.
<i>string</i>	A user-defined text string up to 64 characters.
interface-alias	The alias configured for the interface.
auto-interface-alias	The switch automatically generates the interface-alias in the following format: <i>SystemName_slot_port</i> .
cvlan	The Customer VLAN ID.
<i>character</i>	The delimiter character that separates fields within the Circuit ID ASCII string value. Valid characters are (pipe), \ (backward slash), / (forward slash), - (dash), _ (underscore), and " " (space).

Defaults

By default, the base MAC address of the switch is used in ASCII format.

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guideline

- This command is used to specify the type of information that is configured in ASCII text string format and then inserted into the Option-82 Circuit ID suboption. Each parameter provided with this command represents a different type of information.
- Configuring the Circuit ID suboption in ASCII format allows up to five fields (types) of information within the ASCII string. However, if the contents of all the fields combined exceeds 127 characters, then the ASCII string is truncated.
- Specifying at least one parameter with this command is required. If multiple parameters are selected, then specifying one of the valid delimiter characters is also required.
- The *string* parameter specifies user-defined information to insert into the Circuit ID ASCII field.
- When entering a *string* for user-defined Option-82 information, quotes are required around ambiguous characters, such as hex characters, spaces, etc, so they are interpreted as text. For example, the *string* "Building B Server" requires quotes because of the spaces between the words.

- The **interface-alias** parameter will use the alias configured with the **interfaces alias** command. If no alias is configured, a NULL string will be inserted.
- A maximum of 63 characters can be inserted when using the **interface-alias** and **auto-interface-alias** commands, remaining characters will be truncated.
- The Option-82 format option is a global setting, the format specified will be applied to all ports on the switch.
- The data specified with this command is inserted into the Circuit ID suboption only when DHCP Option-82 data insertion is enabled for the switch.
- When DHCP Snooping is enabled at the switch level, Option-82 data insertion is enabled by default.

Examples

```
-> ip helper dhcp-snooping option-82 format ascii circuit-id user-string "Bldg A
Server"
-> ip helper dhcp-snooping option-82 format ascii circuit-id vlan system-name
delimiter /
-> ip helper dhcp-snooping option-82 format ascii circuit-id user-string "Bldg. B
Server" base-mac system name vlan interface-alias auto-interface-alias delimiter |
```

Release History

Release 6.6.3; command was introduced.

Related Commands

ip helper dhcp-snooping option-82 data-insertion	Globally enables or disables DHCP Option-82 data insertion for DHCP packets.
ip helper dhcp-snooping	Globally enables or disables DHCP Snooping for the switch.
show ip helper	Displays the current DHCP configuration for the switch.
interfaces alias	Configures an alias for a port.

MIB Objects

```
iphelperDhcpSnoopingOption82FormatASCIIConfigurableEntry
iphelperDhcpSnoopingOption82FormatASCIIConfigurableIndex
iphelperDhcpSnoopingOption82FormatASCIIConfigurableField1
iphelperDhcpSnoopingOption82FormatASCIIConfigurableField1StringValue
iphelperDhcpSnoopingOption82FormatASCIIConfigurableField2
iphelperDhcpSnoopingOption82FormatASCIIConfigurableField2StringValue
iphelperDhcpSnoopingOption82FormatASCIIConfigurableField3
iphelperDhcpSnoopingOption82FormatASCIIConfigurableField3StringValue
iphelperDhcpSnoopingOption82FormatASCIIConfigurableField4
iphelperDhcpSnoopingOption82FormatASCIIConfigurableField4StringValue
iphelperDhcpSnoopingOption82FormatASCIIConfigurableField5
iphelperDhcpSnoopingOption82FormatASCIIConfigurableField5StringValue
iphelperDhcpSnoopingOption82FormatASCIIConfigurableDelimiter
```

ip helper dhcp-snooping option-82 format ascii remote-id

Configures the type of information that is inserted into the Option-82 Remote ID suboption. The information is inserted into the Remote ID field in ASCII text string format.

```
ip helper dhcp-snooping option-82 format ascii remote-id {base-mac | system-name | vlan |  
user-string string / interface-alias | auto-interface-alias | cvlan} {delimiter character}
```

```
no ip helper dhcp-snooping option-82 format ascii remote-id
```

Syntax Definitions

base-mac	The base MAC address of the switch.
system-name	The system name of the switch.
vlan	The VLAN ID of which the client is a member.
<i>string</i>	A user-defined text string up to 64 characters.
interface-alias	The alias configured for the interface.
auto-interface-alias	The switch automatically generates the interface-alias in the following format: <i>SystemName_slot_port</i> .
cvlan	The Customer VLAN ID.
<i>character</i>	The delimiter character that separates fields within the Circuit ID ASCII string value. Valid characters are (pipe), \ (backward slash), / (forward slash), - (dash), _ (underscore), and " " (space).

Defaults

By default, the base MAC address of the switch is used in ASCII format.

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guideline

- This command is used to specify the type of information that is configured in ASCII text string format and then inserted into the Option-82 Remote ID suboption. Each parameter provided with this command represents a different type of information.
- Configuring the Remote ID suboption in ASCII format allows up to five fields (types) of information within the ASCII string. However, if the contents of all the fields combined exceeds 127 characters, then the ASCII string is truncated.
- Specifying at least one parameter with this command is required. If multiple parameters are selected, then specifying one of the valid delimiter characters is also required.
- The *string* parameter specifies user-defined information to insert into the Remote ID ASCII field.
- When entering a *string* for user-defined Option-82 information, quotes are required around ambiguous characters, such as hex characters, spaces, etc, so they are interpreted as text. For example, the *string* "Building B Server" requires quotes because of the spaces between the words.

- The **interface-alias** parameter will use the alias configured with the **interfaces alias** command. If no alias is configured, a NULL string will be inserted.
- A maximum of 63 characters can be inserted when using the **interface-alias** and **auto-interface-alias** commands, remaining characters will be truncated.
- The Option-82 format option is a global setting, the format specified will be applied to all ports on the switch.
- The data specified with this command is inserted into the Remote ID suboption only when DHCP Option-82 data insertion is enabled for the switch.
- When DHCP Snooping is enabled at the switch level, Option-82 data insertion is enabled by default.

Examples

```
-> ip helper dhcp-snooping option-82 format ascii remote-id user-string "Bldg A
Server"
-> ip helper dhcp-snooping option-82 format ascii remote-id vlan system-name
delimiter /
-> ip helper dhcp-snooping option-82 format ascii remote-id user-string "Bldg. B
Server" base-mac system name vlan interface-alias auto-interface-alias delimiter |
```

Release History

Release 6.6.3; command was introduced.

Related Commands

ip helper dhcp-snooping option-82 data-insertion	Globally enables or disables DHCP Option-82 data insertion for DHCP packets.
ip helper dhcp-snooping	Globally enables or disables DHCP Snooping for the switch.
show ip helper	Displays the current DHCP configuration for the switch.
interfaces alias	Configures an alias for a port.

MIB Objects

```
iphelperDhcpSnoopingOption82FormatASCIIConfigurableEntry
iphelperDhcpSnoopingOption82FormatASCIIConfigurableIndex
iphelperDhcpSnoopingOption82FormatASCIIConfigurableField1
iphelperDhcpSnoopingOption82FormatASCIIConfigurableField1StringValue
iphelperDhcpSnoopingOption82FormatASCIIConfigurableField2
iphelperDhcpSnoopingOption82FormatASCIIConfigurableField2StringValue
iphelperDhcpSnoopingOption82FormatASCIIConfigurableField3
iphelperDhcpSnoopingOption82FormatASCIIConfigurableField3StringValue
iphelperDhcpSnoopingOption82FormatASCIIConfigurableField4
iphelperDhcpSnoopingOption82FormatASCIIConfigurableField4StringValue
iphelperDhcpSnoopingOption82FormatASCIIConfigurableField5
iphelperDhcpSnoopingOption82FormatASCIIConfigurableField5StringValue
iphelperDhcpSnoopingOption82FormatASCIIConfigurableDelimiter
```

ip helper dhcp-snooping bypass option-82-check

Enables or disables checking for an Option-82 field in DHCP packets ingressing on untrusted ports.

ip helper dhcp-snooping bypass option-82-check {enable | disable}

Syntax Definitions

enable	Bypasses the Option-82 field check.
disable	Checks DHCP packets for the Option-82 field.

Defaults

By default, this feature is disabled.

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- When this feature is disabled (the default), DHCP packets ingressing on untrusted ports are checked to see if they contain the Option-82 field. If this field is present, the DHCP packet is discarded.
- When this feature is enabled, DHCP packets ingressing on untrusted ports are *not* checked to see if they contain the Option-82 field. In this case, the Option-82 field is ignored and all DHCP packets are processed.
- Using this command is only allowed when DHCP Snooping is enabled globally for the switch or at the VLAN level.

Examples

```
-> ip helper dhcp-snooping bypass option-82-check enable
-> ip helper dhcp-snooping bypass option-82-check disable
```

Release History

Release 6.6.1; command was introduced.

Related Commands

ip helper dhcp-snooping	Globally enables or disables DHCP Snooping for the switch.
show ip helper	Displays the current DHCP configuration for the switch.

MIB Objects

iphelperDHCPsnoopingBypassOpt82CheckStatus

ip helper dhcp-snooping vlan

Enables or disables DHCP Snooping on a per VLAN basis. When this feature is enabled, all DHCP packets received on ports associated with the DHCP Snooping VLAN are filtered.

ip helper dhcp-snooping vlan *vlan_id* [**mac-address verification** {enable | disable}] [**option-82 data-insertion** {enable | disable}]

no ip helper dhcp-snooping vlan *vlan_id*

Syntax Definitions

<i>vlan_id</i>	The VLAN identification number (1–4094).
mac-address verification	Enables or disables verifying the source MAC address of DHCP packets with the client MAC address contained in the same packet.
option-82 data-insertion	Enables or disables inserting Option-82 information into DHCP packets.

Defaults

By default, DHCP Snooping is disabled. When this feature is enabled for the specified VLAN, the following default parameter values apply:

parameter	default
mac-address verification	Enabled
option-82 data-insertion	Enabled

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Use the **no** form of this command to disable DHCP Snooping for the specified VLAN.
- The MAC address verification and Option-82 data insertion are applied to packets received on ports associated with the DHCP Snooping VLAN.
- If the DHCP relay agent Option-82 feature is enabled, DHCP Snooping is not available. These two features are mutually exclusive.
- If the DHCP Snooping feature is globally enabled for the switch, then configuring snooping on a per-VLAN basis is not allowed. The opposite is also true; invoking VLAN based snooping prevents the use of switch level snooping.
- Note that disabling the Option-82 data insertion operation for a VLAN is not allowed when the binding table functionality is enabled.

Examples

```
-> ip helper dhcp-snooping vlan 100 enable
-> ip helper dhcp-snooping vlan 100 disable
```

Release History

Release 6.6.1; command was introduced.

Related Commands

[ip helper dhcp-snooping](#)

Globally enables or disables DHCP Snooping for the switch.

[ip helper dhcp-snooping binding](#)

Enables or disables the DHCP Snooping binding table functionality

MIB Objects

```
iphelperDhcpSnoopingVlanTable  
  iphelperDhcpSnoopingVlanNumber  
  iphelperDhcpSnoopingVlanMacVerificationStatus  
  iphelperDhcpSnoopingVlanOpt82DataInsertionStatus
```

ip helper dhcp-snooping port

Configures the DHCP Snooping trust mode for the port. The trust mode determines if the port will accept all DHCP traffic, block all DHCP traffic, or accept only client DHCP traffic.

ip helper dhcp-snooping port *slot1/port1[-port1a]* {block | client-only | trust}

Syntax Definitions

<i>slot1/port1[-port1a]</i>	Specifies the slot number for the module and the physical port number on that module (e.g. 3/1 specifies port 1 on slot 3). Use a hyphen to specify a range of ports (e.g. 3/1-16).
block	Blocks all DHCP traffic on the port.
client-only	Allows only DHCP client traffic on the port.
trust	Allows all DHCP traffic on the port. The port behaves as if DHCP Snooping was not enabled.

Defaults

By default, the trust mode for a port is set to **client-only** when the DHCP Snooping feature is enabled for the switch or for a VLAN.

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- The DHCP trust mode only applies when the DHCP Snooping feature is enabled for the switch or for a VLAN.
- If DHCP Snooping is enabled at the switch level, the trust mode applies to all switch ports.
- If DHCP Snooping is enabled for a specific VLAN, then the trust mode applies to only those ports that are associated with that VLAN.
- Use the [show ip helper dhcp-snooping port](#) command to display the current trust mode for a port and statistics regarding the number of packets dropped due to DHCP Snooping violations.

Examples

```
-> ip helper dhcp-snooping port 1/24 trust
-> ip helper dhcp-snooping port 2/1-10 block
-> ip helper dhcp-snooping port 4/8 client-only
```

Release History

Release 6.6.1; command was introduced.

Related Commands

- ip helper dhcp-snooping** Globally enables or disables DHCP Snooping for the switch.
- ip helper dhcp-snooping vlan** Enables or disables DHCP Snooping on a per-VLAN basis.

MIB Objects

iphelperDhcpSnoopingPortTable
iphelperDhcpSnoopingPortIfIndex
iphelperDhcpSnoopingPortTrustMode

ip helper dhcp-snooping linkagg

Configures the DHCP Snooping trust mode for the link aggregate. The trust mode determines if the link-aggregate will accept all DHCP traffic, block all DHCP traffic, or accept only client DHCP traffic.

ip helper dhcp-snooping linkagg *num* {block | client-only | trust| ip-source-filtering}

Syntax Definitions

<i>num</i>	Specifies the link aggregate ID number.
block	Blocks all DHCP traffic on the port.
client-only	Allows only DHCP client traffic on the port.
trust	Allows all DHCP traffic on the link aggregate. The port behaves as if DHCP Snooping was not enabled.
ip-source-filter	Traffic on the port is restricted to packets received on the port that contain the client MAC address and IP address. All other packets are dropped.

Defaults

By default, the trust mode for a link aggregate is set to **client-only** when the DHCP Snooping feature is enabled for the switch or for a VLAN.

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- The DHCP trust mode only applies when the DHCP Snooping feature is enabled for the switch or for a VLAN.
- If DHCP Snooping is enabled at the switch level, the trust mode applies to all link aggregates.
- If DHCP Snooping is enabled for a specific VLAN, then the trust mode applies to only those link aggregates that are associated with that VLAN.
- Use the **show ip helper dhcp-snooping port** command to display the current trust mode for a link aggregate and statistics regarding the number of packets dropped due to DHCP Snooping violations.

Examples

```
-> ip helper dhcp-snooping linkagg 1 trust
-> ip helper dhcp-snooping linkagg 2 block
-> ip helper dhcp-snooping linkagg 3 client-only
```

Release History

Release 6.6.3; command was introduced.

Related Commands

- ip helper dhcp-snooping** Globally enables or disables DHCP Snooping for the switch.
- ip helper dhcp-snooping vlan** Enables or disables DHCP Snooping on a per-VLAN basis.

MIB Objects

iphelperDhcpSnoopingPortTable
iphelperDhcpSnoopingPortIfIndex
iphelperDhcpSnoopingPortTrustMode

ip helper dhcp-snooping port traffic-suppression

Configures the traffic suppression status for the port. When this function is enabled, DHCP packets are not flooded on the default VLAN for the specified port. This will prevent DHCP communications between a DHCP server and a client when both devices belong to the same VLAN domain.

This command is currently not supported. Traffic suppression is automatically enabled when DHCP Snooping is enabled for the switch or for specific VLANs.

ip helper dhcp-snooping port *slot1/port1[-port1a]* traffic-suppression {enable | disable}

Syntax Definitions

<i>slot1/port1[-port1a]</i>	Specifies the slot number for the module and the physical port number on that module (e.g. 3/1 specifies port 1 on slot 3). Use a hyphen to specify a range of ports (e.g. 3/1-16).
enable	Enables traffic suppression for the specified port.
disable	Disables traffic suppression for the specified port.

Defaults

By default, traffic suppression is disabled for the port.

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Traffic suppression applies only to ports that are associated with a VLAN that has DHCP Snooping enabled or to all ports when DHCP Snooping is globally enabled for the switch.
- When traffic suppression is disabled, then DHCP packets are flooded on the default VLAN for the port. Any DHCP server in the same VLAN domain as the client will receive and respond to such packets; DHCP Snooping is not invoked in this scenario.

Examples

```
-> ip helper dhcp-snooping port 1/24 traffic-suppression enable
-> ip helper dhcp-snooping port 2/1-10 traffic-suppression enable
-> ip helper dhcp-snooping port 4/8 traffic-suppression disable
-> ip helper dhcp-snooping port 3/1-5 traffic-suppression disable
```

Release History

Release 6.6.1; command was introduced.

Related Commands

ip helper dhcp-snooping	Globally enables or disables DHCP Snooping for the switch.
ip helper dhcp-snooping vlan	Enables or disables DHCP Snooping on a per-VLAN basis.
ip helper dhcp-snooping port	Configures the DHCP Snooping trust mode for a port.
ip helper dhcp-snooping port ip-source-filter	Configures the IP source filtering status for a DHCP Snooping port.

MIB Objects

```
iphelperDhcpSnoopingPortTable  
  iphelperDhcpSnoopingPortIfIndex  
  iphelperDhcpSnoopingPortIpTrafficSuppression
```

ip helper dhcp-snooping port ip-source-filter

Configures the IP source filtering status for the port. When ip-source-filtering is enabled, traffic on the port is restricted to packets received on the port that contain the client MAC address and IP address. All other packets are dropped.

ip helper dhcp-snooping port *slot/port[-port1a]* ip-source-filter {enable | disable}

Syntax Definitions

<i>slot/port[-porta]</i>	Specifies the slot number for the module and the physical port number on that module (for example: 3/1 specifies port 1 on slot 3). Use a hyphen to specify a range of ports (or example: 3/1-16).
enable	Enables IP source filtering for the specified port.
disable	Disables IP source filtering for the specified port.

Defaults

By default, IP source filtering is disabled for the port.

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- This CLI is deprecated. The CLI **ip helper dhcp-snooping ip-source-filter** can be used for configuring IP source filtering.
- This CLI is supported for backward compatibility.
- IP source filtering applies only to ports that are associated with a VLAN that has DHCP Snooping enabled or to all ports when DHCP Snooping is globally enabled for the switch.
- The DHCP Snooping binding table is used to verify client information.
- If a device connected to a DHCP Snooping port with IP source filtering enabled does not have a valid IP address lease from the trusted DHCP server, then all IP traffic for that device is blocked on the port.
- Disable IP source filtering for the DHCP Snooping port to allow a device to obtain a valid IP address lease.
- Once a device obtains a valid lease or if a device already has a valid lease, then only source bound traffic is allowed.

Examples

```
-> ip helper dhcp-snooping port 1/24 ip-source-filtering enable
-> ip helper dhcp-snooping port 2/1-10 ip-source-filtering enable
-> ip helper dhcp-snooping port 4/8 ip-source-filtering disable
-> ip helper dhcp-snooping port 3/1-5 ip-source-filtering disable
```

Release History

Release 6.6.1; command was introduced.

Release 6.6.4: command deprecated.

Related Commands

ip helper dhcp-snooping	Globally enables or disables DHCP Snooping for the switch.
ip helper dhcp-snooping vlan	Enables or disables DHCP Snooping on a per-VLAN basis.
ip helper dhcp-snooping port	Configures the DHCP Snooping trust mode for a port.
ip helper dhcp-snooping port traffic-suppression	Configures the traffic suppression status for a DHCP Snooping port.

MIB Objects

```
iphelperDhcpSnoopingPortTable  
  iphelperDhcpSnoopingPortIfIndex  
  iphelperDhcpSnoopingPortIpSourceFiltering
```

ip helper dhcp-snooping binding

Enables or disables the DHCP Snooping binding table functionality. The binding table contains the MAC address, IP address, lease time, binding type (dynamic or static), VLAN number, and the interface information that corresponds to a local untrusted port on the switch. In addition, this command is also used to configure a static entry in the binding table.

```
ip helper dhcp-snooping binding {[enable | disable] | [mac_address [port slot/port | linkagg num]
address ip_address vlan vlan_id]}
```

```
no ip helper dhcp-snooping binding mac_address [port slot/port | linkagg num] address ip_address
vlan vlan_id
```

Syntax Definitions

enable	Enables the creation of binding table entries.
disable	Disables the creation of binding table entries.
<i>mac_address</i>	The client MAC address.
<i>slot/port num</i>	The slot and port number or linkagg that receive the DHCP request.
<i>ip_address</i>	The IP address that the DHCP server offered to the client.
<i>time</i>	The IP address lease time assigned by the DHCP server.
<i>vlan_id</i>	The VLAN identification number (1–4094) of the VLAN to which the client belongs.

Defaults

By default, the binding table functionality is enabled when the DHCP Snooping feature is enabled for the switch or for a VLAN.

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Use the **no** form of this command to remove a static entry from the DHCP Snooping binding table.
- The **enable** and **disable** parameters are independent of the other parameters, in that they are only used to turn the binding table functionality on and off. Enabling or disabling binding table functionality and creating a static binding table entry is not allowed on the same command line.
- Note that enabling the binding table functionality is not allowed if Option-82 data insertion is *not* enabled at either the switch or VLAN level.
- Static binding table entries are created using this command. If DHCP Snooping binding table functionality is not enabled, creating a static entry is not allowed.
- Dynamic binding table entries are created when the relay agent receives a DHCPACK packet.

Examples

```
-> ip helper dhcp-snooping binding disable
-> ip helper dhcp-snooping binding enable
-> ip helper dhcp-snooping binding 00:2a:95:51:6c:10 port 1/15 address 17.15.3.10
vlan 200
-> no ip helper dhcp-snooping binding 00:2a:95:51:6c:10 port 1/15 address
17.15.3.10 vlan 200
```

Release History

Release 6.6.1; command was introduced.

Related Commands

[ip helper dhcp-snooping binding timeout](#)

Configures the amount of time between each automatic save of the binding table contents to a file on the switch.

[ip helper dhcp-snooping binding action](#)

Synchronizes the contents of the DHCP Snooping binding table with the contents of the **dhcpBinding.db** file saved on the switch.

MIB Objects

```
iphelperDhcpSnoopingBindingStatus
iphelperDhcpSnoopingBindingTable
    iphelperDhcpSnoopingBindingMacAddress
    iphelperDhcpSnoopingBindingIfIndex
    iphelperDhcpSnoopingBindingIpAddress
    iphelperDhcpSnoopingBindingVlan
    iphelperDhcpSnoopingBindingType
```

ip helper dhcp-snooping ip-source-filter

Enables or disables the IP source filtering capability at a port, link aggregation, or VLAN level. When this function is enabled, the switch allows the traffic that matches the client IP address, MAC address, port, and VLAN combination obtained from the DHCP snooping binding table entry. All the other packets will be dropped by default. This command also provides a provision to bypass the IP source filtering on specific subnets on VLAN basis.

ip helper dhcp-snooping ip-source-filter {vlan num [allow ip_address mask subnet_mask | port slot/port [-port2] | linkagg num] {enable | disable}}

Syntax Definitions

vlan num	The VLAN identification number (1–4094).
<i>ip_address</i>	An IP host address (for example 10.0.0.1, 171.15.0.20) to specify the IP router network.
<i>subnet_mask</i>	A valid IP address mask (for example, 255.0.0.0, 255.255.0.0) to identify the IP subnet for the interface.
linkagg num	Specifies the link aggregate identification number.
<i>slot/port[-port2]</i>	Specifies the slot number for the module and the physical port number on that module (for example, 3/1 specifies port 1 on slot 3). Use a hyphen to specify a range of ports (for example, 3/1-16).
enable	Enables IP source filtering for the specified port, link aggregation, or VLAN.
disable	Disables IP source filtering for the specified port, link aggregation, or VLAN level.

Defaults

By default, IP source filtering is disabled for a port or link aggregate, or VLAN.

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Source filtering can be enabled only on the VLANs on which the DHCP Snooping is enabled.
- Source filtering can be enabled
 - on the ports that are associated with a VLAN on which DHCP Snooping is enabled.
 - on all the ports when DHCP Snooping is globally enabled for the switch.
- To enable or disable specific subnets on VLAN level from IP source filtering, configure the required subnets using the “**allow ip_address mask subnet_mask**” option. The specified subnets will be excluded from IP source filtering.
- A maximum of 16 subnets are allowed to be excluded from source filtering on OmniSwitch 6450 and OmniSwitch 6250. On OmniSwitch 6350, only 8 subnets are allowed. [show ip helper dhcp-snooping ip-source-filter vlan](#) displays the subnet information on which IP source filtering is excluded.

Examples

```
-> ip helper dhcp-snooping ip-source-filter port 1/1 enable
-> ip helper dhcp-snooping ip-source-filter linkagg 2 enable
-> ip helper dhcp-snooping ip-source-filter vlan 10 enable
-> ip helper dhcp-snooping ip-source-filter vlan 20 disable
-> ip helper dhcp-snooping ip-source-filter vlan 4050 allow 10.55.40.4 mask
255.255.255.252 enable
```

Release History

Release 6.6.3; command was introduced.

Release 6.7.1.R02: **allow** keyword added.

Related Commands

show ip helper dhcp-snooping ip-source-filter Displays the ports or VLANs on which IP source filtering is enabled.

MIB Objects

```
iphelperDhcpSnoopingPortIpSourceFiltering
  iphelperDhcpSnoopingPortIfIndex
  iphelperDhcpSourceFilterVlanNumber
  iphelperDhcpSourceFilterVlanFilteringStatus
  iphelperDhcpSourceFilterAllowSubnetTable
  iphelperDhcpSourceFilterExpIpAddress
  iphelperDhcpSourceFilterExpIpMask
  iphelperDhcpSourceFilterVlan
  iphelperDhcpSourceFilterExpIpStatus
```

ip helper dhcp-snooping binding timeout

Configures the amount of time between each automatic save of the DHCP Snooping binding table contents maintained in memory to a file on the switch. This functionality preserves binding table contents across switch reboots.

ip helper dhcp-snooping port binding timeout *seconds*

Syntax Definitions

seconds The number of seconds (180 to 600) to wait before the next save.

Defaults

By default, the timeout value is set to 300 seconds.

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- The timeout value is only valid if the DHCP Snooping binding table functionality is enabled.
- The contents of the binding table is saved to the **dhcpBinding.db** file in the **/flash/switch** directory.
- The **dhcpBinding.db** file is time stamped when a save of the binding table contents is successfully completed.

Examples

```
-> ip helper dhcp-snooping binding timeout 600  
-> ip helper dhcp-snooping binding timeout 250
```

Release History

Release 6.6.1; command was introduced.

Related Commands

[ip helper dhcp-snooping binding](#)

.Enables or disables the DHCP Snooping binding table functionality.

[ip helper dhcp-snooping binding action](#)

Synchronizes the contents of the DHCP Snooping binding table with the contents of the **dhcpBinding.db** file saved on the switch.

MIB Objects

iphelperDhcpSnoopingBindingDatabaseSyncTimeout
iphelperDhcpSnoopingBindingDatabaseLastSyncTime

ip helper dhcp-snooping binding action

Triggers a purge or renew action against the DHCP Snooping binding table. A purge action clears the contents of the table. A renew action populates the table with entries saved in the **dhcpBinding.db** file.

ip helper dhcp-snooping port binding action {purge | renew}

Syntax Definitions

purge	Clears all binding table entries that are maintained in switch memory.
renew	Populates the binding table with entries saved in the dhcpBinding.db file located in the /flash/switch directory on the switch.

Defaults

By default, the timeout value is set to 300 seconds.

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

The DHCP Snooping binding table is maintained in the switch memory. Binding table entries are saved on a periodic basis to the **dhcpBinding.db** file on the switch. Use the **purge** and **renew** options available with this command to sync the binding table contents with the contents of the **dhcpBinding.db** file.

Examples

```
-> ip helper dhcp-snooping binding action purge
-> ip helper dhcp-snooping binding action renew
```

Release History

Release 6.6.1; command was introduced.

Related Commands

ip helper dhcp-snooping binding	.Enables or disables the DHCP Snooping binding table functionality.
ip helper dhcp-snooping binding timeout	Configures the amount of time between each automatic save of the binding table contents to a file on the switch.

MIB Objects

iphelperDhcpSnoopingBindingDatabaseAction

ip helper dhcp-snooping binding persistency

Retains the entries in the DHCP Snooping binding table for the duration of the lease regardless of the existence of the MAC address in the MAC address table.

ip helper dhcp-snooping binding persistency {enable | disable}

Syntax Definitions

enable	Enables DHCP Snooping binding persistency.
disable	Disables DHCP Snooping binding persistency.

Defaults

By default, DHCP Snooping binding persistency is disabled.

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- With this option disabled, the entry will be removed if the MAC address is missing from the MAC address table when the database is synchronized.
- Use the [show ip helper](#) command to display the current status.

Examples

```
-> ip helper dhcp-snooping binding persistency enable
-> ip helper dhcp-snooping binding persistency disable
```

Release History

Release 6.6.1; command was introduced.

Related Commands

ip helper dhcp-snooping binding	Enables or disables the DHCP Snooping binding table functionality.
ip helper dhcp-snooping binding timeout	Configures the amount of time between each automatic save of the binding table contents to a file on the switch.

MIB Objects

iphelperDhcpSnoopingBindingPersistencyStatus

ip helper boot-up

Enables or disables automatic IP address configuration for default VLAN 1 when an unconfigured switch boots up. If enabled, the switch broadcasts a BootP or a DHCP request packet at boot time. When the switch receives an IP address from a BootP/DHCP server, the address is assigned to default VLAN 1.

Note. Automatic IP address configuration only supports the assignment of a *permanent* IP address to the switch. Make sure that the DHCP server is configured with such an address before using this feature.

ip helper boot-up {enable | disable}

Syntax Definitions

enable	Enables automatic IP address configuration for default VLAN 1.
disable	Disables automatic IP address configuration for default VLAN 1.

Defaults

By default, this feature is disabled on the switch.

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Use the **ip helper boot-up enable** command to specify BootP or DHCP for the request packet type.
- If an IP router port already exists for VLAN 1, a request packet is not broadcast even if automatic IP address configuration is enabled for the switch.

Examples

```
-> ip helper boot-up enable
-> ip helper boot-up disable
```

Release History

Release 6.6.1; command was introduced.

Release 6.6.2; command deprecated; use **ip interface dhcp-client**.

Related Commands

ip helper boot-up enable

Specifies BootP or DHCP as the type of request packet the switch will broadcast at boot time.

MIB Objects

iphelperStatTable

iphelperBootupOption

ip helper boot-up enable

Specifies the type of packet to broadcast (BootP or DHCP) when automatic IP address configuration is enabled for the switch.

Note. Automatic IP address configuration only supports the assignment of a *permanent* IP address to the switch. Make sure that the DHCP server is configured with such an address before using this feature.

ip helper boot-up enable {BOOTP | DHCP}

Syntax Definitions

BOOTP	Broadcasts a BOOTP formatted request packet.
DHCP	Broadcasts a DHCP formatted request packet.

Defaults

parameter	default
BOOTP DHCP	BOOTP

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

This command is only valid if automatic IP address configuration is already enabled for the switch.

Examples

```
-> ip helper boot-up enable DHCP
-> ip helper boot-up enable BOOTP
```

Release History

Release 6.6.1; command was introduced.
Release 6.6.2; command deprecated; use [ip interface dhcp-client](#).

Related Commands

[ip helper boot-up](#) Enables or disables automatic IP configuration for the switch.

MIB Objects

iphelperStatTable
iphelperBootupPacketOption

ip udp relay

Enables or disables UDP port relay for BOOTP/DHCP and generic UDP service ports (i.e., NBNS/NBDD, other well-known UDP ports, and user-defined service ports that are not well-known).

ip udp relay {**BOOTP** | **NBDD** | **NBNSNBDD** | **DNS** | **TACACS** | **TFTP** | **NTP** | *port* [*name*]}

no ip udp relay {**BOOTP** | **NBDD** | **NBNSNBDD** | **DNS** | **TACACS** | **TFTP** | **NTP** | *port*}

Syntax Definitions

BOOTP	BOOTP/DHCP well-known ports 67/68.
NBDD	NBDD well-known port 138.
NBNSNBDD	NBNS/NBDD well-known ports 137/138.
DNS	DNS well-known port 53.
TACACS	TACACS well-known port 65.
TFTP	TFTP well-known port 69.
NTP	NTP well-known port 123.
<i>port</i>	Any number that is not a well-known port number.
<i>name</i>	Text string description up to 30 characters.

Defaults

By default, relay is enabled on the BOOTP/DHCP well-known ports.

parameter	default
<i>name</i>	User Service Other#

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Use the **no** form of this command to disable UDP Relay for the specified service port.
- Only use the *port* parameter to specify service port numbers that are not well known. For example, do not specify port 53 as it is the well-known port number for DNS. Instead, use the **DNS** parameter to enable relay for port 53.
- The *name* parameter is only used with the *port* parameter and provides a user-defined description to identify the not well-known port service.
- When entering a *name* for a user-defined service, quotes are required around ambiguous characters, such as hex characters, spaces, etc, so they are interpreted as text. For example, the *name* "A UDP Protocol" requires quotes because of the spaces between the words.
- When UDP Relay is disabled for BOOTP/DHCP, the **ip helper** configuration is *not* retained and all dependant functionality (i.e., automatic IP configuration for VLAN 1, Telnet and HTTP client authentication, etc.) is disrupted.

- Up to three types of UDP Relay services are supported at any one time and in any combination.

Note. If the relay service for BOOTP/DHCP is disabled when the switch reboots, the service is automatically enabled when the switch comes back up. If there were three non-BOOTP/DHCP relay services already enabled before the reboot, the most recent service enabled is disabled and replaced with the BOOTP/DHCP relay service.

- If port relay is enabled for the NBDD well-known port, NBNS is not automatically enabled by default. Specify **NBNS/NBDD** to enable relay for both well-known ports.
- Note that when UDP port relay is enabled for NTP, relay cannot forward NTP packets that contain a destination IP address that matches a VLAN router IP address on the switch.

Examples

```
-> ip udp relay DNS
-> ip udp 3047 "Generic Service"
-> no ip udp relay BOOTP
-> no ip udp relay 3047
```

Release History

Release 6.6.1; command was introduced.

Related Commands

ip udp relay vlan Specifies the VLAN to which traffic from the specified UDP service port is forwarded.

MIB Objects

```
iphelperxServicePortAssociationTable
  iphelperxServicePortAssociationService
  iphelperxServicePortAssociationPort
  iphelperxServicePortAssociationName
iphelperxPortServiceAssociationTable
  iphelperxPortServiceAssociationService
  iphelperxPortServiceAssociationPort
  iphelperxPortServiceAssociationName
```

ip udp relay vlan

Specifies a VLAN on which traffic destined for a UDP port is forwarded.

ip udp relay {BOOTP | NBDD | NBNSNBDD | DNS | TACACS | TFTP | NTP | *port*} **vlan** *vlan_id*

no ip udp relay {BOOTP | NBDD | NBNSNBDD | DNS | TACACS | TFTP | NTP | *port*} **vlan** *vlan_id*

Syntax Definitions

BOOTP	BOOTP/DHCP well-known ports 67/68.
NBDD	NBDD well-known port 138.
NBNSNBDD	NBNS/NBDD well-known ports 137/138.
DNS	DNS well-known port 53.
TACACS	TACACS well-known port 65.
TFTP	TFTP well-known port 69.
NTP	NTP well-known port 123.
<i>port</i>	A user-specified port that is not a well-known port.
<i>vlan_id</i>	A numeric value (1–4094) that uniquely identifies an individual VLAN. Use a hyphen to specify a range of VLANs (e.g., 1-5).

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Use the **no** form of this command to remove the VLAN association with the UDP service port.
- The maximum number of VLANs that can receive forwarded UDP service port traffic is 256.
- Only specify service port numbers that are *not* well known when using the *port* parameter with this command. For example, do not specify port 53 as it is the well-known port number for the DNS UDP service. Instead, use the **DNS** parameter to enable relay for port 53.
- Specifying a VLAN for the BOOTP/DHCP service does not work if the **per-vlan only** forwarding option is not active. Use the **ip helper per-vlan only** command to enable this option.

Examples

```
-> ip udp relay DNS vlan 10
-> ip udp 3047 vlan 500
-> no ip udp relay DNS vlan 10
```

Release History

Release 6.6.1; command was introduced.

Related Commands

[ip udp relay](#) Enables or disables relay for UDP service ports.

MIB Objects

iphelperxPortServiceAssociationTable
iphelperxPortServiceAssociationService

dhcp-server

Enables or disables the DHCP server operation.

dhcp-server {enable | disable}

Syntax Definitions

enable Enables operation status of the DHCP server.
disable Disables operation status of the DHCP server.

Defaults

parameter	default
enable disable	disable

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- When DHCP server is enabled on the switch, DHCP relay and DHCP snooping will not be supported on the default VRF of the switch.
- DHCP server must be restarted when changes are made to the dhcpd.conf file.

Examples

```
-> dhcp-server enable  
-> dhcp-server disable
```

Release History

Release 6.6.4; command was introduced.

Related Commands

show dhcp-server leases Displays the leases offered by the DHCP server.
show dhcp-server statistics Displays the statistics of the DHCP server.
dhcp-server restart Allows to restart the DHCP server when the dhcpd.conf file is modified.

MIB Objects

alaDhcpSrvGlobalConfigStatus

dhcp-server restart

Allows to restart the DHCP server when the dhcpd.conf file is modified.

dhcp-server restart

Syntax Definitions

restart Restarts the DHCP server.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

The command can be used to restart the DHCP server when the dhcpd.conf file is modified.

Examples

```
-> dhcp-server restart
```

Release History

Release 6.6.4; command was introduced.

Related Commands

[dhcp-server](#) Enables or disables the DHCP server operation.

MIB Objects

```
alaDhcpSrvGlobalRestart
```

show dhcp-server leases

Displays the leases offered by the DHCP server.

show dhcp-server leases [**ip-address** *ip_address* | **mac-address** *mac_address*] [**type** {**static** | **dynamic**}] [**count**]

Syntax Definitions

<i>ip_address</i>	Specifies IP address of the interface configured with DHCP server.
<i>mac_address</i>	Specifies MAC address of the interface configured with DHCP server.
static	Displays only static leases.
dynamic	Displays only dynamic leases.
count	Count of DHCP messages recorded.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

DHCP server should be enabled first before using this command.

Examples

```
-> show dhcp-server leases
```

```
Total leases: 8
```

IP Address	MAC address	Lease Granted	Lease Expiry	Type
200.0.1.1	00:00:01:b8:91:3f	DEC 15 14:10:59 2009	DEC 19 01:30:59 2009	DYNAMIC
200.0.1.2	00:00:01:b8:91:37	DEC 15 14:11:05 2009	DEC 19 01:31:05 2009	DYNAMIC
200.0.1.3	00:00:01:b8:91:3b	DEC 15 14:11:48 2009	DEC 19 01:31:48 2009	DYNAMIC
200.0.1.4	00:00:01:b8:91:3d	DEC 15 14:11:53 2009	DEC 19 01:31:53 2009	DYNAMIC
220.0.0.2	00:00:01:1d:4f:7e	DEC 15 14:11:45 2009	DEC 15 22:31:45 2009	DYNAMIC
220.0.0.3	00:00:01:5a:0b:76	DEC 15 14:12:00 2009	DEC 15 22:32:00 2009	DYNAMIC
220.0.0.4	00:00:01:1d:4f:7d	DEC 15 14:11:53 2009	DEC 15 22:31:53 2009	DYNAMIC
120.0.0.4	00:00:02:12:4f:8c	DEC 15 14:11:53 2009	DEC 15 23:31:53 2009	STATIC

```
-> show dhcp-server leases ip-address 200.0.1.2
```

IP Address	MAC address	Lease Granted	Lease Expiry	Type
200.0.1.2	00:00:01:b8:91:37	DEC 15 14:11:05 2009	DEC 19 01:31:05 2009	DYNAMIC

```
-> show dhcp-server leases mac-address 00:00:01:1d:4f:7d
```

```
IP Address MAC address Lease Granted Lease Expiry Type
-----+-----+-----+-----+-----
220.0.0.4 00:00:01:1d:4f:7d DEC 15 14:11:53 2009 DEC 15 22:31:53 2009 DYNAMIC
-> show dhcp-server leases type static
```

```
Total leases: 1
```

```
IP Address MAC address Lease Granted Lease Expiry Type
-----+-----+-----+-----+-----
120.0.0.4 00:00:02:12:4f:8c DEC 15 14:11:53 2009 DEC 15 23:31:53 2009 STATIC
```

output definitions

IP address	The IP address allocated to the client.
MAC address	The MAC address of the client for which the lease is allocated.
Lease Granted	The date and time at which lease is granted.
Lease Expiry	The date and time at which lease expires.
Type	The type of lease offered.

Release History

Release 6.6.4; command introduced.

Related Commands

[clear dhcp-server statistics](#) Clears the DHCP server lease statistics.

MIB Objects

```
alaDhcpSrvLeaseTable
  alaDhcpSrvLeaseMACAddress
  alaDhcpSrvLeaseIpAddress
  alaDhcpSrvLeaseLeaseGrant
  alaDhcpSrvLeaseLeaseExpiry
  alaDhcpSrvLeaseType
```

show dhcp-server statistics

Displays the statistics of the DHCP server.

show dhcp-server statistics [packets | hosts | subnets | all]

Syntax Definitions

packets	Displays general statistical information along with specific information about data packets received, dropped, and transmitted .
hosts	Displays general statistical information along with specific information about leases related to the DHCP server.
subnets	Displays general statistical information along with specific information about all the subnets.
all	Displays all statistical information related to the DHCP server.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

DHCP server should be enabled first before using this command.

Examples

```
-> show dhcp-server statistics
General:
  DHCP Server Name: mample.vitalqip.com,
  DHCP Server Status      : Enabled,
  Total Subnets Managed  : 7,
  Total Subnets Used     : 2,
  Total Subnets Unused   : 5,
  Total Subnets Full     : 0,
  DHCP Server System Up Time : TUE DEC 15 14:10:27.9956
  Lease DB Sync:
  Lease DB Sync time (in sec) : 60,
  Last sync time              : TUE DEC 15 14:21:34 2009,
  Next sync time              : TUE DEC 15 14:22:34 2009
```

```
-> show dhcp-server statistics packets
Packets:
  Total DHCP Discovers      : 12,
  Total DHCP Offers        : 12,
  Total DHCP Requests       : 16,
  Total DHCP Request Grants : 10,
  Total DHCP Request Renews : 6,
  Total DHCP Declines       : 0,
  Total DHCP Acks           : 16,
```

```
Total DHCP Nacks      : 0,  
Total DHCP Releases   : 0,  
Total DHCP Informs    : 0,  
Total Bootp requests  : 0,  
Total Bootp response  : 0,  
Total Unknown packets : 0
```

```
-> show dhcp-server statistics hosts
```

```
Leases:
```

```
Total:  
  Leases Managed: 1365,  
  Leases used      : 7,  
  Leases unused    : 1358,  
  Leases Pending   : 0,  
  Leases unavailable : 0  
Static DHCP:  
  Leases Managed   : 0,  
  Leases used      : 0,  
  Leases unused    : 0,  
  Leases Pending   : 0,  
  Leases unavailable : 0  
Dynamic DHCP:  
  Leases Managed   : 1365,  
  Leases used      : 7,  
  Leases unused    : 1358,  
  Leases Pending   : 0,  
  Leases unavailable : 0  
Automatic DHCP:  
  Leases Managed   : 0,  
  Leases used      : 0,  
  Leases unused    : 0,  
  Leases Pending   : 0,  
  Leases unavailable : 0  
Static Bootp:  
  Leases Managed   : 0,  
  Leases used      : 0,  
  Leases unused    : 0,  
  Leases Pending   : 0,  
  Leases unavailable : 0  
Automatic Bootp :  
  Leases Managed   : 0,  
  Leases used      : 0,  
  Leases unused    : 0,  
  Leases Pending   : 0,  
  Leases unavailable : 0
```

```
-> show dhcp-server statistics subnets
```

```
Subnets:
```

```
Subnet1:  
  Subnet: 200.0.0.0,  
  Total      : 1022,  
  Static DHCP : 0,  
  Dynamic DHCP : 1022,  
  Automatic DHCP : 0,  
  Static Bootp : 0,  
  Automatic Bootp : 0  
  Ranges:  
    Start      : 200.0.1.1,  
    End        : 200.0.2.255,
```

```
Mask : 255.255.253.0,
Type : 5
Used : 4,
Unused : 507,
Pending : 0,
Unavailable : 0
Subnet2:
Subnet : 220.0.0.0,
Total : 508,
Static DHCP : 0,
Dynamic DHCP : 508,
Automatic DHCP : 0,
Static Bootp : 0,
Automatic Bootp : 0
  Ranges:
  Start : 220.0.0.2,
  End : 220.0.0.255,
  Mask : 255.255.255.0,
  Type : 5,
  Unused : 251,
  Used : 3,
  Pending : 0,
  Unavailable : 0
Subnet3:
Subnet : 150.0.0.0,
Total : 400,
Static DHCP : 0,
Dynamic DHCP : 400,
Automatic DHCP : 0,
Static Bootp : 0,
Automatic Bootp : 0
  Ranges:
  Range1:
  Start : 150.0.1.1,
  End : 150.0.1.100,
  Mask : 255.255.255.0,
  Type : 5,
  Used : 0,
  Unused : 100,
  Pending : 0,
  Unavailable : 0
  Range2:
  Start : 150.0.2.1,
  End : 150.0.2.100,
  Mask : 255.255.255.0,
  Type : 5,
  Unused : 100,
  Used : 0,
  Pending : 0,
  Unavailable : 0
Subnet4:
Subnet : 50.0.0.0,
Total : 200,
Static DHCP : 0,
Dynamic DHCP : 200,
Automatic DHCP : 0,
Static Bootp : 0,
Automatic Bootp : 0
  Ranges:
```

```
Start           : 50.0.1.1,
End             : 50.0.1.100,
Mask            : 255.255.255.0,
Type           : 5,
Unused         : 100,
Used           : 0,
Pending        : 0,
Unavailable    : 0
```

-> show dhcp-server statistics all

General:

```
DHCP Server Name: mample.vitalqip.com,
DHCP Server Status      : Enabled,
Total Subnets Managed  : 7,
Total Subnets Used     : 2,
Total Subnets Unused   : 5,
Total Subnets Full     : 0,
DHCP Server System Up Time : TUE DEC 15 14:10:27.9956
Lease DB Sync:
  DB Sync time (in sec)  : 60,
  Last sync time        : TUE DEC 15 14:21:34 2009,
  Next sync time        : TUE DEC 15 14:22:34 2009
```

Packets:

```
Total DHCP Discovers: 12,
Total DHCP Offers      : 12,
Total DHCP Requests    : 16,
Total DHCP Request Grants : 10,
Total DHCP Request Renewals : 6,
Total DHCP Declines    : 0,
Total DHCP Acks        : 16,
Total DHCP Nacks       : 0,
Total DHCP Releases    : 0,
Total DHCP Informs     : 0,
Total Bootp requests   : 0,
Total Bootp response   : 0,
Total Unknown packets  : 0
```

Leases:

```
Total:
  Leases Managed: 1365,
  Leases used      : 7,
  Leases unused    : 1358,
  Leases Pending   : 0,
  Leases unavailable : 0
Static DHCP:
  Leases Managed   : 0,
  Leases used      : 0,
  Leases unused    : 0,
  Leases Pending   : 0,
  Leases unavailable : 0
Dynamic DHCP:
  Leases Managed   : 1365,
  Leases used      : 7,
  Leases unused    : 1358,
  Leases Pending   : 0,
  Leases unavailable : 0
Automatic DHCP:
  Leases Managed   : 0,
  Leases used      : 0,
  Leases unused    : 0,
```

```
Leases Pending           : 0,
Leases unavailable       : 0
Static Bootp:
Leases Managed           : 0,
Leases used              : 0,
Leases unused            : 0,
Leases Pending           : 0,
Leases unavailable       : 0
Automatic Bootp         :
Leases Managed           : 0,
Leases used              : 0,
Leases unused            : 0,
Leases Pending           : 0,
Leases unavailable       : 0
Subnets:
Subnet1:
Subnet                   : 200.0.0.0,
Total                    : 1022,
Static DHCP              : 0,
Dynamic DHCP             : 1022,
Automatic DHCP           : 0,
Static Bootp             : 0,
Automatic Bootp         : 0
  Ranges:
    Start                 : 200.0.1.1,
    End                   : 200.0.2.255,
    Mask                   : 255.255.253.0,
    Type                   : 5
    Used                   : 4,
    Unused                 : 507,
    Pending                : 0,
    Unavailable            : 0
Subnet2:
Subnet                   : 220.0.0.0,
Total                    : 508,
Static DHCP              : 0,
Dynamic DHCP             : 508,
Automatic DHCP           : 0,
Static Bootp             : 0,
Automatic Bootp         : 0
  Ranges:
    Start                 : 220.0.0.2,
    End                   : 220.0.0.255,
    Mask                   : 255.255.255.0,
    Type                   : 5
    Unused                 : 251,
    Used                   : 3,
    Pending                : 0,
    Unavailable            : 0
Subnet3:
Subnet                   : 150.0.0.0,
Total                    : 400,
Static DHCP              : 0,
Dynamic DHCP             : 400,
Automatic DHCP           : 0,
Static Bootp             : 0,
Automatic Bootp         : 0
  Ranges:
    Range1:
```

```

        Start           : 150.0.1.1,
        End             : 150.0.1.100,
        Mask            : 255.255.255.0,
        Type            : 5,
        Used             : 0,
        Unused          : 100,
        Pending         : 0,
        Unavailable     : 0
    Range2:
        Start           : 150.0.2.1,
        End             : 150.0.2.100,
        Mask            : 255.255.255.0,
        Type            : 5,
        Unused          : 100,
        Used             : 0,
        Pending         : 0,
        Unavailable     : 0
    Subnet4:
        Subnet           : 50.0.0.0,
        Total            : 200,
        Static DHCP     : 0,
        Dynamic DHCP    : 200,
        Automatic DHCP  : 0,
        Static Bootp    : 0,
        Automatic Bootp : 0
    Ranges:
        Start           : 50.0.1.1,
        End             : 50.0.1.100,
        Mask            : 255.255.255.0,
        Type            : 5,
        Unused          : 100,
        Used             : 0,
        Pending         : 0,
        Unavailable     : 0

```

output definitions

General stats	Denotes general DHCP Server statistics.
Name	Specifies the name assigned to the DHCP server.
Status	Specifies up or down status of the DHCP server.
Total subnets used	Specifies the total number of subnets being used.
Total subnets managed	Specifies the total number of subnets being managed by the DHCP server.
Total subnets unused	Specifies the total number of subnets being unused.
Total subnets full	Specifies the total number of subnets where all the IP addresses are used.
DHCP Server System Up Time	Shows the DHCP Server System Up Time Performance Monitor counter.
Sync time	Specifies the time for DHCP server to contact and synchronize with the designated time server.
Last sync time	Specifies the last time the synchronization occurred.
Next sync time	Specifies the next time the synchronization should be scheduled.

output definitions (continued)

Packet stats	Denotes statistical information about the data packet transmission.
Total DHCP Discovers	Specifies the total number of DHCPDISCOVER packets sent by the clients to the DHCP server.
Total DHCP Offers	Specifies the total number of DHCPOFFER packets sent by the server to the clients.
Total DHCP Requests	Specifies the total number of DHCPREQUEST packets sent by the clients in response to the DHCPOFFER packets.
Total DHCP Request Grants	Specifies the total number of DHCP request grants provided by the server to the clients.
Total DHCP Request Renewals	Specifies the total number of DHCP lease renew requests sent by the clients to the DHCP server.
Total DHCP Declines	Specifies the total number of DHCP requests declined by the DHCP server.
Total DHCP Acks	Specifies the total number of DHCPACK acknowledgement packets sent by the DHCP server to the clients.
Total DHCP Nacks	Specifies the total number of DHCP Negative acknowledgement sent from the DHCP server to the clients. The DHCPNACK message is sent when all the IP addresses available to the server are exhausted and the client sends a DHCPREQUEST.
Total DHCP Releases	Specifies the total number of DHCPRELEASE packets sent by the DHCP server to release IP addresses from its clients.
Total DHCP Informs	Specifies the total number of DHCPINFORM packets sent by the clients to obtain DHCP options from the DHCP server.
Total Bootp requests	Specifies the total number of BOOTP requests sent by the clients to the DHCP server.
Total Bootp response	Specifies the total number of BOOTP response packets sent by the DHCP server to the clients.
Total Unknown packets	Specifies the total number of unknown or badly formatted DHCP packets received by the DHCP server.
Leases stats	Denotes statistical information about leases provided by the DHCP server.
Hosts Managed	Specifies the total number of clients managed by the DHCP server.
Hosts used	Specifies the total number of clients using the IP addresses provided by the DHCP server.
Hosts unused	Specifies the total number of clients managed by the DHCP server which are not being used.
Hosts Pending	Specifies the total number of DHCP IP address requests which are pending by the DHCP server.
Hosts unavailable	Specifies the total number of DHCP hosts which are unavailable i.e; whose lease period have expired.
Static DHCP	Denotes statistical information about the hosts configured with Static DHCP.
Automatic DHCP	Denotes statistical information about the hosts configured with Automatic DHCP.

output definitions (continued)

Static BootP	Denotes statistical information about the hosts configured under Static BootP. Note: BootP Relay is disabled when DHCP server is enabled on the switch.
Automatic BootP	Denotes statistical information about the hosts configured with Automatic BootP.
Subnet statistics	Denotes all DHCP related statistical information for individual subnets.
Range	Specifies the range of IP addresses in the individual subnet.
Mask	Specifies the subnet mask.
Type	Specifies whether the type of IP address allocation is dynamic or Static.

Release History

Release 6.6.4; command introduced.

Related Commands

[clear dhcp-server statistics](#) Clears the DHCP Server lease statistics.

MIB Objects

N/A

clear dhcp-server statistics

Clears the packet counters of DHCP server statistics .

clear dhcp-server statistics

Syntax Definitions

N/A

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

Use this command to clear the packet counters of DHCP server statistics.

Examples

```
-> clear dhcp-server statistics
```

Release History

Release 6.6.4; command introduced.

Related Commands

[show dhcp-server statistics](#) Displays the DHCP Server lease statistics.

MIB Objects

N/A

show ip helper

Displays the current DHCP Relay, Relay Agent Information, and DHCP Snooping configuration.

show ip helper

Syntax Definitions

N/A

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

Displays information for all IP addresses configured.

Examples

The following example shows what the display output looks like when the DHCP Snooping feature is enabled and the DHCP relay agent information (Option 82) feature is disabled:

```
-> show ip helper
Ip helper :
Forward Delay(seconds) = 0,
Max number of hops = 4,
Relay Agent Information = Disabled,
DHCP Snooping Status = Switch-Level Enabled,
Option 82 Data Insertion Per Switch = Enabled,
MAC Address Verification Per Switch = Enabled,
DHCP Snooping Bypass Opt82-Check = Disabled,
DHCP Snooping Opt82 ASCII Circuit ID Field1 = Base MAC,
DHCP Snooping Opt82 ASCII Circuit ID Field1 String = 00:e0:b1:91:45:d0,
DHCP Snooping Opt82 ASCII Circuit ID Field2 = Cvlan,
DHCP Snooping Opt82 ASCII Circuit ID Field2 String = - ,
DHCP Snooping Opt82 ASCII Circuit ID Field3 = Interface,
DHCP Snooping Opt82 ASCII Circuit ID Field3 String = - ,
DHCP Snooping Opt82 ASCII Circuit ID Field4 = Interface Alias,
DHCP Snooping Opt82 ASCII Circuit ID Field4 String = - ,
DHCP Snooping Opt82 ASCII Circuit ID Field5 = System Name,
DHCP Snooping Opt82 ASCII Circuit ID Field5 String = vxTarget,
DHCP Snooping Opt82 ASCII Circuit ID Delimiter = "/",
DHCP Snooping Opt82 ASCII Remote ID Field1 = Vlan,
DHCP Snooping Opt82 ASCII Remote ID Field1 String = - ,
DHCP Snooping Opt82 ASCII Remote ID Field2 = Cvlan,
DHCP Snooping Opt82 ASCII Remote ID Field2 String = - ,
DHCP Snooping Opt82 ASCII Remote ID Field3 = User String,
DHCP Snooping Opt82 ASCII Remote ID Field3 String = biswajit,
DHCP Snooping Opt82 ASCII Remote ID Delimiter = " ",
DHCP Snooping Trap-Mode      = default,
```

```

DHCP Snooping Binding DB Status = Enabled,
Database Sync Timeout = 300,
Database Last Sync Time = ,
Binding Persistency Status = Disabled,
PXE support = Disabled,
Forward option = standard
Vlan Number NA
Bootup Option Disable
Forwarding Address :
20.0.0.151
UDP Relay on Default VRF = Enabled

```

The following example shows what the display output looks like when the DHCP relay agent information (Option 82) feature is enabled and the DHCP Snooping feature is disabled:

```

-> show ip helper
Ip helper :
  Forward Delay(seconds) = 3,
  Max number of hops      = 4,
  Relay Agent Information      = Enabled,
  Relay Agent Information Policy = Drop
  DHCP Snooping Status        = Disabled
  DHCP Snooping Bypass Opt82-Check = Disabled,
  DHCP Snooping Opt82 Format   = Base MAC,
  DHCP Snooping Opt82 String  = 00:d0:95:ae:3b:f6,
  DHCP Snooping Trap-Mode     = default,
  DHCP Snooping Binding DB Status = Disabled,
  Forward option              = standard
  Vlan Number NA
  Bootup Option Disable
  Forwarding Address :
    5.5.5.5
    21.2.2.10
    172.19.4.1

```

output definitions

Forward Delay	The current forward delay time (default is three seconds). Use the ip helper forward delay command to change this value.
Max number of hops	The current maximum number of hops allowed (default is four hops). Use the ip helper maximum hops command to change this value.
Forward option	The current forwarding option setting: standard . Configured through the ip helper standard command.
Relay Agent Information	Indicates the status (Enabled or Disabled) of the DHCP relay agent information option (Option 82) feature. Configured through the ip helper agent-information command. This feature is disabled if the DHCP snooping feature is enabled.
Relay Agent Information Policy	The current policy action (Drop , Keep , Replace) applied to DHCP packets that contain an Option-82 field. Configured through the ip helper agent-information policy command. Note that this field only appears when the DHCP relay agent information Option-82 feature is enabled.

output definitions

DHCP Snooping Status	Indicates the status (Disabled , Switch-Level Enabled , or VLAN-Level Enabled) of the DHCP snooping feature. Configured through the ip helper dhcp-snooping or ip helper dhcp-snooping vlan command. This feature is disabled if the DHCP relay agent information option is enabled.
Option 82 Data Insertion Per Switch	Indicates whether or not the DHCP Option 82 field is added to DHCP packets (Enabled or Disabled). Configured through the ip helper dhcp-snooping option-82 data-insertion command. Note that this field only appears when DHCP snooping is enabled at the switch level.
MAC Address Verification Per Switch	Indicates whether or not MAC address verification is performed on the DHCP packets (Enabled or Disabled). Configured through the ip helper dhcp-snooping trap-mode command. Note that this field only appears when DHCP snooping is enabled at the switch level.
DHCP Snooping Bypass Opt82-Check	Indicates whether or not an Option-82 check is performed for DHCP packets ingressing on untrusted ports (Enabled or Disabled). Configured through the ip helper dhcp-snooping bypass option-82-check command.
DHCP Snooping Opt 82 Format	The type of information (base MAC address for the switch, system name for the switch, or user-defined text) that is inserted into the Option-82 field when Option-82 data insertion is enabled for the switch. Configured through the ip helper dhcp-snooping option-82 format command.
DHCP Snooping Opt 82 String	The user-defined text inserted into the Option-82 field when data insertion is enabled and a string format for the data is specified. Configure through the ip helper dhcp-snooping option-82 format command.
DHCP Snooping Trap-Mode	Displays the configured DHCP Snooping global mode setting.
DHCP Binding DB Status	Indicates if the DHCP snooping binding table (database) functionality is Enabled or Disabled .
Database Sync Timeout	The amount of time, in seconds, that the switch waits between each synchronization of the DHCP snooping binding table with the dhcpBinding.db file (default is 300 seconds). Configured through the ip helper dhcp-snooping binding timeout command. Note that this field does not appear if the binding table functionality is disabled.
Database Last Sync Time	The last time and day the DHCP snooping binding table was synchronized with the dhcpBinding.db file. Note that this field does not appear if the binding table functionality is disabled.
Binding Persistency Status	Indicates whether or not the DHCP snooping binding table retains entries with MAC addresses that were cleared from the MAC address table (Enabled or Disabled). Configured through the ip helper dhcp-snooping binding persistency command.
Bootup Option	Indicates whether or not automatic IP address configuration for default VLAN 1 is done when the switch boots up (Enabled or Disabled). Configured through the ip helper boot-up command.

output definitions

Bootup Packet Option	Indicates if the Bootup Option broadcasts a DHCP or BOOTP packet to obtain an IP address for default VLAN 1. Configured through the ip helper boot-up enable command. Note that this field does not appear if the Bootup Option is disabled.
Forwarding Addresses	IP addresses for DHCP servers that will receive BOOTP/DHCP packets forwarded by this DHCP Relay service. Use the ip helper address command to add or remove DHCP server IP addresses from the DHCP Relay configuration.

Release History

Release 6.6.1; command was introduced.

Release 6.7.1 R02; **DHCP Snooping Trap-Mode** output field was introduced.

Related Commands

show ip helper stats	Displays DHCP Relay statistics, including the number of client packets received and transmitted to the DHCP server and packets dropped due to forward delay time and maximum hops violations.
ip helper dhcp-snooping trap-mode	Globally configures the DHCP Snooping trap-mode settings for the switch.

MIB Objects

```

iphelperTable
  iphelperService
  iphelperForwAddr
  iphelperForwDelay
  iphelperMaxHops
iphelperAgentInformation
iphelperAgentInformationPolicy
iphelperDhcpSnooping
iphelperDhcpSnoopingOpt82DataInsertionStatus
iphelperDhcpSnoopingMacAddressVerificationStatus
iphelperDHCPsnoopingBypassOpt82CheckStatus
iphelperDhcpSnoopingOption82FormatType
iphelperDhcpSnoopingOption82StringValue
iphelperDhcpSnoopingBindingStatus
iphelperDhcpSnoopingTrapStatus
iphelperDhcpSnoopingBindingDatabaseSyncTimeout
iphelperDhcpSnoopingBindingDatabaseLastSyncTime
iphelperDhcpSnoopingVlanTable
  iphelperDhcpSnoopingVlanNumber
  iphelperDhcpSnoopingVlanMacVerificationStatus
  iphelperDhcpSnoopingVlanOpt82DataInsertionStatus
iphelperStatTable
  iphelperBootupOption
  iphelperBootupPacketOption

```

show ip helper stats

Displays the number of packets DHCP Relay has received, the number of packets dropped due to forward delay and maximum hops violations, and the number of packets processed since the last time these statistics were displayed. Also includes statistics that apply to a specific DHCP server, such as the number of packets transmitted to the server and the difference between the number of packets received from a client and the number transmitted to the server.

show ip helper stats

ip helper no stats

Syntax Definitions

N/A

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

Use the **no** form of this command to clear all DHCP Relay statistics.

Examples

```
-> show ip helper stats
```

```
Global Statistics :
  Reception From Client :
    Total Count =      12, Delta =      12,
  Forw Delay Violation :
    Total Count =       3, Delta =       3,
  Max Hops Violation :
    Total Count =       0, Delta =       0,
  Agent Info Violation :
    Total Count =       0, Delta =       0,
  Invalid Gateway IP :
    Total Count =       0, Delta =       0,
  Invalid Agent Info From Server :
    Total Count =       0, Delta =       0,
Server Specific Statistics :
  Server 5.5.5.5
    Tx Server :
      Total Count =       9, Delta =       9
```


output definitions

Reception From Client	Number of packets DHCP Relay has received from the DHCP client.
Forw Delay Violation	Number of packets dropped as a result of forward delay violations. A violation occurs if a client packet contains an elapsed boot time value that is less than the configured DHCP Relay forward delay time value.
Max Hops Violation	Number of packets dropped as a result of maximum hop violations. A violation occurs if a packet contains a hop count equal to or greater than the configured DHCP Relay maximum hops value.
Agent Info Violation	Number of packets dropped as a result of a relay agent information (Option-82) violation. A violation occurs if an Option-82 DHCP packet contains a zero gateway IP address (giaddr) and the relay agent information policy is set to Drop or a DHCP packet has no Option-82 field and contains a non-zero giaddr.
Invalid Gateway IP	Number of packets dropped as a result of a gateway IP violation. A violation occurs if an Option-82 DHCP packet contains a gateway IP address (giaddr) that matches a local subnet address.
Invalid Agent Info From Server	Number of invalid Option-82 DHCP server packets dropped by the relay agent.
Delta	Total number of packets processed since the last time the ip helper statistics were checked during any user session.
Server	DHCP server IP address that receives BOOTP/DHCP packets forwarded by this DHCP Relay service. Use the ip helper address command to add or remove DHCP server IP addresses from DHCP Relay configuration.
Tx Server	Number of packets DHCP Relay has transmitted to the DHCP server.
Delta	The difference between the number of packets received from the client and the number of packets transmitted to the DHCP server since the last time DHCP Relay statistics were checked during any user session.

Release History

Release 6.6.1; command was introduced.

Related Commands

show ip helper Displays current DHCP Relay configuration information.

MIB Objects

```
iphelperStatTable
  iphelperServerAddress
  iphelperRxFromClient
  iphelperTxToServer
  iphelperMaxHopsViolation
  iphelperForwDelayViolation
  iphelperResetAll
```

show ip helper dhcp-snooping vlan

Displays a list of VLANs that have DHCP Snooping enabled and whether or not MAC address verification and Option-82 data insertion is enabled for each VLAN.

show ip helper dhcp-snooping vlan

Syntax Definitions

N/A

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- This command only applies if DHCP Snooping is enabled at the VLAN level.
- Use the **show ip helper** command to determine the status of DHCP Snooping at the switch level.

Examples

```
-> show ip helper dhcp-snooping vlan
VLAN   Opt82      MAC Addr
ID     Insertion  Verification
-----+-----+-----
50      Enabled    Enabled
60      Enabled    Enabled
100     Disabled   Enabled
200     Enabled    Disabled
1500    Disabled   Disabled
```

output definitions

VLAN ID	The VLAN identification number for the DHCP Snooping VLAN.
MAC Address Verification	Indicates whether or not MAC address verification is enabled for the VLAN (Enabled or Disabled). Configured through the ip helper dhcp-snooping vlan command.
Opt-82 Data Insertion	Indicates whether or not Option-82 data insertion is enabled for the VLAN (Enabled or Disabled). Configured through the ip helper dhcp-snooping vlan command.

Release History

Release 6.6.1; command was introduced.

Related Commands

show ip helper

Displays current DHCP Relay configuration information.

show ip helper dhcp-snooping port

Displays the trust mode and DHCP violation statistics for all switch ports that are filtered by DHCP Snooping.

MIB Objects

```
iphelperDhcpSnoopingVlanTable  
  iphelperDhcpSnoopingVlanNumber  
  iphelperDhcpSnoopingVlanMacVerificationStatus  
  iphelperDhcpSnoopingVlanOpt82DataInsertionStatus
```

show ip helper dhcp-snooping port

Displays the trust mode and DHCP Snooping violation statistics for all switch ports that are filtered by DHCP Snooping.

show ip helper dhcp-snooping port

Syntax Definitions

N/A

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- If DHCP Snooping is operating at the switch level, then information for all switch ports is displayed.
- If DHCP Snooping is operating at the VLAN level, then information for only those ports that are associated with a DHCP Snooping VLAN is displayed.
- The violation statistics displayed only apply to ports that are in the client only trust mode. When the trust mode for a port is changed from **client-only** to **trusted** or **blocked**, the violation counters are set to zero (0).

Examples

```
-> show ip helper dhcp-snooping port
Slot      Trust      Opt82      MAC      Server      Relay      Binding
Port      Mode      Violation  Violation Violation  Violation  Violation
-----+-----+-----+-----+-----+-----+-----
1/1       Blocked   0          0        0          0         0
1/2       Client-Only 0          0        0          0         0
1/3       Client-Only 0          0        0          0         0
1/4       Client-Only 0          0        0          0         0
1/5       Client-Only 0          0        0          0         0
1/6       Blocked   0          0        0          0         0
1/7       Client-Only 0          0        0          0         0
1/8       Client-Only 0          0        0          0         0
1/9       Client-Only 0          0        0          0         0
1/10      Trusted   0          0        0          0         0
1/11      Trusted   0          0        0          0         0
1/12      Trusted   0          0        0          0         0
```

output definitions

Slot/Port	The slot number for the module and the physical port number on that module (e.g., 3/1 specifies port 1 on slot 3).
Trust Mode	The DHCP Snooping trust mode for the port (Blocked , Client-Only , or Trusted). Configured through the ip helper dhcp-snooping port command.
Opt82 Violation	The number of DHCP packets dropped due to a DHCP Snooping Option-82 violation.
MAC Violation	The number of DHCP packets dropped due to a mismatch between the packet source MAC address and the client hardware address contained within the packet.
Server Violation	The number of DHCP server packets dropped because they originated from outside the network or firewall.
Relay Violation	The number of DHCP packets dropped because the packet included a relay agent IP address that was not 0.0.0.0.
Binding Violation	The number of DHCP packets dropped due to a mismatch between packets received and binding table information.

Release History

Release 6.6.1; command was introduced.

Related Commands

show ip helper	Displays current DHCP Relay configuration information.
show ip helper dhcp-snooping vlan	Displays a list of DHCP Snooping VLANs.

MIB Objects

```
iphelperDhcpSnoopingPortTable
  iphelperDhcpSnoopingPortIfIndex
  iphelperDhcpSnoopingPortTrustMode
  iphelperDhcpSnoopingPortIpSourceFiltering
  iphelperDhcpSnoopingPortOption82Violation
  iphelperDhcpSnoopingPortMacAddrViolation
  iphelperDhcpSnoopingPortDhcpServerViolation
  iphelperDhcpSnoopingPortRelayAgentViolation
  iphelperDhcpSnoopingPortBindingViolation
```

show ip helper dhcp-snooping binding

Displays the contents of the DHCP Snooping binding table (database).

show ip helper dhcp-snooping binding

Syntax Definitions

N/A

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Use the [ip helper dhcp-snooping binding](#) command to create a static entry in the binding table.
- Dynamic binding table entries are created when the relay agent receives a DHCPACK packet.

Examples

```
-> show ip helper dhcp-snooping binding
      MAC          Slot      IP          Lease   VLAN   Binding
      Address      Port      Address     Time    ID     Type
-----+-----+-----+-----+-----+-----
00:ae:22:e4:00:08  1/4     10.255.11.23  2000    5     Dynamic
10:fe:a2:e4:32:08  2/15    10.255.91.53  2000    2     Dynamic
```

output definitions

MAC Address	The MAC address of the client.
Slot/Port	The slot/port designation for the switch port that received the DHCP request
IP Address	The IP address offered by the DHCP server.
Lease Time	The IP address lease time assigned by the DHCP server.
VLAN ID	The VLAN ID of the VLAN to which the client belongs.
Binding Type	Indicates whether the binding table entry is dynamic or static . Static entries are created using the ip helper dhcp-snooping binding command.

Release History

Release 6.6.1; command was introduced.

Related Commands

- show ip helper** Displays current DHCP Relay configuration information.
- show ip helper dhcp-snooping vlan** Displays a list of DHCP Snooping VLANs.
- show ip helper dhcp-snooping port** Displays the trust mode and DHCP violation statistics for all switch ports that are filtered by DHCP Snooping.

MIB Objects

```
iphelperDhcpSnoopingBindingStatus  
iphelperDhcpSnoopingBindingTable  
    iphelperDhcpSnoopingBindingMacAddress  
    iphelperDhcpSnoopingBindingIfIndex  
    iphelperDhcpSnoopingBindingIpAddress  
    iphelperDhcpSnoopingBindingLeaseTime  
    iphelperDhcpSnoopingBindingVlan  
    iphelperDhcpSnoopingBindingType
```

show ip udp relay service

Displays current configuration for UDP services by service name or by service port number.

show ip udp relay service [**BOOTP** | **NBDD** | **NBNSNBDD** | **DNS** | **TACACS** | **TFTP** | **NTP** | *port*]

Syntax Definitions

BOOTP	BOOTP/DHCP well-known ports 67/68.
NBDD	NBDD well-known port 138.
NBNSNBDD	NBNS/NBDD well-known ports 137/138.
DNS	DNS well-known port 53.
TACACS	TACACS well-known port 65.
TFTP	TFTP well-known port 69.
NTP	NTP well-known port 123.
<i>port</i>	A user-specified port that is not a well-known port.

Defaults

By default, the configuration for all UDP services is shown.

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Enter a service name or port number with this command to display information about an individual service.
- When specifying a port number, do not specify a well-known port number. Instead, use the service name for the well-known port (i.e., NBNS/NBDD, DNS, etc.).

Examples

```
-> show ip udp relay service
```

```
Service      Port(s)  Description
-----+-----+-----
  1           67 68    BOOTP/DHCP
  4           53      DNS
  5           65      TACACS
```

```
-> show ip udp relay service dns
```

```
Service      Port(s)  Description
-----+-----+-----
  4           53      DNS
```



```
-> show ip udp relay service 1776
```

```
Service      Port(s)  Description
-----+-----+-----
      9      1776      A UDP protocol
```

output definitions

Service	The UDP service number. (1 through 7 for well-known service ports and 8 and above for user-defined service ports).
Port(s)	The UDP service port number.
Description	A description of the UDP service.

Release History

Release 6.6.1; command was introduced.

Related Commands

- show ip udp relay statistics** Displays the current statistics for each UDP port relay service.
- show ip helper dhcp-snooping ip-source-filter** Displays the ports or VLANs on which IP source filtering is enabled or the binding table for IP source filtering enabled ports.

MIB Objects

```
iphelperxPropertiesTable
  iphelperxPropertiesService
  iphelperxPropertiesPort
  iphelperxPropertiesName
```

show ip udp relay statistics

Displays the current statistics for each UDP port relay service. These statistics include the name of the service, the forwarding VLAN(s) configured for that service, and the number of packets the service has sent and received.

show ip udp relay [**BOOTP** | **NBDD** | **NBNSNBDD** | **DNS** | **TACACS** | **TFTP** | **NTP** | *port*]

Syntax Definitions

BOOTP	BOOTP/DHCP well-known ports 67/68.
NBDD	NBDD well-known port 138.
NBNSNBDD	NBNS/NBDD well-known ports 137/138.
DNS	DNS well-known port 53.
TACACS	TACACS well-known port 65.
TFTP	TFTP well-known port 69.
NTP	NTP well-known port 123.
<i>port</i>	A user-specified port that is not a well-known port.

Defaults

By default, the statistics for all UDP services is shown.

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Enter a service name or port number with this command to display information about an individual service.
- When specifying a port number, do not specify a well-known port number. Instead, use the service name for the well-known port (i.e., NBNS/NBDD, DNS, etc.).

Examples

```
-> show ip udp relay statistics
```

Service	Vlan	Pkts Sent	Pkts Recvd
BOOTP		0	0
DNS	2	10	10
	4	15	15
TACACS	3	0	0

```
-> show ip udp relay statistics tacacs
```

```
Service          Vlan    Pkts Sent  Pkts Recvd
-----+-----+-----+-----
TACACS           3        0          0
```

```
-> show ip udp relay statistics 1776
```

```
Service          Vlan    Pkts Sent  Pkts Recvd
-----+-----+-----+-----
A UDP Protocol   18        2          2
```

output definitions

Service	The active UDP service name.
VLAN	The VLAN assigned to the UDP service port that will forward traffic destined for that port. Use the ip udp relay vlan command to configure this value.
Pkts Sent	The number of packets sent from this service port to the server.
Pkts Recvd	The number of packets received by this service port from a client.

Release History

Release 6.6.1; command was introduced.

Related Commands

show ip udp relay service	Displays current configuration for UDP services by service name or by service port number.
show ip helper dhcp-snooping ip-source-filter	Displays the VLAN assignments to which the traffic received on the specified UDP service port is forwarded.

MIB Objects

```
iphelperxStatTable
  iphelperxStatService
  iphelperxStatVlan
  iphelperxStatTxToServer
  iphelperxStatRxFromClient
```

show ip udp relay destination

Displays the VLAN assignments to which the traffic received on the specified UDP service port is forwarded.

show ip udp relay destination [**BOOTP** | **NBDD** | **NBNSNBDD** | **DNS** | **TACACS** | **TFTP** | **NTP** | *port*]

Syntax Definitions

BOOTP	BOOTP/DHCP well-known ports 67/68.
NBDD	NBDD well-known port 138.
NBNSNBDD	NBNS/NBDD well-known ports 137/138.
DNS	DNS well-known port 53.
TACACS	TACACS well-known port 65.
TFTP	TFTP well-known port 69.
NTP	NTP well-known port 123.
<i>port</i>	A user-specified port that is not a well-known port.

Defaults

By default, the forwarding VLAN assignments for all UDP services is shown.

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Enter a service name or port number with this command to display information about an individual service.
- When specifying a port number, do not specify a well-known port number. Instead, use the service name for the well-known port (i.e., NBNS/NBDD, DNS, etc.).

Examples

```
-> show ip udp relay destination
```

Service	Port	VLANs
-----+-----+-----		
BOOTP	67	
DNS	53	2 4
TACACS	65	3

```
-> show ip udp relay destination dns
```

Service	Port	VLANs
-----+-----+-----		
DNS	53	2 4

```
-> show ip udp relay destination 1776
```

Service	Port	VLANs
A UDP Protocol	1776	18

output definitions

Service	The active UDP service name.
Port	The UDP service port number.
VLANs	The VLAN assigned to the UDP service port that will forward traffic destined for that port. Use the ip udp relay vlan command to configure this value.

Release History

Release 6.1; command was introduced.

Related Commands

- show ip udp relay service** Displays current configuration for UDP services by service name or by service port number.
- show ip udp relay statistics** Displays the current statistics for each UDP port relay service.

MIB Objects

```

iphelperTable
  iphelperService
  iphelperVlan
iphelperxPropertiesTable
  iphelperxPropertiesName
  iphelperxPropertiesPort

```

show ip helper dhcp-snooping ip-source-filter

Displays the ports or VLANs on which IP source filtering is enabled or the binding table entries for IP source filtering enabled ports and VLANs.

show ip helper dhcp-snooping ip-source-filter {vlan | port | binding}

Syntax Definitions

vlan	Displays the VLANs on which the IP source filtering is enabled.
port	Displays the ports on which IP source filtering is enabled.
binding	Displays the binding table entries for the ports and VLANs on which the IP source filtering is enabled.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- The show output displays only those ports or VLANs on which IP source filtering is enabled.
- This command also displays the status of the link aggregate ports, when source filtering is enabled at VLAN or port level.

Examples

```
-> show ip helper dhcp-snooping ip-source-filter port
Slot  IP Src
Port  Filtering
-----+-----
1/7   Enabled
1/12  Enabled
```

output definitions

Slot/Port	Specifies the slot and port number.
IP Src Filtering	Specifies the IP source filtering status. Enabled or Disabled .

```
-> show ip helper dhcp-snooping ip-source-filter vlan
VLAN   Ip Src   Excluded   Subnets
ID     Filtering IP          Mask
-----+-----+-----+-----
101    Enabled  10.55.40.4 255.255.255.252
```

output definitions

VLAN ID	Specifies the VLAN ID of the instance.
IP Src Filtering	Specifies the IP source filtering status. Enabled or Disabled .
Excluded IP	Specifies the excluded IP address on which the DHCP snooping IP source filtering exception is applied.
Subnets Mask	Specifies the subnet IP address on which the DHCP snooping IP source filtering exception is applied

```
-> show ip helper dhcp-snooping ip-source-filter binding
```

```

      MAC          Slot      IP          Lease   VLAN   Binding
      Address      Port      Address    Time    ID     Type
-----+-----+-----+-----+-----+-----
00:00:13:02:78:77 1/30    110.11.1.135  15     161    Dynamic

```

```
Total number of binding entries :1
```

output definitions

MAC Address	Specifies the MAC address of allowed streams.
Slot/Port	Specifies the slot and port number on which source filtering has been enabled.
IP Address	Specifies the IP address of allowed streams.
Lease Time	Specifies the lease time of the binding entries expiry.
VLAN ID	Specifies the VLAN ID for the instance.
Binding Type	Specifies the type of binding.

Release History

Release 6.6.3; command was introduced.

Release 6.7.1 R02; **binding** parameter added.

Related Commands

ip helper dhcp-snooping binding Enables or disables the IP source filtering at a port, link aggregation, or VLAN level.

ip helper dhcp-snooping ip-source-filter Enables or disables the IP source filtering capability at a port, link aggregation, or VLAN level. When this function is enabled, the switch allows the traffic that matches the client IP address, MAC address, port, and VLAN combination obtained from the DHCP snooping binding table entry.

MIB Objects

```

iphelperDhcpSnoopingPortIpSourceFiltering
  iphelperDhcpSnoopingPortIfIndex
  iphelperDhcpSourceFilterVlanNumber
  iphelperDhcpSourceFilterVlanFilteringStatus
iphelperDhcpSnoopingBindingTable
  iphelperDhcpSnoopingBindingMacAddress
  iphelperDhcpSnoopingBindingIfIndex
  iphelperDhcpSnoopingBindingIpAddress

```

```
iphelperDhcpSnoopingBindingVlan  
iphelperDhcpSnoopingBindingLeaseTime  
iphelperDhcpSnoopingBindingType
```

ipv6 helper address

Adds or deletes a DHCPv6 server address. DHCPv6 relay forwards DHCPv6 packets to and from the specified address. If multiple DHCPv6 servers are used, one IPv6 address must be configured for each server.

ipv6 helper address *ipv6_address*

ipv6 helper no address [*ipv6_address*]

Syntax Definitions

ipv6_address DHCPv6 server address (for example, 5001::6).

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Use the **no** form of this command to delete an IPv6 address from the DHCPv6 Relay service. If an address is not specified, then all addresses are deleted.
- Using this command enables a Global DHCPv6 Relay service on the switch. When the DHCPv6 Relay is specified by the DHCPv6 server IPv6 address, the service is called Global DHCPv6 Relay.
- When the DHCPv6 Relay is specified by the VLAN number of the DHCPv6 request, the service is referred to as Per-VLAN DHCPv6. You can either configure Global DHCPv6 or Per-VLAN DHCPv6 but not both together.
- UDPv6 Relay is automatically enabled on a switch when a DHCPv6 server IPv6 address is defined. There is no separate command for enabling or disabling the relay service.
- Configure DHCPv6 Relay on switches where packets are routed between IPv6 networks. You can configure up to 256 server IPv6 addresses for one relay service.

Example

```
-> ipv6 helper address 2001::5  
-> ipv6 helper no address 3001::3
```

Release History

Release 6.7.1; command introduced.

Related Commands

ipv6 helper per-vlan only

Configures DHCPv6 relay for the specified VLAN.

ipv6 helper maximum hops

Sets the maximum number of hops value for the DHCPv6 Relay configuration.

show ipv6 helper

Displays the current DHCPv6 Relay, Relay Agent information and DHCPv6 snooping configurations.

MIB Objects

ipv6helperTable

 ipv6helperForwAddr

ipv6 helper address vlan

Configures DHCPv6 relay for the specified VLAN. This command can be used when a Per-VLAN only relay service is active on the switch.

ipv6 helper address *ipv6_address* **vlan** *vlan_id*

ipv6 helper no address *ipv6_address* **vlan** *vlan_id*

Syntax Definitions

ipv6_address DHCPv6 server IPv6 address (for example, 5001::6).

vlan_id VLAN Identification number of per-VLAN.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Use the **no** form of this command to delete the DHCPv6 server VLAN from the DHCPv6 Relay.
- This command does not apply when using a standard relay service.
- Specifying multiple VLAN IDs or a range of VLAN IDs on the same command line is allowed.
- Use a hyphen to indicate a contiguous range and a space to separate multiple VLAN ID entries (for example, 10-15, 500-510, 850).
- The **ipv6 helper address vlan** command does not work if the **per-vlan only** forwarding option is not active. Use the **ipv6 helper per-vlan only** command to enable this option.
- The per-VLAN only relay service supports a maximum of 256 VLANs.

Example

```
-> ipv6 helper address 2001::5 vlan 100
-> ipv6 helper address 2001::5 vlan 100-105
-> ipv6 helper no address 2001::5 vlan 103
```

Release History

Release 6.7.1; command introduced.

Related Commands

ipv6 helper per-vlan only

Sets the DHCPv6 Relay forwarding option to process only DHCPv6 packets received from a specific identified VLAN. This option allows each VLAN to have its own relay.

show ipv6 helper

Displays the current DHCPv6 Relay, Relay Agent information and DHCPv6 snooping configurations.

MIB Objects

ipv6helperTable

 ipv6helperVlan

 ipv6helperStatus

ipv6 helper standard

Sets DHCPv6 Relay forwarding option to standard. All DHCPv6 packets are processed by a global relay.

ipv6 helper standard

Syntax Definitions

N/A

Defaults

By default, the DHCPv6 relay forwarding option is set to standard.

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

All DHCPv6 packets are processed by a global relay. When the DHCPv6 Relay is specified by the DHCPv6 server, the service is called Global DHCPv6 Relay.

Example

```
-> ipv6 helper standard
```

Release History

Release 6.7.1; command introduced.

Related Commands

[ipv6 helper per-vlan only](#)

Sets the DHCPv6 Relay forwarding option to process only DHCPv6 packets received from a specific identified VLAN. This option allows each VLAN to have its own relay.

[show ipv6 helper](#)

Displays the current DHCPv6 Relay, Relay Agent information and DHCPv6 snooping configurations.

MIB Objects

ipv6helperTable
ipv6helperForwardOption

ipv6 helper per-vlan only

Sets the DHCPv6 Relay forwarding option to process only DHCPv6 packets received from a specific identified VLAN. This option allows each VLAN to have its own relay.

ipv6 helper per-vlan only

Syntax Definitions

N/A

Defaults

By default, forwarding option is set to standard.

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- When the forwarding option is set to Per-VLAN only, the standard (global) DHCPv6 relay service must not be active.
- Using the **per-vlan only** forwarding option requires you to specify a DHCPv6 server IPv6 address for each VLAN that provides a relay service. The **ipv6 helper address vlan** command performs this function and at the same time enables relay for the specified VLAN.

Example

```
-> ipv6 helper per-vlan only
```

Release History

Release 6.7.1; command introduced.

Related Commands

- | | |
|---|--|
| ipv6 helper per-vlan only | Configures DHCPv6 relay for the specified VLAN. This command can be used when a Per-VLAN only relay service is active on the switch. |
| show ipv6 helper | Displays current DHCPv6 Relay configuration information. |

MIB Objects

```
ipv6helperTable  
  ipv6helperForwardOption
```

ipv6 helper maximum hops

Sets the maximum number of hops for the DHCPv6 Relay configuration.

ipv6 helper maximum hops *num*

Syntax Definitions

num Maximum number of hops. The valid range is 1 to 32.

Defaults

By default, the maximum number of hops is set to 32.

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- The **hops** value specifies the maximum number of relays a DHCPv6 packet is allowed to traverse until it reaches its server destination. Limiting the number of hops that can forward a packet prevents packets from looping through the network.
- If a packet contains a hop count equal to or greater than the **hops** value, DHCPv6 Relay discards the packet.

Example

```
-> ipv6 helper maximum hops 1  
-> ipv6 helper maximum hops 12
```

Release History

Release 6.7.1; command introduced.

Related Commands

[show ipv6 helper](#) Displays the current DHCPv6 Relay, Relay Agent information and DHCPv6 snooping configurations.

MIB Objects

```
ipv6helperTable  
    ipv6helperMaxHops
```

ipv6 helper dhcp-snooping

Globally enables or disables DHCPv6 Snooping for the switch. When this feature is enabled, all DHCPv6 packets received on all switch ports are filtered.

ipv6 helper dhcp-snooping {enable | disable}

Syntax Definitions

enable	Enables DHCPv6 snooping for the switch.
disable	Disables DHCPv6 snooping for the switch.

Defaults

By default, this feature is disabled.

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- If the DHCPv6 Snooping feature is globally enabled for the switch, then configuring snooping on a Per-VLAN basis is not allowed.
- If Per-VLAN based snooping is enabled, switch level snooping cannot be enabled.

Example

```
-> ipv6 helper dhcp-snooping enable
-> ipv6 helper dhcp-snooping disable
```

Related Commands

ipv6 helper address	Adds or deletes a DHCPv6 server address. DHCPv6 relay forwards DHCPv6 packets to and from the specified address.
show ipv6 helper	Displays the current DHCPv6 Relay, Relay Agent information and DHCPv6 snooping configurations.

Release History

Release 6.7.1; command introduced

MIB Objects

```
ipv6helperTable
  ipv6helperDhcpSnooping
```

ipv6 helper dhcp-snooping vlan

Enables or disables DHCPv6 Snooping on a Per-VLAN basis. When this feature is enabled, all DHCPv6 packets received on ports associated with the VLAN are filtered.

ipv6 helper dhcp-snooping vlan *vlan_id*

no ipv6 helper dhcp-snooping vlan *vlan_id*

Syntax Definitions

vlan_id VLAN Identification Number (1 to 4094).

Defaults

By default, DHCPv6 snooping is disabled.

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Use the **no** form of this command to disable DHCPv6 Snooping for the specified VLAN.
- If the DHCPv6 Snooping feature is globally enabled for the switch, then configuring snooping on a Per-VLAN basis is not allowed.
- If per-VLAN based snooping is enabled for the switch, then DHCPv6 snooping cannot be enabled.

Example

```
-> ipv6 helper dhcp-snooping vlan 100
-> no ipv6 helper dhcp-snooping vlan 100
```

Release History

Release 6.7.1; command introduced.

Related Commands

show ipv6 helper dhcp-snooping vlan Displays a list of VLANs that have DHCPv6 Snooping enabled.

MIB Objects

ipv6helperDhcpSnoopingVlanTable

ipv6 helper dhcp-snooping port

Configures the DHCPv6 Snooping trust mode for the port. The trust mode determines if the port accepts all DHCPv6 traffic, blocks all DHCPv6 traffic, or accepts only client DHCPv6 traffic.

ipv6 helper dhcp-snooping port *slot / port1* [- *port 1a*] {**block** | **client-only-trusted** | **client-only-untrusted** | **trusted**}

Syntax Definitions

<i>slot / port1</i> [- <i>port 1a</i>]	Specifies the slot number for the module and the physical port number on that module (for example, 3/1 specifies port 1 on slot 3). Use a hyphen to specify a range of ports (for example, 3/1-16).
block	Blocks all DHCPv6 traffic on the port.
client-only-trusted	Allows only DHCPv6 client traffic on the port along with the Relay forward message
client-only-untrusted	Allows only DHCPv6 client traffic on the port with DHCPv6 snooping enabled.
trusted	Allows all DHCPv6 traffic on the port. The port behaves as if DHCPv6 Snooping is not enabled.

Defaults

By default, the trust mode for a port is set to **client-only-untrusted** when the DHCPv6 Snooping feature is enabled for the switch or for a VLAN.

Usage Guidelines

- The DHCPv6 trust mode only applies when the DHCPv6 Snooping feature is enabled for the switch or for a VLAN.
- If DHCPv6 Snooping is enabled at the switch level, the trust mode applies to all switch ports.
- If DHCPv6 Snooping is enabled for a specific VLAN, then the trust mode applies to only those ports that are associated with that VLAN.
- Use the **show ipv6 helper dhcp-snooping port** command to display the current trust mode for a port and statistics regarding the number of packets dropped due to DHCPv6 Snooping violations.

Example

```
-> ipv6 helper dhcp-snooping port 1/24 trusted
-> ipv6 helper dhcp-snooping port 2/1-5 block
-> ipv6 helper dhcp-snooping port 4/7 client-only-untrusted
```

Release History

Release 6.7.1; command introduced.

Related Commands

show ipv6 helper dhcp-snooping port

Displays the trust mode and DHCPv6 Snooping violation statistics for all switch ports that are filtered by DHCPv6 Snooping.

Related MIB Objects

Ipv6helperDhcpSnoopingPortTable
 ipv6helperDhcpSnoopingPortEntry
 ipv6helperDhcpSnoopingPortIfIndex
 ipv6helperDhcpSnoopingPortTrustMode

ipv6 helper dhcp-snooping linkagg

Configures the DHCPv6 Snooping trust mode for the link aggregate. The trust mode determines if the link aggregate will accept all DHCPv6 traffic, block all DHCPv6 traffic, or accept only client DHCPv6 traffic.

ipv6 helper dhcp-snooping linkagg num {block | client-only-trusted | client-only-untrusted | trusted}

Syntax Definitions

num	Specifies the link aggregate ID number
block	Blocks all DHCPv6 traffic on the ports of the specified link aggregate.
client-only-trusted	Allows only DHCPv6 client traffic on the link aggregate ports along with the Relay forward message.
client-only-untrusted	Allows only DHCPv6 client traffic on the link aggregate ports with DHCPv6 snooping enabled.
trusted	Allows all DHCPv6 traffic on the link aggregate ports. The port behaves as if DHCPv6 Snooping was not enabled.

Defaults

By default, the trust mode for link aggregate is set to **client-only-untrusted** when the DHCPv6 Snooping feature is enabled for the switch or for a VLAN.

Usage Guidelines

- The DHCPv6 trust mode only applies when the DHCPv6 Snooping feature is enabled for the switch or for a VLAN.
- If DHCPv6 Snooping is enabled at the switch level, the trust mode applies to all link aggregates.
- If DHCPv6 Snooping is enabled for a specific VLAN, then the trust mode applies to only those link aggregates that are associated with that VLAN.
- Use the **show ipv6 helper dhcp-snooping port** command to display the current trust mode for link aggregate and statistics regarding the number of packets dropped due to DHCPv6 Snooping violations.

Example

```
-> ipv6 helper dhcp-snooping linkagg 1 trust
-> ipv6 helper dhcp-snooping linkagg 2 block
-> ipv6 helper dhcp-snooping linkagg 3 client-only-trusted
```

Release History

Release 6.7.1; command introduced.

Related Commands

show ipv6 helper dhcp-snooping port Displays the trust mode and DHCPv6 Snooping violation statistics for all switch ports that are filtered by DHCPv6 Snooping.

MIB Objects

Ipv6helperDhcpSnoopingPortTable
 ipv6helperDhcpSnoopingPortEntry
 ipv6helperDhcpSnoopingPortIfIndex
 ipv6helperDhcpSnoopingPortTrustMode

ipv6 helper dhcp-snooping binding

Enables or disables the DHCPv6 Snooping binding table functionality. The binding table contains the link local address, IPv6 address, lease time, VLAN number, and the interface information that corresponds to a local untrusted port on the switch.

ipv6 helper dhcp-snooping binding [enable | disable]

Syntax Definitions

enable	Enables the creation of binding table entries.
disable	Disables the creation of binding table entries.

Defaults

By default, the binding table functionality is enabled when the DHCPv6 Snooping feature is enabled for the switch or for a VLAN.

Usage Guidelines

- The enable and disable parameters are independent of the other parameters; they are only used to turn the binding table functionality on and off.
- Dynamic binding table entries are created when the relay agent receives a DHCPv6 Reply packet.

Example

```
-> ipv6 helper dhcp-snooping binding disable
-> ipv6 helper dhcp-snooping binding enable
```

Release History

Release 6.7.1; command introduced.

Related Commands

show ipv6 helper dhcp-snooping binding	Displays the trust mode and DHCPv6 Snooping violation statistics for all switch ports that are filtered by DHCPv6 Snooping.
---	---

MIB Objects

```
ipv6helperDhcpSnoopingBindingTable
  ipv6helperDhcpSnoopingBindingStatus
```

ipv6 helper dhcp-snooping binding action

Triggers a purge or renew action against the DHCPv6 Snooping binding table. A purge action clears the contents of the table. A renew action populates the table with entries saved in the DHCPv6 binding table.

ipv6 helper dhcp-snooping binding action {purge | renew}

Syntax Definitions

purge	Clears all binding table entries that are maintained in switch memory.
renew	Populates the binding table with entries saved in the dhcpv6bind.db file located in /flash/switch directory on the switch.

Defaults

N/A

Usage Guidelines

The DHCPv6 Snooping binding table is maintained in the switch memory. Binding table entries are saved on a periodic basis to the **dhcpv6bind.db** file on the switch. Use the purge and renew options available with this command to sync the binding table contents with the contents of the **dhcpv6bind.db** file.

Example

```
-> ipv6 helper dhcp-snooping binding action purge
-> ipv6 helper dhcp-snooping binding action renew
```

Release History

Release 6.7.1; command introduced.

Related Commands

N/A

MIB Objects

```
ipv6helperDhcpSnoopingBindingTable
  ipv6helperDhcpSnoopingBindingDatabaseAction
```

ipv6 helper dhcp-snooping binding persistency

Retains the entries in the DHCPv6 Snooping binding table for the duration of the lease, regardless of the existence of the MAC address in the MAC address table.

ipv6 helper dhcp-snooping binding persistency {enable | disable}

Syntax Definitions

enable	Enables DHCPv6 snooping binding persistency.
disable	Disables DHCPv6 snooping binding persistency.

Defaults

By default, DHCPv6 snooping binding persistency is disabled.

Usage Guidelines

- When this option is disabled, the client MAC address entry in the MAC table is removed. If the MAC address is missing from the MAC address table then binding entry will be removed.
- Use the **show ipv6 helper** command to display the current status.

Example

```
-> ipv6 helper dhcp-snooping binding persistency enable
-> ipv6 helper dhcp-snooping binding persistency disable
```

Release History

Release 6.7.1; command introduced.

Related Commands

show ipv6 helper Displays the current DHCPv6 Relay, Relay Agent information and DHCPv6 snooping configurations.

MIB Objects

```
ipv6helperDhcpSnoopingBindingTable
  ipv6helperDhcpSnoopingBindingPersistencyStatus
```

ipv6 helper dhcp-snooping ip-source-filter

Enables or disables the IPv6 source filtering capability at a port, link aggregation, or VLAN level. When this function is enabled, the switch allows the traffic that matches the client IPv6 address, MAC address, port, and VLAN combination obtained from the DHCPv6 snooping binding table entry.

ipv6 helper dhcp-snooping ip-source-filter {vlan *num* | port *slot/port[-port2]* | linkagg *num*} {enable | disable}

Syntax Definitions

vlan	The VLAN identification number (1–4094).
linkagg num	Specifies the link aggregate identification number.
<i>slot/port[-port2]</i>	Specifies the slot number for the module and the physical port number on that module (for example, 3/1 specifies port 1 on slot 3). Use a hyphen to specify a range of ports (for example, 3/1-16).
enable	Enables IP source filtering for the specified port, link aggregation, or VLAN.
disable	Disables IP source filtering for the specified port, link aggregation, or VLAN level.

Defaults

By default, IPv6 source filtering is disabled for a port or link aggregate, or VLAN.

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- In case of OmniSwitch 6350, source filtering for both IPv4 and IPv6 cannot be configured on the same switch.
- DHCPv6 snooping must be enabled for IPv6 source filtering to be enabled.
- IPv6 source filtering can be enabled
 - On the port or VLAN level when DHCPv6 snooping is enabled at the system level or VLAN level.
 - On the ports that are associated with a VLAN on which DHCPv6 snooping is enabled.
 - On all the ports or link aggregate when DHCPv6 snooping is enabled at the system level.
- When the IPv6 source filtering is enabled on the switch, only two UNI profiles can be configured.
- A maximum of 32 VLANs can be tagged to IPv6 source filtering.

Examples

```
-> ipv6 helper dhcp-snooping ip-source-filter port 1/1 enable
-> ipv6 helper dhcp-snooping ip-source-filter linkagg 2 enable
-> ipv6 helper dhcp-snooping ip-source-filter vlan 10 enable
-> ipv6 helper dhcp-snooping ip-source-filter vlan 20 disable
```

Release History

Release 6.7.1; command introduced.

Related Commands

show ipv6 helper dhcp-snooping ip-source-filter Displays the ports or VLANs on which IPv6 source filtering is enabled.

show ipv6 helper dhcp-snooping ip-source-filter binding Displays the binding entries for IPv6 source filtering.

MIB Objects

```
ipv6helperDhcpSnoopingPortTable  
  ipv6helperDhcpSnoopingPortIfIndex  
  Ipv6helperDhcpSourceFilterPortFilteringStatus  
  ipv6helperDhcpSourceFilterVlanNumber  
  ipv6helperDhcpSourceFilterVlanFilteringStatus
```

ipv6 helper interface-id prefix

This command can be used to configure Interface ID manually.

ipv6 helper interface-id prefix *string*

ipv6 helper no interface-id prefix

Syntax Definitions

string A user-defined text string up to 255 characters.

Defaults

By default, **interface-id** option is added with value containing VLAN ID and Ifindex.

Usage Guidelines

When the **interface-id** prefix is configured, the user defined Interface ID is inserted into the relay-forward message.

Example

```
-> ipv6 helper interface-id prefix pool-1  
-> ipv6 helper no interface-id prefix
```

Release History

Release 6.7.1; command introduced.

Related Commands

[show ipv6 helper](#) Displays the current DHCPv6 Relay, Relay Agent information and DHCPv6 snooping configurations.

MIB Objects

ipv6helperTable
 ipv6helperInterfaceIdPrefixValue

ipv6 helper remote-id format

Configures the type of information that is inserted into the Remote ID sub option. The information is inserted into the Remote ID field in ASCII text string format.

ipv6 helper remote-id format {**base-mac** | **system-name** | **vlan** | **user-string** *string* | **interface-alias** | **auto-interface-alias** | **disable**}

ipv6 helper remote-id enterprise-number *num*

Syntax Definitions

base-mac	The base MAC address of the switch.
system-name	The system name of the switch.
vlan	The VLAN ID of which the client is a member.
<i>string</i>	A user-defined text string upto 64 characters to insert into the Remote ID ASCII field.
interface-alias	The alias configured for the interface.
auto-interface-alias	The switch automatically generates the interface-alias in the following format: <i>systemName_slot_port</i> .
enterprise-number	The vendor's registered enterprise number.
disable	Disable the Remote ID format and remove the enterprise-number configuration.

Defaults

By default, this feature is disabled.

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Configuring the Remote ID sub option in ASCII format allows up to five types of information within the ASCII string. However, if the contents of all the fields combined exceed 127 characters, then the ASCII string is truncated.
- Enterprise number must be set before the Remote ID format.
- Specifying at least one parameter with this command is required. If multiple parameters are selected, then one of the valid delimiter characters must be specified.
- For user-defined *string*, include ambiguous characters such as hex characters and spaces in quotes so that they are interpreted as text. For example, the string "Building B Server" requires quotes because of the spaces between the words.
- The **interface-alias** parameter uses the alias configured with the **interfaces alias** command. If no alias is configured, a NULL string is inserted.

- The Remote ID format option is a global setting; the format specified is applied to all ports on the switch.
- Both Enterprise-number and format is disabled when the **disable** option is used in the Remote ID format.

Example

```
-> ipv6 helper remote-id enterprise-number 5
-> ipv6 helper remote-id format interface-alias
-> ipv6 helper remote-id format user-string "Network XYZ"
```

Release History

Release 6.7.1; command introduced.

Related Commands

[interfaces alias](#)

Configures a description (alias) for a single port.

[show ipv6 helper](#)

Displays the current DHCPv6 Relay, relay agent information and DHCPv6 snooping configurations

MIB Objects

ipv6helperTable

 ipv6helperRemoteIdEnterpriseNumber

 ipv6helperRemoteIdUserStringValue

 ipv6helperRemoteIdFormatType

show ipv6 helper

Displays the current DHCPv6 Relay, Relay Agent information and DHCPv6 snooping configurations.

show ipv6 helper

Syntax Definitions

N/A

Defaults

N/A

Usage Guidelines

Displays information for all IPv6 server addresses configured.

Example

```
-> show ipv6 helper
Dhcpv6 helper :
  Max number of hops      = 32,
  DHCPV6 Snooping Status = VLAN-Level Enabled,
  DHCPV6 Remote-id       = Enabled,
  DHCPV6 Remote-id Enterprise Number = -,
  DHCPV6 Remote-Id Format = System Name,
  DHCPV6 Remote-Id String = vxTarget,
  DHCPV6 Interface-id Prefix = -,
  DHCPV6 Snooping Binding DB Status = Enabled,
  Database Sync Timeout   = 300,
  Database Last Sync Time = Jun 1 2015 15:17,
  Binding Persistency Status = Disabled,
  Forward option          = per-vlan only
```

```
Forwarding Address          Vlan Number
-----+-----
2001:1:2000::4             2002
```

output definitions

Max number of hops	Specifies the maximum number of hops configured.
DHCPv6 Snooping Status	Specifies DHCPv6 snooping status Switch-Level Enabled or Switch-Level Disabled , VLAN-Level Enabled
DHCPV6 Remote-id	Specifies if remote ID is enabled or disabled.
DHCPV6 Remote-id Enterprise Number	Specifies the registered enterprise number of the vendor.
DHCPV6 Remote-Id Format	Specifies the remote ID format set.
DHCPV6 Remote-Id String	Specifies the remote ID value.
DHCPV6 Interface-id Prefix	A user-defined text string upto 255 characters.
DHCPv6 Snooping Binding DB Status	Specifies DHCPv6 Snooping Binding DB Status Enabled , or Disabled

output definitions

Database Sync Timeout	Specifies the assigned Database Sync Timeout
Database Last Sync Time	Specifies the last time, database synchronization was performed on the switch in date time and year format.
Binding Persistency Status	Specifies if Binding Persistency Status: Enabled or Disabled
Forward option	Specifies the configured Forwarding option - Standard or per-vlan only
Forwarding Address	Specifies the assigned Forwarding Address
Vlan Number	Specifies the assigned VLAN Numbers in per-vlan only mode.

Release History

Release 6.7.1; command introduced.

Related Commands

ipv6 helper address	Adds or deletes a DHCPv6 server address. DHCPv6 relay forwards DHCPv6 packets to and from the specified address.
ipv6 helper standard	Sets DHCPv6 Relay forwarding option to standard. All DHCPv6 packets are processed by a global relay.
ipv6 helper per-vlan only	Sets the DHCPv6 Relay forwarding option to process only DHCPv6 packets received from a specific identified VLAN.
ipv6 helper per-vlan only	Configures DHCPv6 relay for the specified VLAN.
ipv6 helper maximum hops	Sets the maximum number of hops value for the DHCPv6 Relay configuration.
ipv6 helper dhcp-snooping	Globally enables or disables DHCPv6 Snooping for the switch. When this feature is enabled, all DHCPv6 packets received on all switch ports are filtered.
ipv6 helper dhcp-snooping binding	Enables or disables the DHCPv6 Snooping binding table functionality.
ipv6 helper dhcp-snooping binding timeout	Configures the amount of time between each automatic save of the DHCP Snooping binding table contents maintained in memory to a file on the switch.
ipv6 helper dhcp-snooping binding persistency	Retains the entries in the DHCPv6 Snooping binding table for the duration of the lease, regardless of the existence of the MAC address in the MAC address table.

MIB Objects

```
ipv6helperTable  
  ipv6helperForwAddr  
  ipv6helperVlan  
  ipv6helperStatus
```

show ipv6 helper stats

Displays the IPv6 helper statistics information.

show ipv6 helper stats

ipv6 helper no stats

Syntax Definitions

N/A

Defaults

N/A

Usage Guidelines

- Use the **no** form of this command to clear the DHCPv6 relay statistics
- The number of packets DHCPv6 Relay has received, the number of packets dropped due to maximum hops violations, and the number of packets processed since the last time these statistics were displayed.
- Also includes statistics that apply to a specific DHCPv6 server, such as the number of packets transmitted to the server and the difference between the number of packets received from a client and the number transmitted to the server.

Example

```
-> show ipv6 helper stats
Global Statistics :
  Reception From Client :
    Total Count =          0, Delta =          0,
  Max Hops Violation :
    Total Count =          0, Delta =          0,
Server Specific Statistics :
  Server 2001::1
    Tx Server :
      Total Count =          0, Delta =          0
```

output definitions

Global Statistics	Specifies Global DHCPv6 statistics
Reception From Client	Specifies statistics of data reception from Client. Total Count and Delta .
Max Hops Violation	Specifies Max Hops Violation statistics Total Count and Delta
Server Specific Statistics	Server details and Server Specific Statistics 5001::5
Tx Server	Specifies Tx Server details Total Count and Delta .

Release History

Release 6.7.1; command introduced.

Related Commands

ipv6 helper address	Displays the DHCPv6 Relay statistics.
ipv6 helper per-vlan only	Configures DHCPv6 relay for the specified VLAN. This command is used when a per-VLAN only relay service is active on the switch.
ipv6 helper standard	Sets DHCPv6 Relay forwarding option to standard. All DHCPv6 packets are processed by a global relay.
ipv6 helper per-vlan only	Sets the DHCPv6 Relay forwarding option to process only DHCPv6 packets received from a specific identified VLAN. This option allows each VLAN to have its own relay.
ipv6 helper maximum hops	Sets the maximum number of hops value for the DHCPv6 Relay configuration.

MIB Objects

```
ipv6helperStatTable  
    ipv6helperStatsServerAddress  
    ipv6helperStatsVlan  
    ipv6helperTxToServer
```

show ipv6 helper dhcp-snooping vlan

Displays a list of VLANs that have DHCPv6 Snooping enabled.

show ipv6 helper dhcp-snooping vlan

Syntax Definitions

N/A

Defaults

N/A

Usage Guidelines

- This command only applies if DHCPv6 snooping is enabled at VLAN level.
- Use **show ipv6 helper** command to determine the status of DHCPv6 snooping at the switch level

Example

```
-> show ipv6 helper dhcp-snooping vlan
VLAN ID  Status
-----
1         Enabled
2         Enabled
100      Disabled
200      Disabled
```

output definitions

VLAN ID	Specifies all the configured VLAN IDs
Status	Specifies whether DHCPv6 snooping binding is Enabled or Disabled on the related VLAN.

Release History

Release 6.7.1; command introduced.

Related Commands

ipv6 helper dhcp-snooping vlan Enables or disables DHCPv6 Snooping on a Per-VLAN basis.

MIB Objects

```
ipv6helperDhcpSnoopingVlanTable
  ipv6helperDhcpSnoopingVlanNumber
  ipv6helperDhcpSnoopingVlanStatus
```

show ipv6 helper dhcp-snooping port

Displays the trust mode and DHCPv6 Snooping violation statistics for all switch ports that are filtered by DHCPv6 Snooping.

show ipv6 helper dhcp-snooping port

Syntax Definitions

N/A

Defaults

N/A

Usage Guidelines

- If DHCPv6 Snooping is operating at the switch level, then information for all switch ports is displayed.
- If DHCPv6 Snooping is operating at the VLAN level, then information for only those ports that are associated with a DHCPv6 Snooping VLAN is displayed

Example

```
-> show ipv6 helper dhcp-snooping port
```

Slot Port	Trust Mode	Client Violation	Server Violation	Binding Violation	Interface-id Violation
1/1	Client-Only-UnTrusted	0	0	0	0
1/2	Client-Only-UnTrusted	0	0	0	0
1/3	Client-Only-UnTrusted	0	0	0	0
1/4	Client-Only-UnTrusted	0	0	0	0
1/5	Client-Only-UnTrusted	0	0	0	0

output definitions

Slot/Port	Specifies Slot/Port of DHCPv6 snooping port
Trust Mode	Specifies Trust Mode configured on the DHCPv6 snooping port. The different types of modes are - Client-Only-Trusted, Client-Only-Untrusted, Trusted, Blocked
Client Violation	Specifies the number of Client Violations on the DHCPv6 snooping port.
Server Violation	Specifies the number of Server Violations on the DHCPv6 snooping port.
Binding Violation	Specifies the number of Binding Violations on the DHCPv6 snooping port.
Interface-id Violation	Specifies the number of Interface ID Violations on the DHCPv6 snooping port.

Release History

Release 6.7.1; command introduced.

Related Commands

- ipv6 helper interface-id prefix** This command can be used to configure Interface ID manually.
- ipv6 helper dhcp-snooping port** Configures the DHCPv6 Snooping trust mode for the port.
- ipv6 helper dhcp-snooping linkagg** Configures the DHCPv6 Snooping trust mode for the link aggregate.
- ipv6 helper dhcp-snooping binding** Enables or disables the DHCPv6 Snooping binding table functionality.

MIB Objects

```
ipv6helperDhcpSnoopingPortTable  
  ipv6helperDhcpSnoopingPortIfIndex  
  ipv6helperDhcpSnoopingPortTrustMode  
  ipv6helperSnoopingClientViolation  
  ipv6helperSnoopingServerViolation  
  ipv6helperSnoopingBindingViolation  
  ipv6helperSnoopingInterfaceidViolation  
  ipv6helperSnoopingPortSourceFilterStatus
```

show ipv6 helper dhcp-snooping binding

Displays the contents of DHCPv6 Snooping binding table (database).

show ipv6 helper dhcp-snooping binding

Syntax Definitions

N/A

Defaults

N/A

Usage Guidelines

Dynamic binding table entries are created when the relay agent receives a DHCPv6 REPLY packet.

Example

```
-> show ipv6 helper dhcp-snooping binding
  Link-local          Slot      IPv6          Valid          VLAN
  Address            Port      Address       LifeTime       ID
-----+-----+-----+-----+-----
fe80::200:ff:fe00:101  1/4      2300::5       2000           5
fe80::200:16ff:fe0e:a785 2/15     4001::2       2000           2
```

output definitions

Link-local address	Specifies the IPv6 Address configured for DHCPv6 Snooping Binding
Slot/Port	Specifies the Slot and Port on which DHCPv6 Snooping Binding is configured
IPv6 Address	Specifies the forwarding IPv6 address specified by the ipv6 helper address command
Valid LifeTime	Specifies the valid binding lease life time.
VLAN ID	Specifies the VLAN IDs on which DHCPv6 snooping binding is active.

Release History

Release 6.7.1; command introduced.

Related Commands

ipv6 helper dhcp-snooping binding

Enables or disables the DHCPv6 Snooping binding table functionality.

ipv6 helper dhcp-snooping binding action

Triggers a purge or renew action against the DHCPv6 Snooping binding table. A purge action clears the contents of the table. A renew action populates the table with entries saved in the DHCPv6 binding table.

ipv6 helper dhcp-snooping binding persistency

Retains the entries in the DHCPv6 Snooping binding table for the duration of the lease, regardless of the existence of the MAC address in the MAC address table.

MIB Objects

```
ipv6helperDhcpSnoopingBindingTable
  ipv6helperBindingLinkLocalAddress
  ipv6helperBindingVlan
  ipv6helperBindingIfIndex
  ipv6helperBindingGlobalIpv6Address
  ipv6helperBindingLeaseTime
  ipv6helperBindingRowStatus
```

show ipv6 helper dhcp-snooping ip-source-filter

Displays the ports or VLANs on which IPv6 source filtering is enabled.

show ip helper dhcp-snooping ip-source-filter {port | vlan}

Syntax Definitions

port Displays the ports on which IPv6 source filtering is enabled.
vlan Displays the VLANS on which IPv6 source filtering is enabled.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- The show output displays only those ports and VLANs on which IPv6 source filtering is enabled.
- This command also displays the status of the link aggregate ports, when source filtering is enabled at port level.

Examples

```
-> show ipv6 helper dhcp-snooping ip-source-filter port
Slot   IPV6 Src
Port   Filtering
-----+-----
1/9    Enabled

-> show ipv6 helper dhcp-snooping ip-source-filter vlan
VLAN   IPv6 Src
ID     Filtering
-----+-----
2002   Enabled
```

output definitions

Slot/Port	Specifies the slot and port number.
VLAN ID	The VLAN ID.
IPv6 Src Filtering	Specifies the IPv6 source filtering status. Enabled or Disabled .

Release History

Release 6.7.1; command introduced.

Related Commands

ipv6 helper dhcp-snooping ip-source-filter Enables or disables the IPv6 source filtering capability at a port, link aggregation, or VLAN level.

MIB Objects

```
ipv6helperSourceFilterVlanTable
  ipv6helperSourceFilterVlan
ipv6helperDhcpSnoopingPortTable
  ipv6helperDhcpSnoopingPortIfIndex
  ipv6helperDhcpSnoopingPortTrustMode
  ipv6helperSnoopingClientViolation
  ipv6helperSnoopingServerViolation
  ipv6helperSnoopingBindingViolation
  ipv6helperSnoopingInterfaceidViolation
  ipv6helperSnoopingPortSourceFilterStatus
```

show ipv6 helper dhcp-snooping ip-source-filter binding

Displays the binding entries for IPv6 source filtering.

show ip helper dhcp-snooping ip-source-filter binding

Syntax Definitions

N/A

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

N/A

Examples

```
-> show ipv6 helper dhcp-snooping ip-source-filter binding
Link-local          Slot      IPv6          Valid        VLAN
Address             Port      Address       LifeTime     ID
-----+-----+-----+-----+-----
fe80::200:ff:fe00:101  1/4      2300::5      2000         5
fe80::200:16ff:fe0e:a785 2/15     4001::2      2000         2
```

output definitions

Link-local Address	Specifies the IPv6 address configured for the IP source filter binding.
Slot/Port	Specifies the slot and port number.
IPv6 Address	IPv6 address.
Valid LifeTime	Specifies the valid binding lease life time.
VLAN ID	The VLAN Id.

Release History

Release 6.7.1; command introduced.

Related Commands

ipv6 helper dhcp-snooping ip-source-filter Enables or disables the IPv6 source filtering capability at a port, link aggregation, or VLAN level.

MIB Objects

N/A

38 RMON Commands

Remote Network Monitoring (RMON) probes can be used to monitor, manage, and compile statistical data about network traffic from designated active ports in a LAN segment without negatively impacting network performance. This feature supports basic RMON 4 group implementation compliant with RFC 2819 (Remote Network Monitoring Management Information Base), but does not support RMON 10 group or RMON 2. This chapter includes descriptions of RMON commands used to enable or disable individual (or a group of a certain flavor type) RMON probes, show a list of (or individual) RMON probes and show a list of (or individual) RMON logged events.

MIB information for the RMON commands is as follows:

Filename: IETF_RMON.mib
Module: RMON-MIB

The following table summarizes the available commands:

rmon probes
show rmon probes
show rmon events

rmon probes

This command enables or disables types of RMON probes.

```
rmon probes {stats | history | alarm} [entry-number] {enable | disable}
```

Syntax Definitions

stats	Ethernet Statistics Table probe entries.
history	History Control Table probe entries.
alarm	Alarm Table probe entries.
<i>entry-number</i>	The entry number in the list of probes (<i>optional</i>).
enable	Enables the RMON probe.
disable	Disables the RMON probe.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Network activity on subnetworks attached to the RMON probe can be monitored by NMS applications.
- RMON will not monitor activities on the CMM onboard Ethernet Management port.

Examples

```
-> rmon probes stats 4012 enable
-> rmon probes history 10240 disable
-> rmon probes alarm 11235 enable
-> rmon probes stats enable
-> rmon probes history disable
-> rmon probes alarm enable
```

Release History

Release 6.6.1; command was introduced.

Related Commands

[show rmon probes](#)

Displays a list of RMON probes or a single RMON probe.

[show rmon events](#)

Displays a list of RMON logged events or a single RMON event.

MIB Objects

ETHERSTATSTABLE

etherStatsStatus

HISTORYCONTROLTABLE

historyControlStatus

ALARMTABLE

alarmStatus

show rmon probes

Displays a list of RMON probes or a single RMON probe.

show rmon probes [**stats** | **history** | **alarm**] [*entry-number*]

Syntax Definitions

stats	Ethernet Statistics Table probe entries.
history	History Control Table probe entries.
alarm	Alarm Table probe entries.
<i>entry-number</i>	The entry number in the list of probes (<i>optional</i>).

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- To display a list of current probes, omit the *entry-number* from the command line.
- To display statistics for a particular probe, include the probe's *entry-number* in the command line.
- The **show rmon probes** command displays the following information: Entry number, Slot/Port, Flavor (whether the probe type is Ethernet, History or Alarm), Status (Active or Inactive), Duration (time since the last change in status, in hours/minutes) and System Resources (the amount of memory allocated to this probe).
- The **show rmon probes** *entry-number* command displays the following information: Probe's Owner (probe type and location), Slot/Port, Entry number, Flavor (whether the probe type is Ethernet, History or Alarm), Status (Active or Inactive), Time since the last change in status (hours/minutes), and System Resources (the amount of memory allocated to this probe). Displayed statistics may vary, depending on whether the probe type is Ethernet, History or Alarm.

Examples

```
-> show rmon probes stats
```

Entry	Slot/Port	Flavor	Status	Duration	System Resources
4001	4/1	Ethernet	Active	00:25:00	275 bytes
4008	4/8	Ethernet	Active	00:25:00	275 bytes
4005	4/5	Ethernet	Active	00:25:00	275 bytes

-> show rmon probes history

Entry	Slot/Port	Flavor	Status	Duration	System Resources
1	4/1	History	Active	00:25:00	9063 bytes
10240	4/5	History	Active	00:14:00	601 bytes
10325	4/8	History	Active	00:14:00	601 bytes

-> show rmon probes alarm

Entry	Slot/Port	Flavor	Status	Duration	System Resources
11235	4/8	Alarm	Active	00:07:00	835 bytes

-> show rmon probes stats 4005

Probe's Owner: Falcon Switch Auto Probe on Slot 4, Port 5
 Entry 4005
 Flavor = History, Status = Active
 Time = 48 hrs 54 mins,
 System Resources (bytes) = 275

-> show rmon probes history 10325

Probe's Owner: Analyzer-p:128.251.18.166 on Slot 4, Port 5
 History Control Buckets Requested = 2
 History Control Buckets Granted = 2
 History Control Interval = 30 seconds
 History Sample Index = 5859
 Entry 10325
 Flavor = History, Status = Active
 Time = 48 hrs 53 mins,
 System Resources (bytes) = 601

-> show rmon probes alarm 11235

Probe's Owner: Analyzer-t:128.251.18.166 on Slot 4, Port 8
 Alarm Rising Threshold = 5
 Alarm Falling Threshold = 0
 Alarm Rising Event Index = 26020
 Alarm Falling Event Index = 0
 Alarm Interval = 10 seconds
 Alarm Sample Type = delta value
 Alarm Startup Alarm = rising alarm
 Alarm Variable = 1.3.6.1.2.1.16.1.1.1.5.4008
 Entry 11235
 Flavor = Alarm, Status = Active
 Time = 48 hrs 48 mins,
 System Resources (bytes) = 1677

output definitions

Probe's Owner	Description and interface (location) of the probe.
Slot/Port	The Slot/Port number (interface) that this probe is monitoring.
Entry	The Entry number in the list of probes.
Flavor	Whether the probe type is Ethernet, History, or Alarm.
Status	The status of the probe— Creating (the probe is under creation), Active (the probe is Active), or Inactive (the probe is inactive).
Duration	Elapsed time (hours/minutes/seconds) since the last change in status.
System Resources	Amount of memory that has been allocated to this probe.

Release History

Release 6.6.1; command was introduced.

Related Commands

rmon probes	Enables or disables types of RMON probes.
show rmon events	Displays RMON logged events.

MIB Objects

```
ETHERSTATSTABLE
    etherStatsIndex
HISTORYCONTROLTABLE
    historyControlIndex
ALARMTABLE
    alarmIndex
```

show rmon events

Displays RMON events (actions that take place based on alarm conditions detected by the RMON probe).

show rmon events [*event-number*]

Syntax Definitions

event-number The event number (*optional*) in the list of probes.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- To display a list of logged events, omit the *event-number* from the command line.
- To display statistics for a particular event, include the *event-number* in the command line.
- The **show rmon events** command displays the following information for all RMON Logged Events: Entry number, Time (hours/minutes/seconds) since the last change in status and Description (nature of the event).
- The **show rmon events** *event-number* command displays the following information for a particular RMON Logged Event: Entry number, Time (hours/minutes/seconds) since the last change in status and Description (nature of the event).

Examples

```
-> show rmon events
```

Entry	Time	Description
1	00:08:00	etherStatsPkts.4008: [Falling trap] "Falling Event"
2	00:26:00	etherStatsCollisions.2008: "Rising Event"

```
-> show rmon events 2
```

Entry	Time	Description
2	00:26:00	etherStatsCollisions.2008: "Rising Event"

output definitions

Entry	The entry number in the list of probes.
Time	Time (hours, minutes, and seconds) since the last change in status.
Description	Description of the Alarm condition detected by the probe.

Release History

Release 6.6.1; command was introduced.

Related Commands

rmon probes	Enables or disables types of RMON probes.
show rmon probes	Displays RMON probes or a single RMON probe.

MIB Objects

EVENTTABLE
eventIndex

39 RIP Commands

Routing Information Protocol (RIP) is an Interior Gateway Protocol (IGP) that uses hop count as its routing metric. RIP-enabled switches update neighboring switches by transmitting a copy of their own routing table. The RIP routing table always uses the most efficient route to a destination, that is, the route with the fewest hops and longest matching prefix.

The switch supports RIP version 1 (RIPv1), RIP version 2 (RIPv2), and RIPv2 that is compatible with RIPv1. It also supports simple and MD5 authentication, on an interface basis, for RIPv2.

The RIP commands comply with the following RFCs: RFC1058, RFC2453, RFC1722, RFC1723, and RFC1724.

MIB information for the RIP commands is as follows:

Filename: RIPv2.mib

Module: rip2

Filename: AlcatelIND1Rip.mib

Module: alaRipMIB

A summary of the available commands is listed here:

ip load rip
ip rip status
ip rip interface
ip rip interface status
ip rip interface metric
ip rip interface send-version
ip rip interface recv-version
ip rip force-holddowntimer
ip rip host-route
ip rip route-tag
ip rip interface auth-type
ip rip interface auth-key
ip rip update-interval
ip rip invalid-timer
ip rip garbage-timer
ip rip holddown-timer
show ip rip
show ip rip routes
show ip rip interface
show ip rip peer

ip load rip

Loads RIP into memory. When the switch is initially configured, you must load RIP into memory before it can be enabled.

ip load rip

Syntax Definitions

N/A

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6450

Usage Guidelines

- In simple networks where only IP forwarding is required, you may not want to use RIP. If you are not using RIP, it is best not to load it to save switch resources.
- To remove RIP from switch memory, you must manually edit the **boot.cfg** file. The **boot.cfg** file is an ASCII text-based file that controls many of the switch parameters. Open the file and delete all references to RIP. You must reboot the switch when this is complete.
- Use the [ip rip status](#) command to enable RIP on the switch.

Examples

```
-> ip load rip
```

Release History

Release 6.6.1; command was introduced.

Related Commands

ip rip status	Enables/disables RIP routing on the switch.
show ip rip	Displays the RIP status and general configuration parameters (e.g., forced hold-down timer).

MIB Objects

```
alaDrcTmConfig  
  alaDrcTmIPRipStatus
```

ip rip status

Enables/disables RIP on the switch. RIP performs well in small networks. By default, RIP packets are broadcast every 30 seconds, even if no change has occurred anywhere in a route or service. Depending on the size and speed of the network, these periodic broadcasts can consume a significant amount of bandwidth.

ip rip status {enable | disable}

Syntax Definitions

enable	Enables RIP routing on the switch.
disable	Disables RIP routing on the switch.

Defaults

parameter	default
enable disable	disable

Platforms Supported

OmniSwitch 6250, 6450

Usage Guidelines

- RIP must be loaded on the switch (**ip load rip**) to enable RIP on the switch.
- A RIP network can be no more than 15 hops (end-to-end). If there is a 16th hop, that network is identified as infinity and the packet is discarded.

Examples

```
-> ip rip status enable
```

Release History

Release 6.6.1; command was introduced.

Related Commands

ip load rip	Loads RIP into the switch memory.
show ip rip	Displays the RIP status and general configuration parameters (e.g., forced hold-down timer).

MIB Objects

```
alaProtocolRip  
  alaRipProtoStatus
```

ip rip interface

Creates/deletes a RIP interface. Routing is enabled on a VLAN when you create a router interface. However, to enable RIP routing, you must also configure and enable a RIP routing interface on the VLAN's IP router interface.

ip rip interface *interface_name*

no ip rip interface *interface_name*

Syntax Definitions

interface_name The name of the interface.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6450

Usage Guidelines

- By default, a RIP interface is created in the disabled state. To enable RIP routing on the interface, you must enable the interface by using the **ip rip interface status** command.
- You can create a RIP interface even if an IP router interface has not been configured. However, RIP will not function unless an IP router interface is configured with the RIP interface.
- For more information on VLANs and router ports, see [Chapter 25, “VLAN Management Commands”](#).

Examples

```
-> ip rip interface rip-1
```

Release History

Release 6.6.1; command was introduced.

Related Commands

ip interface

Creates a VLAN router interface.

ip load rip

Loads RIP into memory. When the switch is initially configured, you must load RIP into memory before it can be enabled.

ip rip status

Enables/disables RIP routing on the switch.

ip rip interface status

Enables/disables a RIP interface.

MIB Objects

rip2IfConfTable

rip2IfConfAddress

rip2IfConfStatus

ip rip interface status

Enables/disables a RIP interface. By default, a RIP interface is created in the disabled state. After creating a RIP interface, you must use this command to enable the interface.

ip rip interface *interface_name* **status {enable | disable}**

Syntax Definitions

interface_name The name of the interface.

Defaults

parameter	default
enable disable	disable

Platforms Supported

OmniSwitch 6250, 6450

Usage Guidelines

- You must first create a RIP interface by using the [ip rip interface](#) command before enabling the interface.
- You can create a RIP interface even if an IP router interface has not been configured. However, RIP will not function unless an IP router interface is configured with the RIP interface.
- For more information on VLANs and router ports, see [Chapter 25, “VLAN Management Commands”](#).

Examples

```
-> ip rip interface rip-1 status enable
```

Release History

Release 6.6.1; command was introduced.

Related Commands

ip interface	Creates a VLAN router interface.
ip load rip	Loads RIP into memory. When the switch is initially configured, you must load RIP into memory before it can be enabled.
ip rip status	Enables/disables RIP routing on the switch.
ip rip interface	Creates/deletes a RIP interface.

MIB Objects

```
rip2IfConfTable  
    rip2IfConfAddress  
    rip2IfConfStatus
```

ip rip interface metric

Configures the RIP metric or cost for a specified interface. You can set priorities for routes generated by a switch by assigning a metric value to routes generated by that switch's RIP interface. For example, routes generated by a neighboring switch may have a hop count of 1. However, you can lower the priority of routes generated by that switch by increasing the metric value for routes generated by the RIP interface.

ip rip interface *interface_name* **metric** *value*

Syntax Definitions

interface_name The name of the interface.
value Metric value. Valid range is 1–15.

Defaults

parameter	default
<i>value</i>	1

Platforms Supported

OmniSwitch 6250, 6450

Usage Guidelines

When you configure a metric for a RIP interface, this metric cost is added to the metric of the incoming route.

Examples

```
-> ip rip interface rip-1 metric 2
```

Release History

Release 6.6.1; command was introduced.

Related Commands

ip rip interface Enables/disables RIP on a specific interface.
show ip rip peer Displays active RIP neighbors (peers). An active peer is a switch that has sent a RIP packet within the last 180 seconds.

MIB Objects

rip2IfConfTable
 rip2IfConfAddress
 rip2IfConfDefaultMetric

ip rip interface send-version

Configures the send option for a RIP interface. This defines the type(s) of RIP packets that the interface will send.

ip rip interface *interface_name* **send-version** {**none** | **v1** | **v1compatible** | **v2**}

Syntax Definitions

<i>interface_name</i>	The name of the interface.
none	RIP packets will not be sent by the interface.
v1	Only RIPv1 packets will be sent by the interface.
v1compatible	Only RIPv2 broadcast packets (not multicast) will be sent by the interface.
v2	Only RIPv2 packets will be sent by the interface.

Defaults

parameter	default
none v1 v2 v1compatible	v2

Platforms Supported

OmniSwitch 6250, 6450

Usage Guidelines

- Using this command will override RIP default behavior.
- Other devices must be able to interpret the information provided by this command or there will not be proper routing information exchanged between the switch and other devices on the network.

Examples

```
-> ip rip interface rip-1 send-version v1
```

Release History

Release 6.6.1; command was introduced.

Related Commands

ip rip interface rcv-version Configures the receive option for a RIP interface.

MIB Objects

```
rip2IfConfTable  
  rip2IfConfAddress  
  rip2IfConfSend
```

ip rip interface recv-version

Configures the receive option for a RIP interface. This defines the type(s) of RIP packets that the interface will accept.

ip rip interface *interface_name* **recv-version** {**v1** | **v2** | **both** | **none**}

Syntax Definitions

<i>interface_name</i>	The name of the interface.
v1	Only RIPv1 packets will be received by the interface.
v2	Only RIPv2 packets will be received by the interface.
both	Both RIPv1 and RIPv2 packets will be received by the interface.
none	Interface ignores any RIP packets received.

Defaults

parameter	default
v1 v2 both none	both

Platforms Supported

OmniSwitch 6250, 6450

Usage Guidelines

- Using this command will override RIP default behavior.
- Other devices must be able to interpret the information provided by this command or there will not be proper routing information exchanged between the switch and other devices on the network.

Examples

```
-> ip rip interface rip-1 recv-version both
```

Release History

Release 6.6.1; command was introduced.

Related Commands

[ip rip interface send-version](#) Configures the send option for a RIP interface.

MIB Objects

```
rip2IfConfTable  
  rip2IfConfAddress  
  rip2IfConfReceive
```

ip rip force-holddowntimer

Configures the forced hold-down timer value, in seconds, that defines an amount of time during which routing information regarding better paths is suppressed. A route enters into a forced hold-down state when an update packet is received that indicates the route is unreachable and when this timer is set to a non-zero value. After this timer has expired and if the value is less than 120 seconds, the route enters a hold-down state for the rest of the period until the remainder of the 120 seconds has also expired. During this time the switch will accept any advertisements for better paths that are received.

ip rip force-holddowntimer *seconds*

Syntax Definitions

seconds The forced hold-down time interval, in seconds. The valid range is 0–120.

Defaults

parameter	default
<i>seconds</i>	0

Platforms Supported

OmniSwitch 6250, 6450

Usage Guidelines

- The forced hold-down timer is not the same as the RIP hold-down timer. The forced hold-down timer defines a separate interval that overlaps the hold-down state. During the forced hold-down timer interval, the switch will not accept *better* routes from other gateways.
- The forced hold-down time interval can become a subset of the hold-down timer (120 seconds) by using this command to set a value less than 120.
- To allow the routing switch to use better routes advertised during the entire hold-down time period, leave the forced hold-down timer set to the default value of 0.

Examples

```
-> ip rip force-holddowntimer 10
```

Release History

Release 6.6.1; command was introduced.

Related Commands

show ip rip

Displays the RIP status and general configuration parameters (e.g., forced hold-down timer).

MIB Objects

alaProtocolRip

alaRipForceHolddownTimer

ip rip host-route

Specifies whether or not RIP can add host routes (routes with a 32-bit mask) to the RIP table.

ip rip host-route

no ip rip host-route

Syntax Definitions

N/A

Defaults

The default is to enable a default host route.

Platforms Supported

OmniSwitch 6250, 6450

Usage Guidelines

- Use the **no** form of this command to prevent RIP from adding host routes to the RIP table.
- When enabled, RIPv1 will interpret an incoming route announcement that contains any 1 bit in the host portion of the IP address as a host route, implying a mask of 255.255.255.255.

Examples

```
-> ip rip host-route
```

Release History

Release 6.6.1; command was introduced.

Related Commands

[show ip rip routes](#) Displays the RIP Routing Database.

MIB Objects

```
alaProtocolRip  
  alaRipHostRouteSupport
```

ip rip route-tag

Configures the route tag value for RIP routes generated by the switch.

ip rip route-tag *value*

Syntax Definitions

value Route tag value. Valid range is 0–2147483647.

Defaults

parameter	default
<i>value</i>	0

Platforms Supported

OmniSwitch 6250, 6450

Usage Guidelines

Only RIPv2 supports route tags.

Examples

```
-> ip rip route-tag 0
```

Release History

Release 6.6.1; command was introduced.

Related Commands

[show ip rip](#) Displays the RIP status and general configuration parameters (e.g., forced hold-down timer).

MIB Objects

alaRipRedistRouteTag

ip rip interface auth-type

Configures the type of authentication that will be used for the RIP interface. By default, there is no authentication used for RIP. However, you can configure a password for a RIP interface. To configure a password, you must first select the authentication type (simple or MD5), then configure a password.

ip rip interface *interface_name* **auth-type** {**none** | **simple** | **md5**}

Syntax Definitions

<i>interface_name</i>	The name of the interface.
none	No authentication will be used.
simple	Simple authentication will be used.
md5	MD5 authentication will be used.

Defaults

parameter	default
none simple	none

Platforms Supported

OmniSwitch 6250, 6450

Usage Guidelines

Regardless of which authentication type is used (simple or MD5), both switches on either end of a link must share the same password.

Examples

```
-> ip rip interface rip-1 auth-type none
```

Release History

Release 6.6.1; command was introduced.

Related Commands

ip rip interface auth-key Configures the text string that will be used as the password for the RIP interface.

MIB Objects

```
rip2IfConfTable  
  rip2IfConfAddress  
  rip2IfConfAuthType
```

ip rip interface auth-key

Configures the text string that will be used as the password for the RIP interface. If you configure simple or MD5 authentication, you must configure a text string that will be used as the password for the RIP interface.

ip rip interface *interface_name* **auth-key** *string*

Syntax Definitions

<i>interface_name</i>	The name of the interface.
<i>string</i>	16-byte text string.

Defaults

The default authentication string is a null string.

Platforms Supported

OmniSwitch 6250, 6450

Usage Guidelines

Regardless of which authentication type is used (simple or MD5), both switches on either end of a link must share the same password.

Examples

```
-> ip rip interface rip-1 auth-key nms
```

Release History

Release 6.6.1; command was introduced.

Related Commands

ip rip interface auth-type Configures the type of authentication that will be used for the RIP interface.

MIB Objects

```
rip2IfConfTable  
  rip2IfConfAddress  
  rip2IfConfAuthKey
```

ip rip update-interval

Configures the time interval during which RIP routing updates are sent out.

ip rip update-interval *seconds*

Syntax Definitions

seconds The RIP routing update interval, in seconds. The valid range is 1–120.

Defaults

parameter	default
<i>seconds</i>	30

Platforms Supported

OmniSwitch 6250, 6450

Usage Guidelines

The update interval value must be less than or equal to one-third the invalid interval value.

Examples

```
-> ip rip update-interval 45
```

Release History

Release 6.6.1; command was introduced.

Related Commands

[show ip rip](#) Displays the RIP status and general configuration parameters (e.g., forced hold-down timer).

MIB Objects

```
alaProtocolRip  
  alaRipUpdateInterval
```

ip rip invalid-timer

Configures the RIP invalid timer value that defines the time interval during which a route will remain active in Routing Information Base (RIB) before moving to the invalid state.

ip rip invalid-timer *seconds*

Syntax Definition

seconds The RIP invalid timer value, in seconds. The valid range is 3–360.

Defaults

parameter	default
<i>seconds</i>	180

Platforms Supported

OmniSwitch 6250, 6450

Usage Guidelines

The invalid time interval value must be three times the update interval value.

Examples

```
-> ip rip invalid-timer 270
```

Release History

Release 6.6.1; command was introduced.

Related Commands

[show ip rip](#) Displays the RIP status and general configuration parameters (e.g., forced hold-down timer).

MIB Objects

```
alaProtocolRip  
  alaRipInvalidTimer
```

ip rip garbage-timer

Configures the RIP garbage timer value that defines the time interval, which must elapse before an expired route is removed from the RIB.

ip rip garbage-timer *seconds*

Syntax Definition

seconds The RIP garbage timer value, in seconds. The valid range is 0–180.

Defaults

parameter	default
<i>seconds</i>	120

Platforms Supported

OmniSwitch 6250, 6450

Usage Guidelines

During the RIP garbage interval, the router advertises the route with a metric of INFINITY (i.e., 16 hops).

Examples

```
-> ip rip garbage-timer 180
```

Release History

Release 6.6.1; command was introduced.

Related Commands

[show ip rip](#) Displays the RIP status and general configuration parameters (e.g., forced hold-down timer).

MIB Objects

alaProtocolRip
 alaRipGarbageTimer

ip rip holddown-timer

Configures the RIP hold-down timer value that defines the time interval during which a route remains in the hold-down state.

ip rip holddown-timer *seconds*

Syntax Definition

seconds The hold-down time interval, in seconds. The valid range is 0–120.

Defaults

parameter	default
<i>seconds</i>	0

Platforms Supported

OmniSwitch 6250, 6450

Usage Guidelines

When RIP detects a route with higher metric than the route in the RIB, the route with the higher metric goes into the hold-down state. The route updates with a metric of INFINITY are rejected.

Examples

```
-> ip rip holddown-timer 10
```

Release History

Release 6.6.1; command was introduced.

Related Commands

[show ip rip](#) Displays the RIP status and general configuration parameters (e.g., forced hold-down timer).

MIB Objects

```
alaProtocolRip  
  alaRipHolddownTimer
```

show ip rip

Displays the RIP status and general configuration parameters (e.g., forced hold-down timer).

show ip rip

Syntax Definitions

N/A

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6450

Usage Guidelines

N/A

Examples

```
-> show ip rip
```

```
Status = Enabled
Number of routes = 9
Host Route Support = Enabled
Route Tag = 42
Update interval = 30
Invalid interval = 180
Garbage interval = 120
Holddown interval = 0
Forced Hold-Down Timer = 0
```

output definitions

Status	RIP status (Enabled or Disabled).
Number of routes	Number of network routes in the RIP routing table.
Host Route Support	Host route status (Enabled or Disabled). Indicates whether or not RIP can add host routes (routes with a 32-bit mask) to the RIP table.
Route Tag	Route tag value for RIP routes generated by the switch. Valid values are 0–2147483647.
Update interval	The RIP routing update interval, in seconds. Valid range is 1–120. Default is 30.
Invalid interval	The RIP invalid timer value, in seconds. Valid range is 3–360. Default is 180.
Garbage interval	The RIP garbage timer value, in seconds. Valid range is 0–180. Default is 120.

output definitions

Holddown interval	The hold-down time interval, in seconds. Valid range is 0–120. Default is 0.
Forced Hold-Down Timer	The forced hold-down time interval, in seconds. The valid range is 0–120. Default is 0.

Release History

Release 6.6.1; command was introduced.

Related Commands

ip rip status	Enables/disables RIP routing on the switch.
ip rip force-holddowntimer	Configures the interval during which a RIP route remains in the forced hold-down state.
ip rip update-interval	Configures the time interval during which RIP routing updates are sent out.
ip rip invalid-timer	Configures the RIP invalid timer value that defines the time interval during which a route will remain active in Routing Information Base (RIB) before moving to the invalid state.
ip rip garbage-timer	Configures the RIP garbage timer value that defines the time interval, which must elapse before an expired route is removed from the RIB.
ip rip holddown-timer	Configures the RIP hold-down timer value that defines the time interval during which a route remains in the hold down state.

MIB Objects

```
alaProtocolRip
  alaRipProtoStatus
  alaRipRouteNumber
  alaRipHostRouteSupport
  alaRipRedistRouteTag
  alaRipUpdateInterval
  alaRipInvalidTimer
  alaRipGarbageTimer
  alaRipHolddownTimer
  alaRipForceHolddownTimer
```

show ip rip routes

Displays the RIP routing database. The routing database contains all of the routes learned through RIP.

show ip rip routes [*ip_address ip_mask*]

Syntax Definitions

ip_address 32-bit IP address.
ip_mask The mask corresponding to the IP address.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6450

Usage Guidelines

To view all RIP routes, enter the basic command syntax (**show ip rip routes**). To view a specific route, enter the destination IP address and mask.

Examples

-> show ip rip routes

Legends: State: A = Active, H = Holddown, G = Garbage

Destination	Gateway	State	Metric	Proto
2.0.0.0/8	+5.0.0.14	A	2	Rip
	4.0.0.7	A	3	Rip
4.0.0.0/8	+5.0.0.14	A	3	Rip
	2.0.0.14	A	3	Rip
5.0.0.0/8	+2.0.0.14	A	2	Rip
	4.0.0.7	A	3	Rip
10.0.0.0/8	+4.0.0.7	A	2	Rip
	5.0.0.14	A	2	Rip
	2.0.0.14	A	2	Rip
22.0.0.0/8	+5.0.0.14	A	2	Rip
	2.0.0.14	A	2	Rip
	4.0.0.7	A	3	Rip
128.251.40.0/24	+4.0.0.7	A	2	Rip
	5.0.0.14	A	3	Rip
	2.0.0.14	A	3	Rip
150.0.0.0/24	+4.0.0.7	A	2	Rip
	5.0.0.14	A	2	Rip
	2.0.0.14	A	2	Rip
152.0.0.0/24	+4.0.0.7	A	2	Rip
	5.0.0.14	A	3	Rip

output definitions

Destination	Destination network IP address.
Gateway	The Gateway IP address (switch from which the destination address was learned).
State	The associated state of the route, which can be A (Active) , H (Holddown) , or G (Garbage) .
Metric	Metric associated with this network. Generally, this is the RIP hop count (the number of hops from this switch to the destination switch).
Proto	The type of route (Local , Rip , or Redist).

```
-> show ip rip routes 2.0.0.0 255.0.0.0
```

```
Destination          = 2.0.0.0,
Mask length          = 8,
Gateway(1)           = 5.0.0.14,
  Protocol            = Rip,
  Out Interface       = intf5,
  Metric              = 2,
  Status              = Installed,
  State               = Active,
  Age                 = 19s,
  Tag                 = 0,
Gateway(2)           = 4.0.0.7,
  Protocol            = Rip,
  Out Interface       = intf4,
  Metric              = 3,
  Status              = Not Installed,
  State               = Active,
  Age                 = 12s,
  Tag                 = 0,
```

output definitions

Destination	Destination network IP address.
Mask length	Length of the destination network IP subnet mask.
Gateway	The Gateway IP address (switch from which the destination address was learned).
Protocol	The type of the route (Local , Rip , or Redist).
Out Interface	The RIP interface through which the next hop is reached.
Metric	Metric associated with this network. Generally, this is the RIP hop count (the number of hops from this switch to the destination switch).
Status	The RIP interface status (Installed or Not Installed).
State	The associated state of the route (Active , Holddown , or Garbage).
Age	The age of the route in seconds (the number of seconds since this route was last updated or otherwise determined to be correct).
Tag	The associated route tag.

Release History

Release 6.6.1; command was introduced.

Related Commands

[ip rip host-route](#)

Enables/disables a host route to an individual host on a network.

MIB Objects

```
alaRipEcmpRouteTable
  alaRipEcmpRouteDest
  alaRipEcmpRouteMask
  alaRipEcmpRouteNextHop
  alaRipEcmpRouteType
  alaRipEcmpMetric
  alaRipEcmpStatus
  alaRipEcmpAge
  alaRipEcmpTag
  alaRipEcmpRouteState
  alaRipEcmpRouteStatus
```

show ip rip interface

Displays RIP interface status and configuration.

show ip rip interface [*interface_name*]

Syntax Definitions

interface_name The interface name.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6450

Usage Guidelines

Enter an IP address to view a specific interface. Enter the basic **show ip rip interface** command to show status for all interfaces.

Examples

```
-> show ip rip interface rip-1
```

```
Interface IP Name           = rip-1,
Interface IP Address        = 11.11.11.1
IP Interface Number (VLANId) = 4,
Interface Admin status     = enabled,
IP Interface Status        = enabled,
Interface Config AuthType  = None,
Interface Config AuthKey Length = 0,
Interface Config Send-Version = v2,
Interface Config Receive-Version = both,
Interface Config Default Metric = 1,
Received Packets           = 154,
Received Bad Packets       = 0,
Received Bad Routes        = 0,
Sent Updates               = 8
```

output definitions

Interface IP Name	The IP Interface name.
Interface IP Address	Interface IP address.
IP Interface Number	Interface VLAN ID number.
Interface Admin Status	The RIP administrative status (enabled/disabled).
IP Interface Status	Interface status (enabled /disabled).
Interface Config AuthType	The type of authentication that will be used for the RIP interface (None or Simple).

output definitions (continued)

Interface Config AuthKey Length	The authentication key length used for the RIP interface.
Interface Config Send-Version	Interface send option (none, v1, v2, and v1 compatible). Default is v2.
Interface Config Receive-Version	Interface receive option (none, v1, v2, and both). Default is both.
Interface Config Default Metric	Default redistribution metric. Default is 1.
Received Packets	Number of packets received on the interface.
Received Bad Packets	Number of bad packets received and discarded. Normally this value is zero (0).
Received Bad Routes	Number of bad routes received and discarded. Normally this value is zero (0).
Sent Updates	Number of RIP routing table updates sent.

Release History

Release 6.6.1; command was introduced.

Related Commands

ip rip interface Enables/disables RIP for a specific interface.

MIB Objects

```

alaProtocolRip
  alaRipProtoStatus
alaRip2IfConfAugTable
  alaRip2IfConfName
  alaRip2IfRecvPkts
  alaRip2IfIpConfStatus
rip2IfConfTable
  rip2IfConfAddress
  rip2IfConfAuthType
  rip2IfConfAuthKey
  rip2IfConfSend
  rip2IfConfReceive
  rip2IfConfDefaultMetric
rip2IfStatTable
  rip2IfStatRcvBadPackets
  rip2IfStatRcvBadRoutes
  rip2IfStatSentUpdates

```

show ip rip peer

Displays active RIP neighbors (peers). An active peer is a switch that has sent a RIP packet within the last 180 seconds. If a peer does not send a RIP packet (request or response) within 180 seconds, it is aged out and will not be displayed.

show ip rip peer [*ip_address*]

Syntax Definitions

ip_address 32-bit IP address.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6450

Usage Guidelines

N/A

Examples

-> show ip rip peer

IP Address	Total Recvd	Bad Packets	Bad Routes	Version	Secs since last update
100.10.10.1	1	0	0	2	3

output definitions

IP Address	Peer IP address.
Total recvd	Total number of RIP packets received from the peer.
Bad Packets	Number of bad packets received from peer.
Bad Routes	Number of bad routes received from peer.
Version	Peer's RIP version as seen on the last packet received.
Secs since last update	Number of seconds since the last packet was received from the peer.

Release History

Release 6.6.1; command was introduced.

Related Commands

[show ip rip interface](#)

Displays the RIP interface status and configuration.

MIB Objects

```
rip2PeerTable  
  rip2PeerAddress  
  rip2PeerDomain  
  rip2PeerLastUpdate  
  rip2PeerVersion  
  rip2PeerRcvBadPackets  
  rip2PeerRcvBadRoutes
```

40 VRRP Commands

The Virtual Router Redundancy Protocol (VRRP) eliminates the single point of failure in a default route environment. VRRP specifies an election protocol that dynamically assigns responsibility for a virtual router to one of the VRRP/VRRP3 routers on the LAN. The VRRP/VRRP3 router, which controls the IP/IPv6 address associated with a virtual router is called the master router, and forwards packets to that IP/IPv6 address. If the master router becomes unavailable, the highest priority backup router transitions to the master state. The Alcatel-Lucent implementation of VRRP also supports the collective management of virtual routers on a switch.

Note. VRRP3 does not support the collective management functionality.

The VRRP and VRRP3 commands comply with RFC 2787 and RFC 3768, respectively.

MIB information is as follows:

Filename: IETF-VRRP.MIB
Module: VRRP-MIB

Filename: AlcatelIND1VRRP.MIB
Module: ALCATEL-IND1-VRRP-MIB

Filename: AlcatelIND1VRRP3.MIB
Module: ALCATEL-IND1-VRRP3-MIB

The VRRP CLI commands are listed here:

- vrrp**
- vrrp address**
- vrrp track**
- vrrp track-association**
- vrrp trap**
- vrrp delay**
- vrrp interval**
- vrrp priority**
- vrrp preempt**
- vrrp all**
- vrrp set**
- vrrp group**
- vrrp group all**
- vrrp group set**
- vrrp group-association**
- vrrp3**
- vrrp3 address**
- vrrp3 trap**
- vrrp3 track-association**
- show vrrp**
- show vrrp statistics**
- show vrrp track**
- show vrrp track-association**
- show vrrp group**
- show vrrp group-association**
- show vrrp3**
- show vrrp3 statistics**
- show vrrp3 track-association**

vrrp

Configures a new VRRP virtual router or modifies an existing one. Used to enable or disable a virtual router.

vrrp *vrid* *vlan_id* [**enable** | **disable** | **on** | **off**] [**priority** *priority*] [**preempt** | **no preempt**] [[**advertising**] **interval** *seconds*]

no vrrp *vrid* *vlan_id*

Syntax Definitions

<i>vrid</i>	The virtual router ID, in the range from 1–255.
<i>vlan_id</i>	The VLAN on which the virtual router is configured. The VLAN must already be created and available on the switch.
enable	Enables the virtual router. A virtual router can only be enabled if an IP address is configured for the virtual router.
disable	Disables the virtual router. Cannot be combined on the same line with other parameters.
on	Alternate syntax for enabling the virtual router.
off	Alternate syntax for disabling the virtual router.
<i>priority</i>	The priority for this virtual router to become the master router. The range is 1 (lowest priority) to 255 (highest priority). The priority must be set to 255 only if this router is the actual owner of the virtual router IP address.
preempt	Specifies that a higher priority router can preempt a lower priority master router.
no preempt	Specifies that a higher priority router cannot preempt a lower priority master router.
<i>seconds</i>	The interval in seconds after which the master router sends VRRP advertisements. The advertising interval must be same for all VRRP routers configured with the same VRID. The valid range is 1 to 255 seconds.

Defaults

parameter	default
enable disable on off	disable (off)
<i>priority</i>	100
preempt no preempt	preempt
<i>seconds</i>	1

Platforms Supported

OmniSwitch 6250, 6450

Usage Guidelines

- Use the **no** form of this command to remove a virtual router from the configuration.
- Use the **vrrp address** command to configure an IP address for the virtual router. This must be done before the virtual router can be enabled.
- To disable the virtual router, rather than to remove it, use the **disable** or **off** option. Note that **disable** or **off** cannot be used with any other optional parameter.
- A virtual router must be disabled before it can be modified.

Important information about configuring priority:

- A value of 255 indicates that the VRRP router owns the IP address; that is, the router contains the real physical interface assigned with the IP address. The system automatically sets this value to 255 if it detects that this router is the IP address owner. If the priority is set to 255 and the virtual router is not the IP address owner, then the priority is set to the default value of 100. The IP address owner becomes the master router if it is available.
- VRRP routers backing up a virtual router must use priority values from 1 to 254. The default priority value for VRRP routers backing up a virtual router is 100. If you configure more than one backup, their priority values must be different. The **preempt** or **no preempt** setting specifies whether or not a higher priority router can preempt a lower priority master router.

Examples

```
-> vrrp 23 1 priority 75
-> vrrp 23 1 enable
```

Release History

Release 6.6.3; command introduced.

Related Commands

vrrp address	Configures an IP address for a virtual router.
show vrrp	Displays the virtual router configuration for all virtual routers or for a specific virtual router.

MIB Objects

```
alaVrrp3OperTable
  alaVrrp3OperAdminState
  alaVrrp3OperPriority
  alaVrrp3OperPreemptMode
  alaVrrp3OperAdvertisementInterval
  alaVrrp3OperRowStatus
```

vrrp address

Configures an IP address for a virtual router.

```
vrrp vrid vlan_id address ip_address
```

```
vrrp vrid vlan_id no address ip_address
```

Syntax Definitions

<i>vrid</i>	The virtual router ID, in the range from 1–255.
<i>vlan_id</i>	The VLAN on which the virtual router is configured.
<i>ip_address</i>	The virtual IP address associated with the specified virtual router.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6450

Usage Guidelines

A virtual router IP address must be configured before the virtual router can be enabled.

Examples

```
-> vrrp 1 3 address 10.10.3.2  
-> vrrp 1 3 no address 10.10.3.2
```

Release History

Release 6.6.3; command introduced.

Related Commands

vrrp	Configures a new VRRP virtual router or modifies an existing one. Used to enable to disable a virtual router.
show vrrp statistics	Displays statistics about VRRP packets for all virtual routers configured on the switch or for a specific virtual router.

MIB Objects

```
alaVrrp3AssoIpAddrTable  
  alaVrrp3AssoIpAddrRowStatus
```

vrrp track

Creates a tracking policy or modifies an existing tracking policy.

vrrp track *track_id* [**enable** | **disable**] [**priority** *value*] [**ipv4-interface** *name* / **ipv6-interface** *name* | **port** *slot/port* | **address** *address*]

no vrrp track *track_id*

Syntax Definitions

<i>track_id</i>	The ID of the tracking policy; the range is 1 to 255.
enable	Enables the tracking policy.
disable	Disables the tracking policy.
<i>value</i>	The value to be decremented from the priority value of the virtual router monitoring this tracking policy when the operational state of the tracking policy is down. The valid range is 0–255.
<i>name</i>	The name of the IPv4 or IPv6 interface that this policy tracks.
<i>slot/port</i>	The slot/port number that this policy tracks.
<i>address</i>	The remote IP or IPv6 address to be tracked by this policy.

Defaults

parameter	default
enable disable	enable
<i>value</i>	25

Platforms Supported

OmniSwitch 6250, 6450

Usage Guidelines

- Use the **no** form of this command to remove a tracking policy.
- Use the **disable** option to disable the tracking policy, rather than removing it from the switch.

Examples

```
-> vrrp track 2 enable priority 50 ipv4-interface Marketing
-> vrrp track 3 enable priority 60 ipv6-interface Sales
-> vrrp track 3 disable
```

Release History

Release 6.6.3; command introduced.

Related Commands

vrrp track-association	Associates a VRRP tracking policy with a virtual router.
show vrrp track	Displays information about tracking policies on the switch.

MIB Objects

```
alaVRRPTrackTable
  alaVrrpTrackState
  alaVrrpTrackAdminState
  alaVrrpTrackPriority
  alaVrrpTrackEntityType
  alaVrrpTrackEntityVlan
  alaVrrpTrackEntityPort
  alaVrrpTrackEntityIpAddress
  alaVrrpTrackEntityIpv6Interface
  alaVrrpTrackEntityInterface
  alaVrrpTrackRowStatus
```

vrrp track-association

Associates a VRRP tracking policy with a virtual router.

```
vrrp vrid vlan_id track-association track_id
```

```
vrrp vrid vlan_id no track-association track_id
```

Syntax Definitions

<i>vrid</i>	The virtual router ID, in the range from 1–255.
<i>vlan_id</i>	The VLAN ID of the virtual router.
<i>track_id</i>	The ID of the tracking policy associated with the virtual router; the range is 1 to 255.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6450

Usage Guidelines

Use the **no** form of this command to remove a tracking policy from a virtual router.

Examples

```
-> vrrp 2 4 track-association 1  
-> vrrp 2 4 no track-association 1
```

Release History

Release 6.6.3; command introduced.

Related Commands

vrrp	Configures a new VRRP virtual router or modifies an existing one. Used to enable or disable a virtual router.
show vrrp track-association	Displays the tracking policies associated with virtual routers.

MIB Objects

```
alaVrrpAssoTrackTable  
  alaVrrpAssoTrackId  
  alaVrrpTrackRowStatus
```

vrrp trap

Enables or disables SNMP traps for VRRP.

vrrp trap

no vrrp trap

Syntax Definitions

N/A

Defaults

By default, SNMP traps for VRRP are enabled.

Platforms Supported

OmniSwitch 6250, 6450

Usage Guidelines

SNMP traps must be enabled globally on the switch for VRRP traps to actually be sent.

Examples

```
-> vrrp trap  
-> no vrrp trap
```

Release History

Release 6.6.3; command introduced.

Related Commands

[snmp trap filter](#) Enables or disables SNMP trap filtering.

MIB Objects

```
vrrpOperGroup  
vrrpNotificationCntl
```

vrrp delay

Configures the amount of time allowed for routing tables to stabilize before virtual routers are started.

vrrp delay *seconds*

Syntax Definitions

seconds The amount of time after a reboot that virtual routers must wait before they go active; the range is 0 to 180 seconds.

Defaults

parameter	default
<i>seconds</i>	45 seconds

Platforms Supported

OmniSwitch 6250, 6450

Usage Guidelines

Use this command to prevent loss of workstation connectivity before a virtual router becomes master.

Examples

```
-> vrrp delay 50
```

Release History

Release 6.6.3; command introduced.

Related Commands

vrrp Configures a new VRRP virtual router or modifies an existing one. Used to enable or disable a virtual router.

show vrrp Displays the virtual router configuration for all virtual routers or for a specific virtual router.

MIB Objects

alaVRRPStartDelay

vrrp interval

Modifies the default advertising interval value assigned to the virtual routers on the switch.

vrrp interval *seconds*

Syntax Definitions

seconds The default advertising interval for the virtual routers. The valid range is 1–255 seconds.

Defaults

parameter	default
<i>seconds</i>	1

Platforms Supported

OmniSwitch 6250, 6450

Usage Guidelines

- Modifying the default advertising interval value affects the value assigned by default to any new virtual routers that are created.
- To apply the new default value to the existing virtual routers, you must disable the virtual routers, then apply the new default value using **vrrp set** command and enable the virtual routers again.
- If any of the virtual routers are running with their own configured value or group value, then that value takes priority over the new default value. To override the configured value with the new default value, you must disable the virtual routers. Now, override the configured value using the **vrrp set** command using the **override** option. Enable the virtual routers again.

Examples

```
-> vrrp interval 50
```

Release History

Release 6.6.3; command introduced.

Related Commands

vrrp all	Changes the administrative status of all the virtual routers on the switch.
vrrp set	Sets the new default parameter values to existing virtual routers on the switch.
show vrrp	Displays the virtual router configuration for all virtual routers or for a specific virtual router.

MIB Objects

```
alaVrrpv2Config  
  alaVrrpDefaultInterval
```

vrrp priority

Modifies the default priority value assigned to the virtual routers on the switch.

vrrp priority *priority*

Syntax Definitions

priority The default priority value for the virtual routers. The valid range is 1 to 254.

Defaults

parameter	default
<i>priority</i>	100

Platforms Supported

OmniSwitch 6250, 6450

Usage Guidelines

- Modifying the default priority value affects the value assigned by default to any new virtual routers that are created.
- To apply the new default value to the existing virtual routers, you must disable the virtual routers, then apply the new default value using the **vrrp set** command and enable the virtual routers again.
- If any of the virtual routers are running with their own configured value or group value, then that value takes priority over the new default value. To override the configured value with the new default value, you must disable the virtual routers, then override the configured value using the **vrrp set** command with the **override** option and enable the virtual routers again.

Examples

```
-> vrrp priority 50
```

Release History

Release 6.6.3; command introduced.

Related Commands

vrrp all	Changes the administrative status of all the virtual routers on the switch.
vrrp set	Sets the new default parameter values to existing virtual routers on the switch.
show vrrp	Displays the virtual router configuration for all virtual routers or for a specific virtual router.

MIB Objects

```
alaVrrpv2Config  
  alaVrrpDefaultPriority
```

vrrp preempt

Modifies the default preempt mode assigned to the virtual routers on the switch.

vrrp [preempt | no preempt]

Syntax Definitions

preempt	Specifies that a higher priority router can preempt a lower priority master router by default.
no preempt	Specifies that a higher priority router cannot preempt a lower priority master router by default.

Defaults

parameter	default
preempt no preempt	preempt

Platforms Supported

OmniSwitch 6250, 6450

Usage Guidelines

- Modifying the default preempt mode affects the mode assigned by default to any new virtual routers that are created.
- To apply the new default value to the existing virtual routers, you must disable the virtual routers, then apply the new default value using the **vrrp set** command and enable the virtual routers again.
- If any of the virtual routers are running with their own configured value or group value, then that value takes priority over the new default value. To override the configured value with the new default value, you must disable the virtual routers, then override the configured value using the **vrrp set** command with the **override** option and enable the virtual routers again.

Examples

```
-> vrrp preempt  
-> vrrp no preempt
```

Release History

Release 6.6.3; command introduced.

Related Commands

vrrp all	Changes the administrative status of all the virtual routers on the switch.
vrrp set	Sets the new default parameter values to existing virtual routers on the switch.
show vrrp	Displays the virtual router configuration for all virtual routers or for a specific virtual router.

MIB Objects

```
alaVrrpv2Config  
  alaVrrpDefaultPreemptMode
```

vrrp all

Changes the administrative status of all the virtual routers on the switch.

vrrp [**disable** | **enable** | **enable all**]

Syntax Definitions

disable	Disables all the virtual routers on the switch.
enable	Enables the virtual routers that have not previously been disabled individually or collectively through the vrrp group all command.
enable all	Enables all the virtual routers on the switch including those virtual routers that have been disabled individually or collectively through the vrrp group all command.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6450

Usage Guidelines

- This command changes the administrative status of all the virtual routers on the switch by executing a single command.
- This command does not affect the ability to change the administrative status of an individual virtual router.

Examples

```
-> vrrp disable
-> vrrp enable
-> vrrp enable all
```

Release History

Release 6.6.3; command introduced.

Related Commands

vrrp interval	Modifies the default advertising interval value assigned to the virtual routers on the switch.
vrrp priority	Modifies the default priority value assigned to the virtual routers on the switch.
vrrp preempt	Modifies the default preempt mode assigned to the virtual routers on the switch.
vrrp set	Sets the new default parameter values to existing virtual routers on the switch.
show vrrp	Displays the virtual router configuration for all virtual routers or for a specific virtual router.

MIB Objects

alaVrrpv2Config
alaVrrpAdminState

vrrp set

Sets the new default parameter values to existing virtual routers on the switch.

```
vrrp set [interval | priority | preempt | all ] [ override]
```

Syntax Definitions

interval	Sets the VRRP advertisement interval value to the new default value.
priority	Sets the priority value to the new default value.
preempt	Sets the preempt mode to the new default mode.
all	Sets all the parameters value to the new default value.
override	Overrides the specified parameters configured value with the new default value.

Defaults

parameter	default
interval priority preempt all	all

Platforms Supported

OmniSwitch 6250, 6450

Usage Guidelines

- All the virtual routers must be disabled before using this command.
- To apply the new default value to the existing virtual routers, you must disable the virtual routers, then apply the new default value using the **vrrp set** command and enable the virtual routers again.
- If any of the virtual routers are running with their own configured value or group value, then that value takes priority over the new default value. To override the configured value with the new default value, you must disable the virtual routers, then override the configured value using the **vrrp set** command with the **override** option and enable the virtual routers again.

Examples

```
-> vrrp set priority  
-> vrrp set priority override
```

Release History

Release 6.6.3; command introduced.

Related Commands

vrrp interval	Modifies the default advertising interval value assigned to the virtual routers on the switch.
vrrp priority	Modifies the default priority value assigned to the virtual routers on the switch.
vrrp preempt	Modifies the default preempt mode assigned to the virtual routers on the switch.
vrrp all	Changes the administrative status of all the virtual routers on the switch.
show vrrp	Displays the virtual router configuration for all virtual routers or for a specific virtual router.

MIB Objects

```
alaVrrpv2Config  
  alaVrrpSetParam  
  alaVrrpOverride
```

vrrp group

Creates a virtual router group or modifies the configuration parameters of an existing virtual router group.

vrrp group *vrgid* [*interval seconds*] [*priority priority*] [**preempt** | **no preempt**]

no vrrp group *vrgid*

Syntax Definitions

<i>vrgid</i>	The virtual router group ID, in the range from 1 to 255.
<i>seconds</i>	The default advertising interval for the virtual router group. The valid range is 1 to 255 seconds.
<i>priority</i>	The default priority value for the virtual router group. The valid range is 1 to 254.
preempt	Specifies that a higher priority router can preempt a lower priority master router by default.
no preempt	Specifies that a higher priority router cannot preempt a lower priority master router by default.

Defaults

parameter	default
<i>seconds</i>	1
<i>priority</i>	100
preempt no preempt	preempt

Platforms Supported

OmniSwitch 6250, 6450

Usage Guidelines

- Use the **no** form of this command to delete the virtual router group.
- The configuration parameters can be modified at any time, but does not affect the virtual routers in the group until the virtual routers are enabled again. To apply the group default value to the virtual routers in a group, you must disable the virtual router group, then apply the group default value using the **vrrp group set** command and enable the virtual router group again.
- If any of the virtual routers in the group are running with their configured value, then that value takes priority over the new default value. To override the configured value with the new default value, you must disable the virtual router group, then override the configured value by using the **vrrp group set** command with the **override** option and enable the virtual router group again.
- When a virtual router group is deleted, the virtual routers assigned to the group become unassigned. However, this de-allocation does not have any impact on the virtual routers.

Examples

```
-> vrrp group 25 interval 50 priority 50 no preempt
-> no vrrp group 25
```

Release History

Release 6.6.3; command introduced.

Related Commands

vrrp group all	Changes the administrative status of all the virtual routers in a virtual router group using a single command.
vrrp group set	Sets the new modified default value to all the virtual routers in a virtual router group.
vrrp group-association	Adds a virtual router to a virtual router group.
show vrrp group	Displays the default parameter values for all the virtual router groups or a specific virtual router group.

MIB Objects

```
alaVrrpGroupTable
  alaVrrpGroupInterval
  alaVrrpGroupPriority
  alaVrrpGroupPreemptMode
  alaVrrpGroupRowStatus
```

vrrp group all

Changes the administrative status of all the virtual routers in a virtual router group using a single command.

vrrp group *vrgid* [**disable** | **enable** | **enable all**]

Syntax Definitions

<i>vrgid</i>	The virtual router group ID, in the range from 1 to 255.
disable	Disables all the virtual routers in the group.
enable	Enables those virtual routers that have not previously been disabled individually in the group.
enable all	Enables all the virtual routers in the group including those virtual routers that have been disabled individually.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6450

Usage Guidelines

- If a virtual router in a group is disabled on an individual basis, it can only be reenabled by using the **enable all** option in this command.
- This command does not affect the ability to change the administrative status of an individual virtual router.

Examples

```
-> vrrp group 25 disable
-> vrrp group 25 enable
-> vrrp group 25 enable all
```

Release History

Release 6.6.3; command introduced.

Related Commands

vrrp group	Creates a virtual router group or modifies the configuration parameters of an existing virtual router group.
vrrp group set	Sets the new modified default value to all the virtual routers in a virtual router group.
show vrrp	Displays the virtual router configuration for all virtual routers or for a specific virtual router.
show vrrp group	Displays the default parameter values for all the virtual router groups or a specific virtual router group.

MIB Objects

alaVrrpGroupTable
 alaVrrpGroupAdminState

vrrp group set

Sets the new modified default value to all the virtual routers in a virtual router group.

vrrp group *vrgid* set [interval | priority | preempt | all] [override]

Syntax Definitions

<i>vrgid</i>	The virtual router group ID, in the range from 1 to 255.
interval	Sets the VRRP advertisement interval value to the new default value.
priority	Sets the priority value to the new default value.
preempt	Sets the preempt mode to the new default mode.
all	Sets all the parameter values to the new default value.
override	Overrides the parameter configured value with the group default value.

Defaults

parameter	default
interval priority preempt all	all

Platforms Supported

OmniSwitch 6250, 6450

Usage Guidelines

- All the virtual routers must be disabled before using this command.
- To apply the group default value to the virtual routers in a group, you must disable the virtual router group, then apply the group default value using the **vrrp group set** command and enable the virtual router group again.
- If any of the virtual routers in the group are running with their own configured parameter value, then that value takes priority over the group default value. To override the configured value with the group default value, you must disable the virtual router group, then override the configured value by using the **vrrp group set** command with the **override** option and enable the virtual router group again.

Examples

```
->vrrp group 10 set priority
->vrrp group 10 set priority override
```

Release History

Release 6.6.3; command introduced.

Related Commands

vrrp group	Creates a virtual router group or modifies the configuration parameters of an existing virtual router group.
vrrp group all	Changes the administrative status of all the virtual routers in a virtual router group using a single command.
show vrrp	Displays the virtual router configuration for all virtual routers or for a specific virtual router.
show vrrp group	Displays the default parameter values for all the virtual router groups or a specific virtual router group.

MIB Objects

```
alaVrrpGroupTable  
  alaVrrpGroupSetParam  
  alaVrrpGroupOverride
```

vrrp group-association

Adds a virtual router to a virtual router group.

```
vrrp vrid vlan_id group-association vrgid
```

```
vrrp vrid vlan_id no group-association vrgid
```

Syntax Definitions

<i>vrid</i>	The virtual router ID, in the range from 1 to 255.
<i>vlan_id</i>	The VLAN on which the virtual router is configured. The VLAN must already be created and available on the switch.
<i>vrgid</i>	The virtual router group ID, in the range from 1 to 255.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6450

Usage Guidelines

- Use the **no** form of this command to remove the virtual router from the virtual router group.
- A virtual router need not be disabled in order to be added to a virtual router group. However, the virtual router does not adopt the group default parameter values until it is re-enabled.
- A virtual router need not be disabled to be removed from a group.

Examples

```
-> vrrp 25 1 group-association 10  
-> vrrp 25 1 no group-association 10
```

Release History

Release 6.6.3; command introduced.

Related Commands

[show vrrp group-association](#) Displays the virtual routers that are associated with a group.

MIB Objects

alaVrrpAssoGroupTable

 alaVrrpAssoGroupRowStatus

vrrp3

Configures a new VRRP3 virtual router or modifies an existing one. Used to enable or disable a virtual router.

vrrp3 *vrid* *vlan_id* [**enable** | **disable** | **on** | **off**] [**priority** *priority*] [**preempt** | **no preempt**][**accept** | **no accept**] [[**advertising**] **interval** *centiseconds*]

no vrrp3 *vrid* *vlan_id*

Syntax Definitions

<i>vrid</i>	The virtual router ID, in the range from 1 to 255.
<i>vlan_id</i>	The VLAN on which the virtual router is configured. The VLAN must already be created and available on the switch.
enable	Enables the virtual router.
disable	Disables the virtual router. Cannot be combined on the same line with other parameters.
on	Alternate syntax for enabling the virtual router.
off	Alternate syntax for disabling the virtual router.
<i>priority</i>	The priority for this virtual router to become the master router. The range is 1 (lowest priority) to 255 (highest priority). The priority must be set to 255 only if this router is the actual owner of the virtual router IP address.
preempt	Specifies that a higher priority router can preempt a lower priority master router.
no preempt	Specifies that a higher priority router cannot preempt a lower priority master router.
accept	Specifies that the master router, which is not the IPv6 address owner must accept the packets addressed to the IPv6 address owner as its own.
no accept	Specifies that the master router, which is not the IPv6 address owner does not accept the packets addressed to the IPv6 address owner as its own.
<i>centiseconds</i>	The interval in centiseconds after which the master router sends VRRP3 advertisements. The advertising interval must be the same for all VRRP3 routers configured with the same VRID. The valid range is 1 to 4096 centiseconds.

Defaults

parameter	default
enable disable on off	disable (off)
<i>priority</i>	100
preempt no preempt	preempt
accept / no accept	accept
<i>centiseconds</i>	100

Platforms Supported

OmniSwitch 6250, 6450

Usage Guidelines

- Use the **no** form of this command to remove a virtual router from the configuration.
- Use the **vrrp3 address** command to configure an IPv6 address for the virtual router.
- To disable the virtual router, rather than to remove it, use the **disable** or **off** option. Note that the **disable** or **off** options cannot be used with any other optional parameter.
- A virtual router must be disabled before it can be modified.
- The maximum number of virtual routers supported is based on the 100 centisecond interval. A smaller interval results in a relatively lesser number of virtual routers.
- The advertising interval cannot be less than 10 centiseconds.

Examples

```
-> vrrp3 23 1 priority 75
-> vrrp3 23 1 enable
```

Release History

Release 6.6.3; command introduced.

Related Commands

[vrrp3 address](#)

Configures an IPv6 address for a virtual router.

[show vrrp3](#)

Displays the virtual router configuration for all virtual routers or for a specific virtual router.

MIB Objects

```
alaVrrp3OperTable
  alaVrrp3OperAdminState
  alaVrrp3OperPriority
  alaVrrp3OperPreemptMode
  alaVrrp3OperAcceptMode
  alaVrrp3OperAdvinterval
  alaVrrp3OperRowStatus
```

vrrp3 address

Configures an IPv6 address for a virtual router.

```
vrrp3 vrid vlan_id address ipv6_address
```

```
vrrp3 vrid vlan_id no address ipv6_address
```

Syntax Definitions

<i>vrid</i>	The virtual router ID, in the range from 1 to 255.
<i>vlan_id</i>	The VLAN on which the virtual router is configured.
<i>address</i>	The virtual IPv6 address associated with the specified virtual router.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6450

Usage Guidelines

N/A

Examples

```
-> vrrp3 1 3 address 213:100:1::56  
-> vrrp3 1 3 no address 213:100:1::56
```

Release History

Release 6.6.3; command introduced.

Related Commands

vrrp3	Configures a new VRRP3 virtual router or modifies an existing one. Used to enable or disable a virtual router.
show vrrp3 statistics	Displays statistics for all virtual routers configured on the switch or for a specific virtual router.

MIB Objects

```
alaVrrp3AssoIpAddrTable  
  alaVrrp3AssoIpAddrRowStatus
```

vrrp3 trap

Enables or disables SNMP traps for VRRP3.

vrrp3 trap

no vrrp3 trap

Syntax Definitions

N/A

Defaults

By default, SNMP traps for VRRP3 are enabled.

Platforms Supported

OmniSwitch 6250, 6450

Usage Guidelines

SNMP traps must be enabled globally on the switch for VRRP3 traps to be sent.

Examples

```
-> vrrp3 trap  
-> no vrrp3 trap
```

Release History

Release 6.6.3; command introduced.

Related Commands

[snmp trap filter](#) SNMP traps must be enabled with this command.

MIB Objects

```
alaVrrp3OperGroup  
  alaVrrp3NotificationCntl
```

vrrp3 track-association

Associates a VRRP3 tracking policy with a virtual router.

```
vrrp3 vrid vlan_id track-association track_id
```

```
vrrp3 vrid vlan_id no track-association track_id
```

Syntax Definitions

<i>vrid</i>	The virtual router ID, in the range from 1 to 255.
<i>vlan_id</i>	The VLAN ID of the virtual router.
<i>track_id</i>	The ID of the tracking policy associated with the virtual router; the range is 1 to 255.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6450

Usage Guidelines

- Use the **no** form of this command to remove a tracking policy from a virtual router.
- Use the **vrrp track** command to create a tracking policy for an IPv6 interface.

Examples

```
-> vrrp3 2 4 track-association 1  
-> vrrp3 2 4 no track-association 1
```

Release History

Release 6.6.3; command introduced.

Related Commands

vrrp3	Configures a new VRRP3 virtual router or modifies an existing one. Used to enable or disable a virtual router.
show vrrp3 track-association	Displays the tracking policies associated with VRRP3 virtual routers.

MIB Objects

```
alaVrrp3AssoTrackTable  
  alaVrrp3AssoTrackId  
  alaVrrp3TrackRowStatus
```

output definitions

VRRP default advertisement interval	The default advertising interval for all virtual routers on the switch.
VRRP default priority	The default priority value for all virtual routers on the switch.
VRRP default preempt	The default preempt mode for all virtual routers on the switch.
VRRP trap generation	Indicates whether or not the VRRP trap generation is enabled or disabled; configured through the vrrp track command.
VRRP startup delay	The amount of time after a reboot that virtual routers wait before they go active; allows time for routing tables to stabilize. Configured through the vrrp delay command.
VRID	Virtual router identifier. Configured through the vrrp command.
VLAN	The VLAN associated with the VRRP instance. Configured through the vrrp command.
IP Address(es)	The assigned IP addresses. Configured through the vrrp address command.
Admin Status	The administrative status of this virtual router instance; enabled allows the virtual router instance to operate; disabled disables the virtual router instance without deleting it.
Priority	Indicates the VRRP router priority for the virtual router. For more information about priority, see the vrrp command description on page 40-3 .
Preempt	Controls whether a higher priority virtual router blocks a lower priority master router: Preempt indicates that a higher priority virtual router blocks a lower priority master; no preempt indicates that the first backup router to take over for the master is not blocked by a virtual router with a higher priority. In either case, the IP address owner always takes over.
Virtual MAC	Displays the virtual MAC address for the virtual router. The first 5 bytes are always 00-00-5E-00-02. The last byte indicates the VRID. This field displays N/A when the virtual router is in the backup or initialize state.
Adv. Interval	Indicates the time interval, in seconds, between sending advertisement messages. Only the master router sends advertisements.

Release History

Release 6.6.3; command introduced.

Related Commands

vrrp	Configures a new VRRP virtual router or modifies an existing one. Used to enable or disable a virtual router.
vrrp address	Configures an IP address for a virtual router.
vrrp interval	Modifies the default advertising interval value assigned to the virtual routers on the switch.
vrrp priority	Modifies the default priority value assigned to the virtual routers on the switch.
vrrp preempt	Modifies the default preempt mode assigned to the virtual routers on the switch.
show vrrp statistics	Displays statistics for all virtual routers configured on the switch or for a specific virtual router.

MIB Objects

```
alaDispVrpp3Config  
  alaVRRPDefaultInterval  
  alaVRRPDefaultPriority  
  alaVRRPDefaultPreemptMode  
  alaVrrp3AssoIpAddr  
  alaVrrp3OperAdminState  
  alaVrrp3OperPriority  
  alaVrrp3OperPreemptMode  
  alaVrrp3OperAcceptMode
```

show vrrp statistics

Displays statistics about VRRP packets for all virtual routers configured on the switch or for a specific virtual router.

show vrrp [*vrid*] **statistics**

Syntax Definitions

vrid The virtual router ID, in the range from 1 to 255.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6450

Usage Guidelines

Use the **show vrrp statistics** command to display information about VRRP packets. Use the **show vrrp** command to display information about the virtual router configuration.

Examples

```
-> show vrrp statistics
```

```
Checksum  Version  VRID
Errors    Errors   Errors
```

```
-----+-----+-----
                0         0         0
```

```
VRID  VLAN  State           UpTime  Become Master  Adv. Rcvd
-----+-----+-----+-----+-----+-----
   1    1  master          378890           1             0
   2   15  backup           4483            0             44
   7    2  initialize         0              0             0
```

output definitions

Checksum Errors	The total number of VRRP packets received with an invalid checksum value.
Version Errors	The total number of VRRP packets received with an invalid version number.
VRID Errors	The total number of VRRP packets received with invalid VRIDs.
VRID	The virtual router identifier.
VLAN	The VLAN associated with the VRRP instance.

output definitions (continued)

State	The operational state of the VRRP router instance; initialize specifies that the interface or VLAN is either disabled or down, or if the startup delay timer has not expired; backup specifies that this instance is monitoring the availability of the master router; master specifies that this instance is functioning as the master router.
UpTime	Time interval (in hundredths of a second) since this virtual router was last initialized.
Become Master	The total number of times this virtual router state has transitioned from backup to master.
Adv. Rcvd	The total number of VRRP advertisements received by this instance.

```
-> show vrrp 1 statistics
Virtual Router VRID = 1 on VLAN = 1
  State = master
  UpTime (1/100th second) = 378890
  Become master = 1
  Advertisements received = 0
  Type errors = 0
  Advertisement interval errors = 0
  Authentication errors = 0
  IP TTL errors = 0
  IP address list errors = 0
  Packet length errors = 0
  Zero priority advertisements sent = 0
  Zero priority advertisements received = 0
```

output definitions

VRID	The virtual router identifier.
VLAN	The VLAN associated with the VRRP instance.
State	The operational state of this VRRP router instance; initialize specifies that the interface or VLAN is either disabled or down, or the startup delay timer has not expired; backup specifies that this instance is monitoring the availability of the master router; master specifies that this instance is functioning as the master router.
UpTime	Time interval (in hundredths of a second) since this virtual router was last initialized.
Become master	The total number of times this virtual router state has transitioned from backup to master.
Advertisements received	The total number of VRRP advertisements received by this instance.
Type errors	The total number of VRRP packets received with an invalid value in the VRRP type field.
Advertisement interval errors	The total number of VRRP packets received in which the advertisement interval differs from the one configured for the virtual router.
Authentication errors	The total number of VRRP packets received with an unknown or invalid authentication type.
IP TTL errors	The total number of VRRP packets received with a TTL value other than 255.

output definitions (continued)

IP address list errors	The total number of VRRP packets in which the IP address list does not match the configured list for the virtual router.
Packet length errors	The total number of VRRP packets received with a length less than the length of the VRRP header.
Zero priority advertisements sent	The total number of VRRP advertisements with a priority of 0 sent by the virtual router.
Zero priority advertisements received	The total number of VRRP advertisements with a priority of 0 received by the virtual router.

Release History

Release 6.6.3; command introduced.

Related Commands

vrrp	Configures a new VRRP virtual router or modifies an existing one. Used to enable to disable a virtual router.
show vrrp	Displays the virtual router configuration for all virtual routers or for a specific virtual router.

MIB Objects

```

alaVrrp3RouterChecksumErrors
alaVrrp3RouterVersionErrors
alaVrrp3RouterVrIdErrors
alaVrrp3RouterStatsTable
  alaVrrp3StatsBecomeMaster
  alaVrrp3StatsAdvertiseRcvd
  alaVrrp3StatsAdvIntervalErrors
  alaVrrp3StatsIpTtlErrors
  alaVrrp3StatsPriZeroPktsRcvd
  alaVrrp3StatsPriZeroPktsSent
  alaVrrp3StatsInvalidTypePktsRcvd
  alaVrrp3StatsAddressListErrors
  alaVrrp3StatsInvlAuthType
  alaVrrp3StatsPacketLengthErrors
alaVrrp3OperTable
  alaVrrp3OperUpTime
  alaVrrp3OperGroup
  alaVrrp3OperState

```

show vrrp track

Displays information about tracking policies on the switch.

```
show vrrp track [track_id]
```

Syntax Definitions

track_id The ID of the tracking policy for which you want to display information.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6450

Usage Guidelines

Enter the tracking ID to display information about a particular policy; if no tracking policy ID is entered, information for all tracking policies is displayed.

Examples

```
-> show vrrp track
Track
  ID           Policy           Admin State   Oper State  Pri
-----+-----+-----+-----+-----
   1   PORT 1/1       Enabled    Up         25
   2   192.10.150.42  Enabled    Down       25
```

output definitions

Track ID	The ID of the tracking policy.
Policy	The slot/port, IP address, or VLAN tracked by the policy.
Admin State	Whether the tracking policy is administratively enabled or disabled.
Oper State	Indicates whether the operating state of the tracking policy is Up or Down.
Pri	The value to be decremented from the priority value of the virtual router monitoring this tracking policy when the operational state of the tracking policy is down.

Release History

Release 6.6.3; command introduced.

Related Commands

vrrp track Creates a tracking policy or modifies an existing tracking policy.

MIB Objects

```
alaVRRPTrackTable  
  alaVrrpTrackState  
  alaVrrpTrackAdminState  
  alaVrrpTrackPriority  
  alaVrrpTrackEntityType  
  alaVrrpTrackEntityVlan  
  alaVrrpTrackEntityPort  
  alaVrrpTrackEntityIpAddress  
  alaVrrpTrackEntityIpv6Interface  
  alaVrrpTrackEntityInterface
```

show vrrp track-association

Displays the tracking policies associated with virtual routers.

show vrrp [*vrid*] **track-association** [*track_id*]

Syntax Definitions

vrid The virtual router ID, in the range from 1 to 255.
track_id The ID of the tracking policy for which you want to display information.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6450

Usage Guidelines

If a track ID is specified, only information about that track ID is displayed. If the virtual router ID and track ID are not specified, information about all virtual routers and their associated tracking policies is displayed.

Examples

```
-> show vrrp 2 track-association
```

VRID	VLAN	Conf Pri	Cur Pri	Track ID	Policy	Admin State	Oper State	Track Pri
2	1	100	100	1	VLAN 1	Enabled	Up	25
				2	10.255.11.101	Enabled	Up	25

output definitions

VRID	The virtual router identifier.
VLAN	The VLAN ID associated with the virtual router.
Conf Pri	The priority configured for the virtual router through the vrrp command.
Cur Pri	The priority currently being used for the virtual router. If the tracking policy is in effect because the tracked entity is down, the current priority is equal to the configured priority (Conf Pri) minus the tracking priority (Track Pri). Otherwise the current priority is considered to be equal to the configured priority.
Track ID	The ID of the tracking policy.
Policy	The VLAN, IP address, or slot/port being tracked by this policy.
Admin State	The administrative state of the tracking policy configured through the vrrp track command.

output definitions (continued)

Oper State	Whether the tracking policy is operational (Up) or not (Down).
Track Pri	The amount to be decremented from the configured virtual router priority when the tracking policy is applied.

Release History

Release 6.6.3; command introduced.

Related Commands

vrrp track-association	Associates a VRRP tracking policy with a virtual router.
vrrp track	Creates a tracking policy or modifies an existing tracking policy.

MIB Objects

```

alaVrrpAssoTrackTable
  alaVrrpAssoTrackId
alaVRRPTrackTable
  alaVrrpTrackState
  alaVrrpTrackAdminState
  alaVrrpTrackPriority
  alaVrrpTrackEntityType
  alaVrrpTrackEntityVlan
  alaVrrpTrackEntityPort
  alaVrrpTrackEntityIpAddress
  alaVrrpTrackEntityInterface

```

show vrrp group

Displays the default parameter values for all the virtual router groups or for a specific virtual router group.

show vrrp group [*vrgid*]

Syntax Definitions

vrgid The virtual router group ID, in the range from 1 to 255.

Defaults

By default, the default parameter values are displayed for all the virtual router groups.

Platforms Supported

OmniSwitch 6250, 6450

Usage Guidelines

Use the *vrgid* parameter with this command to display the default values for a specific virtual router group.

Examples

```
-> show vrrp group 2
Virtual Router Group GROUPID = 2
  Interval = 11
  Priority = 250
  Preempt Mode = Yes
  3 Associated Virtual Routers
```

output definitions

Group ID	The virtual router group identifier.
Adv Interval	Indicates the time interval, in seconds, between the sending of advertisement messages. Only the master router sends advertisements.
Priority	Indicates the VRRP router priority for the virtual router group. For more information about priority, see the vrrp command description on page 40-3 .
Preempt Mode	Controls whether a higher priority virtual router can block a lower priority master; preempt indicates that a higher priority virtual router can block a lower priority master; no preempt indicates that the first backup router to take over for the master is not blocked by a virtual router with a higher priority. In either case, the IP address owner always takes over.

Release History

Release 6.6.3; command introduced.

Related Commands

vrrp group

Creates a virtual router group or modifies the configuration parameters of an existing virtual router group.

vrrp group all

Changes the administrative status of all the virtual routers in a virtual router group using a single command.

MIB Objects

alaVrrpGroupTable
 alaVrrpGroupInterval
 alaVrrpGroupPriority
 alaVrrpGroupPreemptMode

show vrrp group-association

Displays the virtual routers that are associated with a group.

show vrrp group-association [*vrgid*]

Syntax Definitions

vrgid The virtual router group ID, in the range from 1 to 255.

Defaults

By default, all virtual router group associations are displayed.

Platforms Supported

OmniSwitch 6250, 6450

Usage Guidelines

Use the *vrgid* parameter with this command to display the association details of a specific virtual router group.

Examples

```
-> show vrrp group-association 2
```

```
GROUPID VRID  VLAN
-----+-----+-----+
      2     3     2
          4     2
          5     2
```

output definitions

GROUPID	The virtual router group identifier.
VRID	The virtual router identifier.
VLAN	The VLAN associated with the VRRP instance. Configured through the vrrp command.

Release History

Release 6.6.3; command introduced.

Related Commands**vrrp group-association**

Adds a virtual router to a virtual router group.

MIB Objects

alaVrrpAssoGroupTable

 alaVrrp3OperVrId

show vrrp3

Displays the virtual router configuration for all virtual routers or for a specific virtual router.

show vrrp3 [*vrid*]

Syntax Definitions

vrid The virtual router ID, in the range from 1 to 255.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6450

Usage Guidelines

Use the **show vrrp3** command to display information about configuration parameters, which can be set through the **vrrp3** command. Use the **show vrrp3 statistics** command to get information about VRRP3 packets.

Examples

```
-> show vrrp3
VRRP trap generation: Enabled
VRRP startup delay: 45 (expired)
```

VRID	VLAN	IPv6 Address(es)	Admin Status	Priority	Preempt	Accept	Adv. Interval
1	101	fe80::200:5eff:fe00:201 1010::30	Enabled	200	No	Yes	100
2	102	fe80::200:5eff:fe00:202 1020::30	Enabled	200	No	Yes	100
3	103	fe80::200:5eff:fe00:203 1030::30	Enabled	200	No	Yes	100
4	104	fe80::200:5eff:fe00:204 1040::30	Enabled	200	No	Yes	100
5	105	fe80::200:5eff:fe00:205 1050::30	Enabled	200	No	Yes	100
6	106	fe80::200:5eff:fe00:206 1060::30	Enabled	200	No	Yes	100
7	107	fe80::200:5eff:fe00:207 1070::30	Enabled	200	No	Yes	100
8	108	fe80::200:5eff:fe00:208 1080::30	Enabled	200	No	Yes	100
9	109	fe80::200:5eff:fe00:209 1090::30	Enabled	200	No	Yes	100
10	110	fe80::200:5eff:fe00:20a 1100::30	Enabled	200	No	Yes	100

output definitions

VRRP trap generation	Whether or not VRRP trap generation is enabled or disabled.
VRRP startup delay	The amount of time after a reboot that virtual routers wait, before they go active; allows time for routing tables to stabilize.
VRID	Virtual router identifier. Configured through the vrrp3 command.
VLAN	The VLAN associated with the VRRP3 instance. Configured through the vrrp3 command.
IPv6 Address(es)	The assigned IPv6 addresses. Configured through the vrrp3 address command.
Admin Status	The administrative status of this virtual router instance; enabled allows the virtual router instance to operate; disabled disables the virtual router instance without deleting it.
Priority	Indicates the VRRP3 router priority for the virtual router. For more information about priority, see the vrrp3 command description on page 40-29 .
Preempt	Controls whether a higher priority virtual router blocks a lower priority master: preempt indicates that a higher priority virtual router can block a lower priority master; no preempt indicates that the first backup router to take over for the master is not blocked by a virtual router with a higher priority. In either case the IP address owner always takes over it if is available.
Accept	Displays whether the master router, which is not the IPv6 address owner, accepts the packets addressed to the IPv6 address owner as its own.
Virtual MAC	Displays the virtual MAC address for the virtual router when the router is in the master state. The first 5 bytes are always 00-00-5E-00-02. The last byte indicates the VRID. This field displays N/A when the virtual router is in the backup or initialize state.
Adv. Interval	Indicates the time interval, in seconds, between sending advertisement messages. Only the master router sends advertisements.

Release History

Release 6.6.3; command introduced.

Related Commands

vrrp3	Configures a new VRRP3 virtual router or modifies an existing one. Used to enable or disable a virtual router.
vrrp3 address	Configures an IPv6 address for a virtual router.
show vrrp3 statistics	Displays statistics for all virtual routers configured on the switch or for a specific virtual router.

MIB Objects

```
alaVrrp3OperTable  
  alaVrrp3OperAdminState  
  alaVrrp3OperPriority  
  alaVrrp3OperPreemptMode  
  alaVrrp3OperAcceptMode  
  alaVrrp3OperAdvinterval
```

show vrrp3 statistics

Displays statistics about VRRP3 packets for all virtual routers configured on the switch or for a specific virtual router.

show vrrp3 [*vrid*] **statistics**

Syntax Definitions

vrid The virtual router ID, in the range from 1 to 255.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6450

Usage Guidelines

Use the **show vrrp3 statistics** command to display information about VRRP3 packets. Use the **show vrrp3** command to display information about the virtual router configuration.

Examples

```
-> show vrrp3 statistics
```

```
Checksum    Version    VRID
Errors      Errors    Errors
-----+-----+-----
          0          0          0
```

```
VRID VLAN    State            UpTime    Become Master Adv. Rcvd
-----+-----+-----+-----+-----+-----
   1  101 Master            2983            1            0
   2  102 Master            60675           1            0
   3  103 Master            60675           1            0
   4  104 Master            60675           1            0
   5  105 Master            60675           1            0
   6  106 Master            60675           1            0
   7  107 Master            60675           1            0
   8  108 Master            60675           1            0
   9  109 Master            60675           1            0
  10  110 Master            60675           1            0
```

output definitions

Checksum Errors	The total number of VRRP3 packets received with an invalid checksum value.
Version Errors	The total number of VRRP3 packets received with an invalid version number.
VRID Errors	The total number of VRRP3 packets received with invalid VRIDs.
VRID	The virtual router identifier.

output definitions (continued)

VLAN	The VLAN associated with the VRRP3 instance.
State	The administrative state of the VRRP3 instance; initialize specifies that the interface or vlan is either disabled or down and the startup delay timer has not expired; backup specifies that this instance is monitoring the availability of the master router; master specifies that this instance is functioning as the master router.
UpTime	Time interval (in hundredths of a second) since this virtual router was last initialized.
Become Master	The total number of times this virtual router state has transitioned from backup to master.
Adv. Rcvd	The total number of VRRP3 advertisements received by this instance.

Release History

Release 6.6.3; command introduced.

Related Commands

vrrp3	Configures a new VRRP3 virtual router or modifies an existing one. Used to enable or disable a virtual router.
show vrrp3	Displays the virtual router configuration for all virtual routers or for a specific virtual router.

MIB Objects

```

alaVrrp3RouterChecksumErrors
alaVrrp3RouterVersionErrors
alaVrrp3RouterVrIdErrors
alaVrrp3RouterStatsTable
  alaVrrp3StatsBecomeMaster
  alaVrrp3StatsAdvertiseRcvd
  alaVrrp3StatsAdvIntervalErrors
  alaVrrp3StatsIpTtlErrors
  alaVrrp3StatsPriZeroPktsRcvd
  alaVrrp3StatsPriZeroPktsSent
  alaVrrp3StatsInvalidTypePktsRcvd
  alaVrrp3StatsAddressListErrors
  alaVrrp3StatsInvldAuthType
  alaVrrp3StatsPacketLengthErrors
alaVrrp3OperTable
  alaVrrp3OperUpTime
alaVrrp3OperGroup
  alaVrrp3OperState

```

show vrrp3 track-association

Displays the tracking policies associated with VRRP3 virtual routers.

show vrrp3 [*vrid*] **track-association** [*track_id*]

Syntax Definitions

vrid The virtual router ID, in the range from 1 to 255.
track_id The ID of the tracking policy for which you want to display information.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6450

Usage Guidelines

If a track ID is specified, only information about that track ID is displayed. If the virtual router ID and track ID are not specified, information about all virtual routers and their associated tracking policies is displayed.

Examples

```
-> show vrrp3 track-association
      Conf  Cur  Track
VRID VLAN  Pri  Pri  ID      Policy      Admin  Oper  Track
-----+-----+-----+-----+-----+-----+-----+-----+-----+
   1  101  200  200  1  PORT 1/37      Enabled  Up    25
```

output definitions

VRID	The virtual router identifier.
VLAN	The VLAN ID associated with the virtual router.
Conf Pri	The priority configured for the virtual router through the vrrp3 command.
Cur Pri	The priority currently being used for the virtual router. If the tracking policy is in effect because the tracked entity is down, the current priority is equal to the configured priority (Conf Pri) minus the tracking priority (Track Pri). Otherwise the current priority is considered to be equal to the configured priority.
Track ID	The ID of the tracking policy.
Policy	The VLAN, IPv6 address, or slot/port being tracked by this policy.
Admin State	The administrative state of the tracking policy.

output definitions (continued)

Oper State	Indicates whether the tracking policy is operational (Up) or not (Down).
Track Pri	The amount to be decremented from the configured virtual router priority when the tracking policy is applied.

Release History

Release 6.6.3; command introduced.

Related Commands

[vrrp3 track-association](#) Associates a VRRP3 tracking policy with a virtual router.

MIB Objects

alaVrrpTrackTable

```

alaVrrpTrackState
alaVrrpTrackAdminState
alaVrrpTrackPriority
alaVrrpTrackEntityType
alaVrrpTrackEntityVlan
alaVrrpTrackEntityPort
alaVrrpTrackEntityIpAddress
alaVrrpTrackEntityIpv6Interface
alaVrrpTrackEntityInterface
alaVrrpTrackRowStatus

```

alaVrrp3AssoTrackTable

```

alaVrrp3AssoTrackId
alaVrrp3TrackRowStatus

```

41 Port Mirroring and Monitoring Commands

The Port Mirroring and Port Monitoring features are primarily used as diagnostic tools.

The Port Mirroring feature allows you to have all the traffic (inbound and outbound) of an Ethernet port sent to another port on the switch. When you enable port mirroring, the active, or “mirrored,” port transmits and receives network traffic normally and the “mirroring” port receives a copy of all transmit and receive traffic to the active port. You can connect an RMON probe or network analysis device to the mirroring port to see an exact duplication of traffic on the mirrored port without disrupting network traffic to and from the mirrored port.

The Port Monitoring feature allows you to examine packets to and from a specific Ethernet port.

MIB information for the Port Mirroring commands is as follows:

Filename: AlcatelIND1portMirMon.mib
Module: ALCATEL-IND1-PORT-MIRRORING-MONITORING-MIB

The following table summarizes the available commands:

Port Mirroring Commands	port mirroring source destination port mirroring show port mirroring status
Port Monitoring Commands	port monitoring source port monitoring show port monitoring status show port monitoring file

port mirroring source destination

Defines a port to mirror and the port that is to receive data from the mirrored port, and enables or disables port mirroring status. Also, enables or disables remote port mirroring.

port mirroring *port_mirror_sessionid* [**no**] **source** *slot/port[-port2]* [*slot/port[-port2]...*]
destination *slot/port* [**rpmir-vlan** *vlan_id*] [**bidirectional** | **inport** | **outport**] [**unblocked** *vlan_id*]
[**enable** | **disable**]

Syntax Definitions

<i>port_mirror_sessionid</i>	Mirroring session identifier.
source	Adds the alphabet “a” to a port mirroring session.
no source	Removes a port or range of ports from a port mirroring session.
<i>slot</i>	Slot number you want to configure.
<i>port</i>	Port number of the interface you want to configure.
<i>port2</i>	Last port number in a range of ports you want to configure.
[<i>slot/port[-port2]...</i>]	Configures multiple source ports.
rpmir-vlan <i>vlan_id</i>	Reserved VLAN (1–4094) to carry the mirroring traffic.
bidirectional	Specifies bidirectional port mirroring.
inport	Specifies incoming unidirectional port mirroring.
outport	Specifies outgoing unidirectional port mirroring.
<i>vlan_id</i>	VLAN ID is the number (1–4094) that specifies the VLAN to protect from Spanning Tree changes while port mirroring/monitoring is active. Ports in this VLAN will remain unblocked.
enable	Enables port mirroring status.
disable	Disables port mirroring status.

Defaults

parameter	default
bidirectional inport outport	bidirectional
enable disable	enable

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- The maximum number of mirroring sessions is limited to two.
- You cannot configure port mirroring and monitoring on the same switching ASIC. Each switching ASIC controls 24 ports (e.g., ports 1–24, 25–48, etc.). For example, if a port mirroring session is configured for ports 1/12 and 1/22, then configuring a port monitoring session for any of the ports between 1 and 24 is not allowed.

- If a port mirroring session is configured across two switching ASICs, then configuring a monitoring session is not allowed on any of the ports controlled by each of the ASICs involved. For example, if a port mirroring session is configured for ports 1/8 and 1/30 on a 48-port switch, then configuring a port monitoring session involving any of the ports between 1 and 48 is not allowed.
- Port mirroring is not supported on logical link aggregate ports however, it is supported on individual ports that are members of a link aggregate.
- An “N-to-1” port mirroring session is configurable, where “N” can be a number from 1 to 24. In other words, you can configure up to 24 source ports for a single destination port in a session.
- Once you execute the **port mirroring source destination** command to define the mirrored port and enable port mirroring status, the **port mirroring** command must be used to enable the port mirroring session.
- By default, the mirroring port is subject to Spanning Tree changes that could cause it to go into a blocked state. To prevent this, specify the *vlan_id* number of the mirroring port that is to remain **unblocked** when executing the command.

Usage Guidelines - Remote Port Mirroring

- Use the **rpmir-vlan** parameter with this command to configure remote port mirroring.
- There must not be any physical loop present in the remote port mirroring VLAN.
- Spanning Tree must be disabled for the remote port mirroring VLAN.
- Source learning must be disabled or overridden on the ports belonging to the remote port mirroring VLAN on intermediate and destination switches.
- The QoS redirect feature can be used to override source learning.

Examples

```
-> port mirroring 6 destination 6/4
-> port mirroring 6 source 2/3
-> port mirroring 6 destination 6/4
-> port mirroring 6 source 2/3-5 2/7 2/10
-> port mirroring 8 destination 1/12 rpmir-vlan 7
-> port mirroring 8 source 1/7 bidirectional
-> port mirroring 7 destination 6/4 unblocked 750
-> port mirroring 7 source 2/3
-> port mirroring 9 destination 1/24
-> port mirroring 9 source 1/23 inport
-> port mirroring 9 disable
-> port mirroring 8 no source 1/7
-> port mirroring 6 no source 2/10-12 2/14
```

Release History

Release 6.6.1; command was introduced.

Related Commands

port mirroring

Enables, disables, or deletes a port mirroring session.

show port mirroring status

Displays the status of mirrored ports. This value may be enabled or disabled.

MIB Objects

mirrorTable

mirrorMirroringIfindex

mirrorDirection

mirrorStatus

mirrorUnblockedVLAN

mirrorTaggedVLAN

port mirroring

Enables, disables, or deletes a port mirroring session.

port mirroring *port_mirror_sessionid* {**enable** | **disable**}

no port mirroring *port_mirror_sessionid* {**enable** | **disable**}

Syntax Definitions

<i>port_mirror_sessionid</i>	Mirroring session identifier.
enable	Enables port mirroring.
disable	Disables port mirroring.
no	Optional syntax. Deletes a previously-configured port mirroring session.

Defaults

parameter	default
enable disable	disable

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Use the **no** form of this command to delete a port mirroring session.
- You must first enter the **port mirroring source destination** command to specify the mirrored and destination ports. Then use this command to enable or disable port mirroring activity on these ports.

Examples

```
-> port mirroring 6 enable
-> port mirroring 6 disable
-> no port mirroring 6
```

Release History

Release 6.6.1; command was introduced.

Related Commands

port mirroring source destination

Defines a port to mirror and the port that is to receive data from the mirrored port, and enables or disables port mirroring status.

show port mirroring status

Displays the status of mirrored ports. This value may be enabled or disabled.

MIB Objects

mirrorTable

 mirrorMirroringIfindex

 mirrorStatus

port monitoring source

Configures a port monitoring session.

```
port monitoring port_monitor_sessionid source slot/port
[{no file | file filename [size filesize] | [overwrite {on | off}]}]
[inport | output | bidirectional] [timeout seconds] [enable | disable]
```

Syntax Definitions

<i>port_monitor_sessionid</i>	Monitoring session identifier.
<i>slot/port</i>	Enter the slot number for the module and the physical port number on that module (e.g., 3/1 specifies port 1 on slot 3).
file filename	Specifies a file name for the monitoring session (e.g., /flash/port2).
<i>filesize</i>	Specifies the size of the file in 16K (16384) byte increments. For example, a value of 3 would specify a size of 49152 bytes. The file size can be up to 160 K (163840 bytes).
no file	Specifies that no file will be created for the monitoring session.
on	Specifies that any existing port monitoring file in flash memory will be overwritten if the total data exceeds the specified file size.
off	Specifies that any existing port monitoring file in flash memory will not be overwritten if the total data exceeds the specified file size.
inport	Specifies incoming unidirectional port monitoring.
output	Specifies outgoing unidirectional port monitoring.
<i>seconds</i>	Specifies the number of seconds after which the session is disabled. The range is 0–2147483647 where 0 is forever.
enable	Enables the port monitoring status.
disable	Disables the port monitoring status.

Defaults

parameter	default
<i>filesize</i>	1
on off	on
bidirectional inport output	bidirectional
<i>seconds</i>	0
enable disable	disable

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- The maximum number of monitoring sessions is limited to one per chassis and/or stack.

- You cannot configure port mirroring and monitoring on the same switching ASIC. Each switching ASIC controls 24 ports (e.g., ports 1–24, 25–48, etc.). For example, if a port mirroring session is configured for ports 1/12 and 1/22, then configuring a port monitoring session for any of the ports between 1 and 24 is not allowed.
- If a port mirroring session is configured across two switching ASICs, then configuring a monitoring session is not allowed on any of the ports controlled by each of the ASICs involved. For example, if a port mirroring session is configured for ports 1/8 and 1/30 on a 48-port switch, then configuring a port monitoring session involving any of the ports between 1 and 48 is not allowed.
- By default, a file called **pmonitor.enc** is created in the **/flash** directory when you configure and enable a port monitoring session. Use the **file** option to create a user-specified file.
- By default, more-recent frames will overwrite older frames in a port monitoring file if the total data exceeds the specified file size. Use the **overwrite off** option to prevent this from occurring.
- Only the first 64 bytes of the traffic will be captured.
- The format of the file created is compliant with the ENC file format (Network General Sniffer Network Analyzer Format).

Examples

```
-> port monitoring 6 source 2/3
-> port monitoring 6 source 2/3 file port3 size 2 enable
```

Release History

Release 6.6.1; command was introduced.

Related Commands

port monitoring	Disables, pauses, resumes, or deletes a port monitoring session.
show port monitoring status	Displays the port monitoring status.
show port monitoring file	Displays the port monitoring data.

MIB Objects

```
monitorTable
  monitorSessionNumber
  monitorIfindex
  monitorFileStatus
  monitorFileName
  monitorFileSize
  monitorScreenStatus
  monitorScreenLine
  monitorTrafficType
  monitorStatus
  monitorFileOverWrite
  monitorDirection
  monitorTimeout
```

port monitoring

Disables, pauses, resume, or deletes an existing port monitoring session.

port monitoring *port_monitor_sessionid* {**disable** | **pause** | **resume**}

no port monitoring *port_monitor_sessionid*

Syntax Definitions

<i>port_monitor_sessionid</i>	Monitoring session identifier.
disable	Disables the port monitoring session.
pause	Pauses the port monitoring session.
resumes	Resumes the port monitoring session.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

Use the **no** form of this command to delete a port monitoring session.

Examples

```
-> port monitoring 6 pause
-> port monitoring 6 disable
-> port monitoring 6 resume
-> no port monitoring 6
```

Release History

Release 6.6.1; command was introduced.

Related Commands

port monitoring	Configures a port monitoring session.
show port monitoring status	Displays the port monitoring status.

MIB Objects

```
monitorTable
  monitorSessionNumber
  monitorScreenStatus
```

show port mirroring status

Displays the status of mirrored ports.

show port mirroring status [*port_mirror_sessionid*]

Syntax Definitions

port_mirror_sessionid Mirroring session identifier.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

If a port mirroring session identifier is not specified with this command, then all port mirroring sessions are displayed.

Examples

-> show port mirroring status

Session	Mirror Destination	Mirror Direction	Unblocked Vlan	Config Status	Oper Status
6.	1/41	-	NONE	Enable	Off
	Mirror Source				
6.	1/20	bidirectional	-	Enable	Off
6.	1/21	bidirectional	-	Enable	Off
6.	1/22	bidirectional	-	Enable	Off
6.	1/23	bidirectional	-	Enable	Off
6.	1/24	bidirectional	-	Enable	Off
6.	1/25	bidirectional	-	Enable	Off
6.	1/26	bidirectional	-	Enable	Off
6.	1/27	bidirectional	-	Enable	Off
6.	1/28	bidirectional	-	Enable	Off
6.	1/29	bidirectional	-	Enable	Off
6.	1/30	bidirectional	-	Enable	Off

output definitions

Session	The port mirroring session identifier.
Mirror Destination	The location of the mirrored port.
Mirror Direction	The direction of the mirroring or mirrored port, which can be bidirectional (the default), inport , or outport .

output definitions (continued)

Unblocked VLAN	The mirroring VLAN ID number.
Config Status	The configuration status of the session.
Oper Status	The current status of the mirroring or mirrored port.
Mirror Source	The location of the mirroring port.

output definitions

Session	The port mirroring session identifier.
Mirror Destination	The location of the mirrored port.
Mirror Direction	The direction of the mirroring or mirrored port, which can be bidirectional (the default), inport , or outport .
Unblocked VLAN	The mirroring VLAN ID number.
Config Status	The configuration status of the session.
Oper Status	The current status of the mirroring or mirrored port.
Mirror Source	The location of the mirroring port.

Release History

Release 6.6.1; command was introduced.

Related Commands

port mirroring	Enables, disables, or deletes a port mirroring session.
port mirroring source destination	Defines a port to mirror and a port that will receive data from the mirrored port, and enables or disables port mirroring status.

MIB Objects

```
mirrorTable
  mirrorMirroringIfindex
  mirrorDirection
  mirrorStatus
  mirrorUnblockedVLAN
```

show port monitoring status

Displays port monitoring status.

show port monitoring status [*port_monitor_sessionid*]

Syntax Definitions

port_monitor_sessionid Monitoring session identifier.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

If a port monitoring session identifier is not specified with this command, then all port monitoring sessions are displayed.

Examples

-> show port monitoring status

Session	Monitor slot/port	Monitor Direction	Overwrite	Operating Status	Admin Status
1.	1/ 9	Bidirectional	ON	ON	ON

output definitions

Session	The port monitoring session identifier.
Monitor slot/port	The location of the monitored port.
Monitor Direction	The direction of the monitoring session, which can be bidirectional (the default), inport , or outport .
Overwrite	Whether files created by a port monitoring session can be overwritten. The default is ON.
Operating Status	The current operating status of the port monitoring session (on/off).
Admin Status	The current administrative status of the port monitoring session (on/off).

Release History

Release 6.6.1; command was introduced.

Related Commands

port monitoring source	Configures a port monitoring session.
port monitoring	Disables, pauses, resumes, or deletes a port monitoring session.
show port monitoring file	Displays port monitoring data.

MIB Objects

```
monitorTable  
  monitorSessionNumber  
  monitorIfindex  
  monitorStatus  
  monitorFileOverWrite  
  monitorDirection
```

show port monitoring file

Displays port monitoring data.

show port monitoring file [*port_monitor_sessionid*]

Syntax Definitions

port_monitor_sessionid Monitoring session identifier.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

N/A

Examples

-> show port monitoring file

Destination	Source	Type	Data
01:80:C2:00:00:00	00:20:DA:8F:92:C6	BPDU	00:26:42:42:03:00:00:00:00:00
00:20:DA:C7:2D:D6	08:00:20:95:F3:89	UDP	08:00:45:00:00:6B:FE:4A:40:00
00:20:DA:A3:89:F6	08:00:20:95:F3:89	UDP	08:00:45:00:00:6B:CF:89:40:00
00:20:DA:BF:5B:76	08:00:20:95:F3:89	UDP	08:00:45:00:00:6B:CF:85:40:00
00:20:DA:A3:89:F6	08:00:20:95:F3:89	UDP	08:00:45:00:00:6B:CF:8A:40:00
00:20:DA:BF:5B:76	08:00:20:95:F3:89	UDP	08:00:45:00:00:6B:CF:86:40:00
00:20:DA:A3:89:F6	08:00:20:95:F3:89	UDP	08:00:45:00:00:6B:CF:8B:40:00
01:80:C2:00:00:00	00:20:DA:8F:92:C6	BPDU	00:26:42:42:03:00:00:00:00:00
00:20:DA:BF:5B:76	08:00:20:95:F3:89	UDP	08:00:45:00:00:6B:CF:87:40:00

output definitions

Destination	The destination MAC address of the packet.
Source	The source MAC address of the packet.
Type	The type of packet.
Data	The packet displayed in hexadecimal format.

Release History

Release 6.6.1; command was introduced.

Related Commands

port monitoring source	Configures a port monitoring session.
port monitoring	Disables, pauses, resumes, or deletes a port monitoring session.
show port monitoring status	Displays the port monitoring status.

MIB Objects

```
monitorTable  
  monitorSessionNumber  
  monitorIfindex  
  monitorTrafficType
```

42 Health Monitoring Commands

The Health Monitoring function monitors the consumable resources of the switch (e.g., bandwidth usage, CPU usage) and provides a single integrated resource for a Network Management System (NMS). This function monitors the switch, and at fixed intervals, collects the current values for each resource being monitored. Users specify resource threshold limits and traps are sent to an NMS if a value falls above or below a user-specified threshold.

The Health Monitoring commands comply with RFC1212.

MIB information for the Health Monitoring commands is as follows:

Filename: AlcatelIND1Health.mib
Module: healthMIB

A summary of the available commands is listed here:

health threshold
health threshold port-trap
health interval
health statistics reset
show health threshold
show health threshold port-trap
show health interval
show health
show health all
show health slice

health threshold

Configures thresholds for input traffic (RX), output/input traffic (TX/RX), memory usage, CPU usage, and chassis temperature.

Input traffic, output/input traffic, memory usage, and CPU usage thresholds specify the maximum percentage for each resource that may be consumed before a trap is sent to the user. The temperature threshold specifies the maximum operating temperature, in Celsius, allowed within the chassis before a trap is sent.

health threshold {*rx percent* | *txrx percent* | **memory percent** | **cpu percent** | **temperature degrees**}

Syntax Definitions

rx	Specifies the maximum input (RX) traffic threshold.
txrx	Specifies the maximum output/input (TX/RX) traffic threshold.
memory	Specifies the maximum RAM memory usage threshold.
cpu	Specifies the maximum CPU usage threshold.
<i>percent</i>	The new threshold value, in percent, for the corresponding resource—i.e., rx , txrx , memory , cpu —(0–100).
temperature	Specifies the temperature threshold for the chassis.
<i>degrees</i>	The new threshold value, in Celsius, for the chassis temperature threshold (0–100).

Defaults

parameter	default
<i>percentage</i>	80
<i>degrees</i>	50

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- When a resource falls back below the configured threshold, an additional trap is sent to the user. This indicates that the resource is no longer operating beyond its configured threshold limit.

Note. Do not configure the port health threshold (Rx and TxRx) value close to the line rate (rate at which traffic is sent). For example, if the traffic is sent at 50 % line rate, then configure the health threshold value of about 80% and not about 60%.

- Changing a threshold value sets the value for all levels of the switch (i.e., switch, module, and port). You cannot set different threshold values for each level.
- For detailed information on each threshold type, refer to [page 42-8](#), or refer to the “Diagnosing Switch Problems” chapter in the *OmniSwitch AOS Release 6250/6350/6450 Network Configuration Guide*.

Note. The console messages "+++ healthMonCpuStatus Crossed Below The Threshold Limit " can be seen on switch bootup if it is configured to receive health monitoring debug messages on console or swlog file using the **swlog appid** and **swlog output** commands.

- To view the current health threshold values, use the **show health threshold** command. Do not use the **show temperature** command as it does not display health threshold statistics. These two **show** commands are unrelated.

Examples

```
-> health threshold rx 85
-> health threshold txrx 55
-> health threshold memory 95
-> health threshold cpu 85
-> health threshold temperature 40
```

Release History

Release 6.6.1; command was introduced.

Related Commands

show health threshold Displays the current health threshold settings.

MIB Objects

```
HealthThreshInfo
  healthThreshDeviceRxLimit
  healthThreshDeviceTxRxLimit
  healthThreshDeviceTempLimit
  healthThreshDeviceMemoryLimit
  healthThreshDeviceCpuLimit
```

health threshold port-trap

Enables or disables health threshold monitoring on a slot, port, or a range of ports.

health threshold port-trap {*slot* | *slot/port* | *slot/port1-port2*} {**enable** | **disable**}

Syntax Definitions

<i>slot/port</i>	The slot number for the chassis and the physical port number on the slot. (for example, 2/1 specifies port 1 on slot 2).
<i>slot/port1-port2</i>	The slot number for the chassis, the physical start port number on that slot and end port on the slot. Here, <i>port1</i> refers of the start port and <i>port2</i> refers to the end port in the range of ports.
<i>slot</i>	The slot number on the chassis.
enable	Health monitoring port-trap is generated for the specified ports or slots.
disable	Health monitoring port-trap is not generated for the specified ports or slots.

Defaults

By default, the health threshold trap is **enabled** globally on the chassis ports.

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Health threshold trap is enabled by default on all chassis ports. This command can be used to enable or disable health threshold traps on a slot, port, or a range of ports.
- Use valid slot and port numbers. If particular slots or ports are not available or not working, then, error messages are displayed.

Examples

```
-> health threshold port-trap 1 disable
-> health threshold port-trap 1/2 disable
-> health threshold port-trap 1/1-4 disable
```

Release History

Release 6.6.4; command introduced.

Related Commands

- health threshold** Configures thresholds for input traffic (RX), output/input traffic (TX/RX), memory usage, CPU usage, and chassis temperature.
- show health threshold port-trap** Displays the current status of the health threshold monitoring settings for a slot, port, or a range of ports.

MIB Objects

healthPortTable
 healthPortSlot
 healthPortIF
 healthPortThresholdTrapStatus

health interval

Configures the sampling interval between health statistics checks. The sampling interval is the time interval between polls of the switch's consumable resources to see if it is performing within set thresholds.

health interval *seconds*

Syntax Definitions

seconds Sampling interval (in seconds). Valid entries are 1, 2, 3, 4, 5, 6, 10, 12, 15, 20, 30.

Defaults

parameter	default
<i>seconds</i>	5

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

Decreasing the polling interval may impact switch performance.

Examples

```
-> health interval 6
```

Release History

Release 6.6.1; command was introduced.

Related Commands

[show health interval](#) Displays the current health sampling interval.

MIB Objects

HealthThreshInfo
healthSamplingInterval

health statistics reset

Resets health statistics for the switch.

health statistics reset

Syntax Definitions

N/A

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

This command clears statistics for the entire switch. You cannot clear statistics for a module or port only.

Examples

```
-> health statistics reset
```

Release History

Release 6.6.1; command was introduced.

Related Commands

[show health](#) Displays health statistics for the switch.

MIB Objects

HealthThreshInfo
healthSamplingReset

show health threshold

Displays current health threshold settings.

show health threshold [rx | txrx | memory | cpu | temperature]

Syntax Definitions

rx	Displays the current input (RX) traffic threshold.
txrx	Displays the current output/input (TX/RX) traffic threshold.
memory	Displays the current RAM memory usage threshold.
cpu	Displays the current CPU usage threshold.
temperature	Displays the current chassis temperature threshold.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Unless a specific resource type (i.e., **rx**, **txrx**, **memory**, **cpu**, or **temperature**) is specified, threshold information for *all* resources displays.
- To display only a specific threshold, enter the command, followed by the specific resource type (**rx**, **txrx**, **memory**, **cpu**, or **temperature**). For example, to display only the memory threshold, enter the following syntax: **show health threshold memory**.

Examples

```
-> show health threshold
Rx Threshold           = 80
TxRx Threshold         = 80
Memory Threshold       = 80
CPU Threshold          = 80
Temperature Threshold  = 50
```

output definitions

Rx Threshold	The current device input (RX) threshold. This value displays the maximum percentage of total bandwidth allowed for <i>incoming traffic</i> on the switch. The total bandwidth is defined as the Ethernet port capacity for all NI modules currently operating in the switch, in Mbps. For example, a chassis with 48 100Base-T Ethernet ports installed has a total bandwidth of 4800 Mbps. The default value is 80 percent and can be changed through the health threshold command.
TxRx Threshold	The current device output/input (TX/RX) threshold. This value displays the maximum percentage of total bandwidth allowed for <i>all incoming and outgoing traffic</i> . As with the RX threshold described above, the total bandwidth is defined as the Ethernet port capacity for all the NI modules currently operating in the switch, in Mbps. The default value is 80 percent and can be changed via the health threshold command.
Memory Threshold	Displays the current memory usage threshold. Memory usage refers to the total amount of RAM memory currently used by switch applications. The default value is 80 percent and can be changed via the health threshold command.
CPU Threshold	Displays the current CPU usage threshold. CPU usage refers to the total amount of CPU processor capacity currently used by switch applications. The default value is 80 percent and can be changed via the health threshold command.
Temperature Threshold	Displays the current chassis temperature threshold, in Celsius. The default value is 50 degrees Celsius and can be changed via the health threshold command.

Release History

Release 6.6.1; command was introduced.

Related Commands

[health threshold](#) Configures thresholds for input traffic (RX), output/input traffic (TX/RX), memory usage, CPU usage, and chassis temperature.

MIB Objects

HealthThreshInfo

```
healthThreshDeviceRxLimit
healthThreshDeviceTxRxLimit
healthThreshDeviceTempLimit
healthThreshDeviceMemoryLimit
healthThreshDeviceCpuLimit
```

show health threshold port-trap

Displays the current status of the health threshold monitoring settings for a slot, port, or a range of ports.

show health threshold port-trap {*slot* | *slot/port* | *slot/port1-port2*}

Syntax Definitions

<i>slot/port</i>	The slot number for the chassis and the physical port number on the slot. (for example, 2/1 specifies port 1 on slot 2).
<i>slot/port1-port2</i>	The slot number for the chassis, the physical start port number on that slot and end port on the slot. Here, <i>port1</i> refers of the start port and <i>port2</i> refers to the end port in the range of ports.
<i>slot</i>	The slot number on the chassis.

Defaults

By default, the health threshold trap is **enabled** globally on the chassis ports.

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Use slot number value with this command, to view the health threshold information for all the ports on the slot.
- An error message “**No data for slot *slotnum***” is displayed when there is no data available for a slot.

Example

```
-> show health threshold port-trap 1
```

```
Slot/Port   Status
-----+-----
    1/1     enabled
    1/2     enabled
    1/3     enabled
    1/4     enabled
    1/5     enabled
    .
    .
    .
    1/26    enabled
```

```
-> show health threshold port-trap 2
ERROR: No data for slot 2
```

```
-> show health threshold port-trap 1/2
```

```
Slot/Port  Status
-----+-----
  1/2      disabled
```

output definitions

Slot/Port	Specifies the port number with the slot and port information.
Status	Specifies the current status of the health threshold settings for the port (enabled or disabled).

Release History

Release 6.6.4; command introduced.

Related Commands

health threshold port-trap Enables or disables health threshold monitoring on a slot, port, or a range of ports.

MIB Objects

```
healthPortTable
  healthPortSlot
  healthPortIF
  healthPortThresholdTrapStatus
```

show health interval

Displays the current health sampling interval.

show health interval

Syntax Definitions

N/A

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

Use the [health interval](#) command to set the sampling interval.

Examples

```
-> show health interval  
Sampling Interval = 5
```

output definitions

Sampling Interval	Currently configured interval between health statistics checks (in seconds).
--------------------------	--

Release History

Release 6.6.1; command was introduced.

Related Commands

[health interval](#) Configures the interval between health statistics checks.

MIB Objects

```
HealthThreshInfo  
  healthSamplingInterval
```

show health

Displays the health statistics for the switch. Statistics are displayed as percentages of total resource capacity and represent data taken from the last sampling interval.

show health [*slot/port*] [**statistics**]

Syntax Definitions

slot/port To view a specific slot, enter the slot number (e.g., 3). To view a specific port, enter the slot and port number (e.g., 3/1).

statistics Optional command syntax. It displays the same information as the **show health** command.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- If no *slot/port* information is specified, the aggregate health statistics for all ports is displayed.
- Use the [health statistics reset](#) command to reset health statistics for the switch.

Examples

```
-> show health
* - current value exceeds threshold
```

Device	Limit	Curr	1 Min Avg	1 Hr Avg	1 Hr Max
Receive	80	01	01	01	01
Transmit/Receive	80	01	01	01	01
Memory	80	66	66	66	66
CPU	80	41	40	32	30

```
-> show health 4/3
* - current value exceeds threshold
```

Port 04/03	Limit	Curr	1 Min Avg	1 Hr Avg	1 Hr Max
Receive	80	01	01	01	01
Transmit/Receive	80	01	01	01	01

output definitions

Receive	Traffic received by the switch.
Transmit/Receive	Traffic transmitted and received by the switch.
Memory	Switch memory.
CPU	Switch CPU.
Limit	Currently configured device threshold levels (percentage of total available bandwidth or temperature measured in degrees Celsius).
Curr	Current device bandwidth usage or temperature (measured in degrees Celsius).
1 Min Avg	Average device bandwidth usage or temperature (measured in degrees Celsius) over a 1-minute period.
1 Hr Avg	Average device bandwidth usage or temperature (measured in degrees Celsius) over a 1-hour period.
1 Hr Max	Maximum device bandwidth usage or temperature (measured in degrees Celsius) over a 1-hour period (i.e., the maximum of the 1 minute averages).

Release History

Release 6.6.1; command was introduced.

Related Commands**health statistics reset**

Resets health statistics for the switch.

show health all

Displays health statistics for a specified resource on *all* NIs currently operating in the chassis.

MIB Objects

```
healthModuleTable
  healthModuleSlot
  healthModuleRxLatest
  healthModuleRx1MinAvg
  healthModuleRx1HrAvg
  healthModuleRx1HrMax
  healthModuleRxTxLatest
  healthModuleRxTx1MinAvg
  healthModuleRxTx1HrAvg
  healthModuleRxTx1HrMax
  healthModuleMemoryLatest
  healthModuleMemory1MinAvg
  healthModuleMemory1HrAvg
  healthModuleMemory1HrMax
  healthModuleCpuLatest
  healthModuleCpu1MinAvg
  healthModuleCpu1HrAvg
  healthModuleCpu1HrMax
```

show health all

Displays health statistics for a specified resource on all *active NI modules* installed in the chassis.

show health all {memory | cpu | rx | txrx}

Syntax Definitions

memory	Displays the RAM memory health statistics for all active NI modules in the switch.
cpu	Displays the CPU health statistics for all active NI modules.
rx	Displays the health statistics for traffic <i>received</i> on all active NI modules.
txrx	Displays the health statistics for traffic both <i>transmitted and received</i> on all active NI modules.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

N/A

Examples

```
-> show health all memory
* - current value exceeds threshold
```

Memory	Limit	Curr	1 Min Avg	1 Hr Avg	1 Hr Max
01	80	40	40	40	40
02	80	40	40	40	40
03	80	40	40	40	40
04	80	40	40	40	40
05	80	40	40	40	40
06	80	40	40	40	40
07	80	40	40	40	40
13	80	40	40	40	40

output definitions

Memory (Cpu, TXX, RX)	A list of all currently-active NI modules (i.e., active slots) on the switch. The column header corresponds with the resource keyword entered. For example, if show health all cpu is entered, Cpu is used as the column header.
Limit	Current usage threshold for the specified resource type, on the corresponding slot (in percent). The usage threshold refers to the maximum amount of the resource's total bandwidth that can be used by switch applications before a notification is sent to the user. The default value for all resource types is 80 percent. This threshold can be changed via the health threshold command.
Curr	Current usage of the resource on the corresponding slot, in percent (i.e., the amount of the resource's total bandwidth actually being used by switch applications).
1 Min Avg	Average usage of the resource on the corresponding slot over a one minute period.
1 Hr Avg	Average usage of the resource on the corresponding slot over a one hour period.
1 Hr Max	The highest average hourly usage for the resource on the corresponding slot.

Release History

Release 6.6.1; command was introduced.

Related Commands

show health

Displays the health statistics for the switch.

health threshold

Configures thresholds for input traffic (RX), output/input traffic (TX/RX), memory usage, CPU usage, and chassis temperature.

MIB Objects

```
healthModuleTable
  healthModuleSlot
  healthModuleRxLatest
  healthModuleRx1MinAvg
  healthModuleRx1HrAvg
  healthModuleRx1HrMax
  healthModuleRxTxLatest
  healthModuleRxTx1MinAvg
  healthModuleRxTx1HrAvg
  healthModuleRxTx1HrMax
  healthModuleMemoryLatest
  healthModuleMemory1MinAvg
  healthModuleMemory1HrAvg
  healthModuleMemory1HrMax
  healthModuleCpuLatest
  healthModuleCpu1MinAvg
  healthModuleCpu1HrAvg
  healthModuleCpu1HrMax
```

show health slice

Displays the health statistics for a particular slice. The term *slice* refers to an amount of CPU time and RAM memory allotted for switch applications. By monitoring slice statistics on the switch, users can determine whether there are any potential usage issues with CPU and RAM memory that may affect switch multi-tasking.

show health slice *slot*

Syntax Definitions

slot A specific physical slot number for which slice statistics are to be displayed (e.g., 3).

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

N/A

Examples

```
-> show health slice 13
Slot 13      slice
Resources    1
-----+-----
Memory      40
Cpu         21
```

output definitions

Slot	The physical slot number for the corresponding slice.
slice	The on-board slice number (1–64).
Memory	The slice-level RAM memory utilization over the latest sample period, in percent (0–100).
Cpu	The slice-level CPU utilization over the latest sample period, in percent (0–100).

Release History

Release 6.6.1; command was introduced.

Related Commands

N/A

MIB Objects

```
healthSliceTable
  healthSliceSlot
  healthSliceSlice
  healthSliceMemoryLatest
  healthSliceCpuLatest
```

43 sFlow Commands

sFlow is a network monitoring technology that gives visibility in to the activity of the network, by providing network usage information. It provides the data required to effectively control and manage the network usage. sFlow is a sampling technology that meets the requirements for a network traffic monitoring solution.

sFlow provides a network-wide view of usage and active routes. It is used for measuring network traffic, collecting, storing, and analyzing the traffic data. As it is scalable, that doesn't add significant network load. sFlow is an industry standard with many vendors delivering products with this support. Some of the applications of the sFlow data include:

- Detecting, diagnosing, and fixing network problems
- Real-time congestion management
- Detecting unauthorized network activity
- Usage accounting and billing
- Understanding application mix
- Route profiling and peer optimization
- Capacity planning

sFlow is a sampling technology embedded within switches/routers. It provides the ability to monitor the traffic flows. It requires an sFlow agent software process running as part of the switch software and a sFlow collector which receives and analyses the monitored data. The sFlow collector makes use of SNMP to communicate with an sFlow agent in order to configure sFlow monitoring on the device (switch).

An sFlow agent running on the switch/router combines interface counters and traffic flow (packet) samples, preferably, on all the interfaces into sFlow datagrams that are sent across the network to an sFlow collector.

Packet sampling on the switch/router is typically performed by the switching/routing ASICs, providing wire-speed performance. In this case, an sFlow agent does very little processing, by packaging data into sFlow datagrams that are immediately sent on network. This minimizes the memory and CPU utilization by the sFlow agent.

MIB information for the sFlow commands is as follows:

Filename: AlcatelIND1PortMirMon.MIB
Module: Alcatel-IND1-PORT-MIRRORING-MONITORING-MIB

Filename: SFLOW_RFC3176.MIB
Module: SFLOW-MIB

A summary of the available commands is listed here:

- sflow receiver**
- sflow sampler**
- sflow poller**
- show sflow agent**
- show sflow receiver**
- show sflow sampler**
- show sflow poller**

sflow receiver

Sets the destination hosts where the sFlow datagrams are sent out. If there are multiple destinations, then each destination is associated with the receiver instance. All these destinations are attached to the sFlow manager instance and to an associated sampler/poller.

sflow receiver *num* **name** *string* **timeout** {*seconds* / **forever**} **address** {*ip_address* / *ipv6address*} **udp-port** *port* **packet-size** *size* **Version** *num*

sflow receiver *receiver_index* **release**

Syntax Definitions

<i>num</i>	Specifies the receiver index.
<i>string</i>	Specifies the name.
<i>seconds</i> / forever	Specifies the timeout value.
<i>ip_address</i> / <i>ipv6address</i>	Specifies the 32/128-bit ip address.
<i>port</i>	Specifies the UDP (destination) port.
<i>size</i>	Specifies the maximum number of data bytes (size) that can be sent.
<i>num</i>	Specifies the version number.

Defaults

parameter	default
<i>string</i>	empty
<i>seconds</i>	0
<i>ip_address</i>	0.0.0.0(ipv4)
<i>port</i>	6343
<i>size</i>	1400
<i>version num</i>	5

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

Use the **release** form at the end of the command to delete a receiver.

Examples

```
-> sflow receiver 1 name Golden address 198.206.181.3
-> sflow receiver 1 release
```

Release History

Release 6.6.1; command was introduced.

Related Commands

show sflow receiver Displays the receiver table.

MIB Objects

```
sFlowRcvrTable  
  sFlowRcvrIndex  
  sFlowRcvrOwner  
  sFlowRcvrTimeout  
  sFlowRcvrMaximumDatagramSize  
  sFlowRcvrAddressType  
  sFlowRcvrAddress  
  sFlowRcvrPort  
  sFlowRcvrDatagramVersion
```

sflow sampler

Gets the hardware sampled from Q-dispatcher and fills up the sampler part of the UDP datagram.

sflow sampler *num portlist receiver receiver_index rate value sample-hdr-size size*

no sflow sampler *num portlist*

Syntax Definitions

<i>num</i>	Specifies the instance ID.
<i>portlist</i>	Specifies the interface index range.
<i>receiver_index</i>	Specifies the receiver index.
<i>value</i>	Specifies the rate value for packet sampling.
<i>size</i>	Specifies the maximum number of bytes (size) that can be copied from a sampled packet.

Defaults

parameter	default
<i>receiver_index</i>	0
<i>value</i>	0
<i>size</i>	128

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Use the **no** form of this command to delete a sampler.
- A sampling rate of 1 counts all packets. A sampling rate of 0 disables sampling.

Examples

```
-> sflow sampler 1 2/1-5 receiver 1 rate 1024
-> no sflow sampler 1 2/1-5
```

Release History

Release 6.6.1; command was introduced.

Related Commands

show sflow sampler Displays the sampler table.

MIB Objects

sFlowFsTable
 sFlowFsDataSource
 sFlowFsInstance
 sFlowFsReceiver
 sFlowFsPacketSamplingRate
 sFlowFsMaximumHeaderSize

sflow poller

Gets counter samples from ethernet driver and fills up the counter part of the UDP datagram.

sflow poller *num portlist receiver receiver_index interval value*

no sflow poller *num portlist*

Syntax Definitions

<i>num</i>	Specifies the instance id.
<i>portlist</i>	Specifies the interface index range.
<i>receiver_index</i>	Specifies the receiver index.
<i>value</i>	Specifies the maximum number of seconds between successive samples (interval value).

Defaults

parameter	default
<i>receiver_index</i>	0
<i>value</i>	0

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

Use the **no** form of this command to delete a poller.

Examples

```
-> sflow poller 1 2/6-10 receiver 1 interval 30
-> no sflow poller 1 2/6-10
```

Release History

Release 6.6.1; command was introduced.

Related Commands

show sflow poller Displays the poller table.

MIB Objects`sFlowCpTable``sFlowCpDataSource``sFlowCpInstance``sFlowCpReceiver``sFlowCpInterval`

show sflow agent

Displays the sflow agent table.

show sflow agent

Syntax Definitions

agent Collects sample datagrams and send it to the collector across the network.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- It is necessary to execute the **ip interface** command to make a loopback0 IP address as the fixed primary address of the switch, in order to avoid interface changes, which might need the collector software to be restarted for it to communicate using the new agent IP address. Normally, the primary IP address could change depending on the IP interface going up/down. Therefore, the sFlow agent always needs to send a fixed IP address in the datagram.
- The loopback address should be an IP interface configured on the switch.

Examples

```
-> ip interface loopback0 address 198.206.181.100
-> show sflow agent
Agent Version = 1.3; Alcatel-Lucent; 6.1.1
Agent IP      = 198.206.181.100
```

output definitions

Agent Version	Identifies the version which includes the MIB version, organization name, and the specific software build of the agent.
Agent address	IP address associated with the agent.

Release History

Release 6.6.1; command was introduced.

Related Commands

show sflow receiver Displays the receiver table.

MIB Objects

sFlowAgent

sFlowVersion

sFlowAgentAddressType

 sFlowAgentAddress

show sflow receiver

Displays the sflow receiver table.

show sflow receiver [*num*]

Syntax Definitions

num Specifies the receiver index.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

N/A

Examples

```
-> show sflow receiver
Receiver 1
Name      = Golden
Address   = IP_V4  198.206.181.3
UDP Port  = 6343
Timeout   = 65535
Packet Size= 1400
DatagramVer= 5
```

output definitions

Name	Name of the entry to claim.
Address	IP address of the sFlow collector.
UDP Port	Destination port for sFlow datagrams.
Timeout	Time remaining before the sampler is released and stops sampling.
Packet size	Maximum number of data bytes that can be sent in a single sample datagram.
Datagram ver	Version of sFlow datagrams that should be sent.

Release History

Release 6.6.1; command was introduced.

Related Commands

sflow receiver

Sets the destination hosts where the sFlow datagrams are sent out.

MIB Objects

sFlowRcvrTable

sFlowRcvrIndex

show sflow sampler

Displays the sflow sampler table.

show sflow sampler*[num]*

Syntax Definitions

num Specifies the instance id.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

N/A.

Examples

-> show sflow sampler

Instance	Interface	Receiver	Sample-rate	Sample-hdr-size
1	2/ 1	1	2048	128
1	2/ 2	1	2048	128
1	2/ 3	1	2048	128
1	2/ 4	1	2048	128
1	2/ 5	1	2048	128

output definitions

Instance	Instance for the flow sampler.
Interface	Interface used for the flow sampler.
Receiver	Receiver associated with the flow sampler.
Sample-rate	Statistical sampling rate for packet sampling from the source.
Sample-hdr-size	Maximum number of bytes that should be copied from a sampled packet.

Release History

Release 6.6.1; command was introduced.

Related Commands**sflow sampler**

Gets hardware sampled from Q-dispatcher.

MIB Objects

sFlowFsTable

sFlowFsInstance

show sflow poller

Displays the sflow poller table.

show sflow poller [*num*]

Syntax Definitions

num Specifies the instance ID.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

N/A

Examples

```
-> show sflow poller
```

Instance	Interface	Receiver	Interval
1	2/ 6	1	30
1	2/ 7	1	30
1	2/ 8	1	30
1	2/ 9	1	30
1	2/10	1	30

output definitions

Instance	Instance for the counter poller.
Interface	Interface used for the counter poller.
Receiver	Receiver associated with the counter poller.
Interval	The maximum number of seconds between successive samples of the counters associated with the data source.

Release History

Release 6.6.1; command was introduced.

Related Commands

sflow poller Gets counter samples.

MIB Objects

sFlowCpTable

sFlowCpInstance

44 QoS Commands

Alcatel-Lucent QoS software provides a way to manipulate flows coming through the switch based on user-configured policies. The flow manipulation (referred to as *Quality of Service* or *QoS*) as simple as allowing or denying traffic, or as complicated as remapping 802.1p bits from a Layer 2 network to ToS values in a Layer 3 network.

This chapter provides information about configuring QoS global and port parameters through the Command Line Interface (CLI). Refer to [Chapter 45, “QoS Policy Commands,”](#) for information about commands used to configure QoS policy rules.

MIB information for the QoS commands is as follows:

Filename: alcatelIND1Qos.mib
Module ALCATEL-IND1-QoS-MIB

The QoS commands are listed here:

Global commands	<ul style="list-style-type: none"> qos qos trust ports qos default servicing mode qos forward log qos log console qos log lines qos log level qos default bridged disposition qos default multicast disposition qos stats interval qos nms priority qos phones qos user-port qos dei qos force-yellow-priority debug qos debug qos internal qos clear log qos apply qos revert qos flush qos reset qos stats reset show qos queue show qos queue statistics show qos slice show qos log show qos config show qos statistics
Port and Slice commands	<ul style="list-style-type: none"> qos port qos port reset qos port trusted qos port servicing mode qos port q maxbw qos port maximum egress-bandwidth qos port maximum ingress-bandwidth qos port default 802.1p qos port default dscp qos port default classification qos port dei show qos port
Buffer Management commands	<ul style="list-style-type: none"> qos register shared buffers qos port register profile show qos register

qos

Enables or disables QoS. This section describes the base command with a single required option (**enable** or **disable**).

In lieu of these options, the base command (**qos**) can be used with other keywords to set up global QoS configuration. These keywords are listed here and described as separate commands later in this chapter. In addition, some keywords have a **no** form to remove the parameter or return it to its default.

```
qos {enable | disable}
    [trust ports]
    [default servicing mode]
    [forward log]
    [log console]
    [log lines lines]
    [log level level]
    [default bridged disposition {accept | deny | drop}]
    [default multicast disposition {accept | deny | drop}]
    [stats interval seconds]
    [user-port {filter | shutdown} {spoof | bpdu | rip}]
    [dei]
```

Syntax Definitions

enable	Enables QoS. The QoS software in the switch classifies flows coming into the switch to attempt to match them to QoS policies. If a match is found, the policy parameters are applied to the flow. The enable setting can be used alone or in conjunction with optional command keywords.
disable	Disables QoS. Flows coming into the switch are not matched to policies. The disable setting cannot be used with any other command keyword.

Defaults

parameter	default
enable disable	enable

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- When QoS is disabled, flows coming into the switch are classified but not matched to a policy. Traffic is treated as best effort and assigned to default queues.
- The command keywords can be used with or without **enable**; these keywords cannot be used with **disable**.

Examples

```
-> qos enable default disposition deny
-> qos disable
-> qos enable
```

Release History

Release 6.6.1; command introduced.

Related Commands

qos apply	Applies configured QoS and policy settings to the current configuration.
policy rule	Configures a policy rule on the switch.
show policy rule	Displays information for policy rules configured on the switch.

MIB Objects

```
alaQoSConfigTable
  alaQoSConfigEnable
  alaQoSConfigTrustedPorts
  alaQoSConfigDefaultQueues
  alaQoSConfigAppliedDefaultQueues
  alaQoSConfigLogLines
  alaQoSConfigLogLevel
  alaQoSConfigLogConsole
  alaQoSConfigFlowTimeout
  alaQoSConfigAppliedFlowTimeout
  alaQoSConfigFragmentTimeout
  alaQoSConfigAppliedFragmentTimeout
  alaQoSConfigReflexiveTimeout
  alaQoSConfigAppliedReflexiveTimeout
  alaQoSConfigNatTimeout
  alaQoSConfigAppliedNatTimeout
  alaQoSConfigClassifyFragments
  alaQoSConfigAppliedClassifyFragments
  alaQoSConfigDefaultMulticastDisposition
  alaQoSConfigAppliedDefaultMulticastDisposition
  alaQoSConfigDefaultDisposition
  alaQoSConfigAppliedDefaultDisposition
  alaQoSConfigDEIMarking
```

qos trust ports

Configures the global trust mode for QoS ports. Trusted ports accepts 802.1p and ToS/DSCP values in incoming packets; untrusted ports sets any 802.1p or ToS/DSCP values to zero in incoming packets, unless a default 802.1p or ToS/DSCP value is configured.

Any port configured through the **qos port** command is automatically added in the trust mode specified by this command. See [page 44-40](#) for more information about this command.

qos trust ports

qos no trust ports

Syntax Definitions

N/A

Defaults

By default, 802.1Q-tagged ports, and mobile ports are trusted; any other port is untrusted by default.

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Use the **qos ports trusted** command to override the default for a particular port.
- The setting only applies to ports with incoming traffic.
- Any port configured for 802.1Q tagging is always trusted regardless of the global setting.
- Mobile ports can be assigned as untrusted ports.
- Use the **qos port default 802.1p** or **qos port default dscp** commands to specify that a value other than zero must be applied to the incoming packets. This value is overridden if a policy exists that specifies a different value for such packets.

Examples

```
-> qos trust ports
-> qos no trust ports
```

Release History

Release 6.6.1; command introduced.

Related Commands

qos port	Configures a physical port for QoS.
qos port trusted	Configures whether a particular port is trusted or untrusted.
show qos port	Displays information about QoS ports.

MIB Objects

alaQoSConfigTable
alaQoSConfigTrustedPorts

qos default servicing mode

Configures the default queuing scheme for destination (egress) ports.

```
qos default servicing mode {strict-priority | wrr [w0 w1 w2 w3 w4 w5 w6 w7] | drd] [w0 w1 w2 w3 w4 w5 w6 w7]
```

Syntax Definitions

strict-priority	Selects the strict priority queuing scheme as the default servicing mode. All eight available queues on a port are serviced strictly by priority.
wrr	Selects the weighted round robin (WRR) queuing scheme as the default servicing mode. Traffic is serviced based on the weight of each queue.
drd	Selects the deficit round robin (DRR) queuing scheme as the default servicing mode. Traffic is serviced based on the weight of each queue.
<i>w0 w1 w2 w3 w4 w5 w6 w7</i>	The value of the desired weight for each of the queues when WRR, priority-WRR, or DRR is the active queuing scheme. The range is 0 to 15.

Defaults

parameter	default
strict-priority priority-wrr wrr drd	strict-priority
<i>w0 w1 w2 w3 w4 w5 w6 w7</i>	1 (best effort)

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Each queue can have a different weight value and configuring these values in ascending or descending order is not required. When a queue is given a weight of 0, it is configured as a Strict-Priority queue.
- Use the **wrr** parameter to configure a Priority-WRR queuing scheme, which consists of a combination of Strict-Priority queues (zero weight) and WRR queues (non-zero weight).
- Using the **qos default servicing mode** command does not override configuration values that were set on a per port basis with the **qos port servicing mode** command.
- The servicing mode only applies to destination (egress) ports as traffic shaping occurs at the destination ports. Even though the **qos port servicing mode** and **qos default servicing mode** commands are allowed on source (ingress) ports, they do not affect traffic on these ports.

Examples

```
-> qos default servicing mode strict-priority
-> qos default servicing mode wrr 1 2 3 4 5 6 7 8
-> qos default servicing mode drd 10 0 12 14 0 0 8 1
```

Release History

Release 6.6.1; command introduced.

Related Commands

qos apply	Applies configured QoS and policy settings to the current configuration.
qos port servicing mode	Configures the servicing mode (SPQ or priority WRR) for a port.
show qos queue	Displays information for all QoS queues.

MIB Objects

```
alaQoSConfig  
  alaQoSConfigServicingMode  
  alaQoSConfigLowPriorityWeight  
  alaQoSConfigMediumPriorityWeight  
  alaQoSConfigHighPriorityWeight  
  alaQoSConfigUrgentPriorityWeight
```

qos forward log

Enables the QoS software in the switch to send events to the policy server software in the switch in real time. The policy server software can then be polled by an NMS application for logged events.

qos forward log

qos no forward log

Syntax Definitions

N/A

Defaults

By default, logged events are not sent to the policy server software in the switch.

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

An NMS application can query the Policy Manager in the switch for logged events. Use the **qos forward log** command to forward each event as it happens.

Examples

```
-> qos forward log
```

Release History

Release 6.6.1; command introduced.

Related Commands

qos log lines	Configures the number of lines in the QoS log.
show qos log	Displays the log of QoS events.

MIB Objects

alaQoSConfigTable
alaQoSConfigForwardLog

qos log console

Sends QoS log messages to the switch logging utility, which is an event logging application available on the OmniSwitch. The configuration of the switch logging utility determines if QoS messages are sent to a log file in the flash file system of the switch, displayed on the switch console, or sent to a remote syslog server.

qos log console

qos no log console

Syntax Definitions

N/A

Defaults

QoS log messages are not sent to the switch logging utility by default.

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- To display QoS log events as they happen on an output console attached to the switch, configure the switch logging utility to output events to the console by using the **swlog output** command.
- Use **show qos log** command to view the entire log at any time.

Examples

```
-> qos log console
-> qos no log console
```

Release History

Release 6.6.1; command introduced.

Related Commands

qos log lines	Configures the number of lines in the QoS log.
swlog output flash file-size	Enables or disables switch logging output to the console, file, or data socket (remote session).
show qos log	Displays the log of QoS events.

MIB Objects

```
alaQoSConfigTable
  alaQoSConfigLogConsole
```

qos log lines

Configures the number of lines in the QoS log.

qos log lines *lines*

Syntax Definitions

lines The number of lines included in the QoS log. A value of zero turns off logging to the console. The range is 0–512.

Defaults

parameter	default
<i>lines</i>	256

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- To turn off logging, enter 0 for the number of log lines. (Note: Error messages are still logged.)
- If you change the number of log lines, you can clear all messages in the QoS log. To avoid clearing all messages in the log, enter the **qos log lines** command in the **boot.cfg** file. The log length is changed at the next reboot.

Examples

```
-> qos log lines 5
-> qos log lines 0
```

Release History

Release 6.6.1; command introduced.

Related Commands

[show qos log](#) Displays the log of QoS events.

MIB Objects

```
alaQoSConfigTable
  alaQoSConfigLogLines
```

qos log level

Configures the level of log detail.

qos log level *level*

qos no log level

Syntax Definitions

level The level of log detail, in the range from 2 (least detail) to 9 (most detail).

Defaults

parameter	default
<i>level</i>	6

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Use the **qos debug** command to change the type of debugging messages that are logged. The **qos log level** command configures the level of detail for these messages.
- If the **qos debug** command is not configured to log any information (default configuration), the **qos log level** command has no effect.
- To log fatal errors only, set the log level to 0.
- A high log level value has an impact on the performance of the switch.

Examples

```
-> qos log level 4  
-> qos log level 0
```

Release History

Release 6.6.1; command introduced.

Related Commands

qos log lines

Configures the number of lines in the QoS log.

debug qos

Configures the type of QoS events that are displayed in the QoS log.

show qos log

Displays the log of QoS events.

MIB Objects

alaQoSConfigTable

 alaQoSConfigLogLevel

qos default bridged disposition

Configures the default disposition for bridged traffic (Layer 2) that comes into the switch and does not match any policies.

qos default bridged disposition {accept | deny | drop}

Syntax Definitions

accept	Specifies that the switch must accept the flow.
drop	Specifies that the switch must silently drop the flow.
deny	Specifies that the switch must drop the flow and issue an ICMP message indicating the flow was dropped for administrative reasons. Currently this option provides the same result as drop ; that is, the flow is silently dropped.

Defaults

By default, the disposition for flows that do match any policies is **accept**.

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Use **policy action disposition** command to configure disposition for particular flows. The disposition for a particular flow overrides the global setting.
- Typically, when configuring IP filtering rules, the global default disposition must be set to **deny**. Filtering rules can then be configured to allow particular types of traffic through the switch.
- If you set the bridged disposition to deny or drop, and you configure rules to allow bridged traffic, each type of allowed traffic must have two rules, one for source and one for destination.

Examples

```
-> qos default bridged disposition deny
```

Release History

Release 6.6.1; command introduced.

Related Commands

policy action disposition Configures a disposition for a policy action.

MIB Objects

```
alaQoSConfigTable  
  alaQoSConfigDefaultBridgedDisposition  
  alaQoSConfigAppliedDefaultBridgedDisposition
```

qos default multicast disposition

Configures the default disposition for multicast flows coming into the switch that do not match any policies.

qos default multicast disposition {accept | deny | drop}

Syntax Definitions

accept	Specifies that the switch must accept the flow.
drop	Specifies that the switch must silently drop the flow.
deny	Specifies that the switch must drop the flow and issue an ICMP message indicating the flow was dropped for administrative reasons. Currently this option provides the same result as drop ; that is, the flow is silently dropped.

Defaults

By default, multicast flows that do not match policies are accepted on the switch.

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

Use the **policy action multicast** command to specify the disposition for a particular action associated with a multicast condition. The disposition for a particular action overrides the global setting.

Examples

```
-> qos default multicast disposition deny
```

Release History

Release 6.6.1; command introduced.

Related Commands

[policy action disposition](#) Configures a disposition for a policy action.

MIB Objects

```
alaQoSConfigTable  
  alaQoSConfigDefaultMulticastDisposition  
  alaQoSConfigAppliedDefaultMulticastDisposition
```

qos stats interval

Configures how often the switch polls network interfaces for statistics about QoS events.

qos stats interval *seconds*

Syntax Definitions

seconds The number of seconds before the switch polls network interfaces for statistics. The range is 10–3600.

Defaults

parameter	default
<i>seconds</i>	60

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Change the statistics interval to a smaller interval if you want to monitor QoS events.
- Change the statistics interval to a larger interval if you want to free some switch memory.

Examples

```
-> qos stats interval 30
```

Release History

Release 6.6.1; command introduced.

Related Commands

[show qos statistics](#) Displays statistics about the QoS configuration.

MIB Objects

alaQoSConfigTable
 alaQoSConfigStatsInterval

qos nms priority

Enables or disables the automatic prioritization of NMS traffic—SSH (TCP Port 22), Telnet (TCP Port 23), WebView (HTTP Port 80) and SNMP (UDP port 161)—that is destined for the switch. Prioritization maximizes access for NMS traffic and helps to reduce the potential for DoS attacks.

qos nms priority

qos no nms priority

Syntax Definitions

N/A

Defaults

By default, NMS traffic prioritization is enabled.

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Use the **no** form of this command to disable automatic prioritization of NMS traffic.
- The NMS traffic from the first eight *active* IP interfaces is prioritized; any such traffic from additional interfaces is not prioritized.
- The precedence of an active IP interface is determined by the value of the SNMP interface index (ifindex), which was assigned to the interface when it was created. The lower the ifindex value the higher the precedence; the higher the ifindex value the lower the precedence. The precedence is determined only for active IP interfaces.
- To change the precedence of an IP interface, use the **ip interface ifindex** command and specify a higher (lower precedence) or lower (higher precedence) ifindex value.
- When automatic NMS prioritization is enabled, QoS policies that specify priority are not applied to the NMS traffic. Other QoS policies, however, are applied to this type of traffic as usual. If a policy specifies rate limiting, then the policy with the lowest rate limiting value is applied.

Examples

```
-> qos nms priority
-> qos no nms priority
```

Release History

Release 6.6.1; command introduced.

Related Commands**show qos config**

Displays the QoS configuration for the switch.

MIB Objects

alaQoSConfigTable

alaQoSConfigAutoNms

qos phones

Enables or disables the automatic prioritization of IP phone traffic.

qos phones priority *priority_value*

qos no phones

Syntax Definitions

priority_value The priority given to scheduling traffic on the output port. Value ranges from 0 (lowest) to 7 (highest).

Defaults

By default, the priority value is set to 5.

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Use the **no** form of this command to disable automatic prioritization of IP phone traffic.
- IP phone traffic is identified by examining the source MAC address of the packet received on the port. If the source MAC falls within one of the following ranges, the QoS IP phone priority is automatically assigned to the MAC:
The IP phone range is:

00-80-9F-54-xx-xx to 00-80-9F-64-xx-xx
00-80-9F-66-xx-xx to 00-80-9F-6F-xx-xx
00-80-9F-8E-xx-xx to 00-80-9F-8F-xx-xx
- To apply the QoS IP phone priority to other, non-IP phone traffic automatically, add the source MAC addresses of such traffic to the QoS “alaPhones” group.
- When automatic prioritization of IP phone traffic is enabled, QoS policies that specify priority are not applied to the IP phone traffic. Other QoS policies, however, are applied to this type of traffic as usual.

Examples

```
-> qos phones priority 7  
-> qos no phones
```

Release History

Release 6.6.1; command introduced.

Related Commands**show qos config**

Displays the QoS configuration for the switch.

MIB Objects

alaQoSConfigTable

alaQoSConfigAutoPhones

qos user-port

Configures the option to filter packets or administratively disable a port when the specified type of traffic is received on a port that is a member of the pre-defined UserPorts group.

qos user-port {**filter** | **shutdown**} {**spoof** | **bpdu** | **rip** | **dhcp-server** | **dns-reply**}

qos no user-port {**filter** | **shutdown**}

Syntax Definitions

filter	Filters the specified type of traffic when it is received on UserPort ports.
shutdown	Administratively disables UserPort ports that receive the specified type of traffic.
spoof	Detects IP spoofing. The source IP address of a packet ingressing on a user port is compared to the subnet of the VLAN for the user port; if these two items do not match, the packet is dropped. Also applies to ARP packets.
bpdu	Filters conventional Spanning Tree BPDU (destination MAC address 0x0180c2:000000) packets and GVRP (destination MAC address 0x0180c2:000021) packets.
rip	Filters RIP protocol packets.
dhcp-server	Filters response packets originating from a DHCP or BOOTP server that is configured on the known UDP port 67.
dns-reply	Filters all packets (both TCP and UDP) that originate from the known DNS port 53.

Defaults

parameter	default
filter	spoof
shutdown	none

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Use the **no** form of this command to disable the filter or shutdown function. This form of the command affects the overall operation of the feature.
- To specify more than one-traffic type in the same command line, enter each type separated by a space (for example, **spoof bpdu rip**).
- Existing traffic types to filter or shutdown are removed each time the **filter** or **shutdown** option is configured. Specify all desired traffic types each time the **qos user-port** command is performed to retain previously configured traffic types.

- No changes to the **filtering** and **shutdown** options are applied to the switch until the **qos apply** command is performed.
- This command only applies to ports that are members of the UserPorts group. Use the **policy port group** command to create and assign members to the UserPorts group.
- An SNMP trap is sent when a port is administratively disabled through a UserPorts shutdown function or a port disable action.
- To enable a port disabled by a user port shutdown operation, use the **interfaces admin** command to administratively enable the port or disconnect and reconnect the port cable.
- Up to 126 IP interfaces are supported with spoof detection on user ports. If the number of interfaces exceeds this amount, user port packets ingressing on those interfaces that exceed the 126 limit are dropped.

Examples

```
-> qos user-port filter spoof bpdu  
-> qos user-port shutdown spoof bpdu rip  
-> qos no user-port shutdown
```

Release History

Release 6.6.1; command introduced.

Related Commands

policy port group	Configures a port group and its associated slot and port numbers.
show qos config	Displays QoS configuration information.

MIB Objects

```
alaQoSConfigTable  
  alaQoSConfigUserportFilter  
  alaQoSConfigAppliedUserportFilter  
  alaQoSConfigUserportShutdown  
  alaQoSConfigAppliedUserportShutdown
```

qos dei

Configures the global Drop Eligible Indicator (DEI) bit marking setting for all QoS ports. The DEI setting applies to packets marked yellow (non-conforming) as the result of Tri-Color Marking (TCM) rate limiting.

qos dei egress

qos no dei egress

Syntax Definitions

egress Marks the DEI/CFI bit for egress packets if TCM marked the packets yellow.

Defaults

By default, no DEI/CFI bit marking is done.

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Use the **no** form of this command to disable the global DEI bit marking (egress) configuration for the switch.
- Use the **qos port dei** command to set the DEI bit marking configuration for a specific port. The port setting takes precedence over the global DEI setting.
- Packets marked yellow by TCM rate limiting are still transmitted when there is no congestion on the egress port queues. Setting the DEI/CFI bit for yellow egress packets (**qos dei egress**) ensures that an upstream switch is made aware that the packet was marked yellow.
- DEI mapping of ingress traffic (**qos port dei ingress**) is not supported.

Examples

```
-> qos dei egress
-> qos no dei egress
```

Release History

Release 6.6.2; command introduced.

Related Commands

qos port	Configures a physical port for QoS.
qos port dei	Configures the Drop Eligible Indicator (DEI) bit marking setting for the specified QoS port.
policy action cir	Configures a Tri-Color Marking policy action.
show qos config	Displays global information about the QoS configuration.
show qos port	Displays information about QoS ports.

MIB Objects

alaQoSConfigTable
alaQoSConfigDEIMarking

qos force-yellow-priority

Configures equal scheduling of yellow traffic on all the egress queues. This command enables you to configure priority value for yellow traffic on OmniSwitch.

qos force-yellow-priority *priority_value*

qos no force-yellow-priority

Syntax Definitions

priority_value The priority value for yellow traffic. Value ranges from 0 (lowest) to 7 (highest).

Defaults

By default, the priority value is set to 0.

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Use the **no** form of this command to remove the equal scheduling of yellow traffic.
- This configuration is global, and cannot be configured on per port basis.

Examples

```
-> qos force-yellow-priority 1
```

```
-> qos no force-yellow-priority
```

Release History

Release 6.6.3; command introduced.

Related Commands

qos port	Configures a physical port for QoS.
qos port dei	Configures the Drop Eligible Indicator (DEI) bit marking setting for the specified QoS port.
policy action cir	Configures a Tri-Color Marking policy action.
show qos config	Displays global information about the QoS configuration.
show qos port	Displays information about QoS ports.

MIB Objects

alaQoSConfigTable

 alaQoSConfigForceYellowPriority

debug qos

Configures the type of QoS events that are displayed in the QoS log.

```
debug qos [info] [config] [rule] [main] [route] [hre] [port] [msg] [sl] [ioctl] [mem] [cam] [mapper]
[flows] [queue] [slot] [l2] [l3] [classifier] [nat] [sem] [pm] [ingress] [egress] [rsvp] [balance] [nimsg]
```

```
debug no qos
```

```
debug no qos [info] [config] [rule] [main] [route] [hre] [port] [msg] [sl] [ioctl] [mem] [cam] [mapper]
[flows] [queue] [slot] [l2] [l3] [classifier] [nat] [sem] [pm] [ingress] [egress] [rsvp] [balance] [nimsg]
```

Syntax Definitions

flows	Logs events for flows on the switch.
queue	Logs events for queues created and destroyed on the switch.
rule	Logs events for rules configured on the switch.
l2	Logs Layer 2 QoS events on the switch.
l3	Logs Layer 3 QoS events on the switch.
nat	Logs events for Network Address Translation policies.
port	Logs events related to QoS ports.
msg	Logs QoS messages.
classifier	Logs information whenever the switch classifies a flow; if the log level is higher, more details are provided.
info	Logs basic information about the switch
config	Logs information about the global configuration.
main	Logs information about basic program interfaces.
route	Logs information about routing.
hre	Logs information about hardware route programming.
sl	Logs information about source learning.
mem	Logs information about memory.
cam	Logs information about CAM operations.
mapper	Logs information about mapping queues.
slot	Logs events related to slots.
sem	Logs information about semaphore, process locking.
pm	Logs events related to the Policy Manager.
ingress	Logs information about packets arriving on the switch.
egress	Logs information about packets leaving the switch.
rsvp	Logs information about RSVP flows. <i>Currently not supported.</i>
balance	Logs information about flows that are part of a load balancing cluster.
nimsg	Logs information about QoS interfaces.

Defaults

By default basic information messages are logged (**info**). Error messages are always logged.

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Use the **no** form of this command to change the type of messages that are logged or to return debugging to its default state.
- Use this command to troubleshoot QoS events on the switch.

Examples

```
-> debug qos flows queue
-> qos debug no flows no queue
-> debug no qos
```

Release History

Release 6.6.1; command introduced.

Related Commands

qos forward log	Enables the switch to send events to the PolicyView application in real time.
qos log lines	Configures the number of lines in the QoS log.
show qos log	Displays the log of QoS events.

MIB Objects

```
alaQoSConfigTable
  alaQoSConfigDebug
```

debug qos internal

Displays debugging information for QoS internal to the switch.

debug qos internal [*slice slot/slice*] [**flow**] [**queue**] [**port**] [**l2tree**] [**l3tree**] [**vector**] [**pending**] [**verbose**] [**mapper**] [**pool**] [**log**] [**pingonly** | **nopingonly**]

Syntax Definitions

<i>slot/slice</i>	The slot number and slice for which you want to view debugging information. A <i>slice</i> is a logical section of hardware that corresponds to particular ports on a network interface module.
flow	Displays information about QoS flows.
queue	Displays information about QoS queues.
port	Displays information about QoS ports.
l2tree	Displays information about Layer 2 flows.
l3tree	Displays information about Layer 3 flows.
vector	Displays information about vectors.
pending	Displays information about pending QoS objects.
verbose	Sets the output to verbose mode for more detailed information.
mapper	Displays information about QoS mapping flows to queues.
pool	Displays information about the buffer pool.
log	Displays information about QoS information that is logged.
pingonly	Specifies that any policies configured with an ICMP protocol condition apply only to ICMP echo-requests.
nopingonly	Configures the switch so that any policies configured with an ICMP protocol condition apply to any ICMP packets.

Defaults

Debugging is disabled by default.

parameter	default
pingonly nopingonly	nopingonly

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

Use the **debug qos** command to set the level of log detail in the QoS log.

Examples

```
-> debug qos internal "verbose log"
```

Release History

Release 6.6.1; command introduced.

Related Commands

debug qos	Configures the type of QoS events that are displayed in the QoS log.
policy condition ip protocol	Configures an IP protocol for a policy condition.

MIB Objects

N/A

qos clear log

Clears messages in the current QoS log.

qos clear log

Syntax Definitions

N/A

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

This command is useful for clearing messages from a large log file so that the file is easier to view. Logs can get large if invalid rules are configured on the switch, or if many QoS events have taken place. Clearing the log makes the file easier to manage.

Examples

```
-> qos clear log
```

Release History

Release 6.6.1; command introduced.

Related Commands

qos log lines	Configures the number of lines in the QoS log.
debug qos	Configures the type of QoS events that are displayed in the QoS log.
show qos log	Displays the log of QoS events.

MIB Objects

alaQoSConfigTable
alaQoSConfigClearLog

qos apply

Applies configured global QoS and policy settings to the current configuration (changes are active and stored in flash).

qos apply

Syntax Definitions

N/A

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- **qos apply** command is required to activate all QoS and policy commands, and is the only command that causes current changes to be written to flash.
- Rules are configured through the **policy rule** command, but are not active on the switch until you enter **qos apply**.

Examples

```
-> qos apply
```

Release History

Release 6.6.1; command introduced.

Related Commands

qos revert	Removes any policies configured through policy rule but not applied to the current configuration through the qos apply command.
qos reset	Resets the QoS configuration to its default values.
qos flush	Deletes all pending policy information.

MIB Objects

```
alaQoSConfigTable  
  alaQoSConfigApply
```

qos revert

Deletes any QoS configuration that has not been applied to the configuration through the **qos apply** command.

qos revert

Syntax Definitions

N/A

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

Use this command to remove currently configured policies that have not yet been activated through the **qos apply** command.

Examples

```
-> qos revert
```

Release History

Release 6.6.1; command introduced.

Related Commands

policy rule	Configures a policy rule and saves it to the current configuration but does not make it active on the switch.
qos apply	Applies all QoS settings configured on the switch to the current configuration.
qos reset	Resets the QoS configuration to its defaults.

MIB Objects

```
alaQoSConfigTable  
  alaQoSConfigRevert
```

qos flush

Deletes all pending policy information. This command is different from **qos revert**, which returns the pending policy configuration to its last applied settings.

qos flush

Syntax Definitions

N/A

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- If you enter this command, the pending policy configuration is erased. If you then enter **qos apply**, the erased configuration *overwrites the applied policies and the entire policy configuration is erased*.

Note. Do not use this command unless you want to erase all of your policy configuration and start configuring new policies.

- Use the **qos revert** command to return the pending policy configuration to its last applied value.
- Policy configuration includes the following commands:

base commands

policy rule	policy mac group
policy network group	policy port group
policy service	policy condition
policy service group	policy action

Examples

```
-> qos flush
```

Release History

Release 6.6.1; command introduced.

Related Commands

- qos revert** Deletes any QoS configuration that has not been applied to the configuration through the **qos apply** command.
- qos apply** Applies configured global QoS and policy settings to the current configuration (changes are active and stored in flash).
- policy server flush** Removes all cached LDAP policy data from the switch.

MIB Objects

alaQoSConfigTable
 alaQoSConfigFlush

qos reset

Resets the QoS configuration to its defaults.

qos reset

Syntax Definitions

N/A

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

Use this command to reset QoS configuration that has not yet been applied through the **qos apply** command. The parameters are reset to their defaults.

Examples

```
-> qos reset
```

Release History

Release 6.6.1; command introduced.

Related Commands

qos apply	Applies all QoS settings configured on the switch to the current configuration.
qos revert	Deletes any QoS configuration that has not been applied to the configuration through the qos apply command.

MIB Objects

```
alaQoSConfigTable  
  alaQoSConfigReset
```

qos stats reset

Resets QoS statistic counters to zero.

qos stats reset [egress]

Syntax Definitions

N/A

Defaults

All QoS statistic counters are reset to zero.

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Use this command to reset global QoS statistics to zero. Statistics are displayed with the **show qos statistics** command.
- Use the **egress** parameter to reset only the egress CoS queue statistics to zero. Statistics are displayed with the **show qos queue** command.

Examples

```
-> qos stats reset  
-> qos stats reset egress
```

Release History

Release 6.6.1; command introduced.
Release 6.6.2; **egress** parameter added.

Related Commands

show qos statistics	Displays statistics about the QoS configuration.
show qos queue	Displays QoS egress CoS queue statistics.

MIB Objects

```
alaQoSConfigTable  
  alaQoSConfigStatsReset
```

qos port reset

Resets all QoS port configuration to the default values.

qos port *slot/port* reset

Syntax Definitions

slot/port The physical slot and port number. For example: 3/1.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

The QoS port configuration parameters that are reset include:

parameter	default
default queues	8
trusted	not trusted

Examples

```
-> qos port 3/1 reset
```

Release History

Release 6.6.1; command introduced.

MIB Objects

```
alaQoSPortTable  
  alaQoSPortSlot  
  alaQoSPortPort  
  alaQoSPortReset
```

qos port

Configures QoS parameters for a physical port. This section describes the base command with a single required option (*slot/port*).

In lieu of these options, the base command (**qos port**) can be used with other keywords to set up a QoS configuration on a per port basis. These keywords are listed here and described as separate commands later in this chapter. In addition, some keywords have a **no** form to remove the parameter or return it to its default.

qos port *slot/port*

[**trusted**]

[**servicing mode**]

[**maximum bandwidth**]

[**maximum egress-bandwidth**]

[**maximum ingress-bandwidth**]

[**default 802.1p** *value*]

[**default dscp** *value*]

[**default classification** {**802.1p** | **tos** | **dscp**}]

[**dei**]

Syntax Definitions

slot/port

The physical slot and port number. For example: 4/1.

Defaults

- By default, ports are not trusted.
- By default, QoS ports do not preempt queues of lower priority.

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

Use the **trusted** option to change the trust mode for the port.

Examples

```
-> qos port 3/1 trusted
-> qos port 4/2 no trusted
```

Release History

Release 6.6.1; command introduced.

Release 6.6.2; **DEI** field added.

Related Commands

qos apply	Applies configured QoS and policy settings to the current configuration.
qos port	Configures whether the default mode for QoS ports is trusted or untrusted.
show qos port	Displays information about QoS ports.

MIB Objects

```
alaQoSPortTable  
  alaQoSPortSlot  
  alaQoSPortPort  
  alaQoSPortTrusted  
  alaQoSPortDefault8021p  
  alaQoSPortDefaultDSCP  
  alaQoSPortMaximumDefaultBandwidth  
  alaQoSPortAppliedMaximumDefaultBandwidth  
  alaQoSPortDefaultClassification  
  alaQoSPortAppliedDefaultClassification  
  alaQoSPortLowPriorityWeight  
  alaQoSPortAppliedLowPriorityWeight  
  alaQoSPortMediumPriorityWeight  
  alaQoSPortAppliedMediumPriorityWeight  
  alaQoSPortHighPriorityWeight  
  alaQoSPortAppliedHighPriorityWeight  
  alaQoSPortUrgentPriorityWeight  
  alaQoSPortAppliedUrgentPriorityWeight  
  alaQoSPortDEIMarking
```

qos port trusted

Configures whether an individual port is trusted or untrusted. Trusted ports accepts the 802.1p and ToS/DSCP values in incoming packets; untrusted ports sets any 802.1p or ToS/DSCP values to zero in incoming packets, unless a default 802.1p or ToS/DSCP value is configured.

qos port *slot/port* trusted

qos port *slot/port* no trusted

Syntax Definitions

slot/port The slot number and port number of the physical port.

Defaults

By default, QoS ports are not trusted.

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Use the **qos trust ports** command to set the default trust mode for all QoS ports. Use **qos port trusted** command to override the default value for QoS ports.
- The setting applies only to ports with incoming traffic.
- Use the **qos port default 802.1p** or **qos port default dscp** commands to specify that a value other than zero must be applied to the incoming packets. This value is overridden if a policy exists that specifies a different 802.1p or ToS/DSCP value for such packets.

Examples

```
-> qos port 3/1 trusted  
-> qos port 4/2 no trusted
```

Release History

Release 6.6.1; command introduced.

Related Commands

qos apply	Applies configured QoS and policy settings to the current configuration.
qos port	Configures a physical port for QoS.
qos trust ports	Configures the global trust mode for QoS ports.
show qos port	Displays information about QoS ports.

MIB Objects

alaQoSPortTable
 alaQoSPortTrusted

qos port servicing mode

Configures a queuing scheme for an individual destination (egress) port.

qos port *slot/port* **servicing mode** {**strict-priority** | **wrr** [*w0 w1 w2 w3 w4 w5 w6 w7*] | **drr** [*w0 w1 w2 w3 w4 w5 w6 w7*] | **default**}

Syntax Definitions

<i>slot/port</i>	The slot and port number to which this servicing mode applies.
strict-priority	Selects the strict priority queuing scheme as the servicing mode for the specified port. All eight available queues on a port are serviced strictly by priority.
wrr	Selects the weighted round robin (WRR) queuing scheme as the default servicing mode. Traffic is serviced based on the weight of each queue.
drr	Selects the deficit round robin (DRR) queuing scheme as the default servicing mode. Traffic is serviced based on the weight of each queue.
<i>w0 w1 w2 w3 w4 w5 w6 w7</i>	The value of the desired weight for each of the queues when WRR, Priority WRR, or, DRR is the active queuing scheme. The range is 0 to 15.
default	Selects the switch default servicing mode for the port. The default mode is configured using the qos default servicing mode command.

Defaults

parameter	default
strict-priority priority-wrr wrr drr	strict-priority
<i>w0 w1 w2 w3 w4 w5 w6 w7</i>	1 (best effort)

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Each queue can have a different weight value and configuring these values in ascending or descending order is *not* required. When a queue is given a weight of 0, it is configured as a Strict-Priority queue.
- Use the **wrr** parameter to configure a Priority-WRR queuing scheme, which consists of a combination of Strict-Priority queues (zero weight) and WRR queues (non-zero weight).
- The **qos port servicing mode** command overrides the servicing mode configured with the **qos default servicing mode** command. Servicing mode configurations can be applied to a maximum of five ports per slot.
- The servicing mode only applies to destination (egress) ports as traffic shaping occurs at the destination ports. Even though the **qos port servicing mode** and **qos default servicing mode** commands are allowed on source (ingress) ports, they do not affect traffic on these ports.

- Once the **qos port servicing mode** command is used on a port, this same command is required to make any additional mode changes for that port. If the port is changed back to the default servicing mode, however, this restriction is removed and the **qos default servicing mode** command is also allowed on the port.

Examples

```
-> qos port 3/1 servicing mode strict-priority
-> qos port 3/3 servicing mode wrr 1 2 3 4 5 6 7 8
-> qos default servicing mode priority-wrr 0 10 0 9 0 0 2 3
-> qos port 3/4 servicing mode drr 10 11 12 13 14 15 16 17
-> qos port 3/2 servicing mode default
```

Release History

Release 6.6.1; command introduced.

Related Commands

qos apply	Applies configured QoS and policy settings to the current configuration.
qos default servicing mode	Configures the default servicing mode for all switch ports.
show qos queue	Displays information for all QoS queues.

MIB Objects

```
alaQoSPortTable
  alaQoSPortServicingMode
  alaQoSPortQ0PriorityWeight
  alaQoSPortQ1PriorityWeight
  alaQoSPortQ2PriorityWeight
  alaQoSPortQ3PriorityWeight
  alaQoSPortQ4PriorityWeight
  alaQoSPortQ5PriorityWeight
  alaQoSPortQ6PriorityWeight
  alaQoSPortQ7PriorityWeight
```

qos port q maxbw

Configures a maximum bandwidth for each of the eight COS egress queues on the specified port.

qos port *slot/port* **qn maxbw** *kbps*

qos port *slot/port* **no qn maxbw** *kbps*

Syntax Definitions

<i>slot/port</i>	The slot/port on which the COS max bandwidth is configured.
<i>n</i>	The number of the queue for the specified port. Range is 1 to 8.
<i>kbps</i>	The maximum bandwidth value (in Kbits per second). The value can be entered as an integer (for example, 10000) or with abbreviated units (for example, 10 k , 10 m , 10 g , or 10 t). If the value is entered in bits per second, the switch rounds the value up to the nearest thousand.

Defaults

By default the maximum bandwidth value for each queue is set to zero (port speed).

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Use the **no** form of this command to return the maximum bandwidth value for the specified queue to the default value (zero).
- Configuring the maximum bandwidth for the same queue is allowed on the same command line (see the “Examples” section).
- Configuring the bandwidth values for different queues requires a separate command for each queue.

Examples

```
-> qos port 1/3 q1 maxbw 5g
-> qos port 1/3 q2 maxbw 4g
-> qos port 2/1 q7 maxbw 50k
-> qos port 1/3 no q1 maxbw
```

Release History

Release 6.6.1; command introduced.

Related Commands

qos apply	Applies configured QoS and policy settings to the current configuration.
qos default servicing mode	Configures the default servicing mode for all switch ports.
show qos queue	Displays information for all QoS queues.

MIB Objects

```
alaQoSPortTable  
  alaQoSPortSlot  
  alaQoSPortPort  
  alaQoSPortCOS0MaximumBandwidth  
  alaQoSPortCOS1MaximumBandwidth  
  alaQoSPortCOS2MaximumBandwidth  
  alaQoSPortCOS3MaximumBandwidth  
  alaQoSPortCOS4MaximumBandwidth  
  alaQoSPortCOS5MaximumBandwidth  
  alaQoSPortCOS6MaximumBandwidth  
  alaQoSPortCOS7MaximumBandwidth
```

qos port maximum egress-bandwidth

Configures the maximum rate at which to send traffic on the specified QoS port.

qos port *slot/port* **maximum egress-bandwidth** *bps*

qos port *slot/port* **no maximum egress-bandwidth**

Syntax Definitions

slot/port

The slot number and port number of the physical port.

bps

The maximum amount of bandwidth that can be used for all traffic egressing on the QoS port.

Defaults

By default, the maximum bandwidth is the maximum allowed for the interface type on which the port resides.

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Use the **no** form of this command to remove a configured maximum egress bandwidth value from a port.
- When configuring the maximum egress bandwidth for a combo port, specify the bandwidth value in multiples of 2 Mbps.
- The maximum egress bandwidth value cannot exceed the maximum bandwidth of the interface type associated with the port.
- Modifying the maximum egress bandwidth is most useful for low-bandwidth links.

Examples

```
-> qos port 3/1 maximum egress-bandwidth 1000  
-> qos port 3/1 no maximum egress-bandwidth
```

Release History

Release 6.6.1; command introduced.

Related Commands

qos port maximum ingress-bandwidth

Configures the rate at which traffic is received on a QoS port.

qos apply

Applies configured QoS and policy settings to the current configuration.

qos port

Configures a physical port for QoS.

show qos port

Displays information about QoS ports.

MIB Objects

alaQoSPortTable

 alaQoSPortSlot

 alaQoSPortPort

 alaQoSPortMaximumBandwidth

 alaQoSPortMaximumBandwidthStatus

qos port maximum ingress-bandwidth

Configures the maximum rate at which traffic is received on a QoS port.

qos port *slot/port* **maximum ingress-bandwidth** *bps*

qos port *slot/port* **no maximum ingress-bandwidth**

Syntax Definitions

slot/port

The slot number and port number of the physical port.

bps

The maximum amount of bandwidth that can be used for all traffic ingressing on the QoS port.

Defaults

By default, the maximum bandwidth is the maximum allowed for the interface type on which the port resides.

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Use the **no** form of this command to remove a configured maximum ingress bandwidth value from a port.
- The maximum ingress bandwidth value cannot exceed the maximum bandwidth of the interface type associated with the port.
- Modifying the maximum ingress bandwidth is most useful for low-bandwidth links.

Examples

```
-> qos port 3/1 maximum ingress-bandwidth 1000  
-> qos port 3/1 no maximum ingress-bandwidth
```

Release History

Release 6.6.1; command introduced.

Related Commands

qos port maximum egress-bandwidth

Configures the rate at which traffic is sent on a QoS port.

qos apply

Applies configured QoS and policy settings to the current configuration.

qos port

Configures a physical port for QoS.

show qos port

Displays information about QoS ports.

MIB Objects

alaQoSPortTable

 alaQoSPortSlot

 alaQoSPortPort

 alaQoSPortMaximumIngBandwidth

 alaQoSPortMaximumIngBandwidthStatus

qos port default 802.1p

Configures the 802.1p value to be inserted in flows ingressing on an untrusted port.

qos port *slot/port* **default 802.1p** *value*

Syntax Definitions

<i>slot/port</i>	The slot number and port number of the physical port.
<i>value</i>	The priority value to be set. Values range from 0 (lowest priority) to 7 (highest priority).

Defaults

parameter	default
<i>value</i>	0

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- By default, untrusted ports sets the 802.1p bit to zero on incoming flows. Use this command to specify that a different 802.1p value must be applied to the flow.
- If there is a matching QoS policy rule that sets the priority, the default 802.1p value is not used.
- On the 802.1p bit for tagged packets received on untrusted ports is set with the default 802.1p value, which is configured using the **qos port default 802.1p** command. If the packet is untagged, however, then the DSCP bit is set with the default DSCP value, which is configured using the **qos port default dscp** command.

Examples

```
-> qos port 3/1 default 802.1p 5
```

Release History

Release 6.6.1; command introduced.

Related Commands

qos apply	Applies configured QoS and policy settings to the current configuration.
qos port	Configures a physical port for QoS.
show qos port	Displays information about QoS ports.

MIB Objects

```
alaQoSPortTable  
  alaQoSPortDefault8021p  
  alaQoSAppliedPortDefault8021p
```

qos port default dscp

Configures the ToS/DSCP value to be inserted in flows ingressing on an untrusted port.

qos port *slot/port* **default dscp** *value*

Syntax Definitions

slot/port The slot number and port number of the physical port.
value The ToS/DSCP value. The range is 0–63.

Defaults

parameter	default
<i>value</i>	0

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- The value configured by this command sets the upper byte (precedence) and therefore configures the ToS/DSCP value for the port.
- If there is a matching QoS policy rule that sets the priority, the default DSCP value is not used.
- On the 802.1p bit for tagged packets received on untrusted ports is set with the default 802.1p value, which is configured using the **qos port default 802.1p** command. If the packet is untagged, however, then the DSCP bit is set with the default DSCP value, which is configured using the **qos port default dscp** command.

Examples

```
-> qos port 3/1 default dscp 63
```

Release History

Release 6.6.1; command introduced.

Related Commands

qos apply	Applies configured QoS and policy settings to the current configuration.
qos port	Configures a physical port for QoS.
show qos port	Displays information about QoS ports.

MIB Objects

```
alaQoSPortTable  
  alaQoSPortDefaultDSCP  
  alaQoSAppliedPortDefaultDSCP
```

qos port default classification

Specifies the default egress priority value to use for IP traffic ingressing on trusted ports.

qos port *slot/port* default classification {802.1p | dscp}

Syntax Definitions

<i>slot/port</i>	The slot number and port number of the physical port.
802.1p	Specifies that the 802.1p value of the flow is used to prioritize flows coming in on the port.
dscp	Specifies that DSCP value of the flow is used to prioritize flows coming in on the port.

Defaults

parameter	default
802.1p dscp	dscp

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- The egress priority assigned to an IP packet received on a trusted port is based on the DSCP value of the packet unless 802.1p is specified using this command.
- The default classification priority is not used if there is a matching QoS policy rule that sets the egress priority value.
- This command does not affect Layer 2 traffic, which is always classified with 802.1p.
- In some network situations, some IP traffic can be dropped before any QoS rules can take effect for the traffic.

Examples

```
-> qos port 8/24 default classification dscp
-> qos port 7/1 default classification 802.1p
```

Release History

Release 6.6.1; command introduced.

Related Commands

qos apply	Applies configured QoS and policy settings to the current configuration.
qos port	Configures a physical port for QoS.
show qos port	Displays information about QoS ports.

MIB Objects

alaQoSPortTable
alaQoSPortDefaultClassification

qos port dei

Configures the Drop Eligible Indicator (DEI) bit marking setting for the specified QoS port. The DEI setting applies to packets marked yellow (non-conforming) as the result of Tri-Color Marking (TCM) rate limiting.

qos port *slot/port* **dei** [**egress**]

qos port *slot/port* **no dei** [**egress**]

Syntax Definitions

<i>slot/port</i>	The slot number and port number of the physical port.
egress	Sets the DEI/CFI bit for egress packets if TCM has marked the packets as yellow.

Defaults

By default, no DEI/CFI bit marking is done.

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Use the **no** form of this command to disable the DEI bit marking (egress) configuration for the specified port
- Use the **qos dei** command to set the global DEI bit marking configuration for all QoS switch ports. The port-level setting takes precedence over the global DEI setting.
- Packets marked yellow by TCM rate limiting are still transmitted when there is no congestion on the egress port queues. Setting the DEI/CFI bit for yellow egress packets (**qos port dei egress**) ensures that an upstream switch is made aware that the packet was marked yellow.
- DEI mapping of ingress traffic (**qos port dei ingress**) is not supported.

Examples

```
-> qos port 1/20 dei egress
-> qos port dei egress
-> qos port 1/20 no dei egress
```

Release History

Release 6.6.2; command introduced.

Related Commands

qos port	Configures a physical port for QoS.
qos dei	Configures the global Drop Eligible Indicator (DEI) bit marking setting for all QoS ports.
policy action cir	Configures a Tri-Color Marking policy action.
show qos config	Displays global information about the QoS configuration.
show qos port	Displays information about QoS ports.

MIB Objects

```
alaQoSPortTable  
  alaQoSConfig  
    alaQoSConfigDEIMarking  
      alaQoSPortDEIMarking
```

show qos port

Displays information about all QoS ports or a particular port.

show qos port [*slot/port*] [*statistics*]

Syntax Definitions

slot/port The physical slot and port number. For example: 3/1.
statistics Displays statistics for high-density gigabit modules.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Information for all ports is displayed unless a particular port is specified.
- Use the **qos port** command to configure port parameters.
- For ports that are trusted (**Yes** displays in the Trust field), the Trust field includes one of the following characters:

character	definition
+	Indicates that the port is manually configured as trusted through the qos port trusted command; the port setting takes precedence over the global trust setting configured through the qos trust ports command.
*	Indicates that the port is automatically trusted regardless of the global setting set through the qos trust ports command. (Applies to mobile ports and ports configured for 802.1Q.)

Examples

```
-> show qos port
```

```
Slot/           Default Default      Queues   Bandwidth      DEI
Port Active Trust P/DSCP Classification Deflt Total Physical Egress  Mark  Type
-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+
1/1   Yes    No  0/ 0      DSCP        8      0     100M     -     Yes  ethernet
1/2   No     No  0/ 0      DSCP        8      0      0K      -     No   ethernet
1/3   No     No  0/ 0      DSCP        8      0      0K      -     No   ethernet
1/4   No     No  0/ 0      DSCP        8      0      0K      -     No   ethernet
1/5   No     No  0/ 0      DSCP        8      0      0K      -     No   ethernet
1/6   No     No  0/ 0      DSCP        8      0      0K      -     No   ethernet
1/7   No     No  0/ 0      DSCP        8      0      0K      -     No   ethernet
1/8   No     No  0/ 0      DSCP        8      0      0K      -     No   ethernet
```



```

1/9   No   No   0/ 0   DSCP   8   0   0K   -   No   ethernet
1/10  No   No   0/ 0   DSCP   8   0   0K   -   Yes  ethernet
1/11  No   No   0/ 0   DSCP   8   0   0K   -   No   ethernet
1/12  No   No   0/ 0   DSCP   8   0   0K   -   No   ethernet

```

```
-> show qos port 1/1
```

```

Slot/           Default Default      Queues  Bandwidth      DEI
Port Active Trust P/DSCP  Classification Deflt Total Physical Egress Mark Type
-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+
5/1  Yes   No   0/ 0   DSCP           8     0   100M     -   Yes  ethernet

```

output definitions

Slot/Port	The slot and physical port number.
Active	Whether the port is sending or receiving QoS traffic.
Trust	Whether the port is trusted or not trusted.
Default P	The default 802.1p setting for the port.
Default DSCP	The default ToS/DSCP setting for the port.
Default Classification	The default classification setting for the port (802.1p or DSCP).
Default Queues	The number of default queues.
Total Queues	The total number of queues.
Physical Bandwidth	The amount of physical bandwidth available on the port.
Egress	The amount of egress bandwidth for the port.
DEI Mark	Whether the port sets the DEI bit for yellow (non-conforming) egress packets.
Type	The interface type: ethernet or wan .

Release History

Release 6.6.1; command introduced.
 Release 6.6.2; **DEI Mark** field added.

Related Commands

[qos port](#) Configures a physical port for QoS.

MIB Objects

```

alaQoSPortTable
  alaQoSPortSlot
  alaQoSPortPort
  alaQoSPortEnabled
  alaQoSPortDefault8021p
  alaQoSPortDefaultDSCP
  alaQoSPortDefaultQueues
  alaQoSPortMaximumReservedBandwidth
  alaQoSPortMaximumDefaultBandwidth
  alaQoSPortDefaultClassification
  alaQoSPortDEIMarking

```

```
alaQoSClassify
  alaQoSClassifySourceInterfaceType
```

show qos queue

Displays information for all QoS queues or only for those queues associated with a specific port.

show qos queue [*slot/port*]

Syntax Definitions

slot/port The physical slot and port number. For example: 3/1.

Defaults

By default, statistics are displayed for all queues.

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

Use the *slot/port* parameter to display queue statistics for a specific port.

Examples

-> show qos queue 2/10

Slot/ Port	VPN	Q			Bandwidth		Max Bufs	Max Depth	Packets Xmit/Drop	Type
		No	Pri	Wt	Min	Max				
2/10	102	0	0	-	*	*	*	*	1000/20	PRI
2/10	102	1	0	-	*	*	*	*	1000/20	PRI
2/10	102	2	0	-	*	*	*	*	1000/20	PRI
2/10	102	3	0	-	*	*	*	*	1000/20	PRI
2/10	102	4	0	-	*	*	*	*	1000/20	PRI
2/10	102	5	0	-	*	*	*	*	1000/20	PRI
Total Xmit Packets:				184368,						
Total Drop Packets:				0						

output definitions

Slot/Port	The physical slot/port numbers associated with the queue.
VPN	The virtual port number associated with the queue.
Q No	The queue number (0 through 7).
Pri	The priority associated with the queue (0 through 7), configured through the policy action priority command.
Wt	The weight value assigned to each queue. Configured through the qos default servicing mode and qos port servicing mode commands.
Bandwidth Min	The minimum bandwidth requirement for the queue.

output definitions (continued)

Bandwidth Max	The maximum bandwidth requirement for the queue (the bandwidth allowed by the maximum configured for all actions associated with the queue). Configured through the policy action maximum bandwidth command.
Max Bufs	The number of buffers associated with the queue.
Max Depth	The maximum queue depth, in bytes. Configured through the policy action maximum depth command.
Packets Xmit/Drop	The number of packets transmitted/dropped from this queue.
Type	The type of queuing performed on this queue (pri, wrr, drr).
Priority	The number of high and low priority packets per queue.
Transmit/Dropped Packet/Bytes	The number of packets and bytes transmitted or dropped per queue.
Transmit/Dropped/Mbits	The rate of Mbits transmitted or dropped per port <i>per queue</i> displayed in seconds.

Release History

Release 6.6.1; command introduced.

Release 6.6.2; *slot/port* and **statistics** parameters added.

Release 6.6.4; *Mbits/sec* added in the output of the command.

Related Commands

policy rule	Configures a policy rule on the switch. A rule is made up of a condition (for classifying incoming traffic) and an action (to be applied to outgoing traffic).
show qos queue statistics	Displays queue details including statistics on a specific port in a system.

MIB Objects

alaQoSQueueTable

- alaQoSQueueId
- alaQoSQueueSlot
- alaQoSQueuePort
- alaQoSQueuePortId
- alaQoSQueueType
- alaQoSQueuePriority
- alaQoSQueueMinimumBandwidth
- alaQoSQueueMaximumBandwidth
- alaQoSQueueAverageBandwidth
- alaQoSQueueMaximumDepth
- alaQoSQueueMaximumBuffers
- alaQoSQueue8021p
- alaQoSQueuePacketsSent
- alaQoSQueuePacketsDropped
- alaQoSQueueMaxLength
- alaQoSQueueAverageLength
- alaQoSQueueCurrentLength

alaQoSQueueStatsTable

- alaQoSQueueStatsEntry
- alaQoSStatsQueueId
- alaQoSQueueStatsSlot
- alaQoSQueueStatsPort
- alaQoSQueueStatsPriority
- alaQoSQueueStatsPacketsSent
- alaQoSQueueStatsPacketsDropped
- alaQoSQueueStatsBytesSent
- alaQoSQueueStatsBytesDropped
- alaQoSQueueStatsRateSent
- alaQoSQueueStatsRateDropped

show qos queue statistics

Displays queue details including statistics on a specific port in a system.

show qos queue statistics [*slot/port*]

Syntax Definitions

slot/port The physical slot and port number. For example: 3/1.

Defaults

By default, statistics are displayed for all queues.

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Use the *slot/port* parameter to display queue statistics for a specific port.
- Use this command to display Queue details including statistics of a specific port.
- As per the current implementation, the statistics are replayed at the end of configured QoS statistics interval. For example, if a 10 second interval is configured, at 10th second the rate counter statistics(mbps/sec) are populated. In the next 10 seconds, if no traffic is sent the rate counters display zero.
- Due to hardware limitations, the counter can hold data upto 34.3 Gig Bytes (35 Bit Counter) in an interval, after that it will wrap around. After each interval this counter is reset. So the interval has to be configured appropriately to ensure the counter does not wrap.
- For 1G traffic maximum supported time interval is around 200-230 secs with max frame size. By default the interval is 60 seconds and minimum supported interval is 10 seconds.
- QoS statistics interval of 10-20 seconds interval will be ideal for all type of port speed.

Examples

```
-> show qos queue statistics 3/1
```

Slot/ Port	Q No	Pri	Transmit Packets	bytes	Mbits/sec	Dropped Packets	bytes	Mbits/sec
3/1	0	High	311989	22463208	10	0	0	0
3/1	0	Low	0	0	0	0	0	0
3/1	1	High	311408	22421376	10	0	0	0
3/1	1	Low	0	0	0	0	0	0
3/1	2	High	310827	22379544	10	0	0	0
3/1	2	Low	0	0	0	0	0	0
3/1	3	High	310240	22337280	10	0	0	0
3/1	3	Low	0	0	0	0	0	0
3/1	4	High	309660	22295520	10	0	0	0
3/1	4	Low	0	0	0	0	0	0
3/1	5	High	309082	22253904	10	0	0	0
3/1	5	Low	0	0	0	0	0	0

3/1	6	High	310435	22362210	10	0	0	0
3/1	6	Low	0	0	0	0	0	0

output definitions

Slot/Port	The physical slot/port numbers associated with the queue.
VPN	The virtual port number associated with the queue.
Q No	The queue number (0 through 7).
Pri	The priority associated with the queue (0 through 7), configured through the policy action priority command.
Wt	The weight value assigned to each queue. Configured through the qos default servicing mode and qos port servicing mode commands.
Bandwidth Min	The minimum bandwidth requirement for the queue.
Bandwidth Max	The maximum bandwidth requirement for the queue (the bandwidth allowed by the maximum configured for all actions associated with the queue). Configured through the policy action maximum bandwidth command.
Max Bufs	The number of buffers associated with the queue.
Max Depth	The maximum queue depth, in bytes. Configured through the policy action maximum depth command.
Packets Xmit/Drop	The number of packets transmitted/dropped from this queue.
Type	The type of queuing performed on this queue (pri , wrr , drr).
Priority	The number of high and low priority packets per queue.
Transmit/Dropped Packet/Bytes	The number of packets and bytes transmitted or dropped per queue.
Transmit/Dropped/Mbits	The rate of Mbits transmitted or dropped per port <i>per queue</i> displayed in seconds.

Release History

Release 6.6.4; command introduced.

Related Commands

policy rule	Configures a policy rule on the switch. A rule is made up of a condition (for classifying incoming traffic) and an action (to be applied to outgoing traffic).
show qos queue	Displays information for all QoS queues or only for those queues associated with a specific port.

MIB Objects

alaQoSQueueTable

- alaQoSQueueId
- alaQoSQueueSlot
- alaQoSQueuePort
- alaQoSQueuePortId
- alaQoSQueueType
- alaQoSQueuePriority
- alaQoSQueueMinimumBandwidth
- alaQoSQueueMaximumBandwidth
- alaQoSQueueAverageBandwidth
- alaQoSQueueMaximumDepth
- alaQoSQueueMaximumBuffers
- alaQoSQueue8021p
- alaQoSQueuePacketsSent
- alaQoSQueuePacketsDropped
- alaQoSQueueMaxLength
- alaQoSQueueAverageLength
- alaQoSQueueCurrentLength

alaQoSQueueStatsTable

- alaQoSQueueStatsEntry
- alaQoSStatsQueueId
- alaQoSQueueStatsSlot
- alaQoSQueueStatsPort
- alaQoSQueueStatsPriority
- alaQoSQueueStatsPacketsSent
- alaQoSQueueStatsPacketsDropped
- alaQoSQueueStatsBytesSent
- alaQoSQueueStatsBytesDropped
- alaQoSQueueStatsRateSent
- alaQoSQueueStatsRateDropped

show qos slice

Displays rule availability and usage information for QoS slices of QoS slots. A *slice* is a logical section of hardware and corresponds to particular ports on the interface.

show qos slice [*slot/slice*]

Syntax Definitions

slot/slice The slot number and slice for which you want to view information. The number of slices per module varies depending on the type of module.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Information for all slots/slices is displayed unless a particular slot/slice is requested.
- This command is useful for monitoring switch resources required for policy rules.

Examples

```
-> show qos slice
Slot/           Ranges           Rules           Counters           Meters
Slice   Type Total/Free  CAM Total/Free      Total/Free      Total/Free
  3/0  Firebolt   16/16           0   128/101         128/101         64/64
                               1   128/125         128/125         64/64
                               2   128/0           128/0           64/64
                               3   128/0           128/0           64/64
                               4   128/0           128/0           64/64
                               5   128/0           128/0           64/64
                               6   128/0           128/0           64/64
                               7   128/0           128/0           64/64
                               8   128/0           128/0           64/64
                               9   128/0           128/0           64/64
                              10   128/0           128/0           64/64
                              11   128/0           128/0           64/64
                              12   128/0           128/0           64/64
                              13   128/0           128/24          64/64
                              14   128/0           128/62          64/64
                              15   128/124         128/123         64/63
```

output definitions

Slot/Slice	The slot and slice number.
Type	The type of slice.
Ranges Total	The total number of TCP/UDP port ranges supported per slot/slice.

output definitions (continued)

Ranges Free	The number of TCP/UDP port ranges that are still available for use.
CAM	The CAM number.
Rules Total	The total number of rules supported per CAM.
Rules Free	The number of rules that are still available for use. On startup, the switch uses 27 rules.
Counters Total	The total number of counters supported per CAM.
Counter Free	The number of counters that are still available for use.
Meters Total	The total number of meters supported per CAM.
Meters Free	The number of meters that are still available for use.

Release History

Release 6.6.1; command introduced.

Related Commands**[policy rule](#)**

Configures a policy rule on the switch. A rule is made up of a condition (for classifying incoming traffic) and an action (to be applied to outgoing traffic).

MIB Objects

N/A

show qos log

Displays the log of QoS events. This command also displays the packets dropped by IP Source Filter entries.

show qos log

Syntax Definitions

N/A

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

Use this command to display the current QoS log. To clear the log, use the **qos clear log** command.

Examples

```
-> show qos log
**QOS Log**
Insert rule 0
Rule index at 0
Insert rule 1
Rule index at 1
Insert rule 2
Rule index at 2
Enable rule r1 (1) 1,1
Enable rule r2 (0) 1,1
Enable rule yuba1 (2) 1,1
Verify rule r1(1)
Enable rule r1 (1) 1,1
Really enable r1
Update condition c1 for rule 1 (1)
Verify rule r2(1)
Enable rule r2 (0) 1,1
Really enable r2
Update condition c2 for rule 0 (1)
Verify rule yuba1(1)
Enable rule yuba1 (2) 1,1
Really enable yuba1
Update condition yubamac for rule 2 (1)
QoS Manager started TUE MAR 10 13:46:50 2002

Match rule 2 to 1
Match rule 2 to 2
Match rule 2 to 3
```

```
-> show qos log
**QOS Log**
9/16/01 18:09:18 [@18:09:18] rule ISF-DROP matched
9/16/01 18:09:18 Tagged. 802.1p 0
9/16/01 18:09:18 svlan 10 VRF (null) port 1/9
9/16/01 18:09:18 MAC 00:00:1E:1D:EE:14 -> E8:E7:32:77:BB:A2
9/16/01 18:09:18 TOS 0x00 (p255) 10.10.10.10 -> 10.10.10.100
9/16/01 18:09:18 [@18:09:18] rule ISF-DROP matched
```

Release History

Release 6.6.1; command introduced.

Related Commands

[qos clear log](#)

Clears messages in the current QoS log.

[qos log lines](#)

Configures the number of lines in the QoS log.

MIB Objects

N/A

show qos config

Displays global information about the QoS configuration.

show qos config

Syntax Definitions

N/A

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

Use this command to view the current global configuration for QoS. Use the **show qos statistics** command to view statistics about the QoS software in the switch.

Examples

```
-> show qos config
QoS Configuration:
  Enabled          : Yes,
  Pending changes  : port,
DEI:
  Marking          : Enabled,
Classifier:
  Default queues   : 8,
  Default queue service : strict-priority,
  Trusted ports    : No,
  NMS Priority      : Yes,
  Phones           : trusted,
  Default bridged disposition : accept,
  Default IGMP/MLD disposition: accept,
Logging:
  Log lines        : 256,
  Log level        : 6,
  Log to console   : No,
  Forward log      : No,
  Stats interval   : 60 seconds,
Userports:
  Filter          : spoof,
  Shutdown        : none,
Debug            : info
```

output definitions

QoS Configuration	Whether QoS is enabled or disabled. Configured through the qos command.
Marking	Whether DEI marking for egress packets is enabled or disabled. Configured through the qos dei command
Default queues	The number of default queues for QoS ports. There are eight queues for each QoS port; this value is not configurable.
Default queue service	The default servicing mode for the switch (strict-priority , WRR , or DRR). Configured through the qos default servicing mode command.
Trusted Ports	The default trusted mode for switch ports. Configured through the qos trust ports command.
NMS Priority	Whether the automatic prioritization of NMS traffic is enabled or disabled. Configured through the qos nms priority command.
Phones	Whether IP Phone traffic is automatically trusted or assigned a priority value. Configured through the qos phones command.
Default bridged disposition	Whether bridged traffic that does not match any policy is accepted or denied on the switch. Configured through the qos default bridged disposition command.
Default IGMP/MLD disposition	Whether multicast flows that do not match any policy are accepted or denied on the switch. Configured through the qos default multicast disposition command.
Log lines	The number of lines included in the QoS log. Configured through the qos log lines command.
Log level	The level of log detail. Configured through the qos log level command.
Log to console	Whether log messages are sent to the console. Configured through the qos log console command.
Forward log	Whether logged events are sent to the policy server software in the switch in real time. Configured through the qos forward log command.
Stats interval	How often the switch polls network interfaces for statistics about QoS events. Configured through the qos stats interval command.
Filter	The type of traffic that is filtered on ports that are members of the UserPorts group. Configured through the qos user-port command.
Shutdown	The type of traffic that triggers an administrative shutdown of the port if the port is a member of the UserPorts group. Configured through the qos user-port command.
Debug	The type of information that is displayed in the QoS log. Configured through the qos dei command. A value of info indicates the default debugging type.

Release History

Release 6.6.1; command introduced.
 Release 6.6.2; **DEI Marking** field added.

Related Commands

- qos** Enables or disables QoS. This base command can be used with keyword options to configure QoS globally on the switch.
- show qos statistics** Displays statistics about the QoS configuration.

MIB Objects

```
alaQoSConfigTable  
  alaQoSConfigEnable  
  alaQoSConfigDEIMarking  
  alaQoSConfigServicingMode  
  alaQoSConfigTrustPorts  
  alaQoSConfigAutoNms  
  alaQoSConfigAutoPhones  
  alaQoSConfigDefaultBridgedDisposition  
  alaQoSConfigDefaultMulticastDisposition  
  alaQoSConfigLogLines  
  alaQoSConfigLogLevel  
  alaQoSConfigLogConsole  
  alaQoSConfigStatsInterval  
  alaQoSConfigUserportFilter  
  alaQoSConfigUserportShutdown  
  alaQoSConfigDebug
```

show qos statistics

Displays statistics about the QoS configuration.

show qos statistics

Syntax Definitions

N/A

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

This command displays statistics about the global QoS configuration. Use the **show qos config** command to display information about configurable global parameters.

Examples

```
-> show qos statistics
QoS stats
```

	Events	Matches	Drops
L2	15	0	0
L3 Inbound	0	0	0
L3 Outbound	0	0	0
IGMP Join	0	0	0
Fragments	: 0		
Bad Fragments	: 0		
Unknown Fragments	: 0		
Sent NI messages	: 9		
Received NI messages	: 4322		
Failed NI messages	: 0		
Load balanced flows	: 0		
Reflexive flows	: 0		
Reflexive correction	: 0		
Flow lookups	: 0		
Flow hits	: 0		
Max PTree nodes	: 0		
Max PTree depth	: 0		
Spoofed Events	: 0		
NonSpoofed Events	: 0		
DropServices	: 0		
L2TP	: 0		
L2TP Drop	: 0		
L2TP Match	: 0		

Software resources												
	Applied						Pending					
Table	CLI	LDAP	ACLM	Blt	Total		CLI	LDAP	ACLM	Blt	Total	Max
rules	0	0	0	0	0		0	0	0	0	0	2048
actions	0	0	0	0	0		0	0	0	0	0	2048
conditions	0	0	0	0	0		0	0	0	0	0	2048
services	0	0	0	0	0		0	0	0	0	0	256
service groups	1	0	0	0	1		1	0	0	0	1	1024
network groups	0	0	0	1	1		0	0	0	1	1	1024
port groups	2	0	0	8	10		2	0	0	8	10	1024
mac groups	0	0	0	0	0		0	0	0	0	0	1024
map groups	0	0	0	0	0		0	0	0	0	0	1024
vlan groups	0	0	0	0	0		0	0	0	0	0	1024

Hardware resources									
			TCAM			Ranges			
Slot	Slice	Unit	Used	Free	Max	Used	Free	Max	
1	0	0	0	1024	1024	0	0	0	

output definitions

Events	The number of Layer 2 or Layer 3 flows transmitted on the switch.
Matches	The number of Layer 2 or Layer 3 flows that match policies.
Drops	The number of Layer 2 or Layer 3 flows that were dropped.
L2	The number of Layer 2 events, matches, and drops.
L3 Ingress	The number of Layer 3 ingress events, matches, and drops.
L3 Egress	The number of Layer 3 egress events, matches, and drops.
IGMP join	The number of multicast events, matches, and drops.
Fragments	The number of fragments dropped.
Bad Fragments	The number of fragments received with an offset of 1.
Unknown Fragments	The number of out-of-order fragments received.
Sent NI messages	The number of messages sent to network interfaces.
Received NI messages	The number of messages received by network interfaces.
Failed NI messages	The number of failed message attempts to network interfaces.
Load balanced flows	The number of Server Load Balance flow entries.
Reflexive flows	The number of reflexive flows.
Reflexive correction	The number of reflexive flow corrections.
Flow lookups	The number of flow table lookups.
Flow hits	The number of flow table lookup hits.
Max PTree nodes	The highest number of nodes in the classifier tree.
Max Ptree depth	The length of the longest path in the classifier tree.
Spoofed Events	The number of spoofed events.
Nonspoofed Events	The number of nonspoofed events.
DropServices	The number of TCP/UDP flows dropped.
Software Resources	The current usage and availability of software resources for the QoS configuration.

output definitions (continued)

Hardware Resources	The current usage and availability of hardware resources for the QoS configuration.
L2TP	The number of L2TP packets.
L2TP Drop	The number of L2TP packets dropped.
L2TP Match	The number L2TP packets that match policies.

Release History

Release 6.6.1; command introduced.
 Release 6.6.2; L2TP parameters added.

Related Commands

[qos stats reset](#) Resets QoS statistic counters to zero.

MIB Objects

```
alaQoSStats
  alaQoSStatsL2Events
  alaQoSStatsL2matches
  alaQoSStatsL2Drops
  alaQoSStatsL3IngressEvents
  alaQoSStatsL3IngressMatches
  alaQoSStatsL3IngressDrops
  alaQoSStatsL3EgressEvents
  alaQoSStatsL3EgressMatches
  alaQoSStatsL3EgressDrops
  alaQoSStatsFragments
  alaQoSStatsBadFragments
  alaQoSStatsUnknownFragments
  alaQoSStatsSpoofedEvents
  alaQoSStatsNonspoofedEvents
  alaQoSStatsDropServicesEvents
```

qos register shared buffers

Configures the number of buffers that would be shared by all ports in the switch.

qos register shared buffers <num>

Syntax Definitions

num Specifies the number of shared buffers.

Defaults

The default value of shared buffers is 1500.

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- The acceptable values for the shared buffers limits are: 0 – 4095.
- The CLI configured value is rounded off to the nearest multiple of 4 and this updated value is configured in the switch.
- Please contact Service & Support for information on activating the buffer management feature.

Examples

```
-> qos register shared-buffers 2000
```

Release History

Release 6.6.5; command introduced.

Related Commands

[qos port register profile](#)

Configures the profile of specific ports in the switch.

[show qos register](#)

Displays the configured number of shared buffers and the profile assignment for all the ports in the switch.

MIB Objects

N/A

qos port register profile

Configures the profile of specific ports in the switch.

qos port[*slot/port*] **register profile** <*num*>

Syntax Definitions

slot/port The physical slot and port number. For example: 3/1.
num Specifies the profile to be applied.

Defaults

Profiles	Default
Front panel 10/100/1000 ports	0
CPU port	1
Stack / Cascading port	2
10G ports / Combo ports	3

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- The acceptable values for the register profile are: 0 – 7.
- Please contact Service & Support for information on activating the buffer management feature.

Examples

```
-> qos port 3/1 register profile 2
```

Release History

Release 6.6.5; command introduced.

Related Commands

[qos register shared buffers](#) Configures the number of buffers that would be shared by all ports in the switch.

[show qos register](#) Displays the configured number of shared buffers and the profile assignment for all the ports in the switch.

MIB Objects

N/A

show qos register

Displays the configured number of shared buffers and the profile assignment for all the ports in the switch.

show qos register

Syntax Definitions

N/A

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Use this command to display the buffer tuning.
- Please contact Service & Support for information on activating the buffer management feature.

Examples

```
-> show qos register
SHARED BUFFERS:          1500
PORT          PROFILE
-----+-----
1/1            0
1/2            0
1/3            0
1/4            0
1/5            0
1/6            0
1/7            0
1/8            0
1/9            0
1/10           0
1/11           0
1/12           0
1/13           0
1/14           0
1/15           0
1/16           0
1/17           0
1/18           0
1/19           0
```

1/20	0
1/21	0
1/22	0
1/23	0
1/24	0
1/25	3
1/26	3

Release History

Release 6.6.5; command introduced.

Related Commands

qos register shared buffers	Configures the number of buffers that would be shared by all ports in the switch.
qos port register profile	Configures the profile of specific ports in the switch.

MIB Objects

N/A

45 QoS Policy Commands

This chapter describes CLI commands used for policy management in the switch. The Quality of Service (QoS) software in the switch uses policy rules for classifying incoming flows and deciding how to treat outgoing flows. A policy rule is made up of a policy condition and a policy action. Policy rules may be created on the switch through CLI or SNMP commands, or they may be created through the PolicyView GUI application on an attached LDAP server.

Note. Rules created through PolicyView cannot be modified through the CLI; however, you can create policies in the CLI that take precedence over policies created through PolicyView.

Refer to [Chapter 44, “QoS Commands,”](#) for information about commands used to configure QoS software.

MIB information for the QoS policy commands is as follows:

Filename: alcatelIND1Qos.mib
Module ALCATEL-IND1-QoS-MIB

Important Note. Some of the commands listed here are not currently supported on one or more platforms. See command descriptions in this chapter and check release notes for information about commands that are not supported.

The QoS Policy commands are listed here:

Policy commands	policy rule policy rule accounting policy validity period policy condition policy action policy list show policy action show policy list show active policy list show policy condition show active policy rule show active policy rule accounting show active policy list accounting details show active policy rule meter-statistics show policy rule show policy validity period
------------------------	---

Group commands	<p> policy network group policy service policy service protocol policy service source tcp port policy service destination tcp port policy service source udp port policy service destination udp port policy service group policy mac group policy port group policy vlan group policy map group show policy network group show policy mac group show policy port group show policy vlan group show policy map group show policy service show policy service group </p>
Condition commands	<p> policy condition policy condition source ip policy condition source ipv6 policy condition destination ipv6 policy condition multicast ip policy condition source network group policy condition destination network group policy condition multicast network group policy condition source ip port policy condition destination ip port policy condition source tcp port policy condition destination tcp port policy condition source udp port policy condition destination udp port policy condition ethertype policy condition established policy condition tcpflags policy condition service policy condition service group policy condition icmptype policy condition icmpcode policy condition ip protocol policy condition ipv6 policy condition 802.1p policy condition tos policy condition dscp policy condition source mac policy condition destination mac policy condition source mac group policy condition destination mac group policy condition source vlan policy condition source vlan group policy condition source port policy condition destination port policy condition source port group policy condition destination port group </p>
Command for testing conditions	<p>show policy classify</p>

Action commands

policy action
policy action disposition
policy action shared
policy action priority
policy action maximum bandwidth
policy action maximum depth
policy action cir
policy action tos
policy action 802.1p
policy action dscp
policy action map
policy action permanent gateway ip
policy action port-disable
policy action redirect port
policy action redirect linkagg
policy action no-cache
policy action mirror
show policy classify

Network Address Translation (NAT) commands

policy action rewrite
qos nat timeout
show qos nat flows
show qos nat counters
qos nat flush

Types of policies are generally determined by the kind of traffic they classify (policy conditions) and how the policy is enforced (policy actions). Commands used for particular types of policies are listed here. See the *OmniSwitch AOS Release 6250/6350/6450 Network Configuration Guide* for more information about creating these types of policies and information about valid condition/action combinations.

Access Control Lists	policy condition policy list policy rule
Traffic prioritization/shaping	policy action shared policy action priority policy action maximum bandwidth policy action maximum depth show policy classify policy rule
802.1p/ToS/DSCP tagging or mapping	policy condition tos policy condition dscp policy condition 802.1p policy action cir policy action 802.1p policy action dscp policy rule
Network Address Translation (NAT)	policy condition source ip policy condition source ipv6 policy rule
Policy based port mirroring	policy action mirror

policy rule

Configures a policy rule on the switch. A rule is made up of a condition (for classifying incoming traffic) and an action (to be applied to outgoing traffic).

policy rule *rule_name* [**enable** | **disable**] [**precedence** *precedence*] [**condition** *condition*] [**action** *action*] [**validity period** *name* | **no validity period**] [**save**] [**accounting** | **no accounting**] [**log** [**interval** *seconds*]] [**count** {**packets** | **bytes**}] [**trap** | **no trap**]

no policy rule *rule_name*

policy rule *rule_name* [**no reflexive**] [**no save**] [**no log**]

Syntax Definitions

<i>rule_name</i>	The name of the policy rule, any alphanumeric string.
enable	Enables the policy rule.
disable	Disables the policy rule.
<i>precedence</i>	The precedence value in the range 0–65535. This value determines the order in which rules are searched for a matching condition. A higher number indicates higher precedence. Typically the range 30000–65535 is reserved for PolicyView.
<i>condition</i>	The condition name that is associated with this rule. Conditions are configured through the policy condition command.
<i>action</i>	The name of the action that is associated with this rule. Actions are configured through the policy action command.
<i>name</i>	The name of a user-defined validity period that is associated with this rule. Validity periods are configured through the policy validity period command.
save	Marks the policy rule so that it may be captured as part of the switch configuration.
accounting	Enable or disable accounting mode for the rule.
no accounting	Disable accounting mode for the rule.
log	Configures the switch to log messages about specific flows coming into the switch that match this policy rule.
<i>seconds</i>	Configures how often to look for packets that match this policy rule when rule logging is applied (in the range from 0–3600 seconds). A value of 0 specifies to log as often as possible.
packets	Counts the number of packets that match the rule.
bytes	Counts the number of bytes that match the rule.
trap	Enables or disables traps for the rule.

Defaults

By default, rules are not reflexive, but they are saved to the configuration.

parameter	default
enable disable	enable
<i>precedence</i>	0
accounting no-accounting	no-accounting
log	no
log interval	30 seconds
packets bytes	packets
trap	enable

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Any rule configured through this command is not active on the switch until the **qos apply** command is issued.
- A policy rule configured through the PolicyView application may not be edited in the CLI. You may, however, create a rule using the CLI with a higher precedence that will override a rule created through PolicyView.
- Use the **no** form of the command to remove the rule from the configuration. The change will not take effect, however, until the **qos apply** command is issued.
- When a flow comes into the switch, the switch examines Layer 2 source policies first; if no match is found, it examines Layer 2 destination policies; if no match is found it then examines Layer 3 policies. The precedence value only applies within the group of the same type of rules.
- If multiple rules (of the same type; that is, Layer 2 source, Layer 2 destination, or Layer 3) are configured with the same precedence, the switch evaluates the rules in the order they were created.
- Only one validity period is associated with a policy rule. Each time this command is entered with a validity period name specified, the existing period name is overwritten with the new one.
- Software and hardware resources are allocated for rules associated with a validity period even if the validity period is not active. Pre-allocating the resources makes sure the rule can be enforced when the validity period becomes active.
- The **save** option marks the policy rule so that the rule will be captured in an ASCII text file (using the **configuration snapshot** command), saved to the working directory after the **write memory** command or **copy running-config working** command is entered, or saved after a reboot. Rules are saved by default. If **no save** is entered for the rule, the policy rule will not be written to the configuration. The **save** option should be disabled only if you want to use a policy rule temporarily.

- If the **configuration snapshot** command is entered after the **policy rule** command is configured, the resulting ASCII file will include the following additional syntax for the **policy rule** command:

from {cli | ldap | blt}

This syntax indicates how the rule was created. The **cli** and **ldap** options may be changed by a user modifying the ASCII file; however, changing this setting is not recommended. The **blt** option indicates a built-in rule, this setting is not configurable.

- The **log** option is useful for determining the source of attacks on the switch firewall.
- If traps are enabled for the rule, a trap is only sent when a port disable action or UserPort shutdown operation is triggered.

Examples

```
-> policy rule rule2 precedence 65535
-> policy rule rule2 validity period vp01
-> no policy rule rule2
-> policy rule rule2 no precedence
-> policy rule no validity period
```

Release History

Release 6.6.1; command was introduced.

Related Commands

policy validity period	Configures a validity period that specifies days, times, and/or months during which an associated policy rule is in effect.
policy condition	Configures condition parameters.
policy action	Configures action parameters.
qos apply	Applies configured QoS and policy settings to the current configuration.
show policy rule	Displays information for policy rules configured on the switch.
show active policy rule	Displays only those policy rules that are currently being enforced on the switch.

MIB Objects

alaQoSRuleTable

- alaQoSRuleName
- alaQoSRuleEnabled
- alaQoSRuleSource
- alaQoSRulePrecedence
- alaQoSRuleCondition
- alaQoSRuleAction
- alaQoSRuleReflexive
- alaQoSRuleSave
- alaQoSRuleLog
- alaQoSRuleLogInterval
- alaQoSRuleCountType
- alaQoSRulePacketCount
- alaQoSRuleByteCount
- alaQoSRuleExcessPacketCount
- alaQoSRuleExcessByteCount
- alaQoSRuleAccounting
- alaQoSRulePacketRate
- alaQoSRuleBitRate
- alaQoSRuleAccPacketCount
- alaQoSRuleAccByteCount

alaQoSAppliedRuleTable

- alaQoSAppliedRuleAccounting
- alaQoSAppliedRulePacketRate
- alaQoSAppliedRuleBitRate
- alaQoSAppliedRuleAccPacketCount
- alaQoSAppliedRuleAccByteCount

- alaQoSAppliedRuleName
- alaQoSAppliedRuleEnabled
- alaQoSAppliedRuleSource
- alaQoSAppliedRulePrecedence
- alaQoSAppliedRuleCondition
- alaQoSAppliedRuleAction
- alaQoSAppliedRuleReflexive
- alaQoSAppliedRuleSave
- alaQoSAppliedRuleLog
- alaQoSAppliedRuleLogInterval
- alaQoSAppliedCountType
- alaQoSAppliedPacketCount
- alaQoSAppliedByteCount
- alaQoSAppliedExcessPacketCount
- alaQoSAppliedExcessByteCount

policy rule accounting

Enables the accounting mode for a rule.

policy rule *rule_name* **accounting**

policy rule *rule_name* **no accounting**

Syntax Definitions

rule_name Specifies the name of the rule for which the user wants to enable the accounting mode.

Defaults

By default accounting is disabled.

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

Use the **no** form of the command to disable the accounting mode for the rule.

Examples

```
-> policy rule r1 accounting
-> policy rule r1 no accounting
```

Release History

Release 6.6.4; command was introduced.

Related Commands

[policy rule](#) Configures a policy rule on the switch and optionally associates that rule with a validity period.

[show active policy rule accounting](#) Displays the accounting results for all the rules that have the accounting mode enabled or for the particular rule specified in the command.

MIB Objects

NA

policy validity period

Configures a validity period that specifies the days and times in which a policy rule is in effect.

policy validity period *name* [[**no**] **days** *days*] [[**no**] **months** *months*] [[**no**] **hours** *hh:mm* **to** *hh:mm* | **no hours**] [**interval** *mm:dd:yyyy hh:mm* **to** *mm:dd:yyyy hh:mm* | **no interval**]

no policy validity period *name*

Syntax Definitions

<i>name</i>	The name of the validity period (up to 31 alphanumeric characters).
<i>days</i>	The day(s) of the week this validity period is active. Enter the actual day of the week (e.g., monday, tuesday, wednesday, etc.).
<i>months</i>	The month(s) in which the validity period is active. Enter the actual month (e.g., january, february, march, etc.).
<i>hh:mm</i>	The time of day, specified in hours and minutes, the validity period starts and the time of day the validity period ends (e.g., 10:30 to 11:30).
<i>mm:dd:yyyy hh:mm</i>	An interval of time in which a rule is in effect. Specify a start and end to the interval period by entering a beginning date and time followed by an end date and time (e.g., 11:01:2005 12:01 to 11:02:2005 12:01).

Defaults

By default, no validity period is in effect for a policy rule.

parameter	default
<i>days</i>	no restriction
<i>months</i>	no restriction
<i>hh:mm</i>	no specific time
<i>mm:dd:yyyy hh:mm</i>	no interval

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Use the **no** form of the command to remove a validity period from the configuration, or to remove parameters from a particular validity period. Note that at least one parameter must be associated with a validity period.
- Any combination of days, months, hours, and interval parameters is allowed. The validity period is only in effect when all specified parameters are true.
- Use the **policy rule** command to associate a validity period with a rule.

- Software and hardware resources are allocated for rules associated with a validity period even if the validity period is not active. Pre-allocating the resources makes sure the rule can be enforced when the validity period becomes active.
- If the **snapshot** command is entered after the **policy validity period** command is configured, the resulting ASCII file will include the following additional syntax for the **policy validity period** command:

from {cli | ldap | blt}

This syntax indicates how the service was created. The **cli** and **ldap** options may be changed by a user modifying the ASCII file; however, changing this setting is not recommended. The **blt** option indicates a built-in object, this setting is not configurable.

Examples

```
-> policy validity period vp01 days tuesday thursday months january february
-> policy validity period vp01 hours 13:00 to 19:00
-> policy validity period vp02 interval 01/01/05 12:01 to 02/01/05 11:59
-> policy validity period vp01 no days thursday
-> no policy validity period vp02
```

Release History

Release 6.6.1; command was introduced.

Related Commands

- | | |
|---|--|
| policy rule | Configures a policy rule on the switch and optionally associates that rule with a validity period. |
| show policy validity period | Displays information about policy validity periods. |

MIB Objects

alaQoSValidityPeriodTable

- alaQoSValidityPeriodName
- alaQoSValidityPeriodSource
- alaQoSValidityPeriodDays
- alaQoSValidityPeriodDaysStatus
- alaQoSValidityPeriodMonths
- alaQoSValidityPeriodMonthsStatus
- alaQoSValidityPeriodHour
- alaQoSValidityPeriodHourStatus
- alaQoSValidityPeriodEndHour
- alaQoSValidityPeriodInterval
- alaQoSValidityPeriodIntervalStatus
- alaQoSValidityPeriodEndInterval

alaQoSAppliedValidityPeriodTable

- alaQoSAppliedValidityPeriodName
- alaQoSAppliedValidityPeriodSource
- alaQoSAppliedValidityPeriodDays
- alaQoSAppliedValidityPeriodDaysStatus
- alaQoSAppliedValidityPeriodMonths
- alaQoSAppliedValidityPeriodMonthsStatus
- alaQoSAppliedValidityPeriodHour
- alaQoSAppliedValidityPeriodHourStatus
- alaQoSAppliedValidityPeriodEndHour
- alaQoSAppliedValidityPeriodInterval
- alaQoSAppliedValidityPeriodIntervalStatus
- alaQoSAppliedValidityPeriodEndInterval

policy network group

Configures a network group name and its associated IP addresses. The group may be used as part of a policy condition. The action associated with any policy using the condition will be applied to all members of the network group.

policy network group *net_group ip_address [mask net_mask] [ip_address2 [mask net_mask2]...]*

no policy network group *net_group*

policy network group *net_group no ip_address [mask netmask] [ip_address2 [mask net_mask2]...]*

Syntax Definitions

<i>net_group</i>	The name of the network group (up to 31 alphanumeric characters).
<i>ip_address</i>	An IPv4 address included in the network group. IPv6 addresses are not supported with network groups.
<i>net_mask</i>	The mask for the IPv4 address. If no mask is entered, the IPv4 address is assumed to be a host address.
<i>ip_address2</i>	Optional. Another IPv4 address to be included in the network group. Multiple IP addresses may be configured for a network group. Separate each address/mask combination with a space.
<i>net_mask2</i>	Optional mask for the IPv4 address. If no mask is entered, the natural mask for the address will be used.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Use this command to configure a group of IPv4 addresses to which you want to apply QoS rules. Rather than create a condition for each IPv4 address, group the addresses together. Use the **policy condition** command to associate a condition with the network group.
- Use the **no** form of the command to remove a network group from the configuration, or to remove an IP address from a network group.
- If the **snapshot** command is entered after the **policy network group** command is configured, the resulting ASCII file will include the following additional syntax for the **policy network group** command:

from {cli | ldap | blt}

This syntax indicates how the network group was created. The **cli** and **ldap** options may be changed by a user modifying the ASCII file; however, changing this setting is not recommended. The **blt** option indicates a built-in network group, this setting is not configurable.

Examples

```
-> policy network group webgroup1 10.10.12.5 10.50.3.1
-> policy network group webgroup1 no 10.10.12.5
-> no policy network group webgroup1
```

Release History

Release 6.6.1; command was introduced.

Related Commands

policy condition	Configures a policy condition. A network group may be configured as part of a policy condition.
qos apply	Applies configured QoS and policy settings to the current configuration.
show policy network group	Displays information for policy network groups.

MIB Objects

```
alaQoSNetworkGroupsTable
  alaQoSNetworkGroupsName
  alaQoSNetworkGroupsSource
alaQoSAppliedNetworkGroupsTable
  alaQoSAppliedNetworkGroupsName
  alaQoSAppliedNetworkGroupsSource
alaQoSNetworkGroupTable
  alaQoSNetworkGroupIpAddr
  alaQoSNetworkGroupsIpMask
alaQoSAppliedNetworkGroupTable
  alaQoSAppliedNetworkGroupIpAddr
  alaQoSAppliedNetworkGroupsIpMask
```

policy service group

Configures a service group and its associated services. The group may be used as part of a policy condition. The action associated with any policy using the condition will be applied to all members of the service group.

policy service group *service_group service_name1 [service_name2...]*

no policy service group *service_group*

policy service group *service_group no service_name1 [service_name2...]*

Syntax Definitions

<i>service_group</i>	The name of the service group (up to 31 alphanumeric characters).
<i>service_name1</i>	The service name is configured through the policy service command and includes information about protocol, source port, and destination port.
<i>service_name2...</i>	Optional. Additional service names may be configured for a service group. Separate each service name with a space.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Use this command to configure a group of services to which you want to apply QoS rules. Rather than create a condition for each service, group services together. Use the **policy condition** command to associate a condition with the service group.
- Use the **no** form of the command to remove a service group from the configuration, or to remove a service from a service group.
- To drop packets destined to specific TCP and UDP ports, create port services for the traffic that you want dropped and add these services to a service group called DropServices. Then create a condition for this service group and a source port group, which can then be used in a deny rule. Refer to the *OmniSwitch AOS Release 6250/6350/6450 Network Configuration Guide* for more information about ACL security enhancements.
- If the **snapshot** command is entered after the **policy service group** command is configured, the resulting ASCII file will include the following additional syntax for the **policy service group** command:

from {cli | ldap | blt}

This syntax indicates how the service group was created. The **cli** and **ldap** options may be changed by a user modifying the ASCII file; however, changing this setting is not recommended. The **blt** option indicates a built-in service group, this setting is not configurable.

Examples

```
-> policy service group servgroup2 telnet ftp
-> policy service group servgroup2 no telnet
-> no policy service group servgroup2
```

Release History

Release 6.6.1; command was introduced.

Related Commands

qos apply	Applies configured QoS and policy settings to the current configuration.
policy service	Configures a service that may be used as part of a policy service group.
policy condition	Configures a policy condition. A network group may be configured as part of a policy condition.
show policy service group	Displays information for policy service groups.

MIB Objects

```
alaQoSServiceGroupsTable
  alaQoSServiceGroupsName
  alaQoSServiceGroupsSource
alaQoSAppliedServiceGroupsTable
  alaQoSAppliedServiceGroupsName
  alaQoSAppliedServiceGroupsSource
alaQoSServiceGroupTable
  alaQoSServiceGroupServiceName
alaQoSAppliedServiceGroupTable
  alaQoSAppliedServiceGroupServiceName
```

policy mac group

Configures a MAC group and its associated MAC addresses. The group may be used as part of a policy condition. The action associated with any policy using the condition will be applied to all members of the MAC group.

policy mac group *mac_group mac_address [mask mac_mask] [mac_address2 [mask mac_mask2]...]*

no policy mac group *mac_group*

policy mac group *mac_group no mac_address [mask mac_mask] [mac_address2 [mask mac_mask2]...]*

Syntax Definitions

<i>mac_group</i>	The name of the MAC group (up to 31 alphanumeric characters).
<i>mac_address</i>	The MAC address associated with the group (for example, 00:20:da:05:f6:23).
<i>mac_mask</i>	The mask of the MAC address, used to identify which bytes in the MAC address are significant when comparing the MAC address in the received frame with the MAC address in the policy condition. If no mask is specified, the switch automatically uses ff:ff:ff:ff:ff:ff.
<i>mac_address2</i>	Optional. Additional MAC addresses may be configured for a MAC group. Separate each address with a space.
<i>mac_mask2</i>	The mask of an additional MAC address, used to identify which bytes in the MAC address are significant when comparing the MAC address in the received frame with the MAC address in the policy condition. If no mask is specified, the switch automatically uses ff:ff:ff:ff:ff:ff.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Use this command to configure a group of source or destination MAC addresses to which you want to apply QoS rules. Rather than create a condition for each MAC address, group MAC addresses together. Use the **policy condition** command to associate a condition with the MAC group.
- Use the **no** form of the command to remove a MAC group from the configuration, or to remove a MAC address from a MAC group.
- The MAC group name “alaPhones” is a reserved group name used to identify the MAC addresses of IP phones. See the [qos phones](#) command for more information.
- If the **snapshot** command is entered after the **policy map group** command is configured, the resulting ASCII file will include the following additional syntax for the **policy map group** command:

from {cli | ldap | blt}

This syntax indicates how the map group was created. The **cli** and **ldap** options may be changed by a user modifying the ASCII file; however, changing this setting is not recommended. The **blt** option indicates a built-in object, this setting is not configurable.

Examples

```
-> policy mac group mac_group1 00:20:da:05:f6:23 00:20:da:05:f6:24
-> no policy mac group mac_group1
```

Release History

Release 6.6.1; command was introduced.

Related Commands

policy condition	Configures a policy condition. A MAC group may be configured as part of a policy condition.
qos apply	Applies configured QoS and policy settings to the current configuration.
show policy mac group	Displays information about policy MAC groups.

MIB Objects

```
alaQoSACGroupsTable
  alaQoSACGroupsName
  alaQoSACGroupsSource
alaQoSAppliedMACGroupsTable
  alaQoSAppliedMACGroupsName
  alaQoSAppliedMACGroupsSource
alaQoSACGroupTable
  alaQoSACGroupMacAddr
  alaQoSACGroupMacMask
alaQoSAppliedMACGroupTable
  alaQoSAppliedMACGroupMacAddr
  alaQoSAppliedMACGroupMacMask
```

policy port group

Configures a port group and its associated slot and port numbers. A port group may be attached to a policy condition. The action associated with that policy will be applied to all members of the port group. This command can be used to specify a rate limiter for the group of ports or individual port by specifying the mode for the port group.

```
policy port group group_name [mode {split | non-split}] slot/port[-port] [slot/port[-port]...]
```

```
no policy port group group_name
```

```
policy port group group_name no slot/port[-port] [slot/port[-port]...]
```

Syntax Definitions

<i>group_name</i>	The name of the port group (up to 31 alphanumeric characters).
split	The policy action is applied on individual port.
non-split	The policy action is applied on the port group.
<i>slot/port[-port]</i>	The slot and port (or port range) to be included in the group. At least one slot/port combination must be specified. Additional combinations may be included in the group; each combination should be separated by a space.

Defaults

By default, non-split mode is the default behavior for the source port group.

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Use this command to configure a group of ports to which you want to apply QoS rules. Rather than create a condition for each port, group ports together. Use the **policy condition** command to associate a condition with the port group.
- Use the **no** form of the command to remove a port group from the configuration, or to remove a slot/port from a port group.
- If a range of ports is specified using the syntax *slot/port-port* (For example, 2/1-8), a single port within that range cannot be removed on its own. The entire range must be deleted as it was entered.
- When a port group is used as part of a policy rule and a policy action specifies a maximum bandwidth, each interface in the port group will be allowed the maximum bandwidth.
- To prevent IP source address spoofing, add ports to the port group called **UserPorts**. This port group does not need to be used in a condition or rule to be effected on flows and only applies to routed traffic. Ports added to the UserPorts group will block spoofed traffic while still allowing normal traffic on the port. Refer to the *OmniSwitch AOS Release 6250/6350/6450 Network Configuration Guide* for more information about ACL security enhancements.

- Use the **qos user-port** command to configure the option to filter or administratively disable a port when a specific type of traffic (Spoof, RIP and/or, BPDU) is received on a port that is a member of the pre-defined UserPorts group.
- If the **snapshot** command is entered after the **policy port group** command is configured, the resulting ASCII file will include the following additional syntax for the **policy port group** command:

from {cli | ldap | blt}

This syntax indicates how the port group was created. The **cli** and **ldap** options may be changed by a user modifying the ASCII file; however, changing this setting is not recommended. The **blt** option indicates a built-in object, this setting is not configurable.

- Per port rate limiting is limited to the source port group attached to the default policy list. The configuration is not valid for any other policy list. Hence, the configuration of the policy rule for the split mode is not valid for the explicit policy lists including ingress policy list.
- Policy action 'shared' cannot be used with the rule where split source port group is configured.
- Rate limiting is not supported for destination port group.
- Maximum bandwidth policies are applied to source (ingress) ports or flows. This applies to flows that involve more than one port. Based on the rate limit mode set on the port group, the maximum bandwidth is applied. For more information on this, refer to 'Port Groups and Maximum Bandwidth' section in the "Configuring QoS" chapter of *OmniSwitch AOS Release 6250/6350/6450 Network Configuration Guide*.

Examples

```
-> policy port group port_group4 3/1-2 4/3 5/4
-> policy port group port_group4 mode split 3/1-2
-> policy port group port_group4 mode non-split 2/1-2 5/3 5/1-6
-> policy port group port_group4 no 3/1-2
-> policy port group UserPorts 4/1-8 5/1-8
-> no policy port group pgl
```

Release History

Release 6.6.1; command was introduced.

Release 6.6.5; 'mode' parameter added.

Related Commands

policy condition	Configures a policy condition. A port group may be configured as part of a policy condition.
qos apply	Applies configured QoS and policy settings to the current configuration.
policy action maximum bandwidth	Configures a maximum bandwidth value for a policy action.
show policy port group	Displays information about policy port groups.
show active policy rule	Displays information about applied policy rules that are active (enabled) on the switch, and per port statistics.
show active policy rule meter-statistics	Displays Tricolor Marking (TCM) packet color statistics for the policy rule. These statistics are kept for those rules that consist of a TCM policy action (policy action cir).

MIB Objects

```
alaQoSPortGroupsTable
  alaQoSPortGroupsName
  alaQoSPortGroupsSource
  alaQoSPortGroupsStatus
  alaQoSPortGroupsMode
alaQoSAppliedPortGroupsTable
  alaQoSAppliedPortGroupsName
  alaQoSAppliedPortGroupsSource
alaAppliedPortGroupTable
  alaQoSAppliedPortGroupSlot
  alaQoSAppliedPortGroupPort
  alaQoSAppliedPortGroupPortEnd
```

policy vlan group

Configures a VLAN group and its associated VLAN ID numbers. A VLAN group may be attached to a policy condition. The action associated with that policy will be applied to all members of the VLAN group.

```
policy vlan group group_name vlanstart[-vlanend] [vlanstart2[-vlanend2]...]
```

```
no policy vlan group group_name
```

```
policy vlan group group_name no vlanstart[-vlanend] [vlanstart2[-vlanend2]...]
```

Syntax Definitions

<i>group_name</i>	The name of the VLAN group (up to 31 alphanumeric characters).
<i>vlanstart</i> [- <i>vlanend</i>]	The VLAN (or VLAN range) to be included in the group. At least one VLAN combination is required. To specify a contiguous range of VLAN IDs, use a hyphen. To specify multiple ID entries, use a space (for example, 10-15 50 100 250-252).

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Use the **no** form of the command to remove a VLAN group from the configuration, or to remove a VLAN from a VLAN group.
- Use this command to configure a group of inner and/or outer VLAN to which you want to apply QoS rules. Rather than creating a condition for each VLAN, group VLANs together. Use the **policy condition** command to associate a condition with the VLAN group.
- If a range of VLANs is specified using the syntax *vlanstart-vlanend* (For example, 100-120), a single VLAN within that range cannot be removed on its own. The entire range must be deleted as it was entered.
- If the **snapshot** command is entered after the **policy vlan group** command is configured, the resulting ASCII file will include the following additional syntax for the **policy port group** command:

```
from {cli | ldap | blt}
```

This syntax indicates how the VLAN group was created. The **cli** and **ldap** options may be changed by a user modifying the ASCII file; however, changing this setting is not recommended. The **blt** option indicates a built-in object, this setting is not configurable.

Examples

```
-> policy vlan group vlan_group1 100-200 205 240-245 1000  
-> policy vlan group vlan_group2 1000-2000
```

```
-> policy vlan group vlan_group3 3000
-> policy vlan group vlan_group3 3000 3100-3105
-> no policy vlan group vlan_group2
-> policy vlan group vlan_group1 no 100-200
```

Release History

Release 6.6.2; command was introduced.

Related Commands

policy condition source vlan	Configures a source VLAN policy condition. A VLAN group may be configured as part of this type of policy condition.
qos apply	Applies configured QoS and policy settings to the current configuration.
show policy vlan group	Displays information about policy VLAN groups.

MIB Objects

```
alaQoSvlanGroupsTable
  alaQoSvlanGroupsName
  alaQoSvlanGroupsSource
  alaQoSvlanGroupsStatus
alaQoSAppliedVlanGroupsTable
  alaQoSAppliedVlanGroupsName
  alaQoSAppliedVlanGroupsSource
  alaQoSAppliedVlanGroupsStatus
alaQoSvlanGroupTable
  alaQoSvlanGroupVlan
  alaQoSvlanGroupVlanEnd
  alaQoSvlanGroupStatus
alaQoSAppliedVlanGroupTable
  alaQoSAppliedVlanGroupVlan
  alaQoSAppliedVlanGroupVlanEnd
  alaQoSAppliedVlanGroupStatus
```

policy map group

Configures a map group and its associated mappings for 802.1p, Type of Service (ToS), or Differentiated Services Code Point (DSCP) values. A map group may be referenced in a policy action with the **map** keyword.

```
policy map group map_group {value1:value2...}
```

```
no policy map group map_group
```

```
policy map group no {value1:value2...}
```

Syntax Definitions

<i>map_group</i>	The name of the map group (up to 31 alphanumeric characters).
<i>value1</i>	The 802.1p, ToS, or DSCP value to be mapped to another value. May be a value or a range of values (for example, 1-2).
<i>value2...</i>	The 802.1p, ToS, or DSCP value to be used in place of <i>value1</i> . Additional mapping pairs may be included.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Use the **no** form of this command to remove a mapping pair or to remove the map group entirely.
- The map group may contain more than one mapping pair.
- If the **snapshot** command is entered after the **policy map group** command is configured, the resulting ASCII file will include the following additional syntax for the **policy map group** command:

```
from {cli | ldap | blt}
```

This syntax indicates how the map group was created. The **cli** and **ldap** options may be changed by a user modifying the ASCII file; however, changing this setting is not recommended. The **blt** option indicates a built-in object, this setting is not configurable.

Examples

```
-> policy map group tosGroup 1-4:3 5-6:5 7:6  
-> policy map group tosGroup no 7:6  
-> no policy map group tosGroup
```

Release History

Release 6.6.1; command was introduced.

Related Commands

[policy action map](#)

Configures a mapping group for a policy action.

MIB Objects

```
alaQoSMapGroupsTable
  alaQoSMapGroupsName
  alaQoSMapGroupsSource
alaQoSAppliedMapGroupsTable
  alaQoSAppliedMapGroupsName
  alaQoSAppliedMapGroupsSource
alaQoSMapGroupTable
  alaQoSMapGroupKey
  alaQoSMapGroupKeyEnd
  alaQoSMapGroupValue
alaQoSAppliedMapGroupTable
  alaQoSAppliedMapGroupKey
  alaQoSAppliedMapGroupKeyEnd
  alaQoSAppliedMapGroupValue
```

policy service

Configures a service that may be used as part of a policy service group or included as part of a policy condition. A service is a source and/or destination TCP or UDP port or port range.

This overview section describes the base command. *At least one option must be configured with the base command.* Some options may be used in combination; some options are shortcuts for keyword combinations (see the Usage Guidelines). Options are described as separate commands. See the command descriptions and usage guidelines for valid combinations.

Use the **no** form for keywords to remove a parameter from a service.

```
policy service service_name  
  [protocol protocol]  
  [source ip port port[-port]]  
  [destination ip port port[-port]]  
  [source tcp port port[-port]]  
  [destination tcp port port[-port]]  
  [source udp port port[-port]]  
  [destination udp port port[-port]]
```

```
no policy service service_name
```

Syntax Definitions

<i>service_name</i>	The name of the service (up to 31 alphanumeric characters).
<i>protocol</i>	The protocol associated with the service. The range of values is 0–255. Currently a value of 6 (for TCP) or 17 (for UDP) is supported. This value must be specified for source ip port or destination ip port ; it cannot be specified for source tcp port , destination tcp port , source udp port , or destination udp port .
<i>port</i>	The well-known port number (or port range) for the desired service. For example, the port number for Telnet is 23. Specify a range of ports using a hyphen (for example, 22-23).

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Use the **no** form of the command to remove a service from the configuration, or to remove parameters from a particular service. Note that at least one parameter must be associated with a service.

- The command options offer alternate ways of configuring TCP or UDP ports for a service. Note that port types (TCP or UDP) cannot be mixed in the same service. The following table shows how the keywords are used:

To configure:	Use keywords:	Notes
TCP or UDP ports for a service	protocol source ip port destination ip port	<i>The protocol must be specified with at least one source or destination port.</i>
TCP ports for a service	source tcp port destination tcp port	<i>Keywords may be used in combination.</i>
UDP ports for a service	source udp port destination udp port	<i>Keywords may be used in combination.</i>

- If the **snapshot** command is entered after the **policy service** command is configured, the resulting ASCII file will include the following additional syntax for the **policy service** command:

from {cli | ldap | blt}

This syntax indicates how the service was created. The **cli** and **ldap** options may be changed by a user modifying the ASCII file; however, changing this setting is not recommended. The **blt** option indicates a built-in object, this setting is not configurable.

Examples

The following two commands show two different ways of configuring the same service:

```
-> policy service telnet2 protocol 6 destination ip port 23
-> policy service telnet3 destination tcp port 23
```

Release History

Release 6.6.1; command was introduced.

Related Commands

policy service group	Configures a policy service group, which is made up of policy services.
policy condition	Creates a policy condition.
qos apply	Applies configured QoS and policy settings to the current configuration.
show policy service	Displays information about policy services configured on the switch.

MIB Objects

alaQoSServiceTable

- alaQoSServiceName
- alaQoSServiceSource
- alaQoSServiceIpProtocol
- alaQoSServiceSourceIpPort
- alaQoSServiceSourceIpPortEnd
- alaQoSServiceDestinationIpPort
- alaQoSServiceDestinationIpPortEnd
- alaQoSServiceSourceTcpPort
- alaQoSServiceSourceTcpPortEnd
- alaQoSServiceDestinationTcpPort
- alaQoSServiceDestinationTcpPortEnd
- alaQoSServiceSourceUdpPort
- alaQoSServiceSourceUdpPortEnd
- alaQoSServiceDestinationUdpPort
- alaQoSServiceDestinationUdpPortEnd

alaQoSAppliedServiceTable

- alaQoSAppliedServiceName
- alaQoSAppliedServiceSource
- alaQoSAppliedServiceIpProtocol
- alaQoSAppliedSourceIpPort
- alaQoSAppliedSourceIpPortEnd
- alaQoSAppliedServiceDestinationIpPort
- alaQoSAppliedServiceDestinationIpPortEnd
- alaQoSAppliedSourceTcpPort
- alaQoSAppliedSourceTcpPortEnd
- alaQoSAppliedServiceDestinationTcpPort
- alaQoSAppliedServiceDestinationTcpPortEnd
- alaQoSAppliedSourceUdpPort
- alaQoSAppliedSourceUdpPortEnd
- alaQoSAppliedServiceDestinationUdpPort
- alaQoSAppliedServiceDestinationUdpPortEnd

policy service protocol

Configures a service with a protocol and IP port or port range that may be used as part of a policy service group or included as part of a policy condition.

```
policy service service_name protocol protocol {[source ip port port[-port]]  
[destination ip port port[-port]]}
```

```
no policy service service_name
```

```
policy service service_name [no source ip port] [no destination ip port]
```

Syntax Definitions

<i>service_name</i>	The name of the service (up to 31 alphanumeric characters).
<i>protocol</i>	The protocol associated with the service. The range of values is 0–255. Currently a value of 6 (for TCP) or 17 (for UDP) is supported.
<i>port</i>	The well-known port number (or port range) for the desired service. For example, the port number for Telnet is 23. A port range should be separated by a hyphen (for example, 22-23).

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Use the **no** form of the command to remove a service from the configuration, or to remove parameters from a particular service. (A protocol value cannot be removed from a service.)
- Shortcut commands for the **policy service protocol** command include the following: **policy service source tcp port**, **policy service destination tcp port**, **policy service source udp port**, and **policy service destination udp port**.
- If the **snapshot** command is entered after the **policy service** command is configured, the resulting ASCII file will include the following additional syntax for the **policy service** command:

```
from {cli | ldap | blt}
```

This syntax indicates how the service was created. The **cli** and **ldap** options may be changed by a user modifying the ASCII file; however, changing this setting is not recommended. The **blt** option indicates a built-in object, this setting is not configurable.

Examples

```
-> policy service telnet2 protocol 6 destination ip port 23 source ip port 22  
-> policy service telnet2 no source ip port
```

Release History

Release 6.6.1; command was introduced.

Related Commands

policy service group	Configures a policy service group, which is made up of policy services.
policy condition	Creates a policy condition.
qos apply	Applies configured QoS and policy settings to the current configuration.
show policy service	Displays information about policy services configured on the switch.

MIB Objects

```
alaQoSServiceTable
  alaQoSServiceName
  alaQoSServiceSource
  alaQoSServiceIpProtocol
  alaQoSServiceSourceIpPort
  alaQoSServiceSourceIpPortEnd
  alaQoSServiceDestinationIpPort
  alaQoSServiceDestinationIpPortEnd
alaQoSAppliedServiceTable
  alaQoSAppliedServiceName
  alaQoSAppliedServiceSource
  alaQoSAppliedServiceIpProtocol
  alaQoSAppliedSourceIpPort
  alaQoSAppliedSourceIpPortEnd
  alaQoSAppliedServiceDestinationIpPort
  alaQoSAppliedServiceDestinationIpPortEnd
```

policy service source tcp port

Configures a service with a source TCP port or port range that may be used as part of a policy service group or included as part of a policy condition.

policy service *service_name* **source tcp port** *port[-port]*

no policy service *service_name*

policy service *service_name* **no source tcp port**

Syntax Definitions

<i>service_name</i>	The name of the service (up to 31 alphanumeric characters).
<i>port</i>	The well-known port number (or port range) for the desired TCP service. For example, the port number for Telnet is 23. A port range should be separated by a hyphen (for example, 22-23).

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- This command is a shortcut for the **policy service protocol** command.
- Use the **no** form of the command to remove a service from the configuration, or to remove parameters from a particular service. Note that at least one parameter must be associated with a service.
- Ports associated with a particular service must all be of the same type. (The **destination tcp port** keyword may be used with this command; other keywords for the command are not allowed.)
- If the **snapshot** command is entered after the **policy service** command is configured, the resulting ASCII file will include the following additional syntax for the **policy service** command:

from {cli | ldap | blt}

This syntax indicates how the service was created. The **cli** and **ldap** options may be changed by a user modifying the ASCII file; however, changing this setting is not recommended. The **blt** option indicates a built-in object, this setting is not configurable.

Examples

```
-> policy service serv_5 source tcp port 21-22
```

Release History

Release 6.6.1; command was introduced.

Related Commands

policy service group	Configures a policy service group, which is made up of policy services.
policy condition	Creates a policy condition.
qos apply	Applies configured QoS and policy settings to the current configuration.
show policy service	Displays information about policy services configured on the switch.

MIB Objects

```
alaQoSServiceTable
  alaQoSServiceName
  alaQoSServiceSource
  alaQoSServiceSourceTcpPort
  alaQoSServiceSourceTcpPortEnd
alaQoSAppliedServiceTable
  alaQoSAppliedServiceName
  alaQoSAppliedServiceSource
  alaQoSAppliedSourceTcpPort
  alaQoSAppliedSourceTcpPortEnd
```

policy service destination tcp port

Configures a service with a destination TCP port or port range that may be used as part of a policy service group or included as part of a policy condition.

policy service *service_name* **destination tcp port** *port*[-*port*]

no policy service *service_name*

policy service *service_name* **no destination tcp port**

Syntax Definitions

<i>service_name</i>	The name of the service (up to 31 alphanumeric characters).
<i>port</i>	The well-known port number (or port range) for the desired TCP service. For example, the port number for Telnet is 23. A port range should be separated by a hyphen (for example, 22-23).

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Use the **no** form of this command to remove a service from the configuration, or to remove parameters from a particular service.
- This command is a shortcut for the **policy service protocol** command.
- A policy service may be grouped in a policy group using the **policy service group** command. A policy condition may then be associated with the service group.
- If the **snapshot** command is entered after the **policy service** command is configured, the resulting ASCII file will include the following additional syntax for the **policy service** command:

from {cli | ldap | blt}

This syntax indicates how the service was created. The **cli** and **ldap** options may be changed by a user modifying the ASCII file; however, changing this setting is not recommended. The **blt** option indicates a built-in object, this setting is not configurable.

Examples

```
-> policy service service4 destination tcp port 23
```

Release History

Release 6.6.1; command was introduced.

Related Commands

policy service group	Configures a policy service group, which is made up of policy services.
policy condition	Creates a policy condition.
qos apply	Applies configured QoS and policy settings to the current configuration.
show policy service	Displays information about policy services configured on the switch.

MIB Objects

```
alaQoSServiceTable
  alaQoSServiceName
  alaQoSServiceSource
  alaQoSServiceDestinationTcpPort
  alaQoSServiceDestinationTcpPortEnd
alaQoSAppliedServiceTable
  alaQoSAppliedServiceName
  alaQoSAppliedServiceSource
  alaQoSAppliedServiceDestinationTcpPort
  alaQoSAppliedServiceDestinationTcpPortEnd
```

policy service source udp port

Configures a service with a source UDP port or port range that may be used as part of a policy service group or included as part of a policy condition.

policy service *service_name* **source udp port** *port*[-*port*]

no policy service *service_name*

policy service *service_name* **no source udp port**

Syntax Definitions

service_name

The name of the service (up to 31 alphanumeric characters).

port

The well-known port number (or port range) for the desired UDP service. A port range should be separated by a hyphen (for example, **22-23**).

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- This command is a shortcut for the **policy service protocol** command.
- Use the **no** form of the command to remove a service from the configuration, or to remove parameters from a particular service. Note that at least one parameter must be associated with a service.
- Ports associated with a particular service must all be of the same type. (The **destination tcp port** keyword may be used with this command; other keywords for the command are not allowed.)
- If the **snapshot** command is entered after the **policy service** command is configured, the resulting ASCII file will include the following additional syntax for the **policy service** command:

from {cli | ldap | blt}

This syntax indicates how the service was created. The **cli** and **ldap** options may be changed by a user modifying the ASCII file; however, changing this setting is not recommended. The **blt** option indicates a built-in object, this setting is not configurable.

Examples

```
-> policy service serv_a source udp port 1000
-> no policy service serv_a
```

Release History

Release 6.6.1; command was introduced.

Related Commands

policy service group	Configures a policy service group, which is made up of policy services.
policy condition	Creates a policy condition.
qos apply	Applies configured QoS and policy settings to the current configuration.
show policy service	Displays information about policy services configured on the switch.

MIB Objects

```
alaQoSServiceTable
  alaQoSServiceName
  alaQoSServiceSource
  alaQoSServiceSourceUdpPort
  alaQoSServiceSourceUdpPortEnd
alaQoSAppliedServiceTable
  alaQoSAppliedServiceName
  alaQoSAppliedServiceSource
  alaQoSAppliedSourceUdpPort
  alaQoSAppliedSourceUdpPortEnd
```

policy service destination udp port

Configures a service with a destination UDP port or port range that may be used as part of a policy service group or included as part of a policy condition.

policy service *service_name* **destination udp port** *port[-port]*

no policy service *service_name*

policy service *service_name* **no destination udp port**

Syntax Definitions

service_name

The name of the service (up to 31 alphanumeric characters).

port

The well-known port number (or port range) for the desired UDP service. For example, a port number for NETBIOS is 137. A port range should be separated by a hyphen (for example, **137-138**).

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- This command is a shortcut for the **policy service protocol** command.
- A policy service may be grouped in a policy group using the **policy service group** command. A policy condition may then be associated with the service group.
- Use the **no** form of the command to remove a service from the configuration, or to remove parameters from a particular service.
- If the **snapshot** command is entered after the **policy service** command is configured, the resulting ASCII file will include the following additional syntax for the **policy service** command:

from {cli | ldap | blt}

This syntax indicates how the service was created. The **cli** and **ldap** options may be changed by a user modifying the ASCII file; however, changing this setting is not recommended. The **blt** option indicates a built-in object, this setting is not configurable.

Examples

```
-> policy service service4 destination udp port 137
```

Release History

Release 6.6.1; command was introduced.

Related Commands

policy service group	Configures a policy service group, which is made up of policy services.
policy condition	Creates a policy condition.
qos apply	Applies configured QoS and policy settings to the current configuration.
show policy service	Displays information about policy services configured on the switch.

MIB Objects

```
alaQoSServiceTable
  alaQoSServiceName
  alaQoSServiceSource
  alaQoSServiceDestinationUdpPort
  alaQoSServiceDestinationUdpPortEnd
alaQoSAppliedServiceTable
  alaQoSAppliedServiceName
  alaQoSAppliedServiceSource
  alaQoSAppliedServiceDestinationUdpPort
  alaQoSAppliedServiceDestinationUdpPortEnd
```

policy condition

Creates a QoS policy condition. The condition determines what parameters the switch uses to classify incoming flows. Condition parameters may be configured when the condition is created; or parameters may be configured for an existing condition. At least one parameter must be configured for a condition.

This section describes the base command. Optional keywords are listed below and described as separate commands later in this chapter. (Options may be used in combination but are described separately for ease in explanation.) Use the **no** form for keywords to remove a parameter from the condition.

Some condition parameters may not be supported depending on the platform you are using. Also some condition parameters may not be supported with some action parameters. See the condition/action tables in the *OmniSwitch AOS Release 6250/6350/6450 Network Configuration Guide*.

policy condition *condition_name*

```
[source ip ip_address [mask netmask]]
[source ipv6 {any | ipv6_address [mask netmask]}]
[destination ip ip_address [mask netmask]]
[destination ipv6 {any | ipv6_address [mask netmask]}]
[multicast ip ip_address [mask netmask]]
[source network group network_group]
[destination network group network_group]
[multicast network group multicast_group]
[source ip port port[-port]]
[destination ip port port[-port]]
[source tcp port port[-port]]
[destination tcp port port[-port]]
[source udp port port[-port]]
[destination udp port port[-port]]
[ethertype etype]
[established]
[tcpflags {any | all} flag [mask flag]]
[service service]
[service group service_group]
[icmptype type]
[icmpcode code]
[ip protocol protocol]
[ipv6]
[ tos tos_value tos_mask]
[dscp {dscp_value[-value]} [dscp_mask]]
[source mac mac_address [mask mac_mask]]
[destination mac mac_address [mask mac_mask]]
[source mac group group_name]
[destination mac group mac_group]
[source vlan vlan_id]
[source vlan group group_name]
[destination vlan vlan_id]
[802.1p 802.1p_value]
[source port slot/port[-port]]
```

```
[source port group group_name]  
[destination port slot/port[-port]]  
[destination port group group_name]
```

no policy condition *condition_name*

Syntax Definitions

condition_name The name of the condition. Any alphanumeric string.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- A policy condition and a policy action are combined to make a policy rule. See the [policy rule](#) command page for more information.
- Use the [qos apply](#) command to activate configuration changes.
- If multiple keywords are defined for a single condition, the traffic flow must match all of the parameters in the condition before the rule is enforced.
- Use the **no** form of the command to remove a condition from a policy rule.
- At least one parameter must be associated with a condition.
- If the **snapshot** command is entered after the **policy condition** command is configured, the resulting ASCII file will include the following additional syntax for the **policy condition** command:

```
from {cli | ldap | blt}
```

This syntax indicates how the condition was created. The **cli** and **ldap** options may be changed by a user modifying the ASCII file; however, changing this setting is not recommended. The **blt** option indicates a built-in condition, this option is not configurable.

Examples

```
-> policy condition cond4 source port 3/1
```

Release History

Release 6.6.1; command was introduced.

Related Commands

qos apply	Applies configured QoS and policy settings to the current configuration.
policy action	Configures a policy action.
policy rule	Configures a policy rule on the switch. A rule is made up of a condition (for classifying incoming traffic) and an action (to be applied to outgoing traffic).
show policy condition	Shows information about policy conditions configured on the switch.

MIB Objects

```

alaQoSConditionTable
  alaQoSConditionName
  alaQoSConditionSource
  alaQoSConditionSourceSlot
  alaQoSConditionSourcePort
  alaQoSConditionSourcePortEnd
  alaQoSConditionSourcePortGroup
  alaQoSConditionDestinationSlot
  alaQoSConditionDestinationPort
  alaQoSConditionDestinationPortEnd
  alaQoSConditionDestinationPortGroup
  alaQoSConditionSourceInterfaceType
  alaQoSConditionDestinationInterfaceType
  alaQoSConditionSourceMacAddr
  alaQoSConditionSourceMacMask
  alaQoSConditionSourceMacGroup
  alaQoSConditionDestinationMacAddr
  alaQoSConditionDestinationMacMask
  alaQoSConditionDestinationMacGroup
  alaQoSConditionSourceVlan
  alaQoSConditionSourceVlanGroup
  alaQoSConditionDestinationVlan
  alaQoSCondition8021p
  alaQoSConditionSourceIpAddr
  alaQoSConditionSourceIpMask
  alaQoSConditionSourceNetworkGroup
  alaQoSConditionDestinationIpAddr
  alaQoSConditionDestinationIpMask
  alaQoSConditionDestinationNetworkGroup
  alaQoSConditionMulticastIpAddr
  alaQoSConditionMulticastIpMask
  alaQoSConditionMulticastNetworkGroup
  alaQoSConditionTos
  alaQoSConditionDscp
  alaQoSConditionTcpFlags
  alaQoSConditionIpProtocol
  alaQoSConditionSourceIpPort
  alaQoSConditionSourceIpPortEnd
  alaQoSConditionDestinationIpPort
  alaQoSConditionDestinationIpPortEnd
  alaQoSConditionSourceTcpPort
  alaQoSConditionSourceTcpPortEnd
  alaQoSConditionDestinationTcpPort
  alaQoSConditionDestinationTcpPortEnd
  alaQoSConditionSourceUdpPort

```

```
alaQoSConditionSourceUdpPortEnd
alaQoSConditionDestinationUdpPort
alaQoSConditionDestinationUdpPortEnd
alaQoSConditionService
alaQoSConditionServiceStatus
alaQoSConditionServiceGroup
alaQoSAppliedConditionTable
  alaQoSAppliedConditionName
  alaQoSAppliedConditionSource
  alaQoSAppliedConditionSourceSlot
  alaQoSAppliedConditionSourcePort
  alaQoSAppliedConditionSourcePortEnd
  alaQoSAppliedConditionSourcePortGroup
  alaQoSAppliedConditionDestinationSlot
  alaQoSAppliedConditionDestinationPort
  alaQoSAppliedConditionDestinationPortEnd
  alaQoSAppliedConditionDestinationPortGroup
  alaQoSAppliedConditionSourceInterfaceType
  alaQoSAppliedConditionDestinationInterfaceType
  alaQoSAppliedConditionSourceMacAddr
  alaQoSAppliedConditionSourceMacMask
  alaQoSAppliedConditionSourceMacGroup
  alaQoSAppliedConditionDestinationMacAddr
  alaQoSAppliedConditionDestinationMacMask
  alaQoSAppliedConditionDestinationMacGroup
  alaQoSAppliedConditionSourceVlan
  alaQoSAppliedConditionSourceVlanGroup
  alaQoSAppliedConditionDestinationVlan
  alaQoSAppliedCondition8021p
  alaQoSAppliedConditionSourceIpAddr
  alaQoSAppliedConditionSourceIpMask
  alaQoSAppliedConditionSourceNetworkGroup
  alaQoSAppliedConditionDestinationIpAddr
  alaQoSAppliedConditionDestinationIpMask
  alaQoSAppliedConditionDestinationNetworkGroup
  alaQoSAppliedConditionMulticastIpAddr
  alaQoSAppliedConditionMulticastIpMask
  alaQoSAppliedConditionMulticastNetworkGroup
  alaQoSAppliedConditionTos
  alaQoSAppliedConditionDscp
  alaQoSAppliedConditionTcpFlags
  alaQoSAppliedConditionIpProtocol
  alaQoSAppliedConditionSourceIpPort
  alaQoSAppliedConditionSourceIpPortEnd
  alaQoSAppliedConditionDestinationIpPort
  alaQoSAppliedConditionDestinationIpPortEnd
  alaQoSAppliedConditionSourceTcpPort
  alaQoSAppliedConditionSourceTcpPortEnd
  alaQoSAppliedConditionDestinationTcpPort
  alaQoSAppliedConditionDestinationTcpPortEnd
  alaQoSAppliedConditionSourceUdpPort
  alaQoSAppliedConditionSourceUdpPortEnd
  alaQoSAppliedConditionDestinationUdpPort
  alaQoSAppliedConditionDestinationUdpPortEnd
  alaQoSAppliedConditionService
  alaQoSAppliedConditionServiceStatus
  alaQoSAppliedConditionServiceGroup
```

policy condition source ip

Configures a source IP address for a policy condition.

policy condition *condition_name* **source ip** *ip_address* [**mask** *netmask*]

policy condition *condition_name* **no source ip**

Syntax Definitions

<i>condition_name</i>	The name of the condition.
<i>ip_address</i>	The source IP address of the Layer 3 flow.
<i>netmask</i>	The mask for the source IP address.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- If a mask is not specified, the IP address is assumed to be a host address.
- A source IP address and a source IP network group cannot be specified in the same condition.
- Use the **no** form of the command to remove a source IP address from a condition; however, at least one classification parameter must be associated with a condition.

Examples

```
-> policy condition cond3 source ip 173.201.18.3
```

Release History

Release 6.6.1; command was introduced.

Related Commands

qos apply	Applies configured QoS and policy settings to the current configuration.
policy condition	Creates a policy condition.
show policy condition	Shows information about a particular policy condition configured on the switch.

MIB Objects

alaQoSConditionTable

 alaQoSConditionName

 alaQoSConditionSourceIpAddr

 alaQoSConditionSourceIpMask

alaQoSAppliedConditionTable

 alaQoSAppliedConditionName

 alaQoSAppliedConditionSourceIpAddr

 alaQoSAppliedConditionSourceIpMask

policy condition source ipv6

Configures a source IPv6 address for a policy condition.

policy condition *condition_name* **source ipv6** {**any** | *ipv6_address* [**mask** *netmask*]}

policy condition *condition_name* **no source ipv6**

Syntax Definitions

<i>condition_name</i>	The name of the condition.
any	Any source IPv6 address.
<i>ipv6_address</i>	A specific source IPv6 address.
<i>netmask</i>	The mask for the source IPv6 address.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Use the **no** form of the command to remove a source IPv6 address from a condition; however, at least one classification parameter must be associated with a condition.
- If a mask is not specified, the IPv6 address is assumed to be a host address.
- This policy condition is not supported when applied to an egress policy list.

Examples

```
-> policy condition cond3 source ipv6::1234:531F:BCD2:F34A
```

Release History

Release 6.6.1; command was introduced.

Related Commands

qos apply	Applies configured QoS and policy settings to the current configuration.
policy condition	Creates a policy condition.
show policy condition	Shows information about a particular policy condition configured on the switch.

MIB Objects

alaQoSConditionTable

- alaQoSConditionName
- alaQoSConditionSourceIpv6Addr
- alaQoSConditionSourceIpv6AddrStatus
- alaQoSConditionSourceIpv6Mask

alaQoSAppliedConditionTable

- alaQoSAppliedConditionName
- alaQoSAppliedConditionSourceIpv6Addr
- alaQoSAppliedConditionSourceIpv6AddrStatus
- alaQoSAppliedConditionSourceIpMask

policy condition destination ip

Configures a destination IP address for a policy condition.

policy condition *condition_name* **destination ip** *ip_address* [**mask** *netmask*]

policy condition *condition_name* **no destination ip**

Syntax Definitions

<i>condition_name</i>	The name of the condition.
<i>ip_address</i>	The destination IP address of the Layer 3 flow.
<i>netmask</i>	The mask for the destination IP address.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- If a mask is not specified, the IP address is assumed to be a host address.
- A destination IP address and a destination IP network group cannot be specified in the same condition.
- Use the **no** form of the command to remove a destination IP address from a condition; however, at least one classification parameter must be associated with a condition.

Examples

```
-> policy condition cond4 destination ip 208.192.21.0 mask 255.255.255.0
```

Release History

Release 6.6.1; command was introduced.

Related Commands

policy condition	Creates a policy condition.
qos apply	Applies configured QoS and policy settings to the current configuration.
show policy condition	Shows information about a particular policy condition configured on the switch.

MIB Objects

alaQoSConditionTable

 alaQoSConditionName

 alaQoSConditionDestinationIpAddr

 alaQoSConditionDestinationIpMask

alaQoSAppliedConditionTable

 alaQoSAppliedConditionName

 alaQoSAppliedConditionDestinationIpAddr

 alaQoSAppliedConditionDestinationIpMask

policy condition destination ipv6

Configures a destination IPv6 address for a policy condition.

policy condition *condition_name* **destination ipv6** {**any** | *ipv6_address* [**mask** *netmask*]}

policy condition *condition_name* **no destination ipv6**

Syntax Definitions

<i>condition_name</i>	The name of the condition.
any	Any destination IPv6 address.
<i>ipv6_address</i>	A specific destination IPv6 address.
<i>netmask</i>	The mask for the source IPv6 address.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Use the **no** form of this command to remove a destination IPv6 address from a condition; however, at least one classification parameter must be associated with a condition.
- If a mask is not specified, the IPv6 address is assumed to be a host address.
- This policy condition is not supported when applied to an egress policy list.

Examples

```
-> policy condition cond3 destination ipv6 ::1234:531F:BCD2:F34A
```

Release History

Release 6.6.1; command was introduced.

Related Commands

qos apply	Applies configured QoS and policy settings to the current configuration.
policy condition	Creates a policy condition.
show policy condition	Shows information about a particular policy condition configured on the switch.

MIB Objects

alaQoSConditionTable

 alaQoSConditionName

 alaQoSConditionDestinationIpv6Addr

 alaQoSConditionDestinationIpv6AddrStatus

 alaQoSConditionDestinationIpv6Mask

alaQoSAppliedConditionTable

 alaQoSAppliedConditionName

 alaQoSAppliedConditionDestinationIpv6Addr

 alaQoSAppliedConditionDestinationIpv6AddrStatus

 alaQoSAppliedConditionDestinationIpMask

policy condition multicast ip

Configures a multicast IP address for a policy condition.

policy condition *condition_name* **multicast ip** *ip_address* [**mask** *netmask*]

policy condition *condition_name* **no multicast ip**

Syntax Definitions

<i>condition_name</i>	The name of the condition.
<i>ip_address</i>	The multicast IP address.
<i>netmask</i>	Optional. The mask for the multicast IP address.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- If a mask is not specified, the IP address is assumed to be a host address.
- A multicast IP address and a multicast network group cannot be specified in the same condition.
- Use the **no** form of the command to remove a multicast IP address from a condition; however, at least one classification parameter must be associated with a condition.

Examples

```
-> policy condition cond4 multicast ip 224.1.1.1
```

Release History

Release 6.6.1; command was introduced.

Related Commands

policy condition	Creates a policy condition.
qos apply	Applies configured QoS and policy settings to the current configuration.

MIB Objects

alaQoSConditionTable

- alaQoSConditionName
- alaQoSMulticastIpAddr
- alaQoSMulticastIpMask

alaQoSAppliedConditionTable

- alaQoSAppliedConditionName
- alaQoSAppliedMulticastIpAddr
- alaQoSAppliedMulticastIpMask

policy condition source network group

Associates a source network group with a policy condition.

policy condition *condition_name* **source network group** *network_group*

policy condition *condition_name* **no source network group**

Syntax Definitions

condition_name

The name of the condition.

network_group

The name of the source network group. Network groups are configured through the [policy network group](#) command.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Use the **no** form of the command to remove a source network group from a condition; however, at least one classification parameter must be associated with a condition.
- A source IP address and a source IP network group cannot be specified in the same condition.

Examples

```
-> policy condition cond5 source network group webgroup1
```

Release History

Release 6.6.1; command was introduced.

Related Commands

[qos apply](#)

Applies configured QoS and policy settings to the current configuration.

[policy condition](#)

Creates a policy condition.

[policy network group](#)

Configures a network group name and its associated IP addresses.

[show policy condition](#)

Shows information about policy conditions configured on the switch.

[show policy network group](#)

Displays information about policy network groups.

MIB Objects

alaQoSConditionTable

 alaQoSConditionName

 alaQoSConditionSourceNetworkGroup

alaQoSAppliedConditionTable

 alaQoSAppliedConditionName

 alaQoSAppliedConditionSourceNetworkGroup

policy condition destination network group

Associates a destination network group with a policy condition.

policy condition *condition_name* **destination network group** *network_group*

policy condition *condition_name* **no destination network group**

Syntax Definitions

condition_name

The name of the condition.

network_group

The name of the destination network group. Network groups are configured through the [policy network group](#) command.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Use the **no** form of the command to remove a destination network group from a condition; however, at least one classification parameter must be associated with a condition.
- A destination IP address and a destination IP network group cannot be specified in the same condition.

Examples

```
-> policy condition cond6 destination network group webgroup1
```

Release History

Release 6.6.1; command was introduced.

Related Commands

[policy condition](#)

Creates a policy condition.

[policy network group](#)

Configures a network group name and its associated IP addresses.

[qos apply](#)

Applies configured QoS and policy settings to the current configuration.

[show policy condition](#)

Shows information about policy conditions configured on the switch.

[show policy network group](#)

Displays information about policy network groups.

MIB Objects

alaQoSConditionTable

 alaQoSConditionName

 alaQoSConditionDestinationNetworkGroup

alaQoSAppliedConditionTable

 alaQoSAppliedConditionName

 alaQoSAppliedConditionDestinationNetworkGroup

policy condition multicast network group

Associates a multicast group with a policy condition.

policy condition *condition_name* **multicast network group** *multicast_group*

policy condition *condition_name* **no multicast network group**

Syntax Definitions

condition_name

The name of the condition.

multicast_group

The multicast group name. Multicast groups are configured through the **policy network group** command.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Use the **no** form of the command to remove a multicast group from a condition; however, at least one classification parameter must be associated with a condition.
- A multicast address and a multicast network group cannot be specified in the same condition.

Examples

```
-> policy condition cond3 multicast group video2
```

Release History

Release 6.6.1; command was introduced.

Related Commands

[qos apply](#)

Applies configured QoS and policy settings to the current configuration.

[policy condition](#)

Creates a policy condition.

[policy network group](#)

Configures a network group name and its associated IP addresses.

[show policy condition](#)

Shows information about policy conditions configured on the switch.

[show policy network group](#)

Displays information about policy network groups.

MIB Objects

alaQoSConditionTable

 alaQoSConditionName

 alaQoSConditionMulticastNetworkGroup

alaQoSAppliedConditionTable

 alaQoSAppliedConditionName

 alaQoSAppliedConditionMulticastNetworkGroup

policy condition source ip port

Configures a source IP port number for a policy condition.

policy condition *condition_name* **source ip port** *port*[-*port*]

policy condition *condition_name* **no source ip port**

Syntax Definitions

<i>condition_name</i>	The name of the condition.
<i>port</i>	The TCP or UDP port number of the source address of the Layer 3 flow, in the range from 0–65535. A range of ports (separated by a hyphen) may be specified instead of a single port.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Use the **no** form of the command to remove a source IP port from a condition; however, at least one classification parameter must be associated with a condition.
- The protocol (TCP or UDP) must be specified in the condition, either on the same command line or in a previous command. Use the **ip protocol** keywords. See the [policy condition ip protocol](#) command.
- The same condition cannot specify a source IP port with a source TCP port, source UDP port, service, or service group.

Examples

```
-> policy condition cond1 ip protocol 6 source ip port 137
```

Release History

Release 6.6.1; command was introduced.

Related Commands

qos apply	Applies configured QoS and policy settings to the current configuration.
policy condition ip protocol	Configures an IP protocol for a policy condition.
show policy condition	Shows information about policy conditions configured on the switch.

MIB Objects`alaQoSConditionTable``alaQoSConditionName``alaQoSConditionSourceIpPort``alaQoSConditionSourceIpPortEnd``alaQoSAppliedConditionTable``alaQoSAppliedConditionName``alaQoSAppliedConditionSourceIpPort``alaQoSAppliedConditionSourceIpPortEnd`

policy condition destination ip port

Configures a destination IP port number for a policy condition.

policy condition *condition_name* **destination ip port** *port[-port]*

policy condition *condition_name* **no destination ip port**

Syntax Definitions

<i>condition_name</i>	The name of the condition.
<i>port</i>	The TCP or UDP port number (or port range) of the destination address of the Layer 3 flow, in the range from 0–65535. A range of ports (separated by a hyphen) may be specified instead of a single port.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Use the **no** form of the command to remove a destination IP port from a condition; however, at least one classification parameter must be associated with a condition.
- The protocol (TCP or UDP) must be specified in the same condition, either on the same command line or in a previous command. Use the **ip protocol** keywords. See the [policy condition ip protocol](#) command.
- The same condition cannot specify a destination IP port with a service or service group.

Examples

```
-> policy condition cond2 ip protocol 6 destination ip port 137-138
```

Release History

Release 6.6.1; command was introduced.

Related Commands

qos apply	Applies configured QoS and policy settings to the current configuration.
policy condition ip protocol	Configures an IP protocol for a policy condition.
show policy condition	Shows information about policy conditions configured on the switch.

MIB Objects

alaQoSConditionTable

 alaQoSConditionName

 alaQoSConditionDestinationIpPort

 alaQoSConditionDestinationIpPortEnd

alaQoSAppliedConditionTable

 alaQoSAppliedConditionName

 alaQoSAppliedConditionDestinationIpPort

 alaQoSAppliedConditionDestinationIpPortEnd

policy condition source tcp port

Configures a source TCP port number for a policy condition.

policy condition *condition_name* **source tcp port** *port*[-*port*]

policy condition *condition_name* **no source tcp port**

Syntax Definitions

<i>condition_name</i>	The name of the condition.
<i>port</i>	The TCP port number of the source address of the Layer 3 flow, in the range from 0–65535. A range of ports (separated by a hyphen) may be specified instead of a single port.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Use the **no** form of the command to remove a source TCP port from a condition; however, at least one classification parameter must be associated with a condition.
- This command is a shortcut for the **policy condition source ip port** command, which requires that the protocol also be specified. Rather than specifying **source ip port** and **ip protocol**, use **source tcp port**.
- The same condition cannot specify a source TCP port with a service or service group.
- IP port protocol types cannot be mixed in the same condition; ports must be either TCP or UDP.
- Use this condition in combination with the IPv6 condition (**policy condition ipv6**) to configure IPv6 policies for Layer 4 information, services, and service groups.

Examples

```
-> policy condition cond3 source tcp port 137
-> policy condition cond4 ipv6 source tcp port 21
-> policy condition cond3 no source tcp port
```

Release History

Release 6.6.1; command was introduced.

Related Commands

qos apply	Applies configured QoS and policy settings to the current configuration.
policy condition	Creates a policy condition.
show policy condition	Shows information about policy conditions configured on the switch.

MIB Objects

```
alaQoSConditionTable
  alaQoSConditionName
  alaQoSConditionSourceTcpPort
  alaQoSConditionSourceTcpPortEnd
alaQoSAppliedConditionTable
  alaQoSAppliedConditionName
  alaQoSAppliedConditionSourceTcpPort
  alaQoSAppliedConditionSourceTcpPortEnd
```

policy condition destination tcp port

Configures a destination TCP port number for a policy condition.

policy condition *condition_name* **destination tcp port** *port*[-*port*]

policy condition *condition_name* **no destination tcp port**

Syntax Definitions

<i>condition_name</i>	The name of the condition.
<i>port</i>	The TCP port number (or port range) of the destination address of the Layer 3 flow, in the range from 0–65535. A range of ports (separated by a hyphen) may be specified instead of a single port.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Use the **no** form of the command to remove a destination TCP port from a condition; however, at least one classification parameter must be associated with a condition.
- This command is a shortcut for the **policy condition destination ip port** command, which requires that the protocol also be specified. Rather than specifying **destination ip port** and **ip protocol**, use **destination tcp port**.
- The same condition cannot specify a destination TCP port with a service or service group.
- IP port protocol types cannot be mixed in the same condition; ports must be either TCP or UDP.
- Use this condition in combination with the IPv6 condition (**policy condition ipv6**) to configure IPv6 policies for Layer 4 information, services, and service groups.

Examples

```
-> policy condition cond4 destination tcp port 137-138
-> policy condition cond5 ipv6 destination tcp port 140
-> policy condition cond4 no destination tcp port
```

Release History

Release 6.6.1; command was introduced.

Related Commands

qos apply	Applies configured QoS and policy settings to the current configuration.
policy condition	Creates a policy condition.
show policy condition	Shows information about policy conditions configured on the switch.

MIB Objects

```
alaQoSConditionTable
  alaQoSConditionName
  alaQoSConditionDestinationTcpPort
  alaQoSConditionDestinationTcpPortEnd
alaQoSAppliedConditionTable
  alaQoSAppliedConditionName
  alaQoSAppliedConditionDestinationTcpPort
  alaQoSAppliedConditionDestinationTcpPortEnd
```

policy condition source udp port

Configures a source UDP port number for a policy condition.

policy condition *condition_name* **source udp port** *port[-port]*

policy condition *condition_name* **no source udp port**

Syntax Definitions

<i>condition_name</i>	The name of the condition.
<i>port</i>	The UDP port number of the source address of the Layer 3 flow, in the range from 0–65535. A range of ports (separated by a hyphen) may be specified instead of a single port.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Use the **no** form of the command to remove a source UDP port from a condition; however, at least one classification parameter must be associated with a condition.
- This command is a shortcut for the **policy condition source ip port** command, which requires that the protocol also be specified. Rather than specifying **source ip port** and **ip protocol**, use **source udp port**.
- The same condition cannot specify a source UDP port with a service or service group.
- IP port protocol types cannot be mixed in the same condition; ports must be either TCP or UDP.
- Use this condition in combination with the IPv6 condition (**policy condition ipv6**) to configure IPv6 policies for Layer 4 information, services, and service groups.

Examples

```
-> policy condition cond5 source udp port 1200-1400
-> policy condition cond6 ipv6 source udp port 1000
-> policy condition cond5 no source udp port
```

Release History

Release 6.6.1; command was introduced.

Related Commands

qos apply	Applies configured QoS and policy settings to the current configuration.
policy condition	Creates a policy condition.
show policy condition	Shows information about policy conditions configured on the switch.

MIB Objects

```
alaQoSConditionTable
  alaQoSConditionName
  alaQoSConditionSourceUdpPort
  alaQoSConditionSourceUdpPortEnd
alaQoSAppliedConditionTable
  alaQoSAppliedConditionName
  alaQoSAppliedConditionSourceUdpPort
  alaQoSAppliedConditionSourceUdpPortEnd
```

policy condition destination udp port

Configures a destination UDP port number for a policy condition.

policy condition *condition_name* **destination udp port** *port*[-*port*]

policy condition *condition_name* **no destination udp port**

Syntax Definitions

<i>condition_name</i>	The name of the condition.
<i>port</i>	The UDP port number (or port range) of the destination address of the Layer 3 flow, in the range from 0–65535. A range of ports (separated by a hyphen) may be specified instead of a single port.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Use the **no** form of the command to remove a destination UDP port from a condition; however, at least one classification parameter must be associated with a condition.
- This command is a shortcut for the **policy condition destination ip port** command, which requires that the protocol also be specified. Rather than specifying **destination ip port** and **ip protocol**, use **destination tcp port**.
- The same condition cannot specify a destination UDP port with a service or service group.
- IP port protocol types cannot be mixed in the same condition; ports must be either TCP or UDP.
- Use this condition in combination with the IPv6 condition (**policy condition ipv6**) to configure IPv6 policies for Layer 4 information, services, and service groups.

Examples

```
-> policy condition cond4 destination udp port 137-138
-> policy condition cond5 ipv6 destination udp port 140
-> policy condition cond4 no destination udp port
```

Release History

Release 6.6.1; command was introduced.

Related Commands

qos apply	Applies configured QoS and policy settings to the current configuration.
policy condition	Creates a policy condition.
show policy condition	Shows information about policy conditions configured on the switch.

MIB Objects

```
alaQoSConditionTable
  alaQoSConditionName
  alaQoSConditionDestinationTcpPort
  alaQoSConditionDestinationTcpPortEnd
alaQoSAppliedConditionTable
  alaQoSAppliedConditionName
  alaQoSAppliedConditionDestinationTcpPort
  alaQoSAppliedConditionDestinationTcpPortEnd
```

policy condition ethertype

Configures an ethertype value to use for traffic classification.

policy condition *condition_name* **ethertype** *etype*

policy condition *condition_name* **no ethertype**

Syntax Definitions

<i>condition_name</i>	The name of the condition.
<i>etype</i>	The ethertype value, in the range 1536–65535 or 0x600–0xffff hex.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Use the **no** form of this command to remove an ethertype value from a condition; however, at least one classification parameter must be associated with a condition.
- Enter a numeric or equivalent hex value for the *etype*.

Examples

```
-> policy condition cond12 ethertype 8137
```

Release History

Release 6.6.1; command was introduced.

Related Commands

policy condition	Creates a policy condition.
qos apply	Applies configured QoS and policy settings to the current configuration.
show policy condition	Shows information about policy conditions configured on the switch.

MIB Objects

alaQoSConditionTable

 alaQoSConditionName

 alaQoSConditionEthertype

 alaQoSConditionEthertypeStatus

alaQoSAppliedConditionTable

 alaQoSAppliedConditionName

 alaQoSAppliedConditionEthertype

 alaQoSAppliedConditionEthertypeStatus

policy condition established

Configures an established TCP connection as a policy condition. A connection is considered established if the **ack** or **rst** flags in the TCP header of the packet are set.

policy condition *condition_name* **established**

policy condition *condition_name* **no established**

Syntax Definitions

condition_name The name of the condition.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Use the **no** form of this command to remove **established** from a condition; however, at least one classification parameter must be associated with a condition.
- When an initial TCP connection packet is received only the **syn** flag is set. As a result, TCP packets are only examined if they are not the starting packet.
- Typically this condition is used in combination with **source ip**, **destination ip**, **source port**, **source TCP port**, or **destination TCP port** conditions.
- The **source mac**, **destination mac**, and **ethertype conditions** cannot be combined with the **established** condition parameter.
- Note that even though **established** can be used with most action parameters, it is mainly intended for ACL use.

Examples

```
-> policy condition cond2 source ip 192.168.5.10 established
-> policy condition cond3 destination ip 10.255.11.40
```

Release History

Release 6.6.1; command was introduced.

Related Commands

- | | |
|---------------------------------------|--|
| qos apply | Applies configured QoS and policy settings to the current configuration. |
| policy condition | Creates a policy condition. |
| show policy condition | Shows information about policy conditions configured on the switch. |

MIB Objects

```
alaQoSConditionTable  
  alaQoSConditionTcpEstablished  
alaQoSAppliedConditionTable  
  alaQoSAppliedConditionTcpEstablished
```

policy condition tcpflags

Configures a specific TCP flag value or combination of flag values as a policy condition.

policy condition *condition_name* **tcpflags** [**any** | **all**] {**F** | **S** | **R** | **P** | **A** | **U** | **E** | **W**} **mask** {**F** | **S** | **R** | **P** | **A** | **U** | **E** | **W**}

policy condition *condition_name* **no tcpflags**

Syntax Definitions

<i>condition_name</i>	The name of the condition.
any	Match on any of the specified TCP flags.
all	Match all specified TCP flags.
F S R P A U E W	TCP flag value to match (F =fin, S =syn, R =rst, P =psh, A =ack, U =urg, E =ecn, and W =cwr). <i>The E and W flags are currently not supported.</i>

Defaults

parameter	default
any all	all

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Use the **no** form of the command to remove **tcpflags** from a condition; however, at least one classification parameter must be associated with a condition.
- Use the **any** option to indicate that a match on any one of the specified TCP flags qualifies as a match for the condition. Use the **all** option to indicate that a match on all specified TCP flags is required to qualify as a match for the condition.
- Enter one or more TCP flags after the **any** or **all** keyword to indicate that the value of the flag bit must be set to one to qualify as a match.
- Enter one or more TCP flags after the **mask** keyword to indicate which TCP flags to match.
- If a TCP flag is specified as part of the **mask** but does not have a corresponding match value specified with the **any** or **all** options, then zero is assumed as the match value. For example, **tcpflags all f s mask f s a** looks for the following bit values to determine a match: **f**=1, **s**=1, **a**=0.
- Typically this condition is used in combination with **source ip**, **destination ip**, **source port**, **source TCP port**, or **destination TCP port** conditions.
- The **source mac**, **destination mac**, and **ethertype conditions** cannot be combined with the **established** condition parameter.
- Note that even though **tcpflags** can be used with most action parameters, it is mainly intended for ACL use.

Examples

```
-> policy condition c1 tcpflags all f s mask f s a
-> policy condition c2 tcpflags any a r mask a r
```

Release History

Release 6.6.1; command was introduced.

Related Commands

qos apply	Applies configured QoS and policy settings to the current configuration.
policy condition	Creates a policy condition.
show policy condition	Shows information about policy conditions configured on the switch.

MIB Objects

```
alaQoSConditionTable
    alaQoSConditionTcpFlags,
    alaQoSConditionTcpFlagsStatus,
    alaQoSConditionTcpFlagsVal,
    alaQoSConditionTcpFlagsValStatus,
    alaQoSConditionTcpFlagsMask,
    alaQoSConditionTcpFlagsMaskStatus,
alaQoSAppliedConditionTable
    alaQoSAppliedConditionTcpFlags,
    alaQoSAppliedConditionTcpFlagsStatus,
    alaQoSAppliedConditionTcpFlagsVal,
    alaQoSAppliedConditionTcpFlagsValStatus,
    alaQoSAppliedConditionTcpFlagsMask,
    alaQoSAppliedConditionTcpFlagsMaskStatus,
```

policy condition service

Configures a service for a policy condition.

policy condition *condition_name* **service** *service_name*

policy condition *condition_name* **no service**

Syntax Definitions

condition_name The name of the condition.

service_name The service name, configured through the **policy service** command.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Use the **no** form of the command to remove a service group from a condition; however, at least one classification parameter must be associated with a condition.
- A policy condition that specifies a service cannot also specify a service group, IP protocol, source IP port, or destination IP port.

Examples

```
-> policy condition cond12 service serv2
```

Release History

Release 6.6.1; command was introduced.

Related Commands

policy service	Configures a service that may be used as part of a policy service group.
qos apply	Applies configured global QoS and policy settings to the current configuration (changes will be active and stored in flash).
show policy service	Displays information about all particular policy services or a particular policy service configured on the switch.

MIB Objects

```
alaQoSConditionTable  
    alaQoSConditionService  
alaQoSAppliedConditionTable  
    alaQoSAppliedConditionService
```

policy condition service group

Associates a policy service group with a policy condition.

policy condition *condition_name* **service group** *service_group*

policy condition *condition_name* **no service group**

Syntax Definitions

condition_name

The name of the condition.

service_group

The service group name. Service groups are configured through the [policy service group](#) command.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Use the **no** form of the command to remove a service group from a condition; however, at least one classification parameter must be associated with a condition.
- A policy condition that specifies a service group cannot also specify a service, IP protocol, source IP port, or destination IP port.

Examples

```
-> policy condition cond12 service group servgroup2
```

Release History

Release 6.6.1; command was introduced.

Related Commands

[policy service group](#)

Configures a service group and its associated services.

[policy condition](#)

Creates a policy condition.

[qos apply](#)

Applies configured QoS and policy settings to the current configuration.

[show policy condition](#)

Shows information about policy conditions configured on the switch.

MIB Objects

alaQoSConditionTable

 alaQoSConditionName

 alaQoSConditionServiceGroup

alaQoSAppliedConditionTable

 alaQoSAppliedConditionName

 alaQoSAppliedConditionServiceGroup

policy condition icmp type

Configures an ICMP type value to use for traffic classification.

policy condition *condition_name* **icmp type** *type*

policy condition *condition_name* **no icmp type**

Syntax Definitions

<i>condition_name</i>	The name of the condition.
<i>type</i>	The ICMP type value, in the range 0–255.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

Use the **no** form of the command to remove an ICMP type value from a condition; however, at least one classification parameter must be associated with a condition.

Examples

```
-> policy condition cond12 icmp type 100
```

Release History

Release 6.6.1; command was introduced.

Related Commands

policy condition	Creates a policy condition.
policy condition icmp code	Configures an ICMP code value for traffic classification.
qos apply	Applies configured QoS and policy settings to the current configuration.
show policy condition	Shows information about policy conditions configured on the switch.

MIB Objects

alaQoSConditionTable

 alaQoSConditionName

 alaQoSConditionIcmpType

 alaQoSConditionIcmpTypeStatus

alaQoSAppliedConditionTable

 alaQoSAppliedConditionName

 alaQoSAppliedConditionIcmpType

 alaQoSAppliedConditionIcmpTypeStatus

policy condition icmpcode

Configures an ICMP code value to use for traffic classification.

policy condition *condition_name* **icmpcode** *code*

policy condition *condition_name* **no icmpcode**

Syntax Definitions

<i>condition_name</i>	The name of the condition.
<i>code</i>	The ICMP code value, in the range 0–255.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

Use the **no** form of the command to remove an ICMP code value from a condition; however, at least one classification parameter must be associated with a condition.

Examples

```
-> policy condition cond12 icmpcode 150
```

Release History

Release 6.6.1; command was introduced.

Related Commands

policy condition	Creates a policy condition.
policy condition icmpcode	Configures an ICMP type value for traffic classification.
qos apply	Applies configured QoS and policy settings to the current configuration.
show policy condition	Shows information about policy conditions configured on the switch.

MIB Objects

alaQoSConditionTable

 alaQoSConditionName

 alaQoSConditionIcmpCode

 alaQoSConditionIcmpCodeStatus

alaQoSAppliedConditionTable

 alaQoSAppliedConditionName

 alaQoSAppliedConditionIcmpCode

 alaQoSAppliedConditionIcmpCodeStatus

policy condition ip protocol

Configures an IP protocol for a policy condition.

policy condition *condition_name* **ip protocol** *protocol*

policy condition *condition_name* **no ip protocol**

Syntax Definitions

<i>condition_name</i>	The name of the condition.
<i>protocol</i>	The protocol associated with the flow. The range is 0–255.

Defaults

parameter	default
<i>protocol</i>	6

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Use the **no** form of the command to remove a protocol from a condition; however, at least one classification parameter must be associated with a condition.
- If a source or destination port is specified (through the **policy condition source ip port** or **policy condition destination ip port** commands), the protocol must be specified.
- The same condition cannot specify an IP protocol with a service or service group.

Examples

```
-> policy condition cond4 ip protocol 6
```

Release History

Release 6.6.1; command was introduced.

Related Commands

policy condition source ip port	Configures a source IP port number for a policy condition.
policy condition destination ip port	Configures a destination IP port number for a policy condition.
qos apply	Applies configured QoS and policy settings to the current configuration.
show policy condition	Shows information about policy conditions configured on the switch.

MIB Objects

alaQoSConditionTable

 alaQoSConditionName

 alaQoSConditionIpProtocol

alaQoSAppliedConditionTable

 alaQoSAppliedConditionName

 alaQoSAppliedConditionIpProtocol

policy condition ipv6

Configures a policy condition to classify IPv6 traffic.

policy condition *condition_name* **ipv6**

policy condition *condition_name* **no ipv6**

Syntax Definitions

condition_name The name of the condition.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Use the **no** form of the command to remove IPv6 traffic as a condition; however, at least one classification parameter must be associated with a condition.
- When the **ipv6** keyword is used in a condition, a policy that uses the condition is considered an IPv6 policy. IPv6 policies are effected only on IPv6 traffic. All other IP policies are considered IPv4 policies and are effected only on IPv4 traffic.
- IPv6 Layer 4 policies are supported and are configured using the **ipv6** keyword in a condition that specifies Layer 4 information, services, or service groups. Note that IPv6 Layer 4 policies only work with packets that contain a single header.
- The **icmptype** and **icmpcode** keywords in an IPv6 policy imply the ICMPv6 protocol, not the ICMPv4 protocol.
- This policy condition is not supported when applied to an egress policy list.

Examples

```
-> policy condition cond4 ipv6
-> policy condition cond5 ipv6 tos 7
-> policy condition cond6 ipv6 source port 1/1
-> policy condition cond7 ipv6 source tcp port 21
-> policy condition cond8 ipv6 source tcp port 0-1024
-> policy condition cond6 no ipv6
```

Release History

Release 6.6.1; command was introduced.

Related Commands

qos apply	Applies configured QoS and policy settings to the current configuration.
show policy condition	Shows information about policy conditions configured on the switch.

MIB Objects

```
alaQoSConditionTable
  alaQoSConditionName
  alaQoSConditionIpv6Traffic
alaQoSAppliedConditionTable
  alaQoSAppliedConditionName
  alaQoSAppliedConditionIpv6Traffic
```

policy condition tos

Configures the precedence bits in the Type of Service (ToS) byte value for a policy condition.

policy condition *condition_name* **tos** *tos_value* [**mask** *tos_mask*]

policy condition *conditioning* **no tos**

Syntax Definitions

<i>conditioning</i>	The name of the condition. May be an existing condition name or a new condition.
<i>tos_value</i>	The Type of Service bits value included in the IP header. The three most significant bits of the byte determine the precedence (i.e, priority) of the frame (0 is the lowest, 7 is the highest).
<i>tos_mask</i>	The mask for the ToS bits, in the range 0–7.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Use the **no** form of this command to remove a ToS value from a condition; however, at least one classification parameter must be associated with a condition.
- If a ToS value is specified, a DSCP value may not be specified.

Examples

```
-> policy condition cond2 tos 7
```

Release History

Release 6.6.1; command was introduced.

Related Commands

policy condition	Creates a policy condition.
qos apply	Applies configured QoS and policy settings to the current configuration.
show policy condition	Shows information about policy conditions configured on the switch.

MIB Objects

alaQoSConditionTable

 alaQoSConditionName

 alaQoSConditionTos

alaQoSAppliedConditionTable

 alaQoSAppliedConditionName

 alaQoSAppliedConditionTos

policy condition dscp

Configures the Differentiated Services Code Point (DSCP) for a policy condition. The DSCP value defines the six most significant bits of the DS byte in the IP header.

policy condition *condition_name* **dscp** {*dscp_value*[-*value*]} [**mask** *dscp_mask*]

policy condition *condition_name* **no dscp**

Syntax Definitions

<i>condition_name</i>	The name of the condition. May be an existing condition name or a new condition.
{ <i>dscp_value</i> [- <i>value</i>]}	The DiffServ Code Point value, in the range 0–63. Use a hyphen to specify a range of DSCP values for the condition (for example, 10-20).
<i>dscp_mask</i>	The mask for the DSCP bits, in the range 0–7.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Use the **no** form of this command to remove a DSCP value from a condition; however, at least one classification parameter must be associated with a condition.
- If a DSCP value is specified, a ToS value may not be specified.

Examples

```
-> policy condition cond4 dscp 10
-> policy condition cond5 dscp 20-30
```

Release History

Release 6.6.1; command was introduced.

Related Commands

policy condition	Creates a policy condition.
qos apply	Applies configured QoS and policy settings to the current configuration.
show policy condition	Shows information about policy conditions configured on the switch.

MIB Objects

```
alaQoSConditionTable
  alaQoSConditionName
  alaQoSConditionDscp
  alaQoSConditionDscpMask
  alaQoSConditionDscpEnd
  alaQoSConditionDscpStatus
alaQoSAppliedConditionTable
  alaQoSAppliedConditionName
  alaQoSAppliedConditionDscp
  alaQoSAppliedConditionDscpMask
  alaQoSAppliedConditionDscpEnd
  alaQoSAppliedConditionDscpStatus
```

policy condition source mac

Configures a source MAC address for a policy condition.

policy condition *condition_name* **source mac** *mac_address* [**mask** *mac_mask*]

policy condition *condition_name* **no source mac**

Syntax Definitions

<i>condition_name</i>	The name of the condition. May be an existing condition name or a new condition.
<i>mac_address</i>	The source MAC address in the Layer 2 header of the frame (for example, 00:20:da:05:f6:23)
<i>mac_mask</i>	Optional. The mask for the source MAC address (for example, ff:ff:ff:ff:ff:ff).

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Use the **no** form of the command to remove a source MAC address from a condition; however, at least one classification parameter must be associated with a condition.
- A source MAC address and a source MAC group cannot be specified in the same condition.

Examples

```
-> policy condition cond2 source mac 00:20:da:05:f6:23
```

Release History

Release 6.6.1; command was introduced.

Related Commands

qos apply	Applies configured QoS and policy settings to the current configuration.
policy condition	Creates a policy condition.
show policy condition	Shows information about policy conditions configured on the switch.

MIB Objects

alaQoSConditionTable

 alaQoSConditionName

 alaQoSConditionSourceMacAddr

 alaQoSConditionSourceMacMask

alaQoSAppliedConditionTable

 alaQoSAppliedConditionName

 alaQoSAppliedConditionSourceMacAddr

 alaQoSAppliedConditionSourceMacMask

policy condition destination mac

Configures a destination MAC address for a policy condition.

Note. Specifying a destination MAC address and mask of all zeros (00:00:00:00:00:00) as a policy condition can result in the switch dropping all traffic. Only use this type of condition in combination with other policies that will allow desired traffic and/or if a source or destination slot/port is also part of the destination MAC condition.

policy condition *condition_name* **destination mac** *mac_address* [**mask** *mac_mask*]

policy condition *condition_name* **no destination mac**

Syntax Definitions

<i>condition_name</i>	The name of the condition. May be an existing condition name or a new condition.
<i>mac_address</i>	The destination MAC address in the Layer 2 header of the frame (for example, 00:20:da:05:f6:23).
<i>mac_mask</i>	Optional. The mask for the destination MAC address (for example, ff:ff:ff:ff:ff:ff).

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Use the **no** form of the command to remove a destination MAC address from a condition; however, at least one classification parameter must be associated with a condition.
- A destination MAC address and a destination MAC group cannot be specified in the same condition.

Examples

```
-> policy condition cond3 destination mac 00:20:da:05:f6:23
```

Release History

Release 6.6.1; command was introduced.

Related Commands

qos apply	Applies configured QoS and policy settings to the current configuration.
policy condition	Creates a policy condition.
show policy condition	Shows information about policy conditions configured on the switch.

MIB Objects

```
alaQoSConditionTable
  alaQoSConditionName
  alaQoSConditionSource
  alaQoSConditionDestinationMacAddr
  alaQoSConditionDestinationMacMask
alaQoSAppliedConditionTable
  alaQoSAppliedConditionName
  alaQoSAppliedConditionSource
  alaQoSAppliedConditionDestinationMacAddr
  alaQoSAppliedConditionDestinationMacMask
```

policy condition source mac group

Associates a source MAC group with a policy condition.

policy condition *condition_name* **source mac group** *group_name*

policy condition *condition_name* **no source mac group**

Syntax Definitions

<i>condition_name</i>	The name of the condition. May be an existing condition name or a new condition.
<i>group_name</i>	The name of the source MAC group, configured through the policy mac group command.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Use the **no** form of the command to remove a source MAC group from a condition; however, at least one classification parameter must be associated with a condition.
- A source MAC address and a source MAC group cannot be specified in the same condition.

Examples

```
-> policy condition cond4 source mac group mac_group1
```

Release History

Release 6.6.1; command was introduced.

Related Commands

qos apply	Applies configured QoS and policy settings to the current configuration.
policy mac group	Configures a MAC group and its associated MAC addresses.
policy condition	Creates a policy condition.
show policy condition	Shows information about policy conditions configured on the switch.

MIB Objects

alaQoSConditionTable

 alaQoSConditionName

 alaQoSConditionSourceMacGroup

alaQoSAppliedConditionTable

 alaQoSAppliedConditionName

 alaQoSAppliedConditionSourceMacGroup

policy condition destination mac group

Associates a destination MAC group with a policy condition.

policy condition *condition_name* **destination mac group** *mac_group*

policy condition *condition_name* **no destination**

Syntax Definitions

<i>condition_name</i>	The name of the condition. May be an existing condition name or a new condition.
<i>mac_group</i>	The name of the destination MAC group, configured through the policy mac group command.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Use the **no** form of the command to remove a destination MAC group from a policy condition; however, at least one classification parameter must be associated with a condition.
- A destination MAC address and a destination MAC group cannot be specified in the same condition.

Examples

```
-> policy condition cond5 destination mac group mac_group1
```

Release History

Release 6.6.1; command was introduced.

Related Commands

qos apply	Applies configured QoS and policy settings to the current configuration.
policy mac group	Configures a MAC group and its associated MAC addresses.
policy condition	Creates a policy condition.
show policy condition	Shows information about policy conditions configured on the switch.

MIB Objects

alaQoSConditionTable

 alaQoSConditionName

 alaQoSConditionDestinationMacGroup

alaQoSAppliedConditionTable

 alaQoSAppliedConditionName

 alaQoSAppliedConditionDestinationMacGroup

policy condition source vlan

Configures a source VLAN for a policy condition.

policy condition *condition_name* **source vlan** *vlan_id*

policy condition *condition_name* **no source vlan**

Syntax Definitions

condition_name The name of the condition. May be an existing condition name or a new condition.

vlan_id The source VLAN ID for the flow.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Use the **no** form of the command to remove a source VLAN from a policy condition; however, at least one classification parameter must be associated with a condition.
- The **source vlan** policy condition classifies double-tagged traffic (for example, VLAN Stacking packets) based on the value of the *outer* VLAN tag of the packet.
- A source VLAN ID and a source VLAN group cannot be specified in the same condition.

Examples

```
-> policy condition cond5 source vlan 3
```

Release History

Release 6.6.1; command was introduced.

Related Commands

[qos apply](#) Applies configured QoS and policy settings to the current configuration.

[policy condition](#) Creates a policy condition.

[show policy condition](#) Shows information about policy conditions configured on the switch.

MIB Objects

```
alaQoSConditionTable  
  alaQoSConditionName  
  alaQoSConditionSourceVlan
```

```
alaQoSAppliedConditionTable  
  alaQoSAppliedConditionName  
  alaQoSAppliedConditionSourceVlan
```

policy condition source vlan group

Associates a source VLAN group with a policy condition.

policy condition *condition_name* **source vlan group** *vlan_group*

policy condition *condition_name* **no source vlan group**

Syntax Definitions

<i>condition_name</i>	The name of the condition. May be an existing condition name or a new condition.
<i>vlan_group</i>	The name of an existing VLAN group, configured through the policy vlan group command. See page 45-22 for more information about this command.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Use the **no** form of the command to remove a source VLAN group from a policy condition; however, at least one classification parameter must be associated with a condition.
- The **source vlan group** condition classifies double-tagged traffic (for example, VLAN Stacking packets) based on the value of the *outer* VLAN tag of the packet.
- A source VLAN ID and a source VLAN group cannot be specified in the same condition.

Examples

```
-> policy condition cond1 source vlan group vlan_group1  
-> policy condition cond1 no source vlan group
```

Release History

Release 6.6.2; command was introduced.

Related Commands

qos apply	Applies configured QoS and policy settings to the current configuration.
policy vlan group	Configures a VLAN group and its associated VLAN IDs.
policy condition	Creates a policy condition.
show policy condition	Shows information about policy conditions configured on the switch.

MIB Objects

```
alaQoSConditionTable
  alaQoSConditionName
  alaQoSConditionSourceVlanGroup
alaQoSAppliedConditionTable
  alaQoSAppliedConditionName
  alaQoSAppliedConditionSourceVlanGroup
```

policy condition destination vlan

Configures a destination VLAN for a policy condition. Note that this condition is supported only in combination with a multicast condition (**multicast ip**, **multicast ipv6**, or **multicast network group**).

policy condition *condition_name* **destination vlan** *vlan_id*

policy condition *condition_name* **no destination vlan**

Syntax Definitions

<i>condition_name</i>	The name of the condition. May be an existing condition name or a new condition.
<i>vlan_id</i>	The destination VLAN ID for the flow.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Use the **no** form of this command to remove a destination VLAN from a condition; however, at least one classification parameter must be associated with a condition.
- Note that this condition is supported for multicast only policies.

Examples

```
-> policy condition cond4 destination vlan 3 multicast ip any
```

Release History

Release 6.6.1; command was introduced.

Related Commands

qos apply	Applies configured QoS and policy settings to the current configuration.
policy condition	Creates a policy condition.
show policy condition	Shows information about policy conditions configured on the switch.

MIB Objects

alaQoSConditionTable

 alaQoSConditionName

 alaQoSConditionDestinationVlan

alaQoSAppliedConditionTable

 alaQoSAppliedConditionName

 alaQoSAppliedConditionDestinationVlan

policy condition 802.1p

Configures the 802.1p value for a policy condition.

policy condition *condition_name* **802.1p** *802.1p[-802.1p_end]*

policy condition *condition_name* **no 802.1p**

Syntax Definitions

<i>condition_name</i>	The name of the condition. Specify an existing condition name or a new condition.
<i>802.1p[-802.1p_end]</i>	The 802.1p value, or a range of 802.1p values, to be included in the condition. Use a hyphen to specify a range of values (e.g., 2-5). Only one entry is allowed per command line (a single 802.1p value or a range of values, not both).

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Use this command to specify 802.1p or range of 802.1p values within range 0-7 (for example , 2-7) to which you want to apply QoS rules, rather than creating a condition for each 802.1p , specify 802.1p range together in condition.
- Use the **no** form of the command to remove an 802.1p value or range of values for a condition; however, at least one classification parameter must be associated with a condition.
- When a range of values is configured for a single condition, removing a single value from within that range is not allowed. All 802.1p values are removed from a condition when the **no** form of this command is used.
- The **802.1p** policy condition classifies double-tagged traffic (for example, VLAN Stacking packets) based on the 802.1p value of the *outer* VLAN tag of the packet.

Examples

```
-> policy condition cond1 802.1p 0-7
-> policy condition cond2 802.1p 5
-> policy condition cond3 802.1p 2-5
-> policy condition cond3 no 802.1p
```

Release History

Release 6.6.1; command was introduced.

Release 6.6.2; ability to specify a range of 802.1p values was added.

Related Commands

qos apply	Applies configured QoS and policy settings to the current configuration.
policy condition	Creates a policy condition.
show policy condition	Shows information about policy conditions configured on the switch.

MIB Objects

```
alaQoSConditionTable
  alaQoSConditionName
  alaQoSCondition8021p
  alaQoSCondition8021pEnd
  alaQoSCondition8021pStatus
alaQoSAppliedConditionTable
  alaQoSAppliedConditionName
  alaQoSAppliedCondition8021p
  alaQoSAppliedCondition8021pEnd
  alaQoSAppliedCondition8021pStatus
```

policy condition source port

Configures a source port number for a policy condition. Use the **no** form of the command to remove a source port number from a condition.

policy condition *condition_name* **source port** *slot/port[-port]*

policy condition *condition_name* **no source port**

Syntax Definitions

<i>condition_name</i>	The name of the condition. May be an existing condition name or a new condition.
<i>slot/port</i>	The slot and port number (or range of ports) on which the frame is received.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Use the **no** form of the command to remove a source port from a condition; however, at least one classification parameter must be associated with a condition.
- This policy condition is not supported when applied to an egress policy list.

Examples

```
-> policy condition cond2 source port 3/1
-> policy condition cond3 source port 3/2-4
```

Release History

Release 6.6.1; command was introduced.

Related Commands

qos apply	Applies configured QoS and policy settings to the current configuration.
policy condition	Creates a policy condition.
show policy condition	Shows information about policy conditions configured on the switch.

MIB Objects

alaQoSConditionTable

 alaQoSConditionName

 alaQoSConditionSourceSlot

 alaQoSConditionSourcePort

 alaQoSConditionSourcePortEnd

alaQoSAppliedConditionTable

 alaQoSAppliedConditionName

 alaQoSAppliedConditionSourceSlot

 alaQoSAppliedConditionSourcePort

 alaQoSAppliedConditionSourcePortEnd

policy condition destination port

Configures a destination port number for a policy condition. Note that this condition is supported only in combination with a multicast condition (**multicast ip**, **multicast ipv6**, or **multicast network group**).

policy condition *condition_name* **destination port** *slot/port[-port]*

policy condition *condition_name* **no destination port**

Syntax Definitions

<i>condition_name</i>	The name of the condition. May be an existing condition name or a new condition.
<i>slot/port</i>	The slot and port number (or range of ports) on which the frame is received.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Use the **no** form of the command to remove a destination port from a condition; however, at least one classification parameter must be associated with a condition.
- The destination port condition is only applied to bridged traffic, it is not applied to routed traffic.

Examples

```
-> policy condition cond3 destination port 4/2 multicast ip any
-> policy condition cond4 destination port 4/3-4 multicast ipv6 any
```

Release History

Release 6.6.1; command was introduced.

Related Commands

qos apply	Applies configured QoS and policy settings to the current configuration.
policy condition	Creates a policy condition.
show policy condition	Shows information about policy conditions configured on the switch.

MIB Objects

alaQoSConditionTable

- alaQoSConditionName
- alaQoSConditionDestinationSlot
- alaQoSConditionDestinationPort
- alaQoSConditionDestinationPortEnd

alaQoSAppliedConditionTable

- alaQoSAppliedConditionName
- alaQoSAppliedConditionDestinationSlot
- alaQoSAppliedConditionDestinationPort
- alaQoSAppliedConditionDestinationPortEnd

policy condition source port group

Associates a source port group with a policy condition. Use the **no** form of the command to remove a source port group from a condition.

policy condition *condition_name* **source port group** *group_name*

policy condition *condition_name* **no source port group**

Syntax Definitions

<i>condition_name</i>	The name of the condition. May be an existing condition name or a new condition.
<i>group_name</i>	The name of the source port group. Port groups are configured through the policy port group command.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Use the **no** form of the command to remove a source port group from a condition; however, at least one classification parameter must be associated with a condition.
- This policy condition is not supported when applied to an egress policy list.

Examples

```
-> policy condition cond6 source port group portgr4
```

Release History

Release 6.6.1; command was introduced.

Related Commands

policy port group	Configures a port group and its associated slot and port numbers.
qos apply	Applies configured QoS and policy settings to the current configuration.
policy condition	Creates a policy condition.
show policy condition	Shows information about policy conditions configured on the switch.

MIB Objects

alaQoSConditionTable

 alaQoSConditionName

 alaQoSConditionSourcePortGroup

alaQoSAppliedConditionTable

 alaQoSAppliedConditionName

 alaQoSAppliedConditionSourcePortGroup

policy condition destination port group

Associates a destination port group with a policy condition. Note that this condition is supported only in combination with a multicast condition (**multicast ip**, **multicast ipv6**, or **multicast network group**).

policy condition *condition_name* **destination port group** *group_name*

policy condition *condition_name* **no destination port**

Syntax Definitions

<i>condition_name</i>	The name of the condition. May be an existing condition name or a new condition.
<i>group_name</i>	The name of the destination port group. Port groups are configured through the policy port group command.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

Use the **no** form of the command to remove a destination port group from a condition; however, at least one classification parameter must be associated with a condition.

Examples

```
-> policy condition cond6 destination port group portgr4 multicast ip any
```

Release History

Release 6.6.1; command was introduced.

Related Commands

qos apply	Applies configured QoS and policy settings to the current configuration.
policy port group	Configures a port group and its associated slot and port numbers.
policy condition	Creates a policy condition.
show policy condition	Shows information about policy conditions configured on the switch.

MIB Objects

alaQoSConditionTable

 alaQoSConditionName

 alaQoSConditionDestinationPortGroup

alaQoSAppliedConditionTable

 alaQoSAppliedConditionName

 alaQoSAppliedConditionDestinationPortGroup

policy action

Configures or deletes a QoS action. A QoS action describes how traffic that matches a particular QoS condition should be treated. It may specify a particular set of bandwidth and queue parameters, or it may simply specify whether the flow is allowed or denied on the switch.

This section describes the base command. Optional keywords are listed below and described as separate commands later in this chapter. (Options may be used in combination but are described separately for ease in explanation.) Use the **no** form for keywords to remove the parameter from the action.

Note that some action parameters may not be supported depending on the platform you are using. Also some action parameters may not be supported with some conditions. See the condition table in the *OmniSwitch AOS Release 6250/6350/6450 Network Configuration Guide*.

policy action *action_name*

[**disposition** {**accept** | **drop** | **deny**}]
[**shared**]
[**priority** *priority_value*]
[**maximum bandwidth** *bps*]
[**maximum depth** *bytes*]
[**cir** *bps* [**cbs** *byte*] [**pir** *bps*] [**pbs** *byte*]
[**tos** *tos_value*]
[**802.1p** *802.1p_value*]
[**dscp** *dscp_value*]
[**map** {**802.1p** | **tos** | **dscp**} **to** {**802.1p** | **tos** | **dscp**} **using** *map_group*]
[**permanent gateway ip** *ip_address*]
[**port-disable**]
[**redirect port** *slot/port*]
[**redirect linkagg** *link_agg*]
[**no-cache**]
[**{ingress | egress | ingress egress | no}** **mirror** *slot/port*]
{source | destination} **rewrite ip** *ip_address* [**mask** *netmask*]

policy no action *action_name*

Syntax Definitions

action_name A name for the action, any alphanumeric string.

Defaults

By default, no drop algorithm is configured for the action, and any queues created by the action are not shared.

parameter	default
accept drop deny	accept

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Any condition parameters that the hardware supports will be used to classify the traffic; any condition parameters that are not supported by the hardware will not be used to classify traffic, and the event will be logged in the QoS log.
- Bandwidth and queue parameters may be specified when the action is created or may be specified as separate commands.
- Use the **qos apply** command to activate configuration changes.
- Use the **no** form of the command to remove a QoS action from the configuration.

Note. Do not apply **policy action mirror** with **disposition drop** as both these actions cannot be combined.

- If the **snapshot** command is entered after the **policy action** command is configured, the resulting ASCII file will include the following additional syntax for the **policy action** command:

from {cli | ldap | blt}

This syntax indicates how the action was created. The **cli** and **ldap** options may be changed by a user modifying the ASCII file; however, changing this setting is not recommended. The **blt** option indicates a built-in action, this setting is not configurable.

Note. When a port group policy condition is applied using the **policy condition port group** command, the **policy action shared** command works only for port groups created on the same slot and ASIC. Each ASIC on a slot shares 24 ports sequentially (for example, ports 1/1 to 1/24 are part of one ASIC, port 1/25 to 1/48 belong to a different ASIC on the same slot). The port groups can be created using the **policy port group** command.

Examples

```
-> policy action action1 accept
```

Release History

Release 6.6.1; command was introduced.
Release 6.7.1 R02; **rewrite ip** parameter added.

Related Commands

policy condition	Configures a condition associated with the action.
qos apply	Applies configured QoS and policy settings to the current configuration.
show policy action	Displays information about policy actions.

MIB Objects

```
alaQoSActionTable  
  alaQoSActionName  
  alaQoSActionSource
```

```
alaQoSActionDisposition
alaQoSActionMinimumBandwidth
alaQoSActionMaximumBandwidth
alaQoSActionPeakBandwidth
alaQoSActionPriority
alaQoSActionShared
alaQoSActionMaximumBuffers
alaQoSActionMaximumDepth
alaQoSActionCIR
alaQoSActionCIRStatus
alaQoSActionCBS
alaQoSActionCBSStatus
alaQoSActionPIR
alaQoSActionPIRStatus
alaQoSActionPBS
alaQoSActionPBSStatus
alaQoSAction8021p
alaQoSActionTos
alaQoSActionTosRewriteMask
alaQoSActionDscp
alaQoSActionMapFrom
alaQoSActionMapTo
alaQoSActionMapGroup
alaQoSActionSourceRewriteIpAddr
alaQoSActionSourceRewriteIpMask
alaQoSActionSourceRewriteIpGroup
alaQoSActionDestinationRewriteIpAddr
alaQoSActionDestinationRewriteIpMask
alaQoSActionDestinationRewriteIpGroup
alaQoSAppliedActionTable
  alaQoSAppliedActionName
  alaQoSAppliedActionSource
  alaQoSAppliedActionDisposition
  alaQoSAppliedActionMinimumBandwidth
  alaQoSAppliedActionMaximumBandwidth
  alaQoSAppliedActionPeakBandwidth
  alaQoSAppliedActionPriority
  alaQoSAppliedActionShared
  alaQoSAppliedActionMaximumDepth
  alaQoSAppliedActionMaximumBuffers
  alaQoSAppliedActionCIR
  alaQoSAppliedActionCIRStatus
  alaQoSAppliedActionCBS
  alaQoSAppliedActionCBSStatus
  alaQoSAppliedActionPIR
  alaQoSAppliedActionPIRStatus
  alaQoSAppliedActionPBS
  alaQoSAppliedActionPBSStatus
  alaQoSAppliedAction8021p
  alaQoSAppliedActionTos
  alaQoSAppliedActionTosRewriteMask
  alaQoSAppliedActionDscp
  alaQoSAppliedActionMapFrom
  alaQoSAppliedActionMapTo
  alaQoSAppliedActionMapGroup
  alaQoSAppliedActionSourceRewriteIpAddr
  alaQoSAppliedActionSourceRewriteIpMask
  alaQoSAppliedActionSourceRewriteIpGroup
```

```
alaQoSAppliedActionDestinationRewriteIpAddr  
alaQoSAppliedActionDestinationRewriteIpMask  
alaQoSAppliedActionDestinationRewriteIpGroup
```

policy list

Configures a list of policy rules. There are two types of lists supported: User Network Profile (UNP) and egress. Rules assigned to a UNP list are applied to traffic classified into a specific profile. Rules assigned to an egress list are applied to traffic egressing on QoS ports.

policy list *list_name* **type** [**unp** | **egress**] **rules** *rule_name* [*rule_name2...*] [**enable** | **disable**]

no policy list *list_name*

policy list *list_name* **no rules** *rule_name* [*rule_name2...*]

Syntax Definitions

<i>list_name</i>	The name to assign to the policy list. Note that the list name is case sensitive.
unp	Applies the list of policy rules to the User Network Profile to which the list is assigned.
egress	Applies the list of policy rules to traffic egressing on QoS ports.
<i>rule_name</i>	The name of an existing QoS policy rule to include in the policy list.
<i>rule_name2</i>	Optional. The name of another QoS policy rule to include in the policy list. Separate each rule name specified with a space.
enable	Enables the policy list.
disable	Disables the policy list.

Defaults

A default policy list is available when the switch boots up. This list has no name and is not configurable. All QoS policy rules are assigned to this default list unless the **no default-list** option of the [policy rule](#) command is used.

parameter	default
unp egress	unp
enable disable	enabled

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Use the **no** form of the command to remove a policy list from the configuration or to remove a policy rule from an existing list.
- Accounting mode is not supported for egress policy list. So if accounting mode is enabled for the rule then that rule cannot be part of egress policy list. Similarly, if a rule is part of an egress policy list, then that rule cannot have accounting mode enabled.
- The QoS policy rule name specified with this command must already exist in the switch configuration.

- Only those rules that are assigned to an egress policy list are applied to egress traffic. However, certain policy conditions and actions are not supported within an egress policy list. For example, IPv6 conditions are not allowed. See the “Configuring QoS” chapter in the *OmniSwitch AOS Release 6250/6350/6450 Network Configuration Guide* for more information.
- QoS changes DSCP and 802.1p values for traffic ingressing on an *untrusted* port. As a result, the new values may not match any egress policy list rules as expected. To avoid this scenario, trust the ingress port or configure a default ToS/DSCP/802.1p value as required.
- If an egress policy list rule contains an 802.1p condition and the ingress port is *trusted*, set the default classification of the ingress port to 802.1p. If the default classification of the ingress port is set to DSCP, the 802.1p value of the traffic is changed per the DSCP classification and will not match the egress 802.1p condition.
- An egress policy rule supports a maximum of two destination port groups.
- Egress rate limiting configured through an Ethernet Service SAP profile takes precedence over egress rate limiting specified within a QoS egress policy list rule.
- A rule may belong to a UNP list, the default list, and an egress policy list at the same time. By default, a rule is assigned to a default policy list when the rule is created. If the rule is subsequently assigned to another policy list, it still remains associated with the default list.
- If a rule is a member of multiple policy lists but one or more of these lists are disabled, the rule is still active in those lists that are enabled.
- If the QoS status of a rule is disabled, then the rule is disabled for all lists even if a list to which the policy belongs is enabled.
- Any policy list configured through this command is not active on the switch until the **qos apply** command is issued.
- If the **snapshot** command is entered after the **policy list** command is configured, the resulting ASCII file will include the following additional syntax for the **policy list** command:

from {cli | ldap | blt}

This syntax indicates how the list was created. The **cli** and **ldap** options may be changed by a user modifying the ASCII file; however, changing this setting is not recommended. The **blt** option indicates a built-in object, this setting is not configurable.

Examples

```
-> policy list unpl type rules r1 r2 r3
-> policy list unpl disable
-> policy list unpl no rules r2
-> policy list unpl enable
-> no policy list unpl
-> policy list egr1 type egress rules r1 r2 r3
-> policy list egr1 disable
-> policy list egr1 no rules r3
-> policy list egr1 enable
-> no policy list egr1
```

Release History

Release 6.6.2; command was introduced.

Related Commands

policy rule	Configures a policy rule on the switch and optionally associates that rule with a validity period.
show policy rule	Displays information for policy rules configured on the switch.
show active policy list	Displays only those policy lists that are currently being enforced on the switch.
show policy list	Displays information for policy lists configured on the switch.

MIB Objects

```
alaQoSRuleGroupsTable
  alaQoSRuleDefaultList
  alaQoSRuleGroupsName
  alaQoSRuleGroupsSource
  alaQoSRuleGroupsType
  alaQoSRuleGroupsEnabled
  alaQoSRuleGroupsStatus
  alaQoSRuleGroupPacketRate
  alaQoSRuleGroupBitRate
  alaQoSRuleGroupAccPacketCount
  alaQoSRuleGroupAccByteCount
alaQoSAppliedRuleGroupsTable
  alaQoSAppliedRuleGroupsName
  alaQoSAppliedRuleGroupsSource
  alaQoSAppliedGroupsType
  alaQoSAppliedGroupsEnabled
  alaQoSAppliedRuleGroupsStatus
  alaQoSAppliedRuleGroupPacketRate
  alaQoSAppliedRuleGroupBitRate
  alaQoSAppliedRuleGroupAccPacketCount
  alaQoSAppliedRuleGroupAccByteCount
```

policy action disposition

Configures a disposition for a policy action.

policy action *action_name* **disposition** {**accept** | **drop** | **deny**}

policy action *action_name* **no disposition**

Syntax Definitions

<i>action_name</i>	The name of the action.
accept	Specifies that the switch should accept the flow.
drop	Specifies that the switch should silently drop the flow.
deny	Specifies that the switch should drop the flow and issue an ICMP message indicating the flow was dropped for administrative reasons. Currently this option will provide the same result as drop ; that is, the flow is silently dropped.

Defaults

parameter	default
accept drop deny	accept

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Use the **no** form of this command to remove a disposition from an action.
- The **policy action disposition drop** & **policy action mirror** actions cannot be combined in one policy condition.
- This command does not support Layer 2 conditions such as destination VLAN or destination MAC address.

Examples

```
-> policy action a3 disposition deny
-> policy action a3 no disposition
```

Release History

Release 6.6.1; command was introduced.

Related Commands

qos apply Applies configured QoS and policy settings to the current configuration.

- policy action** Creates a policy action.
- show policy action** Displays information about policy actions.

MIB Objects

```
alaQoSActionTable
  alaQoSActionName
  alaQoSActionDisposition
alaQoSAppliedActionTable
  alaQoSAppliedActionName
  alaQoSAppliedActionDisposition
```

policy action shared

Enables queues created by a particular action to be shared.

policy action *action_name* **shared**

policy action *action_name* **no shared**

Syntax Definitions

action_name The name of the action.

Defaults

By default, queues created by an action are *not* shared.

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- If multiple rules have the same action, more than one flow may be scheduled on the same queue if the queue is defined as shared; otherwise, a separate queue is created for each flow.
- Note that flows must be sent over the same virtual port for the flows to share a queue. For example, flows with the same 802.1Q tag may share the same queue.
- Use the **no** form of the command to disable sharing.

Note. When a port group policy condition is applied using the **policy condition port group** command, the **policy action shared** command works only for port groups created on the same slot and ASIC. Each ASIC on a slot shares 24 ports sequentially (for example, ports 1/1 to 1/24 are part of one ASIC, port 1/25 to 1/48 belong to a different ASIC on the same slot). The port groups can be created using the **policy port group** command.

Example

```
-> policy action action5 shared
-> policy action action5 no shared
```

Release History

Release 6.6.1; command was introduced.

Related Commands

- | | |
|------------------------------------|--|
| policy action | Creates a policy action. |
| qos apply | Applies configured QoS and policy settings to the current configuration. |
| show policy action | Displays information about actions configured on the switch. |

MIB Objects`alaQoSActionTable``alaQoSActionName``alaQoSActionShared``alaQoSAppliedActionTable``alaQoSAppliedActionName``alaQoSAppliedActionShared`

policy action priority

Configures the priority for queuing a flow to which the QoS action applies.

policy action *action_name* **priority** *priority_value*

policy action *action_name* **no priority**

Syntax Definitions

action_name

The name of the action.

priority_value

The priority given to scheduling traffic on the output port. Values range from 0 (lowest) to 7 (highest).

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Use the **no** form of this command to remove a priority value from an action.
- This priority value is independent of 802.1Q, Type of Service (ToS), or Differentiated Services Code Point (DSCP) values.
- Note that the value displayed on the **show qos queue** screen may be different from the value entered here.

Examples

```
-> policy action action1 priority 1  
-> policy action action1 no priority
```

Release History

Release 6.6.1; command was introduced.

Related Commands

qos apply

Applies configured QoS and policy settings to the current configuration.

policy action

Creates a policy action.

show policy action

Displays information about actions configured on the switch.

MIB Objects

alaQoSActionTable

 alaQoSActionName

 alaQoSActionPriority

 alaQoSActionPriorityStatus

alaQoSAppliedActionTable

 alaQoSAppliedActionName

 alaQoSAppliedActionPriority

 alaQoSAppliedActionPriorityStatus

policy action maximum bandwidth

Configures a maximum bandwidth value for a policy action.

policy action *action_name* **maximum bandwidth** *bps*

policy action *action_name* **no maximum bandwidth**

Syntax Definitions

<i>action_name</i>	The name of the action.
<i>bps</i>	The desired value for maximum bandwidth, in bits per second. The value may be entered as an integer (for example, 10000) or with abbreviated units (for example, 10k). If the value is entered in bits per second, the switch rounds the value up to the nearest thousand.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Use the **no** form of the command to remove a maximum bandwidth value from an action.
- Note that the bandwidth may be entered in bits per second. Alternatively, the bandwidth may be entered in abbreviated units (**1k**, **2k**, etc). If the bandwidth value is entered in bytes, the switch rounds the value to the nearest thousand bytes. For example, if you enter 1 to 1024, the result is 1K. If you enter 1025 to 2048, the result is 2K.

Examples

```
-> policy action action4 maximum bandwidth 10000
-> policy action action4 maximum bandwidth 10k
-> policy action action4 no maximum bandwidth
```

Release History

Release 6.6.1; command was introduced.

Related Commands

qos apply	Applies configured QoS and policy settings to the current configuration.
policy action	Creates a policy action.
show policy classify	Creates a Tri-Color Marking (TCM) policy action.
show policy action	Displays information about actions configured on the switch.

MIB Objects

```
alaQoSActionTable
  alaQoSActionName
  alaQoSActionMaximumBandwidth
alaQoSAppliedActionTable
  alaQoSAppliedActionName
  alaQoSAppliedActionMaximumBandwidth
```

policy action maximum depth

Configures the maximum queue depth assigned to this action, in bytes. The queue depth determines the amount of buffer allocated to each queue. When the queue depth is reached, the switch starts dropping packets.

policy action *action_name* **maximum depth** *bytes*

policy action *action_name* **no maximum depth**

Syntax Definitions

<i>action_name</i>	The name of the action.
<i>bytes</i>	The maximum queue depth, in bytes. The value may be entered as an integer (for example, 10000) or with abbreviated units (for example, 10k). If the value is entered in bytes, the switch rounds the value up to the nearest thousand.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Use the **no** form of this command to remove a maximum depth value from a policy action.
- Note that the bandwidth may be entered in bytes. Alternatively, the bandwidth may be entered in abbreviated units (**1k**, **2k**, etc). If the bandwidth value is entered in bytes, the switch rounds the value to the nearest thousand bytes. For example, if you enter 1 to 1024, the result is 1K. If you enter 1025 to 2048, the result is 2K.

Examples

```
-> policy action action2 maximum depth 100
-> policy action action2 no maximum depth
```

Release History

Release 6.6.1; command was introduced.

Related Commands

qos apply	Applies configured QoS and policy settings to the current configuration.
policy action	Creates a policy action.
show policy action	Displays information about actions configured on the switch.

MIB Objects

```
alaQoSActionTable
  alaQoSActionName
  alaQoSActionMaximumDepth
alaQoSAppliedActionTable
  alaQoSAppliedActionName
  alaQoSAppliedActionMaximumDepth
```

policy action cir

Configures a Tri-Color Marking (TCM) policy action. This type of action consists of parameters for Committed Information Rate (CIR), Committed Burst Size (CBS), Peak Information Rate (PIR), and Peak Burst Size (PBS).

policy action *action_name* **cir** *bps* [**cbs** *byte*] [**pir** *bps*] [**pbs** *byte*]

policy action *action_name* **no cir** *bps*

Syntax Definitions

<i>action_name</i>	The name of the action.
<i>bps</i>	The burst size value, in bits per second.
<i>byte</i>	The desired value for maximum bucket size, in bytes.

Defaults

parameter	default
<i>bps</i>	0
<i>byte</i>	0

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Use the **no** form of this command to remove the TCM parameter values.
- The **cir** and **pir** *bits* and the **cbs** and **pbs** *bytes* parameter values may be entered as an integer (for example, **10000**) or with abbreviated units (for example, **10m**).
- The **cbs** and **pbs** parameters are optional. If not specified, the default value used by the switch for maximum depth is used as the default **cbs** and **pbs** value.
- The optional **pir** parameter is used to invoke the Two-Rate TCM mode; otherwise, TCM operates in the Single-Rate mode by default. Note that the **pir** value must be greater than the **cir** value when using the Two-Rate TCM mode.

Examples

```
-> policy action A3 cir 10M
-> policy action A4 cir 10M cbs 4k
-> policy action A5 cir 10M cbs 4k pir 20M pbs 40M
-> policy action A3 no cir 10M
```

Release History

Release 6.6.1; command was introduced.

Related Commands

policy action

Creates a policy action.

show policy action

Displays information about actions configured on the switch.

show active policy list

Displays information about pending and applied policy rules that are active (enabled) on the switch.

MIB Objects

alaQoSActionTable

 alaQoSActionCIR

 alaQoSActionCBS

 alaQoSActionPIR

 alaQoSActionPBS

alaQoSAppliedActionTable

 alaQoSActionCIR

 alaQoSActionCBS

 alaQoSActionPIR

 alaQoSActionPBS

policy action tos

Configures a Type of Service (ToS) bits value to be applied to packets in outgoing flows to which the specified policy applies.

policy action *action_name* **tos** *tos_value*

policy action *action_name* **no tos**

Syntax Definitions

<i>action_name</i>	The name of the action.
<i>tos_value</i>	The three-bit priority value in the IP header that should be set on outgoing frames in flows that match the specified policy. Values range from 0 (lowest priority) to 7 (highest priority).

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Use the **no** form of this command to remove a ToS value from a policy action.
- Note that specifying both ToS and DSCP in the same action is *not* allowed.
- An 802.1p or ToS/DSCP action always sets the packet priority. For 802.1p marking, the priority is set according to the marked 802.1p. For ToS marking, the priority is set according to the marked ToS. For DSCP marking, the priority is set according to the marked DSCP.
- A ToS action alters the packet IP ToS fields. The DSCP bits 3,4,5 are reset to 0. For example, a ToS 2 action on a packet carrying DSCP 5 will set a DSCP value of 40.

Examples

```
-> policy action action3 tos 4  
-> policy action action3 no tos
```

Release History

Release 6.6.1; command was introduced.

Related Commands

qos apply	Applies configured QoS and policy settings to the current configuration.
policy action	Creates a policy action.
show policy action	Displays information about actions configured on the switch.

MIB Objects`alaQoSActionTable``alaQoSActionName``alaQoSActionTos``alaQoSAppliedActionTable``alaQoSAppliedActionName``alaQoSAppliedActionTos`

policy action 802.1p

Configures a value to be set in the 802.1p bits of the 802.1Q byte of an outgoing frame for traffic that matches a policy with this action.

policy action *action_name* **802.1p** *802.1p_value*

policy action *action_name* **no 802.1p**

Syntax Definitions

<i>action_name</i>	The name of the action.
<i>802.1p_value</i>	The priority value to be set in 802.1Q frames. Values range from 0 (lowest priority) to 7 (highest priority).

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Use the **no** form of the command to remove an 802.1p value from a policy action.
- Note that specifying both ToS and DSCP in the same action is not allowed.
- An 802.1p or ToS/DSCP action always sets the packet priority. For 802.1p marking, the priority is set according to the marked 802.1p. For ToS marking, the priority is set according to the marked ToS. For DSCP marking, the priority is set according to the marked DSCP.

Examples

```
-> policy action action4 802.1p 7  
-> policy action action4 no 802.1p
```

Release History

Release 6.6.1; command was introduced.

Related Commands

qos apply	Applies configured QoS and policy settings to the current configuration.
policy action	Creates a policy action.
show policy action	Displays information about actions configured on the switch.

MIB Objects`alaQoSActionTable``alaQoSActionName
 alaQoSAction8021p``alaQoSAppliedActionTable``alaQoSAppliedActionName
 alaQoSAppliedAction8021p`

policy action dscp

Configures a Differentiated Services Code Point (DSCP) value to be set in an outgoing flow for traffic that matches rules with this action.

policy action *action_name* **dscp** *dscp_value*

policy action *action_name* **no dscp**

Syntax Definitions

<i>action_name</i>	The name of the action.
<i>dscp_value</i>	The DSCP value to be set, in the range 0–63.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Use the **no** form of this command to remove a DSCP value from a policy action.
- Note that specifying both ToS and DSCP in the same action is *not* allowed.
- An 802.1p or ToS/DSCP action always sets the packet priority. For 802.1p marking, the priority is set according to the marked 802.1p. For ToS marking, the priority is set according to the marked ToS. For DSCP marking, the priority is set according to the marked DSCP.

Examples

```
-> policy action action2 dscp 61  
-> policy action action2 no dscp
```

Release History

Release 6.6.1; command was introduced.

Related Commands

qos apply	Applies configured QoS and policy settings to the current configuration.
policy action	Creates a policy action.
show policy action	Displays information about actions configured on the switch.

MIB Objects`alaQoSActionTable``alaQoSActionName``alaQoSActionDscp``alaQoSAppliedActionTable``alaQoSAppliedActionName``alaQoSAppliedActionDscp`

policy action map

Configures a mapping group for a policy action.

policy action map {802.1p | tos | dscp} to {802.1p | tos| dscp} using *map_group*

policy action no map

Syntax Definitions

802.1p	Indicates that an 802.1p value should be mapped.
tos	Indicates that a ToS value should be mapped.
dscp	Indicates that a DSCP value should be mapped.
<i>map_group</i>	The name of the map group, configured through the policy vlan group command.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- When remapping is configured with this command and a flow matches a policy with this remapping action, and the 802.1p, ToS, or DSCP setting in the incoming flow is specified by the map group, the value will be remapped in the outgoing flow according to the map group.
- If the 802.1p, ToS, or DSCP setting in the incoming flow is not a value specified in the map group, the switch will do one of two things:

If the *remap from* and *remap to* types are the same (802.1p to 802.1p, ToS to ToS, or DSCP to DSCP), the values in the outgoing flow will be unchanged. If the *remap from* and *remap to* types are not the same (for example: 802.1p to ToS), the switch will set the *remap to* value to zero (in this case, the ToS bit would be set to zero). The *remap to* value remains the same (in this case, the 802.1p bit would remain unchanged).

- Use the **no** form of the command to delete the map group from the configuration.

Examples

```
-> policy action a1 map 802.1p to 802.1p using mapGroup2
-> policy action a2 map 802.1p to tos using mapGroup3
```

Release History

Release 6.6.1; command was introduced.

Related Commands

policy map group	Configures a map group and its associated mappings for 802.1p, Type of Service (ToS), or Differentiated Services Code Point (DSCP) values.
qos apply	Applies configured QoS and policy settings to the current configuration.
policy action	Creates a policy action.
show policy action	Displays information about policy actions.
show policy map group	Displays information about all pending and applied policy map groups or a particular map group.

MIB Objects

```
alaQoSActionTable
  alaQoSActionMapFrom
  alaQoSActionMapTo
  alaQoSActionMapGroup
alaQoSAppliedActionTable
  alaQoSAppliedActionMapFrom
  alaQoSAppliedActionMapTo
  alaQoSAppliedActionMapGroup
```

policy action permanent gateway ip

Used for Policy Based Routing (PBR). Routed flows to which this action is applied will be directed to the IP address specified in the action regardless of whether or not a route already exists in the switch routing table.

policy action *action_name* **permanent gateway ip** *ip_address*

policy action *action_name* **no permanent gateway ip**

Syntax Definitions

<i>action_name</i>	The name of the action.
<i>ip_address</i>	The destination IP address to which packets will be routed.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Use the **no** form of the command to remove a gateway IP address from a policy action.
- If the gateway goes down, the traffic to be routed over the gateway will be dropped.
- This policy action is not supported when applied to an egress policy list.

Examples

```
-> policy action pbr2 permanent gateway ip 10.10.2.1  
-> policy action pbr2 no permanent gateway ip
```

Release History

Release 6.6.1; command was introduced.

Related Commands

qos apply	Applies configured QoS and policy settings to the current configuration.
show policy action	Displays information about actions configured on the switch.

MIB Objects

alaQoSActionTable

 alaQoSActionName

 alaQoSActionPermanentGatewayIpAddr

alaQoSAppliedActionTable

 alaQoSAppliedActionName

 alaQoSAppliedActionPermanentGatewayIpAddr

policy action port-disable

Administratively disables the source port of the traffic to which this action is applied.

policy action *action_name* **port-disable**

policy action *action_name* **no port-disable**

Syntax Definitions

action_name The name of the action.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Use the **no** form of this command to remove **port-disable** from the policy action.
- An SNMP trap is sent when a port is administratively disabled through a port disable action or a User-Ports shutdown function.
- To enable a port disabled by this action, use the **interfaces admin** command to administratively enable the port or disconnect and reconnect the port cable.
- This policy action is not supported when applied to an egress policy list.

Examples

```
-> policy action pd01 port-disable  
-> policy action pb02 no port-disable
```

Release History

Release 6.6.1; command was introduced.

Related Commands

qos apply Applies configured QoS and policy settings to the current configuration.
show policy action Displays information about actions configured on the switch.

MIB Objects`alaQoSActionTable``alaQoSActionName``alaQoSActionPortdisable``alaQoSAppliedActionTable``alaQoSAppliedActionName``alaQoSAppliedActionPortdisable`

policy action redirect port

Redirects bridged traffic matching a redirect policy to the specified port instead of the port to which the traffic was destined.

policy action *action_name* **redirect port** *slot/port*

policy action *action_name* **no redirect port**

Syntax Definitions

<i>action_name</i>	The name of the action.
<i>slot/port</i>	The slot and port number (or range of ports) that will receive the redirected traffic.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Use the **no** form of the command to remove **redirect port** from the policy action.
- Redirection policies apply to bridged traffic. When redirecting traffic on VLAN A, the redirect port must belong to VLAN A (tagged or default VLAN). In other words, the ingress port and redirect port must both reside in the same VLAN.
- This policy action is not supported when applied to an egress policy list.

Examples

```
-> policy action rp01 redirect port 1/12
-> policy action rp01 no redirect port
```

Release History

Release 6.6.1; command was introduced.

Related Commands

qos apply	Applies configured QoS and policy settings to the current configuration.
show policy action	Displays information about actions configured on the switch.

MIB Objects

alaQoSActionTable

- alaQoSActionName
- alaQoSActionRedirectSlot
- alaQoSActionRedirectPort

alaQoSAppliedActionTable

- alaQoSAppliedActionName
- alaQoSAppliedActionRedirectSlot
- alaQoSAppliedActionRedirectPort

policy action redirect linkagg

Redirects bridged traffic matching a redirect policy to the specified link aggregate ID instead of the link aggregate to which the traffic was destined.

policy action *action_name* **redirect linkagg** *link_agg*

policy action *action_name* **no redirect linkagg**

Syntax Definitions

<i>action_name</i>	The name of the action.
<i>link_agg</i>	The link aggregate ID number (0–32) to assign to the specified VLAN. See Chapter 12, “Link Aggregation Commands.”

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Use the **no** form of this command to remove **redirect linkagg** from the policy action.
- Redirection policies apply to bridged traffic. When redirecting traffic on VLAN A, the redirect port must belong to VLAN A (tagged or default VLAN). In other words, the ingress port and redirect port must both reside in the same VLAN.
- This policy action is not supported when applied to an egress policy list.

Examples

```
-> policy action rp01 redirect port 1/12
-> policy action rp01 no redirect port
```

Release History

Release 6.6.1; command was introduced.

Related Commands

qos apply	Applies configured QoS and policy settings to the current configuration.
show policy action	Displays information about actions configured on the switch.

MIB Objects

alaQoSActionTable

alaQoSActionName

alaQoSActionRedirectAgg

alaQoSAppliedActionTable

alaQoSAppliedActionName

 alaQoSAppliedActionRedirectAgg

policy action no-cache

Disables logging of rule entries to the hardware cache.

policy action *action_name* **no-cache**

policy action *action_name* **no no-cache**

Syntax Definitions

action_name The name of the action.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Use the **no** form of this command to remove **no cache** from the policy action.
- Recommended for use when applied to traffic going to the switch.

Examples

```
-> policy action nc01 no-cache  
-> policy action nc01 no no-cache
```

Release History

Release 6.6.1; command was introduced.

Related Commands

[qos apply](#) Applies configured QoS and policy settings to the current configuration.
[show policy action](#) Displays information about actions configured on the switch.

MIB Objects

```
alaQoSActionTable  
  alaQoSActionName  
  alaQoSActionNocache  
alaQoSAppliedActionTable  
  alaQoSAppliedActionName  
  alaQoSAppliedActionNocache
```

policy action mirror

Mirrors ingress packets that match a mirroring policy to the specified port.

policy action *action_name* **ingress mirror** *slot/port*

policy action *action_name* **no mirror** *slot/port*

Syntax Definitions

<i>action_name</i>	The name of the action.
ingress	Mirrors ingress packets.
<i>slot/port</i>	The slot and port number that will receive the mirrored traffic.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Use the **no** form of the command to remove **mirror** from the policy action.
- Use this command to configure a mirror-to-port (MTP) action that is used for policy based mirroring.
- Only one MTP session is supported at any given time. As a result, all mirroring policies should specify the same MTP port.
- Policy based mirroring and the port based mirroring feature can run simultaneously on the same switch. If a packet qualifies for both types of sessions, the packet is copied to the destination for both sessions.
- This policy action is not supported when applied to an egress policy list.

Examples

```
-> policy action a1 mirror 1/7 (default ingress)
-> policy action a1 ingress mirror 1/7
-> policy action a1 no mirror
```

Release History

Release 6.6.1; command was introduced.

Related Commands

qos apply

Applies configured QoS and policy settings to the current configuration.

show policy action

Displays information about actions configured on the switch.

MIB Objects

alaQoSActionTable

alaQoSActionName

alaQoSActionMirrorSlot

alaQoSActionMirrorPort

alaQoSActionMirrorMode

alaQoSActionMirrorModeStatus

show policy classify

Sends hypothetical information to the Layer 2, Layer 3, or multicast classifier to see how the switch will handle the packet. Used to verify that a policy rule works a particular way.

This section describes the base command. Optional keywords are listed below and described as separate commands later in this chapter. (Note that options may be used in combination but are described separately for ease in explanation.)

show policy classify {I2 | I3 | multicast} [applied]

[source port *slot/port*]

[destination port *slot/port*]

[source mac *mac_address*]

[destination mac *mac_address*]

[source vlan *vlan_id*]

[destination vlan *vlan_id*]

[source interface type {ethernet | wan | ethernet-10 | ethernet-100 | ethernet-1G | ethernet-10G}]

[destination interface type {ethernet | wan | ethernet-10 | ethernet-100 | ethernet-1G | ethernet-10G}]

[802.1p *value*]

[source ip *ip_address*]

[destination ip *ip_address*]

[multicast ip *ip_address*]

[tos *tos_value*]

[dscp *dscp_value*]

[ip protocol *protocol*]

[source ip port *port*]

[destination ip port *port*]

Syntax Definitions

I2	Uses the Layer 2 classifier for the hypothetical packet. Typically specified for port, MAC address, VLAN, interface type, or 802.1p.
I3	Uses the Layer 3 classifier for the hypothetical packet. Typically specified for interface type, IP address, ToS or DSCP, IP protocol, or TCP/UDP port.
multicast	Uses the multicast IGMP classifier for the hypothetical packet. Typically specified for multicast IP address (which is the multicast stream) and destination parameters (for the client issuing an IGMP request).
applied	Indicates that only applied policies should be examined.

Defaults

By default, only pending policies are examined.

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Use this command to determine if the switch will classify the traffic condition specified and match it to a policy. By default the classifier only tests pending policies (policies that have not yet been applied). Use the **applied** keyword to test only those policies that have been applied.
- If you specify multicast traffic, any destination parameters specified indicate the client(s) attempting to join a multicast group.
- Use the **qos apply** command to activate saved policies.
- See command descriptions in the next sections for more information about the individual options.

Examples

```
-> show policy classify l3 source ip 1.2.3.4 destination ip 198.60.22.2
destination ip port 80 ip protocol 6
```

Packet headers:

```
L3:
*Port          :                               0/0  -> 0/0
*MAC           :                               000000:000000  -> 000000:000000
*VLAN          :                               0  -> 0
*802.1p        : 0
L3/L4:
*IP            :                               1.2.3.4  -> 198.60.22.2
TCP           :                               0  -> 80
*TOS/DSCP      : 0/0
```

Using pending l3 policies

Classify L3:

```
*Matches rule 'filter1': action pri3 (accept)
```

- Source and destination are indicated to the left and right of the arrow (->) respectively. A zero displays for values not requested in the hypothetical packet.
- Note that some fields only display for particular traffic types.

output definitions

L2/L3/L4	Indicates the type of traffic (Layer 2 or Layer 3/4).
Port	The physical slot/port of the theoretical traffic.
IfType	Displays for hypothetical Layer 2 packets only. The interface type of the packet.
MAC	The MAC address of the hypothetical packet.
VLAN	The VLAN ID of the hypothetical packet.
802.1p	The 802.1p value of the hypothetical packet.
Mcast	Displays for hypothetical multicast packets only. The multicast address of the hypothetical packet.
IP	The IP address of the hypothetical packet.
TCP	The TCP/UDP port of the hypothetical packet.
TOS/DSCP	The ToS or DSCP value of the hypothetical packet.

Release History

Release 6.6.1; command was introduced.

Related Commands

qos apply

Applies configured QoS and policy settings to the current configuration.

MIB Objects

```
alaQoSClassifyTable
  alaQoSClassifySourceSlot
  alaQoSClassifySourcePort
  alaQoSClassifyDestinationSlot
  alaQoSClassifyDestinationPort
  alaQoSClassifySourceMac
  alaQoSClassifyDestinationMac
  alaQoSClassifySourceVlan
  alaQoSClassifyDestinationVlan
  alaQoSClassifySourceInterfaceType
  alaQoSClassifyDestinationInterfaceType
  alaQoSClassify8021p
  alaQoSClassifySourceIp
  alaQoSClassifyDestinationIp
  alaQoSClassifyMulticastIp
  alaQoSClassifyTos
  alaQoSClassifyDscp
  alaQoSClassifyIpProtocol
  alaQoSClassifySourceIpPort
  alaQoSClassifyDestinationIpPort
  alaQoSClassifyExecute
  alaQoSClassifyL2SourceResultRule
  alaQoSClassifyL2SourceResultDisposition
  alaQoSClassifyL2DestinationResultRule
  alaQoSClassifyL2DestinationResultDisposition
  alaQoSClassifyL3ResultRule
  alaQoSClassifyL3ResultDisposition
  alaQoSClassifyIGMPResultRule
  alaQoSClassifyIGMPResultDisposition
  alaQoSClassifyMulticastResultRule
  alaQoSClassifyMulticastResultDisposition
```

show policy classify source port

Specifies a source port for a hypothetical packet to show how the QoS software in the switch will handle the packet.

```
show policy classify {I2 | I3 | multicast} [applied] source port slot/port
```

Syntax Definitions

I2	Uses the Layer 2 classifier for the hypothetical packet.
I3	Uses the Layer 3 classifier for the hypothetical packet.
multicast	Uses the multicast IGMP classifier for the hypothetical packet.
applied	Indicates that only applied policies should be examined.
<i>slot/port</i>	The slot and port number of the source address of the flow.

Defaults

By default, only pending policies are examined.

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Use this command to determine if the switch will classify the traffic condition specified and match it to a policy. By default the classifier only tests pending policies (policies that have not yet been applied). Use the **applied** keyword to test only those policies that have been applied.
- Use the **qos apply** command to activate saved policies.

Examples

```
-> show policy classify I2 source port 3/1
```

See the output example given on [page 45-154](#) for more information about the potential screen display.

Release History

Release 6.6.1; command was introduced.

Related Commands

[qos apply](#)

Applies configured QoS and policy settings to the current configuration.

[show policy classify](#)

Describes the base command.

MIB Objects

alaQoSClassifyTable

 alaQoSClassifySourceSlot

 alaQoSClassifySourcePort

show policy classify destination port

Specifies a destination port for a hypothetical packet to show how the QoS software in the switch will handle the packet.

show policy classify {**I2** | **I3** | **multicast**} [**applied**] **destination port** *slot/port*

Syntax Definitions

I2	Uses the Layer 2 classifier for the hypothetical packet.
I3	Uses the Layer 3 classifier for the hypothetical packet.
multicast	Uses the multicast IGMP classifier for the hypothetical packet.
applied	Indicates that only applied policies should be examined.
<i>slot/port</i>	The slot and port number of the destination address of the flow.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Use this command to determine if the switch will classify the traffic condition specified and match it to a policy. By default the classifier only tests pending policies (policies that have not yet been applied). Use the **applied** keyword to test only those policies that have been applied.
- Use the **qos apply** command to activate saved policies.

Examples

```
-> show policy classify I2 destination port 2/1
```

See the output example given on [page 45-154](#) for more information about the potential screen display.

Release History

Release 6.6.1; command was introduced.

Related Commands

qos apply	Applies configured QoS and policy settings to the current configuration.
show policy classify	Describes the base command.

MIB Objects

```
alaQoSClassifyTable  
  alaQoSClassifyDestinationSlot  
  alaQoSClassifyDestinationPort
```

show policy classify source mac

Specifies a source MAC address for a hypothetical packet to show how the QoS software in the switch will handle the packet.

```
show policy classify {I2 | I3 | multicast} [applied] source mac mac_address
```

Syntax Definitions

I2	Uses the Layer 2 classifier for the hypothetical packet.
I3	Uses the Layer 3 classifier for the hypothetical packet.
multicast	Uses the multicast IGMP classifier for the hypothetical packet.
applied	Indicates that only applied policies should be examined.
<i>mac_address</i>	The source MAC address of the Layer 2 flow (for example, 00:20:da:05:f6:23) .

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Use this command to determine if the switch will classify the traffic condition specified and match it to a policy. By default the classifier only tests pending policies (policies that have not yet been applied). Use the **applied** keyword to test only those policies that have been applied.
- Use the **qos apply** command to activate saved policies.

Examples

```
-> show policy classify I2 source mac 00:20:da:05:f6:23
```

See the output example given on [page 45-154](#) for more information about the potential screen display.

Release History

Release 6.6.1; command was introduced.

Related Commands

[qos apply](#)

Applies configured QoS and policy settings to the current configuration.

[show policy classify](#)

Describes the base command.

MIB Objects

alaQoSClassifyTable

 alaQoSClassifySourceMac

show policy classify destination mac

Specifies a destination MAC address for a hypothetical packet to show how the QoS software in the switch will handle the packet.

show policy classify {**I2** | **I3 multicast**} [**applied**] **destination mac** *mac_address*

Syntax Definitions

I2	Uses the Layer 2 classifier for the hypothetical packet.
I3	Uses the Layer 3 classifier for the hypothetical packet.
multicast	Uses the multicast IGMP classifier for the hypothetical packet.
applied	Indicates that only applied policies should be examined.
<i>mac_address</i>	The destination MAC address of the Layer 2 flow (for example, 00:20:da:05:f6:23).

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Use this command to determine if the switch will classify the traffic condition specified and match it to a policy. By default the classifier only tests pending policies (policies that have not yet been applied). Use the **applied** keyword to test only those policies that have been applied.
- Use the **qos apply** command to activate saved policies.

Examples

```
-> show policy classify l2 destination mac 00:20:da:05:f6:23
```

See the output example given on [page 45-154](#) for more information about the potential screen display.

Release History

Release 6.6.1; command was introduced.

Related Commands

[qos apply](#)

Applies configured QoS and policy settings to the current configuration.

[show policy classify](#)

Describes the base command.

MIB Objects

alaQoSClassifyTable

 alaQoSClassifyDestinationMac

show policy classify source vlan

Specifies a source VLAN for a hypothetical packet to show how the QoS software in the switch will handle the packet.

```
show policy classify {I2 | I3 | multicast} [applied] source vlan vlan_id
```

Syntax Definitions

I2	Uses the Layer 2 classifier for the hypothetical packet.
I3	Uses the Layer 3 classifier for the hypothetical packet.
multicast	Uses the multicast IGMP classifier for the hypothetical packet.
applied	Indicates that only applied policies should be examined.
<i>vlan_id</i>	The destination VLAN ID for the flow.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Use this command to determine if the switch will classify the traffic condition specified and match it to a policy. By default the classifier only tests pending policies (policies that have not yet been applied). Use the **applied** keyword to test only those policies that have been applied.
- Use the **qos apply** command to activate saved policies.

Examples

```
-> show policy classify I2 source vlan 2
```

See the output example given on [page 45-154](#) for more information about the potential screen display.

Release History

Release 6.6.1; command was introduced.

Related Commands

qos apply	Applies configured QoS and policy settings to the current configuration.
show policy classify	Describes the base command.

MIB Objects

```
alaQoSClassifyTable  
  alaQoSClassifySourceVlan
```

show policy classify destination vlan

Specifies a destination VLAN for a hypothetical packet to show how the QoS software in the switch will handle the packet.

```
show policy classify {I2 | I3 | multicast} [applied] destination vlan vlan_id
```

Syntax Definitions

I2	Uses the Layer 2 classifier for the hypothetical packet.
I3	Uses the Layer 3 classifier for the hypothetical packet.
multicast	Uses the multicast IGMP classifier for the hypothetical packet.
applied	Indicates that only applied policies should be examined.
<i>vlan_id</i>	The destination VLAN ID for the flow.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Use this command to determine if the switch will classify the traffic condition specified and match it to a policy. By default the classifier only tests pending policies (policies that have not yet been applied). Use the **applied** keyword to test only those policies that have been applied.
- Use the **qos apply** command to activate saved policies.

Examples

```
-> show policy classify I2 destination vlan 3
```

See the output example given on [page 45-154](#) for more information about the potential screen display.

Release History

Release 6.6.1; command was introduced.

Related Commands

qos apply	Applies configured QoS and policy settings to the current configuration.
show policy classify	Describes the base command.

MIB Objects

```
alaQoSClassifyTable  
  alaQoSClassifySourceVlan
```

show policy classify source interface type

Specifies a source interface type for a hypothetical packet to show how the QoS software in the switch will handle the packet.

show policy classify {**l2** | **l3** | **multicast**} [**applied**] **source interface type** {**ethernet** | **wan** | **ethernet-10** | **ethernet-100** | **ethernet-1G** | **ethernet-10G**}

Syntax Definitions

l2	Uses the Layer 2 classifier for the hypothetical packet.
l3	Uses the Layer 3 classifier for the hypothetical packet.
multicast	Uses the multicast IGMP classifier for the hypothetical packet.
applied	Indicates that only applied policies should be examined.
ethernet	Indicates that the flow's source port is an Ethernet interface.
wan	Indicates that the flow's source port is a WAN interface. <i>Not supported currently.</i>
ethernet-10	Indicates that the flow's source port is 10 Mb Ethernet.
ethernet-100	Indicates that the flow's source port is 100 Mb Ethernet.
ethernet-1G	Indicates that the flow's source port is 1 gigabit Ethernet.
ethernet-10G	Indicates that the flow's source port is 10 gigabit Ethernet.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Use this command to determine if the switch will classify the traffic condition specified and match it to a policy. By default the classifier only tests pending policies (policies that have not yet been applied). Use the **applied** keyword to test only those policies that have been applied.
- Use the **qos apply** command to activate saved policies.

Examples

```
-> policy classify l2 source interface type ethernet
```

See the output example given on [page 45-154](#) for more information about the potential screen display.

Release History

Release 6.6.1; command was introduced.

Related Commands

[qos apply](#)

Applies configured QoS and policy settings to the current configuration.

[show policy classify](#)

Describes the base command.

MIB Objects

alaQoSClassifyTable

 alaQoSClassifySourceInterfaceType

show policy classify destination interface type

Specifies a destination interface type for a hypothetical packet to show how the QoS software in the switch will handle the packet.

show policy classify {**l2** | **l3** | **multicast**} [**applied**] **destination interface type** {**ethernet** | **wan** | **ethernet-10** | **ethernet-100** | **ethernet-1G** | **ethernet-10G**}

Syntax Definitions

l2	Uses the Layer 2 classifier for the hypothetical packet.
l3	Uses the Layer 3 classifier for the hypothetical packet.
multicast	Uses the multicast IGMP classifier for the hypothetical packet.
applied	Indicates that only applied policies should be examined.
ethernet	Indicates that the flow's destination port is an Ethernet interface.
wan	Indicates that the flow's destination port is a WAN interface. <i>Not supported currently.</i>
ethernet-10	Indicates that the flow's destination port is 10 Mb Ethernet.
ethernet-100	Indicates that the flow's destination port is 100 Mb Ethernet.
ethernet-1G	Indicates that the flow's destination port is 1 gigabit Ethernet.
ethernet-10G	Indicates that the flow's destination port is 10 gigabit Ethernet.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Use this command to determine if the switch will classify the traffic condition specified and match it to a policy. By default the classifier only tests pending policies (policies that have not yet been applied). Use the **applied** keyword to test only those policies that have been applied.
- Use the **qos apply** command to activate saved policies.

Examples

```
-> show policy classify l2 destination interface type ethernet-10
```

See the output example given on [page 45-154](#) for more information about the potential screen display.

Release History

Release 6.6.1; command was introduced.

Related Commands

[qos apply](#)

Applies configured QoS and policy settings to the current configuration.

[show policy classify](#)

Describes the base command.

MIB Objects

alaQoSClassifyTable

 alaQoSClassifyDestinationInterfaceType

show policy classify 802.1p

Specifies a destination interface type for a hypothetical packet to show how the QoS software in the switch will handle the packet.

show policy classify {**I2** | **I3** | **multicast**} [**applied**] **802.1p** *value*

Syntax Definitions

I2	Uses the Layer 2 classifier for the hypothetical packet.
I3	Uses the Layer 3 classifier for the hypothetical packet.
multicast	Uses the multicast IGMP classifier for the hypothetical packet.
applied	Indicates that only applied policies should be examined.
<i>value</i>	The 802.1p value for the flow.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Use this command to determine if the switch will classify the traffic condition specified and match it to a policy. By default the classifier only tests pending policies (policies that have not yet been applied). Use the **applied** keyword to test only those policies that have been applied.
- Use the **qos apply** command to activate saved policies.

Examples

```
-> show policy classify I2 802.1p 4
```

See the output example given on [page 45-154](#) for more information about the potential screen display.

Release History

Release 6.6.1; command was introduced.

Related Commands

qos apply	Applies configured QoS and policy settings to the current configuration.
show policy classify	Describes the base command.

MIB Objects

```
alaQoSClassifyTable  
  alaQoSClassify8021p
```

show policy classify source ip

Specifies a source IP address for a hypothetical packet to show how the QoS software in the switch will handle the packet.

```
show policy classify {I2 | I3 | multicast} [applied] source ip ip_address
```

Syntax Definitions

I2	Uses the Layer 2 classifier for the hypothetical packet.
I3	Uses the Layer 3 classifier for the hypothetical packet.
multicast	Uses the multicast IGMP classifier for the hypothetical packet.
applied	Indicates that only applied policies should be examined.
<i>ip_address</i>	The source IP address.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Use this command to determine if the switch will classify the traffic condition specified and match it to a policy. By default the classifier only tests pending policies (policies that have not yet been applied). Use the **applied** keyword to test only those policies that have been applied.
- Use the **qos apply** command to activate policies.

Examples

```
-> show policy classify l3 source ip 1.2.3.4
```

See the output example given on [page 45-154](#) for more information about the potential screen display.

Release History

Release 6.6.1; command was introduced.

Related Commands

qos apply	Applies configured QoS and policy settings to the current configuration.
show policy classify	Describes the base command.

MIB Objects

```
alaQoSClassifyTable  
  alaQoSClassifySourceIp
```

show policy classify destination ip

Specifies a destination IP address for a hypothetical packet to show how the QoS software in the switch will handle the packet.

```
show policy classify {I2 | I3 | multicast} [applied] destination ip ip_address
```

Syntax Definitions

I2	Uses the Layer 2 classifier for the hypothetical packet.
I3	Uses the Layer 3 classifier for the hypothetical packet.
multicast	Uses the multicast IGMP classifier for the hypothetical packet.
applied	Indicates that only applied policies should be examined.
<i>ip_address</i>	The destination IP address.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Use this command to determine if the switch will classify the traffic condition specified and match it to a policy. By default the classifier only tests pending policies (policies that have not yet been applied). Use the **applied** keyword to test only those policies that have been applied.
- Use the **qos apply** command to activate policies.

Examples

```
-> show policy classify I3 destination ip 198.60.22.2
```

See the output example given on [page 45-154](#) for more information about the potential screen display.

Release History

Release 6.6.1; command was introduced.

Related Commands

qos apply	Applies configured QoS and policy settings to the current configuration.
show policy classify	Describes the base command.

MIB Objects

```
alaQoSClassifyTable  
  alaQoSClassifyDestinationIpPort
```

show policy classify multicast ip

Specifies a multicast address for a hypothetical packet to show how the QoS software in the switch will handle the packet.

show policy classify {I2 | I3 | **multicast**} [**applied**] **multicast ip** *ip_address*

Syntax Definitions

I2	Uses the Layer 2 classifier for the hypothetical packet.
I3	Uses the Layer 3 classifier for the hypothetical packet.
multicast	Uses the multicast IGMP classifier for the hypothetical packet.
applied	Indicates that only applied policies should be examined.
<i>ip_address</i>	The multicast IP address (the address of the multicast stream).

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Use this command to determine if the switch will classify the traffic condition specified and match it to a policy. By default the classifier only tests pending policies (policies that have not yet been applied). Use the **applied** keyword to test only those policies that have been applied.
- Use the **qos apply** command to activate policies.

Examples

```
-> show policy classify multicast multicast ip 224.22.22.1
Packet headers:
L2:
 *Port          :                               0/0 (any)  -> 0/0 (any)
 *MAC           :                               000000:000000  -> 080020:D1E51
 *VLAN          :                               0           -> 0
 *802.1p        : 0
L3/L4:
 *Mcast         :                               224.22.22.1
 *IP            :                               0.0.0.0   -> 0.0.0.0
 *TOS/DSCP      : 0/0
Using pending multicast policies
Classify Multicast:
 *No rule matched: (accept)
```

See the output example given on [page 45-154](#) for more information about the potential screen display.

Release History

Release 6.6.1; command was introduced.

Related Commands

[qos apply](#)

Applies configured QoS and policy settings to the current configuration.

[show policy classify](#)

Describes the base command.

MIB Objects

alaQoSClassifyTable

 alaQoSClassifyMulticastIp

show policy classify tos

Specifies a ToS value for a hypothetical packet to show how the QoS software in the switch will handle the packet.

```
show policy classify {I2 | I3 | multicast} [applied] tos tos_value
```

Syntax Definitions

I2	Uses the Layer 2 classifier for the hypothetical packet.
I3	Uses the Layer 3 classifier for the hypothetical packet.
multicast	Uses the multicast IGMP classifier for the hypothetical packet.
applied	Indicates that only applied policies should be examined.
<i>tos_value</i>	The Type of Service bits value included in the IP header. The three most significant bits of the byte determine the precedence (i.e, priority) of the frame (0 is the lowest, 7 is the highest).

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Use this command to determine if the switch will classify the traffic condition specified and match it to a policy. By default the classifier only tests pending policies (policies that have not yet been applied). Use the **applied** keyword to test only those policies that have been applied.
- Use the **qos apply** command to activate policies.
- If a ToS value is specified, a DSCP value may not be specified.

Examples

```
-> show policy classify I3 tos 7
```

See the output example given on [page 45-154](#) for more information about the potential screen display.

Release History

Release 6.6.1; command was introduced.

Related Commands[qos apply](#)

Applies configured QoS and policy settings to the current configuration.

[show policy classify](#)

Describes the base command.

MIB Objects

alaQoSClassifyTable

 alaQoSClassifyTos

show policy classify dscp

Specifies a DiffServ Code Point (DSCP) value for a hypothetical packet to show how the QoS software in the switch will handle the packet.

```
show policy classify {I2 | I3 | multicast} [applied] dscp dscp_value
```

Syntax Definitions

I2	Uses the Layer 2 classifier for the hypothetical packet.
I3	Uses the Layer 3 classifier for the hypothetical packet.
multicast	Uses the multicast IGMP classifier for the hypothetical packet.
applied	Indicates that only applied policies should be examined.
<i>dscp_value</i>	The DiffServ Code Point value, in the range 0–63.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Use this command to determine if the switch will classify the traffic condition specified and match it to a policy. By default the classifier only tests pending policies (policies that have not yet been applied). Use the **applied** keyword to test only those policies that have been applied.
- Use the **qos apply** command to activate policies.
- If a DSCP value is specified, a ToS value may not be specified.

Examples

```
-> show policy classify I3 dscp 63
```

See the output example given on [page 45-154](#) for more information about the potential screen display.

Release History

Release 6.6.1; command was introduced.

Related Commands**qos apply**

Applies configured QoS and policy settings to the current configuration.

show policy classify

Describes the base command.

MIB Objects

alaQoSClassifyTable

 alaQoSClassifyDscp

show policy classify ip protocol

Specifies an IP protocol for a hypothetical packet to show how the QoS software in the switch will handle the packet.

```
show policy classify {I2 | I3 | multicast} [applied] ip protocol protocol
```

Syntax Definitions

I2	Uses the Layer 2 classifier for the hypothetical packet.
I3	Uses the Layer 3 classifier for the hypothetical packet.
multicast	Uses the multicast IGMP classifier for the hypothetical packet.
applied	Indicates that only applied policies should be examined.
<i>protocol</i>	The IP protocol number, for example, 6.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Use this command to determine if the switch will classify the traffic condition specified and match it to a policy. By default the classifier only tests pending policies (policies that have not yet been applied). Use the **applied** keyword to test only those policies that have been applied.
- Use the **qos apply** command to activate policies.

Examples

```
-> show policy classify I3 ip protocol 6
```

See the output example given on [page 45-154](#) for more information about the potential screen display.

Release History

Release 6.6.1; command was introduced.

Related Commands

qos apply	Applies configured QoS and policy settings to the current configuration.
show policy classify	Describes the base command.

MIB Objects

```
alaQoSClassifyTable  
  alaQoSClassifyIpProtocol
```

show policy classify source ip port

Specifies a source IP port for a hypothetical packet to show how the QoS software in the switch will handle the packet.

show policy classify {**I2** | **I3** | **multicast**} [**applied**] **source ip port** *port*

Syntax Definitions

I2	Uses the Layer 2 classifier for the hypothetical packet.
I3	Uses the Layer 3 classifier for the hypothetical packet.
multicast	Uses the multicast IGMP classifier for the hypothetical packet.
applied	Indicates that only applied policies should be examined.
<i>port</i>	The well-known port number for the desired service. For example, the port number for Telnet is 23.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Use this command to determine if the switch will classify the traffic condition specified and match it to a policy. By default the classifier only tests pending policies (policies that have not yet been applied). Use the **applied** keyword to test only those policies that have been applied.
- Use the **qos apply** command to activate policies.

Examples

```
-> show policy classify l3 source ip port 80
```

See the output example given on [page 45-154](#) for more information about the potential screen display.

Release History

Release 6.6.1; command was introduced.

Related Commands

[qos apply](#)

Applies configured QoS and policy settings to the current configuration.

[show policy classify](#)

Describes the base command.

MIB Objects

alaQoSClassifyTable

 alaQoSClassifySourceIpPort

show policy classify destination ip port

Specifies a destination IP port for a hypothetical packet to show how the QoS software in the switch will handle the packet.

show policy classify {**I2** | **I3** | **multicast**} [**applied**] **destination ip port** *port*

Syntax Definitions

I2	Uses the Layer 2 classifier for the hypothetical packet.
I3	Uses the Layer 3 classifier for the hypothetical packet.
multicast	Uses the multicast IGMP classifier for the hypothetical packet.
applied	Indicates that only applied policies should be examined.
<i>port</i>	The well-known port number for the desired service. For example, the port number for Telnet is 23.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Use this command to determine if the switch will classify the traffic condition specified and match it to a policy. By default the classifier only tests pending policies (policies that have not yet been applied). Use the **applied** keyword to test only those policies that have been applied.
- Use the **qos apply** command to activate policies.

Examples

```
-> show policy classify I3 destination ip port 80
```

See the output example given on [page 45-154](#) for more information about the potential screen display.

Release History

Release 6.6.1; command was introduced.

Related Commands

[qos apply](#)

Applies configured QoS and policy settings to the current configuration.

[show policy classify](#)

Describes the base command.

MIB Objects

alaQoSClassifyTable

 alaQoSClassifyDestinationIpPort

show policy network group

Displays information about pending and applied policy network groups.

show [applied] policy network group [*network_group*]

Syntax Definitions

applied Indicates that only network groups that have been applied should be displayed.

network_group The name of the policy network group for which you want to display information; or a wildcard sequence of characters for displaying information about network groups with similar names. Use an asterisk (*) to indicate a wildcard character.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Information for all policy network groups displays unless *network_group* is specified.
- The display may include any of the following characters:

character	definition
+	Indicates a new policy network group.
-	Indicates the policy network group is pending deletion.
#	Indicates that the policy network group differs between the pending/applied network groups.

Examples

```
-> show policy network group
Group Name:          From  Entries
Switch               blt  4.0.1.166
                   10.0.1.166
                   143.209.92.166
                   192.85.3.1

+netgroup1          cli  143.209.92.0/255.255.255.0
                   172.28.5.0/255/255/255.0
```

output definitions

Group Name	The name of the port group, configured through the policy network group command.
From	The way the group was configured: blt indicates a built-in entry; cli indicates that the entry was configured on the switch; ldap indicates the entry was configured through PolicyView
Entries	The IP addresses associated with the network group.

Release History

Release 6.6.1; command was introduced.

Related Commands

[policy network group](#) Configures policy network groups.

MIB Objects

```
alaQoSNetworkGroupsTable
  alaNetworkGroupsName
  alaNetworkGroupsSource
alaNetworkGroupTable
  alaNetworkGroupIpAddr
  alaQoSNetworkGroupIpMask
```

show policy service

Displays information about pending and applied policy services.

show [applied] policy service [*service_name*]

Syntax Definitions

applied Indicates that only services that have been applied should be displayed.

service_name The name of the service for which you want to display information; or a wildcard sequence of characters for displaying information about services with similar names. Use an asterisk (*) to indicate a wildcard character.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Information about all policy services is displayed unless *service_name* is specified.
- The display may include any of the following characters:

character	definition
+	Indicates a new policy service.
-	Indicates the policy service is pending deletion.
#	Indicates that the policy service differs between the pending/applied services.

Examples

```
-> show policy service
  Service Name      From      IPProto  ScrPort  DstPort
telnet_service     cli       6 (TCP)  23
+ftp_service       cli       6 (TCP)  21
test_service       cli       6 (TCP)  21

-> show policy service telnet_service
  Service Name      From      IPProto  ScrPort  DstPort
telnet_service     cli       6 (TCP)  23

-> show applied policy service
  Service Name      From      IPProto  ScrPort  DstPort
telnet_service     cli       6 (TCP)  23
test_service       cli       6 (TCP)  21
```

output definitions

Service Name	The name of the port group, configured through the policy service command.
From	The way the service was configured: blt indicates a built-in entry; cli indicates that the entry was configured on the switch; ldap indicates the entry was configured through PolicyView.
IPProto	The IP protocol associated with the service.
SrcPort	A source port associated with the service.
DstPort	A destination port associated with the service.

Release History

Release 6.6.1; command was introduced.

Related Commands

[policy service](#) Configures a service that may be used as part of a policy service group.

MIB Objects

alaQoSServiceTable

```

alaQoSServiceName
alaQoSServiceSource
alaQoSServiceIpProtocol
alaQoSServiceSourceIpPort
alaQoSServiceDestinationIpPort

```

alaQoSAppliedServiceTable

```

alaQoSAppliedServiceName
alaQoSAppliedServiceSource
alaQoSAppliedServiceIpProtocol
alaQoSAppliedSourceIpPort
alaQoSAppliedServiceDestinationIpPort

```

show policy service group

Displays information about pending and applied policy service groups.

show [applied] policy service group [*service_group*]

Syntax Definitions

applied	Indicates that only service groups that have been applied should be displayed.
<i>service_group</i>	The name of the service group for which you want to display information; or a wildcard sequence of characters for displaying information about service groups with similar names. Use an asterisk (*) to indicate a wildcard character.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Information for all policy service groups displays unless *service_group* is specified.
- The display may include any of the following characters:

character	definition
+	Indicates a new policy service group.
-	Indicates the policy service group is pending deletion.
#	Indicates that the policy service group differs between the pending/applied service groups.

Examples

```
-> show policy service group
Group Name:          From  Entries
serv_group1         cli   telnet
                   ftp
serv_group2         cli   telnet
```

output definitions

Group Name	The name of the port group, configured through the policy service group command.
From	The origin of the service group: cli indicates that the entry was configured on the switch; ldap indicates the entry was configured through PolicyView.
Entries	The services associated with the group. Services are configured through the policy service command.

Release History

Release 6.6.1; command was introduced.

Related Commands

policy service group Configures a service group and its associated services. A service group may be attached to a policy condition.

MIB Objects

```

alaQoSServiceGroupsTable
  alaQoSServiceGroupsName
  alaQoSServiceGroupsSource
alaQoSAppliedServiceGroupsTable
  alaQoSAppliedServiceGroupsName
  alaQoSAppliedServiceGroupsSource
alaQoSServiceGroupTable
  alaQoSServiceGroupServiceName
alaQoSAppliedServiceGroupTable
  alaQoSAppliedServiceGroupServiceName

```

show policy mac group

Displays information about pending and applied MAC groups.

show [applied] policy mac group [*mac_group*]

Syntax Definitions

applied	Indicates that only MAC groups that have been applied should be displayed.
<i>mac_group</i>	The name of the MAC group for which you want to display information; or a wildcard sequence of characters for displaying information about MAC groups with similar names. Use an asterisk (*) to indicate a wildcard character.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Information for all policy MAC groups displays unless *mac_group* is specified.
- The display may include any of the following characters:

character	definition
+	Indicates a new policy MAC group.
-	Indicates the policy MAC group is pending deletion.
#	Indicates that the policy MAC group differs between the pending/applied MAC groups.

Examples

```
-> show policy mac group
Group Name:          From  Entries
pubsl                cli   0020da:05f623
                       0020da:05f624
                       143.209.92.166
                       192.85.3.1

+yuba                cli   080020:D16E51
                       172.28.5.0/255/255/255.0
```

output definitions

Group Name	The name of the port group, configured through the policy mac group command.
From	The origin of the MAC group: cli indicates that the entry was configured on the switch; ldap indicates the entry was configured through PolicyView.
Entries	The MAC addresses associated with the group.

Release History

Release 6.6.1; command was introduced.

Related Commands

policy mac group Configures policy MAC groups.

MIB Objects

```

alaQoSMACTable
  alaQoSMACTableName
  alaQoSMACTableSource
alaQoSAppliedMACTable
  alaQoSAppliedMACTableName
  alaQoSAppliedMACTableSource
alaQoSMACTable
  alaQoSMACTableMacAddr
  alaQoSMACTableMacMask
alaQoSAppliedMACTable
  alaQoSAppliedMACTableMacAddr
  alaQoSAppliedMACTableMacMask

```

show policy port group

Displays information about pending and applied policy port groups, and also the mode configured for the port group.

show [**applied**] **policy port group** [*group_name*]

Syntax Definitions

applied	Indicates that only policy port groups that have been applied should be displayed.
<i>group_name</i>	The name of the policy port group for which you want to display information; or a wildcard sequence of characters for displaying information about port groups with similar names. Use an asterisk (*) to indicate a wildcard character.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Information for all policy port groups displays unless *group_name* is specified.
- The display may include any of the following characters:

character	definition
+	Indicates a new policy port group.
-	Indicates the policy port group is pending deletion.
#	Indicates that the policy port group differs between the pending/applied port groups.

Examples

```
-> show policy port group
```

```
Group Name  From          Entries      Mode
Slot01     blt           1/1-26      non-split
pg1         cli           1/1-2       split
Pg2         cli           1/3-4       non-split
Pg3         cli           1/5-6       split
```

output definitions

Group Name	The name of the port group, configured through the policy port group command or built-in port groups automatically set up by the switch (Slot01, Slot02, Slot03 , etc.).
From	The origin of the port group: cli indicates that the entry was configured on the switch; ldap indicates the entry was configured through PolicyView; blt indicates the entry was set up automatically by the switch based on the current hardware.
Entries	The slot/port combinations associated with the port group.
Mode	The mode configured for the port group.

Release History

Release 6.6.1; command was introduced.

Release 6.6.5; 'Mode' field added.

Related Commands

policy port group Configures a port group and its associated slot and port numbers.

MIB Objects

```

alaQoSPortGroupsTable
  alaQoSPortGroupsName
  alaQoSPortGroupsSource
alaQoSAppliedPortGroupsTable
  alaQoSAppliedPortGroupsName
  alaQoSAppliedPortGroupsSource
alaPortGroupTable
  alaQoSPortGroupSlot
  alaQoSPortGroupPort
alaAppliedPortGroupTable
  alaQoSAppliedPortGroupSlot
  alaQoSAppliedPortGroupPort

```

show policy vlan group

Displays information about pending and applied policy VLAN groups.

show [applied] policy vlan group [*group_name*]

Syntax Definitions

applied Displays only those policy VLAN groups that have been applied.

group_name The name of the policy VLAN group for which you want to display information; or a wildcard sequence of characters for displaying information about VLAN groups with similar names. Use an asterisk (*) to indicate a wildcard character.

Defaults

By default, all VLAN groups are displayed with this command.

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Use the *group_name* parameter to display information for a specific VLAN group.
- The display may include any of the following characters:

character	definition
+	Indicates a new policy vlan group.
-	Indicates the policy vlan group is pending deletion.
#	Indicates that the policy vlan group differs between the pending/applied port groups.

Examples

```
-> show policy vlan group
Group Name      vlan                From
-----+-----+-----
Vlan_grp1      100                 cli
Vlan_grp1      101                 cli
Vlan_grp1      200                 cli
Vlan_grp2      1234                cli
Vlan_grp3      2000                cli
Vlan_grp3      2001                cli
Vlan_grp3      2003-2005           cli
Vlan_grp3      2500                cli
Vlan_grp3      3000                cli
```

```

-> show policy vlan group
Group Name      vlan      From
-----+-----+-----
Vlan_grp2      1234      cli

```

output definitions

Group Name	The name of the VLAN group.
VLAN	The VLAN IDs associated with the VLAN group.
From	The origin of the VLAN group: cli indicates that the entry was configured on the switch; ldap indicates the entry was configured through PolicyView; blt indicates the entry was set up automatically by the switch based on the current hardware.

Release History

Release 6.6.2; command was introduced.

Related Commands

[policy vlan group](#) Configures a VLAN group and its associated VLAN ID numbers.

MIB Objects

```

alaQoSvlanGroupsTable
  alaQoSvlanGroupsName
  alaQoSvlanGroupsSource
  alaQoSvlanGroupsStatus
alaQoSAppliedVlanGroupsTable
  alaQoSAppliedVlanGroupsName
  alaQoSAppliedVlanGroupsSource
  alaQoSAppliedVlanGroupsStatus
alaQoSvlanGroupTable
  alaQoSvlanGroupVlan
  alaQoSvlanGroupVlanEnd
  alaQoSvlanGroupStatus
alaQoSAppliedVlanGroupTable
  alaQoSAppliedVlanGroupVlan
  alaQoSAppliedVlanGroupVlanEnd
  alaQoSAppliedVlanGroupStatus

```

show policy map group

Displays information about pending and applied policy map groups.

show [**applied**] **policy map group** [*group_name*]

Syntax Definitions

applied	Indicates that only map groups that have been applied should be displayed.
<i>group_name</i>	The name of the policy map group for which you want to display information; or a wildcard sequence of characters for displaying information about map groups with similar names. Use an asterisk (*) to indicate a wildcard character.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Information for all policy map groups displays unless *group_name* is specified.
- The display may include any of the following characters:

character	definition
+	Indicates a new policy port group.
-	Indicates the policy port group is pending deletion.
#	Indicates that the policy port group differs between the pending/applied port groups.

Examples

```
-> show policy map group
Group Name          From  Entries
+tosGroup           cli   1-2:4
                   4:5
```

output definitions

Group Name	The name of the map group, configured through the policy map group command.
From	The origin of the port group: cli indicates that the entry was configured on the switch; ldap indicates the entry was configured through PolicyView.
Entries	The slot/port combinations associated with the port group.

Release History

Release 6.6.1; command was introduced.

Related Commands

[policy mac group](#)

Configures a map group and its associated mappings for 802.1p, Type of Service (ToS), or Differentiated Services Code Point (DSCP) values.

MIB Objects

alaQoSMapGroupsTable

- alaQoSMapGroupsName
- alaQoSMapGroupsSource

alaQoSAppliedMapGroupsTable

- alaQoSAppliedMapGroupsName
- alaQoSAppliedMapGroupsSource

alaQoSMapGroupTable

- alaQoSMapGroupKey
- alaQoSMapGroupKeyEnd
- alaQoSMapGroupValue

alaQoSAppliedMapGroupTable

- alaQoSAppliedMapGroupKey
- alaQoSAppliedMapGroupKeyEnd
- alaQoSAppliedMapGroupValue

show policy action

Displays information about pending and applied policy actions configured on the switch.

show [applied] policy action [*action_name*]

Syntax Definitions

applied Indicates that only actions that have been applied should be displayed.

action_name The name of the action for which you want to display information; or a wildcard sequence of characters for displaying information about actions with similar names. Use an asterisk (*) to indicate a wildcard character.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Information for all policy actions displays unless *action_name* is specified.
- The display may include any of the following characters:

character	definition
+	Indicates a new policy action.
-	Indicates the policy action is pending deletion.
#	Indicates that the policy action differs between the pending/applied actions.

Examples

```
-> show policy action
```

```

Action Name From  Disp  Pri Share Min Max CIR PIR Max-Depth Bufs CBS PBS To
-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+
A3          cli   accept  No          10M
+A4         cli   accept  No          10M
A5          cli   accept  No          10M 10M
A6          cli   accept  No
+A7         cli   accept  No
+A8         cli   accept  Yes
action1     cli   accept  No          10M 20M
action2     cli   accept  No          10M 20M

```

```
-> show policy action a5
```

Action Name	From	Disp	Pri	Share	Bandwidth				Burst size				
					Min	Max	CIR	PIR	Max-Depth	Bufs	CBS	PBS	To
A5	cli	accept	No				10M	10M				4K	

```
-> show applied policy action
```

Action Name	From	Disp	Pri	Share	Bandwidth				Burst size				
					Min	Max	CIR	PIR	Max-Depth	Bufs	CBS	PBS	To
A3	cli	accept	No				10M						
A5	cli	accept	No				10M	10M				4K	
A6	cli	accept	No										
action1	cli	accept	No				10M	20M				4K	
action2	cli	accept	No				10M	20M				4K	40M

```
-> show policy action action*
```

Action Name	From	Disp	Pri	Share	Bandwidth				Burst size				
					Min	Max	CIR	PIR	Max-Depth	Bufs	CBS	PBS	To
action1	cli	accept	No				10M	20M				4K	
action2	cli	accept	No				10M	20M				4K	40M

output definitions

Action Name	The name of the action, configured through the policy action command.
From	Where the policy rule originated: cli indicates that the entry was configured on the switch; ldap indicates the entry was configured through PolicyView.
Disp	The disposition of the rule, either accept or deny .
Pri	The priority configured for the rule.
Share	Whether or not the rule specifies that the queue should be shared.
Min Bandwidth	The minimum bandwidth required by the rule.
Max Bandwidth	The maximum bandwidth required by the rule.
Max Depth Bufs	Maximum depth (in Kbytes) of queues for traffic.

Release History

Release 6.6.1; command was introduced.

Related Commands

policy action

Creates a policy action. A QoS action is a particular set of bandwidth and queue parameters that may be applied to a flow matching particular QoS conditions.

MIB Objects

```
alaQoSActionTable
  alaQoSActionName
  alaQoSActionSource
  alaQoSActionDisposition
  alaQoSActionShared
  alaQoSActionMinimumBandwidth
  alaQoSActionMaximumBandwidth
  alaQoSActionMaximumDepth
alaQoSAppliedActionTable
  alaQoSAppliedActionName
  alaQoSAppliedActionSource
  alaQoSAppliedActionDisposition
  alaQoSAppliedActionShared
  alaQoSAppliedActionMinimumBandwidth
  alaQoSAppliedActionMaximumBandwidth
  alaQoSAppliedActionMaximumDepth
```

show policy list

Displays information about pending and applied policy lists.

show [applied] policy list [*list_name*]

Syntax Definitions

applied Displays only those policy lists that have been applied to the switch configuration.

list_name The name of the list for which you want to display information; or a wildcard sequence of characters for displaying information about lists with similar names. Use an asterisk (*) to indicate a wildcard character.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Information for all rules is displayed unless a *list_name* is specified.
- Use the [show active policy list](#) command to display only active policy lists that are currently enforced on the switch.
- The display may include any of the following characters:

character	definition
+	Indicates that the policy list has been modified or has been created since the last qos apply .
-	Indicates the policy list is pending deletion.
#	Indicates that the policy list differs between the pending/applied lists.

Examples

```
-> show policy list
Group Name      From  Type  Enabled  Entries
list1           cli   unp   Yes      r1
               r2
+list2          cli   unp   Yes      r3
egress_list1    cli   egress No       r1
               r2
               r3
```



```

-> show applied policy list
Group Name          From  Type  Enabled  Entries
list1               cli   unp   Yes      r1
                   r2

egress_list1       cli   egress No       r1
                   r2
                   r3

```

output definitions

Group Name	The name of the policy list. Configured through the policy list command. A plus sign (+) preceding a policy list name indicates that the list was modified or created since the last qos apply .
From	Where the list originated.
Type	The type of rule (unp or egress). Configured through the policy list command. Note that the default policy list is not shown. Use the show active policy rule meter-statistics command to display rules that are members of the default policy list.
Enabled	Whether or not the rule is enabled. Configured through the policy list command.
Entries	The QoS policy rules that are grouped together in this policy list. Configured through the policy list command.

Release History

Release 6.6.2; command was introduced.

Related Commands

show active policy list	Displays only those policy lists that are currently being enforced on the switch.
show policy rule	Displays information about pending and applied policy rules

MIB Objects

```

alaQoSRuleGroupsTable
  alaQoSRuleDefaultList
  alaQoSRuleGroupsName
  alaQoSRuleGroupsSource
  alaQoSRuleGroupsType
  alaQoSRuleGroupsEnabled
  alaQoSRuleGroupsStatus
alaQoSAppliedRuleGroupsTable
  alaQoSAppliedRuleGroupsName
  alaQoSAppliedRuleGroupsSource
  alaQoSAppliedGroupsType
  alaQoSAppliedGroupsEnabled
  alaQoSAppliedRuleGroupsStatus

```

show policy condition

Displays information about pending and applied policy conditions.

show [applied] policy condition [*condition_name*]

Syntax Definitions

applied	Indicates that only conditions that have been applied should be displayed.
<i>condition_name</i>	The name of the condition for which you want to display information; or a wildcard sequence of characters for displaying information about conditions with similar names. Use an asterisk (*) to indicate a wildcard character.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Information for all policy conditions displays unless *condition_name* is specified.
- The display may include any of the following characters:

character	definition
+	Indicates a new policy condition.
-	Indicates the policy condition is pending deletion.
#	Indicates that the policy condition differs between the pending/applied conditions.

Examples

```
-> show policy condition
Condition Name:          From  Src  ->  Dest
pcond1
*IP      :                Any  ->  198.60.82.0/255.255.255.0

+c4                cli
*IP      : 10.11.2.0/255/255/255.0  ->  Any
*TCP    :                Any  ->  600

-> show policy condition c*
Condition Name:          From  Src  ->  Dest
+c4                cli
*IP      : 10.11.2.0/255/255/255.0  ->  Any
*TCP    :                Any  ->  600
```

output definitions

Condition Name	The name of the condition, configured through the policy condition command.
From	The origin of the condition: cli indicates that the entry was configured on the switch; ldap indicates the entry was configured through PolicyView.
Src	The source address associated with the condition.
Dest	The destination address associated with the condition.

Release History

Release 6.6.1; command was introduced.

Related Commands

policy condition Creates a policy condition. The condition determines what parameters the switch uses to classify incoming flows.

MIB Objects

```

alaQoSConditionTable
  alaQoSConditionName
  alaQoSConditionSource
  alaQoSConditionSourceSlot
  alaQoSConditionSourcePort
  alaQoSConditionSourcePortGroup
  alaQoSConditionDestinationSlot
  alaQoSConditionDestinationPort
  alaQoSConditionDestinationPortGroup
  alaQoSConditionSourceInterfaceType
  alaQoSConditionDestinationInterfaceType
  alaQoSConditionSourceMacAddr
  alaQoSConditionSourceMacMask
  alaQoSConditionSourceMacGroup
  alaQoSConditionDestinationMacAddr
  alaQoSConditionDestinationMacMask
  alaQoSConditionDestinationMacGroup
  alaQoSConditionSourceVlan
  alaQoSConditionSourceVlanGroup
  alaQoSConditionDestinationVlan
  alaQoSCondition8021p
  alaQoSConditionSourceIpAddr
  alaQoSConditionSourceIpMask
  alaQoSConditionSourceNetworkGroup
  alaQoSConditionDestinationIpAddr
  alaQoSConditionDestinationIpMask
  alaQoSConditionDestinationNetworkGroup
  alaQoSConditionMulticastIpAddr
  alaQoSConditionMulticastIpMask
  alaQoSConditionMulticastNetworkGroup
  alaQoSConditionTos
  alaQoSConditionDscp

```

```
alaQoSConditionTcpFlags  
alaQoSConditionIpProtocol  
alaQoSConditionSourceIpPort  
alaQoSConditionDestinationIpPort  
alaQoSConditionService  
alaQoSConditionServiceGroup
```

show active policy list

Displays information about applied policy lists that are active (enabled) on the switch.

show active policy list [*list_name*]

Syntax Definitions

list_name The name of the list for which you want to display information; or a wildcard sequence of characters for displaying information about lists with similar names. Use an asterisk (*) to indicate a wildcard character.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Information for all active rules is displayed unless a *list_name* is specified.
- Use the **show policy list** command to display inactive as well as active policy lists.
- Applied lists may or may not be active on the switch. Applied lists are inactive if they have been administratively disabled with the **disable** option in the **policy list** command.
- The display may include any of the following characters:

character	definition
+	Indicates that the policy list has been modified or has been created since the last qos apply .
-	Indicates the policy list is pending deletion.
#	Indicates that the policy list differs between the pending/applied lists.

Examples

```
-> show active policy list
Group Name                From  Type  Enabled  Entries
-----
list1                      cli   unp   Yes      r1
                           r2
+list2                     cli   unp   Yes      r3
egress_list1              cli   egress Yes      r1
                           r2
                           r3
```

output definitions

Group Name	The name of the policy list. Configured through the policy list command. A plus sign (+) preceding a policy list name indicates that the list was modified or created since the last qos apply .
From	Where the list originated.
Type	The type of rule (unp or egress). Configured through the policy list command. Note that the default policy list is not shown. Use the show policy rule command to display rules that are members of the default policy list.
Enabled	Whether or not the rule is enabled. Configured through the policy list command.
Entries	The QoS policy rules that are grouped together in this policy list. Configured through the policy list command.

Release History

Release 6.6.2; command was introduced.

Related Commands

show policy list

Displays information about pending and applied policy lists.

show policy rule

Displays information about pending and applied policy rules

MIB Objects

alaQoSRuleGroupsTable

alaQoSRuleDefaultList
 alaQoSRuleGroupsName
 alaQoSRuleGroupsSource
 alaQoSRuleGroupsType
 alaQoSRuleGroupsEnabled
 alaQoSRuleGroupsStatus

alaQoSAppliedRuleGroupsTable

alaQoSAppliedRuleGroupsName
 alaQoSAppliedRuleGroupsSource
 alaQoSAppliedGroupsType
 alaQoSAppliedGroupsEnabled
 alaQoSAppliedRuleGroupsStatus

show active policy rule

Displays information about applied policy rules that are active (enabled) on the switch, and per port statistics.

show active [**bridged** | **routed** | **multicast**] **policy rule** [*rule_name*] [**extended**]

Syntax Definitions

bridged	Displays active rules that apply to bridged traffic.
routed	Displays active rules that apply to routed traffic.
multicast	Displays active rules that apply to multicast traffic.
<i>rule_name</i>	The name of the rule for which you want to display information; or a wildcard sequence of characters for displaying information about rules with similar names. Use an asterisk (*) to indicate a wildcard character.
extended	Displays the statistics for each individual port specified in the policy port group.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Use the **show policy rule** command to display inactive as well as active policy rules.
- Information for all rules is displayed unless *rule_name* is specified.
- Information for all rule types is displayed unless a keyword (**bridged**, **routed**, **multicast**) is specified.
- Applied rules may or may not be active on the switch. Applied rules are inactive if they have been administratively disabled with the **disable** option in the **policy rule** command.
- The display may include any of the following characters:

character	definition
+	Indicates that the policy rule has been modified or has been created since the last qos apply .
-	Indicates the policy object is pending deletion.
#	Indicates that the policy object differs between the pending/applied objects.

- A match may show for a rule that is not the highest precedence rule for a particular flow, but only the rule with the highest precedence is actually applied.

- This command displays the counters for each individual port only when the rule specifies a split port group as condition, else only the aggregated counter statistics is displayed for a particular rule and not each of the individual ports.
- If the split mode is not used in the rule configured with the port group and **extended** keyword is used for the display, an error message is displayed.
- The command 'show active policy rule *rule name* extended' will still show the aggregated counters for each sub-rules formed corresponding to each port configured with the source port group in the rule.

Examples

```
-> show active policy rule
Policy From Prec Enab Act Refl Log Trap Save Def Acc Matches
r1 cli 0 Yes Yes No No Yes Yes Yes Yes 1241827
(L2/3): c2 -> a1
```

```
-> show active policy rule extended
Policy Port Matches
r1 1/1 4000
    1/2 5000

r2 1/3 2000
    1/4 1000
```

```
-> show active policy rule r1 extended
Policy Port Matches
r1 1/3 6008280
    2/1 6738088
```

output definitions

Policy	The name of the policy rule, configured through the policy rule command. A plus sign (+) preceding a policy rule name indicates that the policy rule has been modified or has been created since the last qos apply .
From	Where the rule originated.
Prec	The precedence of the rule. Precedence determines the order in which the switch will apply rules.
Enab	Whether or not the rule is administratively enabled. (By default, rules are enabled.)
Act	Whether or not the rule is enforceable by the switch (e.g., qos is enabled, rule is valid and enabled, validity period is active).
Refl	Whether the rule is reflexive or not.
Log	Whether or not the switch will log messages about specific flows coming into the switch that match this policy rule. Configured through the policy rule command.
Trap	Whether or not traps are enabled for the rule. Configured through the policy rule command. A trap is sent when a port is administratively disabled through a port disable action or a UserPort shutdown function

output definitions (continued)

Save	Whether the rule will be captured in an ASCII text file (using the configuration snapshot command), saved to the working directory after the write memory command or copy running-config working command is entered, or saved after a reboot. Configured through the policy rule command.
Matches	The number of flows matching this rule. Note that for ingress maximum bandwidth policies, the value in this field indicates the number of packets that exceed the bandwidth limit, not the packets that match the rule.
Green, Yellow, Red	Tri-Color Marking (TCM) statistics; the number of packets/bytes that are marked Green (low drop precedence), Yellow (high drop precedence), and Red (always drop). Configured through the show policy classify command.
{L2/3}	The condition and the action associated with the rule; configured through the policy condition and policy action commands respectively.
Acc	Displays whether accounting mode is enabled or not enabled (Yes or No)
Port	Port associated with the rule.

Release History

Release 6.6.1; command was introduced.

Release 6.6.4; “accounting” was added to command output.

Release 6.6.5; ‘extended’ parameter added.

Related Commands

policy rule Configures a policy rule on the switch. A rule is made up of a condition (for classifying incoming traffic) and an action (to be applied to outgoing traffic).

MIB Objects

```

alaQoSAppliedRuleTable
  alaQoSAppliedRuleEnabled
  alaQoSAppliedRuleName
  alaQoSAppliedRuleSource
  alaQoSAppliedRulePrecedence
  alaQoSAppliedRuleCondition
  alaQoSAppliedRuleAction
  alaQoSAppliedRuleReflexive
  alaQoSAppliedRuleSave
  alaQoSAppliedRuleMatches
  alaQoSAppliedRuleActive
  alaQoSAppliedRuleDefaultList
  alaQoSAppliedRuleAccounting
alaQoSExtendedRuleTable
  alaQoSExtendedRulePort
  alaQoSExtendedRuleMatches

```

show active policy rule accounting

Displays the accounting results for all the rules that have the accounting mode enabled or for the particular rule specified in the command.

show active policy rule [*rule_name*] **accounting**

Syntax Definitions

rule_name The name of the rule for which you want to display information of accounting results. ; or a wildcard sequence of characters for displaying information about rules with similar names. Use an asterisk (*) to indicate a wildcard character.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Use the **show policy rule** command to display inactive as well as active policy rules.
- Information for all rules is displayed unless *rule_name* is specified.
- Applied rules may or may not be active on the switch. Applied rules are inactive if they have been administratively disabled with the **disable** option in the **policy rule** command.

Examples

```
show active policy rule accounting
```

```
  a) Examples :
```

Matches			Rate	
Rule Name	Packets	Bytes	Packets/sec	Bits/sec
r1	12345	567890	123	4567
r2	0	0	0	0
r3	12345	567890	123	4567

output definitions

Rule Name	Displays the name of the accounting rule
Packets	Counts the number of packets that match the rule.
Bytes	Counts the number of bytes that match the rule.
Packets/sec	Displays the number of packets and the number of bytes matching a particular rule.
Bits/sec	Displays the number of bits matching a particular rule

Release History

Release 6.6.4; command was introduced.

Related Commands

[policy rule](#)

Configures a policy rule on the switch. A rule is made up of a condition (for classifying incoming traffic) and an action (to be applied to outgoing traffic).

MIB Objects

```
alaQoSAppliedRuleTable  
  alaQoSAppliedRuleName  
  alaQoSAppliedRulePacketRate  
  alaQoSAppliedRuleBitRate  
  alaQoSAppliedRuleAccPacketCount  
  alaQoSAppliedRuleAccByteCount
```

show active policy list accounting details

Displays the accounting results of all the active lists or the one specified in the command. The "detail" option will give the counters of the individual rules that are part of the list.

show active policy list [*list_name*] **accounting** [**details**]

Syntax Definitions

list_name The name of the list for which you want to display information of accounting results. ; or a wildcard sequence of characters for displaying information about rules with similar names. Use an asterisk (*) to indicate a wildcard character.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Information for all list is displayed unless *list_name* is specified.
- Egress policy list is not part of this CLI as Accounting is not supported on egress list.

Examples

```
-> show active policy list accounting
```

List Name	Packets	Matches		Rate	
		Bytes	Packet/sec	Bits/sec	
L1	2222	222222	333	33333	
L2	4444	444444	666	66666	

```
-> show active policy list accounting detail
```

List Name	Rule Name	Matches		Rate	
		Packets	Bytes	Packets/sec	Bits/sec
L1	R1	1111	111111	166	16666
	R2	1111	111111	166	16666
L2	R3	2222	222222	333	33333
	R4	2222	222222	333	333333

output definitions

List Name	Displays the name of the active list.
Rule Name	Displays the name of the accounting rule
Packets	Counts the number of packets that match the rule.

output definitions (continued)

Bytes	Counts the number of bytes that match the rule.
Packets/sec	Displays the number of packets/sec and the number of bytes matching a particular rule.
Bits/sec	Displays the number of bits/sec matching a particular rule

Release History

Release 6.6.4; command was introduced.

Related Commands

[policy rule accounting](#) Enables the accounting mode for a rule.

MIB Objects

```
alaQoSAppliedRuleGroupTable  
  alaQoSAppliedRuleGroupName  
  alaQoSAppliedRuleGroupAccPacketCount  
  alaQoSAppliedRuleGroupAccByteCount  
  alaQoSAppliedRuleGroupPacketRate  
  alaQoSAppliedRuleGroupBitRate
```

show active policy rule meter-statistics

Displays Tricolor Marking (TCM) packet color statistics for the policy rule. These statistics are kept for those rules that consist of a TCM policy action (**policy action cir**).

show active policy rule [*rule_name*] **meter-statistics** [**extended**]

Syntax Definitions

<i>rule_name</i>	The name of the rule for which you want to display information; or a wildcard sequence of characters for displaying information about rules with similar names. Use an asterisk (*) to indicate a wildcard character.
extended	Displays the statistics for each individual ports specified in the policy port group in a particular rule.

Defaults

By default, statistics are displayed for all rules.

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Use the optional *rule_name* parameter to display statistics for a specific policy rule.
- This command displays statistics for applied policy rules that are active (enabled) on the switch. Use the **show policy rule** command to display inactive as well as active policy rules.
- Applied rules may or may not be active on the switch. Applied rules are inactive if they have been administratively disabled with the **disable** option in the **policy rule** command.
- Statistics are displayed for all three colors: Green, Yellow, and Red.
- A TCM action specifies the rates and burst sizes used to determine drop precedence for packets to which the action is applied. Packets are marked a certain color based on whether or not they conform to the specified rates and burst sizes. The packet color indicates the drop precedence (Green = low drop precedence, Yellow = high drop precedence, and Red = packet is always dropped).
- The extended keyword must be used along with the rule name in the 'show active policy rule r1 meter-statistics' as the extended keyword is used to view the statistics for each individual ports specified in the policy port group in a specific rule.

Examples

The following command examples display statistics for the color counters. These are the two counters specified by the TCM policy action that is assigned to the "R1" and "R2" policy rules.

```
-> show active policy rule meter-statistics
Policy r2:
  Green      :          0,
  Yellow     :          0,
  Red        :          0,
```

```

Matches          :                0

Policy r1:
  Green          :                0,
  Yellow         :                0,
  Red            :                0,
  Matches        :                0

-> show active policy rule r2 meter-statistics extended
Policy:r2, Port:1/1
Green   :                0,
Yellow  :                0,
Red     :                0,
Matches :                0

Policy:r2, Port:1/2
Green   :                0,
Yellow  :                0,
Red     :                0,
Matches :                0

```

output definitions

Policy	The name of the policy rule, configured through the policy rule command.
Green	Packets marked green as a result of the TCM policy action; green packets have a low drop precedence.
Red	Packets marked red as a result of the TCM policy action; red packets are always dropped.
Yellow	The number of packets marked yellow as a result of the TCM policy action; yellow packets have a high drop precedence.
Non-Green	The number of yellow and red packets combined.
Non-Red	The number of green and yellow packets combined.
Port	Port number associated with the rule.

Release History

Release 6.6.2; command was introduced.
 Release 6.6.5; 'extended' parameter added.

Related Commands

policy action cir	Configures a TCM policy action, including the color mode for the action.
qos stats reset	Resets QoS statistic counters to zero.
show policy action	Displays information for policy actions configured on the switch.
show policy rule	Displays information for policy rules configured on the switch.

MIB Objects

```
alaQoSRuleTable
  alaQoSRuleName
  alaQoSRuleGreenCount
  alaQoSRuleRedCount
  alaQoSRuleYellowCount
alaQoSAppliedRuleTable
  alaQoSAppliedRuleName
  alaQoSAppliedRuleGreenCount
  alaQoSAppliedRuleRedCount
  alaQoSAppliedRuleYellowCount
alaQoSExtendedRuleTable
  alaQoSRuleExtendedGreenCount
  alaQoSRuleExtendedYellowCount
  alaQoSExtendedRuleRedCount
  alaQoSRuleExtendedNonGreenCount
  alaQoSRuleExtendedNonRedCount
```

show policy rule

Displays information about pending and applied policy rules.

show [**applied**] [**bridged** | **routed** | **multicast**] **policy rule** [*rule_name*]

Syntax Definitions

applied	Indicates that only policy rules that have been applied should be displayed.
bridged	Displays rules that apply to bridged traffic.
routed	Displays rules that apply to routed traffic.
multicast	Displays rules that apply to multicast traffic.
<i>rule_name</i>	The name of the rule for which you want to display information; or a wildcard sequence of characters for displaying information about rules with similar names. Use an asterisk (*) to indicate a wildcard character.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Information for all rules is displayed unless *rule_name* is specified.
- Information for all rule types is displayed unless a keyword (**bridged**, **routed**, **multicast**) is specified.
- Use the [show active policy list](#) command to display only active rules that are currently being enforced on the switch.
- The display may include any of the following characters:

character	definition
+	Indicates that the policy rule has been modified or has been created since the last qos apply .
-	Indicates the policy object is pending deletion.
#	Indicates that the policy object differs between the pending/applied objects.

Examples

```
show policy rule
```

```
  a) Examples :
```

```

      Policy
r1      From  Prec  Enab  Act  Refl  Log  Trap  Save  Def  Acc
(L2/3): cli    0  Yes  Yes  No   No   Yes  Yes  Yes  Yes
      c2 -> a1
```

output definitions

Policy	The name of the policy rule, configured through the policy rule command. A plus sign (+) preceding a policy rule name indicates that the policy rule has been modified or has been created since the last qos apply .
From	Where the rule originated.
Prec	The precedence of the rule. Precedence determines the order in which the switch will apply rules. Configured through the
Enab	Whether or not the rule is enabled.
Act	Whether or not the rule is enforceable by the switch (e.g., qos is enabled, rule is valid and enabled, validity period is active).
Refl	Whether the rule is reflexive or not.
Log	Whether or not the switch will log messages about specific flows coming into the switch that match this policy rule. Configured through the policy rule command.
Trap	Whether or not traps are enabled for the rule. Configured through the policy rule command. A trap is sent when a port is administratively disabled through a port disable action or a UserPort shutdown function.
Save	Whether the rule will be captured in an ASCII text file (using the configuration snapshot command), saved to the working directory after the write memory command or copy running-config working command is entered, or saved after a reboot. Configured through the policy rule command.
{L2/3}	The condition and the action associated with the rule; configured through the policy condition and policy action commands respectively.
Acc	Displays whether accounting mode is enabled or not enabled, (Yes or No)

Release History

Release 6.6.1; command was introduced.

Release 6.6.4: "accounting" added to command output.

Related Commands

policy rule

Configures a policy rule on the switch. A rule is made up of a condition (for classifying incoming traffic) and an action (to be applied to outgoing traffic).

MIB Objects

```
alaQoSRuleTable  
  alaQoSRuleSource  
  alaQoSRulePrecedence  
  alaQoSRuleCondition  
  alaQoSRuleAction  
  alaQoSRuleReflexive  
  alaQoSRuleSave  
  alaQoSRuleLog  
  alaQoSRuleActive  
  alaQoSRuleDefaultList  
  alaQoSRuleEnabled  
  alaQoSRuleAccounting
```

output definitions

Days	The days of the week the validity period is active, configured through the policy validity period command. If this field does not appear, then the validity period is not restricted to specific days.
Months	The months during which the validity period is active, configured through the policy validity period command. If this field does not appear, then the validity period is not restricted to specific months.
Hours	The time of day the validity period begins and ends, configured through the policy validity period command. If this field does not appear, then the validity period is not restricted to a specific time.
Interval	The date and time a validity period interval begins and ends, configured through the policy validity period command. If this field does not appear, then the validity period is not restricted to a specific date and time interval.

Release History

Release 6.6.1; command was introduced.

Related Commands

policy validity period Configures a validity period that specifies days, times, and/or months during which an associated policy rule is in effect.

MIB Objects

```

alaQoSValidityPeriodTable
  alaQoSValidityPeriodName
  alaQoSValidityPeriodSource
  alaQoSValidityPeriodDays
  alaQoSValidityPeriodDaysStatus
  alaQoSValidityPeriodMonths
  alaQoSValidityPeriodMonthsStatus
  alaQoSValidityPeriodHour
  alaQoSValidityPeriodHourStatus
  alaQoSValidityPeriodEndHour
  alaQoSValidityPeriodInterval
  alaQoSValidityPeriodIntervalStatus
  alaQoSValidityPeriodEndInterval
alaQoSAppliedValidityPeriodTable
  alaQoSAppliedValidityPeriodName
  alaQoSAppliedValidityPeriodSource
  alaQoSAppliedValidityPeriodDays
  alaQoSAppliedValidityPeriodDaysStatus
  alaQoSAppliedValidityPeriodMonths
  alaQoSAppliedValidityPeriodMonthsStatus
  alaQoSAppliedValidityPeriodHour
  alaQoSAppliedValidityPeriodHourStatus
  alaQoSAppliedValidityPeriodEndHour
  alaQoSAppliedValidityPeriodInterval
  alaQoSAppliedValidityPeriodIntervalStatus
  alaQoSAppliedValidityPeriodEndInterval

```

policy action rewrite

Configures the source or destination IP which needs to be rewritten to global IP.

```
policy action action_name {source | destination} rewrite ip ip_address [mask netmask]
```

```
policy action action_name no {source | destination} rewrite ip ip_address [mask netmask]
```

Syntax Definitions

<i>action_name</i>	The name of the action.
<i>ip_address</i>	The source or destination IP address.
<i>netmask</i>	The mask for the source or destination IP address.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- The rewrite IP (source/destination IP/network) must be an interface IP on the device.
- If the source IP is different and it contains the same rewrite IP and source port, as a part of NATing, the source port will be incremented by one and sent out.
- Telnet, Ping, SSH, and SNMP packets are not considered for NAT packets.
- Each rule will handle reverse NAT as well. Configuring a rule for reverse NAT is not required.

Examples

```
-> policy action natexample source rewrite ip 9.9.9.2
```

Release History

Release 6.7.1 R02; command introduced.

Related Commands

qos nat timeout	Configures the timeout value for the NAT flow.
show qos nat flows	Displays the flow inbound and outbound traffic details.

MIB Objects

```
alaQoSActionSourceRewriteIpAddr  
alaQoSActionDestinationRewriteIpAddr
```

qos nat timeout

Configures the timeout value for the NAT flow. The timer controls the flow stored in the dynamic table.

qos nat timeout *timeout_value*

Syntax Definitions

timeout_value The timeout value for the NAT flow. Timeout value can be in the range 10 and 200000 seconds.

Defaults

By default, timeout value is 300 seconds.

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

N/A

Examples

```
-> qos nat timeout 100
```

Release History

Release 6.7.1 R02; command introduced.

Related Commands

[policy action rewrite](#) Configures the source or destination IP which needs to be rewritten to global IP.

MIB Objects

alaQoSConfigNatTimeout

show qos nat flows

Displays the flow inbound and outbound traffic details.

show qos nat flows [**protocol** {**UDP** | **TCP** | **ICMP**} | **outbound-ip** *ip_address* | **inbound** {**public-ip** *ip_address* | **private-ip** *ip_address*}]

Syntax Definitions

protocol Specify the protocol.
outbound-ip Specify the outbound IP address.
inbound Specify the inbound IP address.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

N/A

Examples

```
-> show qos nat flows
Max Limit Size:1024
Current Size:1          Peek Size:1

Proto  Inbound Private Inbound Public  Outbound      Inbound      Outbound  FlowstartTime  FlowlastTime
      Rx/Tx          Rx/Tx
-----+-----+-----+-----+-----+-----+-----+-----+-----+-----
UDP    5.5.5.5:63      20.20.20.1:1500 20.20.20.10:63 2199/2199     0/0          55s        33s
```

```
-> show qos nat flows icmp
Max Limit Size:1024
Current Size:1          Peek Size:262

Proto  Inbound Private Inbound Public  Outbound      Inbound      Outbound  FlowstartTime  FlowlastTime
      Rx/Tx          Rx/Tx
-----+-----+-----+-----+-----+-----+-----+-----+-----+-----
ICMP   174.55.21.3     172.0.59.55     174.58.1.253 341/341       340/340      29s        15s
```

```
-> show qos nat flows outbound-ip 174.58.1.253
Max Limit Size:1024
Current Size:262       Peek Size:262

Proto  Inbound Private Inbound Public  Outbound      Inbound      Outbound  FlowstartTime  FlowlastTime
      Rx/Tx          Rx/Tx
-----+-----+-----+-----+-----+-----+-----+-----+-----+-----
TCP    174.55.21.2:60  172.0.59.55:1500 174.58.1.253:60 127/127       0/0 2m        42s        3s
TCP    174.55.21.22:60 172.0.59.55:1520 174.58.1.253:60 127/127       0/0 2m        42s        3s
TCP    174.55.21.42:60 172.0.59.55:1540 174.58.1.253:60 127/127       0/0 2m        42s        3s
```



```
-> show qos nat flows inbound public-ip 172.0.59.55
Max Limit Size:1024
Current Size:262      Peek Size:262
```

Proto	Inbound Private	Inbound Public	Outbound Rx/Tx	Inbound Rx/Tx	Outbound	FlowstartTime	FlowlastTime
TCP	174.55.21.2:60	172.0.59.55:1500	174.58.1.253:60	96/96	0/0	2m 6s	6
TCP	174.55.21.3:60	172.0.59.55:1501	174.58.2.253:60	96/96	0/0	2m 6s	6s
TCP	174.55.21.4:60	172.0.59.55:1502	174.58.3.253:60	96/96	0/0	2m 6s	6s

```
-> show qos nat flows inbound private-ip 174.55.21.90
Max Limit Size:1024
Current Size:262      Peek Size:262
```

Proto	Inbound Private	Inbound Public	Outbound Rx/Tx	Inbound Rx/Tx	Outbound	FlowstartTime	FlowlastTime
TCP	174.55.21.90:60	172.0.59.55:1588	174.58.9.253:60	79/79	0/0	1m 53s	14s

output definitions

Max Limit Size	Maximum number flows that can be processed.
Current Size	The current statistics of the flows processed.
Peek Size	The history of the maximum flows processed.
Proto	The protocol of the flow processed.
Inbound Private	The inbound IP of the processed flow.
Inbound Public	The rewritten inbound IP and its corresponding layer 4 port number of the processed flow.
outbound	The outbound IP and layer 4 port number of the processed flow.
Inbound Rx/Tx	The number of packet forward NAT received and sent out.
outbound Rx/Tx	The number of packet reverse NAT received and sent out.
Flow start time	The time the flow processed and added to binding table.
Flow last time	The last time the flow received a packet and processed.

Release History

Release 6.7.1 R02; command introduced.

Related Commands

[policy action rewrite](#) Configures the source or destination IP which needs to be rewritten to global IP.

MIB Objects

```
alaQosActionTable
  alaQosActionEntry
  alaQoSActionSourceRewriteIpAddr
  alaQosActionSourceRewriteNetworkGroup
```

show qos nat counters

Displays the match counters for the NAT flows.

show qos nat counters

Syntax Definitions

N/A

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

N/A

Examples

```
-> show qos nat counters
***** QOS COUNTERS *****
Entry Id      Dev      Match Count
1178          0          0
1180          0          0
1182          0          0
1184          0          0
1178          1          0
1180          1          0
1182          1          0
1184          1          0
***** QDS COUNTERS *****
qdsNatTxCount      : 0
qdsNatTxFailCount  : 0
qdsRnatTxCount     : 0
qdsRnatTxFailCount: 0
***** IPNI COUNTERS *****
ipnatTxCount       :0
ipnatTxfail        :0
ipRnatTxCount      :0
ipRnatTxfailCount  :0
```

output definitions

QOS COUNTERS

Entry Id	The rule number.
Dev	The device number.
Match Count	The match count.

QDS COUNTERS

output definitions (continued)

qdsNatTxCount	Packets processed under forward NAT in queue dispatcher.
qdsNatTxFailCount	Packets processed under forward NAT that failed in queue dispatcher.
qdsRNatTxCount	Packets processed under reverse NAT in queue dispatcher.
qdsRNatTxFailCount	Packets processed under reverse NAT that failed in queue dispatcher.
IPNI COUNTERS	
ipnatTxCount	Packets processed under forward NAT in IPNI module.
ipnatTxfail	Packets processed under forward NAT that failed in IPNI module.
ipRnatTxCount	Packets processed under reverse NAT in IPNI module.
ipRnatTxfailCount	Packets processed under reverse NAT that failed in IPNI module.

Release History

Release 6.7.1 R02; command introduced.

Related Commands

[policy action rewrite](#) Configures the source or destination IP which needs to be rewritten to global IP.

MIB Objects

```

alaQoSAppliedRuleTable
  alaQoSAppliedRuleName
  alaQoSAppliedRulePacketRate
  alaQoSAppliedRuleBitRate
  alaQoSAppliedRuleAccPacketCount
  alaQoSAppliedRuleAccByteCount

```

qos nat flush

Clears the NAT flow entries.

qos nat flush

Syntax Definitions

N/A

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

N/A

Examples

```
-> qos nat flush
```

Release History

Release 6.7.1 R02; command introduced.

Related Commands

[show qos nat flows](#) Displays the flow inbound and outbound traffic details.

MIB Objects

alaQosConfigNATFlush

46 Policy Server Commands

This chapter describes CLI commands used for managing policies downloaded to the switch from an attached LDAP server. Policy rules may be created on an attached server through the PolicyView GUI application. Policy rules may also be created on the switch directly through CLI or SNMP commands. This chapter describes commands related to managing LDAP policies only. See [Chapter 44, “QoS Commands,”](#) for information about commands for creating and managing policies directly on the switch.

The policy commands are based on RFC 2251 and RFC 3060.

MIB information for policy server commands is as follows:

Filename: alcatelIND1policy.mib
Module: ALCATEL-IND1-POLICY-MIB

The policy server commands are summarized here:

[policy server load](#)
[policy server flush](#)
[policy server](#)
[show policy server](#)
[show policy server long](#)
[show policy server statistics](#)
[show policy server rules](#)
[show policy server events](#)

policy server load

Downloads policies from a LDAP server. These policies are created through the PolicyView management application.

policy server load

Syntax Definitions

N/A

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

Policies are downloaded to the switch from the directory server with the highest preference setting; this server must be enabled and operational (able to bind).

Examples

```
-> policy server load
```

Release History

Release 6.6.1; command was introduced.

Related Commands

[policy server flush](#) Removes all cached LDAP policy data from the switch.

MIB Objects

```
serverPolicyDecision
```

policy server flush

Removes all cached LDAP policy data from the switch.

policy server flush

Syntax Definitions

N/A

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

Use this command to remove LDAP policies. Policies configured through the CLI or SNMP are not removed.

Examples

```
-> policy server flush
```

Release History

Release 6.6.1; command was introduced.

Related Commands

[policy server load](#)

Downloads policies from a LDAP server. These policies are created through the PolicyView management application.

MIB Objects

serverPolicyDecision

policy server

Configures operational parameters for an LDAP-enabled directory server on which policies are stored.

policy server *ip_address* [**port** *port_number*] [**admin** {**up** | **down**}] [**preference** *preference*] [**user** *user_name* **password** *password*] [**searchbase** *search_string*] [**ssl** | **no ssl**]

no policy server *ip_address* [**port** *port_number*]

Syntax Definitions

<i>ip_address</i>	The IP address of the LDAP-enabled directory server.
<i>port_number</i>	The TCP/IP port number used by the switch to connect to the directory server.
up	Enables the specified policy server to download rules to the switch (servers are up by default.)
down	Prevents the specified policy server from downloading rules to the switch.
<i>preference</i>	Determines which directory server is used for policy downloads when multiple servers are configured. The range is 0–255. The server with the highest value is used as the policy server. If that server becomes unavailable, the server with the next highest preference value is used for policy downloads.
<i>user_name</i>	The user name for accessing the database entries on the directory server. When spaces are used in the user name, quotation marks must be included: “ Directory Manager ” is an example.
<i>password</i>	The password associated with the user name. The password must match the password defined on the directory server.
<i>search_string</i>	The root of the directory on the search that will be searched for policy information. Typically, the <i>search_string</i> includes o=organization and c=country . For example, o=company and c=country .
ssl	Enables a Secure Socket Layer between the switch and the policy server.
no ssl	Disables a Secure Socket Layer between the switch and the policy server.

Defaults

parameter	default
admin	up
<i>port_number</i>	389 (SSL disabled) 636 (SSL enabled)
<i>preference</i>	0
ssl no ssl	no ssl

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

If you change the port number, another entry is added to the policy server table; an existing port number is not changed. To remove a port number, use the **no** form of this command with the relevant policy server IP address and the port number you want to remove.

Examples

```
-> policy server 222.22.22.2 port 345 user dirmgr password secret88 searchbase  
ou=qos,o=company,c=country
```

Release History

Release 6.6.1; command was introduced.

Related Commands

[show policy server](#) Displays information about policies downloaded from an LDAP server.

MIB Objects

```
DIRECTORYSERVERTABLE  
  directoryServerAddress  
  directoryServerPort  
  directoryServerAdminStatus  
  directoryServerPreference  
  directoryServerUserId  
  directoryServerAuthenticationType  
  directoryServerPassword  
  directoryServerSearchbase  
  directoryServerEnableSSL
```

show policy server

Displays information about servers from which policies may be downloaded to the switch.

show policy server

Syntax Definitions

N/A

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

This command displays basic information about policy servers. Use the **show policy server long** command to display more details about the servers.

Examples

```
-> show policy server
```

```
Server  IP Address  port  enabled  status  primary
-----+-----+-----+-----+-----+-----
   1    208.19.33.112  389    Yes     Up      X
   2    208.19.33.66   400    No      Down    -
```

output definitions

Server	The index number corresponding to the LDAP server.
IP Address	The IP address of the LDAP server.
port	The TCP/IP port number used by the switch to connect to the policy server.
enabled	Whether or not the policy server is enabled.
status	The state of the policy server, Unkn , Up or Down .
primary	Indicates whether the server is the primary server; this server will be used for the next download of policies; only one server is a primary server.

Release History

Release 6.6.1; command was introduced.

Related Commands

[policy server](#)

Configures operational parameters for an LDAP-enabled directory server on which policies are stored.

MIB Objects

```
directoryServerTable
  directoryServerAddress
  directoryServerPort
  directoryServerAdminState
```

show policy server long

Displays more detailed information about an LDAP policy server.

show policy server long

Syntax Definitions

N/A

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

This command displays detailed information about policy servers. Use the **show policy server** command to display basic information about policy servers.

Examples

```
-> show policy server long
LDAP server 0
  IP address       : 155.132.44.98,
  TCP port        : 16652,
  Enabled         : Yes,
  Operational status : Unkn,
  Preference      : 99,
  Authentication  : password,
  SSL             : Disabled,
  login DN       : cn=Directory Manager,
  searchbase     : ou:4.1, cn=policyRoot, o=company.fr
  Last load time  : 09/13/01 16:38:18
LDAP server 1
  IP address       : 155.132.48.27,,
  TCP port        : 21890,
  Enabled         : Yes,
  Operational status : Unkn,
  Preference      : 50,
  Authentication  : password,
  SSL             : Disabled,
  login DN       : cn=Directory Manager,
  searchbase     : o=company.fr
  Last load time  : 00/00/00 00:00:00
```

output definitions

IP address	The IP address of the policy server.
TCP port	The TCP/IP port number used by the switch to connect to the policy server.

output definitions (continued)

Enabled	Whether or not the policy server is enabled via the PolicyView application.
Operational status	The state of the policy server, Up or Down .
Preference	Determines which directory server is used for policy downloads when multiple servers are configured. The range is 0–255. The server with the highest value is used as the policy server. If that server becomes unavailable, the server with the next highest preference value is used for policy downloads.
Authentication	Displays password if a user name and password was specified for the server through the policy server command. Displays anonymous if a user name and password are not configured.
login DN	The directory user name.
searchbase	The searchbase name, which is the root of the directory that will be searched for policy download information.
Last load time	The date and time that policies were last downloaded. Values of zero indicate that no policies have been downloaded.

Release History

Release 6.6.1; command was introduced.

MIB Objects

```

directoryServerTable
  directoryServerAddress
  directoryServerPort
  directoryServerPreference
  directoryServerAuthenticationType
  directoryServerSearchbase
  directoryServerUserId
  directoryServerPassword
  directoryServerCacheChange
  directoryServerLastChange
  directoryServerAdminStatus
  directoryServerOperStatus

```

show policy server statistics

Displays statistics about policy directory servers.

show policy server statistics

Syntax Definitions

N/A

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

This command displays statistics about server downloads. For information about server parameters, use the **show policy server** command.

Examples

```
-> show policy server statistics
Server  IP Address      port  accesses  delta  successes delta  errors  delta
-----+-----+-----+-----+-----+-----+-----+-----+-----
   1    155.132.44.98 16652    793     793     295     295     0       0
   2    155.132.48.27 21890     0       0       0       0     0       0
```

output definitions

Server	The index number corresponding to the server.
IP Address	The IP address of the LDAP server.
port	The TCP/IP port number used by the switch to connect to the policy server.
accesses	The number of times the server was polled by the switch to download policies.
delta	The change in the number of accesses since the last time the policy server was accessed.
successes	The number of times the server was polled by the switch to download policies and the policies were successfully downloaded.
delta	The change in the number of successful policy downloads since the last time the policy server was accessed.
errors	The number of errors returned by the server.
delta	The change in the number of errors returned by the server since the last time the policy server was accessed.

Release History

Release 6.6.1; command was introduced.

Related Commands

[policy server](#)

Configures operational parameters for an LDAP-enabled directory server on which policies are stored.

MIB Objects

policyStatsTable

 policyStatsAddress

 policyStatsServerPort

 policyStatsAccessCount

 policyStatsSuccessAccessCount

 policyStatsNotFoundCount

show policy server rules

Displays the names of policies originating on a directory server that have been downloaded to the switch.

show policy server rules

Syntax Definitions

N/A

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

This command displays information about policies created on directory servers only. [Chapter 44, “QoS Commands,”](#) for information about configuring and displaying policies directly on the switch.

Examples

```
-> show policy server rules
Num      name          prio      scope      status
-----+-----+-----+-----+-----
1         QoSRule1       0         Provisioned Active
2         QoSrule2       0         Provisioned Active
```

Fields are defined here:

output definitions

Num	An index number corresponding to the policy rule.
name	The name of the policy rule; only rules configured through PolicyView are displayed in this table.
prio	The priority or preference of the rule. Indicates the order in which rules will be checked for matching to incoming traffic. If two or more rules apply to the traffic, the rule with the highest preference is applied. Preference is determined when the rule is created.
scope	The type of rule. Provisioned is the only type valid currently.
status	The status of the rule: Active indicates that the rule has been pushed to the QoS software in the switch and is available to apply to traffic; notInService means the rule may be pushed to the QoS software in the future but is not available yet (typically because of a variable validity period); notReady indicates that the rule will never be pushed to the QoS software because its validity period has expired or because it has been disabled through SNMP.

Release History

Release 6.6.1; command was introduced.

Related Commands

[policy server load](#)

Downloads policies from a LDAP server. These policies are created through the PolicyView management application.

MIB Objects

```
policyRuleNamesTable
  policyRuleNamesIndex
  policyRuleNamesName
  policyRuleOperStatus
```

show policy server events

Displays any events related to a directory server on which policies are stored.

show policy server events

Syntax Definitions

N/A

Defaults

The display is limited to 50 events.

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

The Policy Manager initialization event is always the first event logged.

Examples

```
-> show policy server events
Event Time                event description
-----+-----
09/13/01 16:38:15 Policy manager log init
09/13/01 16:38:17 LDAP server 155.132.44.98/16652 defined
09/13/01 16:38:17 LDAP server 155.132.44.98/21890 defined
09/13/01 16:38:18 PDP optimization: PVP day-of-week all 1
09/13/01 16:38:18 PDP optimization: PVP Month all 1
09/13/01 16:38:18 PDP optimization: PVP Month all 1
09/13/01 16:38:18 PDP optimization: PVP Month all 1
09/13/01 16:38:18 PDP optimization: PVP Month all 1
09/13/01 16:38:18 IP address and mask make bad address change on destination IP
address 155.132.44.98:155.132.44.101
```

output definitions

Event Time	The date and time the policy event occurred.
event description	A description of the event.

Release History

Release 6.6.1; command was introduced.

Related Commands

[policy server](#)

Configures operational parameters for an LDAP-enabled directory server on which policies are stored.

MIB Objects

```
policyEventTable
  policyEventCode
  policyEventDetailString
  policyEventIndex
  policyEventTime
```

47 IP Multicast Switching Commands

IP Multicast Switching (IPMS) is a one-to-many communication technique employed by emerging applications such as video distribution, news feeds, conferencing, netcasting, and resource discovery). Unlike unicast, which sends one packet per destination, multicast sends one packet to all devices in any subnetwork that has at least one device requesting the multicast traffic.

Alcatel-Lucent's IPMS software is compatible with the following RFCs:

- RFC 1112 — Host Extensions for IP Multicasting
- RFC 2236 — Internet Group Management Protocol, Version 2
- RFC 2933 — Internet Group Management Protocol MIB
- RFC 3376 — Internet Group Management Protocol, Version 3

Alcatel-Lucent's IPv6MS software is compatible with the following RFCs:

- RFC 2710 — Multicast Listener Discovery for IPv6
- RFC 3019 — IPv6 MIB for Multicast Listener Discovery Protocol
- RFC 3810 — Multicast Listener Discovery Version 2 for IPv6

MIB information for the IPMS commands is as follows:

Filename: AlcatelIND1Igmplib
Module: ALCATEL-IGMP-IND1-MIB

MIB information for the IPv6MS commands is as follows:

Filename: AlcatelIND1Mld.mib
Module: ALCATEL-MLD-IND1-MIB

The following table summarizes the available IP and IPv6 multicast commands:

ip multicast status
ip multicast flood-unknown
ip multicast dynamic-control drop-all status
ip multicast querier-forwarding
ip multicast version
ip multicast max-group
ip multicast vlan max-group
ip multicast port max-group
ip multicast max-group
ip multicast static-querier
ip multicast static-group
ip multicast query-interval
ip multicast last-member-query-interval
ip multicast query-response-interval
ip multicast unsolicited-report-interval
ip multicast router-timeout
ip multicast source-timeout
ip multicast querying
ip multicast robustness
ip multicast spoofing
ip multicast zapping
ip multicast proxying
ipv6 multicast status
ipv6 multicast querier-forwarding
ipv6 multicast version
ipv6 multicast max-group
ipv6 multicast vlan max-group
ipv6 multicast port max-group
ipv6 multicast max-group
ipv6 multicast static-querier
ipv6 multicast static-group
ipv6 multicast query-interval
ipv6 multicast last-member-query-interval
ipv6 multicast query-response-interval
ipv6 multicast unsolicited-report-interval
ipv6 multicast router-timeout
ipv6 multicast source-timeout
ipv6 multicast querying
ipv6 multicast robustness
ipv6 multicast spoofing
ipv6 multicast zapping
ipv6 multicast proxying
show ip multicast
show ip multicast port
show ip multicast neighbor
show ip multicast querier
show ip multicast group
show ip multicast source
show ipv6 multicast
show ipv6 multicast port
show ipv6 multicast neighbor
show ipv6 multicast querier
show ipv6 multicast group
show ipv6 multicast source

ip multicast status

Enables or disables IP Multicast Switching and Routing on the specified VLAN, or on the system if no VLAN is specified.

ip multicast [vlan *vid*] status [{enable | disable}]

Syntax Definitions

<i>vid</i>	VLAN on which to apply the configuration.
enable	Enable IP Multicast Switching and Routing.
disable	Disable IP Multicast Switching and Routing.

Defaults

parameter	default
enable disable	disable

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- If an IP Multicast Routing protocol is already running on the system, the **ip multicast status** command will override the existing configuration and always enable IP Multicast Switching and Routing.
- If the IP Multicast Switching and Routing is already enabled on the system, then the VLAN configuration will override the system's configuration.
- You can also restore the IP Multicast Switching and Routing to its default (i.e., disabled) status on the system if no VLAN is specified, by using only **ip multicast status** (e.g., ip multicast status).
- You can also restore the IP Multicast Switching and Routing to its default (i.e., disabled) status on the specified VLAN, by using only **ip multicast vlan *vid* status** (e.g., ip multicast vlan 2 status).

Examples

```
-> ip multicast status enable
-> ip multicast status disable
-> ip multicast status
-> ip multicast vlan 2 status enable
-> ip multicast vlan 2 status disable
-> ip multicast vlan 2 status
```

Release History

Release 6.6.1; command was introduced.

Related Commands

show ip multicast

Displays the IP Multicast Switching and Routing status and the general configuration parameters on the specified VLAN or on the system if no VLAN is specified.

MIB Objects

alaIcmp

 alaIcmpStatus

alaIcmpVlan

 alaIcmpVlanStatus

ip multicast flood-unknown

Enables or disables the flooding of new multicast packets until the multicast group membership table is updated.

ip multicast flood-unknown {enable | disable}

Syntax Definitions

enable	Enable the flooding of multicast packets until membership table updated.
disable	Disable the flooding of multicast packets.

Defaults

parameter	default
enable disable	disable

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- When flood-unknown is enabled and IP multicast switching is enabled, multicast packets are flooded on the VLAN until the multicast group membership table is updated. They are then forwarded based on the multicast group membership table.
- When flood-unknown is enabled and IP multicast switching is disabled, all multicast traffic will be flooded on the VLAN.
- When flood-unknown is disabled and IP multicast switching is enabled, multicast packets are not flooded on the VLAN but will be forwarded once the multicast group membership table is updated.
- If IP multicast switching is disabled and flood-unknown is disabled, all multicast packets are flooded on the VLAN.

Examples

```
-> ip multicast flood-unknown enable
-> ip multicast flood-unknown disable
```

Release History

Release 6.3.4; command was introduced.

Related Commands

ip multicast status

Enables or disables IP Multicast Switching and Routing on the specified VLAN, or on the system if no VLAN is specified.

show ip multicast

Displays the IP Multicast Switching and Routing status and the general configuration parameters on the specified VLAN or on the system if no VLAN is specified.

MIB Objects

alaIcmp

 alaIcmpStatus

alaIcmpVlan

 alaIcmpVlanStatus

ip multicast dynamic-control drop-all status

Enables or disables the processing of IPV4 protocol packets through the CPU.

ip multicast dynamic-control drop-all status [{enable | disable}]

Syntax Definitions

enable	The IPV4 protocol packets entering the switch is transparently forwarded without any CPU processing. This reduces the CPU load.
disable	The IPV4 protocol packets entering the switch is captured to the CPU before processing.

Defaults

parameter	default
enable disable	disable

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- On enabling this feature the IPV4 protocol packets are not trapped to the CPU. The packets are transparently forwarded.
- This feature should not be enabled if routing protocol or VRRP is configured on the switch.
- This feature has no influence on MDNS traffic since the MDNS Relay rule has higher precedence over IPV4 specific protocols.

Examples

```
-> ip multicast dynamic-control drop-all status enable
-> ip multicast dynamic-control drop-all status disable
```

Release History

Release 6.6.5; command was introduced.

Related Commands

show ip multicast

Displays the IP Multicast Switching and Routing status and the general configuration parameters on the specified VLAN or on the system if no VLAN is specified.

MIB Objects

alaIcmp
alaDynamicControlIpv4Status

ip multicast querier-forwarding

Enables or disables IGMP querier forwarding on the specified VLAN or on the system if no VLAN is specified.

ip multicast [vlan *vid*] querier-forwarding [{enable | disable}]

no ip multicast [vlan *vid*] querier-forwarding

Syntax Definitions

<i>vid</i>	The VLAN on which configuration is applied.
enable	Enable IGMP querier forwarding.
disable	Disable IGMP querier forwarding.

Defaults

parameter	default
enable / disable	disable

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Use the **no** form of this command to remove an IGMP querier forwarding entry on the specified VLAN or on the system and return to its default behavior.
- If the IGMP querier forwarding is already enabled on the system, then the VLAN configuration will override the system's configuration.
- IGMP querier forwarding refers to promoting detected IGMP queriers to receive all IP multicast data traffic.

Examples

```
-> ip multicast querier-forwarding enable
-> ip multicast querier-forwarding disable
-> ip multicast querier-forwarding
-> ip multicast vlan 2 querier-forwarding enable
-> ip multicast vlan 2 querier-forwarding disable
-> ip multicast vlan 2 querier-forwarding
-> no ip multicast vlan 2 querier-forwarding
```

Release History

Release 6.6.1; command was introduced.

Related Commands

show ip multicast

Displays the IP Multicast Switching and Routing status and the general configuration parameters on the specified VLAN or on the system if no VLAN is specified.

MIB Objects

```
alaIcmp
  alaIcmpQuerierForwarding
alaIcmpVlan
  alaIcmpVlanQuerierForwarding
```

ip multicast version

Sets the default version of the IGMP protocol on the specified VLAN or on the system if no VLAN is specified.

ip multicast [**vlan** *vid*] **version** [*version*]

Syntax Definitions

vid VLAN on which to apply the configuration.
version Default IGMP protocol version to run. Valid range is 1 to 3.

Defaults

parameter	default
<i>version</i>	2

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- IP Multicast Switching and Routing must be enabled to set the default IGMP protocol version on the system and/or the specified VLANs.
- If the default IGMP protocol version is already configured on the system, then the VLAN configuration will override the system's configuration.
- Due to protocol inter-operation requirements, this command specifies only a default version of the IGMP protocol to run.
- To restore the IGMP multicast version to the default (i.e., 2) version on the system if no VLAN is specified, use **ip multicast version** followed by the value 0 (e.g., ip multicast version 0) or use only **ip multicast version** (e.g., ip multicast version).
- To restore the IGMP multicast version to the default (i.e., 2) version on the specified VLAN, use **ip multicast vlan** *vid* **version**, followed by the value 0 (e.g., ip multicast vlan 2 version 0) or use only **ip multicast vlan** *vid* **version** (e.g., ip multicast vlan 2 version).

Examples

```
-> ip multicast version 3
-> ip multicast version 0
-> ip multicast version
-> ip multicast vlan 2 version 3
-> ip multicast vlan 2 version 0
-> ip multicast vlan 2 version
```

Release History

Release 6.6.1; command was introduced.

Related Commands

show ip multicast

Displays the IP Multicast Switching and Routing status and the general configuration parameters on the specified VLAN or on the system if no VLAN is specified.

MIB Objects

```
alaIcmp
  alaIcmpVersion
alaIcmpVlan
  alaIcmpVlanVersion
```

ip multicast max-group

Configures the global maximum group limit that can be learned per port/VLAN instance. The limit is applied to each port/VLAN instance and an action is taken when it exceeds the limit.

ip multicast max-group [*num*] [action {none | drop | replace}]

Syntax Definitions

<i>num</i>	Specifies the maximum IGMP group count. Valid range is 0 to 4294967295.
none	Disables the maximum group limit configuration
drop	Drops the incoming membership request.
replace	Replaces an existing membership with the incoming membership request.

Defaults

By default, the max-group limit is set to zero.

parameter	defaults
action	none

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Configuring a max-group value will have no effect on existing group memberships until the memberships are refreshed on the port/VLAN instance.
- The configuration is allowed even when the ip multicast status is disabled.
- If the num and action parameters are not specified, then the limit is removed.
- The max-group configuration on a specific VLAN or port will override the global configuration.
- IGMP zapping must be enabled when the max-group limit is enabled and the action is dropped.

Examples

```
-> ip multicast max-group 10 action drop
-> ip multicast max-group 20 action replace
-> ip multicast max-group
```

Release History

Release 6.3.4; command was introduced.

Related Commands

show ip multicast

Displays the IP Multicast Switching and Routing status and the general configuration parameters on the specified VLAN or on the system if no VLAN is specified.

MIB Objects

alaIcmpMaxGroupLimit
alaIcmpMaxGroupExceedAction

ip multicast vlan max-group

Configures the maximum group limit learned per port on a VLAN. The limit is applied to each port that is a member of the given VLAN.

ip multicast vlan *vid* max-group [*num*] [action {none | drop | replace}]

Syntax Definitions

<i>vid</i>	VLAN on which to apply the configuration.
<i>num</i>	The maximum IGMP group count. Valid range is 0 to 4294967295.
none	Disables the maximum group limit configuration.
drop	Drops the incoming membership request.
replace	Replaces an existing membership with the incoming membership request.

Defaults

By default, the max-group limit is set to zero.

parameter	defaults
Action	none

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Configuring a max-group value will have no affect on existing group memberships until the memberships are refreshed on the port/VLAN instance
- The configuration is allowed even when the ip multicast status is disabled.
- If the num and action parameters are not specified, then the limit is removed.
- The max-group configuration on a VLAN will override the global configuration.
- IGMP zapping must be enabled when the max-group limit is enabled and the action is dropped.

Examples

```
-> ip multicast vlan 10 max-group 10 action drop
-> ip multicast vlan 10 max-group
```

Release History

Release 6.3.4; command was introduced.

Related Commands

show ip multicast

Displays the IP Multicast Switching and Routing status and the general configuration parameters on the specified VLAN or on the system if no VLAN is specified.

MIB Objects

alaIcmpVlanTable

 alaIcmpVlanMaxGroupLimit

 alaIcmpVlanMaxGroupExceedAction

ip multicast port max-group

Configures the maximum group limit learned per port. The limit is applicable on the given port for all VLAN instances of the port.

ip multicast port *slot / port* max-group [*num*] [action {none | drop | replace}]

Syntax Definitions

<i>slot / port</i>	The slot number for the module and the physical port number on that module (e.g. 3/1 specifies port 1 on slot 3).
<i>num</i>	The maximum IGMP group count. Valid range is 0 to 4294967295.
none	Disables the maximum group limit configuration.
drop	Drops the incoming membership request.
replace	Replaces an existing membership with the incoming membership request.

Defaults

By default, the max-group limit is set to zero.

parameter	defaults
Action	none

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Configuring a max-group value will have no affect on existing group memberships until the memberships are refreshed on the port/VLAN instance
- The configuration is allowed even when the ip multicast status is disabled.
- If the num and action parameters are not specified, then the limit is removed.
- The max-group configuration on a port will override the VLAN or global configuration.
- IGMP zapping must be enabled when the max-group limit is enabled and the action is dropped.

Examples

```
-> ip multicast port 1/1 max-group 10 action drop
-> ip multicast port 6/14 max-group 20 action replace
```

Release History

Release 6.3.4; command was introduced.

Related Commands

show ip multicast

Displays the IP Multicast Switching and Routing status and the general configuration parameters on the specified VLAN or on the system if no VLAN is specified.

MIB Objects

alaIcmpPortTable

 alaIcmpPortMaxGroupLimit

 alaIcmpPortMaxGroupExceedAction

ip multicast static-neighbor

Creates a static IGMP neighbor entry on a specified port on a specified VLAN.

ip multicast static-neighbor vlan *vid* port *slot/port*

no ip multicast static-neighbor vlan *vid* port *slot/port*

Syntax Definitions

<i>vid</i>	VLAN to include as a static IGMP neighbor.
<i>slot/port</i>	The slot/port number you want to configure as a static IGMP neighbor.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Use the **no** form of this command to remove an IGMP static neighbor entry on a specified port on a specified VLAN.
- The **ip multicast static-neighbor** command allows you to create an IGMP static neighbor entry on a specified port on a specified VLAN. This, in turn, enables that network segment to receive all the IGMP traffic.
- You can also create an IGMP static neighbor entry on a link aggregate port by entering **ip multicast static-neighbor** vlan *vid* port, followed by the link aggregation group number (e.g., ip multicast static-neighbor vlan 2 port 7).

Examples

```
-> ip multicast static-neighbor vlan 4 port 1/1
-> no ip multicast static-neighbor vlan 4 port 1/1
-> ip multicast static-neighbor vlan 4 port 7
-> no ip multicast static-neighbor vlan 4 port 7
```

Release History

Release 6.6.1; command was introduced.

Related Commands

show ip multicast neighbor Displays the IGMP neighbor table entries of IP Multicast Switching and Routing.

MIB Objects

alaIcmpStaticNeighborTable
alaIcmpStaticNeighborVlan
alaIcmpStaticNeighborIfIndex
alaIcmpStaticNeighborRowStatus

ip multicast static-querier

Creates a static IGMP querier entry on a specified port on a specified VLAN.

ip multicast static-querier *vlan vid port slot/port*

no ip multicast static-querier *vlan vid port slot/port*

Syntax Definitions

<i>vid</i>	VLAN to include as a static IGMP querier.
<i>slot/port</i>	The slot/port number you want to configure as a static IGMP querier.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Use the **no** form of this command to remove an IGMP static querier entry on a specified port on a specified VLAN.
- The **ip multicast static-querier** command allows you to create an IGMP static querier entry on a specified port on a specified VLAN. This, in-turn, enables that network segment to receive all the IGMP traffic.
- You can also create an IGMP static querier entry on a link aggregate port by entering **ip multicast static-querier** *vlan vid port*, followed by the link aggregation group number (e.g., ip multicast static-querier vlan 2 port 7).

Examples

```
-> ip multicast static-querier vlan 4 port 1/1
-> no ip multicast static-querier vlan 4 port 1/1
-> ip multicast static-querier vlan 4 port 7
-> no ip multicast static-querier vlan 4 port 7
```

Release History

Release 6.6.1; command was introduced.

Related Commands

show ip multicast querier

Displays the IGMP querier table entries of IP Multicast Switching and Routing.

MIB Objects

```
alaIcmpStaticQuerierTable  
  alaIcmpStaticQuerierVlan  
  alaIcmpStaticQuerierIfIndex  
  alaIcmpStaticQuerierRowStatus
```

ip multicast static-group

Creates a static IGMP group entry on a specified port on a specified VLAN.

ip multicast static-group *ip_address* **vlan** *vid* **port** *slot/port* [**receiver-vlan** *<num>*]

no ip multicast static-group *ip_address* **vlan** *vid* **port** *slot/port* [**receiver-vlan** *<num>*]

Syntax Definitions

<i>ip_address</i>	The IP address of the multicast group.
<i>vid</i>	VLAN to include as a static IGMP group.
<i>slot/port</i>	The slot/port number you want to configure as a static IGMP group.
receiver-vlan (optional)	VLAN ID number (2–4094). Provide the Receiver VLAN associated using command vlan ipmvlan .

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Use the **no** form of this command to remove an IGMP static group entry on a specified port on a specified VLAN.
- The **ip multicast static-group** command allows you to create an IGMP static group entry on a specified port on a specified VLAN. This, in-turn, enables that network segment to receive IGMP traffic addressed to the specified IP multicast group address.
- You can also create an IGMP static group entry on a link aggregate port by entering **ip multicast static-group** *ip_address* **vlan** *vid* **port**, followed by the link aggregation group number (e.g., ip multicast static-group 11.0.0.1 vlan 2 port 7).

Examples

```
-> ip multicast static-group 229.10.10.10 vlan 4 port 1/1
-> no ip multicast static-group 229.10.10.10 vlan 4 port 1/1
-> ip multicast static-group 225.11.11.11 vlan 4 port 7 receiver-vlan 20
-> no ip multicast static-group 225.11.11.11 vlan 4 port 7 receiver-vlan 30
```

Release History

Release 6.6.1; command was introduced.

Related Commands

show ip multicast group

Displays the IGMP group membership table entries of IP Multicast Switching and Routing for the specified IP multicast group address or all entries if no IP multicast group address is specified.

MIB Objects

```
alaipmvReceiverVlanPortTable  
  alaipmvReceiverVlanPortIPMVlanNumber  
  alaipmvReceiverVlanPortNumber  
  alaipmvReceiverVlanPortRcvrVlanNumber  
  alaipmvReceiverVlanPortRowStatus
```

ip multicast query-interval

Sets the IGMP query interval on the specified VLAN or on the system if no VLAN is specified.

ip multicast [**vlan** *vid*] **query-interval** [*seconds*]

Syntax Definitions

vid VLAN on which to apply the configuration.
seconds IGMP query interval in seconds. Valid range is 1 to 65535.

Defaults

parameter	default
<i>seconds</i>	125

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- IP Multicast Switching and Routing must be enabled to set the IGMP query interval on the system and/or the specified VLANs.
- If the IGMP query interval is already configured on the system, then the VLAN configuration will override the system's configuration.
- The IGMP query interval refers to the time period between IGMP query messages.
- To restore the IGMP query interval to its default (125 seconds) value on the system if no VLAN is specified, use **ip multicast query-interval** followed by the value 0 (e.g., ip multicast query-interval 0) or use only **ip multicast query-interval** (e.g., ip multicast query-interval).
- To restore the IGMP query interval to its default (125 seconds) value on the specified VLAN, use **ip multicast vlan vid query-interval**, followed by the value 0 (e.g., ip multicast vlan 2 query-interval 0) or use only **ip multicast vlan vid query-interval** (e.g., ip multicast vlan 2 query-interval).

Examples

```
-> ip multicast query-interval 100
-> ip multicast query-interval 0
-> ip multicast query-interval
-> ip multicast vlan 2 query-interval 100
-> ip multicast vlan 2 query-interval 0
-> ip multicast vlan 2 query-interval
```

Release History

Release 6.6.1; command was introduced.

Related Commands

show ip multicast

Displays the IP Multicast Switching and Routing status and the general configuration parameters on the specified VLAN or on the system if no VLAN is specified.

MIB Objects

```
alaIcmp
  alaIcmpQueryInterval
alaIcmpVlan
  alaIcmpVlanQueryInterval
```

ip multicast last-member-query-interval

Sets the IGMP last member query interval value on the specified VLAN or on the system if no VLAN is specified.

ip multicast [vlan *vid*] last-member-query-interval [*tenths-of-seconds*]

Syntax Definitions

vid VLAN on which to apply the configuration.

tenths-of-seconds IGMP last member query interval in tenths of seconds. Valid range is 1 to 65535.

Defaults

parameter	default
<i>tenths-of-seconds</i>	10

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- IP Multicast Switching and Routing must be enabled to set the IGMP last member query interval on the system and/or the specified VLANs.
- If the IGMP last member query interval is already configured on the system, then the VLAN configuration will override the system's configuration.
- The IGMP last member query interval refers to the time period to reply to an IGMP query message sent in response to a leave group message.
- To restore the IGMP last member query interval to its default (i.e., 10 tenths-of-seconds) value on the system if no VLAN is specified, use **ip multicast last-member-query-interval** followed by the value 0 (e.g., ip multicast last-member-query-interval 0) or use only **ip multicast last-member-query-interval** (e.g., ip multicast last-member-query-interval).
- To restore the IGMP last member query interval to its default (i.e., 10 tenths-of-seconds) value on the specified VLAN, use **ip multicast vlan *vid* last-member-query-interval** followed by the value 0 (e.g., ip multicast vlan 2 last-member-query-interval 0) or use only **ip multicast vlan *vid* last-member-query-interval** (e.g., ip multicast vlan 2 last-member-query-interval).

Examples

```
-> ip multicast last-member-query-interval 22
-> ip multicast last-member-query-interval 0
-> ip multicast last-member-query-interval
-> ip multicast vlan 2 last-member-query-interval 22
-> ip multicast vlan 2 last-member-query-interval 0
-> ip multicast vlan 2 last-member-query-interval
```

Release History

Release 6.6.1; command was introduced.

Related Commands

show ip multicast

Displays the IP Multicast Switching and Routing status and the general configuration parameters on the specified VLAN or on the system if no VLAN is specified.

MIB Objects

alaIcmp

 alaIcmpLastMemberQueryInterval

alaIcmpVlan

 alaIcmpVlanLastMemberQueryInterval

ip multicast query-response-interval

Sets the IGMP query response interval on the specified VLAN or on the system if no VLAN is specified.

ip multicast [vlan *vid*] query-response-interval [*tenths-of-seconds*]

Syntax Definitions

<i>vid</i>	VLAN on which to apply the configuration.
<i>tenths-of-seconds</i>	IGMP query response interval in tenths of seconds. Valid range is 1 to 65535.

Defaults

parameter	default
<i>tenths-of-seconds</i>	100

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- IP Multicast Switching and Routing must be enabled to set the IGMP query response interval on the system and/or the specified VLANs.
- If the IGMP query response interval is already configured on the system, then the VLAN configuration will override the system's configuration.
- The query response interval refers to the time period to reply to an IGMP query message.
- To restore the IGMP query response interval to its default (i.e., 100 tenths-of-seconds) value on the system if no VLAN is specified, use **ip multicast query-response-interval** followed by the value 0 (e.g., **ip multicast query-response-interval 0**) or use only **ip multicast query-response-interval** (e.g., **ip multicast query-response-interval**).
- To restore the IGMP last member query interval to its default (i.e., 100 tenths-of-seconds) value on the specified VLAN, use **ip multicast vlan *vid* query-response-interval** followed by the value 0 (e.g., **ip multicast vlan 2 query-response-interval 0**) or use only **ip multicast vlan *vid* query-response-interval** (e.g., **ip multicast vlan 2 query-response-interval**).

Examples

```
-> ip multicast query-response-interval 200
-> ip multicast query-response-interval 0
-> ip multicast query-response-interval
-> ip multicast vlan 2 query-response-interval 300
-> ip multicast vlan 2 query-response-interval 0
-> ip multicast vlan 2 query-response-interval
```

Release History

Release 6.6.1; command was introduced.

Related Commands

show ip multicast

Displays the IP Multicast Switching and Routing status and the general configuration parameters on the specified VLAN or on the system if no VLAN is specified.

MIB Objects

alaIcmp

 alaIcmpQueryResponseInterval

alaIcmpVlan

 alaIcmpVlanQueryResponseInterval

ip multicast unsolicited-report-interval

Sets the value of the IGMP unsolicited report interval on the specified VLAN or on the system if no VLAN is specified.

ip multicast [vlan *vid*] unsolicited-report-interval [*seconds*]

Syntax Definitions

vid VLAN on which to apply the configuration.

seconds IGMP query response interval in seconds. Valid range is 1 to 65535, where 0 represents the default setting.

Defaults

parameter	default
<i>seconds</i>	1

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- IP Multicast Switching and Routing must be enabled to set the IGMP unsolicited report interval on the system and/or the specified VLANs.
- If the IGMP query response interval is already configured on the system, then the VLAN configuration will override the system's configuration.
- The unsolicited report interval refers to the time period to proxy any changed IGMP membership state.
- To restore the IGMP unsolicited report interval to its default (i.e., 1 second) value on the system if no VLAN is specified, use **ip multicast unsolicited-report-interval** followed by the value 0 (e.g., ip multicast unsolicited-report-interval 0) or use only **ip multicast unsolicited-report-interval** (e.g., ip multicast unsolicited-report-interval).
- To restore the IGMP unsolicited report interval to its default (i.e., 1 second) value on the specified VLAN, use **ip multicast vlan *vid* unsolicited-report-interval** followed by the value 0 (e.g., ip multicast vlan 2 unsolicited-report-interval 0) or use only **ip multicast vlan *vid* unsolicited-report-interval** (e.g., ip multicast vlan 2 unsolicited-report-interval).

Examples

```
-> ip multicast unsolicited-report-interval 200
-> ip multicast unsolicited-report-interval 0
-> ip multicast unsolicited-report-interval
-> ip multicast vlan 2 unsolicited-report-interval 300
-> ip multicast vlan 2 unsolicited-report-interval 0
-> ip multicast vlan 2 unsolicited-report-interval
```

Release History

Release 6.6.1; command was introduced.

Related Commands

show ip multicast

Displays the IP Multicast Switching and Routing status and the general configuration parameters on the specified VLAN or on the system if no VLAN is specified.

MIB Objects

alaIcmp

 alaIcmpUnsolicitedReportInterval

alaIcmpVlan

 alaIcmpVlanUnsolicitedReportInterval

ip multicast router-timeout

Configures the expiry time of IP multicast routers on the specified VLAN or on the system if no VLAN is specified.

ip multicast [**vlan vid**] **router-timeout** [*seconds*]

Syntax Definitions

vid VLAN on which to apply the configuration.
seconds IGMP router timeout in seconds. Valid range is 1 to 65535.

Defaults

parameter	default
<i>seconds</i>	90

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- IP Multicast Switching and Routing must be enabled to set the IGMP router timeout on the system and/or the specified VLANs.
- If the IGMP router timeout is already configured on the system, then the VLAN configuration will override the system's configuration.
- To restore the IGMP router timeout to its default (i.e., 90 seconds) value on the system if no VLAN is specified, use **ip multicast router-timeout** followed by the value 0 (e.g., ip multicast router-timeout 0) or use only **ip multicast router-timeout** (e.g., ip multicast router-timeout).
- To restore the IGMP router timeout to its default (i.e., 90 seconds) value on the specified VLAN, use **ip multicast vlan vid router-timeout** followed by the value 0 (e.g., ip multicast vlan 2 router-timeout 0) or use only **ip multicast vlan vid router-timeout** (e.g., ip multicast vlan 2 router-timeout).

Examples

```
-> ip multicast router-timeout 100
-> ip multicast router-timeout 0
-> ip multicast router-timeout
-> ip multicast vlan 2 router-timeout 100
-> ip multicast vlan 2 router-timeout 0
-> ip multicast vlan 2 router-timeout
```

Release History

Release 6.6.1; command was introduced.

Related Commands

show ip multicast

Displays the IP Multicast Switching and Routing status and the general configuration parameters on the specified VLAN or on the system if no VLAN is specified.

MIB Objects

```
alaIcmp
  alaIcmpRouterTimeout
alaIcmpVlan
  alaIcmpVlanRouterTimeout
```

ip multicast source-timeout

Configures the expiry time of IP multicast sources on the specified VLAN or on the system if no VLAN is specified.

ip multicast [**vlan vid**] **source-timeout** [*seconds*]

Syntax Definitions

vid VLAN on which to apply the configuration.
seconds IGMP source timeout in seconds. Valid range is 1 to 65535.

Defaults

parameter	default
<i>seconds</i>	30

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- IP Multicast Switching and Routing must be enabled to set the IGMP source timeout on the system and/or the specified VLANs.
- If the IGMP source timeout is already configured on the system, then the VLAN configuration will override the system's configuration.
- To restore the IGMP source timeout to its default (i.e., 30 seconds) value on the system if no VLAN is specified, use **ip multicast source-timeout** followed by the value 0 (e.g., ip multicast source-timeout 0) or use only **ip multicast source-timeout** (e.g., ip multicast source-timeout).
- To restore the IGMP source timeout to its default (i.e., 30 seconds) value on the specified VLAN, use **ip multicast vlan vid source-timeout** followed by the value 0 (e.g., ip multicast vlan 2 source-timeout 0) or use only **ip multicast vlan vid source-timeout** (e.g., ip multicast vlan 2 source-timeout).

Examples

```
-> ip multicast source-timeout 100
-> ip multicast source-timeout 0
-> ip multicast source-timeout
-> ip multicast vlan 2 source-timeout 100
-> ip multicast vlan 2 source-timeout 0
-> ip multicast vlan 2 source-timeout
```

Release History

Release 6.6.1; command was introduced.

Related Commands

show ip multicast

Displays the IP Multicast Switching and Routing status and the general configuration parameters on the specified VLAN or on the system if no VLAN is specified.

MIB Objects

```
alaIcmp
  alaIcmpSourceTimeout
alaIcmpVlan
  alaIcmpVlanSourceTimeout
```

ip multicast querying

Enables or disables IGMP querying on the specified VLAN or on the system if no VLAN is specified.

ip multicast [vlan *vid*] querying [{enable | disable}]

no ip multicast [vlan *vid*] querying

Syntax Definitions

<i>vid</i>	VLAN on which configuration is applied.
enable	Enable IGMP querying.
disable	Disable IGMP querying.

Defaults

parameter	default
enable / disable	disable

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Use the **no** form of this command to remove an IGMP querying entry on the specified VLAN or on the system and return to its default behavior.
- IP Multicast Switching and Routing must be enabled to enable IGMP querying on the system and/or specified VLANs.
- If the IGMP querying is already enabled/disabled on the system, then the VLAN configuration will override the system's configuration.
- IGMP querying refers to requesting the network's IGMP group membership information by sending out IGMP queries. IGMP querying also involves participating in IGMP querier election.
- You can also restore the IGMP querying to its default (i.e., disabled) setting on the system if no VLAN is specified, by using only **ip multicast querying** (e.g., ip multicast querying).
- You can also restore the IGMP querying to its default (i.e., disabled) setting on the specified VLAN, by using only **ip multicast vlan *vid* querying** (e.g., ip multicast vlan 2 querying).

Examples

```
-> ip multicast querying enable
-> ip multicast querying disable
-> ip multicast querying
-> ip multicast vlan 2 querying enable
-> ip multicast vlan 2 querying disable
-> ip multicast vlan 2 querying
-> no ip multicast vlan 2 querying
```

Release History

Release 6.6.1; command was introduced.

Related Commands

show ip multicast

Displays the IP Multicast Switching and Routing status and the general configuration parameters on the specified VLAN or on the system if no VLAN is specified.

MIB Objects

alaIcmp

 alaIcmpQuerying

alaIcmpVlan

 alaIcmpVlanQuerying

ip multicast robustness

Sets the IGMP robustness variable on the specified VLAN or on the system if no VLAN is specified.

ip multicast [**vlan** *vid*] **robustness** [*robustness*]

Syntax Definitions

vid VLAN on which to apply the configuration.
robustness IGMP robustness variable. Valid range is 1 to 7.

Defaults

parameter	default
<i>robustness</i>	2

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- IP Multicast Switching and Routing must be enabled to set the IGMP robustness variable on the system and/or the specified VLANs.
- If the IGMP robustness variable is already configured on the system, then the VLAN configuration will override the system's configuration.
- Robustness variable allows fine-tuning on the network, where the expected packet loss would be greater.
- To restore the IGMP robustness variable to its default (i.e., 2) value on the system if no VLAN is specified, use **ip multicast robustness** followed by the value 0 (e.g., ip multicast robustness 0) or use only **ip multicast robustness** (e.g., ip multicast robustness).
- To restore the IGMP robustness variable to its default (i.e., 2) value on the specified VLAN, use **ip multicast vlan** *vid* **robustness** followed by the value 0 (e.g., ip multicast vlan 2 robustness 0) or use only **ip multicast vlan** *vid* **robustness** (e.g., ip multicast vlan 2 robustness).

Examples

```
-> ip multicast robustness 3
-> ip multicast robustness 0
-> ip multicast robustness
-> ip multicast vlan 2 robustness 3
-> ip multicast vlan 2 robustness 0
-> ip multicast vlan 2 robustness
```

Release History

Release 6.6.1; command was introduced.

Related Commands

show ip multicast

Displays the IP Multicast Switching and Routing status and the general configuration parameters on the specified VLAN or on the system if no VLAN is specified.

MIB Objects

alaIcmp

 alaIcmpRobustness

alaIcmpVlan

 alaIcmpVlanRobustness

ip multicast spoofing

Enables or disables IGMP spoofing on the specified VLAN or on the system if no VLAN is specified.

ip multicast [vlan *vid*] spoofing [{enable | disable}]

no ip multicast [vlan *vid*] spoofing

Syntax Definitions

<i>vid</i>	VLAN on which to apply the configuration.
enable	Enable IGMP spoofing.
disable	Disable IGMP spoofing.

Defaults

parameter	default
enable / disable	disable

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Use the **no** form of this command to remove an IGMP spoofing entry on the specified VLAN or on the system and return to its default behavior.
- If the IGMP spoofing is already enabled on the system, then the VLAN configuration will override the system's configuration.
- IGMP spoofing refers to replacing a client's MAC and IP address with the system's MAC and IP address when proxying aggregated IGMP group membership information.
- You can also restore the IGMP spoofing to its default (i.e., disabled) setting on the system if no VLAN is specified, by using only **ip multicast spoofing** (e.g., ip multicast spoofing).
- You can also restore the IGMP spoofing to its default (i.e., disabled) setting on the specified VLAN, by using only **ip multicast vlan *vid* spoofing** (e.g., ip multicast vlan 2 spoofing).

Examples

```
-> ip multicast spoofing enable
-> ip multicast spoofing disable
-> ip multicast spoofing
-> ip multicast vlan 2 spoofing enable
-> ip multicast vlan 2 spoofing disable
-> ip multicast vlan 2 spoofing
-> no ip multicast vlan 2 spoofing
```

Release History

Release 6.6.1; command was introduced.

Related Commands

show ip multicast

Displays the IP Multicast Switching and Routing status and the general configuration parameters on the specified VLAN or on the system if no VLAN is specified.

MIB Objects

alaIcmp

 alaIcmpSpoofing

alaIcmpVlan

 alaIcmpVlanSpoofing

ip multicast zapping

Enables or disables IGMP zapping on the specified VLAN or on the system if no VLAN is specified.

```
ip multicast [vlan vid] zapping [{enable | disable}]
```

Syntax Definitions

<i>vid</i>	VLAN on which to apply the configuration.
enable	Enable IGMP zapping.
disable	Disable IGMP zapping.

Defaults

parameter	default
enable disable	disable

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- If the IGMP zapping is already enabled on the system, then the VLAN configuration will override the system's configuration.
- IGMP zapping refers to processing membership, immediate source filter removals and will not wait for the protocol's specified time period. This mode facilitates IP TV applications looking for quick changes between IP multicast groups.
- You can also restore the IGMP querying to its default (i.e., disabled) setting on the system if no VLAN is specified, by using only **ip multicast zapping** (e.g., ip multicast zapping).
- You can also restore the IGMP querying to its default (i.e., disabled) setting on the specified VLAN, by using only **ip multicast vlan *vid* zapping** (e.g., ip multicast vlan 2 zapping).

Examples

```
-> ip multicast zapping enable
-> ip multicast zapping disable
-> ip multicast zapping
-> ip multicast vlan 2 zapping enable
-> ip multicast vlan 2 zapping disable
-> ip multicast vlan 2 zapping
```

Release History

Release 6.6.1; command was introduced.

Related Commands

show ip multicast

Displays the IP Multicast Switching and Routing status and the general configuration parameters on the specified VLAN or on the system if no VLAN is specified.

MIB Objects

```
alaIcmp
  alaIcmpZapping
alaIcmpVlan
  alaIcmpVlanZapping
```

ip multicast proxying

Enables or disables IGMP proxying on the specified VLAN or on the system if no VLAN is specified.

ip multicast [vlan *vid*] proxying [enable | disable]

Syntax Definitions

<i>vid</i>	VLAN on which to apply the configuration.
enable	Enable IGMP proxying.
disable	Disable IGMP proxying.

Defaults

parameter	default
enable disable	disable

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- If the IGMP proxying is already enabled on the system, then the VLAN configuration will override the system's configuration.
- IGMP proxying refers to processing membership information on behalf of client systems and reporting membership on their behalf.
- You can also restore the IGMP querying to its default (i.e., disabled) setting on the system if no VLAN is specified, by using only **ip multicast proxying** (e.g., ip multicast proxying).
- You can also restore the IGMP querying to its default (i.e., disabled) setting on the specified VLAN, by using only **ip multicast vlan *vid* proxying** (e.g., ip multicast vlan 2 proxying).

Examples

```
-> ip multicast proxying enable
-> ip multicast proxying disable
-> ip multicast proxying
-> ip multicast vlan 2 proxying enable
-> ip multicast vlan 2 proxying disable
-> ip multicast vlan 2 proxying
```

Release History

Release 6.6.1; command was introduced.

Related Commands

show ip multicast

Displays the IP Multicast Switching and Routing status and the general configuration parameters on the specified VLAN or on the system if no VLAN is specified.

MIB Objects

```
alaIcmp
  alaIcmpProxying
alaIcmpVlan
  alaIcmpVlanProxying
```

ipv6 multicast status

Enables or disables IPv6 Multicast Switching and Routing on the specified VLAN or on the system if no VLAN is specified.

ipv6 multicast [*vlan vid*] **status** [{**enable** | **disable**}]

Syntax Definitions

<i>vid</i>	VLAN on which to apply the configuration.
enable	Enable IPv6 Multicast Switching and Routing.
disable	Disable IPv6 Multicast Switching and Routing.

Defaults

parameter	default
enable disable	disable

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- If an IPv6 multicast routing protocol is already running on the system, the **ipv6 multicast status** command will override this configuration and always enable IPv6 Multicast Switching and Routing.
- If the IPv6 Multicast Switching and Routing is already enabled on the system, then the VLAN configuration will override the system's configuration.
- You can also restore the MLD querying to its default (i.e., disabled) status on the system if no VLAN is specified, by using only **ipv6 multicast status** (e.g., ipv6 multicast status).
- You can also restore the MLD querying to its default (i.e., disabled) status on the specified VLAN, by using only **ipv6 multicast vlan vid status** (e.g., ipv6 multicast vlan 2 status).

Examples

```
-> ipv6 multicast status enable
-> ipv6 multicast status disable
-> ipv6 multicast status
-> ipv6 multicast vlan 2 status enable
-> ipv6 multicast vlan 2 status disable
-> ipv6 multicast vlan 2 status
```

Release History

Release 6.6.1; command was introduced.

Related Commands

show ipv6 multicast

Displays the IPv6 Multicast Switching and Routing status and the general configuration parameters on the specified VLAN or on the system if no VLAN is specified.

MIB Objects

```
alaMld
  alaMldStatus
alaMldVlan
  alaMldVlanStatus
```

ipv6 multicast querier-forwarding

Enables or disables MLD querier forwarding on the specified VLAN or on the system if no VLAN is specified.

ipv6 multicast [vlan *vid*] querier-forwarding [{enable | disable}]

no ipv6 multicast [vlan *vid*] querier-forwarding

Syntax Definitions

<i>vid</i>	The VLAN on which configuration is applied.
enable	Enable MLD querier forwarding.
disable	Disable MLD querier forwarding.

Defaults

parameter	default
enable / disable	disable

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Use the **no** form of this command to remove an MLD querier forwarding entry on the specified VLAN or on the system and return to its default behavior.
- If the MLD querier forwarding is already enabled on the system, then the VLAN configuration will override the system's configuration.
- MLD querier forwarding refers to promoting detected MLD queriers to receive all IP multicast data traffic.

Examples

```
-> ipv6 multicast querier-forwarding enable
-> ipv6 multicast querier-forwarding disable
-> ipv6 multicast querier-forwarding
-> ipv6 multicast vlan 2 querier-forwarding enable
-> ipv6 multicast vlan 2 querier-forwarding disable
-> ipv6 multicast vlan 2 querier-forwarding
-> no ipv6 multicast vlan 2 querier-forwarding
```

Release History

Release 6.6.1; command was introduced.

Related Commands

show ipv6 multicast

Displays the IPv6 Multicast Switching and Routing status and the general configuration parameters on the specified VLAN or on the system if no VLAN is specified.

MIB Objects

alaMld

 alaMldQuerierForwarding

alaMldVlan

 alaMldVlanQuerierForwarding

ipv6 multicast version

Sets the default version of the MLD protocol on the specified VLAN or on the system if no VLAN is specified.

ipv6 multicast [**vlan** *vid*] **version** [*version*]

Syntax Definitions

vid VLAN on which to apply the configuration.
version Default MLD protocol version to run. Valid range is 1 to 2.

Defaults

parameter	default
<i>version</i>	1

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- IPv6 Multicast Switching and Routing must be enabled to set the default MLD protocol version on the system and/or the specified VLANs.
- If the default MLD protocol version is already configured on the system, then the VLAN configuration will override the system's configuration.
- Due to protocol inter-operation requirements, this command specifies only a default version of the MLD protocol to run.
- To restore the MLD multicast version to the default (i.e., 1) version on the system if no VLAN is specified, use **ipv6 multicast version** followed by the value 0 (e.g., `ipv6 multicast version 0`) or use only **ipv6 multicast version** (e.g., `ipv6 multicast version`).
- To restore the MLD multicast version to the default (i.e., 1) version on the specified VLAN, use **ipv6 multicast vlan** *vid* **version** followed by the value 0 (e.g., `ipv6 multicast vlan 2 version 0`) or use only **ipv6 multicast vlan** *vid* **version** (e.g., `ipv6 multicast vlan 2 version`).

Examples

```
-> ipv6 multicast version 2
-> ipv6 multicast version 0
-> ipv6 multicast version
-> ipv6 multicast vlan 2 version 2
-> ipv6 multicast vlan 2 version 0
-> ipv6 multicast vlan 2 version
```

Release History

Release 6.6.1; command was introduced.

Related Commands

show ipv6 multicast

Displays the IPv6 Multicast Switching and Routing status and the general configuration parameters on the specified VLAN or on the system if no VLAN is specified.

MIB Objects

```
alaMld
  alaMldVersion
alaMldVlan
  alaMldVlanVersion
```

ipv6 multicast max-group

Configures the global maximum group limit that can be learned per port/VLAN instance. The limit is applied to each port/VLAN instance and an action is taken when it exceeds the limit.

ipv6 multicast max-group [*num*] [**action** {**none** | **drop** | **replace**}]

Syntax Definitions

<i>num</i>	Specifies the maximum MLD group count. Valid range is 0 to 4294967295.
none	Disables the maximum group limit configuration
drop	Drops the incoming membership request.
replace	Replaces an existing membership with the incoming membership request.

Defaults

By default, the max-group limit is set to zero.

parameter	defaults
Action	none

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Configuring a max-group value will have no affect on existing group memberships until the memberships are refreshed on the port/VLAN instance.
- The configuration is allowed even when the ip multicast status is disabled.
- If the num and action parameters are not specified, then the limit is removed.
- The max-group configuration on a specific VLAN or port will override the global configuration.
- MLD zapping must be enabled when the max-group limit is enabled and the action is dropped.

Examples

```
-> ipv6 multicast max-group 10 action drop
-> ipv6 multicast max-group 20 action replace
-> ipv6 multicast max-group
```

Release History

Release 6.3.4; command was introduced.

Related Commands

show ipv6 multicast

Displays the IPv6 Multicast Switching and Routing status and the general configuration parameters on the specified VLAN or on the system if no VLAN is specified.

MIB Objects

```
alaIcmpMaxGroupLimit  
alaIcmpMaxGroupExceedAction
```

ipv6 multicast vlan max-group

Configures the maximum group limit learned per port on a VLAN. The limit is applied to each port that is a member of the given VLAN.

ipv6 multicast vlan *vid* **max-group** [*num*] [**action** {**none** | **drop** | **replace**}]

Syntax Definitions

<i>vid</i>	VLAN on which to apply the configuration.
<i>num</i>	The maximum MLD group count. Valid range is 0 to 4294967295.
none	Disables the maximum group limit configuration.
drop	Drops the incoming membership request.
replace	Replaces an existing membership with the incoming membership request.

Defaults

By default, the max-group limit is set to zero.

parameter	defaults
Action	none

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Configuring a max-group value will have no affect on existing group memberships until the memberships are refreshed on the port/VLAN instance.
- The configuration is allowed even when the ip multicast status is disabled.
- If the num and action parameters are not specified, then the limit is removed.
- The max-group configuration on a VLAN will override the global configuration.
- MLD zapping must be enabled when the max-group limit is enabled and the action is dropped.

Examples

```
-> ipv6 multicast vlan 10 max-group 10 action drop
-> ipv6 multicast vlan 10 max-group 20 action replace
```

Release History

Release 6.3.4; command was introduced.

Related Commands

show ipv6 multicast

Displays the IP Multicast Switching and Routing status and the general configuration parameters on the specified VLAN or on the system if no VLAN is specified.

MIB Objects

alaIcmpVlanTable

 alaIcmpVlanMaxGroupLimit

 alaIcmpVlanMaxGroupExceedAction

ipv6 multicast port max-group

Configures the maximum group limit learned per port. The limit is applicable on the given port for all VLAN instances of the port.

ipv6 multicast port *slot / port* **max-group** [*num*] [**action** {**none** | **drop** | **replace**}]

Syntax Definitions

<i>slot / port</i>	The slot number for the module and the physical port number on that module (e.g. 3/1 specifies port 1 on slot 3).
<i>num</i>	The maximum MLD group count. Valid range is 0 to 4294967295.
none	Disables the maximum group limit configuration.
drop	Drops the incoming membership request.
replace	Replaces an existing membership with the incoming membership request.

Defaults

By default, the max-group limit is set to zero.

parameter	defaults
Action	none

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Configuring a max-group value will have no affect on existing group memberships until the memberships are refreshed on the port/VLAN instance.
- The configuration is allowed even when the ip multicast status is disabled.
- If the num and action parameters are not specified, then the limit is removed.
- The max-group configuration on a port will override the VLAN or global configuration.
- MLD zapping must be enabled when the max-group limit is enabled and the action is dropped.

Examples

```
-> ipv6 multicast port 1/1 max-group 10 action drop
-> ipv6 multicast port 1/1 max-group action replace
```

Release History

Release 6.3.4; command was introduced.

Related Commands

show ipv6 multicast

Displays the IP Multicast Switching and Routing status and the general configuration parameters on the specified VLAN or on the system if no VLAN is specified.

MIB Objects

alaIcmpPortTable

 alaIcmpPortMaxGroupLimit

 alaIcmpPortMaxGroupExceedAction

ipv6 multicast static-neighbor

Creates a static MLD neighbor entry on a specified port on a specified VLAN.

ipv6 multicast static-neighbor *vlan vid port slot/port*

no ipv6 multicast static-neighbor *vlan vid port slot/port*

Syntax Definitions

vid

VLAN to include as a static MLD neighbor.

slot/port

The slot/port number you want to configure as a static MLD neighbor.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Use the **no** form of this command to remove an MLD static neighbor entry on a specified port on a specified VLAN.
- The **ipv6 multicast static-neighbor** command allows you to create an MLD static neighbor entry on a specified port on a specified VLAN. This, in turn, enables that network segment to receive all MLD traffic.
- You can also create an MLD static neighbor entry on a link aggregate port by entering **ipv6 multicast static-neighbor** *vlan vid port*, followed by the link aggregation group number (e.g., `ipv6 multicast static-neighbor vlan 2 port 7`).

Examples

```
-> ipv6 multicast static-neighbor vlan 4 port 1/1
-> no ipv6 multicast static-neighbor vlan 4 port 1/1
-> ipv6 multicast static-neighbor vlan 4 port 7
-> no ipv6 multicast static-neighbor vlan 4 port 7
```

Release History

Release 6.6.1; command was introduced.

Related Commands

show ipv6 multicast neighbor Displays the MLD neighbor table entries of IPv6 Multicast Switching and Routing.

MIB Objects

```
alaMldStaticNeighborTable  
  alaMldStaticNeighborVlan  
  alaMldStaticNeighborIfIndex  
  alaMldStaticNeighborRowStatus
```

ipv6 multicast static-querier

Creates a static MLD querier entry on a specified port on a specified VLAN.

ipv6 multicast static-querier *vlan vid port slot/port*

no ipv6 multicast static-querier *vlan vid port slot/port*

Syntax Definitions

<i>vid</i>	VLAN to include as a static MLD querier.
<i>slot/port</i>	The slot/port number you want to configure as a static MLD querier.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Use the **no** form of this command to remove an MLD static querier entry on a specified port on a specified VLAN.
- The **ipv6 multicast static-querier** command allows you to create an MLD static querier entry on a specified port on a specified VLAN. This, in turn, enables that network segment to receive all MLD traffic.
- You can also create an MLD static querier entry on a link aggregate port by entering **ipv6 multicast static-querier** *vlan vid port*, followed by the link aggregation group number (e.g., `ipv6 multicast static-querier vlan 2 port 7`).

Examples

```
-> ipv6 multicast static-querier vlan 4 port 1/1
-> no ipv6 multicast static-querier vlan 4 port 1/1
-> ipv6 multicast static-querier vlan 4 port 7
-> no ipv6 multicast static-querier vlan 4 port 7
```

Release History

Release 6.6.1; command was introduced.

Related Commands

show ipv6 multicast querier Displays the MLD querier table entries of IPv6 Multicast Switching and Routing.

MIB Objects

```
alaMldStaticQuerierTable  
  alaMldStaticQuerierVlan  
  alaMldStaticQuerierIfIndex  
  alaMldStaticQuerierRowStatus
```

ipv6 multicast static-group

Creates a static MLD group entry on a specified port on a specified VLAN.

ipv6 multicast static-group *ip_address* **vlan** *vid* **port** *slot/port*

no ipv6 multicast static-group *ip_address* **vlan** *vid* **port** *slot/port*

Syntax Definitions

<i>ip_address</i>	IPv6 multicast group address.
<i>vid</i>	VLAN to include as a static MLD group.
<i>slot/port</i>	The slot/port number you want to configure as a static MLD group.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Use the **no** form of this command to remove an MLD static group entry on a specified port on the specified VLAN.
- The **ipv6 multicast static-group** command allows you to create an MLD static group entry on a specified port on a specified VLAN. This, in turn, enables that network segment to receive MLD traffic addressed to the specified IPv6 multicast group address.
- You can also create an MLD static group entry on a link aggregate port by entering **ipv6 multicast static-group** *ip_address* **vlan** *vid* **port**, followed by the link aggregation group number (e.g., `ipv6 multicast static-group ff05::5 vlan 2 port 7`).

Examples

```
-> ipv6 multicast static-group ff05::4681 vlan 4 port 1/1
-> no ipv6 multicast static-group ff05::4681 vlan 4 port 1/1
-> ipv6 multicast static-group ff05::4681 vlan 4 port 7
-> no ipv6 multicast static-group ff05::4681 vlan 4 port 7
```

Release History

Release 6.6.1; command was introduced.

Related Commands

show ipv6 multicast group

Displays the MLD group membership table entries of IPv6 Multicast Switching and Routing for the specified IPv6 multicast group address or all entries if no IPv6 multicast group address is specified.

MIB Objects

```
alaMldStaticMemberTable  
  alaMldStaticMemberVlan  
  alaMldStaticMemberIfIndex  
  alaMldStaticMemberGroupAddress  
  alaMldStaticMemberRowStatus
```

ipv6 multicast query-interval

Sets the MLD query interval on the specified VLAN or on the system if no VLAN is specified.

ipv6 multicast [**vlan vid**] **query-interval** [*seconds*]

Syntax Definitions

vid VLAN on which to apply the configuration.
seconds MLD query interval in seconds. Valid range is 1 to 65535.

Defaults

parameter	default
<i>seconds</i>	125

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- IPv6 Multicast Switching and Routing must be enabled to set the MLD query interval on the system and/or the specified VLANs.
- If the MLD query interval is already configured on the system, then the VLAN configuration will override the system's configuration.
- The MLD query interval refers to the time period between MLD query messages.
- To restore the MLD query interval to its default (i.e., 125 seconds) value on the system if no VLAN is specified, use **ipv6 multicast query-interval** followed by the value 0 (e.g., `ipv6 multicast query-interval 0`) or use only **ipv6 multicast query-interval** (e.g., `ipv6 multicast query-interval`).
- To restore the MLD query interval to its default (i.e., 125 seconds) value on the specified VLAN, use **ipv6 multicast vlan vid query-interval** followed by the value 0 (e.g., `ipv6 multicast vlan 2 query-interval 0`) or use only **ipv6 multicast vlan vid query-interval** (e.g., `ipv6 multicast vlan 2 query-interval`).

Examples

```
-> ipv6 multicast query-interval 100
-> ipv6 multicast query-interval 0
-> ipv6 multicast query-interval
-> ipv6 multicast vlan 2 query-interval 100
-> ipv6 multicast vlan 2 query-interval 0
-> ipv6 multicast vlan 2 query-interval
```

Release History

Release 6.6.1; command was introduced.

Related Commands

show ipv6 multicast

Displays the IPv6 Multicast Switching and Routing status and the general configuration parameters on the specified VLAN or on the system if no VLAN is specified.

MIB Objects

```
alaMld
  alaMldQueryInterval
alaMldVlan
  alaMldVlanQueryInterval
```

ipv6 multicast last-member-query-interval

Sets the MLD last member query interval on the specified VLAN or on the system if no VLAN is specified.

ipv6 multicast [*vlan vid*] **last-member-query-interval** [*milliseconds*]

Syntax Definitions

<i>vid</i>	VLAN on which to apply the configuration.
<i>milliseconds</i>	MLD last member query interval in milliseconds. Valid range is 1 to 65535.

Defaults

parameter	default
<i>milliseconds</i>	1000

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- IPv6 Multicast Switching and Routing must be enabled to set the MLD last member query interval to use on the system and/or the specified VLANs. apply this configuration.
- If the MLD last member query interval is already configured on the system, then the VLAN configuration will override the system's configuration.
- The MLD last member query interval refers to the time period to reply to an MLD query message sent in response to a leave group message.
- To restore the MLD last member query interval to its default (i.e., 1000 milliseconds) value on the system if no VLAN is specified, use **ipv6 multicast last-member-query-interval** followed by the value 0 (e.g., `ipv6 multicast last-member-query-interval 0`) or use only **ipv6 multicast last-member-query-interval** (e.g., `ipv6 multicast last-member-query-interval`).
- To restore the MLD last member query interval to its default (i.e., 1000 milliseconds) value on the specified VLAN, use **ipv6 multicast vlan vid last-member-query-interval** followed by the value 0 (e.g., `ipv6 multicast vlan 2 last-member-query-interval 0`) or use only **ipv6 multicast vlan vid last-member-query-interval** (e.g., `ipv6 multicast vlan 2 last-member-query-interval`).

Examples

```
-> ipv6 multicast last-member-query-interval 2200
-> ipv6 multicast last-member-query-interval 0
-> ipv6 multicast last-member-query-interval
-> ipv6 multicast vlan 4 last-member-query-interval 2200
-> ipv6 multicast vlan 4 last-member-query-interval 0
-> ipv6 multicast vlan 4 last-member-query-interval
```

Release History

Release 6.6.1; command was introduced.

Related Commands

show ipv6 multicast

Displays the IPv6 Multicast Switching and Routing status and the general configuration parameters on the specified VLAN or on the system if no VLAN is specified.

MIB Objects

alaMld

 alaMldLastMemberQueryInterval

alaMldVlan

 alaMldVlanLastMemberQueryInterval

ipv6 multicast query-response-interval

Sets the MLD query response interval on the specified VLAN or on the system if no VLAN is specified.

ipv6 multicast [*vlan vid*] **query-response-interval** [*milliseconds*]

Syntax Definitions

vid VLAN on which to apply the configuration.
milliseconds MLD query response interval in milliseconds. Valid range is 1 to 65535.

Defaults

parameter	default
<i>milliseconds</i>	10000

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- IPv6 Multicast Switching and Routing must be enabled to set the MLD query response interval to use on the system and/or the specified VLANs.
- If the MLD query response interval is already configured on the system, then the VLAN configuration will override the system's configuration.
- The MLD query response interval refers to the time period to reply to an MLD query message.
- To restore the MLD query response interval to its default (i.e., 10000 milliseconds) value on the system if no VLAN is specified, use **ipv6 multicast query-response-interval** followed by the value 0 (e.g., `ipv6 multicast query-response-interval 0`) or use only **ipv6 multicast query-response-interval** (e.g., `ipv6 multicast query-response-interval`).
- To restore the MLD last member query interval to its default (i.e., 10000 milliseconds) value on the specified VLAN, use **ipv6 multicast vlan vid query-response-interval** followed by the value 0 (e.g., `ipv6 multicast vlan 2 query-response-interval 0`) or use only **ipv6 multicast vlan vid query-response-interval** (e.g., `ipv6 multicast vlan 2 query-response-interval`).

Examples

```
-> ipv6 multicast query-response-interval 20000
-> ipv6 multicast query-response-interval 0
-> ipv6 multicast query-response-interval
-> ipv6 multicast vlan 2 query-response-interval 20000
-> ipv6 multicast vlan 2 query-response-interval 0
-> ipv6 multicast vlan 2 query-response-interval
```

Release History

Release 6.6.1; command was introduced.

Related Commands

show ipv6 multicast

Displays the IPv6 Multicast Switching and Routing status and the general configuration parameters on the specified VLAN or on the system if no VLAN is specified.

MIB Objects

alaMld

 alaMldQueryResponseInterval

alaMldVlan

 alaMldVlanQueryReponseInterval

ipv6 multicast unsolicited-report-interval

Sets the MLD unsolicited report interval on the specified VLAN or on the system if no VLAN is specified.

ipv6 multicast [*vlan vid*] **unsolicited-report-interval** [*seconds*]

Syntax Definitions

<i>vid</i>	VLAN on which to apply the configuration.
<i>seconds</i>	MLD unsolicited report interval in seconds. Valid range is 1 to 65535, where 0 represents the default setting.

Defaults

parameter	default
<i>seconds</i>	1

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- IPv6 Multicast Switching and Routing must be enabled to set the MLD unsolicited report interval to use on the system and/or the specified VLANs.
- If the MLD unsolicited report interval is already configured on the system, then the VLAN configuration will override the system's configuration.
- The unsolicited report interval refers to the time period to proxy any changed MLD membership state.
- To restore the MLD unsolicited interval to its default (i.e., 1 second) value on the system if no VLAN is specified, use **ipv6 multicast unsolicited-report-interval** followed by the value 0 (e.g., `ipv6 multicast unsolicited-report-interval 0`) or use only **ipv6 multicast unsolicited-report-interval** (e.g., `ipv6 multicast unsolicited-report-interval`).
- To restore the MLD unsolicited report interval to its default (i.e., 1 second) value on the specified VLAN, use **ipv6 multicast vlan vid unsolicited-report-interval** followed by the value 0 (e.g., `ipv6 multicast vlan 2 unsolicited-report-interval 0`) or use only **ipv6 multicast vlan vid unsolicited-report-interval** (e.g., `ipv6 multicast vlan 2 unsolicited-report-interval`).

Examples

```
-> ipv6 multicast unsolicited-report-interval 20000
-> ipv6 multicast unsolicited-report-interval 0
-> ipv6 multicast unsolicited-report-interval
-> ipv6 multicast vlan 2 unsolicited-report-interval 20000
-> ipv6 multicast vlan 2 unsolicited-report-interval 0
-> ipv6 multicast vlan 2 unsolicited-report-interval
```

Release History

Release 6.6.1; command was introduced.

Related Commands

show ipv6 multicast

Displays the IPv6 Multicast Switching and Routing status and the general configuration parameters on the specified VLAN or on the system if no VLAN is specified.

MIB Objects

alaMld

 alaMldUnsolicitedReportInterval

alaMldVlan

 alaMldVlanUnsolicitedReportInterval

ipv6 multicast router-timeout

Configures the expiry time of IPv6 multicast routers on the specified VLAN or on the system if no VLAN is specified.

ipv6 multicast [*vlan vid*] **router-timeout** [*seconds*]

Syntax Definitions

vid VLAN on which to apply the configuration.
seconds MLD router timeout in seconds. Valid range is 1 to 65535.

Defaults

parameter	default
<i>seconds</i>	90

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- IPv6 Multicast Switching and Routing must be enabled to set the MLD router timeout on the system and/or the specified VLANs. apply this configuration.
- If the MLD router timeout is already configured on the system, then the VLAN configuration will override the system's configuration.
- To restore the MLD router timeout to its default (i.e., 90 seconds) value on the system if no VLAN is specified, use **ipv6 multicast router-timeout** followed by the value 0 (e.g., `ipv6 multicast router-timeout 0`) or use only **ipv6 multicast router-timeout** (e.g., `ipv6 multicast router-timeout`).
- To restore the MLD router timeout to its default (i.e., 90 seconds) value on the specified VLAN, use **ipv6 multicast vlan vid router-timeout** followed by the value 0 (e.g., `ipv6 multicast vlan 2 router-timeout 0`) or use only **ipv6 multicast vlan vid router-timeout** (e.g., `ipv6 multicast vlan 2 router-timeout`).

Examples

```
-> ipv6 multicast router-timeout 100
-> ipv6 multicast router-timeout 0
-> ipv6 multicast router-timeout
-> ipv6 multicast vlan 2 router-timeout 100
-> ipv6 multicast vlan 2 router-timeout 0
-> ipv6 multicast vlan 2 router-timeout
```

Release History

Release 6.6.1; command was introduced.

Related Commands

show ipv6 multicast

Displays the IPv6 Multicast Switching and Routing status and the general configuration parameters on the specified VLAN or on the system if no VLAN is specified.

MIB Objects

```
alaMld
  alaMldRouterTimeout
alaMldVlan
  alaMldVlanRouterTimeout
```

ipv6 multicast source-timeout

Configures the expiry time of IPv6 multicast sources on the specified VLAN or on the system if no VLAN is specified.

ipv6 multicast [*vlan vid*] **source-timeout** [*seconds*]

Syntax Definitions

vid VLAN on which to apply the configuration.
seconds MLD source timeout in seconds. Valid range is 1 to 65535.

Defaults

parameter	default
<i>seconds</i>	30

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- IPv6 Multicast Switching and Routing must be enabled to set the MLD source timeout on the system and/or the specified VLANs.
- If the MLD source timeout is already configured on the system, then the VLAN configuration will override the system's configuration.
- To restore the MLD router timeout to its default (i.e., 30 seconds) value on the system if no VLAN is specified, use **ipv6 multicast source-timeout** followed by the value 0 (e.g., `ipv6 multicast source-timeout 0`) or use only **ipv6 multicast source-timeout** (e.g., `ipv6 multicast source-timeout`).
- To restore the MLD router timeout to its default (i.e., 30 seconds) value on the specified VLAN, use **ipv6 multicast vlan vid source-timeout** followed by the value 0 (e.g., `ipv6 multicast vlan 2 source-timeout 0`) or use only **ipv6 multicast vlan vid source-timeout** (e.g., `ipv6 multicast vlan 2 source-timeout`).

Examples

```
-> ipv6 multicast source-timeout 100
-> ipv6 multicast source-timeout 0
-> ipv6 multicast source-timeout
-> ipv6 multicast vlan 2 source-timeout 100
-> ipv6 multicast vlan 2 source-timeout 0
-> ipv6 multicast vlan 2 source-timeout
```

Release History

Release 6.6.1; command was introduced.

Related Commands

show ipv6 multicast

Displays the IPv6 Multicast Switching and Routing status and the general configuration parameters on the specified VLAN or on the system if no VLAN is specified.

MIB Objects

alaMld

 alaMldSourceTimeout

alaMldVlan

 alaMldVlanSourceTimeout

ipv6 multicast querying

Enables or disables MLD querying on the specified VLAN or on the system if no VLAN is specified.

ipv6 multicast [vlan *vid*] querying [{enable | disable}]

no ipv6 multicast [vlan *vid*] querying

Syntax Definitions

<i>vid</i>	VLAN on which to apply the configuration.
enable	Enable MLD querying.
disable	Disable MLD querying.

Defaults

parameter	default
enable / disable	disable

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Use the **no** form of this command to remove an MLD querying entry on the specified VLAN or on the system and return to its default behavior.
- IPv6 Multicast Switching and Routing must be enabled to enable MLD querying on the system and/or specified VLANs.
- If the MLD querying is already enabled/disabled on the system, then the VLAN configuration will override the system's configuration.
- MLD querying refers to requesting the network's MLD group membership information by sending out MLD queries. MLD querying also involves participating in MLD querier election.
- You can also restore the MLD querying to its default (i.e., disabled) setting on the system if no VLAN is specified, by using only **ipv6 multicast querying** (e.g., ipv6 multicast querying).
- You can also restore the MLD querying to its default (i.e., disabled) setting on the specified VLAN, by using only **ipv6 multicast vlan *vid* querying** (e.g., ipv6 multicast vlan 2 querying).

Examples

```
-> ipv6 multicast querying enable
-> ipv6 multicast querying disable
-> ipv6 multicast querying
-> ipv6 multicast vlan 2 querying enable
-> ipv6 multicast vlan 2 querying disable
-> ipv6 multicast vlan 2 querying
-> no ipv6 multicast vlan 2 querying
```

Release History

Release 6.6.1; command was introduced.

Related Commands

show ipv6 multicast

Displays the IPv6 Multicast Switching and Routing status and the general configuration parameters on the specified VLAN or on the system if no VLAN is specified.

MIB Objects

alaMld

 alaMldQuerying

alaMldVlan

 alaMldVlanQuerying

ipv6 multicast robustness

Sets the MLD robustness variable on the specified VLAN or on the system if no VLAN is specified.

ipv6 multicast [**vlan** *vid*] **robustness** [*robustness*]

Syntax Definitions

vid VLAN on which to apply the configuration.
robustness MLD robustness variable. Valid range is 1 to 7.

Defaults

parameter	default
<i>robustness</i>	2

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- IPv6 Multicast Switching and Routing must be enabled to set the MLD robustness variable on the system and/or the specified VLANs.
- If the MLD robustness variable is already configured on the system, then the VLAN configuration will override the system's configuration.
- Robustness variable allows fine-tuning on the network, where the expected packet loss would be greater.
- To restore the MLD robustness variable to its default (i.e., 2) value on the system if no VLAN is specified, use **ipv6 multicast robustness** followed by the value 0 (e.g., `ipv6 multicast robustness 0`) or use only **ipv6 multicast robustness** (e.g., `ipv6 multicast robustness`).
- To restore the MLD robustness variable to its default (i.e., 2) value on the specified VLAN, use **ipv6 multicast vlan** *vid* **robustness** followed by the value 0 (e.g., `ipv6 multicast vlan 2 robustness 0`) or use only **ipv6 multicast vlan** *vid* **robustness** (e.g., `ipv6 multicast vlan 2 robustness`).

Examples

```
-> ipv6 multicast robustness 3
-> ipv6 multicast robustness 0
-> ipv6 multicast robustness
-> ipv6 multicast vlan 2 robustness 3
-> ipv6 multicast vlan 2 robustness 0
-> ipv6 multicast vlan 2 robustness
```

Release History

Release 6.6.1; command was introduced.

Related Commands

show ipv6 multicast

Displays the IPv6 Multicast Switching and Routing status and the general configuration parameters on the specified VLAN or on the system if no VLAN is specified.

MIB Objects

```
alaMld
  alaMldRobustness
alaMldVlan
  alaMldVlanRobustness
```

ipv6 multicast spoofing

Enables or disables MLD spoofing on the specified VLAN or on the system if no VLAN is specified.

ipv6 multicast [vlan *vid*] spoofing [{enable | disable}]

no ipv6 multicast [vlan *vid*] spoofing

Syntax Definitions

<i>vid</i>	VLAN on which to apply the configuration.
enable	Enable MLD spoofing.
disable	Disable MLD spoofing.

Defaults

parameter	defaults
enable / disable	disable

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Use the **no** form of this command to remove an MLD spoofing entry on the specified VLAN or on the system and return to its default behavior.
- If the MLD spoofing is already enabled on the system, then the VLAN configuration will override the system's configuration.
- MLD spoofing refers to replacing a client's MAC and IP address with the system's MAC and IP address when proxying aggregated MLD group membership information.
- You can also restore the MLD spoofing to its default (i.e., disabled) setting on the system if no VLAN is specified, by using only **ipv6 multicast spoofing** (i.e., ipv6 multicast spoofing).
- You can also restore the MLD spoofing to its default (i.e., disabled) setting on the specified VLAN, by using only **ipv6 multicast vlan *vid* spoofing** (i.e., ipv6 multicast vlan 2 spoofing).

Examples

```
-> ipv6 multicast spoofing enable
-> ipv6 multicast spoofing disable
-> ipv6 multicast spoofing
-> ipv6 multicast vlan 2 spoofing enable
-> ipv6 multicast vlan 2 spoofing disable
-> ipv6 multicast vlan 2 spoofing
-> no ipv6 multicast vlan 2 spoofing
```

Release History

Release 6.6.1; command was introduced.

Related Commands

show ipv6 multicast

Displays the IPv6 Multicast Switching and Routing status and the general configuration parameters on the specified VLAN or on the system if no VLAN is specified.

MIB Objects

alaMld

 alaMldSpoofing

alaMldVlan

 alaMldVlanSpoofing

ipv6 multicast zapping

Enables or disables MLD zapping on the specified VLAN or on the system if no VLAN is specified.

ipv6 multicast [vlan *vid*] zapping [{enable | disable}]

Syntax Definitions

<i>vid</i>	VLAN on which to apply the configuration.
enable	Enable MLD zapping.
disable	Disable MLD zapping.

Defaults

parameter	default
enable disable	disable

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- If the MLD zapping is already enabled on the system, then the VLAN configuration will override the system's configuration.
- MLD zapping refers to processing membership and source filter removals immediately and not waiting for the protocol's specified time period. This mode facilitates IP TV applications looking for quick changes between IP multicast groups.
- You can also restore the MLD zapping to its default (i.e., disabled) setting on the system if no VLAN is specified, by using only **ipv6 multicast zapping** (e.g., ipv6 multicast zapping).
- You can also restore the MLD zapping to its default (i.e., disabled) setting on the specified VLAN, by using only **ipv6 multicast vlan *vid* zapping** (e.g., ipv6 multicast vlan 2 zapping).

Examples

```
-> ipv6 multicast zapping enable
-> ipv6 multicast zapping disable
-> ipv6 multicast zapping
-> ipv6 multicast vlan 2 zapping enable
-> ipv6 multicast vlan 2 zapping disable
-> ipv6 multicast vlan 2 zapping
```

Release History

Release 6.6.1; command was introduced.

Related Commands

show ipv6 multicast

Displays the IPv6 Multicast Switching and Routing status and the general configuration parameters on the specified VLAN or on the system if no VLAN is specified.

MIB Objects

```
alaMld
  alaMldZapping
alaMldVlan
  alaMldVlanZapping
```

ipv6 multicast proxying

Enables or disables MLD proxying on the specified VLAN or on the system if no VLAN is specified.

ipv6 multicast [vlan *vid*] proxying [enable | disable]

Syntax Definitions

<i>vid</i>	VLAN on which to apply the configuration.
enable	Enable MLD proxying.
disable	Disable MLD proxying.

Defaults

parameter	default
enable disable	disable

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- If the MLD proxying is already enabled on the system, then the VLAN configuration will override the system's configuration.
- MLD proxying refers to processing membership information on behalf of client systems and reporting membership on their behalf.
- You can also restore the MLD proxying to its default (i.e., disabled) setting on the system if no VLAN is specified, by using only **ipv6 multicast proxying** (e.g., ipv6 multicast proxying).
- You can also restore the MLD proxying to its default (i.e., disabled) setting on the specified VLAN, by using only **ipv6 multicast vlan *vid* proxying** (e.g., ipv6 multicast vlan 2 proxying).

Examples

```
-> ipv6 multicast proxying enable
-> ipv6 multicast proxying disable
-> ipv6 multicast proxying
-> ipv6 multicast vlan 2 proxying enable
-> ipv6 multicast vlan 2 proxying disable
-> ipv6 multicast vlan 2 proxying
```

Release History

Release 6.6.1; command was introduced.

Related Commands

show ipv6 multicast

Displays the IPv6 Multicast Switching and Routing status and the general configuration parameters on the specified VLAN or on the system if no VLAN is specified.

MIB Objects

```
alaMld
  alaMldProxying
alaMldVlan
  alaMldVlanProxying
```

show ip multicast

Displays the IP Multicast Switching and Routing status and the general configuration parameters on the specified VLAN or on the system if no VLAN is specified.

show ip multicast [*vlan vid*]

Syntax Definitions

vid VLAN ID number (1–4094).

Defaults

By default the status and general configuration parameters for the system.

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

Specify a VLAN ID to display the configuration information for an individual VLAN.

Examples

```
-> show ip multicast
```

```
Status: Enabled
Querying: Disabled
Proxying: Disabled
Spoofing: Disabled
Zapping: Disabled
Querier Forwarding: Disabled
Dynamic control drop-all status: Disabled
Version: 2
Robustness: 2
Query Interval (seconds): 125
Query Response Interval (tenths of seconds): 100
Last Member Query Interval(tenths of seconds):10
Unsolicited Report Interval(seconds): 1
Router Timeout (seconds): 90
Source Timeout (seconds): 30
```

```
-> show ip multicast vlan 1
```

```
Status: Enabled
Querying: Disabled
Proxying: Disabled
Spoofing: Disabled
Zapping: Disabled
Querier Forwarding: Disabled
Version: 2
Robustness: 2
Query Interval (seconds): 125
Query Response Interval (tenths of seconds): 100
Last Member Query Interval(tenths of seconds):10
Unsolicited Report Interval(seconds): 1
Router Timeout (seconds): 90
Source Timeout (seconds): 30
```

Output fields are described here:

output definitions

Status	Whether the IP Multicast Switching and Routing is Enabled or Disabled (the default status). You can enable or disable IP Multicast Switching and Routing with the ip multicast status command, which is described on page 47-3 .
Querying	The current state of IGMP querying, which can be Enabled or Disabled (the default status). You can enable or disable IGMP querying with the ip multicast querying command, which is described on page 47-37 .
Proxying	The current state of IGMP proxying on the system, which can be Enabled or Disabled (the default status). You can enable or disable IGMP spoofing with the ip multicast proxying command, which is described on page 47-45 .
Spoofing	The current state of IGMP spoofing on the system, which can be Enabled or Disabled (the default status). You can enable or disable IGMP spoofing with the ip multicast spoofing command, which is described on page 47-41 .
Zapping	The current state of IGMP zapping on the system, which can be Enabled or Disabled (the default status). You can enable or disable IGMP zapping with the ip multicast zapping command, which is described on page 47-43 .
Querier Forwarding	The current state of IGMP querier forwarding on the system, which can be Enabled or Disabled (the default status). You can enable or disable IGMP Querier forwarding with the ip multicast querier-forwarding command, which is described on page 47-9 .
Dynamic control drop-all status	Displays the dynamic control drop-all status of the IPV4 protocol packets on the switch. You can enable or disable the dynamic control drop-all status with the ip multicast dynamic-control drop-all status command, which is described on page 47-5 .
Version	Displays the default IGMP version, which can be 1 , 2 or 3 . Use the ip multicast version command to modify this parameter.

output definitions

Robustness	Displays the IGMP robustness value, ranging from 1 to 7 . (The default value is 2). Use the ip multicast robustness command to modify this parameter.
Query Interval (seconds)	Displays the time (in seconds) between IGMP queries. (The default value is 125 seconds). You can modify this parameter with the ip multicast query-interval command, which is described on page 47-25 .
Query Response Interval (tenths of seconds)	Displays the time (in tenths of seconds) taken to reply to an IGMP query message. (The default value is 100 tenths-of-seconds). You can modify this parameter with the ip multicast query-response-interval command, which is described on page 47-29 .
Last Member Query Interval (tenths of seconds)	Displays the time (in tenths of seconds) taken to reply to an IGMP query message sent in response to a leave group message. (The default value is 10 tenths-of-seconds.) You can modify this parameter with the ip multicast last-member-query-interval command, which is described on page 47-27 .
Unsolicited Report Interval (seconds)	Displays the time period (in seconds) to proxy any changed IGMP membership state. (The default value is 1 second). You can modify this parameter with the ip multicast unsolicited-report-interval command, which is described on page 47-31 .
Router Timeout (seconds)	Displays the IGMP router timeout in seconds. (The default value is 90 seconds.) You can modify this parameter with the ip multicast router-timeout command, which is described on page 47-33 .
Source Timeout (seconds)	Displays the IGMP source timeout in seconds. (The default value is 30 seconds.) You can modify this parameter with the ip multicast source-timeout command, which is described on page 47-35 .

Release History

Release 6.6.1; command was introduced.

Release 6.6.5; **Dynamic control drop-all status** output field added.

Related Commands

ip multicast status	Enables or disables IP Multicast Switching and Routing on the specified VLAN, or on the system if no VLAN is specified.
ip multicast version	Sets the default version of the IGMP protocol on the specified VLAN or on the system if no VLAN is specified.
ip multicast querying	Enables or disables IGMP querying on the specified VLAN or on the system if no VLAN is specified.
ip multicast robustness	Sets the IGMP robustness variable on the specified VLAN or on the system if no VLAN is specified.
ip multicast spoofing	Enables or disables IGMP spoofing on the specified VLAN or on the system if no VLAN is specified.
ip multicast zapping	Enables or disables IGMP zapping on the specified VLAN or on the system if no VLAN is specified.
ip multicast proxying	Enables or disables IGMP proxying on the specified VLAN or on the system if no VLAN is specified.
ip multicast query-interval	Sets the IGMP query interval on the specified VLAN or on the system if no VLAN is specified.
ip multicast last-member-query-interval	Sets the IGMP last member query interval value on the specified VLAN or on the system if no VLAN is specified.
ip multicast query-response-interval	Sets the IGMP query response interval on the specified VLAN or on the system if no VLAN is specified.
ip multicast unsolicited-report-interval	Sets the value of the IGMP unsolicited report interval on the specified VLAN or on the system if no VLAN is specified.
ip multicast router-timeout	Configures the expiry time of IP multicast routers on the specified VLAN or on the system if no VLAN is specified.
ip multicast source-timeout	Configures the expiry time of IP multicast sources on the specified VLAN or on the system if no VLAN is specified.
ip multicast flood-unknown	Enables or disables the processing of IPv4 protocol packets through the CPU.

MIB Objects

```

alaIgmP
  alaIgmPStatus
  alaIgmPQuerying
  alaIgmPProxying
  alaIgmPSpoofing
  alaIgmPZapping
  alaIgmPQuerierForwarding
  alaDynamicControlIpv4Status
  alaIgmPVersion
  alaIgmPRobustness
  alaIgmPQueryInterval
  alaIgmPQueryResponseInterval
  alaIgmPLastMemberQueryInterval
  alaIgmPUnsolicitedReportInterval
  alaIgmPRouterTimeout
  alaIgmPSourceTimeout

```

```
alaIcmpVlan
  alaIcmpVlanStatus
  alaIcmpVlanQuerying
  alaIcmpVlanProxying
  alaIcmpVlanSpoofing
  alaIcmpVlanZapping
  alaIcmpVlanQuerierForwarding
  alaIcmpVlanVersion
  alaIcmpVlanRobustness
  alaIcmpVlanQueryInterval
  alaIcmpVlanQueryResponseInterval
  alaIcmpVlanLastMemberQueryInterval
  alaIcmpVlanUnsolicitedReportInterval
  alaIcmpVlanRouterTimeout
  alaIcmpVlanSourceTimeout
```

show ip multicast port

Displays the max-group configuration applicable for all port or vlan instances of a given port or all ports. The current number of groups learnt on a given port or vlan instance will also be displayed.

show ip multicast port [*slot/port*]

Syntax Definitions

slot / port

The slot number for the module and the physical port number on that module (e.g. 3/1 specifies port 1 on slot 3)).

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

Specify a slot and port number to display the configuration information for a specific switch port.

Examples

```
-> show ip multicast port
```

```
Total 5 Port-Vlan Pairs
```

Port	VLAN	Current Igmp Groups	Max-group	Action
1/1	10	1	1	drop
1/1	20	1	1	drop
1/3	15	2	5	replace
1/4	20	3	10	drop
1/6	15	5	0	none

```
-> show ip multicast port 1/1
```

```
Max-group 0 Action none
```

```
Total 2 Port-Vlan Pairs
```

Port	vlan	current IGMP group	max-group	action
1/1	10	1	1	drop
1/1	20	2	5	replace

output definitions

Port	The slot and port number of the IP multicast port.
VLAN	The VLAN associated with the IP multicast port.
Current Groups	The current group associated with the IP Current groups.

output definitions

IGMP	The IGMP associated with the IP multicast port.
Max-group	The maximum group count allowed on the port.
Action	The action to be taken when the group membership limit is exceeded.

Release History

Release 6.3.4; command was introduced.

Related Commands

ip multicast status	Enables or disables IP Multicast Switching and Routing on the specified VLAN, or on the system if no VLAN is specified.
ip multicast version	Sets the default version of the IGMP protocol on the specified VLAN or on the system if no VLAN is specified.
ip multicast querying	Enables or disables IGMP querying on the specified VLAN or on the system if no VLAN is specified.
ip multicast robustness	Sets the IGMP robustness variable on the specified VLAN or on the system if no VLAN is specified.
ip multicast spoofing	Enables or disables IGMP spoofing on the specified VLAN or on the system if no VLAN is specified.
ip multicast zapping	Enables or disables IGMP zapping on the specified VLAN or on the system if no VLAN is specified.
ip multicast proxying	Enables or disables IGMP proxying on the specified VLAN or on the system if no VLAN is specified.
ip multicast query-interval	Sets the IGMP query interval on the specified VLAN or on the system if no VLAN is specified.
ip multicast last-member-query-interval	Sets the IGMP last member query interval value on the specified VLAN or on the system if no VLAN is specified.
ip multicast query-response-interval	Sets the IGMP query response interval on the specified VLAN or on the system if no VLAN is specified.
ip multicast unsolicited-report-interval	Sets the value of the IGMP unsolicited report interval on the specified VLAN or on the system if no VLAN is specified.
ip multicast router-timeout	Configures the expiry time of IP multicast routers on the specified VLAN or on the system if no VLAN is specified.
ip multicast source-timeout	Configures the expiry time of IP multicast sources on the specified VLAN or on the system if no VLAN is specified.

MIB Objects

alaIcmpPortTable

- alaIcmpPortMaxGroupLimit
- alaIcmpPortMaxGroupExceedAction

alaIcmpPortVlanTable

- alaIcmpPortVlanCurrentGroupCount
- alaIcmpPortVlanMaxGroupLimit
- alaIcmpPortVlanMaxGroupExceedAction

show ip multicast forward

Displays the IP Multicast Switching and Routing forwarding table entries for the specified IP multicast group address or all the entries if no IP multicast group address is specified.

show ip multicast forward [*ip_address*]

Syntax Definitions

ip_address IP multicast group address.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

N/A

Examples

```
-> show ip multicast forward
```

```
Total 1 Forwards
```

Group Address	Host Address	Tunnel Address	Ingress		Egress	
			VLAN	Port	VLAN	Port
228.0.0.1	1.0.0.2	0.0.0.0	1	2/1	1	2/23

```
-> show ip multicast forward 228.0.0.1
```

Group Address	Host Address	Tunnel Address	Ingress		Egress	
			VLAN	Port	VLAN	Port
228.0.0.1	1.0.0.2	0.0.0.0	1	2/1	1	2/23

Output fields are described here:

output definitions

Group Address	IP group address of the IP multicast forward.
Host Address	IP host address of the IP multicast forward.
Tunnel Address	IP source tunnel address of the IP multicast forward.
VLAN	VLAN associated with the IP multicast forward.
Port	The slot and port number of the IP multicast forward.

Release History

Release 6.6.1; command was introduced.

Related Commands

ip multicast static-group

Creates a static IGMP group entry on a specified port on a specified VLAN.

MIB Objects

```
alaIgmPForwardTable  
  alaIgmPForwardVlan  
  alaIgmPForwardIfIndex  
  alaIgmPForwardGroupAddress  
  alaIgmPForwardHostAddress  
  alaIgmPForwardDestAddress  
  alaIgmPForwardOrigAddress  
  alaIgmPForwardType  
  alaIgmPForwardNextVlan  
  alaIgmPForwardNextIfIndex  
  alaIgmPForwardNextTunnelAddress  
  alaIgmPForwardNextType  
  alaIgmPForwardTtl
```

show ip multicast neighbor

Displays the IGMP neighbor table entries of IP Multicast Switching and Routing.

show ip multicast neighbor

Syntax Definitions

N/A

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

N/A

Examples

```
-> show ip multicast neighbor
```

```
Total 2 Neighbors
Host Address      VLAN  Port  Static  Count  Life
-----+-----+-----+-----+-----+-----
1.0.0.2           1     2/1   no      1      86
0.0.0.0           1     2/13  yes     0       0
```

Output fields are described here:

output definitions

Host Address	The IP address of the IP multicast neighbor.
VLAN	The VLAN associated with the IP multicast neighbor.
Port	The slot and port number of the IP multicast neighbor.
Static	Whether it is a static IP multicast neighbor or not.
Count	Displays the count of IP multicast neighbor.
Life	The life time of the IP multicast neighbor.

Release History

Release 6.6.1; command was introduced.

Related Commands

ip multicast max-group Creates a static IGMP neighbor entry on a specified port on a specified VLAN.

MIB Objects

```
alaIcmpNeighborTable
  alaIcmpNeighborVlan
  alaIcmpNeighborIfIndex
  alaIcmpNeighborHostAddress
  alaIcmpNeighborCount
  alaIcmpNeighborTimeout
  alaIcmpNeighborUpTime
alaIcmpStaticNeighborTable
  alaIcmpStaticNeighborVlan
  alaIcmpStaticNeighborIfIndex
  alaIcmpStaticNeighborRowStatus
```

show ip multicast querier

Displays the IGMP querier table entries of IP Multicast Switching and Routing.

show ip multicast querier

Syntax Definitions

N/A

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

N/A

Examples

```
-> show ip multicast querier
```

```
Total 2 Queriers
Host Address      VLAN  Port  Static  Count  Life
-----+-----+-----+-----+-----+-----
1.0.0.2           1     2/1   no      1      250
0.0.0.0           1     2/13  yes     0       0
```

Output fields are described here:

output definitions

Host Address	The IP address of the IP multicast querier.
VLAN	The VLAN associated with the IP multicast querier.
Port	The slot and port number of the IP multicast querier.
Static	Whether it is a static multicast neighbor or not.
Count	Displays the count of the IP multicast querier.
Life	The life time of the IP multicast querier.

Release History

Release 6.6.1; command was introduced.

Related Commands

ip multicast static-querier Creates a static IGMP querier entry on a specified port on a specified VLAN.

MIB Objects

```
alaIcmpQuerierTable
  alaIcmpQuerierVlan
  alaIcmpQuerierIfIndex
  alaIcmpQuerierHostAddress
  alaIcmpQuerierCount
  alaIcmpQuerierTimeout
  alaIcmpQuerierUpTime
alaIcmpStaticQuerierTable
  alaIcmpStaticQuerierVlan
  alaIcmpStaticQuerierIfIndex
  alaIcmpStaticQuerierRowStatus
```

show ip multicast group

Displays the IGMP group membership table entries of IP Multicast Switching and Routing for the specified IP multicast group address or all entries if no IP multicast group address is specified.

show ip multicast group [*ip_address*]

Syntax Definitions

ip_address IP multicast group address.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

N/A

Examples

-> show ip multicast group

```
Total 3 Groups
Group Address   Source Address  VLAN  Port  RVLAN Mode   Static  Count  Life
-----+-----+-----+-----+-----+-----+-----+-----+-----
231.0.0.3      1.0.0.5        1     2/1   20  exclude no    1     257
229.0.0.1      0.0.0.0        1     2/13  30  exclude yes   0      0
```

-> show ip multicast group 234.0.0.4

```
Group Address   Source Address  VLAN  Port  Mode   Static  Count  Life
-----+-----+-----+-----+-----+-----+-----+-----
234.0.0.4      0.0.0.0        1     2/1   exclude no    1     218
```

Output fields are described here:

output definitions

Group Address	IP address of the IP multicast group.
Source Address	IP address of the IP multicast source.
VLAN	The VLAN associated with the IP multicast group.
Port	The slot and port number of the IP multicast group.
Mode	IGMP source filter mode.
Static	Whether it is a static multicast group or not.
Count	Number of IGMP membership requests made.
Life	Life time of the IGMP group membership.

Release History

Release 6.6.1; command was introduced

Related Commands.

ip multicast static-group Creates a static IGMP group entry on a specified port on a specified VLAN.

MIB Objects

```
alaIgmPMemberTable
  alaIgmPMemberVlan
  alaIgmPMemberIfIndex
  alaIgmPMemberGroupAddress
  alaIgmPMemberSourceAddress
  alaIgmPMemberMode
  alaIgmPMemberCount
  alaIgmPMemberTimeout
alaIgmPStaticMemberTable
  alaIgmPStaticMemberVlan
  alaIgmPStaticMemberIfIndex
  alaIgmPStaticMemberGroupAddress
  alaIgmPStaticMemberRowStatus
```

show ip multicast source

Displays the IP Multicast Switching and Routing source table entries matching the specified IP multicast group address or all entries if no IP multicast group address is specified.

show ip multicast source [*ip_address*]

Syntax Definitions

ip_address IP multicast group address.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

This command is not supported. If a multicast source packet is sent and stopped, the entry will be removed from the 'show ip multicast source' command immediately.

Examples

```
-> show ip multicast source
```

```
Total 1 Sources
Group Address  Host Address  Tunnel Address  VLAN  Port
-----+-----+-----+-----+-----
228.0.0.1     1.0.0.2      0.0.0.0        1     2/1
```

```
-> show ip multicast source 228.0.0.1
```

```
Total 1 Sources
Group Address  Host Address  Tunnel Address  VLAN  Port
-----+-----+-----+-----+-----
228.0.0.1     1.0.0.2      0.0.0.0        1     2/1
```

output definitions

Group Address	IP group address of the IP multicast source.
Host Address	IP host address of the IP multicast source.
Tunnel Address	IP destination tunnel address of the IP multicast source.
VLAN	VLAN associated with the IP multicast source.
Port	The slot and port number of the IP multicast source.

Release History

Release 6.6.1; command was introduced.

Related Commands

ip multicast static-group

Creates a static IGMP group entry on a specified port on a specified VLAN.

MIB Objects

```
alaIgmSourceTable  
  alaIgmSourceVlan  
  alaIgmSourceIfIndex  
  alaIgmSourceGroupAddress  
  alaIgmSourceHostAddress  
  alaIgmSourceDestAddress  
  alaIgmSourceOrigAddress  
  alaIgmSourceType  
  alaIgmSourceUpTime
```

show ipv6 multicast

Displays the IPv6 Multicast Switching and Routing status and the general configuration parameters on the specified VLAN or on the system if no VLAN is specified.

show ipv6 multicast [vlan vid]

Syntax Definitions

vid VLAN for which to display the configuration.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

N/A

Examples

```
-> show ipv6 multicast
```

```
Status: = Enabled
Querying: = Disabled
Proxying: = Disabled
Spoofing: = Disabled
Zapping: = Disabled
Querier Forwarding: = Disabled
Version: = 1
Robustness: = 2
Query Interval (seconds): = 125
Query Response Interval (milliseconds): = 10000
Last Member Query Interval (milliseconds): = 1000
Unsolicited Report Interval (seconds) = 1,
Router Timeout (seconds): = 90
Source Timeout (seconds): = 30
```

```
-> show ipv6 multicast vlan 1
```

```
Status:                               = Enabled
Querying:                             = Disabled
Proxying:                             = Disabled
Spoofing:                             = Disabled
Zapping:                              = Disabled
Querier Forwarding:                  = Disabled
Version:                              = 1
Robustness:                          = 2
Query Interval (seconds):            = 125
Query Response Interval (milliseconds): = 10000
Last Member Query Interval (milliseconds): = 1000
Unsolicited Report Interval (seconds) = 1,
Router Timeout (seconds):            = 90
Source Timeout (seconds):            = 30:
```

output definitions

Status	Whether the IPv6 Multicast Switching and Routing is Enabled or Disabled (the default status). You can enable or disable IPv6 Multicast Switching and Routing with the ipv6 multicast status command, which is described on page 47-47
Querying	The current state of MLD querying, which can be Enabled or Disabled (the default status). You can enable or disable MLD querying with the ipv6 multicast querying command, which is described on page 47-77
Proxying	The current state of MLD proxying on the system, which can be Enabled or Disabled (the default status). You can enable or disable MLD spoofing with the ipv6 multicast proxying command, which is described on page 47-85
Spoofing	The current state of MLD spoofing on the system, which can be Enabled or Disabled (the default status). You can enable or disable MLD spoofing with the ipv6 multicast spoofing command, which is described on page 47-41
Zapping	The current state of MLD zapping on the system, which can be Enabled or Disabled (the default status). You can enable or disable MLD zapping with the ipv6 multicast zapping command, which is described on page 47-83
Querier Forwarding	The current state of MLD querier forwarding on the system, which can be Enabled or Disabled (the default status). You can enable or disable MLD Querier forwarding with the ipv6 multicast querier-forwarding command, which is described on page 47-49 .
Version	Displays the default MLD version, which can be 1 , 2 or 3 . Use the ipv6 multicast version command to modify this parameter.
Robustness	Displays the MLD robustness value, ranging from 1 to 7 . Use the ipv6 multicast robustness command to modify this parameter.
Query Interval (seconds)	Displays the time (in seconds) between MLD queries. (The default value is 125 seconds). You can modify this parameter with the ipv6 multicast query-interval command, which is described on page 47-65 .

output definitions

Query Response Interval (milliseconds)	Displays the time (in milliseconds) to reply to an MLD query message. (The default value is 10000 milliseconds.) You can modify this parameter with the ipv6 multicast query-response-interval command, which is described on page 47-69 .
Last Member Query Interval (milliseconds)	Displays the time (in milliseconds) to reply to an MLD query message sent in response to a leave group message. (The default value is 1000 milliseconds.) You can modify this parameter with the ipv6 multicast last-member-query-interval command, which is described on page 47-67 .
Unsolicited Report Interval (seconds)	Displays the time period (in seconds) to proxy any changed MLD membership state. (The default value is 1 second). You can modify this parameter with the ipv6 multicast unsolicited-report-interval command, which is described on page 47-71 .
Router Timeout (seconds)	Displays the MLD router timeout in seconds (The default value is 90 seconds.) You can modify this parameter with the ipv6 multicast router-timeout command, which is described on page 47-73 .
Source Timeout (seconds)	Displays the IGMP source timeout in seconds (The default is 30 seconds.) You can modify this parameter with the ipv6 multicast source-timeout command, which is described on page 47-75 .

Release History

Release 6.6.1; command was introduced.

Related Commands

ipv6 multicast status	Enables or disables IPv6 Multicast Switching and Routing on the specified VLAN or on the system if no VLAN is specified.
ipv6 multicast version	Sets the default version of the MLD protocol on the specified VLAN or on the system if no VLAN is specified.
ipv6 multicast query-interval	Sets the MLD query interval on the specified VLAN or on the system if no VLAN is specified.
ipv6 multicast last-member-query-interval	Sets the MLD last member query interval on the specified VLAN or on the system if no VLAN is specified.
ipv6 multicast query-response-interval	Sets the MLD query response interval on the specified VLAN or on the system if no VLAN is specified.
ipv6 multicast unsolicited-report-interval	Sets the MLD unsolicited report interval on the specified VLAN or on the system if no VLAN is specified.
ipv6 multicast router-timeout	Configures the expiry time of IPv6 multicast routers on the specified VLAN or on the system if no VLAN is specified.
ipv6 multicast source-timeout	Configures the expiry time of IPv6 multicast sources on the specified VLAN or on the system if no VLAN is specified.
ipv6 multicast querying	Enables or disables MLD querying on the specified VLAN or on the system if no VLAN is specified.
ipv6 multicast robustness	Sets the MLD robustness variable on the specified VLAN or on the system if no VLAN is specified.
ipv6 multicast spoofing	Enables or disables MLD spoofing on the specified VLAN or on the system if no VLAN is specified.
ipv6 multicast zapping	Enables or disables MLD zapping on the specified VLAN or on the system if no VLAN is specified.
ipv6 multicast proxying	Enables or disables MLD proxying on the specified VLAN or on the system if no VLAN is specified.

MIB Objects

```

alaMld
  alaMldStatus
  alaMldQuerying
  alaMldProxying
  alaMldSpoofing
  alaMldZapping
  alaMldQuerierForwarding
  alaMldVersion
  alaMldRobustness
  alaMldQueryInterval
  alaMldQueryResponseInterval
  alaMldLastMemberQueryInterval
  alaMldUnsolicitedReportInterval
  alaMldRouterTimeout
  alaMldSourceTimeout
alaMldVlan
  alaMldVlanStatus
  alaMldVlanQuerying
  alaMldVlanProxying

```



```
alaMldVlanSpoofing  
alaMldVlanZapping  
alaMldVlanQuerierForwarding  
alaMldVlanVersion  
alaMldVlanRobustness  
alaMldVlanQueryInterval  
alaMldVlanQueryResponseInterval  
alaMldVlanLastMemberQueryInterval  
alaMldVlanUnsolicitedReportInterval  
alaMldVlanRouterTimeout  
alaMldVlanSourceTimeout
```

show ipv6 multicast port

Display the max-group configuration applicable for all port or vlan instances of a given port or all ports. The current number of groups learnt on a given port or vlan instance will also be displayed in this show output.

show ipv6 multicast port [*slot/port*]

Syntax Definitions

slot / port

The slot number for the module and the physical port number on that module (e.g. 3/1 specifies port 1 on slot 3)).

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

Specify a VLAN ID to display the configuration information for an individual VLAN.

Examples

```
-> show ipv6 multicast port 1/6
Max-group 9 Action replace
```

```
Total 1 Port-Vlan Pairs
  Port   VLAN   Current Mld   Max-group   Action
          Groups
-----+-----+-----+-----+-----
    1/6   15           5           0         none
```

Output fields are described here:

output definitions

Port	The slot and port number of the IP multicast port.
VLAN	The VLAN associated with the IP multicast port.
Current Groups	The current group associated with the IP Current groups.
IGMP	The IGMP associated with the IP multicast port.
Max-group	The maximum group count allowed on the port.
Action	The action to be taken when the group membership limit is exceeded.

Release History

Release 6.3.4; command was introduced.

Related Commands

ip multicast status	Enables or disables IP Multicast Switching and Routing on the specified VLAN, or on the system if no VLAN is specified.
ip multicast version	Sets the default version of the IGMP protocol on the specified VLAN or on the system if no VLAN is specified.
ip multicast querying	Enables or disables IGMP querying on the specified VLAN or on the system if no VLAN is specified.
ip multicast robustness	Sets the IGMP robustness variable on the specified VLAN or on the system if no VLAN is specified.
ip multicast spoofing	Enables or disables IGMP spoofing on the specified VLAN or on the system if no VLAN is specified.
ip multicast zapping	Enables or disables IGMP zapping on the specified VLAN or on the system if no VLAN is specified.
ip multicast proxying	Enables or disables IGMP proxying on the specified VLAN or on the system if no VLAN is specified.
ip multicast query-interval	Sets the IGMP query interval on the specified VLAN or on the system if no VLAN is specified.
ip multicast last-member-query-interval	Sets the IGMP last member query interval value on the specified VLAN or on the system if no VLAN is specified.
ip multicast query-response-interval	Sets the IGMP query response interval on the specified VLAN or on the system if no VLAN is specified.
ip multicast unsolicited-report-interval	Sets the value of the IGMP unsolicited report interval on the specified VLAN or on the system if no VLAN is specified.
ip multicast router-timeout	Configures the expiry time of IP multicast routers on the specified VLAN or on the system if no VLAN is specified.
ip multicast source-timeout	Configures the expiry time of IP multicast sources on the specified VLAN or on the system if no VLAN is specified.

MIB Objects

```
alaIgmpportTable
  alaIgmpportMaxGroupLimit
  alaIgmpportMaxGroupExceedAction
alaIgmpportVlanTable
  alaIgmpportVlanCurrentGroupCount
  alaIgmpportVlanMaxGroupLimit
  alaIgmpportVlanMaxGroupExceedAction
```

show ipv6 multicast forward

Display the IPv6 Multicast Switching and Routing forwarding table entries for the specified IPv6 multicast group address or all entries if no IPv6 multicast address is specified.

show ipv6 multicast forward [*ipv6_address*]

Syntax Definitions

ipv6_address IPv6 multicast group address.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

N/A

Examples

```
-> show ipv6 multicast forward
```

```
Total 1 Forwards
```

Group Address	Host Address	Tunnel Address	Ingress		Egress	
			VLAN	Port	VLAN	Port
ff05::6	4444::2	::	1	2/1	1	2/23

```
-> show ipv6 multicast forward ff05::6
```

Group Address	Host Address	Tunnel Address	Ingress		Egress	
			VLAN	Port	VLAN	Port
ff05::6	4444::2	::	1	2/1	1	2/23

output definitions

Group Address	IPv6 group address of the IPv6 multicast forward.
Host Address	IPv6 host address of the IPv6 multicast forward.
Tunnel Address	IPv6 source tunnel address of the IPv6 multicast forward.
VLAN	VLAN associated with the IPv6 multicast forward.
Port	The slot and port number of the IPv6 multicast forward.

Release History

Release 6.6.1; command was introduced.

Related Commands

ipv6 multicast static-group Creates a static MLD group entry on a specified port on a specified VLAN.

MIB Objects

```
alaMldForwardTable  
  alaMldForwardVlan  
  alaMldForwardIfIndex  
  alaMldForwardGroupAddress  
  alaMldForwardHostAddress  
  alaMldForwardDestAddress  
  alaMldForwardOrigAddress  
  alaMldForwardType  
  alaMldForwardNextVlan  
  alaMldForwardNextIfIndex  
  alaMldForwardNextDestAddress  
  alaMldForwardNextType  
  alaMldForwardTtl
```

show ipv6 multicast neighbor

Displays the MLD neighbor table entries of IPv6 Multicast Switching and Routing.

show ipv6 multicast neighbor

Syntax Definitions

N/A

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

N/A

Examples

```
-> show ipv6 multicast neighbor
```

```
Total 2 Neighbors
Host Address          VLAN  Port  Static  Count  Life
-----+-----+-----+-----+-----+-----
fe80::2a0:ccff:fed3:2853  1    2/1   no      1      6
::                    1    2/13  yes     0      0
```

output definitions

Host Address	The IPv6 address of the IPv6 multicast neighbor.
VLAN	The VLAN associated with the IPv6 multicast neighbor.
Port	The slot and port number of the IPv6 multicast neighbor.
Static	Whether it is a static MLD neighbor or not.
Count	Displays the count of the IPv6 multicast neighbor.
Life	The life time of the IPv6 multicast neighbor.

Release History

Release 6.6.1; command was introduced.

Related Commands

ipv6 multicast max-group Creates a static MLD neighbor entry on a specified port on a specified VLAN.

MIB Objects

```
alaMldNeighborTable
  alaMldNeighborVlan
  alaMldNeighborIfIndex
  alaMldNeighborHostAddress
  alaMldNeighborCount
  alaMldNeighborTimeout
  alaMldNeighborUpTime
alaMldStaticNeighborTable
  alaMldStaticNeighborVlan
  alaMldStaticNeighborIfIndex
  alaMldStaticNeighborRowStatus
```

show ipv6 multicast querier

Displays the MLD querier table entries of IPv6 Multicast Switching and Routing.

show ipv6 multicast querier

Syntax Definitions

N/A

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

N/A

Examples

```
-> show ipv6 multicast querier
```

```
Total 2 Queriers
Host Address          VLAN  Port  Static  Count  Life
-----+-----+-----+-----+-----
fe80::2a0:ccff:fed3:2853 1     2/1  no      1      6
::                   1     2/13 yes      0      0
```

output definitions

Host Address	The IPv6 address of the IPv6 multicast querier.
VLAN	The VLAN associated with the IPv6 multicast querier.
Port	The slot and port number of the IPv6 multicast querier.
Static	Whether it is a static MLD neighbor or not.
Count	Displays the count of the IPv6 multicast querier.
Life	The life time of the IPv6 multicast querier.

Release History

Release 6.6.1; command was introduced

Related Commands

ipv6 multicast static-querier Creates a static MLD querier entry on a specified port on a specified VLAN.

MIB Objects

```
alaMldQuerierTable
  alaMldQuerierVlan
  alaMldQuerierIfIndex
  alaMldQuerierHostAddress
  alaMldQuerierCount
  alaMldQuerierTimeout
  alaMldQuerierUpTime
alaMldStaticQuerierTable
  alaMldStaticQuerierVlan
  alaMldStaticQuerierIfIndex
  alaMldStaticQuerierRowStatus
```

show ipv6 multicast group

Displays the MLD group membership table entries of IPv6 Multicast Switching and Routing for the specified IPv6 multicast group address or all entries if no IPv6 multicast group address is specified.

show ipv6 multicast group [*ip_address*]

Syntax Definitions

ip_address IPv6 multicast group address.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

N/A

Examples

-> show ipv6 multicast group

```
Total 3 Groups
Group Address      Source Address  VLAN  Port  Mode      Static  Count  Life
-----+-----+-----+-----+-----+-----+-----+-----
ff05::5           ::              1     2/1   exclude   no      1     145
ff05::6           3333::1        1     2/1   exclude   no      1     242
ff05::9           ::              1     2/13  exclude   yes     0      0
```

-> show ipv6 multicast group ff05::5

```
Group Address      Source Address  VLAN  Port  Mode      Static  Count  Life
-----+-----+-----+-----+-----+-----+-----+-----
ff05::5           ::              1     2/1   exclude   no      1     145
```

output definitions

Group Address	IPv6 address of the IPv6 multicast group.
Source Address	IPv6 address of the IPv6 multicast source.
VLAN	The VLAN associated with the IPv6 multicast group.
Port	The slot and port number of the IPv6 multicast group.
Mode	MLD source filter mode.
Static	Whether it is a static MLD group or not.
Count	Number of MLD membership requests made.
Life	Life time of the MLD group membership.

Release History

Release 6.6.1; command was introduced

Related Commands

ipv6 multicast static-group Creates a static MLD group entry on a specified port on a specified VLAN.

MIB Objects

```
alaMldMemberTable
  alaMldMemberVlan
  alaMldMemberIfIndex
  alaMldMemberGroupAddress
  alaMldMemberSourceAddress
  alaMldMemberMode
  alaMldMemberCount
  alaMldMemberTimeout
  alaMldMemberUpTime
alaMldStaticMemberTable
  alaMldStaticMemberVlan
  alaMldStaticMemberIfIndex
  alaMldStaticMemberGroupAddress
  alaMldStaticMemberRowStatus
```

show ipv6 multicast source

Displays the IPv6 Multicast Switching and Routing source table entries matching the specified IPv6 multicast group address or all entries if no IPv6 multicast group address is specified.

show ipv6 multicast source [*ip_address*]

Syntax Definitions

ip_address IPv6 multicast group address.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

N/A

Examples

```
-> show ipv6 multicast source
```

```
Total 1 Sources
Group Address  Host Address  Tunnel Address  VLAN  Port
-----+-----+-----+-----+-----
ff05::6       4444::2      ::             1     2/1
```

```
-> show ipv6 multicast source ff05::6
```

```
Total 1 Sources
Group Address  Host Address  Tunnel Address  VLAN  Port
-----+-----+-----+-----+-----
ff05::6       4444::2      ::             1     2/1
```

output definitions

Group Address	IPv6 group address of the IPv6 multicast source.
Host Address	IPv6 host address of the IPv6 multicast source.
Tunnel Address	IPv6 source tunnel address of the IPv6 multicast source.
VLAN	VLAN associated with the IPv6 multicast source.
Port	The slot and port number of the IPv6 multicast source.

Release History

Release 6.6.1; command was introduced.

Related Commands

ipv6 multicast static-group Creates a static MLD group entry on a specified port on a specified VLAN.

MIB Objects

```
alaMldSourceTable  
  alaMldSourceVlan  
  alaMldSourceIfIndex  
  alaMldSourceGroupAddress  
  alaMldSourceHostAddress  
  alaMldSourceDestAddress  
  alaMldSourceOrigAddress  
  alaMldSourceType  
  alaMldSourceUpTime
```

48 IP Multicast VLAN Commands

The IP Multicast VLAN (IPMV) is a distribution Multicast VLAN that flows into the customer ports. These distribution VLANs connect to the nearest multicast router and support multicast traffic only. Multicast traffic flows from the distribution VLAN to the customer VLAN and not vice-versa. Customer-generated multicast traffic should flow via the customer VLANs so that the Multicast router can control distribution of this traffic. IPMV feature is invisible to the customer. The customer VLANs can be tagged or untagged.

IPMV works in both the Enterprise environment as well as the VLAN Stacking environment. The ports are separately classified as VLAN stacking ports or as legacy ports (fixed ports/tagged ports). VLAN Stacking contains only VLAN Stacking ports as its members, while normal data VLAN contains normal legacy ports. This ensures that data flow is confined to a single broadcast domain.

MIB information for the IP Multicast VLAN commands is as follows:

Filename: AlcatelIND1IPMV.MIB
Module: Alcatel-IND1-IPM-VLAN-MIB

Filename: AlcatelIND1VlanStacking.MIB
Module: Alcatel-IND1-VLAN-STACKING-MIB

Filename: AlcatelIND1VlanManager.MIB
Module: Alcatel-IND1-VLAN-MGR-MIB

A summary of the available commands is listed here:

VLAN Manager Commands	vlan ipmvlan
VLAN Stacking Commands	vlan ipmvlan ctag vlan ipmvlan address vlan ipmvlan sender-port vlan ipmvlan receiver-port vlan svlan port translate ipmvlan show vlan ipmvlan c-tag show vlan ipmvlan address show vlan ipmvlan port-config show ipmvlan port-config show vlan ipmvlan port-binding

vlan ipmvlan

Creates an IP Multicast VLAN.

```
vlan ipmvlan ipmvlan-id [{enable | disable} | [{1x1 | flat} stp {enable | disable}]] [name name-string]
[svlan]
```

```
no vlan ipmvlan ipmvlan-id [-ipmvlan-id2]
```

Syntax Definitions

<i>ipmvlan-id</i>	Specifies the IP Multicast VLAN number. The valid range is 2–4094.
enable	Enables IPMVLAN.
disable	Disables IPMVLAN.
1x1	Specifies that the switch is running in the 1x1 Spanning Tree mode.
flat	Specifies that the switch is running in the Flat Spanning Tree mode.
stp enable	Enables Spanning Tree for the specified IPMVLAN.
stp disable	Disables Spanning Tree for the specified IPMVLAN.
<i>name-string</i>	Alphanumeric string up to 32 characters. Use quotes around the string if the name contains multiple words with spaces between them (for example, “Alcatel-Lucent VLAN”).
svlan	Tags the IPMVLAN to be used in VLAN Stacking environment.
<i>ipmvlan-id2</i>	The last IPMVLAN number in a range of IPMVLANs that you want to configure.

Defaults

parameter	default
enable disable	enable

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Use the **no** form of this command to delete a single or multiple IPMVLANs. If the specified IPMVLAN(s) does not exist, an error message will be displayed.
- If *ipmvlan-id* does not exist or if *ipmvlan-id* exists as VLAN Stacking VLAN or Standard VLAN, an error message will be displayed.
- Use the **svlan** parameter to specify that the IPMVLAN should be used in the VLAN Stacking environment.
- The default mode of the IPMVLAN is the Enterprise mode.
- If an IPMVLAN is disabled, all the ports bound to an IPMVLAN will be blocked for that VLAN instance.

- A maximum of 256 IPMVLANs can be configured.

Examples

```
-> vlan ipmvlan 1003 name "multicast vlan"  
-> vlan ipmvlan 1033 name "multicast vlan" svlan  
-> vlan ipmvlan 1333 lxl stp enable name "multicast vlan" svlan  
-> no vlan ipmvlan 1003
```

Release History

Release 6.6.1; command was introduced.

Related Commands

[show vlan ipmvlan](#)

Displays IPMVLAN information for a specific IPMVLAN or all IPMVLANs.

[show vlan](#)

Displays a list of VLANs and their types configured on the switch.

MIB Objects

```
vlanTable  
  vlanNumber  
  vlanDescription  
  vlanTrafficType  
  vlanAdmStatus  
  vlanStatus
```

vlan ipmvlan ctag

Defines the mapping between an IPMVLAN and a customer VLAN ID (c-tag) to be used in the c-tag translation rule.

```
vlan ipmvlan ipmvlan-id ctag {ctag | ctag1-ctag2}
```

```
no vlan ipmvlan ipmvlan-id ctag {ctag | ctag1-ctag2}
```

Syntax Definitions

<i>ipmvlan-id</i>	Specifies the IP Multicast VLAN number for which the c-tag is to be assigned. The valid range is 2–4094.
<i>ctag</i>	The customer VLAN ID number used in the translation rule. The valid range is 1–4094.
<i>ctag1-ctag2</i>	Specifies the range of the customer VLAN ID numbers.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6450

Usage Guidelines

- Use the **no** form of this command to remove the mapping between the IPMVLAN and the customer VLAN ID.
- If the c-tag is already assigned to another IPMVLAN, the configuration request will fail.
- If you assign a range of c-tags to an IPMVLAN, an error message will be displayed for the c-tags already assigned to the IPMVLAN.
- The command will not work in Enterprise Mode.

Examples

```
-> vlan ipmvlan 1003 ctag 10  
-> no vlan ipmvlan 1003 ctag 10
```

Release History

Release 6.6.1; command was introduced.

Related Commands

show vlan ipmvlan c-tag

Displays the customer VLAN IDs associated with a single IP Multicast VLAN or all the configured IP Multicast VLANs.

MIB Objects

```
alaipmvVlanCtagTable  
  alaipmvVlanNumber  
  alaipmvVlanCtag  
  alaipmvVlanCtagRowStatus
```

vlan ipmvlan address

Assigns an IPv4 address, IPv6 address, or a range of addresses to an existing IPMVLAN.

vlan ipmvlan *ipmvlan-id* **address** {*ip_address* | *ipv6_address* | *ipaddress1-ipaddress2* | *ipv6address1-ipv6address2*}

no vlan ipmvlan *ipmvlan-id* **address** {*ip_address* | *ipv6_address* | *ipaddress1-ipaddress2* | *ipv6address1-ipv6address2*}

Syntax Definitions

<i>ipmvlan-id</i>	Specifies the IP Multicast VLAN number to which the IP address will be assigned. The valid range is 2–4094.
<i>ip_address</i>	Specifies a 32-bit IP Multicast address that will be assigned to the IPMVLAN.
<i>ipv6_address</i>	Specifies a 128-bit IPv6 Multicast address that will be assigned to the IPMVLAN.
<i>ipaddress1-ipaddress2</i>	Specifies the IP Multicast address range.
<i>ipv6address1-ipv6address2</i>	Specifies the IPv6 Multicast address range.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Use the **no** form of this command to disassociate the already assigned IP or IPv6 address from the IPMV.
- If the address is already assigned to another IPMVLAN, the configuration request will fail.
- If you assign a range of addresses to an IPMVLAN, an error message will be displayed for the addresses already assigned to the IPMVLAN.
- A maximum of 128 addresses can be specified in a range. If the range is exceeded, configuration for all the addresses in that range will fail.

Examples

```
-> vlan ipmvlan 1003 address 225.0.0.1
-> vlan ipmvlan 1033 address ff08::3
-> no vlan ipmvlan 1003 address 225.0.0.1
```

Release History

Release 6.6.1; command was introduced.

Related Commands

show vlan ipmvlan address Displays the IPv4 and IPv6 addresses assigned to single IP Multicast VLAN or all the configured IP Multicast VLANs.

MIB Objects

```
alaipmvVlanIpAddrTable  
  alaipmvVlanIpAddrVlanNumber  
  alaipmvVlanIpAddrType  
  alaipmvVlanIpAddress  
  alaipmvVlanIpAddrRowStatus
```

vlan ipmvlan sender-port

Configures a port, a range of ports, an aggregate of ports, or a range of aggregates as sender port for the IP Multicast VLAN. This sender port can receive multicast data for the configured multicast groups.

```
vlan ipmvlan ipmvlan-id sender-port {port slot/port[-port2] / linkagg agg_num [-agg_num2]}
```

```
no vlan ipmvlan ipmvlan-id sender-port {port slot/port[-port2] / linkagg agg_num [-agg_num2]}
```

Syntax Definitions

<i>ipmvlan-id</i>	Specifies the IP Multicast VLAN number to which the port will be attached as a sender port. The valid range is 2–4094.
<i>slot/port</i>	The slot number for the module and the physical port number on that module (e.g., 3/1 specifies port 1 on slot 3).
<i>port2</i>	The last port number in a range of ports that you want to configure on the same slot (e.g., 3/1-4 specifies ports 1-4 on slot 3).
<i>agg_num</i>	The link aggregate ID number (0–31) to be assigned as a sender port to the IPMVLAN.
<i>agg_num2</i>	The last link aggregate ID number in a range of aggregates that you want to configure.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Use the **no** form of this command to remove a single port, a range of ports, an aggregate of ports, or a range of aggregates assigned as the sender port(s) for the IPMVLAN.
- Multiple sender ports can be assigned to an IPMVLAN and a port can be configured as a sender port for multiple IPMVLANs.
- In the Enterprise mode, the configuration fails if the port configured as a sender port is not a tagged port, or if the port is an aggregated port (member port of a logical aggregate) or a VLAN Stacking port.
- In the VLAN Stacking mode, the configuration fails if the port configured as a sender port is not a VLAN Stacking port (network port).

Examples

The following command configures the sender port in an Enterprise mode:

```
-> vlan ipmvlan 1003 sender-port port 1/45-50
```

The following commands configure the sender port in the VLAN Stacking mode:

```
-> vlan svlan 1/49 network-port
```

```
-> vlan ipmvlan 1033 sender-port port 1/49
```

The following command removes the port configured as sender port:

```
-> no vlan ipmvlan 1003 sender-port port 1/50
```

Release History

Release 6.6.1; command was introduced.

Related Commands

show vlan ipmvlan port-config Displays the sender and receiver ports for a specific IP Multicast VLAN or all the IP Multicast VLANs.

MIB Objects

```
alaipmvVlanPortTable  
  alaipmvVlanPortIPMvlanNumber  
  alaipmvVlanPortPortNumber  
  alaipmvVlanPortPortType  
  alaipmvVlanPortRowStatus
```

vlan ipmvlan receiver-port

Configures a port, a range of ports, or an aggregate of ports as receiver ports for the IP Multicast VLAN.

```
vlan ipmvlan ipmvlan-id receiver-port {port slot/port[-port2] / linkagg agg_num [-agg_num2]}  
[ receiver vlan-id ]
```

```
no vlan ipmvlan ipmvlan-id receiver-port {port slot/port[-port2] / linkagg agg_num [-agg_num2]}  
[ receiver vlan-id ]
```

Syntax Definitions

<i>ipmvlan-id</i>	Specifies the IP Multicast VLAN number to which the port will be attached as a receiver port. The valid range is 2–4094.
<i>slot/port</i>	The slot number for the module and physical port number on that module (e.g., 3/1 specifies port 1 on slot 3).
<i>port2</i>	Last port number in a range of ports you want to configure on the same slot (e.g., 3/1-4 specifies ports 1-4 on slot 3).
<i>agg_num</i>	The link aggregate ID number to be assigned as a receiver port to the specified IPMVLAN. The valid range is 0–31.
<i>agg_num2</i>	Last link aggregate ID number in a range of aggregates you want to configure.
<i>receiver vlan-id</i>	Specifies the receiver vlan to be associated with the receiver ports.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Use the **no** form of this command to remove the port assigned as a receiver port for the IPMVLAN.
- A single port can be configured as a receiver port for multiple IPMVLANs. An IPMVLAN can contain multiple receiver ports.
- In the Enterprise mode, the configuration fails if the port configured as a receiver port is an aggregated port (member port of a logical aggregate) or a VLAN Stacking port.
- In the VLAN Stacking mode, the configuration fails if the port configured as a receiver port is not a VLAN Stacking port (user port).

Examples

The following commands configure the receiver port in the Enterprise mode:

```
-> vlan ipmvlan 1003 receiver-port port 1/51-60  
-> vlan ipmvlan 1033 receiver-port port 1/62
```


The following commands configure the receiver port in the VLAN Stacking mode:

```
-> vlan svlan port 1/1 user-customer-port default-svlan 10
-> vlan ipmvlan 1002 receiver-port port 1/1
-> no vlan ipmvlan 1002 receiver-port port 1/1
```

Release History

Release 6.6.3; command was introduced.

Related Commands

show vlan ipmvlan port-config Displays the sender and receiver ports for a specific IP Multicast VLAN or all the configured IP Multicast VLANs.

MIB Objects

```
alaipmvReceiverVlanPortTable
  alaipmvReceiverVlanPortIPMVlanNumber
  alaipmvReceiverVlanPortNumber
  alaipmvReceiverVlanPortRcvrVlanNumber
  alaipmvReceiverVlanPortRowStatus
```

vlan svlan port translate ipmvlan

Creates an association between IP Multicast VLAN and customer VLAN (c-tag) on the receiver ports.

```
vlan svlan port {slot/port | agg_num} translate cvlan customer-vlan-id {ipmvlan ipmvlan-id | svlan svlan-id}
```

```
vlan svlan port {slot/port | agg_num} cvlan customer-vlan-id no ipmvlan ipmvlan-id
```

Syntax Definitions

<i>slot/port</i>	Slot number for the module and physical port number on that module (e.g., 3/1 specifies port 1 on slot 3).
<i>agg_num</i>	The link aggregate ID number to associate SVLAN / IPMVLAN to a customer VLAN on the receiver port. The valid range is 0–31.
<i>customer-vlan-id</i>	Customer VLAN ID associated with the SVLAN / IPMVLAN.
<i>ipmvlan-id</i>	Specifies the IP Multicast VLAN number. The valid range is 2–4094.
<i>svlan-id</i>	Specifies the SVLAN number identifying the instance.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6450

Usage Guidelines

- Use the **no** form of this command to delete the association between SVLAN / IPMVLAN and customer VLAN.
- If the SVLAN / IPMVLAN does not exist, the port is not a VLAN Stacking port, the port is a member of an aggregate, or the aggregate does not exist, then an error message will be displayed.

Examples

```
-> vlan svlan port 1/1 user-customer-port default-svlan 10
-> vlan ipmvlan 1002 receiver-port port 1/1
-> vlan svlan port 1/1 translate cvlan 10 ipmvlan 1002
-> vlan svlan port 1/1 cvlan 10 no ipmvlan 1002
```

Release History

Release 6.6.1; command was introduced.

Related Commands

show vlan ipmvlan port-binding

Displays the translation bindings of an IP Multicast VLAN on a port, an aggregate of ports, or all the ports.

MIB Objects

alaVstkSvlanPortTable

- alaVstkSvlanPortNumber
- alaVstkSvlanPortSvlanNumber
- alaVstkSvlanPortCvlanNumber
- alaVstkSvlanPortMode
- alaVstkSvlanPortRowStatus

show vlan ipmvlan c-tag

Displays the customer VLAN IDs associated with a single IP Multicast VLAN or all the configured IP Multicast VLANs.

show vlan ipmvlan [*ipmvlan-id*] **c-tag**

Syntax Definitions

ipmvlan-id Specifies the IP Multicast VLAN number. The valid range is 2–4094.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6450

Usage Guidelines

N/A

Examples

-> show vlan ipmvlan c-tag

```

ipmvlan      ctag
+-----+-----+
  100         10
  100         20
  200         30

```

output definitions

ipmvlan	The numerical IPMVLAN ID.
ctag	The customer VLAN-ID associated with the IPMVLAN.

Release History

Release 6.6.1; command was introduced.

Related Commands

[vlan ipmvlan ctag](#) Defines the mapping between a IPMVLAN and a customer VLAN ID (c-tag) to be used in the c-tag translation rule.

MIB Objects

```

alaipmvVlanCtagTable
  alaipmvVlanNumber
  alaipmvVlanCtag

```

show vlan ipmvlan address

Displays the IPv4 and IPv6 addresses assigned to a single IP Multicast VLAN or all the configured IP Multicast VLANs.

show vlan ipmvlan [*ipmvlan-id*] **address**

Syntax Definitions

ipmvlan-id Specifies the IP Multicast VLAN number. The valid range is 2–4094.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

N/A

Examples

```
-> show vlan ipmvlan 10 address
IpAddress  ipAddressType
-----+-----
224.1.1.1  Ipv4
224.1.1.2  Ipv4
224.1.1.3  Ipv4
ffae::1    Ipv6
ffae::2    Ipv6
ffae::3    Ipv6
```

output definitions

IPv4 Addresses Assigned to IPMVLAN 10	The 32-bit IPv4 address assigned to IPMVLAN 10.
IPv6 Addresses Assigned to IPMVLAN 10	The 128-bit IPv4 address assigned to IPMVLAN 10.

```
-> show vlan ipmvlan address
```

```

 ipmvlan    ipAddress    ipAddressType
+-----+-----+-----+
    100      224.1.1.3      Ipv4
    100      225.1.1.1      Ipv4
    100      ff08::3        Ipv6
    200      224.1.1.2      Ipv4
    200      ff09::1        Ipv6

```

output definitions

ipmvlan	The numerical IPMVLAN ID.
ipAddress	The IPv4 or IPv6 address.
ipAddressType	The IP address type (IPv4 or IPv6).

Release History

Release 6.6.1; command was introduced.

Related Commands

vlan ipmvlan address Assigns an IPv4 address, IPv6 address, or a range of addresses to an existing IPMVLAN.

MIB Objects

```

alaipmvVlanIpAddrTable
  alaipmvVlanIpAddrVlanNumber
  alaipmvVlanIpAddrType
  alaipmvVlanIpAddress

```

show vlan ipmvlan port-config

Displays the sender and receiver ports for a specific IP Multicast VLAN or all the IP Multicast VLANs.

show vlan ipmvlan [*ipmvlan-id*] **port-config**

Syntax Definitions

ipmvlan-id Specifies the IP Multicast VLAN number for which the sender and receiver ports will be displayed. The valid range is 2–4094.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

N/A

Examples

```
-> show vlan ipmvlan port-config
ipmvlan  port      type      RVLAN
-----+-----+-----+-----
100      1/1      sender    -
100      1/2      receiver  10
100      1/3      receiver  20
200      1/10     sender    -
200      1/2      receiver  10
200      1/3      receiver  20
```

```
-> show vlan ipmvlan 101 port-config
port      type      RVLAN
-----+-----+-----
1/11     receiver  10
1/11     receiver  20
1/2      sender    -
```

output definitions

ipmvlan	The numerical IPMVLAN ID.
port	Displays the slot number of the module and the physical port number on that module for which the IPMVLAN is configured.
type	The type (sender or receiver) of the IPMVLAN port.
RVLAN	The receiver VLAN

Release History

Release 6.6.1; command was introduced.

Related Commands

- | | |
|-----------------------------------|--|
| vlan ipmvlan sender-port | Configures a port or an aggregate of ports as the sender port for the IP Multicast VLAN. |
| vlan ipmvlan receiver-port | Configures a port (or a range of ports) or an aggregate of ports as the receiver port for the IP Multicast VLAN. |

MIB Objects

```
alaipmvVlanPortTable  
  alaipmvReceiverVlanPortIPMvlanNumber  
  alaipmvReceiverVlanPortNumber  
  alaipmvReceiverVlanPortRcvrVlanNumber  
  alaipmvReceiverVlanPortRowStatus
```

show ipmvlan port-config

Displays the sender and receiver IPMVLANs for a specific slot or port.

show vlan ipmvlan port-config [*slot/port* / *agg_num*]

Syntax Definitions

slot/port The slot number for the module and physical port number on that module (e.g., 3/1 specifies port 1 on slot 3).

agg_num The Link aggregate ID number. The valid range is 0–31.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

N/A

Examples

```
-> show vlan ipmvlan port-config 2/1
  ipmvlan      type
+-----+-----+
   50          receiver
```

```
-> show vlan ipmvlan port-config 2/2
  ipmvlan      type
+-----+-----+
   51          receiver
  100          receiver
```

```
-> show vlan ipmvlan port-config 1
  ipmvlan      type
+-----+-----+
  101          sender
```

output definitions

ipmvlan	The numerical IPMVLAN ID.
type	The type (sender or receiver) of the IPMVLAN port.

Release History

Release 6.6.1; command was introduced.

Related Commands

- vlan ipmvlan sender-port** Configures a port or an aggregate of ports as the sender port for the IP Multicast VLAN.
- vlan ipmvlan receiver-port** Configures a port (or a range of ports) or an aggregate of ports as the receiver port for the IP Multicast VLAN.

MIB Objects

```
alaipmvVlanPortTable  
  alaipmvVlanPortIPMVlanNumber  
  alaipmvVlanPortPortNumber  
  alaipmvVlanPortPortType
```

show vlan ipmvlan port-binding

Displays the translation bindings of an IP Multicast VLAN on a port, an aggregate of ports, or all the ports.

show vlan ipmvlan port-binding [*slot/port* | *agg_num*]

Syntax Definitions

slot/port The slot number for the module and physical port number on that module (e.g., 3/1 specifies port 1 on slot 3).

agg_num The Link aggregate ID number. The valid range is 0–31.

Defaults

By default all the IPMVLANs will be displayed.

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

Use the *slot/port* or *agg_num* parameter with this command to view the IPMVLANs associated with a specific port or an aggregate of ports.

Examples

```
-> show vlan ipmvlan port-binding
  port          ipmvlan      cvlan        type
+-----+-----+-----+-----+
  2/2           100          10           receiver
  2/2           100          11           receiver
  0/2           51           151          receiver
```

```
-> show vlan ipmvlan port-binding 2/2
  ipmvlan      cvlan        type
+-----+-----+-----+
  100          10           receiver
  100          11           receiver
```

```
-> show vlan ipmvlan port-binding 2
  ipmvlan      cvlan        type
+-----+-----+-----+
  51           151          receiver
```

output definitions

port	The slot number/physical port number on that module.
ipmvlan	The numerical IPMVLAN ID.

output definitions (continued)

cvlan	The numerical CVLAN ID associated with the IPMV.
type	The type (sender or receiver) of the IPMVLAN port.

Release History

Release 6.6.1; command was introduced.

Related Commands

vlan svlan port translate ipmvlan Creates an association between IP Multicast VLAN and customer VLAN (c-tag) on the receiver ports.

MIB Objects

alaipmvVlanPortTable
 alaipmvVlanPortIPMvlanNumber
 alaipmvVlanPortPortNumber
 alaipmvVlanPortPortType

49 AAA Commands

This chapter includes descriptions for authentication, authorization, and accounting (AAA) commands. The commands are used for configuring the type of authentication as well as the AAA servers and the local user database on the switch.

- **Authenticated Switch Access.** Authenticates users into the switch to manage the switch. User information is stored on a RADIUS, TACACS+, LDAP, or ACE/Server; or information can be stored locally in the switch user database.
- **Local user database.** User information can be configured for Authenticated Switch Access. For functional management access, users can be allowed to access specific command families or domains. Alternately, users can be configured with a profile that specifies access to particular ports or VLANs.

MIB information for the AAA commands is as follows:

Filename: alcatelIND1AAA.mib
Module: ALCATEL-IND1-AAA-MIB

A summary of the available commands is listed here:

Authentication servers	aaa radius-server aaa test-radius-server aaa tacacs+-server aaa tacacs command-authorization aaa tacacs server-wait-time aaa ldap-server aaa ace-server clear aaa classification-rule mac-address
Authenticated Switch Access	aaa authentication aaa authentication default aaa accounting mac aaa accounting session aaa accounting command show aaa server show aaa authentication show aaa authentication 802.1x show aaa accounting mac show aaa accounting
Authenticated Switch Access - Enhanced Mode	aaa switch-access mode aaa switch-access ip-lockout-threshold aaa switch-access banned-ip release aaa switch-access priv-mask aaa switch-access management-stations aaa switch-access management-stations ip-address show aaa switch-access mode show aaa switch-access ip-lockout-threshold show aaa switch-access banned-ip show aaa switch-access priv-mask show aaa switch-access management-stations
802.1X Port-Based Network Access Control	aaa authentication 802.1x aaa authentication mac aaa accounting 802.1x show aaa authentication mac show aaa accounting 802.1x
Local User Database and Partitioned Management	user password user password-size min user password-expiration show user show aaa classification-rule

Password Policy	<code>user password-size min</code> <code>user password-expiration</code> <code>user password-policy cannot-contain-username</code> <code>user password-policy min-uppercase</code> <code>user password-policy min-lowercase</code> <code>user password-policy min-digit</code> <code>user password-policy min-nonalpha</code> <code>user password-history</code> <code>user password-size min</code> <code>user password-min-age</code> <code>user password-expiration</code> <code>show user</code> <code>show user password-size</code> <code>show user password-expiration</code> <code>show user password-policy</code>
User Lockout Settings	<code>user lockout-window</code> <code>user lockout-threshold</code> <code>user lockout-duration</code> <code>user lockout unlock</code> <code>show user</code> <code>show user lockout-setting</code> <code>debug command-info</code> <code>debug end-user profile</code>
Administrative User Logout	<code>aaa admin-logout</code>
End-user Profiles	<code>user</code> <code>aaa admin-logout</code> <code>end-user profile</code> <code>end-user profile port-list</code> <code>end-user profile vlan-range</code> <code>show end-user profile</code>
User Network Profiles	<code>aaa user-network-profile</code> <code>aaa classification-rule mac-address</code> <code>aaa classification-rule mac-address-range</code> <code>aaa classification-rule ip-address</code> <code>show aaa user-network-profile</code> <code>show aaa classification-rule</code>
Host Integrity Check	<code>aaa byod white-list</code> <code>aaa hic allowed-name</code> <code>aaa hic</code> <code>aaa hic web-agent-url</code> <code>aaa hic custom-proxy-port</code> <code>aaa hic redundancy background-poll-interval</code> <code>aaa hic server-failure mode</code> <code>aaa hic server-failure policy user-network-profile change</code> <code>show aaa hic</code> <code>show aaa hic host</code> <code>show aaa hic server</code> <code>show aaa hic allowed</code> <code>show aaa hic server-failure policy</code>

User Authentication Status	<code>show aaa-device all-users</code> <code>show aaa-device supplicant-users</code> <code>show aaa-device non-supplicant-users</code> <code>show aaa-device captive-portal-users</code> <code>show aaa priv hexa</code>
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BYOD commands	<code>aaa redirect-server</code> <code>aaa redirect url</code> <code>aaa port-bounce</code> <code>aaa redirect pause-timer</code> <code>aaa user-network-profile</code> <code>aaa byod white-list</code> <code>aaa byod white-list no</code> <code>show aaa redirect-server</code> <code>show aaa redirect url-list</code> <code>show aaa port-bounce status</code> <code>show aaa redirect pause-timer</code> <code>show byod host</code> <code>show byod status</code> <code>show byod status</code> <code>show aaa user-network-profile</code>
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MDNS Relay Commands	<code>mdns-relay</code> <code>mdns-relay tunnel</code> <code>show mdns-relay config</code>
----------------------------	--

aaa radius-server

Configures or modifies a RADIUS server for Authenticated Switch Access or 802.1X port access control. This command is used to configure NAS server configurations for the RADIUS server, enable or disable unique session ID for RADIUS accounting.

```
aaa radius-server server host {hostname | ip_address} [hostname2 | ip_address2] key secret [retransmit
retries] [timeout seconds] [auth-port auth_port] [acct-port acct_port] [mac-address-format-status
{enable | disable} mac-address-format {uppercase | lowercase}] [nas-port {default | ifindex} |
nas-port-id {enable | disable}] nas-port-type [xdsl | x75x25 | x25 | wireless-other | wireless-ieee-802-
11 | virtual | sync | sdsl-symmetric-dsl | piafs | isdn-sync | isdn-async-v120 | isdn-async-v110 | idsl |
hdlc-clear-channel | g3-fax | Ethernet | cable | async | adsl-dmt | adsl-cap-asymmetric-dsl]
[unique-acct-session-id {enable | disable}]
```

```
no aaa radius server server
```

Syntax Definitions

<i>server</i>	The name of the RADIUS server.
<i>hostname</i>	The host name (DNS name) of the primary RADIUS server. The host name or IP address is required when creating a server.
<i>ip_address</i>	The IP address of the primary RADIUS server. An IP address or host name is required when creating a server.
<i>hostname2</i>	The host name (DNS name) of an optional backup RADIUS server.
<i>ip_address2</i>	The IP address of an optional backup RADIUS server.
<i>secret</i>	The shared secret known to the switch and the server, but which is not sent over the network. Can be any text or hexadecimal string but MUST match the secret configured on the server. The secret is case sensitive.
<i>retries</i>	The number of retries the switch makes to authenticate a user before trying the backup server (<i>hostname2</i> or <i>ip_address2</i>).
<i>seconds</i>	The timeout for server replies to authentication requests.
<i>auth_port</i>	The UDP destination port for authentication requests.
<i>acct_port</i>	The UDP destination port for accounting requests.
mac-address-format-status	enable : Enables case-sensitive MAC address authentication. disable : Disables case-sensitive MAC address authentication.
uppercase	Specifies that the MAC address format and other IDs sent to RADIUS server will be in uppercase.
lowercase	Specifies that the MAC address format and other IDs sent to RADIUS server will be in lowercase.
nas-port	Physical port of the NAS server. default : When NAS port is configured as default , access request/accounting request packet will be sent with NAS port value as 77. ifindex : When NAS port is configured as ifindex , authenticating port will be converted to ifIndex (slot*1000+port) and will be sent using the NAS port attribute.

nas-port-id	The interface identifier of the NAS port authenticating the user. enable : Enable NAS port-ID attribute. When enabled, authenticating port will be converted to ifIndex (slot*1000+port) and will be sent using NAS port ID attribute. disable : Disable NAS port-ID attribute.
nas-port-type	Type of the physical port of the NAS server that is authenticating the user. The various options available are x75, x25, xdsl, wireless-other, wireless-ieee-802-11, virtual, sync, sdsl-symmetric-dsl, piafs, isdn-sync, isdn-async-v120, isdn-async-v110, idsl, hdlc-clear-channel, g3-fax, Ethernet, cable, async, adsl-dmt, adsl-cap-asymmetric-dsl .
unique-acct-session-id	enable : Enable unique session ID for RADIUS accounting. disable : Disable unique session ID for RADIUS accounting.

Defaults

parameter	default
<i>retries</i>	3
<i>seconds</i>	2
<i>auth_port</i>	1812
<i>acct_port</i>	1813
mac-address-format-status enable disable	disable
mac-address-format uppercase lowercase	uppercase
nas-port	default
nas-port-id	disable
nas-port-type	Ethernet
unique-acct-session-id	disable

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Use the **no** form of the command to remove a RADIUS server from the configuration. Only one server can be deleted at a time.
- A host name (or IP address) and a secret key are required when configuring a server.
- The primary server and the backup server must both be RADIUS servers.
- The case sensitive **mac-address-format** can be applied only when **mac-address-format-status** is enabled.
- The MAC address is sent as part of Radius packets, the following data is sent as lowercase when MAC address format is selected as lowercase using the **mac-address-format lowercase** keywords:
 - user-name and password, in Access-Request and Accounting-Request
 - Calling-Station-ID in Access-Request packet.

- When **mac-address-format-status** is not applied or disabled, by default the related RADIUS packet data is sent in uppercase format.
- NAS port configuration is supported for supplicant or non-supplicant clients, and ASA users (management sessions) like FTP, telnet, HTTP, console, HTTPS, and SSH.
- Authentication and accounting server must be configured as RADIUS for 802.1x supplicant clients, non-supplicant clients, and ASA users prior to NAS port configuration.
- NAS port and NAS port ID configurations are mutually exclusive. Either NAS port or NAS port ID can be configured at a time for the RADIUS server. For more information on the configuration behavior, refer to “Managing Authentication Servers” chapter in *OmniSwitch AOS Release 6250/6350/6450 Network Configuration Guide*.
- **show configuration snapshot aaa** command displays the value of NAS port, NAS port ID, and NAS port type configured for the RADIUS server. However, NAS port configuration will not be displayed when these attributes are configured with default values.
- RADIUS Accounting Session ID feature maintains a unique session ID in RADIUS accounting for 802.1x supplicant or non-supplicant clients, captive portal users, and management sessions like FTP, telnet, HTTP, console, HTTPS, and SSH.
- Authentication server and accounting server must be configured as RADIUS server for 802.1x supplicant clients, 802.1x non-supplicant clients, captive portal users, and management users prior to unique session ID configuration.
- Use **show configuration snapshot aaa** and **show aaa server** commands to view the unique session ID configuration.
- RADIUS server status can be checked periodically by enabling server polling using the **802.1x server-polling** command. **show aaa server** command displays the reachability status of all the configured RADIUS servers configured on the switch.

Examples

```
-> aaa radius-server "Server1" host 10.10.2.1 key wwtoc timeout 5
-> no aaa radius-server "Server1"

-> aaa radius-server "Server1" mac-address-format-status enable mac-address-format
lowercase

-> aaa radius-server "Server1" nas-port-id enable nas-port-type async

-> aaa radius-server "Server1" unique-acct-session-id enable
-> aaa radius-server "Server1" unique-acct-session-id disable
```

Release History

Release 6.6.1; command was introduced.

Release 6.6.4; **mac-address-format-status**, **mac-address-format**, **nas-port**, **nas-port-id**, **nas-port-type**, **unique-acct-session-id** parameters added.

Related Commands

aaa classification-rule mac-address	Displays information about AAA servers.
aaa authentication	Specifies the AAA servers to be used for Authenticated Switch Access.
aaa authentication 802.1x	Enables/disables the switch for 802.1X authentication. Specifies the RADIUS authentication server used for 802.1X authentication.
aaa authentication mac	Enables/disables the switch for MAC authentication. Specifies the RADIUS authentication server used for MAC authentication.
aaa accounting 802.1x	Enables/disables accounting for 802.1X authentication sessions.
aaa accounting mac	Enables/disables accounting for 802.1X non-suppliant (MAC-based) authentication sessions.
aaa accounting session	Configures an accounting server or servers for authenticated switch sessions.
show aaa server	Displays information about a particular AAA server or AAA servers.

MIB Objects

```
aaaServerTable
  aaasProtocol
  aaasHostName
  aaasIpAddress
  aaasHostName2
  aaasIpAddress2
  aaasRadKey
  aaasRetries
  aaasTimeout
  aaasRadMacAddrCaseStatus
  aaasRadMacAddrFormat
  aaasRadAuthPort
  aaasRadAcctPort
  aaasRadUniqueAcctSessionId
```

aaa test-radius-server

Starts the authentication or accounting test for the given username and password. Radius test tool allows you to test the radius server reach ability from the switch and validate the authentication/accounting port of the Radius server.

aaa test-radius-server *server-name* **type** {**authentication user** *user-name* **password** *password* [**method** {**MD5** | **PAP**}] | **accounting user** *user-name*}

Syntax Definitions

<i>server-name</i>	Server name for which test has been configured.
authentication accounting	The type of test to be configured.
<i>user-name</i>	User name for which test has been configured.
<i>password</i>	Password for the given user name.
MD5 PAP	Password encryption method for the test.

Defaults

By default, the authentication method is MD5.

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- RADIUS server configurations like RADIUS server name, acct-port, auth-port, secret key, Retransmit Count, Timeout should be done on the AOS switch before starting the test tool.
- If the server name for the given test is not configured, the command displays an error as “Unknown server”.
- The maximum length of the user name should not exceed 63 characters.
- The length of password should not exceed 128 characters.

Examples

```
-> aaa radius-server abc host "172.21.160.26" auth-port 1812 acct-port 1813 key
"1234"
```

```
-> aaa test-radius-server abc type authentication user admin password switch method
MD5 Testing Radius Server <172.21.160.26/abc>
```

```
-> aaa test-radius-server abc type authentication user admin password switch method
pap Testing Radius Server <172.21.160.26/abc>
```

```
-> aaa test-radius-server abc type accounting user admin
Testing Radius Server <172.21.160.26/abc>
```

```
-> aaa test-radius-server abc type authentication user admin password switch
Testing Radius Server <172.21.160.25/abc>
```

```
-> aaa test-radius-server abc type authentication user admin password switch
Testing Radius Server <172.21.160.25/abc>
```

Release History

Release 6.6.3; command was introduced.

Related Commands

aaa radius-server	Configures or modifies a RADIUS server for Authenticated Switch Access or 802.1X port access control.
aaa authentication	Specifies the AAA servers to be used for Authenticated Switch Access.
show aaa server	Displays information about a particular AAA server or AAA servers.

MIB Objects

N/A

aaa tacacs+ -server

Configures or modifies a TACACS+ server for Authenticated Switch Access.

```
aaa tacacs+-server server [host {hostname | ip_address} {hostname2 | ip_address2}] [key secret]
[timeout seconds] [port port]
```

```
no aaa tacacs+-server server
```

Syntax Definitions

<i>server</i>	The name of the TACACS+ server.
<i>hostname</i>	The host name (DNS name) of the primary TACACS+ server. The host name or IP address is required when creating a server.
<i>ip_address</i>	The IP address of the primary TACACS+ server. An IP address or host name is required when creating a server.
<i>hostname2</i>	The host name (DNS name) of an optional backup TACACS+ server.
<i>ip_address2</i>	The IP address of an optional backup TACACS+ server.
<i>secret</i>	The shared secret known to the switch and the server, but which is not sent over the network. Can be any text or hexadecimal string but MUST match the secret configured on the server. The secret is case sensitive. required when creating a server.
<i>seconds</i>	The timeout for server replies to authentication requests.
<i>port</i>	The port number for the primary TACACS+ server.

Defaults

parameter	default
<i>seconds</i>	2
<i>port</i>	49

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Use the **no** form of the command to remove a TACACS+ server from the configuration. Only one server may be deleted at a time.
- A host name (or IP address) and a secret are required when configuring a server.
- The server and the backup server must both be TACACS+ servers.

Examples

```
-> aaa tacacs+-server tpub host 10.10.2.2 key otna timeout 10
-> no aaa tacacs+-server tpub
```

Release History

Release 6.6.1; command was introduced.

Related Commands

aaa classification-rule mac-address	Displays information about AAA servers.
aaa authentication	Specifies the AAA servers to be used for Authenticated Switch Access.
aaa accounting mac	Specifies the accounting servers to be used for Authenticated Switch Access.

MIB Objects

```
aaaServerTable
  aaasName
  aaasProtocol
  aaasHostName
  aaasIpAddress
  aaasHostName2
  aaasIpAddress2
  aaasTacacsKey
  aaasTimeout
  aaasTacacsPort
```

aaa tacacs command-authorization

Configures a command based authorization in TACACS+ server, for authenticated switch.

aaa tacacs command-authorization {enable | disable}

Syntax Definitions

enable	Enable command based authorization in TACACS+ server
disable	Disable command based authorization. This enables partition-management family based authorization in TACACS+ server.

Defaults

parameter	default
enable disable	disable

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- This command is applicable only for CLI commands.
- If this command is enabled, then in the TACACS+ server the authorization of every command executed on the switch is command based. CLI commands executed on the switch are sent for authorization to the TACACS+ server along with mode of operation (read or read-write). After authorization, the server will send the response message to the TACACS+ client.
- If the command is disabled, then in the TACACS+ server the authorization is partition-management family based.
- Use **show configuration snapshot aaa** command to view the configuration details of this command.

Examples

```
-> aaa tacacs command-authorization enable
-> aaa tacacs command-authorization disable
```

Release History

Release 6.6.5; command was introduced.

Related Commands

show aaa server

Displays information about a particular AAA server or AAA servers.

MIB Objects

aaaTacacsServerCmdAuthorization

aaa tacacs server-wait-time

Configures the wait time of TACACS+ server during command authorization process.

aaa tacacs server-wait-time *num*

Syntax Definitions

num The wait time of the TACACS+ server. The range is 0 to 200 seconds.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

N/A

Examples

```
-> aaa tacacs server-wait-time 4
```

Release History

Release 6.6.5; command was introduced.

Related Commands

[show aaa server](#) Displays information about a particular AAA server or AAA servers.

MIB Objects

aaaTacacsServerWaitTime

aaa ldap-server

Configures or modifies an LDAP server for Authenticated Switch Access.

```
aaa ldap-server server_name [host {hostname | ip_address} [{hostname2 | ip_address2}]] [dn dn_name]
[password super_password] [base search_base] [retransmit retries] [timeout seconds] [ssl | no ssl]
[port port]
```

```
no aaa ldap-server server-name
```

Syntax Definitions

<i>server_name</i>	The name of the LDAP server.
<i>hostname</i>	The host name (DNS) of the primary LDAP server. The host name or IP address is required when creating a server.
<i>ip_address</i>	The IP address of the primary LDAP server.
<i>hostname2</i>	The host name (DNS) of the backup LDAP server.
<i>ip_address2</i>	The IP address of a backup host for the LDAP server.
<i>dn_name</i>	The super-user or administrative distinguished name in the format recognized by the LDAP-enabled directory servers. For example: cn=manager . Must be different from the <i>search-base</i> name and must be in a format supported by the server. Required when creating a server.
<i>super_password</i>	The super-user password recognized by the LDAP-enabled directory servers. The password can be clear text or hexadecimal format. Required when creating a server.
<i>search_base</i>	The search base recognized by the LDAP-enabled directory servers. For example, o=company or c=country . Must be different from the <i>dn_name</i> . Required when creating a server.
<i>retries</i>	The number of retries the switch makes to the LDAP server to authenticate a user before trying the backup server.
<i>seconds</i>	The timeout in seconds for server replies to authentication requests from the switch.
ssl	Enables a secure switch layer (SSL) between the switch and the LDAP server.
no ssl	Disables a secure switch layer (SSL) between the switch and the LDAP server.
<i>port</i>	The port number for the primary LDAP server and any backup server. Must match the port number configured on the server.

Defaults

Defaults for optional parameters are as follows:

parameter	default
<i>port</i>	389 (SSL disabled) 636 (SSL enabled)
<i>retries</i>	3
<i>seconds</i>	2
ssl no ssl	no ssl

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- The *dn_name* must be different from the *search_base* name.
- Use the **no** form of the command to remove an LDAP server from the configuration. Only one server may be removed at a time.
- The port number configured on the switch must match the port number configured for the server.

Examples

```
-> aaa ldap-server topanga5 host 10.10.3.4 dn cn=manager password tpub base c=us
retransmit 4
-> no aaa ldap-server topanga5
```

Release History

Release 6.6.1; command was introduced.

Related Commands

aaa classification-rule mac-address	Displays information about AAA servers.
aaa authentication	Specifies the AAA servers to be used for authenticated switch access.
aaa accounting mac	Specifies the accounting servers to be used for Authenticated Switch Access.

MIB Objects

aaaServerTable

aaasProtocol

aaasHostName

aaasIpAddress

aaasHostName2

aaasIpAddress2

aaasLdapPort

aaasLdapDn

aaasLdapPasswd

aaasLdapSearchBase

aaasLdapServType

aaasRetries

aaasTimeout

aaasLdapEnableSsl

aaa ace-server clear

Clears the ACE secret on the switch. An ACE/Server generates “secrets” that it sends to clients for authentication. The secret cannot be configured on the switch but can be cleared on the switch.

aaa ace-server clear

Syntax Definitions

N/A

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- If the server and the switch gets out of sync, clear the ACE secret on the switch. See ACE/Server documentation in RSA Security for more information.
- If you clear the secret on the switch, it must also be cleared on the server.

Examples

```
-> aaa ace-server clear
```

Release History

Release 6.6.1; command was introduced.

Related Commands

- | | |
|---|---|
| aaa authentication | Specifies servers for Authenticated Switch Access. |
| aaa classification-rule mac-address | Displays information about AAA servers configured for the switch. |

MIB Objects

```
aaaServerTable  
  aaasAceClear
```

aaa authentication

Configures the interface for Authenticated Switch Access and specifies the server(s) to be used. This type of authentication gives users access to manage the switch.

aaa authentication {console | telnet | ftp | http | snmp | ssh | default} *server1* [*server2...*] [local]

no aaa authentication {console | telnet | ftp | http | snmp | ssh | default}

Syntax Definitions

console	Configures Authenticated Switch Access through the console port.
telnet	Configures Authenticated Switch Access for any port used for Telnet.
ftp	Configures Authenticated Switch Access for any port used for FTP.
http	Configures Authenticated Switch Access for any port used for Web-based management.
snmp	Configures Authenticated Switch Access for any port used for SNMP.
ssh	Configures Authenticated Switch Access for any port used for Secure Shell.
default	Configures Authenticated Switch Access for any port using any service (telnet , ftp , etc.). SNMP access is enabled only if an LDAP or local server is specified with the command.
<i>server1</i>	The name of the authentication server used for Authenticated Switch Access. At least one server is required, the server can be a RADIUS, TACACS+, LDAP, ACE/Server, or the local user database. RADIUS, TACACS+, and LDAP server names are set up through the aaa radius-server , aaa tacacs+-server , and aaa ldap-server commands. If an ACE/Server will be used, specify ace for the server name. (Only one ACE/Server may be specified.)
<i>server2...</i>	The names of backup servers for Authenticated Switch Access. Up to 4 backups may be specified (including local). These backups are only used if <i>server1</i> becomes unavailable. They are polled in the order they are listed in this command. The first available server becomes the authentication server.
local	Specifies that the local user database will be a backup for the authentication servers. If you want to use the local user database as the only authentication server, specify local for <i>server1</i> .

Defaults

- At switch startup, Authenticated Switch Access is available through console port via the local database. Authentication for other management interfaces (Telnet, FTP, etc.) is disabled.
- The default user on the switch is **admin**, and **switch** is the password.

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- The server type may be RADIUS, TACACS+, LDAP, ACE/Server, or the local user database. Up to 5 servers may be configured for an interface type; at least one is required. Each server name should be separated by a space.
- The switch uses *only the first available server* in the list to check for user information. For example, if *server1* is not available, the switch will poll *server2*. If user information is not found on the first available server, the authentication request will fail.
- RADIUS, TACACS+, and LDAP servers may each have an additional backup specified through the [aaa radius-server](#), [aaa tacacs+-server](#), and [aaa ldap-server](#) commands.
- If the local switch database will be used as the only authentication server, specify **local** for *server1*. If **local** is specified as a backup server, it should be entered last in the list of servers. The local user database is always available if the switch is up.
- Only LDAP or the local database may be used for authenticated SNMP management.
- An ACE/Server cannot be specified for SNMP access.
- If Secure Shell (**ssh**) is enabled, Telnet and FTP should be disabled.

Examples

```
-> aaa authentication telnet pubs1
-> no aaa authentication telnet
-> aaa authentication default pubs2 pubs3
```

Release History

Release 6.6.1; command was introduced.

Related Commands

aaa radius-server	Configures or modifies a RADIUS server for Authenticated Switch Access.
aaa ldap-server	Configures or modifies an LDAP server for Authenticated Switch Access.
user	Configures user information for the local database on the switch.
aaa classification-rule mac-address	Displays information about servers configured for Authenticated Switch Access.

MIB Objects

```
aaaAuthSTable
  aaatsInterface
  aaasName
  aaatsName1
  aaatsName2
  aaatsName3
  aaatsName4
  aaatsName5
```

aaa authentication default

Sets the authenticated switch access type to the default server setting.

aaa authentication {console | telnet | ftp | http | snmp | ssh} default

Syntax Definitions

console	Configures the default Authenticated Switch Access server setting for the console port.
telnet	Configures the default Authenticated Switch Access server setting for Telnet.
ftp	Configures the default Authenticated Switch Access server setting for FTP.
http	Configures the default Authenticated Switch Access server setting for Web-based management.
snmp	Configures the default Authenticated Switch Access server setting for any port used for SNMP.
ssh	Configures the default Authenticated Switch Access server setting for any port used for Secure Shell.

Defaults

By default, the default Authenticated Switch Access server setting does not include any servers.

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

Use the **aaa authentication** command to set the default servers.

Examples

```
-> aaa authentication telnet default
-> aaa authentication default default
```

Release History

Release 6.6.1; command was introduced.

Related Commands

aaa radius-server	Configures or modifies a RADIUS server for Authenticated Switch Access.
aaa tacacs+-server	Configures or modifies an LDAP server for Authenticated Switch Access.
user	Configures user information for the local database on the switch.
aaa classification-rule mac-address	Displays information about servers configured for Authenticated Switch Access.

MIB Objects

```
aaaAuthSatable  
  aaatsName1  
  aaatsName2  
  aaatsName3  
  aaatsName4  
  aaatsName5
```

aaa authentication 802.1x

Enables/disables the switch for 802.1X authentication.

aaa authentication 802.1x *server1* [*server2*] [*server3*] [*server4*] [*server5*]

no aaa authentication 802.1x

Syntax Definitions

<i>server1</i>	The name of the RADIUS authentication server used for 802.1X authentication. (<i>Note that only RADIUS servers are supported for 802.1X authentication.</i>) At least one server is required. RADIUS server names are set up through the aaa radius-server command.
<i>server2...server5</i>	The names of backup servers for authenticating 802.1X users. Up to 4 backups may be specified; include a space between each server name. These backups are only used if <i>server1</i> becomes unavailable. They are polled in the order they are listed in this command. The first available server becomes the authentication server.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Use the **no** form of this command to disable 802.1x authentication for the switch.
- Use the [vlan port 802.1x](#) command to enable or disable ports for 802.1X. Use the [802.1x](#) command to configure authentication parameters for a dedicated 802.1X port.
- Up to 5 RADIUS servers (total) may be specified. At least one server is required. Each server name should be separated by a space.
- The switch uses *only the first available server* in the list to check for user information. For example, if *server1* is not available, the switch will poll *server2*. If user information is not found on the first available server, the authentication request will fail.
- RADIUS servers may each have an additional backup specified through the [aaa radius-server](#) command.
- Before any device is authenticated through an 802.1X port, the port will only process 802.1X frames (EAPoL frames) from an unknown source.
- Note that multiple supplicants can be authenticated on a given 802.1X port. Each supplicant MAC address received on the port is authenticated and learned separately. Only those that authenticate successfully are allowed on the port; those that fail authentication are blocked on the 802.1X port.

Examples

```
-> aaa authentication 802.1x rad1 rad2
-> no aaa authentication 802.1x
```

Release History

Release 6.6.1; command was introduced.

Related Commands

802.1x	Configures 802.1X parameters on a particular slot/port. Typically used for port access control on a dedicated 802.1X port.
aaa radius-server	Configures or modifies a RADIUS server for Authenticated Switch Access or 802.1X port access control.
vlan port 802.1x	Enables or disables 802.1X port-based access control on a mobile port.
show aaa authentication 802.1x	Displays information about the global 802.1X configuration on the switch.

MIB Objects

AaaAuth8021XTable

```
aaatxName1
aaatxName2
aaatxName3
aaatxName4
aaatxName5
aaatxOpen
```

aaa authentication mac

Enables/Disables the switch for MAC authentication. This type of authentication is available in addition to 802.1x authentication and is designed to handle devices that do not support an 802.1x authentication method (non-suplicants).

aaa authentication MAC *server1* [*server2*] [*server3*] [*server4*] [*server5*]

no aaa authentication MAC

Syntax Definitions

<i>server1</i>	The name of the RADIUS authentication server used for MAC authentication. (Note that only RADIUS servers are supported for MAC authentication.) At least one server is required. RADIUS server names are set up through the aaa radius-server command.
<i>server2...server5</i>	The names of backup servers used for MAC authentication. Up to 4 backups may be specified; include a space between each server name. These backups are only used if <i>server1</i> becomes unavailable. They are polled in the order they are listed in this command. The first available server becomes the authentication server.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Up to 5 RADIUS servers (total) may be specified. At least one server is required. Each server name should be separated by a space.
- Use the **no** form of this command to disable MAC authentication for the switch.
- The switch uses **only the first available server** in the list to check for user information. For example, if *server1* is not available, the switch will poll *server2*. If user information is not found on the first available server, the authentication request will fail.
- RADIUS servers may each have an additional backup specified through the [aaa radius-server](#) command.
- MAC authentication verifies the source MAC address of a non-suppliant device via a remote RADIUS server. Similar to 802.1x authentication, this method sends RADIUS frames to the server with the MAC address embedded in the username and password attributes.
- Note that the same RADIUS servers can be used for 802.1x (suppliant) and MAC (non-suppliant) authentication. Using different servers for each type of authentication is allowed but not required.
- Use the [vlan port 802.1x](#) command to enable or disable ports for 802.1X. Use the [802.1x non-suppliant policy authentication](#) command to configure a MAC authentication policy for a dedicated 802.1X port.

- Multiple supplicants and non-supplicants can be authenticated on a given 802.1X port. Each device MAC address received on the port is authenticated and learned separately. If no MAC authentication policies exist on the port, non-supplicants are blocked.

Examples

```
-> aaa authentication mac rad1 rad2
-> no aaa authentication mac
```

Release History

Release 6.6.1; command was introduced.

Related Commands

802.1x	Configures 802.1X parameters on a particular slot/port. Typically used for port access control on a dedicated 802.1X port.
802.1x non-supplicant policy authentication	Configures MAC authentication device classification policies for non-supplicants.
aaa radius-server	Configures or modifies a RADIUS server for Authenticated Switch Access or 802.1X port access control.
vlan port 802.1x	Enables or disables 802.1X port-based access control on a mobile port.
show aaa authentication mac	Displays information about the global 802.1X configuration on the switch.

MIB Objects

AaaAuthMACTable

```
aaaMacSrvrName1
aaaMacSrvrName2
aaaMacSrvrName3
aaaMacSrvrName4
aaaMacSrvrName5
```

aaa accounting 802.1x

Enables/disables accounting for 802.1X authentication sessions. Accounting servers keep track of network resources (time, packets, bytes, etc.) and user activity.

aaa accounting 802.1x *server1* [*server2...*] [**local**]

no aaa accounting 802.1x

Syntax Definitions

<i>server1</i>	The name of the RADIUS, TACACS+, or LDAP server used for 802.1X accounting. At least one server is required. RADIUS, TACACS+, and LDAP server names are set up through the aaa radius-server , aaa tacacs+-server , and aaa ldap-server commands.
<i>server2...</i>	The names of backup servers for 802.1X accounting. Up to 4 backups may be specified (including local); include a space between each server name. These backups are only used if <i>server1</i> becomes unavailable. They are polled in the order they are listed in this command. The first available server becomes the accounting server.
local	Local accounting is done through the Switch Logging feature in the switch. See Chapter 51, “Switch Logging Commands,” for information about Switch Logging commands.

Defaults

Accounting is disabled by default.

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Use the **no** form of the command to disable accounting for 802.1X ports.
- Up to 5 accounting servers (total) may be specified. At least one server is required. Each server name should be separated by a space.
- The servers may be RADIUS, TACACS+, or LDAP servers, and/or the local Switch Logging facility.
- If **local** is specified as *server1*, the switch will **only** use the local Switching Logging facility for accounting.
- If **local** is specified as a backup, it should be entered last in the list of servers. The Switch Logging facility is always available if the switch is up.
- The switch uses **only the first available server** in the list for accounting. For example, if *server1* is not available, the switch will use *server2*.
- RADIUS, TACACS+, and LDAP servers may each have an additional backup specified through the [aaa radius-server](#), [aaa tacacs+-server](#), and [aaa ldap-server](#) commands.

Examples

```
-> aaa accounting 802.1x rad1 local
-> no aaa accounting 802.1x
```

Release History

Release 6.6.1; command was introduced.

Related Commands

802.1x	Configures 802.1X parameters on a particular slot/port. Typically used for port access control on a dedicated 802.1X port.
aaa radius-server	Configures or modifies a RADIUS server for Authenticated Switch Access or 802.1X port access control.
show aaa accounting 802.1x	Displays information about accounting servers for 802.1X sessions.

MIB Objects

```
aaaAcct8021xTable
  aaacxName1
  aaacxName2
  aaacxName3
  aaacxName4
  aaacxName5
```

aaa accounting mac

Enables/disables accounting for 802.1X non-supPLICANT (MAC-based) authentication sessions. Accounting servers keep track of network resources (time, packets, bytes, etc.) and user activity.

aaa accounting mac *server1* [*server2...*] [**local**]

no aaa accounting mac

Syntax Definitions

<i>server1</i>	The name of the RADIUS, TACACS+, or LDAP server used for accounting. At least one server is required. RADIUS, TACACS+, and LDAP server names are set up through the aaa radius-server , aaa tacacs+-server , and aaa ldap-server commands.
<i>server2...</i>	The names of backup servers for accounting. Up to 4 backups may be specified (including local); include a space between each server name. These backups are only used if <i>server1</i> becomes unavailable. They are polled in the order they are listed in this command. The first available server becomes the accounting server.
local	Local accounting is done through the Switch Logging feature in the switch. See Chapter 51, “Switch Logging Commands,” for information about Switch Logging commands.

Defaults

Accounting is disabled by default.

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Use the **no** form of the command to disable accounting.
- Up to 5 accounting servers (total) may be specified. At least one server is required. Each server name should be separated by a space.
- The servers may be RADIUS, TACACS+, or LDAP servers, and/or the local Switch Logging facility.
- If **local** is specified as *server1*, the switch will **only** use the local Switching Logging facility for accounting.
- If **local** is specified as a backup, it should be entered last in the list of servers. The Switch Logging facility is always available if the switch is up.
- The switch uses **only the first available server** in the list for accounting. For example, if *server1* is not available, the switch will use *server2*.
- RADIUS, TACACS+, and LDAP servers may each have an additional backup specified through the [aaa radius-server](#), [aaa tacacs+-server](#), and [aaa ldap-server](#) commands.

Examples

```
-> aaa accounting mac radl local
-> no aaa accounting mac
```

Release History

Release 6.6.3; command was introduced.

Related Commands

[aaa radius-server](#)

Configures or modifies a RADIUS server for Authenticated VLANs, Authenticated Switch Access, or 802.1X port access control.

[show aaa accounting mac](#)

Displays information about accounting servers for 802.1X non-suppliant sessions.

MIB Objects

```
aaaAcctMACTable
  aaaAcctSvrInterface
  aaaAcctSvr1
  aaaAcctSvr2
  aaaAcctSvr3
  aaaAcctSvr4
  aaaAcctSvr5
  aaaAcctSvrRowStatus
```

aaa accounting session

Configures an accounting server or servers for authenticated switch sessions. Accounting servers keep track of network resources (time, packets, bytes, etc.) and user activity.

aaa accounting session *server1* [*server2...*] [**local**]

no accounting session

Syntax Definitions

<i>server1</i>	The name of the RADIUS, TACACS+, or LDAP server used for accounting of authenticated switch sessions. At least one server is required. RADIUS, TACACS+, and LDAP server names are set up through the aaa radius-server , aaa tacacs+-server , and aaa ldap-server commands.
<i>server2...</i>	The names of backup servers. Up to 4 backups may be specified (including local); each server name should be separated by a space. These backups are only used if <i>server1</i> becomes unavailable. They are polled in the order they are listed in this command. The first available server becomes the accounting server.
local	Local accounting is done through the Switching Logging feature on the switch. See Chapter 51, “Switch Logging Commands,” for information about Switch Logging commands.

Defaults

Accounting is disabled by default.

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Use the **no** form of the command to disable accounting for Authenticated Switch Access.
- Up to 5 accounting servers (total) may be specified. At least one server is required. Each server name should be separated by a space.
- The servers may be RADIUS, TACACS+, LDAP servers, and/or the local Switch Logging facility.
- If **local** is specified as *server1*, the switch will **only** use the local Switching Logging facility for accounting.
- If **local** is specified as a backup, it should be entered last in the list of servers. The Switch Logging facility is always available if the switch is up.
- The switch uses **only the first available server** in the list for accounting. For example, if *server1* is not available, the switch will use *server2*.
- RADIUS, TACACS+, and LDAP servers may each have an additional backup specified through the [aaa radius-server](#), [aaa tacacs+-server](#), and [aaa ldap-server](#) commands.

Examples

```
-> aaa accounting session ldap1 radius2 local  
-> no aaa accounting session
```

Release History

Release 6.6.1; command was introduced.

Related Commands

show aaa accounting mac Displays information about accounting servers configured for Authenticated Switch Access.

MIB Objects

```
aaaAcctsaTable  
  aaacsName1  
  aaacsName2  
  aaacsName3  
  aaacsName4  
  aaacsName5
```

aaa accounting command

Enables or disables the server for command accounting. Accounting servers keep track of network resources (time, packets, bytes, etc.) and user activity.

aaa accounting command *server1* [*server2...*] [**local**]

no accounting command

Syntax Definitions

<i>server1</i>	The name of the TACACS+ server used for command accounting. At least one server is required. TACACS+ server names are set up through the aaa tacacs+-server commands.
<i>server2...</i>	The names of TACACS+ backup servers. Up to 4 backups may be specified; each server name should be separated by a space. These backups are only used if <i>server1</i> becomes unavailable. They are polled in the order they are listed in this command. The first available server becomes the accounting server.
local	Local accounting is done through the Switching Logging feature on the switch. See Chapter 51, “Switch Logging Commands,” for information about Switch Logging commands.

Defaults

Accounting is disabled by default.

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Use the **no** form of the command to disable command accounting.
- Up to 5 accounting servers (total) may be specified. At least one server is required. Each server name should be separated by a space.
- The servers can be only TACACS+ servers.
- The switch uses **only the first available server** in the list for accounting. For example, if *server1* is not available, the switch will use *server2*.
- TACACS+ server may each have an additional backup specified through the [aaa tacacs+-server](#) command.

Examples

```
-> aaa accounting command tacacs1 tacacs2 tacacs3
-> no aaa accounting command
```

Release History

Release 6.6.1; command was introduced.

Related Commands

show aaa accounting mac Displays information about accounting servers configured for Authenticated Switch Access.

MIB Objects

```
aaaAcctCmdTable  
  aaacmdSrvName1  
  aaacmdSrvName2  
  aaacmdSrvName3  
  aaacmdSrvName4  
  aaacmdSrvName5
```

user

Configures or modifies user entries in the local user database. Use the **no** form of the command to remove the user from the local database.

```
user username [password password] [password-prompt] [expiration {day | date}] [read-only | read-write] [families... / domains...] all | none | all-except families...] [no snmp | no auth | sha | md5 | sha+des | md5+des | sha+3des | sha+aes | sha+aes192 | sha+aes256 | sha224 | sha224+3des | sha224+aes | sha224+aes192 | sha224+aes256 | sha256 | sha256+3des | sha256+aes | sha256+aes192 | sha256+aes256] [priv-password password] [console-only {enable | disable}]
```

```
no user username
```

Syntax Definitions

<i>username</i>	The name of the user (maximum is 31 alphanumeric characters). Used for logging into the switch. Required to create a new user entry or for modifying a user.
<i>password</i>	The user's password in clear text or hexadecimal (corresponding to encrypted form). Required to create a new user entry. The default minimum length is 8 alphanumeric characters. The maximum is 47 characters.
password-prompt	Select this option with the 'user' command to configure the password for the user. When this option is selected, a password prompt appears and the password can be provided. Password needs to be re-entered, and only if both the passwords match, command is accepted. Password provided in this mode is not displayed on the CLI as text.
<i>day</i>	The number of days before this user's current password expires. The range is 1 to 150 days.
<i>date</i>	The date (in the format <i>mm/dd/yyyy hh:mm</i>) that the user's current password will expire.
read-only	Specifies that the user will have read-only access to the switch.
read-write	Specifies that the user will have read-write access to the switch.
<i>families</i>	Determines the command families available to the user on the switch. Each command family should be separated by a space. Command families are subsets of domains. See Usage Guidelines for more details.
<i>domains</i>	Determines the command domains available to the user on the switch. Each domain should be separated by a space. See the Usage Guidelines for more details.
all	Specifies that all command families and domains are available to the user.
none	Specifies that no command families or domains are available to the user.
all-except	Specifies that functional privileges for families followed by 'all-except' are disabled to the user.
no snmp	Denies the specified user SNMP access to the switch.
no auth	Specifies that the user has SNMP access without any required SNMP authentication and encryption protocol.

sha	Specifies that the SHA authentication algorithm is used for authenticating SNMP PDU for the user.
md5	Specifies that the MD5 authentication algorithm is used for authenticating SNMP PDU for the user.
sha+des	Specifies that the SHA authentication algorithm and DES encryption standard is used for authenticating and encrypting SNMP PDU for the user.
md5+des	Specifies that the MD5 authentication algorithm and the DES encryption standard is used for authenticating and encrypting SNMP PDU for the user.
sha+3des	Specifies that the SHA authentication algorithm and 3DES encryption standard is used for authenticating and encrypting SNMP PDU for the user.
sha+aes	Specifies that the SHA authentication algorithm and AES encryption standard is used for authenticating and encrypting SNMP PDU for the user.
sha+aes192	Specifies that the SHA authentication algorithm and AES192 encryption standard is used for authenticating and encrypting SNMP PDU for the user.
sha+aes256	Specifies that the SHA authentication algorithm and AES256 encryption standard is used for authenticating and encrypting SNMP PDU for the user.
sha224	Specifies that the SHA224 authentication algorithm is used for authenticating SNMP PDU for the user.
sha224+3des	Specifies that the SHA224 authentication algorithm and 3DES encryption standard is used for authenticating and encrypting SNMP PDU for the user.
sha224+aes	Specifies that the SHA224 authentication algorithm and AES encryption standard is used for authenticating and encrypting SNMP PDU for the user.
sha224+aes192	Specifies that the SHA224 authentication algorithm and AES192 encryption standard is used for authenticating and encrypting SNMP PDU for the user.
sha224+aes256	Specifies that the SHA224 authentication algorithm and AES256 encryption standard is used for authenticating and encrypting SNMP PDU for the user.
sha256	Specifies that the SHA226 authentication algorithm is used for authenticating SNMP PDU for the user.
sha256+3des	Specifies that the SHA226 authentication algorithm and 3DES encryption standard is used for authenticating and encrypting SNMP PDU for the user.
sha256+aes	Specifies that the SHA226 authentication algorithm and AES encryption standard is used for authenticating and encrypting SNMP PDU for the user.
sha256+aes192	Specifies that the SHA226 authentication algorithm and AES192 encryption standard is used for authenticating and encrypting SNMP PDU for the user.

sha256+aes256	Specifies that the SHA226 authentication algorithm and AES256 encryption standard is used for authenticating and encrypting SNMP PDU for the user.
priv-password	Separate password that is used for encryption. (8-30 characters)
<i>name</i>	The name of an end-user profile associated with this user. Configured through the aaa admin-logout command. Cannot be associated with the user if command families/domains are associated with the user.

Defaults

By default, if a user is created without indicating the read and write privileges and SNMP access, the user will be given privileges based on the *default user account*. The default user account may be modified, but by default it has the following privileges:

parameter	default
read-only read-write	read-only

- By default, the password will be encrypted using SHA for all non SNMP users.
- For SNMP users without authentication, password will be encrypted with SHA.
- For SNMP users with authentication, it will be encrypted with the authentication method set for the user. If user is created with MD5, then it will be still encrypted with MD5.

For more information about the default user account, see the *OmniSwitch AOS Release 6250/6350/6450 Switch Management Guide*.

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- In addition to the syntax listed for the command, the syntax **authkey** *key* will display in an ASCII text file produced via the **snapshot** command if the user is allowed SNMPv3 access to the switch. The authentication key is in hexadecimal form, and is deducted from the user's password with SHA or MD5 hash and encrypted with DES encryption. The key parameter only appears in configuration files that are resulting from a snapshot. The key is computed by the switch based on the user's SNMP access and will only appear in the ASCII text file; it is not displayed through the CLI. (*This key is used for both Auth Password and Priv Password in the OmniVista NMS application.*)
- At least one user with SHA/MD5 authentication and/or DES encryption must be configured on the switch for SNMPv3 communication with OmniVista.
- Use **user** *username* and **password** *password* to reset a user's password configured through the **password** command.
- Typically the password should be a string of non-repeating characters. The CLI uses the first occurrence of the character series to uniquely identify the password. For example, the password *tpubtpub* is the same as *tpub*. A better password might be *tpub345*.
- Note that the exclamation point (!) is not a valid password character. In addition, specifying an asterisk (*) as one or more characters in a password is allowed as long as every character is not an asterisk. For example, **password** ****123456**** is allowed; **password** ********* is not allowed.

- The password expiration date will display in an ASCII text file produced via the **snapshot** command.
- A password expiration for the user's current password may be configured with the **expiration** option. However, if the password is changed, or the global password expiration setting is configured with the **user password-expiration** command, the user's password expiration will be configured with the global expiration setting.
- When modifying a user's SNMP access, the user password must be re-entered (or a new one configured). This is required because the hash algorithm used to save the password in the switch depends on the SNMP authentication level.
- At initial startup, the default user on the switch is **admin** with a password of **switch**. The switch will not recreate this user at any successive startup as long as there exists at least one user defined with write access to all commands. (Note that if password expiration is configured for the **admin** user, or configured globally through the **user password-expiration** command, when the **admin** user's password expires, the **admin** user will have access only through the console port.)
- Either privileges or an end-user profile may be associated with a user; both cannot be configured for the same user.
- New users or updated user settings are saved *automatically*; that is, these settings do not require the **write memory**, **copy running-config working**, or **configuration snapshot** command to save user settings over a reboot.
- The priv-password token is accepted only when SNMP level with encryption is configured for the user. If SNMP level with encryption is not selected and **priv-password** is configured, then CLI command is rejected with error.
- If priv-password is not configured for the user with encryption SNMP level, then user password parameter is used for priv-password (both for authentication/encryption).
- Password policy is not applicable for the new optional parameter **priv-password**.
- Existing password is still used for authenticating switch access through other methods such as telnet, ftp, ssh etc, if "priv-password" is not configured for a user.
- When the SNMP level for an existing user with priv-password configured is changed from one encryption level to another encryption level, then the previously configured priv-password will not be used with the new SNMP level. Priv-password needs to be configured again when SNMP level is changed for an existing user.

Possible values for domains and families are listed in the table here:

Domain	Corresponding Families
domain-admin	file telnet dshell debug
domain-system	system aip snmp rmon webmgt config
domain-physical	chassis module interface pmm health
domain-network	ip rip ip-routing ipmr ipms
domain-layer2	vlan bridge stp 802.1q linkagg ip-helper
domain-service	dns
domain-security	session aaa

Examples

```
-> user techpubs password writer read-only config
-> no user techpubs
```

```
-> user techpubs password-prompt
Password: *****
Re-enter password: *****
```

The following example creates a user with read-write privileges for all families except dshell.

```
-> user techpubs password writer read-write all-except dshell

-> user username password ***** SHA224
-> user username password ***** SHA256+3DES

-> user snmpv3user password passlpassl priv-password privlprivl read-write all
sha+aes
```

Release History

Release 6.6.1; command was introduced.

Release 6.7.1 R02; **password-prompt**, **all-except**, additional options for **SHA224** and **SHA256** algorithms, **priv-password** parameter added.

Related Commands

password	Configures the current user's password.
show user	Displays information about users configured in the local database on the switch.

MIB Objects

```
aaaUserTable
  aaauPassword
  aaauReadRight
  aaauWriteRight
  aaauSnmpLevel
  aaauSnmpAuthKey
  aaauPasswordExpirationDate
  aaauSnmpPrivPassword
```

password

Configures the current user's password.

password

Syntax Definitions

N/A

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- If the **snapshot** command is used to capture the switch configuration, the text of the password is not displayed in the file. Instead an authentication key is included in the file.
- The **password** command does not require a password in-line; instead, after the command is entered, the system displays a prompt for the password. Enter any alphanumeric string. (The string displays on the screen as asterisks.) The system displays a prompt to verify the new password.
- A new password cannot be identical to the current password; it cannot be identical to any of the three passwords that preceded the current password.
- The password may be up to 47 characters. The default minimum password length is 8 characters.
- Note that the exclamation point (!) is not a valid password character. In addition, specifying an asterisk (*) as one or more characters in a password is allowed as long as every character is not an asterisk. For example, **password **123456**** is allowed; **password ******* is not allowed.
- Password settings are saved *automatically*; that is, the **write memory**, **copy running-config working**, or **configuration snapshot** command is not required to save password settings over a reboot.

Examples

```
-> password
enter old password: *****
enter new password: *****
reenter new password: *****
->
```

Release History

Release 6.6.1; command was introduced.

Related Commands

user

Configures entries in the local user database. May be used by a system administrator to change any user's password in addition to configuring user privileges or profile.

MIB Objects

```
aaaUserTable  
  aaauPassword  
  aaauOldPassword
```

user password-size min

Configures the minimum number of characters required when configuring a user password.

user password-size min *size*

Syntax Definitions

size The number of characters required when configuring a user password through the **password** command or when setting up a user password through the **user** command. The range is 1 to 14 characters.

Defaults

parameter	default
<i>size</i>	8

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

N/A

Examples

```
-> user password-size min 9
```

Release History

Release 6.6.1; command was introduced.

Related Commands

- [user](#) Configures entries in the local user database. May be used by a system administrator to change any user's password in addition to configuring user privileges or profile.
- [show user password-size](#) Displays the minimum number of characters that are required for a user password.
- [show user password-policy](#) Displays the global password policy configuration for the switch.

MIB Objects

```
aaaAsaConfig  
  aaaAsaPasswordSizeMin
```

user password-expiration

Configures an expiration date for all user passwords stored locally on the switch or disables password expiration.

user password-expiration {*day* / **disable**}

Syntax Definitions

<i>day</i>	The number of days before locally configured user passwords will expire. The range is 1 to 150 days.
disable	Disables password expiration for users configured locally on the switch.

Defaults

parameter	default
<i>day</i> / disable	disable

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- The **user password-expiration** command sets a default password expiration for users configured locally on the switch.
- Password expiration may be configured on a per-user basis through the **user** command; the user setting overrides the **user password-expiration** setting until the user password is changed or the **user password-expiration** command is entered again.

Examples

```
-> user password-expiration 2
-> user password-expiration disable
```

Release History

Release 6.6.1; command was introduced.

Related Commands

user	Configures entries in the local user database. May be used by a system administrator to change any user's password in addition to configuring user privileges or profile.
show user password-expiration	Displays the expiration date for passwords configured for user accounts stored on the switch.
show user password-policy	Displays the global password policy configuration for the switch.

MIB Objects

aaaAsaConfig

aaaAsaDefaultPasswordExpirationInDays

user password-policy cannot-contain-username

Specifies whether or not a user can configure a password that contains the username for the account.

user password-policy cannot-contain-username {enable | disable}

Syntax Definitions

enable Does not allow the password to contain the username.
disable Allows the password to contain the username.

Defaults

parameter	default
enable disable	disable

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- The status of this function is specified as part of a global password policy that is applied to all passwords when they are created or modified.
- When this function is enabled, a check is done at the time the password is created or modified to ensure that the username is not specified as part of the password text.

Examples

```
-> user password-policy cannot-contain-username enable  
-> user password-policy cannot-contain-username disable
```

Release History

Release 6.6.1; command was introduced.

Related Commands

[show user password-policy](#) Displays the global password policy configuration for the switch.

MIB Objects

aaaAsaConfig
aaaAsaPasswordContainUserName

user password-policy min-uppercase

Configures the minimum number of uppercase English characters required for a valid password.

user password-policy min-uppercase *number*

Syntax Definitions

number The minimum number of uppercase characters. The range is 0 to 7.

Defaults

parameter	default
<i>number</i>	0

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Specify **0** with this command to disable the minimum uppercase character requirement.
- The minimum number of uppercase characters is specified as part of a global password policy that is applied to all passwords when they are created or modified.

Examples

```
-> user password-policy min-uppercase 2
-> user password-policy min-uppercase 0
```

Release History

Release 6.6.1; command was introduced.

Related Commands

show user password-policy Displays the global password policy configuration for the switch.

MIB Objects

```
aaaAsaConfig
  aaaAsaPasswordMinUpperCase
```

user password-policy min-lowercase

Configures the minimum number of lowercase English characters required for a valid password.

user password-policy min-lowercase *number*

Syntax Definitions

number The minimum number of lowercase characters. The range is 0 to 7.

Defaults

parameter	default
<i>number</i>	0

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Specify **0** with this command to disable the minimum lowercase character requirement.
- The minimum number of lowercase characters is specified as part of a global password policy that is applied to all passwords when they are created or modified.

Examples

```
-> user password-policy min-lowercase 2  
-> user password-policy min-lowercase 0
```

Release History

Release 6.6.1; command was introduced.

Related Commands

show user password-policy Displays the global password policy configuration for the switch.

MIB Objects

```
aaaAsaConfig  
    aaaAsaPasswordMinLowerCase
```

user password-policy min-digit

Configures the minimum number of base-10 digits required for a valid password.

user password-policy min-digit *number*

Syntax Definitions

number The minimum number of digits. The range is 0 to 7.

Defaults

parameter	default
<i>number</i>	0

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Specify **0** with this command to disable the minimum number of digits requirement.
- The minimum number of digits requirement is specified as part of a global password policy that is applied to all passwords when they are created or modified.

Examples

```
-> user password-policy min-digit 2
-> user password-policy min-digit 0
```

Release History

Release 6.6.1; command was introduced.

Related Commands

show user password-policy Displays the global password policy configuration for the switch.

MIB Objects

```
aaaAsaConfig
  aaaAsaPasswordMinDigit
```

user password-policy min-nonalpha

Configures the minimum number of non-alphanumeric characters (symbols) required for a valid password.

user password-policy min-nonalpha *number*

Syntax Definitions

number The minimum number of non-alphanumeric characters. The range is 0 to 7.

Defaults

parameter	default
<i>number</i>	0

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Specify **0** with this command to disable the minimum non-alphanumeric character requirement.
- The minimum number of non-alphanumeric characters is specified as part of a global password policy that is applied to all passwords when they are created or modified.

Examples

```
-> user password-policy min-nonalpha 2
-> user password-policy min-nonalpha 0
```

Release History

Release 6.6.1; command was introduced.

Related Commands

show user password-policy Displays the global password policy configuration for the switch.

MIB Objects

```
aaaAsaConfig
  aaaAsaPasswordMinNonAlpha
```

user password-min-age

Configures the minimum number of days during which a user is prevented from changing a password.

user password-min-age *days*

Syntax Definitions

days The number of days to use as the minimum age of the password. The range is 0 to 150.

Defaults

parameter	default
<i>days</i>	0

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Specify **0** with this command to disable the minimum number of days requirement.
- Configure the minimum age of a password with a value that is less than the value configured for the password expiration.
- The password minimum age value is specified as part of a global password policy that is applied to all passwords when they are created or modified.

Examples

```
-> user password-min-age 7
-> user password-min-age 0
```

Release History

Release 6.6.1; command was introduced.

Related Commands

[show user password-policy](#) Displays the global password policy configuration for the switch.

MIB Objects

```
aaaAsaConfig
  aaaAsaPasswordMinAge
```

user lockout-window

Configures a moving period of time (observation window) during which failed login attempts are counted to determine if the number of failed attempts has exceeded the number of allowed attempts. The number of failed login attempts is decremented by the number of failed attempts that age beyond the observation window time period.

user lockout-window *minutes*

Syntax Definitions

minutes The number of minutes the observation window remains active. The range is 0 to 99999.

Defaults

parameter	default
<i>minutes</i>	0

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- This command is only available to the **admin** user because the **admin** user account is the only account protected from any type of lockout attempt.
- Specify **0** with this command to disable the observation window function. This means that failed login attempts will never age out; the number of failed attempts is never decremented.
- Do not configure an observation window time period that is greater than the lockout duration time period.
- If the number of failed login attempts exceeds the number of failed attempts allowed before the observation window time expires, then the user account is locked out of the switch.
- The observation window time period is a global lockout setting that is applied to all passwords configured on the switch.
- Lockout settings are saved *automatically*; that is, these settings do not require the **write memory**, **copy running-config working**, or **configuration snapshot** command to save user settings over a reboot.

Examples

```
-> user lockout-window 500
-> user lockout-window 0
```

Release History

Release 6.6.1; command was introduced.

Related Commands

user lockout-duration	Configures the amount of time a user account remains locked out of the switch.
user lockout-threshold	Configures the number of failed password attempts allowed before the user account is locked out of the switch.
user lockout unlock	Manually locks or unlocks a user account on the switch.
show user lockout-setting	Displays the global user lockout settings for the switch.

MIB Objects

```
aaaAsaConfig  
  aaaAsaLockoutWindow
```

user lockout-threshold

Configures the number of failed password login attempts allowed during a certain period of time (observation window). If the number of failed attempts exceeds the lockout threshold number before the observation window period expires, the user account is locked out.

user lockout-threshold *number*

Syntax Definitions

number The number of failed login attempts allowed. The range is 0 to 999.

Defaults

parameter	default
<i>number</i>	0

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- This command is only available to the **admin** user because the **admin** user account is the only account protected from any type of lockout attempt.
- If the lockout threshold is set to zero (the default), there is no limit to the number of failed login attempts allowed.
- A user account remains locked out for the length of the lockout duration time period; at the end of this time, the account is automatically unlocked.
- If the lockout duration time period is set to zero, only the **admin** user or a user with read/write AAA privileges can unlock a locked user account. An account is unlocked by changing the user account password or with the **user lockout unlock** command.
- The lockout threshold time period is a global lockout setting that is applied to all passwords configured on the switch.
- Lockout settings are saved *automatically*; that is, these settings do not require the **write memory**, **copy running-config working**, or **configuration snapshot** command to save user settings over a reboot.

Examples

```
-> user lockout-threshold 3
-> user lockout-threshold 0
```

Release History

Release 6.6.1; command was introduced.

Related Commands

user lockout-window	Configures a window of time during which failed login attempts are counted to determine if the number of failed attempts has exceeded the number of allowed attempts.
user lockout-duration	Configures the length of time a user account remains locked out of the switch.
user lockout unlock	Manually locks or unlocks a user account on the switch.
show user lockout-setting	Displays the global user lockout settings for the switch.

MIB Objects

```
aaaAsaConfig  
  aaaAsaLockoutThreshold
```

user lockout-duration

Configures the length of time a user account remains locked out of the switch. At the end of this time period, the user account is automatically unlocked.

user lockout-duration *minutes*

Syntax Definitions

minutes The number of minutes the user account remains locked out. The range is 0 to 99999.

Defaults

parameter	default
<i>minutes</i>	0

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- This command is only available to the **admin** user because the **admin** user account is the only account protected from any type of lockout attempt.
- Note that if the lockout duration time period is set to zero (the default), then locked user accounts are never automatically unlocked.
- Only the **admin** user or a user with read/write AAA privileges can unlock a locked user account when the lockout duration time is set to zero. An account is unlocked by changing the user password or with the **user lockout unlock** command.
- Do not configure a lockout duration time period that is less than the amount of time configured for the observation window.
- The lockout duration time period is a global lockout setting that is applied to all passwords configured on the switch.
- Lockout settings are saved *automatically*; that is, these settings do not require the **write memory**, **copy running-config working**, or **configuration snapshot** command to save user settings over a reboot.

Examples

```
-> user lockout-duration 60
-> user lockout-duration 0
```

Release History

Release 6.6.1; command was introduced.

Related Commands

user lockout-window	Configures a window of time during which failed login attempts are counted to determine if the number of failed attempts has exceeded the number of allowed attempts,
user lockout-threshold	Configures the number of failed password attempts allowed before the user account is locked out of the switch.
user lockout unlock	Manually locks or unlocks a user account on the switch.
show user lockout-setting	Displays the global user lockout settings for the switch.

MIB Objects

```
aaaAsaConfig  
  aaaAsaLockoutDuration
```

user lockout unlock

Manually locks or unlocks a user account on the switch.

```
user profile {lockout | unlock}
```

Syntax Definitions

<i>profile</i>	The username of the account to lock or unlock.
lockout	Locks the user account out of the switch.
unlock	Unlocks a locked user account.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- This command is only available to the **admin** user or a user with read/write AAA privileges.
- The **admin** user account is protected from any type of lockout attempt.
- User lockouts and unlocks are saved *automatically*; that is, these settings do not require the **write memory**, **copy running-config working**, or **configuration snapshot** command to save user settings over a reboot.

Examples

```
-> user j_smith lockout  
-> user j_smith unlock
```

Release History

Release 6.6.1; command was introduced.

Related Commands

show user	Displays information about all users or a particular user configured in the local user database on the switch.
show user lockout-setting	Displays the global user lockout settings for the switch.

MIB Objects

```
aaaUserTable  
    aaauPasswordLockoutEnable
```

aaa admin-logout

Administratively logs a user out of the network. This command can only be used with administrative privileges.

aaa admin-logout {**mac-address** *mac_address* | **port** *slot/port* | **user** *user_name* | **user-network-profile** *name profile_name*}

Syntax Definitions

<i>mac_address</i>	The source MAC address of the user's device.
<i>slot/port</i>	The slot and port number of the specific switch. All users learned on this port are logged out.
<i>user_name</i>	The user name of the account to log out.
<i>profile_name</i>	The name of the User Network Profile (UNP). All users classified with this profile are logged out of the switch.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- This command can only be used by the user with administrative privileges.
- The **admin** user account is protected from any attempt to log out the admin user.

Examples

```
-> aaa admin-logout mac-address 00:2a:95:00:3a:10
-> aaa admin-logout port 1/9
-> aaa admin-logout user j_smith
-> aaa admin-logout user-network-profile name marketing
```

Release History

Release 6.6.3; command was introduced.

Related Commands

show aaa-device all-users Displays the information about the users (both supplicant and non supplicant) logged into the switch.

MIB Objects

alaDot1xAdminLogoutParams

 alaDot1xAdminLogoutType

 alaDot1xAdminLogoutMacAddress

 alaDot1xAdminLogoutUserName

 alaDot1xAdminLogoutNetworkProfileName

 alaDot1xAdminLogoutInterfaceId

end-user profile

Configures or modifies an end-user profile, which specifies access to command areas. The profile may be attached to a customer login user account.

end-user profile *name* [**read-only** [*area* | **all**]] [**read-write** [*area* | **all**]] [**disable** [*area* | **all**]]

no end-user profile *name*

Syntax Definitions

<i>name</i>	The name of the end-user profile, up to 32 alphanumeric characters.
<i>area</i>	Command areas on the switch to which the user is allowed or denied access. Areas include physical , vlan-table , basic-ip-routing , ip-routes-table , mac-filtering-table , spantree .

Defaults

Areas are disabled for end-user profiles by default.

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Use the **no** form of the command to delete an end-user profile.
- An end-user profile may not be attached to a user that is already configured with functional privileges.
- If a profile is deleted, but the profile name is still associated with a user, the user will not be able to log into the switch.
- Use the **end-user profile port-list** and **end-user profile vlan-range** commands to configure ports and VLANs to which this profile will have access. By default, new profiles do not allow access to any ports or VLANs.

Examples

```
-> end-user profile bsmith read-only basic-ip-routing ip-routes-table  
-> no end-user profile bsmith
```

Release History

Release 6.6.1; command was introduced.

Related Commands

end-user profile port-list	Configures a range of ports associated with an end-user profile.
end-user profile vlan-range	Configures a range of VLANs associated with an end-user profile.
user	Configures or modifies user entries in the local user database.
show end-user profile	Displays information about end-user profiles.

MIB Objects

```
endUserProfileTable
    endUserProfileName
    endUserProfileAreaPhysical
    endUserProfileAreaVlanTable
    endUserProfileAreaBasicIPRouting
    endUserProfileAreaIpRoutesTable
    endUserProfileAreaMacFilteringTable
    endUserProfileAreaSpantree
endUserProfileSlotPortTable
    endUserProfileSlotNumber
    endUserProfilePortList
endUserProfileVlanIdTable
    endUserProfileVlanIdStart
    endUserProfileVlanIdEnd
```

end-user profile port-list

Configures a range of ports associated with an end-user profile.

end-user profile *name* **port-list** *slot1*[*/port_range1*] [*slot2*[*/port_range2*] ...]

end-user profile *name* **no port-list** *slot1* [*slot2*...]

Syntax Definitions

<i>name</i>	The name of an existing or a new end-user profile.
<i>slot1</i>	The slot number associated with the profile.
<i>port_range1</i>	The port or port range associated with slot1. Ports are separated by a hyphen, for example 2-4 .
<i>slot2</i>	Additional slots may be associated with the profile.
<i>port_range2</i>	Additional ports may be associated with additional slot numbers associated with the profile.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

Use the **no** form of the command to remove a port list or lists from an end-user profile. Note that the **no** form removes all the ports on a given slot or slots.

Examples

```
-> end user profile Prof1 port-list 2/1-3 3 4/1-5
-> end user profile Prof1 no port-list 4
```

Release History

Release 6.6.1; command was introduced.

Related Commands

aaa admin-logout	Configures or modifies an end-user profile, which specifies access to command areas.
end-user profile vlan-range	Configures a range of VLANs associated with an end-user profile.
show end-user profile	Displays information about end-user profiles.

MIB Objects

```
endUserProfileTable
    endUserProfileName
endUserProfileSlotPortTable
    endUserProfileSlotNumber
    endUserProfilePortList
```

end-user profile vlan-range

Configures a range of VLANs associated with an end-user profile.

end-user profile *name* **vlan-range** *vlan_range* [*vlan_range2...*]

end-user profile *name* **no vlan-range** *vlan1* [*vlan2..*]

Syntax Definitions

<i>name</i>	The name of an existing or a new end-user profile.
<i>vlan_range</i>	The VLAN range associated with the end-user profile; values are separated by a hyphen. For example: 3-6 indicates VLAN 3, VLAN 4, VLAN 5, and VLAN 6.
<i>vlan_range2...</i>	Optional additional VLAN ranges associated with the end-user profile. Up to 16 ranges total may be configured.
<i>vlan1</i>	The VLAN range to be deleted from the profile. Only the start of the range may be entered.
<i>vlan2...</i>	Additional VLAN ranges to be deleted. Only the start of the range may be entered.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

Use the **no** form of the command to remove a VLAN range or ranges from an end-user profile. Note that only the start of the VLAN range must be entered to remove the range.

Examples

```
-> end-user profile Prof1 vlan-range 2-4 7-8  
-> end-user profile Prof1 no vlan-range 7
```

Release History

Release 6.6.1; command was introduced.

Related Commands

aaa admin-logout	Configures or modifies an end-user profile, which specifies access to command areas.
end-user profile port-list	Configures a range of ports associated with an end-user profile.
show end-user profile	Displays information about end-user profiles.

MIB Objects

```
endUserProfileTable
    endUserProfileName
endUserProfileVlanIdTable
    endUserProfileVlanIdStart
    endUserProfileVlanIdEnd
```

aaa user-network-profile

Configures a User Network Profile (UNP) that is used to provide role-based access to the switch. UNP determines:

- the VLAN ID a device can join,
- whether or not a Host Integrity Check (HIC) is applied to the device,
- whether to assign redirection URL to ClearPass Server for BYOD devices for CoA authorization,
- if any QoS policy rules are used to control access to network resources,
- the maximum ingress and egress bandwidth associated with the UNP,
- maximum default depth associated with the UNP.

aaa user-network-profile name *profile_name* **vlan** *vlan-id* [**hic** {**enable** | **disable**}] [**redirect** *url_name*] [**policy-list-name** *list_name*] [**maximum-ingress-bandwidth** *num* [**K(kilo)** | **M(mega)** | **G(giga)** | **T(tera)**]] [**maximum-egress-bandwidth** *num* [**K(kilo)** | **M(mega)** | **G(giga)** | **T(tera)**]] [**maximum-default-depth** *num* [**K(kilo)** | **M(mega)** | **G(giga)** | **T(tera)**]]

no aaa user-network-profile name *name*

Syntax Definitions

<i>profile_name</i>	The name of an existing or a new user profile. The name specified here must match with the Filter-ID attribute returned by the RADIUS server. The user profile name can range from 1 to 32 characters in length.
<i>vlan-id</i>	The VLAN identification number for a preconfigured VLAN that will be assigned to a user. The valid range is 1-4094.
enable	Enables Host Integrity Check for the profile.
disable	Disables Host Integrity Check for the profile.
<i>url_name</i>	The redirect URL name of maximum 32 characters associated with a corresponding URL. A maximum of 5 redirect URLs and URL names can be configured.
<i>list_name</i>	The name of an existing QoS policy list to apply to devices classified by the UNP. It is possible to assign up to eight policy lists to each user profile.
<i>num</i>	Maximum ingress bandwidth associated to a UNP. The valid range is 0 - 10485760 (Kbit/sec).
K M G T	The denominator for the ingress bandwidth configured. It can be specified as K (kilo), M (mega), G (giga), and T (tera).
<i>num</i>	Maximum egress bandwidth associated to a UNP. The valid range is 0-1000000 (Kbit/sec).
K M G T	The denominator for the egress bandwidth configured. It can be specified as K (kilo), M (mega), G (giga), and T (tera).
<i>num</i>	Maximum default depth associated to a UNP. The valid range is 0 - 16384 in Kilobytes.
K M G T	The denominator for the default depth configured. It can be specified as K (kilo), M (mega), G (giga), and T (tera).

Defaults

parameter	default
hic enable disable	disabled
<i>url_name</i>	none
<i>list_name</i>	none
maximum-ingress-bandwidth maximum-egress-bandwidth	No bandwidth limitation is applied.
maximum-default-depth	Optimal default depth value of 1Mbyte is applied.

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Use the **no** form of this command to remove a UNP from the switch configuration.
- This command is used only with RADIUS as the authentication server.
- Enabling the **hic** parameter triggers the HIC verification process for the devices to which this profile is applied. The switch interacts with the InfoExpress CyberGatekeeper HIC server to determine host compliance.
- Assign a URL name with the **redirect** parameter to specify the redirection URL to ClearPass Server for CoA authorization for BYOD devices. The URL name is associated with a URL link to the redirection server using the **aaa redirect url** command.
- Configure Redirect Server with Clearpass IP using the **aaa redirect-server** command, Redirect URL using **aaa redirect url** and associate Redirect URL to UNP using **aaa user-network-profile** command.
- When HIC is enabled, redirection URL cannot be enabled. HIC must be disabled before applying **redirect** parameter. The **hic** and **redirect** settings are mutually exclusive.
- The egress and ingress bandwidth, and default depth configuration is supported for supplicant, non-supplicant, and captive portal users.
- The egress and ingress bandwidth, and default depth can be configured in kilo (K), mega (M), giga (G), or tera (T) unit or denominator. If no unit is specified while configuring the bandwidth, then the bandwidth value is considered to be in Kbit/sec. In case of default depth, the value is considered to be in Kbytes/sec.
For example,
 - If maximum ingress bandwidth is configured as 1024, then the maximum ingress bandwidth is considered as 1024 Kbit/sec.
 - If maximum ingress bandwidth is configured as 23.2K, then it is stored as 24K rounding off to next integer value.

Note. The maximum ingress and egress bandwidth allowed is 10485760 (Kbit/sec). To represent the value in tera denomination, convert the value to equivalent of tera. For default depth, to represent the value in mega and tera, convert the required values to equivalent of mega and tera.

- The configured bandwidth is displayed in the show command output with denominator marked as "K", "M", "G" rounded off by maximum two decimal points. For example, the maximum ingress bandwidth of 20000 Kbit/sec, and 2000000 Kbit/sec is displayed as 20.0M and 2.0G.
- When maximum ingress and maximum egress bandwidth is set to 0, no traffic is dropped.
- When maximum default depth is set to '0', the optimal default depth of 1Mbyte is used.
- If QoS policy rule and UNP profile with policy list are both configured, then the lower bandwidth of the two configurations is considered.
- If QoS policy rule and UNP profile without policy list is configured, then the UNP bandwidth is considered.
- If QoS policy rule is of egress type and the UNP profile is configured with or without policy list, then the lower bandwidth of the two configurations is considered.
- When 802.1x is disabled on the port or when interface is administratively brought down, the bandwidth set by UNP on 802.1x port is removed. In both cases, the bandwidth reverts to the bandwidth set by QoS port, if any.
- If multiple users are authenticated on a port, then the latest user authenticated overwrites the previously set bandwidth value. If there is no bandwidth associated to a UNP, no rate limitations are enforced, previously set bandwidth is not changed. Refer to *OmniSwitch AOS Release 6250/6350/6450 Network Configuration Guide* for more information.
- Use the **show 802.1x rate-limit** command (see [Chapter 50, "802.1x Commands"](#)) to view the current rate limit configuration on 802.1x enabled ports.

Examples

```
-> aaa user-network-profile name engineering vlan 10
-> aaa user-network-profile name accounting vlan 20
-> aaa user-network-profile name marketing vlan 30 hic enable
-> aaa user-network-profile name guest_user vlan 500 hic enable policy-list name
temp_rules
-> aaa user-network-profile name profile1 vlan 50 maximum-ingress-bandwidth 1024
maximum-egress-bandwidth 256 maximum-default-depth 128
-> aaa user-network-profile name unp1 vlan num 172.26.36.26 redirect url url_name
http://clearpass.user.registration.page

-> no aaa user-network-profile name engineering
```

Release History

Release 6.6.1; command was introduced.

Release 6.6.4; **maximum-ingress-bandwidth**, **maximum-egress-bandwidth**, **maximum-default-depth** parameters added.

Release 6.6.5; **redirect** parameter added.

Related Commands

show aaa user-network-profile	Displays the user network profile table.
aaa hic	Globally enables or disables the HIC feature for the switch.
aaa classification-rule mac-address	Defines a MAC address UNP mobile rule.
aaa classification-rule mac-address-range	Defines a MAC address UNP mobile rule for a range of MAC addresses.
aaa classification-rule ip-address	Defines an IP network address UNP mobile rule.
aaa redirect url	Specifies the different type of URL names that are applied on the redirection UNP.

MIB Objects

```
aaaUserNetProfileTable  
  aaaUserNetProfileName  
  aaaUserNetProfileVlanID  
  aaaUserNetProfileHICflag  
  aaaUserNetProfileQosPolicyListName  
  aaaUserNetProfileMaxIngressBw  
  aaaUserNetProfileMaxEgressBw  
  aaaUserNetProfileMaxDefaultDepth  
  aaaUserNetworkProfileRedirectUrl
```

aaa classification-rule mac-address

Defines a User Network Profile (UNP) MAC address mobile rule. If the source MAC address of a device matches the MAC address defined for the rule, the specified UNP is applied to the device. UNP mobile rules are applied using an Access Guardian Group Mobility device classification policy.

aaa classification-rule mac-address *mac_address* **user-network-profile** *name* *profile_name*

aaa classification-rule no mac-address *mac_address*

Syntax Definitions

<i>mac_address</i>	MAC address (for example, 00:00:39:59:f1:0c).
<i>profile_name</i>	The name of an existing UNP.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Use the **no** form of this command to remove the UNP mobile rule from the switch configuration.
- To change the UNP associated with a mobile rule, enter the MAC address of an existing rule with a different UNP name.
- When Group Mobility is configured as an Access Guardian device classification policy for an 802.1x port, both UNP mobile rules and VLAN mobile rules are applied to device traffic on that port.
- UNP mobile rules take precedence over VLAN mobile rules.

Examples

```
-> aaa classification-rule mac-address 00:00:2a:33:44:01 user-network-profile name  
accounting
```

```
-> aaa classification-rule no mac-address 00:00:2a:33:44:01
```

Release History

Release 6.6.1; command was introduced.

Related Commands

aaa classification-rule mac-address-range	Configures a UNP mobile rule for a range of MAC addresses.
aaa classification-rule ip-address	Configures an IP address UNP mobile rule.
show aaa classification-rule	Displays the UNP configuration.
show aaa user-network-profile	Displays the UNP configuration.

MIB Objects

```
aaaUNPMacRuleTable  
  aaaUNPMacRuleAddr  
  aaaUNPMacRuleProfileName
```

aaa classification-rule mac-address-range

Defines a UNP mobile rule for a range of MAC addresses. If the source MAC address of a device matches any address within the range of MAC addresses, the specified UNP is applied to the device. UNP mobile rules are applied using an Access Guardian Group Mobility device classification policy.

aaa classification-rule mac-address-range *low_mac_address high_mac_address user-network-profile name profile_name*

aaa classification-rule no mac-address-range *low_mac_address*

Syntax Definitions

<i>low_mac_address</i>	MAC address that defines the low end of the range (for example, 00:00:39:59:f1:00).
<i>high_mac_address</i>	MAC address that defines the high end of the range (for example, 00:00:39:59:f1:90).
<i>profile_name</i>	The name of an existing user network profile.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Use the **no** form of this command to remove the UNP mobile rule from the switch configuration.
- To change the UNP associated with a mobile rule, enter the MAC address range of an existing rule with a different UNP name.
- When Group Mobility is configured as an Access Guardian device classification policy for an 802.1x port, both UNP mobile rules and VLAN mobile rules are applied to device traffic on that port.
- UNP mobile rules take precedence over VLAN mobile rules.

Examples

```
-> aaa classification-rule mac-address-range 00:00:2a:33:44:01 00:00:2a:33:44:10
user-network-profile name accounting
-> aaa classification-rule no mac-address-range 00:00:2a:33:44:01
```

Release History

Release 6.6.1; command was introduced.

Related Commands

- aaa classification-rule mac-address** Configures a MAC address UNP mobile rule.
- aaa classification-rule ip-address** Configures an IP address UNP mobile rule.
- show aaa classification-rule** Displays the UNP mobile rule configuration.
- show aaa user-network-profile** Displays the UNP configuration.

MIB Objects

aaaUNPMacRangeRuleTable
aaaUNPMacRangeRuleLoAddr
aaaUNPMacRangeRuleHiAddr
aaaUNPMacRangeRuleProfileName

aaa classification-rule ip-address

Defines a UNP IP address mobile rule. If the source IP address of a device matches the IP address defined for the rule, the specified UNP is applied to the device. UNP mobile rules are applied using an Access Guardian Group Mobility device classification policy.

aaa classification-rule ip-address *ip_address* [*subnet_mask*] **user-network-profile name** *profile_name*

aaa classification-rule no ip-address *ip_address* [*subnet_mask*]

Syntax Definitions

<i>ip_address</i>	IP network address (for example, 10.0.0.0, 171.15.0.0, 196.190.254.0)
<i>subnet_mask</i>	Class A, B, or C subnet mask (for example, 255.0.0.0, 255.255.0.0, or 255.255.255.0).
<i>profile_name</i>	The name of an existing user network profile.

Defaults

By default, the subnet mask is set to the default subnet mask value for the IP address class.

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Use the **no** form of this command to remove the UNP mobile rule from the switch configuration.
- To change the UNP associated with a mobile rule, enter the IP address of an existing rule with a different UNP name.
- When Group Mobility is configured as an Access Guardian device classification policy for an 802.1x port, both UNP mobile rules and VLAN mobile rules are applied to device traffic on that port.
- UNP mobile rules take precedence over VLAN mobile rules.

Examples

```
-> aaa classification-rule ip-address 10.1.1.1 user-network-profile name accounting
-> aaa classification-rule ip-address 198.4.21.1 255.255.0.0 user-network-profile
name marketing
-> aaa classification-rule no ip-address 10.1.1.1
```

Release History

Release 6.6.1; command was introduced.

Related Commands

- | | |
|--|--|
| aaa classification-rule mac-address | Configures a MAC address UNP mobile rule. |
| aaa classification-rule mac-address-range | Configures a UNP mobile rule for a range of MAC addresses. |
| show aaa classification-rule | Displays the UNP mobile rule configuration. |
| show aaa user-network-profile | Displays the UNP configuration. |

MIB Objects

```
aaaUNPIpNetRuleTable  
  aaaUNPIpNetRuleAddr  
  aaaUNPIpNetRuleMask  
  aaaUNPIpNetRuleProfileName
```

aaa byod white-list

This command is used to configure a white list of IP address to be bypassed by the redirect server which was provided by CPPM server.

[no] aaa byod white-list *ip_address* [*subnet_mask*]

Syntax Definitions

ip_address The IP address of the server to be bypassed.
subnet_mask A valid IP address mask to identify the IP subnet for the server.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- This command can be used when users in a restricted role are trying to reach an OCSP server to validate a certificate. Since the users are not authenticated they may continuously be redirected. Adding the OCSP server to a white list will allow the restricted users to reach the OCSP server.
- A Maximum of 8 IP addresses can be configured.

Examples

```
-> aaa byod white-list 192.168.50.50 mask 255.255.255.0
```

Release History

Release 6.6.5; command was introduced.

Related Commands

[show byod status](#) Displays the status of the BYOD clients at switch or per port level.
[show aaa byod white-list ip-address](#) Displays the status of the BYOD white list IP addresses.

MIB Objects

aaaBYODWhiteListTable
 aaaBYODWhiteListIPAddress
 aaaBYODWhiteListIPMask

aaa byod white-list no

This command is used to remove a white list of IP address to be bypassed by the redirect server which was provided by CPPM server.

aaa byod white-list no *ip_address*

Syntax Definitions

<i>ip_address</i>	The IP address of the server to be bypassed.
<i>subnet_mask</i>	A valid IP address mask to identify the IP subnet for the server.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350

Usage Guidelines

- For configuring the BYOD whitelist, use the command [aaa byod white-list](#)

Examples

```
-> aaa byod white-list 192.168.50.50 mask 255.255.255.0
```

Release History

Release 6.6.5; command was introduced.

Related Commands

show byod status	Displays the status of the BYOD clients at switch or per port level.
show aaa byod white-list ip-address	Displays the status of the BYOD white list IP addresses.

MIB Objects

```
aaaBYODWhiteListTable  
  aaaBYODWhiteListIPAddress  
  aaaBYODWhiteListIPMask
```

aaa hic server-name

Configures the identity of the Host Integrity Check (HIC) InfoExpress CyberGatekeeper server. HIC is a UNP option that when enabled, verifies the integrity of a device connected to the switch. Both HIC and UNP are components of the Access Guardian security framework.

aaa hic server-name *server* **ip-address** *ip_address* **key** *key* [**role** {**primary** | **backup**}] [**udp-port** *udp_port*]

aaa hic no server-name *server*

Syntax Definitions

<i>server</i>	The name of the HIC server.
<i>ip_address</i>	The IP address of the HIC server.
<i>key</i>	The shared key known to the switch and the server, but not sent over the network. This key can be any text or hexadecimal string, but MUST match the key configured on the server. The key is case sensitive.
primary backup	Configures the server as either the Primary or Backup HIC server.
<i>udp_port</i>	The UDP destination port number (1025–65536) for HIC requests.

Defaults

parameter	default
<i>udp_port</i>	11707

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Configure the HIC server identity and related parameters before globally enabling the HIC feature for the switch.
- The primary server is initially configured as an active server and the backup server as an inactive server.
- A keepalive message will be sent to the active server if the switch does not receive any HIC-UPDATES from the server for 16 seconds. The switch will retain the active server upon receiving the keepalive acknowledgment.
- The switch will send a total of four keepalive messages to the active server on every interval of six second. If no response is received, the inactive server becomes the active server provided the server status is UP.
- If both servers are unavailable the switch operates in either Hold or Pass-through mode based on the configured HIC Server failure mode.
- Background polling (Keepalive) packets are sent to the primary server every 16 seconds.

- If the server's role is not specified, the first configured server will be the primary and the next configured server will be backup.

Examples

```
-> aaa hic server-name hic-srv1 ip-address 2.2.2.2 key wwwtoe mode primary
-> aaa hic server-name hic-srv1 ip-address 2.2.2.2 udp-port 12049
-> aaa hic no server-name hic-srv1
```

Release History

Release 6.6.3; command was introduced.

Related Commands

show aaa priv hexa	Displays the HIC server configuration for the switch.
aaa hic server-failure mode	Configures the failure mode to be applied when both servers are unavailable.
aaa classification-rule mac-address	Displays information about AAA servers.
aaa classification-rule mac-address	Configures a download server as an exception to the HIC process.
aaa hic	Globally enables and disables the HIC feature for the switch.

MIB Objects

```
aaaHicSvrTable
  aaaHicSvrName
  aaaHicSvrIpAddr
  aaaHicSvrRole
  aaaHicSvrConnection
  aaaHicSvrPort
  aaaHicSvrKey
  aaaHicSvrStatus
```

aaa hic allowed-name

Configures a list of servers that are excluded from the Host Integrity Check (HIC) process. This list identifies the servers that a host can communicate with during the verification process when the host has limited access to the network.

aaa hic allowed-name *server* **ip-address** *ip_address* [**mask** *subnet_mask*]

aaa hic no allowed-name *server*

Syntax Definitions

<i>server</i>	The name of the server.
<i>ip_address</i>	The IP address of the primary HIC server.
<i>subnet_mask</i>	A valid IP address mask (for example, 255.0.0.0, 255.255.0.0) to identify the IP subnet for the download server.

Defaults

parameter	default
<i>subnet_mask</i>	255.255.255.255

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Use the **no** form of the command to remove a server from the HIC exception list.
- Up to four server exception entries are allowed.
- If a host device requires access to the HIC server through a Web-based agent, ensure the Web agent download server is added to this list.
- Add any additional servers required for remediation to this list.

Examples

```
-> aaa hic allowed-name rem-srv1 ip-address 10.1.1.1
-> aaa hic allowed-name patch-srv1 ip-address 11.1.1.1
-> aaa hic allowed-name web-agent-srv1 ip-address 12.1.1.1
-> aaa hic no allowed-name rem-srv1
```

Release History

Release 6.6.3; command was introduced.

Related Commands

aaa classification-rule mac-address

Displays information about AAA servers.

aaa byod white-list

Configures a HIC server for use with the switch.

aaa hic

Globally enables and disables the HIC feature for the switch.

MIB Objects

```
aaaHicAllowedTable  
  aaaHicAllowedName  
  aaaHicAllowedIpAddr  
  aaaHicAllowedIpMask  
  aaaHicAllowedRowStatus
```

aaa hic

Globally enables or disables the Host Integrity Check (HIC) feature for the switch.

aaa hic {enable | disable}

Syntax Definitions

enable	Enables the HIC feature for the switch.
disable	Disables the HIC feature for the switch.

Defaults

HIC is disabled by default.

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Configure the HIC server information before enabling the HIC on the switch.
- When HIC is enabled on the switch, reconfiguring the HIC server parameters is not allowed.
- VLAN Stacking feature is not available when HIC is configured on the switch as these two features are mutually exclusive. Only one of them can run on the switch at any given time.

Examples

```
-> aaa hic enable  
-> aaa hic disable
```

Release History

Release 6.6.3; command was introduced.

Related Commands

aaa classification-rule mac-address	Displays information about AAA servers.
aaa byod white-list	Configures a HIC server for use with the switch.
aaa classification-rule mac-address	Configures a remediation, patch, or web agent download server as an exception to the Host Integrity Check (HIC) process.
aaa user-network-profile	Configures a User Network Profile (UNP) that is used to provide role-based access to the switch.

MIB Objects

aaaHicConfigInfo
aaaHicStatus

aaa hic web-agent-url

Specifies the URL for the Web agent download server. The switch uses this information to redirect a host (client device) to a download server where the host can obtain the InfoExpress Web-based compliance agent. This agent provides the interaction between the switch, host device, and HIC server.

aaa hic web-agent-url *url*

Syntax Definitions

url The URL address for the web agent download server.

Defaults

By default, no URL is configured.

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- This command overwrites any URL information that was previously configured.
- Add the corresponding name and IP address for the web agent download server to the HIC allowed name exception list.

Examples

```
-> aaa hic web-agent-url http://10.10.10.10:2146
```

Release History

Release 6.6.3; command was introduced.

Related Commands

show aaa hic	Displays the global HIC configuration for the switch.
aaa byod white-list	Configures a HIC server for use with the switch.
aaa hic redundancy background-poll-interval	Configures a remediation, patch, or web agent download server as an exception to the Host Integrity Check (HIC) process.
aaa hic	Globally enables the HIC feature for the switch.

MIB Objects

```
aaaHicConfigInfo  
aaaHicWebAgentDownloadURL
```

aaa hic custom-proxy-port

Specifies the HTTP proxy port number used in the Web browser configuration of a host device. The HIC process uses this information when interacting with hosts using the InfoExpress Web-based compliance agent.

aaa hic custom-proxy-port *proxy_port*

Syntax Definitions

proxy_port An HTTP proxy port number (1025–65535).

Defaults

The HTTP proxy port is set to 8080.

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

This command overwrites the existing proxy port number.

Examples

```
-> aaa hic custom-proxy-port 8878
```

Release History

Release 6.6.3; command was introduced.

Related Commands

show aaa server	Displays information about AAA servers.
aaa hic	Globally enables the HIC feature for the switch.

MIB Objects

```
aaaHicConfigInfo  
  aaaHicCustomHttpProxyPort
```

aaa hic redundancy background-poll-interval

Configures the background polling interval that determines when the primary server is considered active after being inactive.

aaa hic redundancy background-poll-interval *value*

Syntax Definitions

value The background polling interval in seconds. The valid range is from 16 to 256 in multiples of 16.

Defaults

parameter	default
<i>value</i>	16

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- If the primary server is unavailable and in the inactive mode, the switch begins to poll the primary server in the background.
- To avoid overwhelming a primary server that becomes active again, the switch generates a random reconnect value. When the switch receives continuous keepalive responses equal to the random reconnect value it considers the primary server is ready to takeover the active role.
- When the backup server is inactive this interval determines the frequency at which the poll packets should be sent to backup server.
- Once the primary server becomes active, the backup server becomes inactive.

Examples

```
-> aaa hic redundancy background-poll-interval 32
```

Release History

Release 6.6.3; command was introduced.

Related Commands

[show aaa priv hexa](#) Displays hexadecimal values for command domains/families.

MIB Objects

```
aaaHicConfigInfo  
  aaaHicBgPollInterval
```

aaa hic server-failure mode

Configures the failure mode to be applied on the new users when both servers are unavailable.

aaa hic server-failure mode {hold | passthrough}

Syntax Definitions

hold	Places all new users in hold mode if the HIC servers are unavailable.
pass-through	Places all new users in pass-through mode if the HIC servers are unavailable.

Defaults

parameter	default
hold passthrough	hold

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- The server failure mode has no affect on users that have already passed HIC successfully.
- In **hold** mode, new users will stay in the HIC IN PROGRESS state while the servers are unavailable.
- In **passthrough** mode, new users will be moved to HIC PASSTHROUGH mode and treated same as HIC SUCCESS.

Examples

```
-> aaa hic server-failure mode passthrough
```

Release History

Release 6.6.3; command was introduced.

Related Commands

[show aaa priv hexa](#) Displays hexadecimal values for command domains/families.

MIB Objects

```
aaaHicConfigInfoTable  
aaaHicSrvFailMode
```

aaa hic server-failure policy user-network-profile change

Configures the network profiles the users are moved to when both HIC servers are unavailable.

aaa hic server-failure policy user-network-profile change *unp1* to *unp2*

aaa hic server-failure policy user-network-profile no change

Syntax Definitions

<i>unp1</i>	Name of the original UNP from which the user will be moved if the servers are not reachable and the failure mode is set to Hold.
<i>unp2</i>	Name of the UNP that the HIC host will be moved to while the HIC servers are down.

Defaults

parameter	default
change no change	no change

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- If the HIC failure mode is set to Hold and the HIC servers are not available, this command allows users in the HIC-in-progress state to be moved from *unp1* to *unp2*. Once the HIC servers are available, the user is moved back to the original *unp1* and the HIC-check will be restarted.
- A maximum of eight server-failure policies can be configured.
- Use the **no** parameter to prevent users from moving out of their current UNP.

Examples

```
-> aaa hic server-failure policy user-network-profile change unp_orig to unp_temp  
-> aaa hic server-failure policy user-network-profile no change
```

Release History

Release 6.6.3; command was introduced.

Related Commands

show aaa priv hexa Displays hexadecimal values for command domains/families.

MIB Objects

```
aaaHicSvrDownUnpMapTable  
  aaaHicSvrDownUnpMapEntry  
  aaaHicSvrDownUnpName  
  aaaHicSvrDownMappedUnpName  
  aaaHicSvrDownUnpRowStatus
```

show aaa server

Displays information about a particular AAA server or AAA servers.

show aaa server [*server_name*]

Syntax Definitions

server_name The server name, which is defined through the **aaa radius-server** or **aaa ldap-server** commands or automatically set as **ace** for ACE servers.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- If you do not include a server name in the syntax, information for all servers configured in the switch is displayed.
- To display information about an ACE server, use **ace** as the *server_name*. Information for ACE is only available if ACE is specified for Authenticated Switch Access through the **aaa authentication** command.
- Use this command to view the NAS port, NAS port ID, NAS port type attributes configured for a RADIUS server, and the reachability status of different RADIUS servers configured on the switch.
- Use this command to view the Unique Acct Session ID attribute configured for a RADIUS server.

Examples

```
-> show aaa server
Server name = ldap2
  Server type= LDAP,
  Host name 1= ors40535,
  Retry number= 3,
  Timeout (in sec)= 2,
  Port= 389,
  Domain name= manager,
  Search base= c=us,
Server name = rad1
  Server type= RADIUS,
  IP Address 1= 10.10.2.1,
  IP Address 2= 10.10.3.5,
  Retry number= 3,
  Timeout (in sec)= 2,
  Authentication port= 1645,
  Accounting port= 1646
```

```

-> aaa tacacs+-server "tacacs" host 172.18.16.99 key alcatel
-> aaa tacacs server-wait-time 4
-> show aaa server tacacs
aaa tacacs server-wait-time 4
Server name = tacacs
  Server type           = TACACS+,
  IP Address 1         = 10.10.5.1,
  Port                 = 49,
  Timeout (in sec)    = 2,
  Encryption enabled   = yes

```

When RADIUS server is configured with NAS port configurations and unique session ID enabled:

```

-> show aaa server
Server name           = Server1
  Server type         = RADIUS,
  IP Address 1       = 172.21.160.26,
  Retry number       = 3,
  Time out (sec)    = 2,
  Authentication port = 1812,
  Accounting port   = 1813,
  Nas Port          = ifindex,
  Nas Port Id       = disable,
  Nas Port Type     = async
  Mac Addr Format Status = disable,
  Mac Address Format = uppercase,
  Unique Acct Session Id = disable,
  Server oper status = DOWN

```

When RADIUS server is configured with default unique session ID value:

```

-> show aaa server
Server name = Server1
  Server type           = RADIUS,
  IP Address 1         = 172.21.160.29,
  Retry number       = 3,
  Time out (sec)    = 2,
  Authentication port = 1812,
  Accounting port   = 1813,
  Nas port          = default,
  Nas port id       = disable,
  Nas port type     = ethernet,
  Unique Acct Session Id = disable

```

When RADIUS server is configured with Case Sensitive MAC address Authentication:

```

-> aaa tacacs command-authorization enable
-> show aaa server
aaa tacacs command-authorization enable
aaa tacacs server-wait-time 4
Server name = Server1
  Server type           = RADIUS,
  IP Address 1         = 172.21.160.29,
  Retry number       = 3,
  Time out (sec)    = 2,
  Authentication port = 1812,
  Accounting port   = 1813,
  Nas port          = default,
  Nas port id       = disable,

```

```
Nas port type          = ethernet,
MAC Address Format Status = disable,
MAC Address Format      = uppercase,
Unique Acct Session Id = disable

Server name = tacacs
  Server type      = Tacacs+,
  IP Address 1    = 172.18.16.99,
  Port           = 49,
  Time out (sec) = 2,
Encryption enabled = yes

-> show aaa server ldap2
Server name = ldap2
  Server type= LDAP,
  Host name 1= ors40535,
  Retry number= 3,
  Timeout (in sec)= 2,
  Port= 389,
  Domain name= manager,
  Search base= c=us,
```

RADIUS, TACACS+, and LDAP parameters are configured through the [aaa radius-server](#), [aaa tacacs+-server](#), and [aaa ldap-server](#) commands. Parameters for the ACE server are automatically set by the switch.

output definitions

aaa tacacs command-authorization	The status of command based authorization in TACACS+ server.
aaa tacacs server-wait-time	The wait time of TACACS+ server during command authorization process
Server name	The name of the server. The switch automatically assigns “ace” to an ACE server. A RADIUS, TACACS+ or LDAP server name is defined through the aaa radius-server , aaa tacacs+-server , and aaa ldap-server commands respectively.
Server type	The type of server (ACE, LDAP, TACACS+, or RADIUS).
Host name	The name of the primary LDAP, TACACS+, or RADIUS host.
IP address	The IP address(es) of the server.
Retry number	The number of retries the switch makes to authenticate a user before trying the backup server.
Timeout	The timeout for server replies to authentication requests.
Port	The port number for the primary LDAP or TACACS+ server.
Encryption enabled	The status of the encryption.
Domain name	The super-user or administrative distinguished name in the format recognized by the LDAP-enabled directory servers.
Search base	The search base recognized by the LDAP-enabled directory servers.
Authentication port	The UDP destination port for authentication requests.
Accounting port	The UDP destination port for accounting requests.
NAS Port	NAS port configured for the NAS server.
NAS Port Id	NAS port ID configured for the NAS server.
NAS Port Type	NAS port type configured for the NAS server.
MAC Address Format Status	The MAC address format status (enable or disable) for Case Sensitive MAC address authentication.
MAC Address Format	The MAC-address-format setting (uppercase or lowercase) for Case Sensitive MAC address authentication.
Unique Acct Session Id	The status of the unique session ID: Enable or Disable
Server oper status	The status of the RADIUS server: Up or Down

Release History

Release 6.6.1; command was introduced.

Release 6.6.4; NAS Port, NAS Port Id, NAS Port Type, MAC Address Format Status, MAC Address Format, Unique Acct Session Id output fields added.

Release 6.7.1 R02; Server oper Status output field added.

Related Commands

aaa radius-server	Configures or modifies a RADIUS server for Authenticated Switch Access.
aaa ldap-server	Configures or modifies an LDAP server for Authenticated Switch Access.
aaa tacacs+-server	Configures or modifies a TACACS+ server for Authenticated Switch Access.

MIB Objects

```
aaaServerTable
  aaasName
  aaasProtocol
  aaasHostName
  aaasIpAddress
  aaasHostName2
  aaasIpAddress2
  aaasRetries
  aaasTimeout
  aaasRadKey
  aaasRadAuthPort
  aaasRadAcctPort
  aaasLdapPort
  aaasLdapDn
  aaasLdapPasswd
  aaasLdapSearchBase
  aaasLdapServType
  aaasLdapEnableSsl
  aaasAceClear
  aaasRowStatus
  aaasTacacsKey
  aaasTacacsPort
  aaasHttpPort
  aaasHttpDirectory
  aaasHttpProxyHostName
  aaasHttpProxyIpAddress
  aaasHttpProxyPort
  aaasRadMacAddrCaseStatus
  aaasRadMacAddrFormat
  aaasRadUniqueAcctSessionId
```

show aaa authentication

Displays information about the current authenticated switch session.

show aaa authentication

Syntax Definitions

N/A

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

Use the **show aaa authentication** command to display authentication information about switch management services (Telnet, FTP, console port, Secure Shell, etc.).

Examples

```
-> show aaa authentication
Service type = Default
  1rst authentication server= RadiusServer
  2nd authentication server= local
Service type = Console
  1rst authentication server= local
Service type = Telnet
  Authentication = Use Default,
  1rst authentication server= RadiusServer
  2nd authentication server= local
Service type = FTP
  Authentication = Use Default,
  1rst authentication server= RadiusServer
  2nd authentication server= local
Service type = Http
  Authentication = Use Default,
  1rst authentication server= RadiusServer
  2nd authentication server= local
Service type = Snmp
  Authentication = Use Default,
  1rst authentication server= RadiusServer
  2nd authentication server= local
Service type = Ssh
  Authentication = Use Default,
  1rst authentication server= TacacsServer
  2nd authentication server= local
```

output definitions

Authentication	Displays denied if the management interface is disabled. Displays Use Default if the management interface is configured to use the default configuration.
1st authentication server	The first server to be polled for authentication information.
2nd authentication server	The next server to be polled for authentication information.

Release History

Release 6.6.1; command was introduced.

Related Commands

[aaa authentication](#) Configures the interface for Authenticated Switch Access and specifies the server(s) to be used.

MIB Objects

aaaAuthSatable
aaatsName1
aaatsName2
aaatsName3
aaatsName4
aaatsName5

show aaa authentication 802.1x

Displays information about the global 802.1X configuration on the switch.

show aaa authentication 802.1x

Syntax Definitions

N/A

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

This command displays information about 802.1X settings configured through the [aaa authentication 802.1x](#) command.

Examples

```
-> show aaa authentication 802.1x
1rst authentication server = nms-vlan-30,
port usage                 = unique
```

output definitions

1st authentication server	The first server to be polled for authentication information. Any backup servers are also displayed on subsequent lines.
port usage	Whether 802.1X ports on the switch will only accept frames from the supplicant's MAC address after successful authentication (unique); or the switch will accept any frames on 802.1X ports after successful authentication (global)

Release History

Release 6.6.1; command was introduced.

Related Commands

[aaa authentication 802.1x](#) Enables/disables the switch for 802.1X authentication.

MIB Objects

AaaAuth8021XTable

aaatxName1

aaatxName2

aaatxName3

aaatxName4

aaatxName5

aaatxOpen

show aaa authentication mac

Displays a list of RADIUS servers configured for MAC-based authentication.

show aaa authentication mac

Syntax Definitions

N/A

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

This command displays MAC authentication servers configured through the [aaa authentication mac](#) command.

Examples

```
-> show aaa authentication mac
1rst authentication server = rad1,
```

output definitions

1st authentication server	The first server to be polled for authentication information. Any backup servers are also displayed on subsequent lines.
----------------------------------	--

Release History

Release 6.6.1; command was introduced.

Related Commands

[aaa authentication mac](#) Enables/disables the switch for MAC-based authentication.

MIB Objects

AaaAuthMACTable

```
aaaMacSrvrName1
aaaMacSrvrName2
aaaMacSrvrName3
aaaMacSrvrName4
aaaMacSrvrName5
```

show aaa accounting 802.1x

Displays information about accounting servers for 802.1X sessions.

show aaa authentication 802.1x

Syntax Definitions

N/A

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

Accounting servers are configured through the [aaa radius-server](#), [aaa tacacs+-server](#), and [aaa ldap-server](#) commands.

Examples

```
-> show aaa accounting 802.1x
1st authentication server = onyx,
2nd accounting server    = odyssey
3rd accounting server    = local
```

output definitions

1st authentication server	The first server to be polled for accounting of 802.1X sessions. Any backup servers are also displayed on subsequent lines.
----------------------------------	---

Release History

Release 6.6.1; command was introduced.

Related Commands

[aaa accounting 802.1x](#) Enables/disables accounting for 802.1X authentication sessions.

MIB Objects

```
AaaAcct8021XTable
  aaacxName1
  aaacxName2
  aaacxName3
  aaacxName4
  aaacxName5
```

show aaa accounting mac

Displays information about accounting servers for 802.1X non-suppliant (MAC-based) sessions.

show aaa authentication mac [statistics]

Syntax Definitions

N/A

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

Accounting servers are configured through the [aaa radius-server](#), [aaa tacacs+-server](#), and [aaa ldap-server](#) commands.

Examples

```
-> show aaa accounting mac
1st authentication server = onyx,
2nd accounting server= odyssey
3rd accounting server= local
```

```
-> show aaa accounting mac statistics
NSA-users Logged in      = 1,
NSA-users Logged out    = 1,
NSA-users Failed info    = 0,
NSA-users IntermUpdate   = 0
```

output definitions

1st authentication server	The first server to be polled for accounting of 802.1X sessions. Any backup servers are also displayed on subsequent lines.
NSA-users Logged in	Displays the number of non-suppliant users logged in successfully.
NSA-users Logged out	Displays the number of non-suppliant users logged out successfully.
NSA-users Failed info	Displays the number of non-suppliant users whose authentication failed.
NSA-users IntermUpdate	Displays the number of interim updates sent when client obtains IP from DHCP server.

Release History

Release 6.6.3; command was introduced.

Related Commands**aaa accounting mac**

Enables/disables accounting for 802.1X non-suppliant (MAC-based) authentication sessions.

MIB Objects

N/A

show aaa accounting

Displays information about accounting servers configured for Authenticated Switch Access and 802.1X port-based network access control. Accounting servers keep track of network resources (time, packets, bytes, etc.) and user activity.

show aaa accounting

Syntax Definitions

N/A

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

Use the **show aaa accounting** command to display accounting servers configured for management session types (Telnet, FTP, console port, HTTP, or SNMP) and 802.1X port-based network access control.

Examples

```
-> show aaa accounting
Authenticated vlan = 23,
  1rst accounting server= RadiusServer
  2nd accounting server= local
Authenticated vlan = 24,
  1rst accounting server= RadiusServer,
  2nd accounting server= local
Authenticated vlan = 25,
  1rst accounting server= RadiusServer,
  2nd accounting server= local
Session (telnet, ftp,...),
  1rst accounting server= RadiusServer,
  2nd accounting server= local
```

output definitions

Authenticated vlan	<i>Authenticated VLANs are not supported.</i>
Session	Indicates servers for Authenticated Switch Access session.
1st authentication server	The first server to be polled for authentication information.
2nd authentication server	The next server to be polled for authentication information.

Release History

Release 6.6.1; command was introduced.

Related Commands

[aaa accounting mac](#)

Configures accounting servers for Authenticated Switch Access sessions.

[aaa accounting 802.1x](#)

Enables/disables accounting for 802.1X authentication sessions.

MIB Objects

aaaAcctSatable

aaacsName1

aaacsName2

aaacsName3

aaacsName4

aaacsName5

show user

Displays information about all users or a particular user configured in the local user database on the switch.

show user [*username*]

Syntax Definitions

username The name of the user. Used for logging into the switch.

Defaults

By default, all users are displayed if the *username* parameter is not specified with this command.

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

Use this command to display information about read/write access and partitioned management access (domains and families) or end-user profiles associated with users.

Examples

```
-> show user
User name = Customer1,
  Password expiration      = 10/27/2007 11:01 (30 days from now),
  Password allow to be modified date = 9/30/2007 10:59 (3 days from now),
  Account lockout         = Yes (Automatically unlocked after 19 minute(s)from now),
  Password bad attempts   = 3,
  Read Only for domains   = None,
  Read/Write for domains  = Admin System Physical Layer2 Services policy Security ,
  Read/Write for families = ip rip ip-routing ipmr ipms ,
  Snmp allowed            = YES,
  Snmp authentication     = SHA,
  Snmp encryption        = DES
User name = admin,
  Password expiration      = 10/27/2007 11:01 (30 days from now),
  Password allow to be modified date = 9/30/2007 10:59 (3 days from now),
  Account lockout         = None,
  Password bad attempts   = 0,
  Read Only for domains   = None,
  Read/Write for domains  = All ,
  Snmp allowed            = NO
User name = j_smith,
  Password expiration      = 10/27/2007 11:01 (30 days from now),
  Password allow to be modified date = 9/30/2007 10:59 (3 days from now),
  Account lockout         = Yes (Automatically unlocked after 19 minute(s)from now),
  Password bad attempts   = 3,
  END user profile        = u_profile1,
  Snmp allowed            = YES,
  Snmp authentication     = SHA,
  Snmp encryption        = DES
```



```

User name = public,
  Password expiration      = 10/27/2007 11:01 (30 days from now),
  Password allow to be modified date    = 9/30/2007 10:59 (3 days from now),
  Account lockout         = None,
  Password bad attempts   = 0,
  Read Only for domains   = None,
  Read/Write for domains  = All ,
  Snmp allowed            = NO,
User name = default (*),
  Password expiration      = 10/27/2007 11:01 (30 days from now),
  Password allow to be modified date    = 9/30/2007 10:59 (3 days from now),
  Account lockout         = None,
  Password bad attempts   = 0,
  Read Only for domains   = None,
  Read/Write for domains  = System Physical Layer2 Services policy Security ,
  Read/Write for families = file telnet dshell debug ip rip ip-routing ipmr ipms ,
  Snmp allowed            = NO,
(*)Note:
  The default user is not an active user account.
  It contains the default user account settings,
  for new user accounts.

```

```

-> show user j_smith
User name = j_smith,
  Password expiration      = 10/27/2007 11:01 (30 days from now),
  Password allow to be modified date    = 9/30/2007 10:59 (3 days from now),
  Account lockout         = Yes (Automatically unlocked after 19 minute(s)from now),
  Password bad attempts   = 3,
  END user profile        = u_profile1,
  Snmp allowed            = YES,
  Snmp authentication     = SHA,
  Snmp encryption         = DES

```

output definitions

User name	The user name for this account.
Password expiration	The date and time on which the password will expire. This field only displays if the password expiration is configured specifically for a user, or a default password expiration is configured globally on the switch through the user password-expiration command. (Note that the date/time is based on the switch's default system date/time or the system date/time configured through the system date and system time commands.)
Password allow to be modified date	The earliest date and time on which the user may change the password. Configured through the user password-min-age command.
Account lockout	Indicates if the user account is locked out (Yes or No) and how many minutes remain until the user account is automatically unlocked. If no remaining time is displayed, the admin user or a user with admin privileges must manually unlock the account. Configured through the user lockout-duration and user lockout unlock commands.
Password bad attempts	The number of failed password login attempts for this user account.
Read Only for domains	The command domains available with the user's read-only access. See the table on the next page for a listing of valid domains. This field does not display if an end-user profile is associated with the user account.

output definitions (continued)

Read/Write for domains	The command domains available with the user's read-write access. See the table on the next page for a listing of valid domains. This field does not display if an end-user profile is associated with the user account.
Read Only for families	The command families available with the user's read-only access. See the table on the next page for a listing of valid families. This field does not display if an end-user profile is associated with the user account.
Read/Write for families	The command families available with the user's read-write access. See the table on the next page for a listing of valid families. This field does not display if an end-user profile is associated with the user account.
END user profile	The name of an end-user profile associated with the user account. Configured through the aaa admin-logout command. This field only displays if an end-user profile is associated with the user account.
Snmp allowed	Indicates whether or not the user is authorized to use SNMP (YES or NO). SNMP is allowed for the user account when SNMP authentication is specified for the account.
Snmp authentication	The level of SNMP authentication, if any, configured for the user. This field only displays if the user is authorized to use SNMP.
Snmp encryption	The level of SNMP encryption, if any, configured for the user. This field only displays if the user is authorized to use SNMP.

Possible values for command domains and families are listed here:

Domain	Corresponding Families
domain-admin	file telnet dshell debug
domain-system	system aip snmp rmon webmgt config
domain-physical	chassis module interface pmm health
domain-network	ip rip ip-routing ipmr ipms
domain-layer2	vlan bridge stp 802.1q linkagg ip-helper
domain-service	dns
domain-security	session aaa

Release History

Release 6.6.1; command was introduced.

Related Commands

user	Configures user entries in the local user database.
show user password-policy	Displays the global password policy configuration for the switch.
show user lockout-setting	Displays the global user lockout settings for the switch.

MIB Objects

```
aaaUserTable
  aaauUserName
  aaauPasswordExpirationDate
  aaauPasswordExpirationInMinute
  aaauPasswordAllowModifyDate
  aaauPasswordLockoutEnable
  aaauBadAttempts
  aaauReadRight1
  aaauReadRight2
  aaauWriteRight1
  aaauWriteRight2
  aaauEndUserProfile
  aaauSnmpLevel
  aaauSnmpAuthkey
```

show user password-size

Displays the minimum number of characters that are required for a user password.

show user password-size

Syntax Definitions

N/A

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

Use this command to display the current minimum number of characters required when configuring user passwords.

Examples

```
-> show user password-size
password, minimum size 9
```

Release History

Release 6.6.1; command was introduced.

Related Commands

user password-size min	Configures the minimum number of characters required when configuring a user password.
user	Configures or modifies user entries in the local user database.
password	Configures the current user's password.
show user password-policy	Displays the global password policy configuration for the switch.

MIB Objects

```
aaaAsaConfig
  aaaAsaPasswordSizeMin
```

show user password-expiration

Displays the expiration date for passwords configured for user accounts stored on the switch.

show user password-expiration

Syntax Definitions

N/A

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

This command displays the default password expiration, which is configured through the [user password-expiration](#) command.

Examples

```
-> show user password-expiration
User password expiration is set to 3 days.
```

Release History

Release 6.6.1; command was introduced.

Related Commands

user password-expiration	Configures an expiration date for user passwords stored locally on the switch or disables password expiration.
user	Configures or modifies user entries in the local user database.
password	Configures the current user's password.
show user password-policy	Displays the global password policy configuration for the switch.

MIB Objects

```
aaaAsaConfig
  aaaAsaDefaultPasswordExpirationInDays
```

show user password-policy

Displays the global password settings configured for the switch.

show user password-policy

Syntax Definitions

N/A

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

The password policy contains parameter values that define configuration requirements for all passwords that are created on the switch. Use this command to display the current parameter values for the password policy.

Examples

```
-> show user password-policy
Password Policy:
Contain username flag: Enable
Minimum number of English uppercase characters: 6
Minimum number of English lowercase characters: 4
Minimum number of base-10 digit: 2
Minimum number of non-alphanumeric: 3
Minimum size: 8
Password history: 4
Password minimum age: 20 (days)
Password expiration: 40 (days)
```

output definitions

Contain username flag	Indicates if the username is included with the password check (Enable or Disable). Configured through the user password-policy cannot-contain-username command.
Minimum number of English uppercase characters	The minimum number of uppercase characters required in a password. Configured through the user password-policy min-uppercase command.
Minimum number of English lowercase characters	The minimum number of lowercase characters required in a password. Configured through the user password-policy min-lowercase .
Minimum number of base-10 digit	The minimum number of digits required in a password. Configured through the user password-policy min-digit command.
Minimum number of non-alphanumeric	The minimum number of non-alphanumeric characters required in a password. Configured through the user password-policy min-non-alpha command.

output definitions

Minimum size	The minimum number of characters required for the password size. Configured through the user password-size min command.
Password history	The maximum number of old passwords retained in the password history. Configured through the user password-history command.
Password minimum age	The number of days a password is protected from any modification. Configured through the user password-min-age command.
Password expiration	The default expiration date applied to all passwords. Configured through the user password-expiration command.

Release History

Release 6.6.1; command was introduced.

Related Commands

- show user password-size** Displays the minimum number of characters that are required for a user password.
- show user password-expiration** Displays the expiration date for passwords configured for user accounts stored on the switch.

MIB Objects

aaaAsaConfig

```

aaaAsaPasswordContainUserName
aaaAsaPasswordMinUpperCase
aaaAsaPasswordMinLowerCase
aaaAsaPasswordMinDigit
aaaAsaPasswordMinNonAlpha
aaaAsaPasswordHistory
aaaAsaPasswordMinAge
aaaAsaPasswordSizeMin
aaaAsaDefaultPasswordExpirationInDays

```

show user lockout-setting

Displays the global user lockout settings for the switch.

show user lockout-setting

Syntax Definitions

N/A

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

The global lockout settings include parameter values that determine the length of a user observation window, the amount of time a locked user remains locked, and the number of failed password login attempts allowed.

Examples

```
-> show user lockout-setting
Lockout Setting:
Observation window: 30 (minutes)
Duration: 200 (minutes)
Threshold: 20
```

output definitions

Observation window	The amount of time, in minutes, during which the number of failed password login attempts are counted. Configured through the user lockout-window command.
Duration	The amount of time, in minutes, that a locked user account remains locked out of the switch. Configured through the user lockout-duration command.
Threshold	The maximum number of failed password login attempts allowed before the user is locked out of the switch. Configured through the user lockout-threshold command.

Release History

Release 6.6.1; command was introduced.

Related Commands

user lockout unlock

Manually locks or unlocks a user account on the switch.

show user

Displays information about all users or a particular user configured in the local user database on the switch.

MIB Objects

aaaAsaConfig

aaaAsaLockoutWindow

aaaAsaLockoutDuration

aaaAsaLockoutThreshold

debug command-info

Enables or disables the command information mode in the CLI. When this mode is enabled, any command entered on the command line will display information about the command rather than executing the command.

debug command-info {enable | disable}

Syntax Definitions

enable Enables the debugging command information mode.
disable Disables the debugging command information mode.

Defaults

parameter	default
enable disable	disable

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- When the mode is enabled, any command entered will result in output similar to the one shown in the Examples section below. Any commands entered when the mode is enabled are not executed. To return to normal operating mode, enter **debug command-info disable**.
- The command information mode is useful when setting privileges for users.

Examples

```
-> debug command-info enable
CLI command info mode on
-> vlan 2
PM family:VLAN
R/W mode:WRITE
-> ls
PM family:SYSTEM
R/W mode:READ
```

output definitions

PM family	The partitioned management (PM) command family to which the command belongs.
R/W mode	Whether the current command is a read-only or a write command.

Release History

Release 6.6.1; command was introduced.

Related Commands**user**

Configures or modifies user entries in the local user database.

MIB ObjectsN/A

debug end-user profile

Use this command to display detailed information about profiles or a particular profile.

debug end-user profile *name*

Syntax Definitions

name The name of the end-user profile, configured through the **end-user profile** command.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Use the **show end-user profile** command to display basic information about end-user profiles.
- If a particular profile is specified, information will be displayed for the profile and for all indexes following that profile. (The index value is the way the switch internally tracks profiles and reflects the order in which profiles are created.)

Examples

```
-> debug end-user profile
End user profile : jentest, length : 7 for index : 1
  End user profile @0x5e781e8
  Read area rights : 3f
  Read and Write area rights : 0
  Physical area rights : 2
  vlan table area rights : 2
  Basic Ip routing area rights : 2
  Ip routes table area rights : 2
  Mac filtering table area rights : 2
  Spantree area rights : 2
  Slot 1, ports : 0 0 0 0
  Slot 2, ports : 0 0 0 0
  Slot 3, ports : 0 0 0 0
  Slot 4, ports : 0 0 0 0
  Slot 5, ports : 0 0 0 0
  Slot 6, ports : 0 0 0 0
  Slot 7, ports : 0 0 0 0
  Slot 8, ports : 0 0 0 0
  Slot 9, ports : 0 0 0 0
  Slot 10, ports : 0 0 0 0
  Slot 11, ports : 0 0 0 0
  Slot 12, ports : 0 0 0 0
  Slot 13, ports : 0 0 0 0
  Slot 14, ports : 0 0 0 0
  Slot 15, ports : 0 0 0 0
```

```
Slot 16, ports : 0 0 0 0
Vlan Id range number : 1
Vlan range 1, start : 1, end : 3
End user profile not created for index : 2
End user profile not created for index : 3
End user profile not created for index : 4
End user profile not created for index : 5
End user profile not created for index : 6
End user profile not created for index : 7
End user profile not created for index : 8
End user profile not created for index : 9
End user profile not created for index : 10
.
.
.
.
```

Release History

Release 6.6.1; command was introduced.

Related Commands

[aaa admin-logout](#)

Configures or modifies an end-user profile, which specifies access to command areas on particular ports and VLANs.

[show end-user profile](#)

Displays information about end-user profiles or a particular end-user profile.

MIB Objects

N/A

Related Commands

aaa admin-logout

Configures or modifies an end-user profile, which specifies access to command areas on particular ports and VLANs.

user

Configures or modifies user entries in the local user database.

MIB Objects

```
endUserProfileTable
  endUserProfileName
  endUserProfileAreaPhysical
  endUserProfileAreaVlanTable
  endUserProfileAreaBasicIPRouting
  endUserProfileAreaIpRoutesTable
  endUserProfileAreaMacFilteringTable
  endUserProfileAreaSpantree
endUserProfileSlotPortTable
  endUserProfileSlotNumber
  endUserProfilePortList
endUserProfileVlanIdTable
  endUserProfileVlanIdStart
  endUserProfileVlanIdEnd
```

show aaa user-network-profile

Displays the User Network Profile (UNP) configuration for the switch.

show aaa user-network-profile

Syntax Definitions

N/A

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

N/A

Examples

```
-> show aaa user-network-profile
```

Max Role Name	Vlan	HIC	Policy List Name	Max Ingress-BW	Egress-BW	Max Default-Depth
100down10up	50	No	list1		10.0M	
100.0M				128K		
50down50up	40	Yes	list1, list2	50.0M		50.0M 256K

output definitions

Role Name	The user profile name.
Vlan	The VLAN ID number the profile assigns to the user device.
HIC	Whether Host Integrity Check is enabled or disabled for the profile.
Policy List Name	The name of one or more QoS policy lists that are applied to the device to which this profile is assigned.
Max Ingress-BW	Maximum ingress bandwidth associated to UNP.
Max Egress-BW	Maximum egress bandwidth associated to UNP.
Max Default-Depth	Maximum default depth associated to UNP.

Release History

Release 6.6.3; command was introduced.

Release 6.6.4; Max Ingress-BW, Max Egress-BW, and Max Default-Depth fields added.

Related Commands

aaa user-network-profile

Creates the user role in the user network profile table and maps the role to a VLAN ID.

MIB Objects

```
aaaUserNetProfileTable  
  aaaUserNetProfileName  
  aaaUserNetProfileVlanID  
  aaaUserNetProfileHICflag  
  aaaUserNetProfileQosPolicyListName  
  aaaUserNetProfileMaxIngressBw  
  aaaUserNetProfileMaxEgressBw  
  aaaUserNetProfileMaxDefaultDepth
```

show aaa classification-rule

Displays the User Network Profile (UNP) mobile classification rule configuration for the switch.

show aaa classification-rule {mac-rule | mac-range-rule | ip-net-rule}

Syntax Definitions

mac-rule	Displays MAC address rules.
mac-range-rule	Displays MAC address range rules.
ip-net-rule	Displays IP network address rules.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Specifying a rule type parameter (**mac-rule** or **mac-range-rule** or **ip-net-rule**) is required with this command.
- UNP mobile rules take precedence over VLAN mobile rules.

Examples

```
-> show aaa classification-rule mac-rule
```

```
MAC Address          User Network Profile Name
-----+-----
00:1a:a0:b1:fa:e5   guest_user
00:b0:d0:2a:0e:2e   acct_user
00:b0:d0:2a:11:60   engr_user
```

output definitions

MAC Address	The source MAC address of the host device to which the UNP is applied.
User Network Profile Name	The name of the UNP applied to the host device.

```
-> show aaa classification-rule mac-range-rule
```

```
Low MAC Address      High MAC Address   User Network Profile Name
-----+-----+-----
00:1a:a0:b1:fa:10   00:1a:0a:b1:fa:20   guest_user
00:b0:d0:2a:0e:2e   00:b0:d0:2a:0e:3a   acct_user
00:b0:d0:2a:11:60   00:b0:d0:2a:11:70   engr_user
```

output definitions

Low MAC Address	The MAC address that identifies the low end of the range of addresses.
High MAC Address	The MAC address that identifies the high end of the range of addresses.
User Network Profile Name	The name of the UNP applied to the host device.

```
-> show aaa classification-rule ip-net-rule
```

```
IP Addr          IP Mask          User Network Profile Name
-----+-----+-----
198.4.21.1       255.255.0.0     guest_user
10.1.1.1         255.0.0.0       acct_user
20.2.2.1         255.0.0.0       engr_user
```

output definitions

IP Addr	The source IP address of the host device to which the UNP is applied.
IP Mask	The subnet mask for the IP address.
User Network Profile Name	The name of the UNP applied to the host device.

Release History

Release 6.6.3; command was introduced.

Related Commands

aaa classification-rule mac-address	Defines a MAC address classification rule and associates that rule with a user network profile.
aaa classification-rule mac-address-range	Defines a MAC address classification rule that specifies a range of MAC addresses for classification and associates the range of addresses with a user network profile.
aaa classification-rule ip-address	Defines an IP network address classification rule and associates the rule with a user network profile.

MIB Objects

```
aaaUNPMacRuleTable
  aaaUNPMacRuleAddr
  aaaUNPMacRule
  aaaUNPMacRuleProfileName
aaaUNPMacRangeRuleTable
  aaaUNPMacRangeRuleLoAddr
  aaaUNPMacRangeRuleHiAddr
  aaaUNPMacRangeRuleProfileName
aaaUNPIpNetRuleTable
  aaaUNPIpNetRuleAddr
  aaaUNPIpNetRuleMask
  aaaUNPIpNetRuleProfileName
```

show aaa hic

Displays the global Host Integrity Check (HIC) configuration for the switch.

show aaa hic

Syntax Definitions

N/A

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

N/A

Examples

```
-> show aaa hic
HIC Global Status: Enabled
HIC Web Agent Download URL: http://100.100.100.100:8080/CGAgentLauncher.htm
HIC Host Custom HTTP Proxy Port: 8383
HIC Background Poll interval: 32
HIC Server-fail-mode: Hold
```

output definitions

HIC Status	The HIC status for the switch (Enabled or Disabled). Configured through the aaa hic command.
HIC Web Agent Download URL	The URL for the web agent download server. Configured through the aaa hic web-agent-url command.
HIC Host Custom HTTP Proxy Port	The proxy port number used when the web-based host is redirected to the HIC server. Configured through the aaa hic custom-proxy-port command.
HIC Background Poll Interval	The URL for the web agent download server. Configured through the aaa hic redundancy background-poll-interval command.
HIC Server-fail-mode	The server background poll interval. Configured through the aaa hic server-failure mode command.

Release History

Release 6.6.3; command was introduced.

Related Commands

show aaa hic host	Displays a list of the learned host MAC addresses and the HIC status for each host.
show aaa hic server	Displays the HIC server configuration for the switch.
show aaa hic server-failure policy	Displays the list of servers allowed access to the switch and host device as part of the HIC process.

MIB Objects

```
aaaHicConfigInfo
  aaaHicStatus
  aaaHicWebAgentDownloadUrl
  aaaHicCustomHttpProxyPort
  aaaHicBgPollInterval
  aaaHicSrvFailMode
```

show aaa hic host

Displays a list of the learned host MAC addresses and the HIC status for each host.

show aaa hic host

Syntax Definitions

N/A

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

N/A

Examples

```
-> show aaa hic host
  HIC Host MAC          Status
-----+-----
00:1a:a0:b1:fa:e5      Successful
00:b0:d0:2a:0e:2e      Failed
00:b0:d0:2a:11:60      Successful
```

output definitions

HIC Host MAC	The MAC address for each learned host device.
Status	The HIC status for the host device (In-Progress , Successful , Failed , or Timeout).

Release History

Release 6.6.3; command was introduced.

Related Commands

show aaa hic

Displays the global HIC configuration for the switch.

show aaa hic server

Displays the HIC server configuration for the switch.

**show aaa hic server-failure
policy**

Displays the list of servers allowed access to the switch and host device as part of the HIC process.

MIB Objects

aaaHicHostTable

aaaHicHostMac

aaaHicHostStatus

show aaa hic server

Displays the HIC server configuration for the switch.

show aaa hic server

Syntax Definitions

N/A

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

A Primary and Backup HIC server can be configured per switch.

Examples

```
-> show aaa hic server
```

```
-> show aaa hic server
```

Server Name	IP Address	UDP Port	Server Role	Server Connection	Server Status
hic1	172.18.16.200	11707	Primary	Active	Down
hic2	172.18.16.232	11707	Backup	Inactive	Down

output definitions

HIC Server Name	The name of the HIC server. Note that only one server is supported per switch. Configured through the aaa byod white-list command.
HIC Server IP Address	The IP address of the HIC server. Configured through the aaa byod white-list command.
HIC server UDP Port	The UDP port number. Configured through the aaa byod white-list command.
HIC Server Role	The role of this server; primary or backup. Configured through the aaa byod white-list command.
HIC Server Connection	The server connection status; active or inactive.
HIC Server Status:	The server status; up or down.

Release History

Release 6.6.3; command was introduced.

Related Commands

show aaa hic

Displays the global HIC configuration for the switch.

show aaa hic host

Displays a list of the learned host MAC addresses and the HIC status for each host.

show aaa hic server-failure policy

Displays the list of servers allowed access to the switch and host device as part of the HIC process.

MIB Objects

aaaHicSvrTable

aaaHicSvrName

aaaHicSvrIpAddr

aaaHicSvrRole

aaaHicSvrConnection

aaaHicSvrPort

show aaa hic allowed

Displays the HIC server exception list. The servers included in this list are exempted from the HIC process. This allows a host device to access these servers for compliance and remediation purposes.

show aaa hic allowed

Syntax Definitions

N/A

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Use this command to get the list of servers allowed access to the switch and host device as part of the HIC process.
- The HIC server exception list may contain up to four servers per switch.

Examples

```
-> show aaa hic allowed
      Allowed Name          IP Address          IP Mask
-----+-----+-----
reml_srv                   3.3.3.3             255.0.0.0
```

output definitions

Allowed Name	The name of the server that is allowed access to the switch and host as part of the HIC process. Configured through the aaa classification-rule mac-address command.
IP Address	The IP address of the allowed server. Configured through the aaa classification-rule mac-address command.
IP Mask	The IP subnet mask for the allowed server. Configured through the aaa classification-rule mac-address command.

Release History

Release 6.6.3; command was introduced.

Related Commands

show aaa hic	Displays the global HIC configuration for the switch.
show aaa hic host	Displays a list of the learned host MAC addresses and the HIC status for each host.
show aaa hic server	Displays the HIC server configuration for the switch.

MIB Objects

```
aaaHicAllowedTable  
  aaaHicAllowedName  
  aaaHicAllowedIpAddr  
  aaaHicAllowedIpMask
```

show aaa hic server-failure policy

Displays the HIC server failure mode and UNP mapping.

show aaa hic server-failure policy

Syntax Definitions

N/A

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

N/A

Examples

```
-> show aaa hic server-failure policy
```

```
Mode: Hold
```

```
UNP Source
```

```
UNP Destination
```

```
-----+-----
```

```
unp1
```

```
unp2
```

output definitions

Mode	The HIC Server Failure Mode; Hold or Pass-Through.
UNP Source	The current UNP of the users.
UNP Destination	The UNP that the users will be moved to if both HIC servers are unavailable.

Release History

Release 6.6.3; command was introduced.

Related Commands

[aaa byod white-list](#) Configures the HIC server.

MIB Objects

aaaHicSvrDownUnpMapTable

aaaHicSvrDownUnpMapEntry

aaaHicSvrDownUnpName

aaaHicSvrDownMappedUnpName

aaaHicSvrDownUnpRowStatus

```
aaaHicConfigInfoTable  
aaaHicSrvFailMode
```

show aaa-device all-users

Displays the information about the users (both supplicant and non supplicant) logged into the switch.

show aaa-device all-users [**unp** *profile_name* | **policy** *device_policy* | **authentication-status** [**success** | **fail**]] [**port** *slot/port*]

Syntax Definitions

<i>profile_name</i>	The name of a user network profile.
<i>device_policy</i>	The type of Access Guardian device classification policy.
success	Display all users that have successfully authenticated.
fail	Display all users that have failed authentication.
<i>slot/port</i>	The slot and port number designation for a specific switch port.

Defaults

If none of the optional parameters are specified with this command, all users learned on all 802.1x ports are displayed by default.

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Use the **unp** *profile_name* parameter to display only those users associated with a specific user network profile.
- Use the **policy** *device_policy* parameter to display only those users authenticated with one of the device classification policy types. To specify which policy to use with this command, enter one of the following types for the *device_policy* parameter value:

policy type

vlan
user-network-profile
group mobility
default-vlan
captive-portal
authentication

- Use the **authentication success** or **authentication fail** parameters to display only those users that have either passed or failed authentication.
- Use the **port** *slot/port* parameter to display only those users learned on a specific port. Note that it is also possible to combine this parameter with any of the other **show aaa-device all-users** command parameters.

Examples

```
-> show aaa-device all-users
```

Slot Port	MAC Address	User Name	VLAN	Addr Mode	IP Address	Authentication Type	Result	User Profile	Network Name
1/1	00:11:50:a6:12:00	User101	100	Brdg	10.133.0.100	1X	Pass	Marketing	
1/1	00:11:50:a6:12:01	User101	100	Brdg	10.133.0.101	1X	Pass	Marketing	
1/1	00:11:50:a6:12:02	User101	100	Brdg	10.133.0.102	1X	Pass	Marketing	
1/1	00:11:50:a6:12:03	User101	100	Brdg	10.133.0.103	1X	Pass	Marketing	
1/1	00:1a:50:a6:12:50	--	100	Blk	10.133.2.128	None	N/A	engr_no_internet	
1/1	00:1a:50:a6:12:51	--	100	Blk	10.133.2.129	None	N/A	engr_no_internet	
1/1	00:1a:50:a6:12:52	--	100	Blk	10.133.2.130	None	N/A	engr_no_internet	
1/1	00:1a:50:a6:12:53	--	100	Blk	10.133.2.131	None	N/A	engr_no_internet	

Slot Port	MAC Address	User Name	VLAN	Addr Mode	IP Address	Authentication Type	Result	User Profile	Network Name
1/2	00:00:39:47:4f:0c	pc2006	1000	Brdg	-	1X	Pass	Marketing	
1/2	00:b0:d0:77:fa:72	--	1000	Brdg	-	MAC	Pass	Marketing	

Slot Port	MAC Address	User Name	VLAN	Addr Mode	IP Address	Authentication Type	Result	User Profile	Network Name
5/9	00:90:27:17:91:a8	pc2006	1000	Brdg	-	1X	Pass	engr	
5/9	00:00:39:93:46:0c	--	1	Blk	-	MAC	Fail	-	

```
-> show aaa-device all-users unp Marketing
```

Slot Port	MAC Address	User Name	VLAN	Addr Mode	IP Address	Authentication Type	Result	User Profile	Network Name
1/1	00:11:50:a6:12:00	User101	100	Brdg	10.133.0.100	1X	Pass	Marketing	
1/1	00:11:50:a6:12:01	User101	100	Brdg	10.133.0.101	1X	Pass	Marketing	
1/1	00:11:50:a6:12:02	User101	100	Brdg	10.133.0.102	1X	Pass	Marketing	
1/1	00:11:50:a6:12:03	User101	100	Brdg	10.133.0.103	1X	Pass	Marketing	

Slot Port	MAC Address	User Name	VLAN	Addr Mode	IP Address	Authentication Type	Result	User Profile	Network Name
1/2	00:00:39:47:4f:0c	pc2006	1000	Brdg	-	1X	Pass	Marketing	
1/2	00:b0:d0:77:fa:72	--	1000	Brdg	-	MAC	Pass	Marketing	

```
-> show aaa-device all-users unp Marketing port 1/2
```

Slot Port	MAC Address	User Name	VLAN	Addr Mode	IP Address	Authentication Type	Result	User Profile	Network Name
1/2	00:00:39:47:4f:0c	pc2006	1000	Brdg	-	1X	Pass	Marketing	
1/2	00:b0:d0:77:fa:72	--	1000	Brdg	-	MAC	Pass	Marketing	

```
-> show aaa-device all-users port 5/9
```

Slot Port	MAC Address	User Name	VLAN	Addr Mode	IP Address	Authentication Type	Result	User Profile	Network Name
5/9	00:90:27:17:91:a8	pc2006	1000	Brdg	-	1X	Pass	engr	
5/9	00:00:39:93:46:0c	--	1	Blk	-	MAC	Fail	-	

output definitions

Slot/Port	The slot and port number to which the user device is connected.
MAC Address	The MAC address of the user device.
User Name	The user login name used to access the switch.
VLAN	The VLAN ID the user device is authorized to access.
Addr Mode	The status of the MAC address for the user device.
Ip Address	The IP address of the user device.
Authentication Type	The type of authentication used to grant the device access to the switch (1X , MAC , or none).
Authentication Result	The result of the authentication process (Pass , Fail , or N/A).
User Network Profile Name	The name of the user network profile used to classify the user device. If N/A appears in this field, there is no user network profile associated with this device.

Release History

Release 6.6.3; command was introduced.

Related Commands

show aaa-device supplicant-users	Displays a list of all supplicant (802.1x) users learned on the switch.
show aaa-device non-supplicant-users	Displays a list of all non-supplicant (non-802.1X) users learned on the switch.
show aaa-device captive-portal-users	Displays a list of users that were classified using Captive Portal browser-based authentication.

MIB Objects

```

alaDot1xDeviceStatusTable
  alaDot1xDeviceStatusMacQueryType
  alaDot1xDeviceStatusSlotNumber
  alaDot1xDeviceStatusPortNumber
  alaDot1xDeviceStatusMacAddress
  alaDot1xDeviceStatusDeviceType
  alaDot1xDeviceStatusVlan
  alaDot1xDeviceStatusIpAddress
  alaDot1xDeviceStatusUserName
  alaDot1xDeviceStatusProfileUsed
  alaDot1xDeviceStatusAuthType
  alaDot1xDeviceStatusPolicyUsed
  alaDot1xDeviceStatusAuthResult
  alaDot1xDeviceStatusMaclearnedState
  alaDot1xDeviceStatusTimeLearned
  alaDot1xDeviceStatusCaptivePortalUsed

```

show aaa-device supplicant-users

Displays the Access Guardian status of all supplicant (802.1x) users learned on the switch.

show aaa-device supplicant-users [**unp** *profile_name* | **policy** *device_policy* | **authentication-status** [**success** | **fail**]] [**port** *slot/port*]

Syntax Definitions

<i>profile_name</i>	The name of a user network profile.
<i>device_policy</i>	The type of Access Guardian device classification policy.
success	Display all supplicant users that have successfully authenticated.
fail	Display all supplicant users that have failed authentication.
<i>slot/port</i>	The slot and port number designation for a specific switch port.

Defaults

If none of the optional parameters are specified with this command, all supplicant users are displayed by default.

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Use the **unp** *profile_name* parameter to display only those users associated with a specific user network profile.
- Use the **policy** *device_policy* parameter to display only those users authenticated with one of the device classification policy types. To specify which policy to use with this command, enter one of the following types for the *device_policy* parameter value:

policy type

vlan
user-network-profile
group mobility
default-vlan
captive-portal
authentication

- Use the **authentication success** or **authentication fail** parameters to display only those users that have either passed or failed authentication.
- Use the **port** *slot/port* parameter to display only those users learned on a specific port. Note that it is also possible to combine this parameter with any of the other **show aaa-device supplicant-users** command parameters.

Examples

-> show aaa-device supplicant-users

Slot Port	MAC Address	User Name	VLAN	Addr Mode	IP Address	Authentication Type	Result	User Profile	Network Name
1/1	00:11:50:a6:12:00	User101	100	Brdg	10.133.0.100	1X	Pass	Marketing	
1/1	00:11:50:a6:12:01	User101	100	Brdg	10.133.0.101	1X	Pass	Marketing	
1/1	00:11:50:a6:12:02	User101	100	Brdg	10.133.0.102	1X	Pass	Marketing	
1/1	00:11:50:a6:12:03	User101	100	Brdg	10.133.0.103	1X	Pass	Marketing	

Slot Port	MAC Address	User Name	VLAN	Addr Mode	IP Address	Authentication Type	Result	User Profile	Network Name
1/2	00:00:39:47:4f:0c	pc2006	1000	Brdg	-	1X	Pass	Marketing	

Slot Port	MAC Address	User Name	VLAN	Addr Mode	IP Address	Authentication Type	Result	User Profile	Network Name
5/9	00:90:27:17:91:a8	pc2006	1000	Brdg	-	1X	Pass	engr	
5/9	00:00:39:93:46:10	--	1	Blk	-	1X	Fail	-	

-> show aaa-device supplicant-users port 5/9

Slot Port	MAC Address	User Name	VLAN	Addr Mode	IP Address	Authentication Type	Result	User Profile	Network Name
5/9	00:90:27:17:91:a8	pc2006	1000	Brdg	-	1X	Pass	engr	
5/9	00:00:39:93:46:10	--	1	Blk	-	1X	Fail	-	

-> show aaa-device supplicant-users authentication-status fail

Slot Port	MAC Address	User Name	VLAN	Addr Mode	IP Address	Authentication Type	Result	User Profile	Network Name
5/9	00:00:39:93:46:10	--	1	Blk	-	1X	Fail	-	

output definitions

Slot/Port	The slot and port number to which the user device is connected.
MAC Address	The MAC address of the user device.
User Name	The user login name used to access the switch.
VLAN	The VLAN ID the user device is authorized to access.
Addr Mode	The status of the MAC address for the user device.
Ip Address	The IP address of the user device.
Authentication Type	The type of authentication used to grant the device access to the switch (1X , MAC , or none).
Authentication Result	The result of the authentication process (Pass , Fail , or N/A).
User Network Profile Name	The name of the user network profile used to classify the user device. If N/A appears in this field, there is no user network profile associated with this device.

Release History

Release 6.6.3; command was introduced.

Related Commands

show aaa-device all-users	Displays the information about the users (both supplicant and non supplicant) logged into the switch.
show aaa-device non-supplicant-users	Displays a list of all non-supplicant (non-802.1X) users learned on the switch.
show aaa-device captive-portal-users	Displays a list of users that were classified using Captive Portal browser-based authentication.

MIB Objects

```
alaDot1xDeviceStatusTable  
  alaDot1xDeviceStatusMacQueryType  
  alaDot1xDeviceStatusSlotNumber  
  alaDot1xDeviceStatusPortNumber  
  alaDot1xDeviceStatusMacAddress  
  alaDot1xDeviceStatusDeviceType  
  alaDot1xDeviceStatusVlan  
  alaDot1xDeviceStatusIpAddress  
  alaDot1xDeviceStatusUserName  
  alaDot1xDeviceStatusProfileUsed  
  alaDot1xDeviceStatusAuthType  
  alaDot1xDeviceStatusPolicyUsed  
  alaDot1xDeviceStatusAuthResult  
  alaDot1xDeviceStatusMaclearnedState  
  alaDot1xDeviceStatusTimeLearned  
  alaDot1xDeviceStatusCaptivePortalUsed
```

show aaa-device non-supPLICANT-users

Displays the Access Guardian status of all non-supPLICANT (non-802.1x) users learned on the switch.

show aaa-device non-supPLICANT-users [**unp** *profile_name* | **policy** *device_policy* | **authentication-status** [**success** | **fail**]] [**port** *slot/port*]

Syntax Definitions

<i>profile_name</i>	The name of a user network profile.
<i>device_policy</i>	The type of Access Guardian device classification policy.
authentication success	Display all non-supPLICANT users that have successfully authenticated.
authentication fail	Display all non-supPLICANT users that have failed authentication.
<i>slot/port</i>	The slot and port number designation for a specific switch port.

Defaults

If none of the optional parameters are specified with this command, all non-supPLICANT users are displayed by default.

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Use the **unp** *profile_name* parameter to display only those users associated with a specific user network profile.
- Use the **policy** *device_policy* parameter to display only those users authenticated with one of the device classification policy types. To specify which policy to use with this command, enter one of the following types for the *device_policy* parameter value:

policy type

vlan
user-network-profile
group mobility
default-vlan
captive-portal
authentication

- Use the **authentication success** or **authentication fail** parameters to display only those users that have either passed or failed authentication.
- Use the **port** *slot/port* parameter to display only those users learned on a specific port. Note that it is also possible to combine this parameter with any of the other **show aaa-device non-supPLICANT-users** command parameters.

Examples

```
-> show aaa-device non-supPLICANT-users
```

Slot Port	MAC Address	User Name	VLAN	Addr Mode	IP Address	Authentication Type	Result	User Profile	Network Name
1/1	00:1a:50:a6:12:50	--	100	Blk	10.133.2.128	None	N/A	engr_no_internet	
1/1	00:1a:50:a6:12:51	--	100	Blk	10.133.2.129	None	N/A	engr_no_internet	
1/1	00:1a:50:a6:12:52	--	100	Blk	10.133.2.130	None	N/A	engr_no_internet	
1/1	00:1a:50:a6:12:53	--	100	Blk	10.133.2.131	None	N/A	engr_no_internet	

Slot Port	MAC Address	User Name	VLAN	Addr Mode	IP Address	Authentication Type	Result	User Profile	Network Name
1/2	00:b0:d0:77:fa:72	--	1000	Brdg	-	MAC	Pass	Marketing	

Slot Port	MAC Address	User Name	VLAN	Addr Mode	IP Address	Authentication Type	Result	User Profile	Network Name
5/9	00:90:27:17:91:20	pc2006	1000	Brdg	-	MAC	Pass	engr	
5/9	00:00:39:93:46:0c	--	1	Blk	-	MAC	Fail	-	

```
-> show aaa-device non-supPLICANT-users unP engr_no_internet
```

Slot Port	MAC Address	User Name	VLAN	Addr Mode	IP Address	Authentication Type	Result	User Profile	Network Name
1/1	00:1a:50:a6:12:50	--	100	Blk	10.133.2.128	None	N/A	engr_no_internet	
1/1	00:1a:50:a6:12:51	--	100	Blk	10.133.2.129	None	N/A	engr_no_internet	
1/1	00:1a:50:a6:12:52	--	100	Blk	10.133.2.130	None	N/A	engr_no_internet	
1/1	00:1a:50:a6:12:53	--	100	Blk	10.133.2.131	None	N/A	engr_no_internet	

```
-> show aaa-device non-supPLICANT-users authentication-status success
```

Slot Port	MAC Address	User Name	VLAN	Addr Mode	IP Address	Authentication Type	Result	User Profile	Network Name
1/2	00:b0:d0:77:fa:72	--	1000	Brdg	-	MAC	Pass	Marketing	

Slot Port	MAC Address	User Name	VLAN	Addr Mode	IP Address	Authentication Type	Result	User Profile	Network Name
5/9	00:90:27:17:91:20	pc2006	1000	Brdg	-	MAC	Pass	engr	

output definitions

Slot/Port	The slot and port number to which the user device is connected.
MAC Address	The MAC address of the user device.
User Name	The user login name used to access the switch.
VLAN	The VLAN ID the user device is authorized to access.
Addr Mode	The status of the MAC address for the user device.
Ip Address	The IP address of the user device.
Authentication Type	The type of authentication used to grant the device access to the switch (IX , MAC , or none).

output definitions

Authentication Result	The result of the authentication process (Pass , Fail , or N/A).
User Network Profile Name	The name of the user network profile used to classify the user device. If N/A appears in this field, there is no user network profile associated with this device.

Release History

Release 6.6.3; command was introduced.

Related Commands

show aaa-device all-users	Displays the information about the users (both supplicant and non supplicant) logged into the switch.
show aaa-device supplicant-users	Displays a list of all supplicant (802.1X) users learned on the switch.
show aaa-device captive-portal-users	Displays a list of users that were classified using Captive Portal browser-based authentication.

MIB Objects

```

alaDot1xDeviceStatusTable
  alaDot1xDeviceStatusMacQueryType
  alaDot1xDeviceStatusSlotNumber
  alaDot1xDeviceStatusPortNumber
  alaDot1xDeviceStatusMacAddress
  alaDot1xDeviceStatusDeviceType
  alaDot1xDeviceStatusVlan
  alaDot1xDeviceStatusIpAddress
  alaDot1xDeviceStatusUserName
  alaDot1xDeviceStatusProfileUsed
  alaDot1xDeviceStatusAuthType
  alaDot1xDeviceStatusPolicyUsed
  alaDot1xDeviceStatusAuthResult
  alaDot1xDeviceStatusMaclearnedState
  alaDot1xDeviceStatusTimeLearned
  alaDot1xDeviceStatusCaptivePortalUsed

```

show aaa-device captive-portal-users

Displays the Access Guardian status of all users that attempted network access through the switch using Captive Portal web-based authentication.

show aaa-device captive-portal-users [**unp** *profile_name* | **policy** *device_policy* | **authentication-status** [**success** | **fail**]] [**port** *slot/port*]

Syntax Definitions

<i>profile_name</i>	The name of a user network profile.
<i>device_policy</i>	The type of Access Guardian device classification policy.
authentication success	Display all non-suppliant users that have successfully authenticated.
authentication fail	Display all non-suppliant users that have failed authentication.
<i>slot/port</i>	The slot and port number designation for a specific switch port.

Defaults

If none of the optional parameters are specified with this command, all Captive Portal users are displayed by default.

Platforms Supported

OmniSwitch 6250, 6450

Usage Guidelines

- Use the **unp** *profile_name* parameter to display only those users associated with a specific user network profile.
- Use the **policy** *device_policy* parameter to display only those users authenticated with one of the device classification policy types. To specify which policy to use with this command, enter one of the following types for the *device_policy* parameter value:

policy type

vlan
user-network-profile
group mobility
default-vlan
captive-portal
authentication

- Use the **authentication success** or **authentication fail** parameters to display only those users that have either passed or failed authentication.
- Use the **port** *slot/port* parameter to display only those users learned on a specific port. Note that it is also possible to combine this parameter with any of the other **show aaa-device captive-portal-users** command parameters.

Examples

-> show aaa-device captive-portal-users

Slot Port	MAC Address	User Name	VLAN	Addr Mode	IP Address	Authentication Type	User Result	Network Profile	Network Name
1/1	00:11:50:a6:12:00	User101	100	Brdg	10.133.0.100	1X	Pass	Marketing	
1/1	00:11:50:a6:12:01	User101	100	Brdg	10.133.0.101	1X	Pass	Marketing	
1/1	00:11:50:a6:12:02	User101	100	Brdg	10.133.0.102	1X	Pass	Marketing	
1/1	00:11:50:a6:12:03	User101	100	Brdg	10.133.0.103	1X	Pass	Marketing	

Slot Port	MAC Address	User Name	VLAN	Addr Mode	IP Address	Authentication Type	User Result	Network Profile	Network Name
1/2	00:00:39:47:4f:0c	pc2006	1000	Brdg	-	1X	Pass	Marketing	
1/2	00:b0:d0:77:fa:72	--	1000	Brdg	-	MAC	Pass	Marketing	

Slot Port	MAC Address	User Name	VLAN	Addr Mode	IP Address	Authentication Type	User Result	Network Profile	Network Name
5/9	00:90:27:17:91:a8	pc2006	1000	Brdg	-	1X	Pass	engr	
5/9	00:00:39:93:46:0c	--	1	Blk	-	MAC	Fail	-	

-> show aaa-device captive-portal-users unprof Marketing

Slot Port	MAC Address	User Name	VLAN	Addr Mode	IP Address	Authentication Type	User Result	Network Profile	Network Name
1/1	00:11:50:a6:12:00	User101	100	Brdg	10.133.0.100	1X	Pass	Marketing	
1/1	00:11:50:a6:12:01	User101	100	Brdg	10.133.0.101	1X	Pass	Marketing	
1/1	00:11:50:a6:12:02	User101	100	Brdg	10.133.0.102	1X	Pass	Marketing	
1/1	00:11:50:a6:12:03	User101	100	Brdg	10.133.0.103	1X	Pass	Marketing	

Slot Port	MAC Address	User Name	VLAN	Addr Mode	IP Address	Authentication Type	User Result	Network Profile	Network Name
1/2	00:00:39:47:4f:0c	pc2006	1000	Brdg	-	1X	Pass	Marketing	
1/2	00:b0:d0:77:fa:72	--	1000	Brdg	-	MAC	Pass	Marketing	

-> show aaa-device captive-portal-users policy vlan

Slot Port	MAC Address	User Name	VLAN	Addr Mode	IP Address	Authentication Type	User Result	Network Profile	Network Name
1/2	00:00:39:47:4f:0c	pc2006	1000	Brdg	-	1X	Pass	Marketing	
1/2	00:b0:d0:77:fa:72	--	1000	Brdg	-	MAC	Pass	Marketing	

Slot Port	MAC Address	User Name	VLAN	Addr Mode	IP Address	Authentication Type	User Result	Network Profile	Network Name
5/9	00:90:27:17:91:a8	pc2006	1000	Brdg	-	1X	Pass	engr	
5/9	00:00:39:93:46:0c	--	1	Blk	-	MAC	Fail	-	

output definitions

Slot/Port	The slot and port number to which the user device is connected.
MAC Address	The MAC address of the user device.

output definitions

User Name	The user login name used to access the switch.
VLAN	The VLAN ID the user device is authorized to access.
Addr Mode	The status of the MAC address for the user device.
Ip Address	The IP address of the user device.
Authentication Type	The type of authentication used to grant the device access to the switch (1X , MAC , or none).
Authentication Result	The result of the authentication process (Pass , Fail , or N/A).
User Network Profile Name	The name of the user network profile used to classify the user device. If N/A appears in this field, there is no user network profile associated with this device.

Release History

Release 6.6.3; command was introduced.

Related Commands

show aaa-device all-users	Displays the information about the users (both supplicant and non supplicant) logged into the switch.
show aaa-device supplicant-users	Displays a list of all supplicant (802.1X) users learned on the switch.
show aaa-device non-supplicant-users	Displays a list of all non-supplicant (non-802.1X) users learned on the switch.

MIB Objects

```

alaDot1xDeviceStatusTable
  alaDot1xDeviceStatusMacQueryType
  alaDot1xDeviceStatusSlotNumber
  alaDot1xDeviceStatusPortNumber
  alaDot1xDeviceStatusMacAddress
  alaDot1xDeviceStatusDeviceType
  alaDot1xDeviceStatusVlan
  alaDot1xDeviceStatusIpAddress
  alaDot1xDeviceStatusUserName
  alaDot1xDeviceStatusProfileUsed
  alaDot1xDeviceStatusAuthType
  alaDot1xDeviceStatusPolicyUsed
  alaDot1xDeviceStatusAuthResult
  alaDot1xDeviceStatusMaclearnedState
  alaDot1xDeviceStatusTimeLearned
  alaDot1xDeviceStatusCaptivePortalUsed

```

show aaa priv hexa

Displays hexadecimal values for command domains/families. Useful for determining how to express command families in hexadecimal; hexadecimal values are used in configuring user privileges in attributes on an external LDAP or RADIUS authentication server.

show aaa priv hexa [*domain or family*]

Syntax Definitions

domain or family The CLI command domain or particular command family for which you want to display hexadecimal values. See table in Usage Guidelines.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Valid values for the family parameter are listed in the Corresponding Families column of the following table:

Domain	Corresponding Families
domain-admin	file telnet dshell debug
domain-system	system aip snmp rmon webmgt config
domain-physical	chassis module interface pmm health
domain-network	ip rip ip-routing ipmr ipms
domain-layer2	vlan bridge stp 802.1q linkagg ip-helper
domain-service	dns
domain-security	session aaa

- Note that some command families may not be supported depending on the hardware platform you are running.
- If you do not specify a command family, hexadecimal values for all commands sets will display.

Examples

```

-> show aaa priv hexa
file           = 0x00000001 0x00000000,
telnet         = 0x00000008 0x00000000,
dshell        = 0x00000020 0x00000000,
debug         = 0x00000040 0x00000000,
domain-admin  = 0x00000069 0x00000000,

system        = 0x00000080 0x00000000,
aip          = 0x00000100 0x00000000,
snmp         = 0x00000200 0x00000000,
rmon         = 0x00000400 0x00000000,
webmgt       = 0x00000800 0x00000000,
config       = 0x00001000 0x00000000,
domain-system = 0x00001F80 0x00000000,

chassis       = 0x00002000 0x00000000,
module        = 0x00004000 0x00000000,
interface     = 0x00008000 0x00000000,
pmm           = 0x00010000 0x00000000,
health        = 0x00040000 0x00000000,
domain-physical = 0x0005E000 0x00000000,

ip            = 0x00080000 0x00000000,
rip           = 0x00100000 0x00000000,
ip-routing    = 0x01000000 0x00000000,
ipmr          = 0x04000000 0x00000000,
ipms          = 0x08000000 0x00000000,
domain-network = 0x0FF80000 0x00000000,

vlan          = 0x10000000 0x00000000,
bridge        = 0x20000000 0x00000000,
stp           = 0x40000000 0x00000000,
802.1q        = 0x80000000 0x00000000,
linkagg       = 0x00000000 0x00000001,
ip-helper     = 0x00000000 0x00000002,
domain-layer2 = 0xF0000000 0x00000003,

dns           = 0x00000000 0x00000010,
domain-service = 0x00000000 0x00000010,

qos           = 0x00000000 0x00000020,
policy        = 0x00000000 0x00000040,
domain-policy = 0x00000000 0x000000E0,

session       = 0x00000000 0x00000100,
aaa           = 0x00000000 0x00000800,
domain-security = 0x00000000 0x00000D00

-> show aaa priv hexa rip
0x00100000 0x00000000

```

Release History

Release 6.6.1; command was introduced.

Related Commands

user

Configures or modifies user entries in the local user database.

MIB Objects

NA

aaa redirect-server

Configures redirection server name and URL details for BYOD.

```
aaa redirect-server name ip-address ip_address url-list {redirect_url1 redirect_url2 redirect_url3}
```

Syntax Definitions

<i>name</i>	Name of the redirection server (maximum 32 characters).
<i>ip_address</i>	The IPv4 address for the redirect server name.
<i>redirect_url1</i>	The URL list specified for the redirect server (maximum 128 characters).

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6450

Usage Guidelines

- User can assign up to 5 redirect URL names to the URL list. Assign URL links to URL names using the command [aaa redirect url](#).
- A maximum of 5 URLs can be added to the redirect-server.

Examples

```
-> aaa redirect-server byod ip-address 172.26.36.26 url-list url1 url2 url3
```

Release History

Release 6.6.5; command introduced.

Related Commands

aaa redirect url	Specifies the different type of URL names that are applied on the redirection UNP.
show aaa redirect-server	Displays redirection server name and its details.

MIB Objects

```
aaaRedirectServerTable  
  aaaRedirectServerName  
  aaaRedirectServerIpAddress  
  aaaRedirectServerUrl1  
  aaaRedirectServerUrl2  
  aaaRedirectServerUrl3  
  aaaRedirectServerUrl4  
  aaaRedirectServerUrl5
```

aaa redirect url

Specifies the different type of URL names that are applied on the redirection UNP.

aaa redirect *name* **url** {*url_name*}

Syntax Definitions

<i>name</i>	Name of the redirection server (maximum 32 characters).
<i>url_name</i>	The URL names specified for the redirection UNP (maximum 128 characters). A maximum of 5 redirect URLs as strings.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6450

Usage Guidelines

Assign URL names first using command **aaa redirect-server**. Then assign URL links to URL names.

Examples

```
-> aaa redirect url url1 http://clearpassuserregistration.page
-> aaa redirect url url2 http://clearpassuser.redirect.page
-> aaa redirect url url3 http://clearpassbyod.main.page2
```

Release History

Release 6.6.5; command introduced.

Related Commands

aaa redirect url	Specifies the different type of URL names that are applied on the redirection UNP.
show aaa redirect-server	Displays redirection server name and its details.

MIB Objects

```
aaaRedirectServerTable
  aaaRedirectServerUrlName
  aaaRedirectServerUrl
```

aaa port-bounce

Enables or disables BYOD port bounce on the port, a range of ports, slots, or globally on the switch. Re-authenticates non-supPLICANT client to get new IP address and get full access of the network.

aaa port-bounce [*slot/port* | *slot* | *slot/port1-portn*] {**enable** | **disable**}

Syntax Definitions

<i>slot</i>	Specifies slot number on the switch.
<i>slot/port</i>	Specifies port number on the switch.
<i>slot/port1-portn</i>	Specifies a range of ports on the switch.
enable	Enables port bounce on the specified ports. If slots and ports are not specified then port bounce is enabled globally on all switch ports.
disable	Disables port bounce on the specified ports. If slots and ports are not specified then port bounce is disabled globally on all switch ports.

Defaults

By default, the global status of port bouncing is enabled.

Platforms Supported

OmniSwitch 6250, 6450

Usage Guidelines

- When no slot or port number is mentioned with this command, port bouncing is enabled on all slots and ports.
- The port bouncing configuration per port can be enabled or disabled after global port bounce is enabled.
- Enable or disable option is available per-port basis using the slot or port number.

Examples

```
-> aaa port-bounce enable
-> aaa port-bounce disable
-> aaa port-bounce 1 enable
-> aaa port-bounce 2/3 enable
-> aaa port-bounce 2/4-8 enable
```

Release History

Release 6.6.5; command introduced.

Related Commands

show aaa port-bounce status

Displays the status of global and port specific port bounce configuration.

MIB Objects

aaaRedirectGlobalConfigTable
 aaaPortBounceGlobalStatus
aaaPortBounceInterfaceTable
 aaaPortBouncePortSlot
 aaaPortBounceIF

aaa redirect pause-timer

Configures the pause timer value.

aaa redirect pause-timer *seconds*

Syntax Definitions

seconds Indicates the pause timer value in seconds (0-65535).

Defaults

By default, the redirect pause timer value is 30.

Platforms Supported

OmniSwitch 6250, 6450

Usage Guidelines

User-defined pause timer values must be in multiples of 5.

Examples

```
-> aaa redirect pause-timer 25
```

Release History

Release 6.6.5; command introduced.

Related Commands

[show aaa redirect pause-timer](#) Specifies the VLAN for the access of network with various scenarios mentioned optionally.

MIB Objects

aaaRedirectGlobalConfigTable
aaaRedirectPauseTimerConfig

show aaa redirect-server

Displays redirection server name and its details.

show aaa redirect-server

Syntax Definitions

N/A

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6450

Usage Guidelines

N/A

Examples

```
->show aaa redirect-server
```

```
Server name      : byod
Ip Address       : 192.16.23.24
Url-list names  : url1
                  url2
                  url3
```

output definitions

Server name	Name of redirection server.
Ip Address	IP address of redirection server.
Url-list names	List of URL names configured on the redirect server.

Release History

Release 6.6.5; command introduced.

Related Commands

[aaa redirect-server](#)

Configures redirection server name and URL details for BYOD.

MIB Objects

```
aaaRedirectServerTable  
  aaaRedirectServerName  
  aaaRedirectServerNameRedirect  
  aaaRedirectServerIpAddress  
  aaaRedirectServerUrl1  
  aaaRedirectServerUrl2  
  aaaRedirectServerUrl3  
  aaaRedirectServerUrl4  
  aaaRedirectServerUrl5
```

show aaa redirect url-list

Displays the different URL names applied on the redirection server. This command displays upto five user defined redirection URL names with its corresponding URL.

show aaa redirect url-list

Syntax Definitions

N/A

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6450

Usage Guidelines

When no port number is specified with the command, the global list of configured redirect URLs and URL names is displayed.

Examples

```
-> show aaa redirect url-list
URL name          URL Address
-----+-----+-----
url1              http://clearpass.user.registration.page
url2              http://clearpass.user.redirect.page
url3              http://clearpass.byod.main.page
```

output definitions

URL name	Name of assigned URL.
URL Address	URL address of redirection clearpass server.

Release History

Release 6.6.5; command introduced.

Related Commands

[aaa redirect url](#)

Specifies the different type of URL names that are applied on the redirection UNP.

MIB Objects

```
aaaRedirectUrlConfigTable
aaaRedirectServerUrlName
```

```
aaaRedirectServerUrlNameList  
aaaRedirectServerUrlRedirection
```

show aaa port-bounce status

Displays the status of global and port specific port bounce configuration.

show aaa port-bounce status *slot/port*

Syntax Definitions

slot/port The port number of the port on which new BYOD devices must be displayed.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6450

Usage Guidelines

N/A

Examples

```
-> show aaa port-bounce status
```

```
Global Status            : ENABLED
```

```
Slot/port                      port bounce
-----+-----
1/1                            DISABLED
1/2                            ENABLED
1/3                            ENABLED
1/4                            ENABLED
1/5                            ENABLED
```

output definitions

Global Status	Global port bounce configuration Status.
Slot/port	Global list of configured ports.
port bounce	Port bounce status on slot/port basis (ENABLED or DISABLED).

Release History

Release 6.6.5; command introduced.

Related Commands

aaa port-bounce

Enables or disables BYOD port bounce on the port, a range of ports, slots, or globally on the switch.
Re-authenticates non-supPLICANT client to get new IP address and get full access to the network.

MIB Objects

```
aaaPortBounceInterfaceTable  
  aaaRedirectGlobalConfig  
  aaaPortBounceConfig  
  aaaPortBounceSlotNumber  
  aaaPortBouncePortNumber
```

show aaa redirect pause-timer

Displays the configured global pause-timer value.

show aaa redirect pause-timer

Syntax Definitions

N/A

Defaults

By default, the pause timer value is 30 seconds.

Platforms Supported

OmniSwitch 6250, 6450

Usage Guidelines

- On ports where port bouncing is not applied, the switch clears all authentication states on the device and pause for some period of time.
- Pause timer value must be multiples of five.

Examples

```
-> show aaa redirect pause-timer
```

```
Pause-timer value : 120(Sec)
```

output definitions

Pause-timer value	Displays the configured pause timer value in seconds (range from 0 to 65535).
--------------------------	---

Release History

Release 6.6.5; command introduced.

Related Commands

[aaa redirect pause-timer](#)

Specifies the different type of URL names that are applied on the redirection UNP.

MIB Objects

```
aaaRedirectGlobalConfig  
aaaRedirectPauseTimerConfig
```

show byod host

Displays the status of the new BYOD clients that come to the network.

show byod host

Syntax Definitions

slot/port The port number of the port on which new BYOD devices must be displayed.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6450

Usage Guidelines

N/A

Examples

```
-> show byod host
```

Client MAC Address	Status
-----+-----	
00:00:00:00:00:01	BYOD inprogress
00:00:00:01:07:09	BYOD complete
00:01:02:03:09:00	BYOD complete

output definitions

Client MAC	The new client MAC address that entered in to the network.
Status	Status of the BYOD client, either BYOD inprogress or BYOD complete .

Release History

Release 6.6.5; command introduced.

Related Commands

[aaa user-network-profile](#)

Configures a User Network Profile (UNP) that is used to provide role-based access to the switch.

MIB Objects

```
aaaByodStatusInfoTable  
  aaaByodClientmac  
  aaaByodProgressStatus
```

show byod status

Displays the status of the BYOD clients at switch or per port level.

show byod status *slot/port*

Syntax Definitions

slot/port

The port number of the port on which new BYOD devices must be displayed.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6450

Usage Guidelines

N/A

Examples

```
-> show byod status 1/4
```

```
Byodconfig for slot 1 and port 4:
```

```
Client MAC      : 00:01:02:03:09:0
Old UNP         : UNP1
New UNP         : validUNP
COA status      : Success BYOD complete
```

output definitions

Client MAC	The client MAC address which is newly entered in to the network.
Old UNP	Displays the old UNP assigned to the client when it is unknown MAC.
New UNP	The new UNP's VLAN assigned to the client with full network access.
COA status	Status of the client in COA/Clearpass context

Release History

Release 6.6.5; command introduced.

Related Commands

N/A

MIB Objects

```
aaaByodConfigTable
  aaaByodConfigIntfNumber
  aaaByodClientmac
  aaaByodPreviousUNP
  aaaByodNewUNP
  aaaByodCOAStatus
```

show aaa byod white-list ip-address

Displays the status of the BYOD white list IP addresses.

show aaa byod white-list ip address

Syntax Definitions

N/A

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6450

Usage Guidelines

N/A

Examples

```
-> show aaa byod white-list ip-address
IP Address           Mask
+-----+
171.1.1.1            255.255.255.255
172.2.2.2            255.255.255.255
173.3.3.3            255.255.255.255
```

Release History

Release 6.6.5 command introduced.

Related Commands

N/A

MIB Objects

```
aaaBYODWhiteListTable
  aaaBYODWhiteListIPAddress
  aaaBYODWhiteListIPMask
```

show aaa user-network-profile

Displays the User Network Profile (UNP) configuration for the switch.

show aaa user-network-profile

Syntax Definitions

N/A

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6450

Usage Guidelines

N/A

Examples

```
-> show aaa user-network-profile
```

Role Name	Vlan	HIC	Policy List Name	Max Ingress-BW	Max Egress-BW	Max Default-Depth	Redirect URL name
byodunp	100						url2
check	203						default-url

output definitions

Role Name	The user profile name.
Vlan	The VLAN ID number the profile assigns to the user device.
HIC	Whether Host Integrity Check is enabled or disabled for the profile.
Policy List Name	The name of one or more QoS policy lists that are applied to the device to which this profile is assigned.
Max-Ingress-BW	Maximum ingress bandwidth associated to UNP.
Max-Egress-BW	Maximum egress bandwidth associated to UNP.
Max Default-Depth	Maximum default depth associated to UNP.
Redirect URL name	The redirection url used to re-direct to the Clearpass page for the BYOD feature.

Release History

Release 6.6.5; command introduced.

Related Commands

N/A

MIB Objects

```
aaaByodConfigTable  
  aaaByodConfigIntfNumber  
  aaaByodClientmac  
  aaaByodPreviousUNP  
  aaaByodNewUNP  
  aaaByodCOAStatus
```

mdns-relay

Enables or disables the Multicast DNS (MDNS) relay feature.

mdns-relay {enable | disable}

Syntax Definitions

enable	Enables the MDNS relay feature.
disable	Disables the MDNS relay feature.

Defaults

The MDNS relay feature is disabled by default.

Platforms Supported

OmniSwitch 6250, 6450

Usage Guidelines

- A GRE Tunnel interface must be associated to the switch before enabling MDNS relay.
- The MDNS packets will be handled in the conventional way on disabling the MDNS relay on the switch.

Example

```
-> mdns-relay enable  
-> mdns-relay disable
```

Release History

Release 6.6.5; command introduced.

Related Commands

mdns-relay tunnel	Associates a GRE tunneling interface for the Multicast DNS (MDNS) relay feature.
show mdns-relay config	Configure a VLAN or a range of VLANs on which the MDNS message received from the WLAN controller should be directed.

MIB Objects

```
mdnsSnoopingTable  
  alaMdnsAdminStatus
```

mdns-relay tunnel

Associates a GRE tunneling interface for the Multicast DNS (MDNS) relay feature.

mdns-relay tunnel *ip interface name*

no mdns-relay tunnel *ip interface name*

Syntax Definitions

ip interface name

Name of the IP interface used by the MDNS relay feature for GRE tunneling. The IP interface should be created before being associated.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6450

Usage Guidelines

- A Layer 2 GRE Tunnel interface must be associated to the switch before enabling MDNS relay. Only Layer 2 GRE Tunnel interface is supported.
- GRE Tunneling is supported only for IPV4 frames.
- The IP interface name should be created before being associated. Use the **ip interface** command to create an ip interface.
- To change the GRE tunnel interface, execute the command with the new existing IP interface name.
- Using the **no** option with this command, shall remove the GRE tunneling interface associated.

Example

```
-> mdns-relay tunnel Payroll  
-> no mdns-relay tunnel Payroll
```

Release History

Release 6.6.5; command introduced.

Related Commands

[show mdns-relay config](#)

Configure a VLAN or a range of VLANs on which the MDNS message received from the WLAN controller should be directed.

MIB Objects

mdnsSnoopingTable
alaMdnsGreTunnelName

show mdns-relay config

Displays the MDNS relay configuration.

show mdns-relay config

Syntax Definitions

N/A

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6450

Usage Guidelines

N/A

Example

```
-> show mdns-relay config
```

```
mdns-relay admin status      : enabled,  
mdns-relay tunnel interface: tnl-MDNS  
mdns-relay tunnel status    : UP
```

output definitions

mdns-relay admin status	Displays if the MDNS relay feature is enabled or disabled.
mdns-relay tunnel interface	Specifies the GRE tunnel name for the MDNS relay feature.
mdns-relay tunnel status	Displays the status of the tunnel.

Release History

Release 6.6.5; command introduced.

Related Commands

mdns-relay	Enables or disables the Multicast DNS (MDNS) relay feature.
mdns-relay tunnel	Associates a GRE tunneling interface for the Multicast DNS (MDNS) relay feature.

MIB Objects

```
mdnsSnoopingTable  
  alaMdnsAdminStatus  
  alaMdnsGreTunnelName
```

alaMdnsFloodVlans

aaa switch-access mode

Globally sets the access mode as enhanced or default.

```
aaa switch-access mode {default | enhanced}
```

Syntax Definitions

default	Sets the access mode as default.
enhanced	Sets the access mode as enhanced.

Defaults

parameter	default
default enhanced	default

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

ASA mode is not enabled by default or when the switch is in the factory default state. The mode must first be activated through CLI through console access with default username and password (admin/switch). However, to avoid this initial CLI command, the new mode can also be activated by creating 'asaAdvancedMode.cfg' file in the /flash/switch directory.

Example

```
-> aaa switch-access mode default
-> aaa switch-access mode enhanced
```

Release History

Release 6.7.1 R02; command introduced.

Related Commands

[show aaa switch-access mode](#) Displays the global access mode configuration.

MIB Objects

aaaAsaAccessMode

aaa switch-access ip-lockout-threshold

Configures the threshold value for failed login attempts from an IP address after which the IP address will be banned from switch access.

aaa switch-access ip-lockout-threshold *number*

Syntax Definitions

number Set the threshold value for login attempts in the range 0 to 999.

Defaults

parameter	default
<i>number</i>	6

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- The command is applicable only if ASA enhanced mode is enabled.
- IP address is permanently blocked/banned if the number of authentication failures from a particular IP reaches IP lockout threshold limit.
- Only the switch access will be restricted from the banned IP address. Any IP packet (with monitored port number) destined to a switch IP interfaces will be discarded. IP packets normally bridged/routed by the switch will not be discarded.
- A maximum of 128 IP addresses can be added to the banned list. When the maximum limit has reached, oldest entry from the list is removed to accommodate the new entries.
- User lockout window ([user lockout-window](#)) is applicable for IP lockout threshold also.
- The IP address will remain blocked until it is released using the command [aaa switch-access banned-ip release](#).

Example

```
-> aaa switch-access ip-lockout-threshold 2
```

Release History

Release 6.7.1 R02; command introduced.

Related Commands

aaa switch-access mode

Globally sets the access mode as enhanced or default.

show aaa switch-access ip-lockout-threshold

Displays the lockout threshold configured for the remote IP addresses.

MIB Objects

aaaAsaIpLockoutThreshold

aaa switch-access banned-ip release

Releases the banned IP addresses that are blocked due to failed login attempts.

aaa switch-access banned-ip {all | *ip_address*} release

Syntax Definitions

all	Release all banned IP addresses.
<i>ip_address</i>	Release a specific IP address that is banned.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

The IP addresses are banned if the failed login count reaches IP lockout threshold limit.

Example

```
-> aaa switch-access banned-ip all release
-> aaa switch-access banned-ip 100.2.45.56 release
```

Release History

Release 6.7.1 R02; command introduced.

Related Commands

show aaa switch-access banned-ip	Displays the list of banned ip addresses.
--	---

MIB Objects

```
aaaSwitchAccessBannedIpTable
  aaaSwitchAccessBannedIpAddress
  aaaSwitchAccessBannedIpRowStatus
```

aaa switch-access priv-mask

Configure the functional privileges for a particular access type.

```
aaa switch-access priv-mask {console | telnet | ssh | http | https} {read-only | read-write} [families... / domains...] all | none | all-except families...]
```

Syntax Definitions

read-only	Specifies that the user will have read-only access to the switch through a specific access type.
read-write	Specifies that the user will have read-write access to the switch through a specific access type.
<i>families</i>	Determines the command families available to the user on the switch for a specific access type. Each command family should be separated by a space. Command families are subsets of domains. See <i>Usage Guidelines</i> for more details.
<i>domains</i>	Determines the command domains available to the user on the switch for a specific access type. Each domain should be separated by a space. See the <i>Usage Guidelines</i> for more details.
all	Specifies that all command families and domains are available to the user for a specific access type.
none	Specifies that no command families or domains are available to the user for a specific access type.
all-except	Specifies that functional privileges for families followed by 'all-except' are disabled for a specific access type.

Defaults

By default, the access types are enabled with read-write privileges for all the families.

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- The command is applicable only when ASA enhanced mode is enabled.
- The access privileges for the SSH, TELNET, Console, HTTP, HTTPS can be defined.
- Possible values for domains and families are listed in the table here:

Domain	Corresponding Families
domain-admin	file telnet dshell debug
domain-system	system aip snmp rmon webmgt config
domain-physical	chassis module interface pmm health
domain-network	ip rip ospf bgp vrrp ip-routing ipmr ipms

domain-layer2	vlan bridge stp 802.1q linkagg ip-helper
domain-service	dns
domain-policy	qos policy slb
domain-security	session avlan aaa

Example

```
-> aaa switch-access priv-mask ssh read-only webmgt vrrp vrf vlan uddl
-> aaa switch-access priv-mask telnet read-write tftp-client telnet system stp ssh
-> aaa switch-access priv-mask ssh read-only all-except vlan
-> aaa switch-access priv-mask telnet read-write all-except ip
```

If privileges for specific families need to be applied, then remove the existing privilege using the **no** command, and re-apply the required family privilege.

```
-> no aaa switch-access priv-mask telnet read-write all
-> aaa switch-access priv-mask telnet read-write vlan aaa
```

Release History

Release 6.7.1 R02; command introduced.

Related Commands

aaa switch-access mode Globally sets the access mode as enhanced or default.

show aaa switch-access priv-mask Displays the privilege details for the access types.

MIB Objects

```
aaaSwitchAccessPrivMaskTable
  aaaSwitchAccessType
  aaaSwitchAccessReadRight1
  aaaSwitchAccessReadRight2
  aaaSwitchAccessWriteRight1
  aaaSwitchAccessWriteRight2
  aaaSwitchAccessPrivMaskRowStatus
```

aaa switch-access management-stations

Enables or disables the IP management station feature in a switch.

aaa switch-access management-stations {enable | disable}

Syntax Definitions

enable	Enables the IP management station feature in the switch.
disable	Disables the IP management station feature in the switch.

Defaults

The IP management station feature is disabled by default.

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- The command is applicable only when ASA enhanced mode is enabled.
- When the IP management station is disabled, switch access from any IP address shall be allowed. If there is a login failure (based on the **ip-lockout threshold** value), the IP address will be banned/ blocked and added to the banned IP address list.
- When the IP management station is enabled, the switch access will be allowed only from those IPs configured in the management station list and only if those are not in banned list.

Example

```
-> aaa switch-access management stations enable
-> aaa switch-access management stations disable
```

Release History

Release 6.7.1 R02; command introduced.

Related Commands

aaa switch-access mode	Globally sets the access mode as enhanced or default.
aaa switch-access management-stations ip-address	Configure the management station in the switch, with or without mask value for the corresponding IP of the management station.
show aaa switch-access management-stations	Displays the list of configured management stations.

MIB Objects

```
aaaSwitchAccessMgmtStationTable
aaaSwitchAccessMgmtStationIpAddress
```

aaaSwitchAccessMgmtStationIpAddress

aaa switch-access management-stations ip-address

Configure the management station in the switch, with or without mask value for the corresponding IP of the management station. The remote access is allowed only from these IP addresses if management station feature is enabled.

aaa switch-access management-stations *ip_address* [*mask*]

no aaa switch-access management-stations *ip_address*

Syntax Definitions

<i>ip_address</i>	IP address of the management station.
<i>mask</i>	The mask corresponding to the IP address.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- A maximum of 64 management stations can be configured.
- Removing an IP address from the management station list will not remove the IP from the banned list.
- Whenever an IP address is removed from the management station, switch will stop responding to that IP. However, the existing sessions are not terminated automatically.

Example

```
-> aaa switch-access management stations 100.15.9.8
-> aaa switch-access management stations 100.15.9.9 mask 255.255.255.0
```

Release History

Release 6.7.1 R02; command introduced.

Related Commands

aaa switch-access management-stations	Enables or disables the IP management station feature in a switch.
show aaa switch-access management-stations	Displays the list of configured management stations.

MIB Objects

```
aaaSwitchAccessMgmtStationTable
  aaaSwitchAccessMgmtStationIpAddress
```

aaaSwitchAccessMgmtStationRowStatus

show aaa switch-access mode

Displays the access mode configuration.

show aaa switch-access mode

Syntax Definitions

N/A

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

N/A

Example

```
-> show aaa switch-access mode  
aaa switch-access mode: Enhanced
```

output definitions

AAA switch-access mode	ASA access mode: Enhanced or Default
-------------------------------	--------------------------------------

Release History

Release 6.7.1 R02; command introduced.

Related Commands

[aaa switch-access mode](#) Globally sets the access mode as enhanced or default.

MIB Objects

aaaAsaAccessMode

show aaa switch-access ip-lockout-threshold

Displays the IP lockout threshold value.

show aaa switch-access ip-lockout-threshold

Syntax Definitions

N/A

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

N/A

Example

```
-> show aaa switch-access ip-lockout-threshold
ip lockout threshold 6
```

output definitions

IP lockout threshold	The IP lockout threshold value.
-----------------------------	---------------------------------

Release History

Release 6.7.1 R02; command introduced.

Related Commands

[aaa switch-access ip-lockout-threshold](#) Configures the threshold for failed login attempts from an IP address after which the IP address will be banned from switch access.

MIB Objects

aaaAsaIpLockoutThreshold

show aaa switch-access banned-ip

Displays the list of banned IP addresses.

show aaa switch-access banned-ip

Syntax Definitions

N/A

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

N/A

Example

```
-> show aaa switch-access banned-ip
Sl.no      IP address
|-----+-----|
   1      100.15.5.21
   2      100.15.5.22
```

output definitions

IP address	The banned IP address blocked due to failed login attempts.
-------------------	---

Release History

Release 6.7.1 R02; command introduced.

Related Commands

[aaa switch-access banned-ip release](#) Releases the banned IP addresses that are blocked due to failed login attempts.

MIB Objects

aaaAsaIpLockoutThreshold

show aaa switch-access priv-mask

Displays the privilege details for the access types.

show aaa switch-access priv-mask

Syntax Definitions

N/A

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

N/A

Examples

```
-> show aaa switch-access priv-mask
  Access type = CONSOLE,
  Read Only for domains   = None,
  Read/Write for domains  = All

  Access type = TELNET,
  Read Only for domains   = None,
  Read/Write for domains  = All

  Access type = HTTP,
  Read Only for domains   = All ,
  Read/Write for domains  = None

  Access type = SSH,
  Read Only for domains   = None,
  Read/Write for domains  = All

  Access type = HTTPS,
  Read Only for domains   = None,
  Read/Write for domains  = All
```

output definitions

Access type	The access type.
Read Only for domains	Read-only privileges for the domains.
Read/Write for domains	Read-write privileges for the domains.

Release History

Release 6.7.1 R02; command introduced.

Related Commands

aaa switch-access priv-mask Configure the functional privileges for a particular access type.

MIB Objects

```
aaaSwitchAccessPrivMaskTable  
  aaaSwitchAccessType  
  aaaSwitchAccessReadRight1  
  aaaSwitchAccessReadRight2  
  aaaSwitchAccessWriteRight1  
  aaaSwitchAccessWriteRight2  
  aaaSwitchAccessPrivMaskRowStatus
```

show aaa switch-access management-stations

Displays the list of configured management stations.

show aaa switch-access management-stations

Syntax Definitions

N/A

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

N/A

Examples

```
-> show aaa switch-access management-stations
MANAGEMENT STATION FEATURE STATUS: ENABLED
  Sl.no      IP address      Mask
|-----+-----+-----|
1           100.15.5.21    255.255.255.255
```

output definitions

Management Station Feature Status	IP management station status: Enabled or disabled.
IP address	IP address of the management station.
Mask	The mask corresponding to the IP address.

Release History

Release 6.7.1 R02; command introduced.

Related Commands

[aaa switch-access management-stations](#)

Enables or disables the IP management station feature in a switch.

[aaa switch-access management-stations ip-address](#)

Configure the management station in the switch, with or without mask value for the corresponding IP of the management station

MIB Objects

```
aaaSwitchAccessMgmtStationTable
  aaaSwitchAccessMgmtStationIpAddress
```

aaaSwitchAccessMgmtStationIpAddress

50 802.1x Commands

This chapter includes information about commands used for configuring and viewing port-specific 802.1x parameters. Included in this command set are specific commands used to configure Access Guardian policies (also referred to as device classification policies) for 802.1x ports.

MIB information for the 802.1x port commands is as follows:

Filename: IEEE_8021X.mib
Module: IEEE8021-PAE-MIB

A summary of the available commands is listed here:

802.1x port commands	802.1x 802.1x initialize 802.1x re-authenticate 802.1x supp-polling retry 802.1x captive-portal address 802.1x auth-server-down 802.1x auth-server-down policy 802.1x server-polling show 802.1x show 802.1x users show 802.1x statistics show 802.1x non-supplicant show 802.1x auth-server-down show 802.1x rate-limit
Access Guardian commands	802.1x supplicant bypass 802.1x non-supplicant allow-eap 802.1x pass-through 802.1x supplicant policy authentication 802.1x non-supplicant policy authentication 802.1x captive-portal name 802.1x non-supplicant policy 802.1x policy default 802.1x captive-portal policy authentication 802.1x captive-portal session-limit 802.1x captive-portal inactivity-logout 802.1x captive-portal retry-count 802.1x captive-portal address 802.1x captive-portal proxy-server-url 802.1x captive-portal proxy-server-port 802.1x captive-portal dns-keyword-list 802.1x captive-portal success-redirect-url 802.1x captive-portal fail-redirect-url 802.1x auth-server-down 802.1x auth-server-down policy 802.1x auth-server-down re-authperiod show 802.1x device classification policies show 802.1x captive-portal configuration

802.1x

Configures 802.1x parameters on a particular slot/port. Typically used for port access control on a dedicated 802.1x port.

802.1x *slot/port* [**direction** {**both** | **in**}] [**port-control** {**force-authorized** | **force-unauthorized** | **auto**}] [**quiet-period** *seconds*] [**tx-period** *seconds*] [**supp-timeout** *seconds*] [**server-timeout** *seconds*] [**max-req** *max_req*] [**re-authperiod** *seconds*] [**reauthentication** | **no reauthentication**]

Syntax Definitions

<i>slot/port</i>	The slot and port number of the 802.1x port.
both	Configures bidirectional control on the port.
in	Configures control over incoming traffic only.
force-authorized	Forces the port control to be authorized, which means that the port is open without restrictions and behaves as any other non-802.1x port. Devices do not need to authenticate to traffic through the port.
force-unauthorized	Forces the port control to be unauthorized, which means the port cannot accept any traffic.
auto	Configures the switch to control the port control status dynamically based on authentication exchanges between the 802.1x end station and the switch. Initially the port is in an unauthorized state; it becomes authorized if a device successfully completes an 802.1x authentication exchange with the switch.
quiet-period <i>seconds</i>	The time during which the port does not accept an 802.1x authentication attempt; the timer is activated after any authentication failure. During the time period specified, the switch ignores and discards all Extensible Authentication Protocol over LAN (EAPOL) packets. The range is 0 seconds to 65535 seconds.
tx-period <i>seconds</i>	The time before an EAP Request Identity is retransmitted. The range is 1 second to 65535 seconds.
supp-timeout <i>seconds</i>	The number of seconds before the switch times out an 802.1x user who is attempting to authenticate. The value must be modified to be a greater value if the authentication process requires additional steps by the user (for example, entering a challenge).
server-timeout <i>seconds</i>	The timeout for the authentication server for authentication attempts. This value is always superseded by the value configured for the RADIUS authentication server configured through the aaa radius-server command.
<i>max_req</i>	The maximum number of times the switch retransmits a request for authentication information (request identity, password, challenge, and so on.) to the 802.1x user before it times out the authentication session based on the supp-timeout . The range is 1 to 10.
re-authperiod <i>seconds</i>	The amount of time that must expire before the switch requires re-authentication of the Supplicant on this port. Only applicable when re-authentication is enabled.

reauthentication	Specifies that the port is reauthenticated after the re-authperiod timer expires.
no reauthentication	Specifies that the port is not reauthenticated unless the 802.1x re-authenticate command is entered.

Defaults

parameter	default
both in	both
force-authorized force-unauthorized auto	auto
quiet-period <i>seconds</i>	60
tx-period <i>seconds</i>	30
supp-timeout <i>seconds</i>	30
<i>max_req</i>	2
re-authperiod <i>seconds</i>	3600
reauthentication no reauthentication	no reauthentication

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- To set the port to accept any traffic without requiring 802.1x authentication, use the **force-authorized** option.
- Use the **vlan port 802.1x** command with the **disable** option to disable 802.1x authentication on the port.
- Before any device is authenticated through an 802.1x port, the port only process 802.1x frames (EAPoL frames) from an unknown source.
- Multiple devices can be authenticated on a given 802.1x port. Each device MAC address received on the port is authenticated and learned separately. Only those that authenticate successfully are allowed on the port, as described above. Those that fail authentication are blocked from accessing the 802.1x port.

Examples

```
-> 802.1x 3/1 quiet-period 30
```

Release History

Release 6.6.1; command introduced.

Related Commands

aaa authentication 802.1x	Enables/disables the switch for 802.1x authentication.
vlan port 802.1x	Enables or disables 802.1x port-based access control on a mobile port.
aaa radius-server	Configures or modifies a RADIUS server for Authenticated VLANs, Authenticated Switch Access, or 802.1x port access control.
802.1x captive-portal address	Displays information about ports configured for 802.1x.

MIB Objects

```
dot1xPaePortTable
  dot1xPaePortNumber
  dot1xPaePortInitialize
  dot1xPaePortReauthenticate
dot1xAuthConfigTable
  dot1xAuthAdminControlledDirections
  dot1xAuthOperControlledDirections
  dot1xAuthAuthControlledPortStatus
  dot1xAuthAuthControlledPortControl
  dot1xAuthQuietPeriod
  dot1xAuthTxPeriod
  dot1xAuthSuppTimeout
  dot1xAuthServerTimeout
  dot1xAuthMaxReq
  dot1xAuthReAuthPeriod
  dot1xAuthReAuthEnabled
```

802.1x supp-polling retry

Configures the number of times to poll a device for EAP frames to determine whether the device is an 802.1x client.

802.1x slot/port supp-polling retry retries

Syntax Definitions

<i>slot</i>	The slot number of the 802.1x port.
<i>port</i>	The 802.1x port number.
<i>retries</i>	The number of times a device is polled for EAP frames (0–99).

Defaults

By default, the number of retries is set to 2.

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guideline

- The polling interval is 0.5 seconds between each retry.
- If no EAP frames are received from a device connected to an 802.1x port, the device is considered a non-802.1x client (non-suppliant).
- Specify “0” for the number of retries to bypass polling attempts and automatically classify the device connected to the 802.1x port as a non-suppliant.
- Any devices previously authenticated on the port remain authenticated; however, reauthentication does not occur.
- If a guest VLAN is configured on the 802.1x port, the non-802.1x client is assigned to the guest VLAN. If a guest VLAN does not exist, the device is blocked from accessing the 802.1x port.

Examples

```
-> 802.1x 3/1 supp-polling retry 5
-> 802.1x 3/9 supp-polling retry 10
-> 802.1x 2/1 supp-polling retry 0
```

Release History

Release 6.6.1; command introduced.

Related Commands

- 802.1x captive-portal address** Displays information about ports configured for 802.1x.
- show 802.1x non-suppliant** Displays a list of all non-802.1x supplicants learned on one or more 802.1x ports. Displays a list of all non-802.1x supplicants learned on one or more 802.1x ports.

MIB Objects

alaDot1xSuppPollingCnt

802.1x supplicant policy authentication

Configures a supplicant device classification policy for an 802.1x port. This type of policy uses 802.1x authentication through a remote RADIUS server. A supplicant is any device that uses the 802.1x protocol for authentication.

802.1x slot/port supplicant policy authentication [[**pass**] {**group-mobility** | **vlan vid** | **default-vlan** | **block** | **captive-portal**}...] [[**fail**] {**vlan vid** | **block** | **captive-portal**}...]

Syntax Definitions

<i>slot/port</i>	The slot and port number of the 802.1x port.
pass	Indicates which policies to apply if 802.1x authentication is successful but does not return a VLAN ID.
fail	Indicates which policies to apply if 802.1x authentication fails or if successful authentication returns a VLAN ID that does not exist.
group-mobility	Use Group Mobility rules for device classification.
vlan vid	Use this VLAN ID number for device classification.
default-vlan	Assigns supplicant to the default VLAN for the 802.1x port.
block	Blocks supplicant access on the 802.1x port.
captive-portal	Use Captive Portal for web-based device classification.

Defaults

When 802.1x is enabled on the port, a default supplicant policy is defined for the port. This policy uses the **group-mobility** and **default-vlan** parameters for the **pass** case and the **block** parameter for the **fail** case.

When the **802.1x supplicant policy authentication** command is used without specifying any parameters, the following values for the **pass** and **fail** case are configured by default:

parameter	default
pass	block
fail	block

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Supplicant device classification policies are applied only when successful 802.1x authentication *does not* return a VLAN ID, returns a VLAN ID that does not exist, or authentication fails.
- When authentication does return a VLAN ID that exists in the switch configuration, the supplicant is assigned to that VLAN and no further classification is performed.
- IF this command is used without specifying any of the optional policy keywords or a **pass/fail** parameter (for example, **802.1x 1/10 supplicant authentication**), the resulting policy blocks

supplicants if successful 802.1x authentication *does not* return a VLAN ID, returns a VLAN ID that does not exist, or authentication fails.

- When multiple parameters are configured, the policy is referred to as a compound supplicant policy. Such policies use the **pass** and **fail** parameters to specify which policies to use when 802.1x authentication is successful and which to use when it fails.
- The **pass** keyword is implied and therefore an optional keyword. If the **fail** keyword is not used, the default action is to block the device when authentication fails.
- The order in which parameters are specified determines the order in which they are applied. However, this type of policy must end with either the **default-vlan** or **block**, or **captive-portal** parameters, referred to as terminal parameters (or policies). This applies to both pass and fail policies. If a terminal parameter is not specified, the **block** parameter is used by default.
- If the **captive-portal** parameter is specified with this command, the Captive Portal authentication policy is applied to supplicant traffic. See the [802.1x captive-portal policy authentication](#) command page for more information.
- A User Network Profile (UNP) specifies a VLAN assignment for the device, whether or not Host Integrity Check (HIC) is required for the device, and if any QoS access control list (ACL) policies are applied to the device. See the [aaa user-network-profile](#) command page for information about how to create a UNP.

Note. Default VLAN of the port must be different from that of the UNP VLAN. UNP Policy list is not applied with UNP classified to UNP VLAN if it is same as the default VLAN assigned to the port.

- Configuring supplicant classification policies is only supported on 802.1x enabled mobile ports.
- Each 802.1x port can have one supplicant policy and one non-supplicant policy for handling 802.1x and non-802.1x devices, respectively. Configuring a new supplicant or non-supplicant policy overwrites any policies that may already exist for the port.

Examples

```
-> 802.1x 3/1 supplicant policy authentication
-> 802.1x 4/1 supplicant policy authentication vlan 27 default-vlan
-> 802.1x 5/1 supplicant policy authentication group-mobility captive-portal
-> 802.1x 5/10 supplicant policy authentication pass group-mobility default-vlan
fail vlan 43 block
-> 802.1x 6/1 supplicant policy authentication pass group-mobility default-vlan
fail captive-portal
```

Release History

Release 6.6.1; command introduced.

Related Commands

802.1x non-supplicant policy authentication	Configures MAC authentication device classification policies for non-supPLICANTS.
802.1x non-supplicant policy	Configures device classification policies that do not perform 802.1x or MAC authentication for non-supPLICANTS.
802.1x policy default	Resets the device classification policy to the default policy value for the 802.1x port.
show 802.1x device classification policies	Displays device classification policies configured for an 802.1x port.
show 802.1x non-supplicant	Displays a list of all non-supPLICANTS learned on all 802.1x ports.

MIB Objects

alaDot1xAuthPolicyTable
alaDot1xSuppPolicy

802.1x non-suppliant policy authentication

Configures a non-suppliant device classification policy for an 802.1x port. This type of policy uses MAC authentication through a remote RADIUS server. A non-suppliant is a device that does not support using the 802.1x protocol for authentication.

802.1x *slot/port* non-suppliant policy authentication **[[pass] {group-mobility | vlan *vid* | default-vlan | block | captive-portal}]** **[[fail] {group-mobility | vlan *vid* / default-vlan | block | captive-portal}]**

Syntax Definitions

<i>slot/port</i>	The slot and port number of the 802.1x port.
pass	Indicates which policies to apply if MAC authentication is successful but does not return a VLAN ID or the VLAN ID returned does not exist.
fail	Indicates which policies to apply if MAC authentication fails.
group-mobility	Use Group Mobility rules for device classification.
vlan <i>vid</i>	Use this VLAN ID number for device classification.
default-vlan	Assigns suppliant to the default VLAN for the 802.1x port.
block	Blocks suppliant traffic on the 802.1x port.
captive-portal	Use Captive Portal for web-based device classification.

Defaults

When 802.1x is enabled on the port, all non-suppliant traffic is blocked by default.

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Non-suppliant device classification policies are applied only when successful MAC authentication *does not* return a VLAN ID, returns a VLAN ID that does not exist, or MAC authentication fails.
- When MAC authentication does return a VLAN ID that exists in the switch configuration, the suppliant is assigned to that VLAN and no further classification is performed.
- MAC-authentication is referred as non-suppliant authentication. The administrator can configure the client MAC address as the password and username in the authentication server. The MAC address of the client, to authenticate the non-suppliant, can be either in uppercase or lowercase letters.
- When MAC authentication does return a VLAN ID that exists in the switch configuration, the suppliant is assigned to that VLAN and no further classification is performed.
- When multiple parameters are configured, the policy is referred to as a compound non-suppliant policy. Such policies use the **pass** and **fail** parameters to specify which policies to use when MAC authentication is successful and which to use when it fails.
- The **pass** keyword is implied and therefore an optional keyword. If the **fail** keyword is not used, the default action is to block the device when authentication fails.

- The order in which the parameters are specified determines the order in which they are applied. However, this type of policy must end with either the **default-vlan** or **block**, or **captive-portal** parameters, referred to as terminal parameters (or policies). This applies to both pass and fail policies. If a terminal parameter is not specified, the **block** parameter is used by default.
- If the **captive-portal** parameter is specified with this command, then the Captive Portal authentication policy is applied to supplicant traffic. See the [802.1x captive-portal policy authentication](#) command page for more information.
- Configuring non-suppliant classification policies is only supported on 802.1x enabled mobile ports.
- Each 802.1x port can have one supplicant policy and one non-suppliant policy for handling 802.1x and non-802.1x devices, respectively. Configuring a new supplicant or non-suppliant policy overwrites any policy that may exist for the port.

Examples

```
-> 802.1x 3/1 non-suppliant policy authentication
-> 802.1x 4/1 non-suppliant policy authentication pass group-mobility fail
default-vlan
-> 802.1x 5/1 non-suppliant policy authentication group-mobility captive-portal
-> 802.1x 5/10 non-suppliant policy authentication vlan 27 fail vlan 500 default-
vlan
-> 802.1x 2/1 non-suppliant policy authentication vlan 10 default-vlan
-> 802.1x 6/1 non-suppliant policy authentication pass group-mobility default-vlan
fail captive-portal
```

Release History

Release 6.6.1; command introduced.

Related Commands

aaa radius-server	Configures or modifies a RADIUS server with different options for Authenticated Switch Access or 802.1X port access control.
802.1x supplicant policy authentication	Configures 802.1x authentication device classification policies for supplicants.
802.1x non-suppliant policy	Configures device classification policies that do not perform 802.1x or MAC authentication for non-suplicants.
802.1x policy default	Resets the device classification policy to the default policy value for the 802.1x port.
show 802.1x device classification policies	Displays device classification policies configured for an 802.1x port.
show 802.1x non-suppliant	Displays a list of all non-suplicants learned on all 802.1x ports.

MIB Objects

```
alaDot1xAuthPolicyTable
alaDot1xNonSuppPolicy
```

802.1x captive-portal name

Configures the name of the redirect URL that is used for accessing a public certificate.

802.1x captive-portal name *cp_url_name*

802.1x captive-portal no name

Syntax Definitions

cp_url_name The name to be used for the redirect URL.

Defaults

By default, the name of the redirect URL is set to “captive-portal”.

Platforms Supported

OmniSwitch 6250, 6450

Usage Guidelines

- Use this command to change the Captive Portal redirect URL name (captive-portal) to match the common name (cn) used by the public certificate on the switch. Matching these two names prevents a certificate warning message caused when these names do not match.
- Use the **no** form of this command to remove the configured Captive Portal redirect URL name. This reverts the URL name back to the default of “captive-portal”.
- This feature is not supported on HTTPS sessions.

Examples

```
-> 802.1x captive-portal name certname  
-> 802.1x captive-portal no name
```

Release History

Release 6.6.3; command introduced.

Related Commands

show 802.1x captive-portal configuration Displays the global Captive Portal configuration for the switch.

MIB Objects

```
alaDot1xAuthPolicyTable  
  alaDot1xCPortalRedirectString
```

802.1x non-suppliant policy

Configures a non-suppliant device classification policy for an 802.1x port. This type of policy does not perform any authentication. A non-suppliant is a device that does not support using the 802.1x protocol for authentication.

802.1x *slot/port* non-suppliant policy {group-mobility | vlan *vid* | default-vlan | block | captive-portal}

Syntax Definitions

<i>slot/port</i>	The slot and port number of the 802.1x port.
group-mobility	Use Group Mobility rules for device classification.
vlan <i>vid</i>	Use this VLAN ID number for device classification.
default-vlan	Assign suppliant to the default VLAN for the 802.1x port.
block	Block suppliant traffic on the 802.1x port.
captive-portal	Use Captive Portal for web-based device classification.

Defaults

By default no device classification policies are configured for an 802.1x port.

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Because this policy does not use 802.1x or MAC authentication, non-suplicants are only classified for assignment to non-authenticated VLANs.
- If a non-suppliant policy is not configured for an 802.1x port, then non-suplicants are automatically blocked from accessing the port.
- If the **captive-portal** parameter is specified with this command, then the Captive Portal authentication policy is applied to non-suppliant traffic. See the [802.1x captive-portal policy authentication](#) command page for more information.
- Configuring non-suppliant classification policies is only supported on 802.1x enabled mobile ports.
- Each 802.1x port can have one suppliant policy and one non-suppliant policy for handling 802.1x and non-802.1x devices, respectively. Configuring a new suppliant or non-suppliant policy overwrites any policies that may already exist for the port.

Examples

```
-> 802.1x 4/1 non-suppliant policy group-mobility default-vlan
-> 802.1x 5/10 non-suppliant policy vlan 500 block
-> 802.1x 6/1 non-suppliant policy group-mobility vlan 247 block
-> 802.1x 4/10 non-suppliant policy captive-portal
```

Release History

Release 6.6.1; command introduced.

Related Commands

802.1x supplicant policy authentication	Configures 802.1x authentication device classification policies for supplicants.
802.1x non-suppliant policy authentication	Configures MAC authentication device classification policies for non-suplicants.
802.1x policy default	Resets the device classification policy to the default policy value for the 802.1x port.
show 802.1x device classification policies	Displays device classification policies configured for an 802.1x port.
show 802.1x non-suppliant	Displays a list of all non-suplicants learned on all 802.1x ports.

MIB Objects

alaDot1xAuthPolicyTable
alaDot1xNonSuppPolicy

802.1x policy default

Resets the device classification policy to the default value for the 802.1x port.

802.1x *slot/port* {supplicant | non-supplicant} policy default

Syntax Definitions

<i>slot/port</i>	The slot and port number of the 802.1x port.
supplicant	Reset the supplicant policy to the default policy value.
non-supplicant	Reset the non-supplicant policy to the default policy value.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- The default non-supplicant policy blocks all non-suppliants from accessing the 802.1x port.
- The default supplicant policy blocks supplicants that fail authentication. If authentication is successful but does not return a VLAN ID, then Group Mobility rules are examined. If no rules exist or match supplicant traffic, then the supplicant is assigned to the default VLAN for the 802.1x port.

Examples

```
-> 802.1x 3/1 supplicant policy default  
-> 802.1x 4/1 non-supplicant policy default
```

Release History

Release 6.6.1; command introduced.

Related Commands

802.1x supplicant policy authentication	Configures 802.1x authentication device classification policies for supplicants.
802.1x non-supplicant policy authentication	Configures MAC authentication device classification policies for non-supplicants.
802.1x non-supplicant policy	Configures device classification policies that do not perform 802.1x or MAC authentication for non-supplicants.
show 802.1x device classification policies	Displays device classification policies configured for an 802.1x port.
show 802.1x non-supplicant	Displays a list of all non-supplicants learned on all 802.1x ports.

MIB Objects

alaDot1xAuthPolicyTable
alaDot1xSuppPolicy

802.1x captive-portal policy authentication

Configures a Captive Portal device classification policy for an 802.1x port. This type of policy classifies both supplicants and non-supplicants that have attempted network access using web-based authentication.

802.1x slot/port captive-portal policy authentication pass {group-mobility | vlan vid | default-vlan | block} [fail] {group-mobility | vlan vid / default-vlan | block}

Syntax Definitions

<i>slot/port</i>	The slot and port number of the 802.1x port.
pass	Indicates which policies to apply if authentication is successful but does not return a VLAN ID or the VLAN ID returned does not exist.
fail	Indicates which policies to apply if authentication fails.
group-mobility	Use Group Mobility rules for device classification.
vlan vid	Use this VLAN ID number for device classification.
default-vlan	Assigns the device to the default VLAN for the 802.1x port.
block	Blocks device traffic on the 802.1x port.

Defaults

A default Captive Portal policy is automatically configured when 802.1x is enabled on a port. This default policy uses the **default-vlan** parameter for the **pass** case and the **block** parameter for the **fail** case.

Platforms Supported

OmniSwitch 6250, 6450

Usage Guidelines

- Captive Portal device classification policies are applied only when successful web-based authentication *does not* return a VLAN ID, returns a VLAN ID that does not exist, or when web-based authentication fails.
- When web-based authentication does return a VLAN ID that exists in the switch configuration, the device is assigned to that VLAN and no further classification is performed.
- When multiple parameters are configured, the policy is referred to as a compound non-supplicant policy. Such policies use the **pass** and **fail** parameters to specify which policies to use when MAC authentication is successful and which to use when it fails.
- If the **fail** keyword is not used, the default action is to block the device when authentication fails.
- The order in which the parameters are specified determines the order in which they are applied. However, this type of policy must end with either the **default-vlan** or **block** parameters, referred to as terminal parameters (or policies). This applies to both pass and fail policies.
- Captive Portal policies are applied only to 802.1x enabled mobile ports that are configured with an 802.1x supplicant or non-supplicant policy that specifies the use of Captive Portal web-based authentication.

Examples

```
-> 802.1x 3/1 captive-portal policy authentication pass vlan 100 block fail vlan 10  
-> 802.1x 4/1 captive-portal policy authentication pass group-mobility
```

Release History

Release 6.6.1; command introduced.

Related Commands

802.1x supplicant policy authentication	Configures 802.1x authentication device classification policies for supplicants.
802.1x non-supplicant policy	Configures device classification policies that do not perform 802.1x or MAC authentication for non-supplicants.
802.1x captive-portal session-limit	Configures the length of a Captive Portal session and the number of login attempts allowed before the device is classified as a failed login.
show 802.1x device classification policies	Displays device classification policies configured for an 802.1x port.
show 802.1x auth-server-down	Displays the Captive Portal configuration information (session time limit and the number of login retries) for the specified 802.1x port.

MIB Objects

```
alaDot1xAuthPolicyTable  
  alaDot1xCaptivePortalPolicy
```

802.1x captive-portal session-limit

Configures the length of an active Captive Portal session.

802.1x slot/port captive-portal session-limit time

Syntax Definitions

slot/port

The slot and port number of the 802.1x port.

time

The amount of time the Captive Portal session remains active. Valid range is from 1—999 hours.

Defaults

parameter	default
<i>time</i>	12 hours

Platforms Supported

OmniSwitch 6250, 6450

Usage Guidelines

- The parameters configured with this command apply to the Captive Portal configuration for the specified 802.1x port.
- At the end of the Captive Portal session time limit, the user is automatically logged out of the session and is no longer allowed to access the network.

Examples

```
-> 802.1x 3/1 captive-portal session-limit 8 retry-count 5  
-> 802.1x 4/1 captive-portal session-limit 4 retry-count 2
```

Release History

Release 6.6.1; command introduced.

Related Commands

- 802.1x captive-portal retry-count** Configures the number of login attempts allowed before the Captive Portal fail policy is applied to the device.
- 802.1x captive-portal policy authentication** Configures a Captive Portal device classification policy for an 802.1x port.
- show 802.1x auth-server-down** Displays the global Captive Portal configuration for the switch.

MIB Objects

alaDot1xAuthPolicyTable
alaDot1xCaptivePortalSessionLimit

802.1x captive-portal inactivity-logout

Configures whether a user MAC address is flushed from the Captive Portal user table due to inactivity.

802.1x slot/port captive-portal inactivity-logout {enable | disable}

Syntax Definitions

<i>slot/port</i>	The slot and port number of the 802.1x port.
enable	Enables inactivity logout.
disable	Disables inactivity logout.

Defaults

By default, inactivity logout is disabled.

Platforms Supported

OmniSwitch 6250, 6450

Usage Guidelines

This timer is based on the MAC address aging timer. If a user is flushed from the MAC address table due to inactivity, the user MAC address is also flushed from the Captive Portal user table.

Examples

```
-> 802.1x 3/1 captive-portal inactivity-logout enable
-> 802.1x 3/1 captive-portal inactivity-logout disable
```

Release History

Release 6.6.3; command introduced.

Related Commands

802.1x captive-portal retry-count	Configures the number of login attempts allowed before the Captive Portal fail policy is applied to the device.
802.1x captive-portal policy authentication	Configures a Captive Portal device classification policy for an 802.1x port.
show 802.1x captive-portal configuration	Displays the global Captive Portal configuration for the switch.

MIB Objects

```
alaDot1xAuthPolicyTable
  alaDot1xCPortalInactivityLogout
```

802.1x captive-portal retry-count

Configures the number of login attempts allowed before the Captive Portal fail policy is applied to the device.

802.1x slot/port captive-portal retry-count retries

Syntax Definitions

slot/port The slot and port number of the 802.1x port.
retries The number of login attempts allowed (1–99).

Defaults

parameter	default
<i>retries</i>	3

Platforms Supported

OmniSwitch 6250, 6450

Usage Guidelines

- The parameters configured with this command apply to the Captive Portal configuration for the specified 802.1x port.
- When a device has failed the allowed number of login attempts, the **fail** case for the Captive Portal policy configured for the 802.1x port is applied. To allow an unlimited number of login attempts, specify zero for the retry count value.

Examples

```
-> 802.1x 3/1 captive-portal session-limit 8 retry-count 5  
-> 802.1x 4/1 captive-portal session-limit 4 retry-count 2
```

Release History

Release 6.6.1; command introduced.

Related Commands

- 802.1x captive-portal session-limit** Configures the length of an active Captive Portal session.
- 802.1x captive-portal policy authentication** Configures a Captive Portal device classification policy for an 802.1x port.
- show 802.1x auth-server-down** Displays the global Captive Portal configuration for the switch.

MIB Objects

alaDot1xAuthPolicyTable
alaDot1xCaptivePortalRetryCnt

802.1x captive-portal address

Configures a different subnet for the Captive Portal IP address (10.123.0.1).

802.1x captive-portal address *ip_address*

Syntax Definitions

ip_address

The IP address for the Captive Portal login page. This IP address must use the following octet values: 10.x.0.1, where “x” is used to specify a new subnet value.

Defaults

By default, the Captive Portal IP address is set to 10.123.0.1.

Platforms Supported

OmniSwitch 6250, 6450

Usage Guidelines

- If the 10.123.0.1 subnet is already in use on the network, use this command to change the second octet of this IP address. The second octet is the only configurable part of the Captive Portal IP address that is allowed.
- This IP address is used exclusively by the Captive Portal feature to serve various pages and to assign a temporary IP address for a client device that is attempting web-based authentication.

Examples

```
-> 802.1x captive-portal address 10.11.0.1  
-> 802.1x captive-portal address 10.124.0.1
```

Release History

Release 6.6.1; command introduced.

Related Commands

show 802.1x auth-server-down Displays the global Captive Portal configuration for the switch.

MIB Objects

```
alaDot1xCportalConfig  
alaDot1xCPortalIpAddress
```

802.1x captive-portal proxy-server-url

Configures Captive Portal to work with a specific proxy server URL used by the client.

802.1x captive-portal proxy-server-url *proxy_url*

Syntax Definitions

proxy_url The URL address for the users proxy server.

Defaults

By default, the proxy server URL value is set to **proxy**. Captive Portal looks for the word “proxy” to identify the users web server URL.

Platforms Supported

OmniSwitch 6250, 6450

Usage Guidelines

- Changing the Captive Portal proxy server URL value is only necessary if the proxy server URL does not contain any of following in the address:

www
http
https
proxy

- When using a proxy server with Microsoft’s Internet Explorer browser, select the “bypass proxy for local address” option.
- When using a proxy server with the Firefox or Netscape browsers, add the name “captive-portal” to the proxy exception list.

Examples

```
-> 802.1x captive-portal proxy-server-url www.companyname.com
```

Release History

Release 6.6.1; command introduced.

Related Commands

show 802.1x auth-server-down Displays the global Captive Portal configuration for the switch.

MIB Objects

alaDot1xCportalConfig
alaDot1xCPortalProxyURL

802.1x captive-portal proxy-server-port

Configures Captive Portal to work with a specific proxy server port.

802.1x captive-portal proxy-server-port *proxy_port*

802.1x captive-portal no proxy-server-port *proxy_port*

Syntax Definitions

proxy_port

The configured port for the proxy server. Valid range is between 1024-49151.

Defaults

N/A.

Platforms Supported

OmniSwitch 6250, 6450

Usage Guidelines

This command is only necessary if the port required is not 80 or 8080.

Examples

```
-> 802.1x captive-portal proxy-server-port 1200
-> 802.1x captive-portal no proxy-server-port
```

Release History

Release 6.6.3; command introduced.

Related Commands

[show 802.1x captive-portal configuration](#)

Displays the global Captive Portal configuration for the switch.

MIB Objects

```
alaDot1xCportalConfig
  alaDot1xCPortalProxyPort
```

Related Commands

show 802.1x captive-portal configuration Displays the global Captive Portal configuration for the switch.

MIB Objects

```
alaDot1xCportalConfig  
  alaDot1xCPortalDnsKeyword1  
  alaDot1xCPortalDnsKeyword2  
  alaDot1xCPortalDnsKeyword3  
  alaDot1xCPortalDnsKeyword4
```

802.1x captive-portal success-redirect-url

Configures Captive Portal to redirect the user to a specific site upon successful authentication. This command specifies the URL of an HTTP site where a Java script is defined that specifies the actual destination URL.

802.1x captive-portal success-redirect-url *redirect_url*

802.1x captive-portal no success-redirect-url

Syntax Definitions

redirect_url The internal HTTP server URL, up to 63 characters, for the redirect Java script (for example, **http://test-cp.com/success.html**).

Defaults

No success redirect URL is configured.

Platforms Supported

OmniSwitch 6250, 6450

Usage Guidelines

- Use the **no** form of this command to remove a success redirect URL configuration.
- Make sure the HTTP server URL and Java script exist and are reachable by the user during the authentication phase.
- A Java script is only needed to redirect a user to a website outside of the network; a script is not needed to redirect users to an intranet site.
- After the user attempts to authenticate through the Captive Portal login page, the Captive Portal status page displays and attempts to run the Java script that is located at the URL site specified with this command.
- If the redirect URL is not configured or is invalid, the Captive Portal status page remains open and displays an error message regarding the attempted redirection.

Examples

The following command example configures the success URL to point to the **success.html** Java script on the **test-cp.com** HTTP server.

```
-> 802.1x captive-portal success-redirect-url http://test-cp.com/success.html
```

The following is an example Java script (**success.html**) in which the “TARGET” field specifies the actual URL to which the user is redirected.

```
<html>
<head> <meta http-equiv="expires" content="Tue, 20 Aug 1996 14:25:47 GMT">
<meta http-equiv=Pragma content=no-cache>
<meta http-equiv=cache-control content=no-cache,no-store,must-revalidate,proxy-
```

```
revalidate>  
</head>  
<body>  
<script type="text/javascript">  
    var TARGET = "http://www.google.com";  
    top.location = TARGET;  
</script>  
</body>
```

Release History

Release 6.6.3; command introduced.

Related Commands

[show 802.1x captive-portal configuration](#)

Displays the global Captive Portal configuration for the switch.

[802.1x captive-portal fail-redirect-url](#)

Configures Captive Portal to redirect the user to a specific site if authentication fails.

MIB Objects

```
alaDot1xCportalConfig  
    alaDot1xCPortalPostAuthSuccessRedirectURL
```

802.1x captive-portal fail-redirect-url

Configures Captive Portal to redirect the user to a specific site if authentication fails (user login is invalid or user bypasses authentication). This command specifies the URL of an HTTP server where a Java script is defined that specifies the actual destination URL.

802.1x captive-portal fail-redirect-url *redirect_url*

802.1x captive-portal no fail-redirect-url

Syntax Definitions

redirect_url The internal HTTP server URL, up to 63 characters, for the redirect Java script (for example, **http://test-cp.com/fail.html**).

Defaults

No fail redirect URL is configured.

Platforms Supported

OmniSwitch 6250, 6450

Usage Guidelines

- Use the **no** form of this command to remove a fail redirect URL configuration.
- Make sure the HTTP server URL and Java script exist and are reachable by the user during the authentication phase.
- A Java script is only needed to redirect a user to a website outside of the network; a script is not needed to redirect users to an intranet site.
- After the user attempts to authenticate through the Captive Portal login page, the Captive Portal status page displays and attempts to run the Java script that is located at the URL site specified with this command.
- If the redirect URL is not configured or is invalid, the Captive Portal status page remains open and displays an error message regarding the attempted redirection.

Examples

The following command example configures the fail URL to point to the **fail.html** Java script on the **test-cp.com** HTTP server.

```
-> 802.1x captive-portal fail-redirect-url http://test-cp.com/fail.html
```

The following is an example Java script (named **fail.html**) in which the “TARGET” field specifies the actual URL to which the user is redirected:

```
<html>
<head> <meta http-equiv="expires" content="Tue, 20 Aug 1996 14:25:47 GMT">
<meta http-equiv=Pragma content=no-cache>
<meta http-equiv=cache-control content=no-cache,no-store,must-revalidate,proxy-
revalidate>
</head>
```



```
<body>
<script type="text/javascript">
  var TARGET = "http://www.mycompany.com";
  top.location = TARGET;
</script>
</body>
```

Release History

Release 6.6.3; command introduced.

Related Commands

- | | |
|---|---|
| show 802.1x captive-portal configuration | Displays the global Captive Portal configuration for the switch. |
| 802.1x captive-portal success-redirect-url | Configures Captive Portal to redirect the user to a specific site upon successful authentication. |

MIB Objects

```
alaDot1xCportalConfig
  alaDot1xCPortalPostAuthFailRedirectURL
```

802.1x auth-server-down

Enables or disables the authentication server down classification policy.

802.1x auth-server-down {enable | disable}

Syntax Definitions

enable	Enables the auth-server-down policy.
disable	Disables the auth-server-down policy.

Defaults

By default, authentication server down policy is disabled.

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

This command is global and applies to all 802.1x ports on the switch.

Examples

```
-> 802.1x auth-server-down enable  
-> 802.1x auth-server-down disable
```

Release History

Release 6.6.2; command introduced.

Related Commands

show 802.1x auth-server-down Displays the configured authentication server down classification policy.

MIB Objects

alaDot1xAuthSvrTimeoutStatus

802.1x auth-server-down policy

Configures the policy for classifying devices attempting to authenticate when the RADIUS servers are not reachable.

802.1x auth-server-down policy {**user-network-profile** *profile_name* | **block**}

Syntax Definitions

<i>profile_name</i>	The name of an existing User Network Profile (UNP) to use for device classification.
block	Blocks device access on the 802.1x port.

Defaults

By default, this policy is configured to block access to such devices and is disabled for the switch.

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Use the **user-network-profile** parameter to classify device traffic into a specific profile when the RADIUS server is down.
- Use the **block** parameter to block device traffic on the 802.1x port when the RADIUS server is down.
- This command applies to all 802.1x-enabled ports on the switch.
- When device authentication fails due to an unreachable RADIUS server, an event message is sent to the switch logging utility (swlog). See the “Switch Logging Command” chapter for more information.

Examples

```
-> 802.1x auth-server-down policy user-network-profile unp1  
-> 802.1x auth-server-down policy block
```

Release History

Release 6.6.3; command introduced.

Related Commands

- 802.1x auth-server-down** Enables or disables the authentication server down policy.
- show 802.1x** Configures the amount of time to wait before reauthentication is attempted for devices classified by the server down policy.
- show 802.1x auth-server-down** Displays the configured authentication server down policy.

MIB Objects

`alaDot1xAuthSvrTimeoutPolicy`

802.1x auth-server-down re-authperiod

Configures the amount of time to wait before reauthentication is attempted for devices that were classified by the authentication server down policy.

802.1x auth-server-down re-authperiod {*value*}

Syntax Definitions

value The value of reauthentication timer. The range is 30 second to 9999 seconds.

Defaults

parameter	default
<i>value</i>	30

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- This timer only applies to devices that were classified by the authentication server down policy. This policy classifies devices whenever RADIUS servers become unreachable.
- This command sets the time interval for all 802.1x-enabled ports on the switch.

Examples

```
-> 802.1x auth-server-down re-authperiod 500
```

Release History

Release 6.6.2; command introduced.

Related Commands

[802.1x auth-server-down policy](#) Configures the authentication server down policy.

[show 802.1x auth-server-down](#) Displays the configured reauthentication time interval value.

MIB Objects

alaDot1xAuthSvrTimeoutReAuthPeriod

802.1x auth-server-down

Enables or disables the authentication server down classification policy.

802.1x auth-server-down {enable | disable}

Syntax Definitions

enable	Enables the auth-server-down policy.
disable	Disables the auth-server-down policy.

Defaults

By default, authentication server down policy is disabled.

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Use this command to enable or disable the authentication server down policy.
- This command is global and applies to all ports on the switch.

Examples

```
-> 802.1x auth-server-down enable
-> 802.1x auth-server-down disable
```

Release History

Release 6.6.2; command introduced.

Related Commands

show 802.1x auth-server-down Displays the configured authentication server down classification policy.

MIB Objects

alaDot1xAuthSvrTimeoutStatus

802.1x auth-server-down policy

Configures the policy for classifying the device when the authentication server is not reachable.

802.1x auth-server-down [[no] **voice-policy**] [**policy**] {**user-network-profile** *profile_name* | **block**}

802.1x auth-server-down no voice-policy

Syntax Definitions

<i>profile_name</i>	The name of an existing User Network Profile (UNP) to use for device classification.
block	Blocks supplicant access on the 802.1x port.
voice-policy	Classifies the IP phone traffic from the data traffic when the authentication server is down.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Use this command to configure the authentication server down classification policy.
- Use the optional parameter **block** to restrict the device traffic on the 802.1x port.
- Use the optional parameter **voice-policy** to configure the UNP to classify IP phone traffic from the data traffic when the authentication server is down. This can be configured for POE IP phones which supports LLDP-MED.
- The **voice-policy** parameter will work only if the **802.1x auth-server-down** functionality is enabled.
- Use the **no** form of the command to remove the **voice-policy** configuration.
- This command is global and applies to all ports on the switch.
- To obtain the RADIUS server status periodically, enable the server polling using the **802.1x server-polling** command. Use **show aaa server** command to view the server status.

Examples

```
-> 802.1x auth-server-down policy user-network-profile
-> 802.1x auth-server-down policy block
-> 802.1x auth-server-down voice-policy user-network-profile UNP1
-> 802.1x auth-server-down no voice-policy user-network-profile
```

Release History

Release 6.6.2; command introduced.

Release 6.7.1; **voice-policy** parameter included.

Related Commands

show 802.1x auth-server-down Displays the configured authentication server down classification policy.

MIB Objects

```
alaDot1xAuthServerTimeoutPolicy  
alaDot1xAuthSvrTimeoutVoicePolicy
```

802.1x server-polling

Enable or disable server polling feature, which polls all the configured RADIUS servers periodically to obtain the server status.

802.1x server-polling {enable | disable}

Syntax Definitions

enable	Enables the polling of the RADIUS server.
disable	Disables the polling of the RADIUS server.

Defaults

By default, RADIUS server polling is disabled.

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guideline

show aaa server command displays the reachability status of different RADIUS servers configured on the switch.

Examples

```
-> 802.1x server-polling enable
-> 802.1x server-polling disable
```

Release History

Release 6.7.1 R02; command introduced.

Related Commands

802.1x auth-server-down policy Configures the policy for classifying the device when the authentication server is not reachable.

MIB Objects

alaDot1xAuthSvrPollingStatus

show 802.1x

Displays information about ports configured for 802.1x.

show 802.1x [*slot/port*]

Syntax Definitions

slot The slot of the port for which you want to display information.
port The port for which you want to display 802.1x information.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

If you do not specify a particular slot/port, information for all 802.1x ports is displayed.

Examples

```
-> show 802.1x 1/13
```

```
802.1x configuration for slot 1 port 13:
direction                               = both,
operational directions                   = both,
port-control                             = auto,
quiet-period (seconds)                   = 60,
tx-period (seconds)                       = 30,
supp-timeout (seconds)                   = 30,
server-timeout (seconds)                 = 30,
max-req                                  = 2,
re-authperiod (seconds)                  = 3600,
reauthentication                         = no
Supplicant polling retry count           = 2
Captive Portal Session Limit (hrs)       = 12
Captive Portal Login Retry Count         = 3
Supplicant Bypass                        = enable
Supplicant Bypass allow-eap Branch       = pass,
Captive Portal Inactivity Logout         = disable
```

output definitions

direction	Whether the port is configured for control on bidirectional traffic or incoming traffic only (both or in). Configured through the 802.1x command.
operational directions	The operational state of controlled direction on the port, which is set automatically by the switch. If the value of direction is both , the value of operational directions is both . If the value of direction is in , the operational state is set to in on initialization and when the MAC address of the port becomes operable. If the MAC address of the port becomes inoperable, the operational direction is set to both .
port-control	The value of the port control parameter for the port (auto , force-authorized , or force-unauthorized). Configured through the 802.1x command.
quiet-period	The time during which the port does not accept an 802.1x authentication attempt; the timer is activated after any authentication failure. The range is 0 seconds to 65535 seconds. Configured through the 802.1x command.
tx-period	The time before an EAP Request Identity is transmitted. The range is 1 second to 65535 seconds. Configured through the 802.1x command.
supp-timeout	The number of seconds before the switch times out an 802.1x user who is attempting to authenticate. Configured through the 802.1x command.
server-timeout	The timeout for the authentication server for authentication attempts. Configured for the switch port through the 802.1x command. However, this value is always superseded by the value configured for the RADIUS authentication server configured through the aaa radius-server command.
max-req	The maximum number of times the switch retransmits a request for authentication information (request identity, password, challenge, and so on.) to the 802.1x user before it times out the authentication session based on the supp-timeout . The range is 1 to 10. Configured through the 802.1x command.
re-authperiod	The amount of time that must expire before the switch requires reauthentication of the Supplicant on this port. Only applicable when reauthentication is enabled. Configured through the 802.1x command.
reauthentication	Whether the port is reauthenticated after the re-authperiod expires. Configured through the 802.1x command.
Supplicant polling retry count	The number of times a device is polled for EAP frames to determine whether the device is an 802.1x client. Configured through the 802.1x supp-polling retry command.
Captive Portal Session Limit (hrs)	The amount of time, in hours, that a Captive Portal session can remain active. Configured through the 802.1x captive-portal session-limit command.
Captive Portal Login Retry Count	The number of login attempts allowed before the Captive Portal fail policy is applied to the device. Configured through the 802.1x captive-portal retry-count command.
Supplicant Bypass	The status of 802.1x authentication bypass (enable or disable). Configured through the 802.1x supplicant bypass command.

output definitions (continued)

Supplicant Bypass allow-eap Branch	Specifies the conditions under which subsequent 802.1x authentication is attempted based on the outcome of the initial MAC authentication (pass , fail , noauth , or none). Configured through the 802.1x non-supplicant allow-eap command. This value only applies when Supplicant Bypass is set to enable .
Captive Portal Inactivity Logout	Whether a user MAC address is removed from the Captive Portal user table when the same MAC ages out of the switch MAC address table due to inactivity (enabled or disabled). Configured through the 802.1x captive-portal inactivity-logout command.

Release History

Release 6.6.3; command introduced.

Related Commands

show 802.1x users	Displays information about users connected to the 802.1x port.
show 802.1x statistics	Displays 802.1x port statistics.

MIB Objects

```

dot1xAuthConfigTable
  dot1xAuthAdminControlledDirections
  dot1xAuthOperControlledDirections
  dot1xAuthAuthControlledPortControl
  dot1xAuthQuietPeriod
  dot1xAuthTxPeriod
  dot1xAuthSuppTimeout
  dot1xAuthServerTimeout
  dot1xAuthMaxReq
  dot1xAuthReAuthPeriod
  dot1xAuthReAuthEnabled
  alaDot1xSuppPollingCnt
  alaDot1xCPortalSessionLimit
  alaDot1xCPortalRetryCnt
  alaDot1xSupplicantBypass
  alaDot1xSBAAllowEAP
  alaDot1xCPortalInactivityLogout

```

output definitions (continued)

Port State	The current state of the 802.1x port for a specific user: <ul style="list-style-type: none"> • Initialize • Disconnected • Connecting • Authenticating • Authenticated • Authenticated-L • Authenticated-T - Supplicant learned according to the auth-server-down policy • Aborting • Held • Force-Authenticated • Force-Unauthenticated
Classification Policy	The 802.1x device classification policy that was applied to the device.
Auth Failure Reason	Displays the reason for authentication failure.
Auth Retry Count	Displays the number of times the switch re-transmitted a request to the 802.1x user for authentication information.
Last Successful Auth Time	Displays the latest successful authentication time.
User Name	The user name that is used for authentication.

Release History

Release 6.6.1; command introduced.

Release 6.6.3; **Auth Failure Reason**, **Auth Retry Count** and **Last Successful Auth Time** fields added.

Related Commands

802.1x Configures 802.1x parameters on a particular slot/port.

MIB Objects

alaDot1xPortTable

```

alaDot1xPortSlotNumber
alaDot1xPortPortNumber
alaDot1xPortMACAddress
alaDot1xPortUserName
alaDot1xPortState
alaDot1xPortVlan
alaDot1xPortProtocol

```

alaDot1xAuthPolicyTable

```

alaDot1xSuppPolicy
alaDot1xSupplicantPolicyUs
alaDot1xNonSuppPolicy

```

show 802.1x statistics

Displays statistics about all 802.1x ports or for a particular 802.1x port.

show 802.1x statistics [*slot/port*]

Syntax Definitions

slot The slot of the port for which you want to display 802.1x statistics.
port The port for which you want to display 802.1x statistics.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

If you do not specify a particular slot/port, information for each 802.1x port is displayed.

Examples

```
-> show 802.1x statistic 1/13
802.1x slot/port = 1/13
  Last EAPOL frame source      = 00:0d:0c:00:00:02
  Last EAPOL frame version    = 1,
  EAPOL frames received       = 3,
  EAPOL frames transmitted    = 3,
  EAPOL start frames received = 1,
  EAPOL logoff frames received = 0,
  EAP Resp/Id frames received = 1,
  EAP Response frames received = 1,
  EAP Req/Id frames transmitted = 1,
  EAP Req frames transmitted  = 1,
  EAP length error frames received = 0,
  Invalid EAPOL frames received = 0,
```

output definitions

Slot	The slot number of the 802.1x port.
Port	The 802.1x port number.
Last EAPOL frame version	The protocol version number carried in the most recently received EAPOL frame.
Last EAPOL frame source	The source MAC address carried in the most recently received EAPOL frame.
EAPOL frames received	The number of valid EAPOL frames of any type that have been received by the switch.

output definitions (continued)

EAPOL frames transmitted	The number of EAPOL frames of any type that have been transmitted by the switch.
EAPOL Start frames received	The number of EAPOL Start frames that have been received by the switch.
EAPOL Logoff frames received	The number of EAPOL Logoff frames that have been received by the switch.
EAP Resp/Id frames received	The number of EAP Resp/Id frames that have been received by the switch.
EAP Response frames received	The number of valid EAP Response frames (other than Resp/Id frames) that have been received by the switch.
EAP Req/Id frames transmitted	The number of EAP Req/Id frames that have been transmitted by the switch.
EAP Req frames transmitted	The number of valid EAP Request frames (other than Req/Id frames) that have been transmitted by the switch.
EAP length error frames received	The number of EAPOL frames that have been received by the switch for which the Packet Body Length field is invalid.
Invalid EAPOL frames received	The number of EAPOL frames that have been received by the switch for which the frame type is not recognized by the switch.

Release History

Release 6.6.1; command introduced.

Related Commands

802.1x captive-portal address Displays information about ports configured for 802.1x.

MIB Objects

```
dot1xAuthStatsTable
  dot1xAuthEapolFramesRx
  dot1xAuthEapolFramesTx
  dot1xAuthEapolStartFramesRx
  dot1xAuthEapolLogoffFramesRx
  dot1xAuthEapolRespIdFramesRx
  dot1xAuthEapolRespFramesRx
  dot1xAuthEapolReqIdFramesTx
  dot1xAuthEapolReqFramesTx
  dot1xAuthInvalidEapolFramesRx
  dot1xAuthEapLengthErrorFramesRx
  dot1xAuthLastEapolFrameVersion
  dot1xAuthLastEapolFrameSource
```

show 802.1x device classification policies

Displays device classification policies configured for 802.1x ports.

show 802.1x device classification policies [*slot/port*]

Syntax Definitions

slot/port The slot and port number of the 802.1x port for which you want to display the policy configuration.

Defaults

All device classification policies for all 802.1x ports are displayed.

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

Use the *slot/port* parameter to display device classification policies for a specific 802.1x port.

Examples

```
-> show 802.1x device classification policies
Device classification policies on 802.1x port 2/26
  Supplicant:
    authentication, block
  Non-Supplicant:
    block
Device classification policies on 802.1x port 2/47
  Supplicant:
    authentication, block
  Non-Supplicant:
    block
Device classification policies on 802.1x port 2/48
  Supplicant:
    authentication, vlan 247, default-vlan
  Non-Supplicant:
    authentication:
      pass: group-mobility, block
      fail: strict-vlan 347, default-vlan

-> show 802.1x device classification policies 2/48
Device classification policies on 802.1x port 2/48
  Supplicant:
    authentication, vlan 247, default-vlan
  Non-Supplicant:
    authentication:
      pass: group-mobility, block
      fail: strict-vlan 347, default-vlan
```

output definitions

Supplicant:	Displays the supplicant device classification policy configured for the 802.1x port.
Non-Supplicant:	Displays the non-supplicant device classification policy configured for the 802.1x port.

Release History

Release 6.6.1; command introduced.

Related Commands

- 802.1x captive-portal address** Displays information about ports configured for 802.1x.
- show 802.1x non-supplicant** Displays a list of all non-supplicants learned on all 802.1x ports.

MIB Objects

alaDot1xAuthPolicyTable
alaDot1xSuppPolicy
alaDot1xNonSuppPolicy

show 802.1x captive-portal configuration

Displays the global Captive Portal configuration for the switch.

show 802.1x captive-portal configuration

Syntax Definitions

N/A

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6450

Usage Guidelines

This command displays the Captive Portal IP address and the proxy server URL.

Examples

```
-> show 802.1x captive-portal configuration
```

```
Captive Portal Global Configuration:
```

```
  Captive Portal IP address = 10.123.0.1
```

```
  Proxy Server URL = proxy
```

```
  Proxy Server Port = 8080
```

```
  Redirect URL string = captive-portal
```

```
  Post Auth Success Redirect URL = http://test-cp.com/fail.html
```

```
  Post Auth Fail Redirect URL = http://test-cp.com/success.html
```

```
  DNS Keyword 1 = univ.intranet1.jp
```

```
  DNS Keyword 2 = univ.intranet2.jp
```

```
  DNS Keyword 3 = univ.interanet3.jp
```

```
  DNS Keyword 4 = univ.intranet4.jp
```

output definitions

Captive Portal IP address	The Captive Portal IP address. Configured through the 802.1x captive-portal address command.
Proxy Server URL	The website URL for the client proxy web server. Configured through the 802.1x captive-portal proxy-server-url command.
Proxy Server Port	The port number for the configured proxy. Configured through the 802.1x captive-portal proxy-server-port command.
Post Auth Success Redirect URL	The internal HTTP server URL for the intermediate Java script used to redirect the user upon successful authentication. Configured through the 802.1x captive-portal success-redirect-url command.
Redirect URL String	The name of the redirect URL to be used with a public certificate. Configured through the 802.1x captive-portal name command.
Post Auth Fail Redirect URL	The internal HTTP server URL for the intermediate Java script used to redirect the user when authentication fails. Configured through the 802.1x captive-portal fail-redirect-url command.
DNS Keyword	A user-defined DNS string. Captive Portal replies to DNS packets that contain this string. Configured through the 802.1x captive-portal proxy-server-port command.

Release History

Release 6.6.3; command introduced.

Related Commands

show 802.1x device classification policies Displays device classification policies configured for 802.1x ports.

MIB Objects

```

alaDot1xCportalConfig
  alaDot1xCPortalIpAddress
  alaDot1xCPortalProxyURL
  alaDot1xCPortalProxyPort
  alaDot1xCPortalRedirectString
  alaDot1xCPortalPostAuthSuccessRedirectURL
  alaDot1xCPortalPostAuthFailRedirectURL
  alaDot1xCPortalDnsKeyword1
  alaDot1xCPortalDnsKeyword2
  alaDot1xCPortalDnsKeyword3
  alaDot1xCPortalDnsKeyword4

```

show 802.1x non-suppliant

Displays a list of all non-802.1x supplicants learned on one or more 802.1x ports.

show 802.1x non-suppliant [*slot/port*]

Syntax Definitions

slot/port The slot/port number of the 802.1x port for which you want to display information.

Defaults

All non-suplicants associated with all 802.1x ports are displayed.

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

Use the *slot/port* parameter to display a list of non-suplicants learned on a specific 802.1x port.

Examples

```
->show 802.1x non-suppliant
```

Slot Port	MAC Address	Authentication Status	Classification Policy	Vlan Learned
03/3	00:61:22:15:22:33	Failed	Vlan ID	1001
03/3	00:61:22:44:75:66	Authenticated	MAC Authent	14
03/11	00:00:39:47:4f:0c	Failed	Vlan ID	1001
03/11	00:00:39:c9:5a:0c	Authenticated	Group Mobility	12
03/11	00:b0:d0:52:47:35	Authenticated	Group Mobility	12
03/11	00:c0:4f:0e:70:68	Authenticated	MAC Authent	14
01/10	00:80:9f:6b:dc:1b	Auth Svr Timeout	AuthSvrDwn-VP-UNP	1

```
->show 802.1x non-supp 3/3
```

Slot Port	MAC Address	Authentication Status	Classification Policy	Vlan Learned
03/3	00:61:22:15:22:33	Failed	Vlan ID	1001
03/3	00:61:22:44:75:66	Authenticated	MAC Authent	14

output definitions

Slot/Port	The 802.1x slot and port number that provides access to the non-802.1x device.
MAC Address	The source MAC address of the non-802.1x device connected to the 802.1x port.

output definitions (continued)

Authentication Status	Indicates the MAC authentication status. <ul style="list-style-type: none">• Success - Non-supplicant learned according to the Success policy.• Failed - Non-supplicant learned according to the Failed policy• Fail (timeout) - Non-Supplicant learned according to the auth-server-down policy.
Classification Policy	The 802.1x device classification policy that was applied to the device.
VLAN Learned	The VLAN ID of the VLAN in which the source MAC address of the non-802.1x device was learned.

Release History

Release 6.6.1; command introduced.

Related Commands

- [802.1x captive-portal address](#) Displays information about ports configured for 802.1x.
- [show 802.1x device classification policies](#) Displays device classification policies configured for an 802.1x port.

MIB Objects

alaDot1xPortTable

- alaDot1xNonSupplicantSlotNum
- alaDot1xNonSupplicantPortNum
- alaDot1xNonSupplicantMACAddress
- alaDot1xNonSupplicantVlanID

show 802.1x auth-server-down

Displays the configured authentication server down classification policy.

show 802.1x auth-server-down

Syntax Definitions

N/A

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

N/A

Examples

```
-> show 802.1x auth-server-down
```

```
Status = Enabled
Re-authentication Interval = 30 seconds
Classification policy = block
Classification Voice Policy = UNP 'unp2'
```

```
-> show 802.1x auth-server-down
```

```
Status = Disabled
Re-authentication Interval = 30 seconds
Classification policy = UNP 'unp1', block
Classification Voice Policy = UNP 'unp2'
```

output definitions

Status	Authentication server down policy status: Enabled or Disabled
Re-authentication Interval	The amount of time for the device to authenticate again with the RADIUS server when it is classified according to the Auth-server-policy.
Classification Policy	The 802.1x device classification policy that was applied to the device.
Classification Voice Policy	Displays the UNP for which the voice policy is configured. If Voice Policy is not configured, “None” is displayed.

Release History

Release 6.6.2; command introduced.

Release 6.7.1; **Classification Voice Policy** output field included.

Related Commands

- | | |
|---------------------------------------|---|
| 802.1x auth-server-down | Enables or disables the authentication server down policy. |
| 802.1x auth-server-down policy | Configures the policy for classifying the device when the authentication server is not reachable |
| show 802.1x | Configures the reauthentication time for the device to authenticate again with the RADIUS server when it is classified according to the Auth-server-down policy |

MIB Objects

N/A

output definitions (continued)

Type	Application under which current maximum egress bandwidth is set.
Egress BW UNP-Profile Name	UNP profile name under which current egress bandwidth is set.

Release History

Release 6.6.4; command introduced.

Related Commands

802.1x Configures 802.1x parameters on a particular slot/port.

MIB Objects

```
alaDot1xCr1UnpTable
  alaDot1xCr1SlotNumber
  alaDot1xCr1PortNumber
  alaDot1xCr1IngBw
  alaDot1xCr1IngTypeFlag
  alaDot1xCr1IngProfile
  alaDot1xCr1EgrBw
  alaDot1xCr1EgrTypeFlag
  alaDot1xCr1EgrProfile
```

802.1x supplicant bypass

Configures whether MAC authentication is applied first to any client device (supplicant or non-supplicant) that is trying to connect through the specified 802.1x port.

802.1x slot/port supplicant bypass {enable | disable}

Syntax Definitions

<i>slot/port</i>	The slot and port number of the 802.1x port.
enable	Enables supplicant bypass on the specified port; MAC authentication is performed first.
disable	Disables supplicant bypass on the specified port; 802.1x authentication is performed first.

Defaults

By default, supplicant bypass is disabled; 802.1x authentication is performed first.

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Use 802.1x supplicant bypass command with the **802.1x non-supplicant allow-eap** command to initiate MAC authentication on any device, and to specify whether subsequent 802.1x authentication is also performed on the same device depending on the MAC authentication outcome and allow-eap configuration.
- This command is only supported on 802.1x ports configured for auto access control mode. See the **802.1x** command for more information about configuring the access control mode.
- Configuring 802.1x supplicant bypass is not allowed on ports where the 802.1x supplicant polling retry count is set to zero. Both operations are mutually exclusive on the same port.
- If supplicants are already connected to the specified port when 802.1x bypass is enabled for that port, the supplicants are automatically logged off to undergo authentication according to the enabled bypass configuration.
- When the 802.1x bypass configuration is modified or disabled, any non-supplicant devices are automatically logged off the port. This frees up those devices to undergo the authentication specified by the new bypass configuration.
- If reauthentication is configured for the 802.1x port and supplicant bypass is enabled, the MAC authentication followed by 802.1x authentication are initially performed as configured. However, only 802.1x authentication is performed during the reauthentication process, so there is no recheck to see if the MAC address of the user device is restricted.

Examples

```
-> 802.1x 3/1 supplicant bypass enable
-> 802.1x 3/1 supplicant bypass disable
```

Release History

Release 6.6.3; command introduced.

Related Commands

- | | |
|--|---|
| 802.1x | Configures 802.1x parameters for the specified port. |
| 802.1x non-supplicant allow-eap | Configures whether subsequent 802.1x authentication is attempted based on the MAC authentication results. |
| show 802.1x | Displays the 802.1x configuration for the port. |

MIB Objects

alaDot1xAuthPolicyTable
alaDot1xSupplicantBypass

802.1x non-suppliant allow-eap

Configures whether the switch attempts subsequent 802.1x authentication for a device connected to an 802.1x bypass-enabled port. When 802.1x bypass is enabled on the port, MAC authentication is performed first on any device connected to that port. This command specifies the conditions under which 802.1x authentication is performed or bypassed after the initial MAC authentication process.

802.1x slot/port non-suppliant allow-eap {pass | fail | noauth | none}

Syntax Definitions

<i>slot/port</i>	The slot and port number of the 802.1x port.
pass	Allows 802.1x (EAP frame) authentication if the supplicant passes MAC authentication.
fail	Allows 802.1x (EAP frame) authentication if the supplicant fails MAC authentication.
noauth	Allows 802.1x (EAP frame) authentication if there is no MAC authentication configured on the port.
none	Prevents 802.1x authentication; only MAC authentication is performed on any device accessing this port.

Defaults

Default value is 'none'. Only MAC authentication is applied to the supplicant device (802.1x classification is not performed on the supplicant device).

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- The port specified with this command must also have 802.1x bypass enabled (see the [802.1x supplicant bypass](#) command). If bypass is not enabled, this command is not configurable and MAC authentication does not take precedence over 802.1x authentication.
- Using this command with the **none** parameter is similar to setting the supplicant polling retry counter to zero (see the [802.1x supp-polling retry](#) command). However, the functionality configured with each command differs as follows:
 - > When the supplicant polling retry is set to zero, EAP frames are ignored. MAC authentication is only triggered when a non-EAP frame is received, which is when the supplicant times out and is in an open state.
 - > When the allow EAP is set to none, EAP frames are ignored but MAC authentication is triggered when the first EAP frame is received and the supplicant is not in an open state.
- When successful MAC authentication returns a VLAN ID or User Network Profile (UNP) and the 802.1x bypass operation is configured to initiate 802.1x authentication when a device passes MAC authentication, the device is *not* moved into that VLAN or UNP. Instead, the device is moved into the VLAN or UNP returned by 802.1x authentication. If 802.1x authentication does not provide such information, the device is moved based on the supplicant device classification policies.

Examples

```
-> 802.1x 3/1 non-supPLICant allow-eap pass
-> 802.1x 4/1 non-supPLICant allow-eap fail
-> 802.1x 5/1 non-supPLICant allow-eap noauth
-> 802.1x 6/1 non-supPLICant allow-eap none
```

Release History

Release 6.6.3; command introduced.

Related Commands

802.1x	Configures 802.1x parameters for the specified port.
802.1x supPLICant bypass	Configures the 802.1x bypass operation status for the 802.1x port.
show 802.1x	Displays the 802.1x configuration for the port.
show 802.1x device classification policies	Displays device classification policies configured for an 802.1x port.

MIB Objects

```
alaDot1xAuthPolicyTable
  alaDot1xSBAAllowEAP
```

802.1x pass-through

Globally sets the switch to forward 802.1x EAP frames transparently.

802.1x pass-through {enable | disable}

Syntax Definitions

<i>slot/port</i>	The slot and port number of the 802.1x port.
enable	Enables transparent forwarding of 802.1x EAP frames on the switch.
disable	Disables transparent forwarding of 802.1x EAP frames on the switch.

Defaults

parameter	default
enable disable	disable

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Use this command to globally set the switch to forward 802.1x EAP frames transparently.
- Pass through mode must be enabled on the layer2 switch to allow EAP packets to be trapped on the Layer3 switch for authentication.

Examples

```
-> 802.1x pass-through enable
-> 802.1x pass-through disable
```

Release History

Release 6.6.3; command introduced.

Related Commands

802.1x	Configures 802.1x parameters for the specified port.
show 802.1x	Displays the 802.1x configuration for the port.

MIB Objects

alaDot1xPassThroughStatus

Release History

Release 6.6.1; command introduced.

Related Commands

- | | |
|--|---|
| 802.1x captive-portal session-limit | Configures the length of a Captive Portal session and the number of login attempts allowed before the device is classified as a failed login. |
| show 802.1x device classification policies | Displays device classification policies configured for 802.1x ports. |

MIB Objects

```
alaDot1xAuthPolicyTable  
  alaDot1xCaptivePortalSessionLimit  
  alaDot1xCaptivePortalRetryCnt
```

51 Switch Logging Commands

This chapter includes descriptions for Switch Logging commands. These commands are used to configure parameters for the Switch Logging utility.

MIB information for the system commands is as follows:

Filename: AlcatelIND1System.MIB
Module: ALCATEL-IND1-SYSTEM-MIB

A summary of the available commands is listed here.

swlog
swlog syslog-facility-id
swlog appid level
swlog remote command-log
swlog output
swlog output flash file-size
system swlog password
swlog clear
show log swlog
show swlog

swlog

Enables or disables switch logging. Switch logging allows you to view a history of various switch activities in a text format.

swlog

no swlog

Syntax Definitions

N/A

Defaults

By default, switch logging is enabled.

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

N/A

Examples

```
-> swlog  
-> no swlog
```

Release History

Release 6.6.1; command introduced.

Related Commands

swlog appid level	Defines the level at which switch logging information is filtered for the specified application.
swlog output flash file-size	Enables or disables switch logging output to the console, file, or data socket.
show log swlog	Displays stored switch logging information from flash.
show swlog	Displays switch logging information.

MIB Objects

```
systemSwitchLoggingGroup  
  systemSwitchLoggingEnable
```

swlog syslog-facility-id

Specifies a facility ID that switch logging includes in the priority (PRI) section of the event message.

swlog syslog-facility-id {*facility_id* | *integer*}

Syntax Definitions

<i>facility_id</i>	A facility identification keyword. Current facility IDs are listed in the table below.
<i>integer</i>	A numerical equivalent value for the facility ID, in the range of 0 to 23. Current numeric equivalent values are listed in the table below.

Supported Facility IDs and their Numeric Equivalents

kernel - 0	NTP - 12
user - 1	log-audit - 13
mail - 2	log-alert - 14
system - 3	clock2 - 15
sec-auth1-2	local0 - 16
syslog - 5	local1 - 17
lptr - 6	local2 - 18
net-news - 7	local3 - 19
UUCP - 8	local4 - 20
clock1- 9	local5 - 21
sec-auth2 - 10	local6 - 22
FTP - 11	local7 - 23

Defaults

parameter	default
<i>facility_id</i>	local0
<i>integer</i>	16

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

Use the ID name (**system**) or the numeric equivalent to specify the facility ID.

Examples

```
-> swlog syslog-facility-id system
-> swlog syslog-facility-id 3
-> swlog syslog-facility-id user
-> swlog syslog-facility-id 1
```

Release History

Release 6.6.3; command introduced.

Related Commands

swlog	Enables or disables switch logging.
show log swlog	Displays stored switch logging information from flash.
show swlog	Displays switch logging information.

MIB Objects

NA

swlog appid level

Defines the level at which switch logging information is filtered for the specified application. All application events of the defined level and lower are captured. Applications can be specified by their application ID (subsystem) or by their numeric equivalent.

swlog appid {*app_id* | *integer*} **level** {*level* | *integer*}

no swlog appid *app_id*

Syntax Definitions

<i>app_id</i>	An application identification keyword. Current application IDs are listed in the following table.
<i>integer</i>	A numerical equivalent value for the application ID. Current numeric equivalent values are listed in the following table.

Application IDs Supported and their Numeric Equivalents

802.1q - 7	interface - 6ip - 15	psm - 81
aaa - 20	ipc-diag - 1	qdispatcher - 3
amap - 18	ip-helper - 22	qdriver - 2
bridge - 10	ipc-link - 4	qos - 13
chassis - 64	ipc-mon - 21	rmon - 79
cli - 67	ipms - 17	rsvp - 14
config - 66	lanpower - 108	session - 71
dbggw - 89	ldap - 86	smni - 83
diag - 0	linkagg - 12	snmp - 68
distrib - 84	mipgw - 70	ssl - 88
drc - 74	module - 24	stp - 11
eipc - 26	nan-driver - 78	system - 75
epilogue - 85	ni-supervision - 5	telnet - 80
ftp - 82	nosnmp - 87	trap - 72
gmap - 19	pmm - 23	vlan - 8
health - 76	policy - 73	web - 69
idle - 255	port-mgr - 64	

<i>level</i>	The severity level filter keyword value for the application ID (<i>see table on the following page</i>). All switch logging messages of the specified level and lower are captured. The severity level is a value assigned to the relative severity of the switch logging message. A lower value indicates messages that are more severe, a higher value indicates messages that are less severe.
<i>integer</i>	A numerical equivalent value for the severity level (<i>see table on the following page</i>). All switch logging messages of the specified level and lower are captured. The severity level is a value assigned to the relative severity of the switch logging message. A lower value indicates messages that are more severe, a higher value indicates messages that are less severe. Values range from 2 to 9.

Supported Levels	Numeric Equivalents	Description
alarm	2	Highest severity. The system is about to crash and reboot.
error	3	System functionality is reduced.
alert	4	A violation has occurred.
warning	5	An unexpected, non-critical event has occurred.
info	6	Any other non-debug message (default).
debug1	7	A normal event debug message.
debug2	8	A debug-specific message.
debug3	9	Lowest severity. A maximum verbosity debug message.

Defaults

Default severity level is **info**. The numeric equivalent for info is 6.

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- You can enter multiple application IDs in the command line. Separate each application ID with a space and no comma.
- Application IDs can be entered in any order.
- This command can also be used on the secondary CMM.

Note. The console messages "+++ healthMonCpuStatus Crossed Below The Threshold Limit " can be seen on switch bootup if it is configured to receive health monitoring debug messages on console or swlog file using the **swlog appid** and **swlog output** commands.

Examples

```
-> swlog appid 254 level alarm
-> swlog appid policy level info
-> swlog appid policy snmp web aaa vlan level alert
-> no swlog appid debug2
```

Release History

Release 6.6.1; command introduced.

Related Commands

swlog	Enables or disables switch logging.
swlog output flash file-size	Enables or disables switch logging output to the console, file, or data socket.
show log swlog	Displays stored switch logging information from flash.
show swlog	Displays switch logging information.

MIB Objects

```
systemSwitchLoggingGroup  
  systemSwitchLoggingLevelAppId  
  systemSwitchLoggingLevel
```

swlog remote command-log

Enables or disables remote command logging.

swlog remote command-log {enable | disable}

Syntax Definitions

N/A

Defaults

By default, switch logging is disabled.

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

N/A

Examples

```
-> swlog remote command-log enable
-> swlog remote command-log disable
```

Release History

Release 6.3.4; command was introduced.

Related Commands

swlog output flash file-size	Enables or disables switch logging output to the console, file, or data socket.
show log swlog	Displays stored switch logging information from flash.
show swlog	Displays switch logging information.

MIB Objects

```
systemSwitchLoggingGroup
  systemSwitchLoggingEnable
```

swlog output

Enables or disables switch logging output to the console, file, or data socket (remote session).

swlog output {**console** | **flash** | **socket** [*ip_address*]}

no swlog output {**console** | **flash** | **socket** [*ip_address*]}

Syntax Definitions

console	Specifies console output. When enabled, switch logging output is printed to the user console.
flash	Specifies /flash file output. When enabled, switch logging output is printed to a file in the /flash file system of the switch.
socket	Specifies data socket output. When enabled, switch logging output is printed to a remote session.
<i>ip_address</i>	The IPv4 or IPv6 address for the remote session host.

Defaults

parameter	default
console flash socket	flash and console

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Use the **no** form of this command to disable one or more configured output IP addresses.
- This command can also be used on the secondary CMM.
- You can send files to multiple hosts (maximum of 12) using the **socket** keyword, followed by the IP address of the remote host.

Examples

```
-> swlog output console
-> no swlog output flash
-> swlog output socket 14.1.1.1
-> swlog output socket 15.1.1.1
-> swlog output socket 16.1.1.1
-> swlog output socket 17.1.1.1
```

Release History

Release 6.6.1; command introduced.

Related Commands

swlog	Enables or disables switch logging.
swlog appid level	Defines the level at which switch logging information is filtered for the specified application.
show log swlog	Displays stored switch logging information from flash.
show swlog	Displays switch logging information.

MIB Objects

```
systemSwitchLoggingGroup
  systemSwitchLoggingFlash
  systemSwitchLoggingSocket
  systemSwitchLoggingSocketIpAddr
  systemSwitchLoggingConsole
systemSwitchLoggingHostTable
  systemSwitchLoggingHostIpAddr
  systemSwitchLoggingHostPort
  systemSwitchLoggingHostStatus
```

swlog output flash file-size

Configures the size of the switch logging file.

swlog output flash file-size *bytes*

Syntax Definitions

bytes The size of the switch logging file. The minimum value is 32000 while the maximum value is the total amount of free space in flash memory.

Defaults

parameter	default
<i>bytes</i>	128000

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Use the **ls** command to determine the amount of available flash memory.
- This command can also be used on the secondary CMM.

Examples

```
-> swlog output flash file size 400000
```

Release History

Release 6.6.1; command introduced.

Related Commands

swlog clear	Clears the files that store switch logging data.
show log swlog	Displays stored switch logging information from flash.
show swlog	Displays switch logging information.

MIB Objects

systemSwitchLoggingGroup
systemSwitchLoggingFileSize

system swlog password

Configure the password to be used for authentication to view the SWLOG data.

```
system swlog password password
```

Syntax Definitions

password Password used for authentication. The maximum length of the password is 30 characters.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Only the admin user can configure this password. The password will be encrypted with AES encryption.
- When the switch is in ASA enhanced mode, password is prompted to view the SWLOG data when **show log swlog**, **vi swlog.log**, **more swlog.log** commands are used by the users. Only those users who provide the configured password are allowed to view the data.

Example

```
-> system swlog password *****
```

Release History

Release 6.7.1 R02; command introduced.

Related Commands

[show log swlog](#) Displays stored switch logging information from flash.

MIB Objects

systemSwlogViewPassword

swlog clear

Clears the files that store switch logging data.

swlog clear

Syntax Definitions

N/A

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- Use this command when the switch logging display is too long due to some of the data being old or out of date.
- This command can also be used on the secondary CMM.

Examples

```
-> swlog clear
```

Release History

Release 6.6.1; command introduced.

Related Commands

- | | |
|--|---|
| swlog output flash file-size | Enables or disables switch logging output to the console, file, or data socket. |
| show log swlog | Displays stored switch logging information from flash. |
| show swlog | Displays switch logging information. |

MIB Objects

```
systemSwitchLoggingGroup  
  systemSwitchLoggingClear
```

show log swlog

Displays stored switch logging information.

show log swlog

show log swlog [session *session_id*] [timestamp *start_time* [*end_time*]] [appid *appid*] [level *level*]

Syntax Definitions

<i>session_id</i>	Identification number of the session for which switch logging information is displayed.
<i>start_time</i>	Specify the starting time for the switch logging information to be displayed. Use the format mm/dd/yyyy hh:mm where mm represents the month, dd is the day, yyyy is the year, hh is the hour, and mm is the minutes. Use four digits to specify the year.
<i>end_time</i>	Specify the time until which the switch logging information must be displayed. Use the format mm/dd/yyyy hh:mm where mm represents the month, dd is the day, yyyy is the year, hh is the hour, mm is the minutes. Use four digits to specify the year.
<i>appid</i>	A digit that represents the application ID for the switch logging information to be displayed. Values are listed in the following table.

Supported Application IDs and their Numeric Equivalents

802.1q - 7	interface - 6	psm - 81
aaa - 20	ip - 15	qdispatcher - 3
amap - 18	ipc-diag - 1	qdriver - 2
bridge - 10	ip-helper - 22	qos - 13
chassis - 64	ipc-link - 4	rmon - 79
cli - 67	ipc-mon - 21	rsvp - 14
config - 66	ipms - 17	session - 71
dbg gw - 89	ldap - 86	smni - 83
diag - 0	linkagg - 12	snmp - 68
distrib - 84	mipgw - 70	ssl - 88
drc - 74	module - 24	stp - 11
eipc - 26	nan-driver - 78	system - 75
epilogue - 85	ni-supervision - 5	telnet - 80
ftp - 82	nosnmp - 87	trap - 72
gmap - 19	pmm - 23	vlan - 8
health - 76	policy - 73	web - 69
idle - 255	port-mgr - 64	

<i>level</i>	A numerical equivalent value for the severity level (<i>see the following table</i>). All switch logging messages of the specified level and lower are shown. The severity level is a value assigned to the relative severity of the switch logging message. A lower value indicates messages that are more severe, a higher value indicates messages that are less severe. Values range from 2 to 9.
--------------	---

Supported Levels	Numeric Equivalents	Description
alarm	2	Highest severity. The system is about to crash and reboot.
error	3	System functionality is reduced.
alert	4	A violation has occurred.
warning	5	An unexpected, non-critical event has occurred.
info	6	Any other non-debug message (default).
debug1	7	A normal event debug message.
debug2	8	A debug-specific message.
debug3	9	Lowest severity. A maximum verbosity debug message.

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

- When the switch logging display is too long, you can use the [show log swlog](#) command to clear all of the switch logging information.
- This command can also be used on the secondary CMM.

Examples

```
-> show log swlog
Displaying file contents for 'swlog2.log'
FILEID: fileName[swlog2.log], endPtr[32]
configSize[64000], currentSize[64000], mode[2]
Displaying file contents for 'swlog1.log'
FILEID: fileName[swlog1.log], endPtr[395]
configSize[64000], currentSize[64000], mode[1]
```

```
Time Stamp           Application Level   Log Message
-----+-----+-----
MON NOV 11 12:42:11 2002   SYSTEM info      Switch Logging files cleared by
command
MON NOV 11 13:07:26 2002   WEB    info The HTTP session login successful!
MON NOV 11 13:18:24 2002   WEB    info The HTTP session login successful!
MON NOV 11 13:24:03 2002   TELNET info New telnet connection, Address ,
128.251.30.88
```

```
MON NOV 11 13:24:03 2002 TELNET      info  Session 4, Created
MON NOV 11 13:59:04 2002      WEB      info  The HTTP session user logout successful!
```

output definitions

Time Stamp	The day, date, and time for which Switch Logging log information is displayed.
Application	The Application ID (Subsystem) for which Switch Logging log information is displayed.
Level	The corresponding Severity Level for which Switch Logging information was stored. Levels include alarm, error, alert, warning, info, debug1, debug2, and debug3.
Log Message	The condition that resulted in the logging information being stored.

Release History

Release 6.6.1; command introduced.

Related Commands

swlog	Enables or disables switch logging.
swlog appid level	Adds or removes a filter level for a specified subsystem.
swlog output flash file-size	Enables or disables switch logging output to the console, file, or data socket.
swlog clear	Clears the files that store switch logging data.
show swlog	Displays switch logging information.

MIB Objects

N/A

show swlog

Displays switch logging information (for example, switch logging status, log devices, facility IDs with non-default severity level settings).

show swlog

Syntax Definitions

N/A

Defaults

N/A

Platforms Supported

OmniSwitch 6250, 6350, 6450

Usage Guidelines

This command can also be used on the secondary CMM.

Examples

```
-> show swlog
Operational Status           : On,
Log Device 1                 : flash,
Log Device 2                 : console,
Syslog FacilityID           : system(3),
Remote command-log          : Disabled,
Console Display Level        : info (6),
All Applications Trace Level : info (6)
```

All Applications have their trace level set to the level 'info' (6)

output definitions

Operational Status	The operational status of switch logging.
Log Device	The device where the output is being logged.
Syslog FacilityID	The facility ID that switch logging includes in the priority (PRI) section of the event message.
Console Display Level	The Console Display Level. Levels include alarm (2), error (3), alert (4), warning (5), info (6), debug1 (7), debug2 (8), and debug3 (9).
All Applications Trace Level	The Severity Level of the Application ID. Levels include alarm (2), error (3), alert (4), warning (5), info (6), debug1 (7), debug2 (8), and debug3 (9).

Release History

Release 6.6.1; command introduced.

Related Commands

swlog	Enables or disables switch logging.
swlog appid level	Defines the level at which switch logging information is filtered for the specified application.
swlog output flash file-size	Enables or disables switch logging output to the console, file, or data socket.
show log swlog	Displays stored switch logging information from flash.

MIB Objects

N/A

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```

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```
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```

```
<signature of Ty Coon>, 1 April 1989
Ty Coon, President of Vice
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G. Random.c

PR 30872 B Kesner created May 5 2000

PR 30872 B Kesner June 16 2000 moved batch_entropy_process to own task iWhirlpool to make code more efficient

random.c -- A strong random number generator

Version 1.89, last modified 19-Sep-99

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CLI Quick Reference

CMM Commands

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reload [primary | secondary] [with-fabric] cancel
reload working {rollback-timeout minutes | no rollback-timeout} [in [*hours:*] *minutes* | at *hour:minute*]
[configure] copy running-config working
[configure] write memory
[configure] copy working certified [flash-synchro]
[configure] copy flash-synchro
takeover
show running-directory
show reload [status]
show microcode [working | certified | loaded]
show microcode history [working | certified]
usb {enable | disable}
usb auto-copy {enable | disable}
usb disaster-recovery {enable | disable}
mount [/uflash]
umount /uflash
show usb statistics

Chassis Management and Monitoring Commands

system contact *text_string*
system name *text_string*
system location *text_string*
system date [*mm/dd/yyyy*]
system time [*hh:mm:ss*]
system time-and-date synchro
system timezone [*timezone_abbrev* | *offset_value* | *time_notation*]
system daylight savings time [{enable | disable} | start {*week*} {*day*} in {*month*} at {*hh:mm*} end {*week*} {*day*} in {*month*} at {*hh:mm*} [by *min*]]
reload ni [slot] *number*
reload all [in [*hours:*] *minutes* | at *hour:minute* [*month day / day month*]]
reload all cancel
reload pass-through *slot-number*
power ni [slot] *slot-number*
no power ni [slot] *slot-number*
temp-threshold *temp* slot *slot-number*

stack set slot *slot-number* saved-slot *saved-slot-number* [reload]
stack set slot *slot-number* mode {stackable | standalone} [reload]
stack clear slot *slot-number* [immediate]
hash-control mode fdb { xor | crc }
show system
show hardware info
show chassis [*number*]
show cmm [*number*]
show ni [*number*]
show module [*number*]
show module long [*number*]
show module status [*number*]
show power [supply] [*number*]
show fan [*number*]
show temperature [*number*]
show stack topology [*slot-number*]
show stack status
show stack mode
show hash-control {mode fdb}
license apply
license remove feature {metro | gig | 10G} ni number
license unlock feature {metro | gig | 10G} ni number
show license info
show license file [filename | local]
stack split-protection {enable | disable}
[no] stack split-protection linkaggid linkagg-id
stack split-protection guard-timer *time*
stack split-protection helper {enable | disable}
stack split-detection helper linkagg linkagg-id
show stack split-protection status
show stack split-protection statistics
show stack split-protection stacking-units
show stack split-protection helper status

Chassis MAC Server (CMS) Commands

mac-range eeprom *start_mac_address count*
mac-retention status {enable | disable}
mac-retention dup-mac-trap {enable | disable}
mac release
show mac-range [*index*]
show mac-range [*index*] alloc
show mac-retention status

Power over Ethernet (PoE) Commands

```
lanpower start {slot/port[-port2] | slot}
lanpower stop {slot/port[-port2] | slot}
lanpower {slot/port | slot} power milliwatts
lanpower slot maxpower watts
lanpower slot/port priority {critical | high | low}
lanpower slot priority-disconnect {enable | disable}
lanpower slot combo-port {enable | disable}
show lanpower slot
show lanpower capacitor-detection slot
show lanpower priority-disconnect slot
```

Network Time Protocol Commands

```
ntp server {ip_address | domain_name} [key key | version version | minpoll exponent
 / prefer]
no ntp server {ip_address | domain_name}
ntp server synchronized
ntp server unsynchronized
ntp client {enable | disable}
ntp broadcast {enable | disable}
ntp broadcast delay microseconds
ntp key key [trusted | untrusted]
ntp key load
show ntp client
show ntp client server-list
show ntp server status [ip_address | domain_name]
show ntp keys
```

Session Management Commands

```
session login-attempt integer
session login-timeout seconds
session banner {cli | ftp | http} file_name
session banner no {cli | ftp | http}
session timeout {cli | http | ftp} minutes
session prompt default {<num> | <string> | system-name}
session xon-xoff {enable | disable}
prompt [user] [time] [date] [string string] [prefix]
no prompt
show prefix
alias alias command_name
show alias
```

```
user profile save
user profile save global-profile
user profile reset
history size number
show history [parameters]
!{! | n}
command-log {enable | disable}
kill session_number
exit
whoami
who
show session config
show session xon-xoff
more size lines
more
no more
show more
telnet {host_name | ip_address}
ssh {host_name | ip_address / enable | disable}
ssh enforce pubkey-auth {enable | disable}
show ssh config
show command-log
show command-log status
```

File Management Commands

```
cd [path]
pwd
mkdir [path]/dir
rmdir [path]/dir
ls [-r] [[path]/dir]
dir [[path]/dir]
rename [path]/old_name [path]/new_name
rm [-r] [path]/filename
delete [path]/filename
cp [-r] [path]/orig_filename [dest_path]/dupl_filename
scp user_name@remote_ip_addr:[path]/source [path]/target
scp [path]/source user_name@remote_ip_addr:[path]/target
mv {[path]/filename dest_path/[new_filename] | [path]/dir dest_path/[new_dir]}
move {[path]/filename dest_path/[new_filename] | [path]/dir dest_path/[new_dir]}
chmod {+w | -w} [path]/file
attrib {+w | -w} [path]/file
freespace [/flash]
```

```

fsck /flash [no-repair | repair]
newfs /flash
rcp [slot:] source_filepath [slot:] destination_filepath
rrm slot_filepath
rls slot_directory [file_name]
vi [path/]filename
view [path/]filename
tty lines columns
show tty
more [path/]file
ftp {host_name | ip_address}
scp-sftp {enable | disable}
show ssh config
tftp {host_name | ip_address} {get | put} source-file [src_path/]src_file [destination-file
[dest_path/] dest_file] [ascii] rz

```

Web Management Commands

```

{[ip] http | https} server
no {[ip] http | https} server
{[ip] http | https} ssl
no {[ip] http | https} ssl
[ip] http port {default | port}
https port {default | port}
debug http sessiondb
show [ip] http

```

Configuration File Manager Commands

```

configuration apply filename [at hh:mm month dd [year]] | [in hh[:mm]] [verbose]
configuration error-file limit number
show configuration status
configuration cancel
configuration syntax check path/filename [verbose]
configuration snapshot feature_list [path/filename]
show configuration snapshot [feature_list]
write terminal

```

SNMP and OpenFlow Commands

```

snmp station {ip_address | ipv6_address} {[udp_port] [username] [v1 | v2 | v3]
[enable | disable]}
no snmp station {ip_address | ipv6_address}
snmp source ip preferred {default | no-loopback | ip_address}

```

```

no snmp source ip preferred
show snmp station
snmp community map community_string {[user useraccount_name] | {enable |
disable} }
no snmp community map community_string
snmp community map mode {enable | disable}
show snmp community map
snmp security {no security | authentication set | authentication all | privacy set | privacy all |
trap only}
show snmp security
show snmp statistics
show snmp mib family [table_name]
snmp trap absorption {enable | disable}
snmp trap to webview {enable | disable}
snmp trap replay {ip_address | ipv6_address} [seq_id]
snmp trap filter {ip_address | ipv6_address} trap_id_list
no snmp trap filter {ip_address | ipv6_address} trap_id_list
snmp authentication trap {enable | disable}
show snmp trap replay
show snmp trap filter
show snmp authentication trap
show snmp trap config
openflow back-off-max seconds
openflow idle-probe-timeout seconds
openflow logical-switch name [admin-state {enable | disable}] [mode {normal | api}] [version
{1.0 | 1.3.1}+] [vlan vlan_id]
no openflow logical-switch <name>
openflow logical-switch name controller ip_address [:port] admin-state {enable | disable}
no openflow logical-switch name controller ip_address [:port]
openflow logical-switch name interfaces {port slot/port1[-port2] | linkagg agg_id[-
agg_id2]}
no openflow logical-switch name interfaces {port slot/port1[-port2] | linkagg agg_id[-
agg_id2]}
show openflow
show openflow logical-switch [name | controllers | interfaces]
show openflow logical-switch name {flowtable | flowentry | openflowport | group} stats

```

DNS Commands

```

ip domain-lookup
no ip domain-lookup
ip name-server server-address1 [server-address2 [server-address3]]
ipv6 name-server server-ipv6_address1 [server-ipv6_address2 [server-
ipv6_address3]]

```

```
ip domain-name name
no ip domain-name
show dns
```

Link Aggregation Commands

```
static linkagg agg_num size size [name name] [admin state {enable | disable}]
no static linkagg agg_num
static linkagg agg_num name name
static linkagg agg_num no name
static linkagg agg_num admin state {enable | disable}
static agg [ethernet | fastethernet | gigaehternet] slot/port agg num agg_num
static agg no [ethernet | fastethernet | gigaehternet] slot/port
lacp linkagg agg_num size size
no lacp linkagg agg_num
lacp linkagg agg_num name name
lacp linkagg agg_num no name
lacp linkagg agg_num admin state {enable | disable}
lacp linkagg agg_num actor admin key actor_admin_key
lacp linkagg agg_num no actor admin key
lacp linkagg agg_num actor system priority actor_system_priority
lacp linkagg agg_num no actor system priority
lacp linkagg agg_num actor system id actor_system_id
lacp linkagg agg_num no actor system id
lacp linkagg agg_num partner system id partner_system_id
lacp linkagg agg_num no partner system id
lacp linkagg agg_num partner system priority partner_system_priority
lacp linkagg agg_num no partner system priority
lacp linkagg agg_num partner admin key partner_admin_key
lacp linkagg agg_num no partner admin key
lacp agg [ethernet | fastethernet | gigaehternet] slot/port actor admin key actor_admin_key
lacp agg no [ethernet | fastethernet | gigaehternet] slot/port
lacp agg [ethernet | fastethernet | gigaehternet] slot/port actor admin state {[active] [timeout]
[aggregate] [synchronize] [collect] [distribute] [default] [expire] | none}
lacp agg [ethernet | fastethernet | gigaehternet] slot/port
actor admin state {[no] active} [[no] timeout] [[no] aggregate] [[no] synchronize]
[[no] collect] [[no] distribute] [[no] default] [[no] expire] | none}
lacp agg [ethernet | fastethernet | gigaehternet] slot/port actor system id actor_system_id
lacp agg [ethernet | fastethernet | gigaehternet] slot/port no actor system id
lacp agg [ethernet | fastethernet | gigaehternet] slot/port actor system priority
actor_system_priority
lacp agg [ethernet | fastethernet | gigaehternet] slot/port no actor system priority
```

```
lacp agg [ethernet | fastethernet | gigaehternet] slot/port partner admin state
{[active] [timeout] [aggregate] [synchronize] [collect] [distribute] [default] [expire] |
none}
lacp agg [ethernet | fastethernet | gigaehternet] slot/port partner admin state
{[[no] active] [[no] timeout] [[no] aggregate] [[no] synchronize] [[no] collect] [[no]
distribute]
[[no] default] [[no] expire] | none}
lacp agg [ethernet | fastethernet | gigaehternet] slot/port partner admin system id
partner_admin_system_id
lacp agg [ethernet | fastethernet | gigaehternet] slot/port no partner admin system id
lacp agg [ethernet | fastethernet | gigaehternet] slot/port partner admin key
partner_admin_key
lacp agg [ethernet | fastethernet | gigaehternet] slot/port no partner admin key
lacp agg [ethernet | fastethernet | gigaehternet] slot/port partner admin system priority
partner_admin_system_priority
lacp agg [ethernet | fastethernet | gigaehternet] slot/port no partner admin system priority
lacp agg [ethernet | fastethernet | gigaehternet] slot/port actor port priority
actor_port_priority
lacp agg [ethernet | fastethernet | gigaehternet] slot/port no actor port priority
lacp agg [ethernet | fastethernet | gigaehternet] slot/port partner admin port
partner_admin_port
lacp agg [ethernet | fastethernet | gigaehternet] slot/port no partner admin port
lacp agg [ethernet | fastethernet | gigaehternet] slot/port partner admin port priority
partner_admin_port_priority
lacp agg [ethernet | fastethernet | gigaehternet] slot/port no partner admin port priority
show linkagg [agg_num]
show linkagg [agg_num] port [slot/port]
dhl num dhl_num [name name]
no dhl num dhl_num
dhl num dhl_num linka {port slot/port | linkagg agg_id} linkb {port slot/port | linkagg
agg_id}
no dhl num dhl_num linka {port slot/port | linkagg agg_id} linkb {port slot/port | linkagg
agg_id}
dhl num dhl_num admin-state {enable | disable}
dhl num dhl_num vlan-map linkb {vlan_id[-vlan_id]}
no dhl num dhl_num vlan-map linkb {vlan_id[-vlan_id]}
dhl num dhl_num pre-emption-time num
dhl num dhl_num mac-flushing {none | raw | mvrp}
show dhl
show dhl num dhl_num
show dhl num dhl_num [linkA | linkB]
```


802.1AB Commands

```
lldp destination mac-address { nearest-bridge | nearest-edge }
lldp transmit fast-start-count num
lldp transmit interval seconds
lldp transmit hold-multiplier num
lldp transmit delay seconds
lldp reinit delay seconds
lldp notification interval seconds
lldp { slot/port | slot | chassis } lldpdu { tx | rx | tx-and-rx | disable }
lldp { slot/port | slot | chassis } notification { enable | disable }
lldp network-policy policy_id - [ policy_id2 ] application { voice | voice-signaling | guest-voice |
    guest-voice-signaling | softphone-voice | video-conferencing | streaming-video | video-signaling }
    vlan { untagged | priority-tag | vlan-id } [ l2-priority 802.1p_value ] [ dscp dscp_value ]
no lldp network-policy policy_id - [ policy_id2 ]
lldp { slot/port | slot | chassis } med network-policy policy_id - [policy_id2]
no lldp { slot/port | slot | chassis } med network-policy policy_id - [policy_id2]
lldp { slot/port | slot | chassis } tlv management { port-description | system-name | system-
    description | system-capabilities | management-address } { enable | disable }
lldp { slot/port | slot | chassis } tlv dot1 { port-vlan | vlan-name } { enable | disable }
lldp { slot/port | slot | chassis } tlv dot3 mac-phy { enable | disable }
lldp { slot/port | slot | chassis } tlv dot3 power-via-mdi { enable | disable }
lldp { slot/port | slot | chassis } tlv med { power | capability | network policy } { enable | disable }
show lldp { slot | slot/port } config
show lldp network-policy [policy_id]
show lldp [slot | slot/port] med network-policy
show lldp system-statistics
show lldp [slot|slot/port] statistics
show lldp local-system
show lldp [slot/port | slot] local-port
show lldp local-management-address
show lldp [slot/port | slot] remote-system
show lldp [slot/port | slot] remote-system [med { network-policy | inventory }]
lldp { slot/port | slot | chassis } trust-agent { enable | disable }
lldp { slot/port | slot | chassis } [chassis-id-subtype { chassis-component | interface-alias | port-
    component | mac-address | network-address | interface-name | locally-assigned | any }]
lldp { slot/port | slot | chassis } trust-agent violation-action { trap-and-shutdown | trap |
    shutdown }
show lldp [num | slot/port] trusted remote-agent
show lldp [num | slot/port] trust-agent
```

Interswitch Protocol Commands

```
amap { enable | disable }
amap discovery [time] seconds
amap common [time] seconds
show amap
```

802.1Q Commands

```
vlan vid 802.1q { slot/port | aggregate_id } [description]
vlan vid no 802.1q { slot/port | aggregate_id }
vlan 802.1q slot/port frame type { all | tagged }
show 802.1q { slot/port | aggregate_id }
```

Distributed Spanning Tree Commands

```
bridge mode { flat | 1x1 }
bridge [instance] protocol { stp | rstp | mstp }
bridge cist protocol { stp | rstp | mstp }
bridge 1x1 vid protocol { stp | rstp }
bridge mst region name name
bridge mst region no name
bridge mst region revision level rev_level
bridge mst region max hops max_hops
bridge msti msti_id [name name]
bridge no msti msti_id
bridge msti msti_id no name
bridge msti msti_id vlan vid_range
bridge msti msti_id no vlan vid_range
bridge [instance] priority priority
bridge cist priority priority
bridge msti msti_id priority priority
bridge 1x1 vid priority priority
bridge [instance] hello time seconds
bridge cist hello time seconds
bridge 1x1 vid hello time seconds
bridge [instance] max age seconds
bridge cist max age seconds
bridge 1x1 vid max age seconds
bridge [instance] forward delay seconds
bridge cist forward delay seconds
bridge 1x1 vid forward delay seconds
bridge [instance] bpdu-switching { enable | disable }
bridge path cost mode { auto | 32bit }
```

```

bridge [msti msti_id] auto-vlan-containment {enable | disable}
bridge instance {slot/port | logical_port} {enable | disable}
bridge cist {slot/port | logical_port} {enable | disable}
bridge 1x1 vid {slot/port | logical_port} {enable | disable}
bridge instance {slot/port | logical_port} priority priority
bridge cist {slot/port | logical_port} priority priority
bridge msti msti_id {slot/port | logical_port} priority priority
bridge 1x1 vid {slot/port | logical_port} priority priority
bridge instance {slot/port | logical_port} path cost path_cost
bridge cist {slot/port | logical_port} path cost path_cost
bridge mist msti_id {slot/port | logical_port} path cost path_cost
bridge 1x1 vid {slot/port | logical_port} path cost path_cost
bridge instance {slot/port | logical_port} mode {forwarding | blocking | dynamic}
bridge cist {slot/port | logical_port} mode {dynamic | blocking | forwarding}
bridge 1x1 vid {slot/port | logical_port} mode {dynamic | blocking | forwarding}
bridge instance {slot/port | logical_port} connection {noptp | ptp | autoptp | edgeport}
bridge cist {slot/port | logical_port} connection {noptp | ptp | autoptp | edgeport}
bridge 1x1 vid {slot/port | logical_port} connection {noptp | ptp | autoptp | edgeport}
bridge cist {slot/port | logical_port} admin-edge {on | off | enable | disable}
bridge 1x1 vid {slot/port | logical_port} admin-edge {on | off | enable | disable}
bridge cist {slot/port | logical_port} auto-edge {on | off | enable | disable}
bridge 1x1 vid {slot/port | logical_port} auto-edge {on | off | enable | disable}
bridge cist {slot/port | logical_port} {restricted-role | root-guard} {on | off | enable |
  disable}
bridge 1x1 vid {slot/port | logical_port} {restricted-role | root-guard} {on | off | enable |
  disable}
bridge cist {slot/port | logical_port} restricted-tcn {on | off | enable | disable}
bridge 1x1 vid {slot/port | logical_port} restricted-tcn {on | off | enable | disable}
bridge cist txholdcount value
bridge 1x1 vid txholdcount {value}
bridge rrstp
no bridge rrstp
bridge rrstp ring ring_id port1 {slot/port | linkagg agg_num} port2
  {slot/port | linkagg agg_num} vlan-tag vlan_id [status {enable | disable}]
no bridge rrstp ring [ring_id]
bridge rrstp ring ring_id vlan-tag vid
bridge rrstp ring ring_id status {enable | disable}
show spantree [instance]
show spantree mode
show spantree cist
show spantree msti [msti_id]
show spantree 1x1 [vid]
show spantree [instance] ports [forwarding | blocking | active | configured]
show spantree cist ports [forwarding | blocking | active | configured]

```

```

show spantree msti [msti_id] ports [forwarding | blocking | active | configured]
show spantree 1x1 [vid] ports [forwarding | blocking | active | configured]
show spantree mst region
show spantree mst [msti_id] vlan-map
show spantree cist vlan-map
show spantree mst vid vlan-map
show spantree mst port {slot/port | logical_port}
show bridge rrstp configuration
show bridge rrstp ring [ring_id]
bridge mode 1x1 pvst+ {enable | disable}
bridge port {slot/port | agg_num} pvst+ {auto | enable | disable}

```

Ethernet Ring Protection Commands

```

erp-ring ring_id port1 {slot/port | linkagg agg_num} port2 {slot/port | linkagg agg_num}
  service-vlan vlan_id level level_num [guard-timer guard_timer] [wait-to-restore-
  timer wtr_timer] {enable | disable}
no erp-ring ring_id
erp-ring ring_id rpl-node {port slot/port | linkagg agg_num}
no erp-ring ring_id rpl-node
erp-ring ring_id wait-to-restore wtr_timer
no erp-ring ring_id wait-to-restore
erp-ring ring_id {enable | disable}
erp-ring ring_id ethoam-event {port slot/port | linkagg agg_num} remote-endpoint mep_id
no erp-ring ring_id ethoam-event {port slot/port | linkagg agg_num}
erp-ring ring_id guard-timer guard_timer
no erp-ring ring_id guard-timer
Clears ERP statistics for all rings, a specific ring, or a specific ring port.
clear erp statistics [ring ring_id [port slot/port | linkagg agg_num]]
show erp [ring ring_id | [port slot/port | linkagg agg_num]]
show erp [ring ring_id] protected-vlan
show erp statistics [ring ring_id [port slot/port | linkagg agg_num]]

```

Loopback Detection Commands

```

loopback-detection {enable | disable}
loopback-detection port slot/port [-port2] {enable | disable}
loopback-detection transmission-timer seconds
loopback-detection autorecovery-timer seconds
show loopback-detection
show loopback-detection port [slot/port]
show loopback-detection statistics port [slot/port]

```

CPE Test Head Commands

```
test-oam string [descr description]  
no test-oam string  
test-oam string [direction {unidirectional | bidirectional}]  
test-oam string [src-endpoint src-string] [dst-endpoint dst-string]  
test-oam string port slot/port  
test-oam string [vlan svlan] [[test-frame [src-mac src-address] [dst-mac dst-address]]  
test-oam string role {generator | analyzer | loopback}  
test-oam string [duration secs] [rate rate] [packet-size bytes]  
test-oam string frame  
test-oam string l2-saa [priority vlan-priority] [count num-pkts] [interval inter-pkt-delay] [size  
size] [drop-eligible {true | false}]  
no test-oam string l2-saa  
test-oam string {[vlan vlan-id] [port slot/port] [packet-size bytes] start | stop} [fetch-remote-  
stats]  
test-oam string remote-sys-mac string  
test-oam statistics flash-logging {enable | disable}  
show test-oam [tests | string]  
show test-oam [string] statistics  
show test-oam [string] saa statistics  
clear test-oam [string] statistics  
test-oam group string [descr description]  
no test-oam group string  
test-oam group string [tests string1.....string8]  
test-oam group string [no tests string1.....string8]  
test-oam feeder-port slot/port  
no test-oam feeder-port  
test-oam group string [ src-endpoint src-string dst-endpoint dst-string] [src-endpoint src-  
string] [dst-endpoint dst-string]  
test-oam group name role {generator | analyzer | loopback}  
test-oam group string port slot/port  
test-oam group string [direction {unidirectional | bidirectional}]  
test-oam group string [duration secs] [rate rate]  
test-oam group string {[port slot/port] start | stop} [fetch-remote-stats]  
test-oam group string remote-sys-mac string  
clear test-oam group string statistics  
show test-oam group [tests | string]  
show test-oam group [string] saa statistics  
show test-oam group [string] statistics
```

Source Learning Commands

```
mac-address-table [permanent] mac_address {slot/port / linkagg link_agg} vid  
[bridging | filtering]  
no mac-address-table [permanent | learned] [mac_address {slot/port / linkagg link_agg}  
vid]  
mac-address-table static-multicast multicast_address {slot1/port1[-port1a] [slot2/  
port2[-port2a]...] / linkagg link_agg} vid  
no mac-address-table static-multicast [multicast_address {slot1/port1[-port1a] [slot2/  
port2[-port2a]...] / linkagg link_agg} vid]  
mac-address-table aging-time seconds  
no mac-address-table aging-time  
source-learning {port slot/port1[-port2] | linkagg linkagg_num} {enable | disable}  
show mac-address-table [permanent | learned] [mac_address] [slot slot | slot/port]  
[linkagg link_agg] [vid | vid1-vid2]  
show mac-address-table static-multicast [multicast_address] [slot slot | slot/port]  
[linkagg link_agg] [vid | vid1-vid2]  
show mac-address-table count [mac_address] [slot slot | slot/port] [linkagg link_agg]  
[vid | vid1-vid2]  
show mac-address-table aging-time  
show source-learning [port slot/port[-port2] | linkagg linkagg_num]
```

PPPoE Intermediate Agent

```
pppoe-ia {enable | disable}  
pppoe-ia {port slot/port[-port2] | linkagg agg_num} {enable | disable}  
pppoe-ia {port slot/port[-port2] | linkagg agg_num} {trust | client}  
pppoe-ia access-node-id {base-mac | system-name | mgnt-address | user-string string}  
pppoe-ia circuit-id {default [atm] ascii [base-mac | system-name | interface | vlan | cvlan |  
interface-alias | user-string string | delimiter char]}  
pppoe-ia remote-id {base-mac | system-name | mgnt-address | user-string string}  
clear pppoe-ia statistics [port {slot/port[-port2] | linkagg agg_num]  
show pppoe-ia configuration  
show pppoe-ia {port {slot/port[-port2] | linkagg agg_num} [enabled | disabled | trusted |  
client]  
show pppoe-ia {port {slot/port[-port2] | linkagg agg_num} statistics
```

Learned Port Security Commands

```
port-security slot/port[-port2] [admin-status {enable | disable | locked}]  
port-security chassis {convert-to-static / disable}  
no port security slot/port[-port2]  
port-security shutdown num [no-aging {enable | disable}] [convert-to-static {enable |  
disable}]
```

```

[boot-up {enable | disable}] [mac-move {enable | disable}] [learn-as-static {enable |
disable}]
port-security shutdown 0 default

port-security slot/port[-port2] maximum num learn-trap-threshold num
port-security slot/port[-port2] max-filtering num
port-security {slot/port[-port2] / chassis} convert-to-static
port-security slot/port mac mac_address [vlan vlan_id]
port-security slot/port no mac {all | mac_address} [vlan vlan_id]
port-security slot/port[-port2] mac-range [low mac_address / high mac_address]
port-security slot/port[-port2] violation {shutdown | restrict | discard}
port-security slot/port[-port2] release
port-security slot/port[-port2] learn-trap-threshold num
show port-security [slot/port1-port2 / slot/port]
show port-security shutdown
show port-security brief

```

Ethernet Port Commands

```

trap slot/port[-port2] port link {enable | disable | on | off}
interfaces slot/port[-port2] speed {auto | 10 | 100 | 1000 | 10000 | max {100 | 1000}}
interfaces slot/port[-port2] autoneg {enable | disable | on | off}
interfaces slot/port[-port2] crossover {auto | mdix | mdi}
interfaces slot/port[-port2] pause {rx | tx-and-rx | disable}
interfaces slot/port[-port2] duplex {full | half | auto}
interfaces slot/port[-port2] admin {up | down}
interfaces slot/port alias description
interfaces slot/port[-port2] ifg bytes
interfaces slot/port[-port2] no l2 statistics
interfaces slot/port[-port2] max frame bytes
interfaces slot/port[-port2] flood {broadcast | multicast | unknown-unicast | all} {enable |
disable}
interfaces slot/port[-port2] flood {broadcast | multicast | unknownunicast | all} rate {mbps
num | pps num | percentage num | default}
interfaces slot/port[-port2] clear-violation-all
interfaces slot/port[-port2] hybrid {fiber | copper} autoneg {enable | disable | on | off}
interfaces slot/port[-port2] hybrid copper crossover {auto | mdix | mdi}
interfaces slot/port[-port2] hybrid {fiber | copper} duplex {full | half | auto}
interfaces slot/port[-port2] speed hybrid {fiber | copper} {auto | 10 | 100 | 1000 | 10000 |
max {100 | 1000}}
interfaces slot/port[-port2] hybrid {fiber | copper} pause {rx | tx-and-rx | disable}
interfaces slot/port tdr-test-start
interfaces [slot | slot/port[-port2]] no tdr-statistics
interfaces [slot | slot/port] tdr-extended-test-start

```

```

interfaces [slot | slot/port[-port2]] no tdr-extended-statistics
interfaces transceiver ddm {enable | disable}
interfaces slot/port[-port2] eee {enable | disable}
interfaces ptp {enable | disable}
show interfaces [slot/port[-port2]]
show interfaces [slot | slot/port[-port2]] tdr-statistics
show interfaces [slot | slot/port[-port2]] tdr-extended-statistics
show interfaces [slot/port[-port2]] capability
show interfaces [slot/port[-port2]] flow [control]
show interfaces [slot/port[-port2]] pause
show interfaces [slot/port[-port2]] accounting
show interfaces [slot/port[-port2]] counters
show interfaces [slot/port[-port2]] counters errors
show interfaces [slot/port[-port2]] collisions
show interfaces [slot/port[-port2]] status
show interfaces [slot / slot/port[-port2]] port
show interfaces [slot/port[-port2]] ifg
show interfaces [slot/port[-port2]] flood rate [broadcast | multicast | unknown-unicast]
show interfaces [slot/port[-port2]] traffic
show interfaces [slot/port[-port2]] hybrid {fiber |copper}
show interfaces [slot/port[-port2]] hybrid {fiber |copper} status
show interfaces [slot/port[-port2]] hybrid {fiber |copper} flow control
show interfaces [slot/port[-port2]] hybrid {fiber |copper} pause
show interfaces [slot/port[-port2]] hybrid {fiber |copper} capability
show interfaces [slot/port[-port2]] hybrid {fiber |copper} accounting
show interfaces [slot/port[-port2]] hybrid {fiber |copper} counters
show interfaces [slot/port[-port2]] hybrid {fiber |copper} counters errors
show interfaces [slot/port[-port2]] hybrid {fiber |copper} collisions
show interfaces [slot/port[-port2]] hybrid {fiber |copper} traffic
show interfaces [slot/port[-port2]] hybrid {fiber |copper} port
show interfaces [slot/port[-port2]] hybrid {fiber |copper} flood rate
show interfaces [slot/port[-port2]] hybrid {fiber |copper} ifg
interfaces [slot / slot/port[-port2]] violation-recovery-time {seconds | default}
interfaces {slot / slot/port[-port2]} violation-recovery-time default
interfaces [slot / slot/port[-port2]] violation-recovery-maximum max_attempts
interfaces {slot / slot/port[-port2]} violation-recovery-maximum default
interface violation-recovery-trap {enable | disable}
interfaces {slot / slot/port[-port2]} clear-violation-all
show interfaces violation-recovery
show interfaces [slot / slot/port[-port2]] transceiver [ddm | w-low | w-high | a-low | a-high
| actual]
show interfaces [slot / slot/port[-port2]] eee
show interfaces ptp
show interfaces [slot / slot/port[-port2]] ptp-statistics

```

Port Mobility Commands

```
vlan vid dhcp mac mac_address
vlan vid no dhcp mac mac_address
vlan vid dhcp mac range low_mac_address high_mac_address
vlan vid no dhcp mac range low_mac_address
vlan vid dhcp port slot/port
vlan vid no dhcp port slot/port
vlan vid dhcp generic
vlan vid no dhcp generic
vlan vid mac mac_address
vlan vid no mac mac_address
vlan vid mac range low_mac_address high_mac_address
vlan vid no mac range low_mac_address
vlan vid ip ip_address [subnet_mask]
vlan vid no ip ip_address [subnet_mask]
vlan vid protocol {ip-e2 | ip-snap | decnet | appletalk |
    ethertype type | dsapssap dsap/ssap | snap snaptype}
vlan vid no protocol {ip-e2 | ip-snap | decnet | appletalk |
    ethertype type | dsapssap dsap/ssap | snap snaptype}
vlan vid port slot/port
vlan vid no port slot/port
vlan port mobile slot/port [bpdudisable {enable | disable}]
vlan no port mobile slot/port
vlan port slot/port default vlan restore {enable | disable}
vlan port slot/port default vlan {enable | disable}
vlan port slot/port authenticate {enable | disable}
vlan port slot/port 802.1x {enable | disable}
show vlan [vid] rules
show vlan port mobile [slot/port]
```

VLAN Management Commands

```
vlan vid [enable | disable] [name description]
no vlan vid
vlan vid [1x1 | flat] stp {enable | disable}
vlan vid mobile-tag {enable | disable}
vlan vid port default {slot/port | link_agg_num}
vlan vid no port default {slot/port | link_agg_num}
show vlan [vid]
show vlan [vid] port [slot/port | link_agg]
show vlan router mac status
show vlan gvrp [vlan-id | vlan-range]
show vlan ipmvlan [ipmvlan-id | ipmvlan-id1-ipmvlan-id2]
```

GVRP Commands

```
gvrp
no gvrp
gvrp {linkagg agg_num | port slot/port}
no gvrp {linkagg agg_num | port slot/port}
gvrp transparent switching
no gvrp transparent switching
gvrp maximum vlan vlanlimit
no gvrp registration {linkagg agg_num | port slot/port}
gvrp applicant {participant | non-participant | active} {linkagg agg_num | port slot/port}
no gvrp applicant {linkagg agg_num | port slot/port}
gvrp timer {join | leave | leaveall} timer-value {linkagg agg_num | port slot/port}
no gvrp timer {join | leave | leaveall} {linkagg agg_num | port slot/port}
no gvrp restrict-vlan-registration {linkagg agg_num | port slot/port} vlan-list
no gvrp restrict-vlan-advertisement {linkagg agg_num | port slot/port} vlan-list
gvrp static-vlan restrict {linkagg agg_num | port slot/port} vlan-list
no gvrp static-vlan restrict {linkagg agg_num | port slot/port} vlan-list
clear gvrp statistics [linkagg agg_num | port slot/port]
show gvrp statistics [linkagg agg_num | port slot/port]
show gvrp last-pdu-origin {linkagg agg_num | port slot/port}
show gvrp configuration
show gvrp configuration port
show gvrp configuration {linkagg agg_num | port slot/port}
show gvrp timer [[join | leave | leaveall] {linkagg agg_num | port slot/port}]
```

MVRP Commands

```
vlan registration-mode {gvrp | mvrp}
mvrp {enable | disable}
mvrp port slot/port [- port2] {enable | disable}
mvrp linkagg agg_num [- agg_num2] {enable | disable}
mvrp transparent-switching {enable | disable}
mvrp {port slot/port [- port2] | linkagg agg_num [- agg_num2]} registration {normal |
    fixed |
    forbidden}
mvrp {port slot/port [- port2] | linkagg agg_num [- agg_num2]} applicant {participant |
    non-participant | active}
mvrp {port slot/port [- port2] | linkagg agg_num [- agg_num2]} restrict-vlan-
    registration vlan vlan-list
no mvrp {port slot/port [- port2] | linkagg agg_num [- agg_num2]} restrict-vlan-
    registration vlan
    vlan-list
```

```

mvrp {port slot/port [-port2] | linkagg agg_num [-agg_num2]} restrict-vlan-
advertisement
vlan vlan-list
no mvrp {port slot/port [-port2] | linkagg agg_num [-agg_num2]} restrict-vlan-
advertisement
vlan vlan-list
mvrp {linkagg agg_num [-agg_num2] | port slot/port [-port2]} static-vlan-restrict vlan
vlan-list
no mvrp {linkagg agg_num [-agg_num2] | port slot/port [-port2]} static-vlan-restrict
vlan vlan-list
show mvrp configuration
show mvrp port {slot/port [-port2]} [enabled | disabled]
show mvrp linkagg [agg_num [-agg_num2]] [enabled | disabled]
mvrp [port slot/port [-port2] | linkagg agg_num [-agg_num2]] clear-statistics

```

VLAN Stacking Commands

```

ethernet-service {svlan | ipmvlan | management-vlan} svid1[-svid2] [enable | disable] [[1x1 |
flat] stp {enable | disable}] [name description]
no ethernet-service {svlan | ipmvlan | management-vlan} svid1[-svid2]
ethernet-service custom-L2-protocol name mac mac-address [mask mask | ethertype ether-
type subtype sub-type | ssap/dsap ssap/dsap pid pid]
no ethernet-service custom-L2-protocol name
ethernet-service {svlan | ipmvlan} svid1[-svid2] source-learning {enable| disable}
Creates a VLAN Stacking service and associates the service with an SVLAN or an IP
Multicast VLAN (IPMV). The SVLAN or IPMV specified is the VLAN that will
transport traffic for the service.
ethernet-service service-name service-name {svlan | ipmvlan} svid
no ethernet-service service-name service-name {svlan | ipmvlan} svid
ethernet-service svlan svid1[-svid2] nni {slot/port1[-port2] | linkagg agg_num} [stp | erp]
no ethernet-service svlan svid1[-svid2] nni {slot/port1[-port2] | linkagg agg_num}
ethernet-service nni {slot/port1[-port2] | agg_num} [tpid value] [{stp | gvrp | mvrp} legacy-
bpdu {enable | disable}] [transparent-bridging {enable | disable}]
ethernet-service sap sapid service-name service-name
no ethernet-service sap sapid
ethernet-service sap sapid uni {slot/port1[-port2] | linkagg agg_num}
ethernet-service sap sapid no uni {slot/port1[-port2] | linkagg agg_num}
ethernet-service sap sapid cvlan {all | cvid | cvid1-cvid2 / untagged}
ethernet-service sap sapid no cvlan {all | cvid | cvid1-cvid2 / untagged}
ethernet-service sap-profile sap-profile-name
no ethernet-service sap-profile sap-profile-name
ethernet-service sap sapid sap-profile sap-profile-name

```

```

ethernet-service uni-profile uni-profile-name [tunnel-mac mac-address] [l2-protocol
{vtp | vlan | uplink | udld | stp | pvst | pagp | oam | mvrp | lacpmarker | gvrp | dtp | cdp |
amap | 802.3ad | 802.1x | 802.1ab {peer | discard | tunnel | mac-tunnel}}]
no ethernet-service uni-profile uni-profile-name
ethernet-service uni {slot/port1[-port2] | agg_num} uni-profile uni-profile-name
ethernet-service uni-profile uni-profile-name custom-L2-protocol custom-L2-
protocol name
{tunnel | discard | mac-tunnel}
no ethernet-service uni-profile uni-profile-name custom-L2-protocol custom-L2-
protocol name
ethernet-service mac-tunneling {enable | disable}
ethernet-service svlan svid1[-svid2] mac-tunneling {enable | disable} [name description]
show ethernet-service custom-L2-protocol custom-L2-protocol
show ethernet-service mode
show ethernet-services vlan [svid1[-svid2]]
show ethernet-service [service-name service-name / svlan svid]
show ethernet-services sap [sapid]
show ethernet-services port {slot/port / linkagg agg_num}
show ethernet-services nni [slot/port / linkagg agg_num]
show ethernet-services nni [linkagg agg_num | slot/port / port range] l2pt-statistics
clear ethernet-services nni [linkagg agg_num | slot/port / port range] l2pt-statistics
show ethernet-service uni [slot/port / linkagg agg_num]
show ethernet-service uni [slot/port / linkagg agg_num] l2pt-statistics
clear ethernet-service uni [linkagg agg_num | slot/port / port range] l2pt-statistics
show ethernet-service uni-profile [uni-profile-name]
show ethernet-service uni-profile [uni-profile-name] l2pt-statistics
clear ethernet-service uni-profile [uni profile name] l2pt-statistics
show ethernet-service sap-profile sap-profile-name
loopback-test profile_name source-mac src_address destination-mac dest_address
vlan vlan_id
loopback-port slot/port type {inward | outward}
loopback-test profile_name {enable | disable}
no loopback-test profile_name
show loopback-test [profile_name]

```

Ethernet OAM Commands

```

ethoam vlan {vlanid-list} primary-vlan {vlan-id}
no ethoam vlan {vlanid-list}
ethoam domain name format {none | dnsname | mac-address-unit | string}
level num
no ethoam domain name
ethoam domain name mhf {none | explicit | default}
ethoam domain name id-permission {none | chassisid}

```

```

ethoam association ma-name format {vpnid | unsignedint | string | primaryvid |
icc-based} domain md-name primary-vlan vlan-id
no ethoam association ma-name domain md-name
ethoam association ma-name domain md-name mhf {none | default | explicit |
defer}
ethoam association ma-name domain md-name id-permission {none | chassisid |
defer}
ethoam association association_name domain {domain_name | mac_address}
ccm-interval {interval-invalid | interval100ms | interval1s / interval10s /
interval1m / interval10m}
ethoam association association_name domain {domain_name | mac_address}
endpoint-list mep_id[-mep_id2]
no ethoam association association_name domain {domain_name | mac_address}
endpoint-list mep_id[-mep_id2]
ethoam association association_name domain {domain_name | mac_address}
allowed-cvlan-list num[-num2]
no ethoam association association_name domain {domain_name | mac_address}
allowed-cvlan-list num[-num2]
clear ethoam statistics [domain domain association association endpoint mep-id]
ethoam default-domain level {num}
no ethoam default-domain
ethoam default-domain mhf {none | default | explicit}
no ethoam default-domain
ethoam default-domain id-permission {none | chassisid}
no ethoam default-domain
ethoam default-domain primary-vlan {vlan-id} [level {no-level | num}] [mhf {none | default
| explicit | defer}] [id-permission {none | chassisid | defer}]
no ethoam default-domain
ethoam endpoint mep-id domain md_name association ma_name direction {up | down}
[port {slot/port | virtual | linkagg agg_id} [primary-vlan vlan_id / cvlan cvlan_id]
no ethoam endpoint mep-id domain md_name association ma_name
ethoam endpoint mep_id domain {domain_name | mac_address} association
association_name
admin-state {enable | disable}
ethoam endpoint mep_id domain {domain_name | mac_address} association
association_name
ccm {enable | disable}
ethoam endpoint mep_id domain {domain_name | mac_address} association
association_name priority ccm_tlm_priority
ethoam endpoint mep_id domain {domain_name | mac_address} association
association_name lowest-defect-priority lowest_priority_defect

```

```

ethoam loopback {target-endpoint t-mepid | target-macaddress mac_add}
source-endpoint s-mepid domain d-name association a-name [number num]
[data string] [vlan-priority vlan-priority] [drop-eligible {true | false}]
ethoam linktrace {target-macaddress mac_address | target-endpoint
tar_mep_id} source-endpoint src_mep_id domain {domain_name |
mac_address} association association_name [flag {fdbonly | fdb-mpdb}]
[hop-count hop_count]
ethoam fault-alarm-time centiseconds endpoint endpoint_id domain
{domain_name | mac_address}
association association_name
no ethoam fault-alarm-time endpoint endpoint_id domain {domain_name |
mac_address}
association association_name
ethoam fault-reset-time centiseconds endpoint endpoint_id domain
{mac_address | domain_name} association association_name
no ethoam fault-reset-time endpoint endpoint_id domain {mac_address /
domain_name} association association_name
ethoam one-way-delay {target-endpoint t-mepid | target-macaddress mac_add} source-
endpoint s-mepid domain domain association association [vlan- priority vlan-priority]
ethoam two-way-delay {target-endpoint t-mepid | target-macaddress mac_add} source-
endpoint s-mepid domain domain association association [vlan- priority vlan-priority]
clear ethoam {one-way-delay-table | two-way-delay-table}
show ethoam
show ethoam domain md-name
show ethoam domain md-name association ma-name
show ethoam domain md-name association ma-name endpoint mep-id
show ethoam default-domain [primary-vlan vlan_id]
show ethoam default-domain configuration
show ethoam remote-endpoint domain md_name association ma_name endpoint
smep-id [remote-mep rmep-id]
show ethoam cfmstack [port{slot/port | virtual} | linkagg agg_num]
show ethoam linktrace-reply domain d-name association a-name endpoint s-
mepid tran-id num
show ethoam linktrace-tran-id domain {domain_name | mac_address}
association association_name endpoint mep_id
show ethoam vlan vlan-id
show ethoam statistics domain {domain_name | mac_address} [association
association_name] [end-point endpoint_id]
show ethoam config-error [vlan vid] [{port slot/port | linkagg aggid}]

```

show ethoam one-way-delay domain domain association association endpoint s-mepid [mac-address mac-add]
show ethoam two-way-delay domain domain association association endpoint s-mepid [mac-address mac-add]

Service Assurance Agent Commands

saa string [descr description] [interval interval]
 no *saa string*
saa string type ip-ping destination-ip ipv4 addr source-ip ipv4 addr type-of-service tos [num-pkts count] [inter-pkt-delay delay] [payload-size size]
saa string type mac-ping destination-macaddress mac vlan vlan-id [vlan-priority vlan-priority] [drop-eligible {true | false}] [data data] [num-pkts count] [inter-pkt-delay delay] [payload-size size]
saa string type ethoam-loopback {target-endpoint tmeop_id | target-mac address mac} source-endpoint smep_id domain domain association assoc vlan-priority priority [drop-eligible {true | false}] [data data] [num-pkts num] [inter-pkt-delay delay]
saa string type {ethoam-two-way-delay} {target-endpoint tmeop_id | target-mac address mac} source-endpoint smep_id domain domain association assoc vlan-priority priority [num-pkts num] [inter-pkt-delay delay]
saa string start [at yyyy-mm-dd, hh:mm:ss.ds]
saa string stop [never | at yyyy-mm-dd, hh:mm:ss.ds]
show saa [string | {descr description}]
show saa [string] type {mac-ping | ip-ping | ethoam-loopback | ethoam-two-way-delay} config
show saa [string] statistics [aggregate | history]

LINK OAM Commands

efm-oam {enable | disable}
efm-oam port slot/port [-port2] status {enable | disable}
efm-oam port slot/port [-port2] mode {active | passive}
efm-oam port slot/port [-port2] keepalive-interval seconds
efm-oam port slot/port [-port2] hello-interval seconds
efm-oam port slot/port [-port2] remote-loopback {process | ignore}
efm-oam port slot/port remote-loopback {start | stop}
efm-oam port slot/port [-port2] propagate-events {critical-event | dying-gasp} {enable | disable}
efm-oam port slot/port [-port2] errored-frame-period [threshold threshold_symbols] [window window_frames] [notify {enable | disable}]
efm-oam port slot/port [-port2] errored-frame [threshold threshold_symbols] [window window_seconds] [notify {enable | disable}]

efm-oam port slot/port [-port2] errored-frame-seconds-summary [threshold threshold_seconds] [window window_seconds] [notify {enable | disable}]
efm-oam multiple-pdu-count count
efm-oam port slot/port l1-ping [num-frames number] [delay milliseconds] [start]
show efm-oam configuration
show efm-oam port [slot/port1-port2] [enable | disable] [active | passive]
show efm-oam port slot/port detail
show efm-oam port slot/port [-port2] statistics
show efm-oam port statistics
show efm-oam port slot/port remote detail
show efm-oam port slot/port history [log-type { link-fault | errored-frame | errored-frame-period | errored-frame-seconds | dying-gasp | critical }]
show efm-oam port slot/port l1-ping detail
clear efm-oam statistics port slot/port [-port2]
clear efm-oam log-history port slot/port [-port2]

UDLD Commands

udld {enable | disable}
udld port slot/port [-port2] {enable | disable}
udld port [slot/port [-port2]] mode {normal | aggressive}
udld port [slot/port [-port2]] probe-timer seconds
no udld port [slot/port [-port2]] probe-timer
udld port [slot/port [-port2]] echo-wait-timer seconds
no udld port [slot/port [-port2]] echo-wait-timer
clear udld statistics [port slot/port]
show udld configuration
show udld configuration port [slot/port]
show udld statistics port slot/port
show udld neighbor port slot/port
show udld status port [slot/port]

Port Mapping Commands

port mapping session_id {enable | disable}
no port mapping session_id
port mapping port_mapping_session id dynamic-proxy-arp {enable | disable}
show port mapping [session_id]

IP Commands

ip interface name [address ip_address] [mask subnet_mask] [admin {enable | disable}] [vlan vid] [forward | no forward] [local-proxy-arp | no local-proxy-arp] [eth2 | snap] [primary | no primary][firewall-vlan vid] local-host-dbcast {enable | disable}


```

no ip interface name
ip managed-interface { Loopback0 / interface-name } application [ldap-server] [tacacs]
[radius] [snmp] [sflow] [ntp] [syslog] [dns] [telnet] [ftp] [ssh] [tftp] [all]
no ip managed-interface { Loopback0 / interface-name } application [ldap-server] [tacacs]
[radius] [snmp] [sflow] [ntp] [syslog] [dns] [telnet] [ftp] [ssh] [tftp] [all]
ip interface dhcp-client [vlan vid ifindex id] [vsi-accept-filter filter-string] [firewall-
vlan vid][release | renew] [option-60 opt60_string] [admin {enable | disable}]
no ip interface dhcp-client
ip router primary-address ip_address
ip router router-id ip_address
ip static-route ip_address [mask mask] gateway gateway [metric metric]
no ip static-route ip_address [mask mask] gateway ip_address [metric metric]
ip route-pref {static | rip | ebgp | ibgp} value
ip default-ttl hops
ping {ip_address | hostname} [source-interface ip_interface] [[sweep-range start_size
/ end_size /
diff_size] | [count count] [size packet_size] [interval seconds] [timeout seconds]
[tos tos_val]
[dont-fragment] [data-pattern string]
traceroute {ip_address | hostname} [source-interface ip_interface] [min-hop
min_hop_count]
[max-hop max_hop_count] [probes probe_count] [time-out seconds] [port-
number port_number]
ip directed-broadcast {on | off}
ip service {all | service_name | port service_port}
no ip service {all | service_name | port service_port}
ip redistribute {local | static | rip} into {rip} route-map route-map-name [status {enable |
disable}]
no ip redistribute {local | static | rip} into {rip} [route-map route-map-name]
ip access-list access-list-name
no ip access-list access-list-name
ip access-list access-list-name address address/prefixLen [action {permit | deny}]
[redist-control {all-subnets | no-subnets | aggregate}]
no ip access-list access-list-name address address/prefixLen
ip route-map route-map-name [sequence-number number] match ip-nexthop
{access-list-name | ip_address/prefixLen [permit | deny]}
no ip route-map route-map-name [sequence-number number] match ip-nexthop
{access-list-name | ip_address/prefixLen [permit | deny]}
ip route-map route-map-name [sequence-number number] match ipv6-nexthop
{access-list-name | ipv6_address/prefixLen [permit | deny]}
no ip route-map route-map-name [sequence-number number] match ipv6-nexthop
{access-list-name | ipv6_address/prefixLen [permit | deny]}
ip route-map route-map-name [sequence-number number] match ipv4-interface interface-
name

```

```

no ip route-map route-map-name [sequence-number number] match ipv4-interface interface-
name
ip route-map route-map-name [sequence-number number] match ipv6-interface interface-
name
no ip route-map route-map-name [sequence-number number] match ipv6-interface interface-
name
ip route-map route-map-name [sequence-number number] match metric metric [deviation
deviation]
no ip route-map route-map-name [sequence-number number] match metric metric
[deviation deviation]
ip route-map route-map-name [sequence-number number] set metric metric
[effect {add | subtract | replace | none}]
no ip route-map route-map-name [sequence-number number] set metric metric
[effect {add | subtract | replace | none}]
ip route-map route-map-name [sequence-number number] set tag tag-number
no ip route-map route-map-name [sequence-number number] set tag tag-number
ip route-map route-map-name [sequence-number number] set ip-nexthop ip_address
no ip route-map route-map-name [sequence-number number] set ip-nexthop ip_address
ip route-map route-map-name [sequence-number number] set ipv6-nexthop
ipv6_address
no ip route-map route-map-name [sequence-number number] set ipv6-nexthop
ipv6_address
arp ip_address hardware_address [alias]
no arp ip_address [alias]
clear arp-cache
ip dos arp-poison restricted-address ip_address
no ip dos arp-poison restricted-address ip_address
arp filter ip_address [mask ip_mask] [vid] [sender | target] [allow | block]
no arp filter ip_address
clear arp-cache
ip arp-limit default
ip arp-limit extend
icmp type type code code {{enable | disable} | min-pkt-gap gap}
icmp unreachable [net-unreachable | host-unreachable | protocol-unreachable |
port-unreachable] {{enable | disable} | min-pkt-gap gap}
icmp echo [request | reply] {{enable | disable} | min-pkt-gap gap}
icmp timestamp [request | reply] {{enable | disable} | min-pkt-gap gap}
icmp add-mask [request | reply] {{enable | disable} | min-pkt-gap gap}
icmp messages {enable | disable}
ip dos scan close-port-penalty penalty_value
ip dos scan tcp open-port-penalty penalty_value
ip dos scan udp open-port-penalty penalty_value
ip dos scan threshold threshold_value
ip dos trap {enable | disable}

```

```

ip dos scan decay decay_value
show ip traffic
show ip interface [name / vlan vlan id / dhcp-client]
show ip managed-interface
show ip route [summary]
show ip route-pref
show ipv6 redist [rip]
show ip access-list [access-list-name]
show ip route-map [route-map-name]
show ip router database [protocol type / gateway ip_address / dest {ip_address/
    prefixLen / ip_address}]
show ip config
show ip protocols
show ip service
show arp [ip_address | hardware_address]
show ip dynamic-proxy-arp
show arp filter [ip_address]
show icmp control
show icmp [statistics]
show tcp statistics
show tcp ports
show udp statistics
show udp ports
show ip dos config
show ip dos statistics
show ip dos arp-poison

```

IPv6 Commands

```

ipv6 interface if_name vlan vid [enable | disable]
    [base-reachable-time time]
    [ra-send {yes | no}]
    [ra-max-interval interval]
    [ra-managed-config-flag {true | false}]
    [ra-other-config-flag {true | false}]
    [ra-reachable-time time]
    [ra-retrans-timer time]
    [ra-default-lifetime time | no ra-default-lifetime]
    [ra-send-mtu] {yes | no}
no ipv6 interface if_name
ipv6 address ipv6_address /prefix_length [anycast] {if_name | loopback}
no ipv6 address ipv6_address [anycast] {if_name | loopback}
ipv6 address ipv6_prefix eui-64 {if_name | loopback}
no ipv6 address ipv6_prefix eui-64 {if_name | loopback}

```

```

ipv6 dad-check ipv6_address if_name
ipv6 hop-limit value
no ipv6 hop-limit
ipv6 pmtu-lifetime time
ipv6 host name ipv6_address
no ipv6 host name ipv6_address
ipv6 neighbor stale-lifetime stale-lifetime
ipv6 neighbor ipv6_address hardware_address {if_name} slot/port
no ipv6 neighbor ipv6_address {if_name}
ipv6 prefix ipv6_address /prefix_length if_name
    [valid-lifetime time]
    [preferred-lifetime time]
    [on-link-flag {true | false}]
    [autonomous-flag {true | false}] if_name
no ipv6 prefix ipv6_address /prefix_length if_name
ipv6 route ipv6_prefix /prefix_length ipv6_address [if_name]
no ipv6 route ipv6_prefix /prefix_length ipv6_address [if_name]
ipv6 static-route ipv6_prefix /prefix_length gateway ipv6_address [if_name] [metric
    metric]
no ipv6 static-route ipv6_prefix /prefix_length gateway ipv6_address [if_name]
ipv6 route-pref {static | rip} value
ping6 {ipv6_address | hostname} [if_name] [count count] [size data_size] [interval
    seconds]
traceroute6 {ipv6_address | hostname} [if_name] [max-hop hop_count] [wait-time time]
    [port port_number] [probe-count probe]
show ipv6 hosts [substring]
show ipv6 icmp statistics [if_name]
show ipv6 interface [if_name | loopback]
show ipv6 pmtu table
clear ipv6 pmtu table
show ipv6 neighbors [ipv6_prefix /prefix_length | if_name | hw hardware_address | static]
clear ipv6 neighbors
show ipv6 prefixes
show ipv6 routes [ipv6_prefix /prefix_length | static]
    show ipv6 route-pref
show ipv6 router database [protocol type / gateway ipv6_address / dest ipv6_prefix /
    prefix_length]
show ipv6 tcp ports
show ipv6 traffic [if_name]
clear ipv6 traffic
show ipv6 udp ports
show ipv6 information
ipv6 redist {local | static | rip} into {rip} route-map route-map-name
    [status {enable | disable}]

```

```

ipv6 access-list access-list-name
no ipv6 access-list access-list-name
ipv6 access-list access-list-name address address/prefixLen [action {permit |
deny}]
    [redist-control {all-subnets | no-subnets | aggregate}]
no ipv6 access-list access-list-name address address/prefixLen
show ipv6 redist [rip]
show ip access-list [access-list-name]
ipv6 load rip
ipv6 rip status {enable | disable}
ipv6 rip invalid-timer seconds
ipv6 rip garbage-timer seconds
ipv6 rip holddown-timer seconds
ipv6 rip jitter value
ipv6 rip route-tag value
ipv6 rip update-interval seconds
ipv6 rip triggered-sends {all | updated-only | none}
ipv6 rip interface if_name
[no] ipv6 rip interface if_name
ipv6 rip interface if_name metric value
ipv6 rip interface if_name rcv-status {enable | disable}
ipv6 rip interface if_name send-status {enable | disable}
ipv6 rip interface if_name horizon {none | split-only | poison}
show ipv6 rip
show ipv6 rip interface [if_name]
show ipv6 rip peer [ipv6_addresses]
show ipv6 rip routes [dest <ipv6_prefix/prefix_length>] | [gateway <ipv6_addr>] | [detail
<ipv6_prefix/prefix_length>]

```

RDP Commands

```

ip router-discovery {enable | disable}
ip router-discovery interface name [enable | disable]
no router-discovery interface name
ip router-discovery interface name advertisement-address {all-systems-multicast |
broadcast}
ip router-discovery interface name max-advertisement-interval seconds
ip router-discovery interface name min-advertisement-interval seconds
ip router-discovery interface name advertisement-lifetime seconds
ip router-discovery interface name preference-level level
show ip router-discovery
show ip router-discovery interface [name]

```

DHCP Relay Commands

```

ip helper address ip_address
ip helper no address [ip_address]
ip helper address ip_address vlan vlan_id
ip helper no address ip_address vlan vlan_id
ip helper standard
ip helper avlan only
ip helper per-vlan only
ip helper forward delay seconds
ip helper maximum hops hops
ip helper agent-information {enable | disable}
ip helper agent-information policy {drop | keep | replace}
ip helper pxe-support {enable | disable}
ip helper dhcp-snooping {enable | disable}
ip helper dhcp-snooping mac-address verification {enable | disable}
ip helper dhcp-snooping option-82 data-insertion {enable | disable}
ip helper dhcp-snooping option-82 data-insertion format [base-mac | system-name | user-
string string]
ip helper dhcp-snooping option-82 format ascii remote-id {base-mac | system-name | vlan |
user-string string | interface-alias | auto-interface-alias | cvlan} {delimiter
character}
no ip helper dhcp-snooping option-82 format ascii remote-id
ip helper dhcp-snooping bypass option-82-check {enable | disable}
ip helper dhcp-snooping vlan vlan_id [mac-address verification {enable | disable}] [option-
82
data-insertion {enable | disable}]
no ip helper dhcp-snooping vlan vlan_id
ip helper dhcp-snooping port slot1/port1[-port1a] {block | client-only | trust}
ip helper dhcp-snooping linkagg num {block | client-only | trust| ip-source-filtering}
ip helper dhcp-snooping port slot1/port1[-port1a] traffic-suppression {enable | disable}
ip helper dhcp-snooping port slot1/port1[-port1a] ip-source-filter {enable | disable}
ip helper dhcp-snooping binding {[enable | disable] | [mac_address port slot/port
address ip_address vlan vlan_id]}
no ip helper dhcp-snooping binding mac_address port slot/port address ip_address
vlan vlan_id
ip helper dhcp-snooping ip-source-filter {vlan num | port slot/port[-port2] | linkagg num}
{enable | disable}
ip helper dhcp-snooping port binding timeout seconds
ip helper dhcp-snooping port binding action {purge | renew}
ip helper dhcp-snooping binding persistency {enable | disable}
ip helper boot-up {enable | disable}
ip helper boot-up enable {BOOTP | DHCP}
ip udp relay {BOOTP | NBDD | NBNSNBDD | DNS | TACACS | TFTP | NTP | port [name]}

```

```

no ip udp relay {BOOTP | NBDD | NBNSNBDD | DNS | TACACS | TFTP | NTP | port}
ip udp relay {BOOTP | NBDD | NBNSNBDD | DNS | TACACS | TFTP | NTP | port} vlan
vlan_id
no ip udp relay {BOOTP | NBDD | NBNSNBDD | DNS | TACACS | TFTP | NTP | port} vlan
vlan_id
dhcp-server {enable | disable}
dhcp-server restart
show dhcp-server leases [ip- address ip_address | mac-address mac_address] [type {static |
dynamic }] [count]
show dhcp-server statistics [ packets | hosts | subnets | all ]
clear dhcp-server statistics
show ip helper
show ip helper stats
ip helper no stats
show ip helper dhcp-snooping vlan
show ip helper dhcp-snooping port
show ip helper dhcp-snooping binding
show ip udp relay service [BOOTP | NBDD | NBNSNBDD | DNS | TACACS | TFTP | NTP |
port]
show ip udp relay [BOOTP | NBDD | NBNSNBDD | DNS | TACACS | TFTP | NTP | port]
show ip udp relay destination [BOOTP | NBDD | NBNSNBDD | DNS | TACACS | TFTP |
NTP | port]
show ip helper dhcp-snooping ip-source-filter port

```

RMON Commands

```

rmon probes {stats | history | alarm} [entry-number] {enable | disable}
show rmon probes [stats | history | alarm] [entry-number]
show rmon events [event-number]

```

RIP Commands

```

ip load rip
ip rip status {enable | disable}
ip rip interface {interface_name}
no ip rip interface {interface_name}
ip rip interface {interface_name} status {enable | disable}
ip rip interface {interface_name} metric value
ip rip interface {interface_name} send-version {none | v1 | v1compatible | v2}
ip rip interface {interface_name} rcv-version {v1 | v2 | both | none}
ip rip force-holddowntimer seconds
ip rip host-route
no ip rip host-route
ip rip route-tag value

```

```

ip rip interface {interface_name} auth-type {none | simple | md5}
ip rip interface {interface_name} auth-key string
ip rip update-interval seconds
ip rip invalid-timer seconds
ip rip garbage-timer seconds
ip rip holddown-timer seconds
show ip rip
show ip rip routes [ip_address ip_mask]
show ip rip interface [interface_name]
show ip rip peer [ip_address]

```

VRRP Commands

```

vrrp vrid vlan_id [enable | disable | on | off] [priority priority] [preempt | no preempt]
[[advertising] interval seconds]
no vrrp vrid vlan_id
vrrp vrid vlan_id address ip_address
vrrp vrid vlan_id no address ip_address
vrrp track track_id [enable | disable] [priority value] [ipv4-interface name / ipv6-interface
name |
port slot/port | address address]
no vrrp track track_id
vrrp vrid vlan_id track-association track_id
vrrp vrid vlan_id no track-association track_id
vrrp trap
no vrrp trap
vrrp delay seconds
vrrp3 vrid vlan_id [enable | disable | on | off] [priority priority] [preempt | no
preempt][accept | no accept] [[advertising] interval centiseconds]
no vrrp3 vrid vlan_id
vrrp3 vrid vlan_id address ipv6_address
vrrp3 vrid vlan_id no address ipv6_address
vrrp3 trap
no vrrp3 trap
vrrp3 vrid vlan_id track-association track_id
vrrp3 vrid vlan_id no track-association track_id
show vrrp [vrid]
show vrrp [vrid] statistics
show vrrp track [track_id]
show vrrp [vrid] track-association [track_id]
show vrrp3 [vrid]
show vrrp3 [vrid] statistics
show vrrp3 [vrid] track-association [track_id]

```

Port Mirroring and Monitoring Commands

```
port mirroring port_mirror_sessionid [no] source slot/port[-port2] [slot/port[-port2]...]
  destination slot/port [rpmir-vlan vlan_id] [bidirectional | inport | outport] [unblocked
  vlan_id]
  [enable | disable]
port mirroring port_mirror_sessionid {enable | disable}
no port mirroring port_mirror_sessionid {enable | disable}
port monitoring port_monitor_sessionid source slot/port
  [{no file | file filename [size filesize] | [overwrite {on | off}]]
  [inport | outport | bidirectional] [timeout seconds] [enable | disable]
port monitoring port_monitor_sessionid {disable | pause | resume}
no port monitoring port_monitor_sessionid
show port mirroring status [port_mirror_sessionid]
show port monitoring status [port_monitor_sessionid]
show port monitoring file [port_monitor_sessionid]
```

Health Monitoring Commands

```
health threshold {rx percent | txrx percent | memory percent | cpu percent | temperature
degrees}
health threshold port-trap {slot | slot/port | slot/port1-port2} {enable | disable}
health interval seconds
health statistics reset
show health threshold [rx | txrx | memory | cpu | temperature]
show health threshold port-trap {slot | slot/port | slot/port1-port2}
show health interval
show health [slot/port] [statistics]
show health all {memory | cpu | rx | txrx}
show health slice slot
```

sFlow Commands

```
sflow receiver num name string timeout {seconds | forever} address {ip_address /
ipv6address}
  udp-port port packet-size size Version num
sflow receiver receiver_index release
sflow sampler num portlist receiver receiver_index rate value sample-hdr-size size
no sflow sampler num portlist
sflow poller num portlist receiver receiver_index interval value
no sflow poller num portlist
show sflow agent
```

```
show sflow receiver [num]
show sflow sampler[num]
show sflow poller [num]
```

QoS Commands

```
qos {enable | disable}
qos trust ports
qos no trust ports
qos default servicing mode {strict-priority | wrr [w0 w1 w2 w3 w4 w5 w6 w7] | drr} [w0
w1 w2 w3 w4 w5 w6 w7]
qos forward log
qos no forward log
qos log console
qos no log console
qos log lines lines
qos log level level
qos no log level
qos default bridged disposition {accept | deny | drop}
qos default multicast disposition {accept | deny | drop}
qos stats interval seconds
qos nms priority
qos no nms priority
qos phones priority priority_value
qos no phones
qos user-port {filter | shutdown} {spoof | bpdu | rip | dhcp-server | dns-reply}
qos no user-port {filter | shutdown}
qos dei egress
qos no dei egress
qos force-yellow-priority priority_value
qos no force-yellow-priority
debug qos [info] [config] [rule] [main] [route] [hre] [port] [msg] [sl] [ioctl] [mem] [cam]
  [mapper] [flows] [queue] [slot] [l2] [l3] [classifier] [nat] [sem] [pm] [ingress] [egress]
  [rsvp] [balance] [nimsg]
debug no qos
debug no qos [info] [config] [rule] [main] [route] [hre] [port] [msg] [sl] [ioctl] [mem] [cam]
  [mapper] [flows] [queue] [slot] [l2] [l3] [classifier] [nat] [sem] [pm] [ingress] [egress]
  [rsvp] [balance] [nimsg]
debug qos internal [slice slot/slice] [flow] [queue] [port] [l2tree] [l3tree] [vector] [pending]
  [verbose] [mapper] [pool] [log] [pingonly | nopingingonly]
qos clear log
qos apply
qos revert
qos flush
```

```

qos reset
qos stats reset [egress]
qos port slot/port reset
qos port slot/port
qos port slot/port trusted
qos port slot/port no trusted
qos port slot/port servicing mode {strict-priority | wrr [w0 w1 w2 w3 w4 w5 w6 w7] | drr
    [w0 w1 w2 w3 w4 w5 w6 w7] | default}
qos port slot/port qn maxbw kbps
qos port slot/port no qn maxbw kbps
qos port slot/port maximum egress-bandwidth bps
qos port slot/port no maximum egress-bandwidth
qos port slot/port maximum ingress-bandwidth bps
qos port slot/port no maximum ingress-bandwidth
qos port slot/port default 802.1p value
qos port slot/port default dscp value
qos port slot/port default classification {802.1p | dscp}
qos port slot/port dei [egress]
qos port slot/port no dei [egress]
show qos port [slot/port] [statistics]
show qos queue [slot/port]
show qos queue statistics [slot/port]
show qos slice [slot/slice]
show qos log
show qos config
show qos statistics
qos register shared buffers <num>
qos port[slot/port] register profile <num>
show qos register

```

QoS Policy Commands

```

policy rule rule_name [enable | disable] [precedence precedence] [condition condition]
    [action action] [validity period name | no validity period] [save] [accounting | no
    accounting] [log [interval seconds]] [count {packets | bytes}] [trap | no trap]
no policy rule rule_name
policy rule rule_name [no reflexive] [no save] [no log]
policy rule <rule_name> accounting
policy rule <rule_name> no accounting
policy validity period name [[no] days days] [[no] months months] [[no] hours hh:mm to
    hh:mm | no hours] [interval mm:dd:yyyy hh:mm to mm:dd:yyyy hh:mm | no
    interval]
no policy validity period name

```

```

policy network group net_group ip_address [mask net_mask] [ip_address2 [mask
    net_mask2]...]
no policy network group net_group
policy network group net_group no ip_address [mask netmask] [ip_address2 [mask
    net_mask2]...]
policy service group service_group service_name1 [service_name2...]
no policy service group service_group
policy service group service_group no service_name1 [service_name2...]
policy mac group mac_group mac_address [mask mac_mask] [mac_address2 [mask
    mac_mask2]...]
no policy mac group mac_group
policy mac group mac_group no mac_address [mask mac_mask] [mac_address2
    [mask mac_mask2]...]
policy port group group_name [mode {split | non-split}] slot/port[-port] [slot/port[-
    port]...]
no policy port group group_name
policy port group group_name no slot/port[-port] [slot/port[-port]...]
policy vlan group group_name vlanstart[-vlanend] [vlanstart2[-vlanend2]...]
no policy vlan group group_name
policy vlan group group_name no vlanstart[-vlanend] [vlanstart2[-vlanend2]...]
policy map group map_group {value1:value2...}
no policy map group map_group
policy map group no {value1:value2...}
policy service service_name
no policy service service_name
policy service service_name protocol protocol {[source ip port port[-port]]
    [destination ip port port[-port]]}
no policy service service_name
policy service service_name [no source ip port] [no destination ip port]
policy service service_name source tcp port port[-port]
no policy service service_name
policy service service_name no source tcp port
policy service service_name destination tcp port port[-port]
no policy service service_name
policy service service_name no destination tcp port
policy service service_name source udp port port[-port]
no policy service service_name
policy service service_name no source udp port
policy service service_name destination udp port port[-port]
no policy service service_name
policy service service_name no destination udp port
policy condition condition_name
no policy condition condition_name
policy condition condition_name source ip ip_address [mask netmask]

```

policy condition *condition_name* no source ip
 policy condition *condition_name* source ipv6 {any | *ipv6_address* [mask *netmask*]}
 policy condition *condition_name* no source ipv6
 policy condition *condition_name* destination ip *ip_address* [mask *netmask*]
 policy condition *condition_name* no destination ip
 policy condition *condition_name* destination ipv6 {any | *ipv6_address* [mask *netmask*]}
 policy condition *condition_name* no destination ipv6
 policy condition *condition_name* multicast ip *ip_address* [mask *netmask*]
 policy condition *condition_name* no multicast ip
 policy condition *condition_name* source network group *network_group*
 policy condition *condition_name* no source network group
 policy condition *condition_name* destination network group *network_group*
 policy condition *condition_name* no destination network group
 policy condition *condition_name* multicast network group *multicast_group*
 policy condition *condition_name* no multicast network group
 policy condition *condition_name* source ip port *port*[-*port*]
 policy condition *condition_name* no source ip port
 policy condition *condition_name* destination ip port *port*[-*port*]
 policy condition *condition_name* no destination ip port
 policy condition *condition_name* source tcp port *port*[-*port*]
 policy condition *condition_name* no source tcp port
 policy condition *condition_name* destination tcp port *port*[-*port*]
 policy condition *condition_name* no destination tcp port
 policy condition *condition_name* source udp port *port*[-*port*]
 policy condition *condition_name* no source udp port
 policy condition *condition_name* destination udp port *port*[-*port*]
 policy condition *condition_name* no destination udp port
 policy condition *condition_name* ethertype *etype*
 policy condition *condition_name* no ethertype
 policy condition *condition_name* established
 policy condition *condition_name* no established
 policy condition *condition_name* tcpflags {any | all} {F | S | R | P | A | U | E | W} mask {F | S | R | P | A | U | E | W}
 policy condition *condition_name* no tcpflags
 policy condition *condition_name* service *service_name*
 policy condition *condition_name* no service
 policy condition *condition_name* service group *service_group*
 policy condition *condition_name* no service group
 policy condition *condition_name* icmptype *type*
 policy condition *condition_name* no icmptype
 policy condition *condition_name* icmpcode *code*
 policy condition *condition_name* no icmpcode
 policy condition *condition_name* ip protocol *protocol*

policy condition *condition_name* no ip protocol
 policy condition *condition_name* ipv6
 policy condition *condition_name* no ipv6
 policy condition *condition_name* tos *tos_value* [mask *tos_mask*]
 policy condition *condition_name* no tos
 policy condition *condition_name* dscp {*dscp_value*[-*value*]} [mask *dscp_mask*]
 policy condition *condition_name* no dscp
 policy condition *condition_name* source mac *mac_address* [mask *mac_mask*]
 policy condition *condition_name* no source mac
 policy condition *condition_name* destination mac *mac_address* [mask *mac_mask*]
 policy condition *condition_name* no destination mac
 policy condition *condition_name* source mac group *group_name*
 policy condition *condition_name* no source mac group
 policy condition *condition_name* destination mac group *mac_group*
 policy condition *condition_name* no destination
 policy condition *condition_name* source vlan *vlan_id*
 policy condition *condition_name* no source vlan
 policy condition *condition_name* source vlan group *vlan_group*
 policy condition *condition_name* no source vlan group
 policy condition *condition_name* destination vlan *vlan_id*
 policy condition *condition_name* no destination vlan
 policy condition *condition_name* 802.1p *802.1p*[-*802.1p_end*]
 policy condition *condition_name* no 802.1p
 policy condition *condition_name* source port *slot/port*[-*port*]
 policy condition *condition_name* no source port
 policy condition *condition_name* destination port *slot/port*[-*port*]
 policy condition *condition_name* no destination port
 policy condition *condition_name* source port group *group_name*
 policy condition *condition_name* no source port group
 policy condition *condition_name* destination port group *group_name*
 policy condition *condition_name* no destination port
 policy action *action_name*
 policy no action *action_name*
 policy list *list_name* type {unp | egress} rules *rule_name* [*rule_name2*...] [enable | disable]
 no policy list *list_name*
 policy list *list_name* no rules *rule_name* [*rule_name2*...]
 policy action *action_name* disposition {accept | drop | deny}
 policy action *action_name* no disposition
 policy action *action_name* shared
 policy action *action_name* no shared
 policy action *action_name* priority *priority_value*
 policy action *action_name* no priority
 policy action *action_name* maximum bandwidth *bps*

policy action *action_name* no maximum bandwidth
 policy action *action_name* maximum depth *bytes*
 policy action *action_name* no maximum depth
 policy action *action_name* cir bps [*cbs* byte] [*pir* bps] [*pbs* byte]
 policy action *action_name* no cir bps
 policy action *action_name* tos *tos_value*
 policy action *action_name* no tos
 policy action *action_name* 802.1p *802.1p_value*
 policy action *action_name* no 802.1p
 policy action *action_name* dscp *dscp_value*
 policy action *action_name* no dscp
 policy action map {802.1p | tos | dscp} to {802.1p | tos | dscp} using *map_group*
 policy action no map
 policy action *action_name* permanent gateway ip *ip_address*
 policy action *action_name* no permanent gateway ip
 policy action *action_name* port-disable
 policy action *action_name* no port-disable
 policy action *action_name* redirect port *slot/port*
 policy action *action_name* no redirect port
 policy action *action_name* redirect linkagg *link_agg*
 policy action *action_name* no redirect linkagg
 policy action *action_name* no-cache
 policy action *action_name* no no-cache
 policy action *action_name* ingress mirror *slot/port*
 policy action *action_name* no mirror *slot/port*
 show policy classify {12 | 13 | multicast} [applied]
 show policy classify {12 | 13 | multicast} [applied] source port *slot/port*
 show policy classify {12 | 13 | multicast} [applied] source mac *mac_address*
 show policy classify {12 | 13 | multicast} [applied] destination mac *mac_address*
 show policy classify {12 | 13 | multicast} [applied] source vlan *vlan_id*
 show policy classify {12 | 13 | multicast} [applied] destination vlan *vlan_id*
 show policy classify {12 | 13 | multicast} [applied] source interface type {ethernet | wan |
 ethernet-10 | ethernet-100 | ethernet-1G | ethernet-10G}
 show policy classify {12 | 13 | multicast} [applied] source ip *ip_address*
 show policy classify {12 | 13 | multicast} [applied] destination ip *ip_address*
 show policy classify {12 | 13 | multicast} [applied] multicast ip *ip_address*
 show policy classify {12 | 13 | multicast} [applied] tos *tos_value*
 show policy classify {12 | 13 | multicast} [applied] dscp *dscp_value*
 show policy classify {12 | 13 | multicast} [applied] ip protocol *protocol*
 show policy classify {12 | 13 | multicast} [applied] source ip port *port*
 show policy classify {12 | 13 | multicast} [applied] destination ip port *port*
 show [applied] policy network group [*network_group*]
 show [applied] policy service [*service_name*]
 show [applied] policy service group [*service_group*]

show [applied] policy mac group [*mac_group*]
 show [applied] policy port group [*group_name*]
 show [applied] policy vlan group [*group_name*]
 show [applied] policy map group [*group_name*]
 show [applied] policy action [*action_name*]
 show [applied] policy list [*list_name*]
 show [applied] policy condition [*condition_name*]
 show active policy list [*list_name*]
 show active [bridged | routed | multicast] policy rule [*rule_name*] [extended]
 show active policy rule [*rule_name*] accounting
 show active policy list [*list_name*] accounting [details]
 show active policy rule [*rule_name*] meter-statistics [extended]
 show [applied] [bridged | routed | multicast] policy rule [*rule_name*]
 show policy validity period [*name*]

Policy Server Commands

policy server load
 policy server flush
 policy server *ip_address* [port *port_number*] [admin {up | down}] [preference
 preference] [user *user_name* password *password*] [searchbase *search_string*]
 [ssl | no ssl]
 no policy server *ip_address* [port *port_number*]
 show policy server
 show policy server long
 show policy server statistics
 show policy server rules
 show policy server events

IP Multicast Switching Commands

ip multicast [vlan *vid*] status [{enable | disable}]
 ip multicast dynamic-control drop-all status [{enable | disable}]
 ip multicast [vlan *vid*] querier-forwarding [{enable | disable}]
 no ip multicast [vlan *vid*] querier-forwarding
 ip multicast [vlan *vid*] version [*version*]
 ip multicast static-neighbor vlan *vid* port *slot/port*
 no ip multicast static-neighbor vlan *vid* port *slot/port*
 ip multicast static-querier vlan *vid* port *slot/port*
 no ip multicast static-querier vlan *vid* port *slot/port*
 ip multicast static-group *ip_address* vlan *vid* port *slot/port* [receiver-vlan <*num*>]
 no ip multicast static-group *ip_address* vlan *vid* port *slot/port* [receiver-vlan <*num*>]
 ip multicast [vlan *vid*] query-interval [*seconds*]


```

ip multicast [vlan vid] last-member-query-interval [tenths-of-seconds]
ip multicast [vlan vid] query-response-interval [tenths-of-seconds]
ip multicast [vlan vid] unsolicited-report-interval [seconds]
ip multicast [vlan vid] router-timeout [seconds]
ip multicast [vlan vid] source-timeout [seconds]
ip multicast [vlan vid] querying [{enable | disable}]
no ip multicast [vlan vid] querying
ip multicast [vlan vid] robustness [robustness]
ip multicast [vlan vid] spoofing [{enable | disable}]
no ip multicast [vlan vid] spoofing
ip multicast [vlan vid] zapping [{enable | disable}]
ip multicast [vlan vid] proxying [enable | disable]
ipv6 multicast [vlan vid] status [{enable | disable}]
ipv6 multicast [vlan vid] querier-forwarding [{enable | disable}]
no ipv6 multicast [vlan vid] querier-forwarding
ipv6 multicast [vlan vid] version [version]
ipv6 multicast static-neighbor vlan vid port slot/port
no ipv6 multicast static-neighbor vlan vid port slot/port
ipv6 multicast static-querier vlan vid port slot/port
no ipv6 multicast static-querier vlan vid port slot/port
ipv6 multicast static-group ip_address vlan vid port slot/port
no ipv6 multicast static-group ip_address vlan vid port slot/port
ipv6 multicast [vlan vid] query-interval [seconds]
ipv6 multicast [vlan vid] last-member-query-interval [milliseconds]
ipv6 multicast [vlan vid] query-response-interval [milliseconds]
ipv6 multicast [vlan vid] unsolicited-report-interval [seconds]
ipv6 multicast [vlan vid] router-timeout [seconds]
ipv6 multicast [vlan vid] source-timeout [seconds]
ipv6 multicast [vlan vid] querying [{enable | disable}]
no ipv6 multicast [vlan vid] querying
ipv6 multicast [vlan vid] robustness [robustness]
ipv6 multicast [vlan vid] spoofing [{enable | disable}]
no ipv6 multicast [vlan vid] spoofing
ipv6 multicast [vlan vid] zapping [{enable | disable}]
ipv6 multicast [vlan vid] proxying [enable | disable]
show ip multicast [vlan vid]
show ip multicast forward [ip_address]
show ip multicast neighbor
show ip multicast querier
show ip multicast group [ip_address]
show ip multicast source [ip_address]
show ipv6 multicast [vlan vid]
show ipv6 multicast forward [ipv6_address]
show ipv6 multicast neighbor

```

```

show ipv6 multicast querier
show ipv6 multicast group [ip_address]
show ipv6 multicast source [ip_address]

```

IP Multicast VLAN

Commands

```

vlan ipmvlan ipmvlan-id [{enable | disable} | [{1x1 | flat} stp {enable | disable}]] [name
name-string] [svlan]
no vlan ipmvlan ipmvlan-id [-ipmvlan-id2]
vlan ipmvlan ipmvlan-id ctag {ctag | ctag1-ctag2}
no vlan ipmvlan ipmvlan-id ctag {ctag | ctag1-ctag2}
vlan ipmvlan ipmvlan-id address {ip_address | ipv6_address | ipaddress1-
ipaddress2 | ipv6address1-ipv6address2}
no vlan ipmvlan ipmvlan-id address {ip_address | ipv6_address | ipaddress1-
ipaddress2 | ipv6address1-ipv6address2}
vlan ipmvlan ipmvlan-id sender-port {port slot/port[-port2] / linkagg agg_num [-
agg_num2]}
no vlan ipmvlan ipmvlan-id sender-port {port slot/port[-port2] / linkagg agg_num [-
agg_num2]}
vlan ipmvlan ipmvlan-id receiver-port {port slot/port[-port2] / linkagg agg_num [-
agg_num2]}
[receiver vlan-id]
no vlan ipmvlan ipmvlan-id receiver-port {port slot/port[-port2] / linkagg agg_num [-
agg_num2]}
[receiver vlan-id]
vlan svlan port {slot/port | agg_num} translate cvlan customer-vlan-id {ipmvlan
ipmvlan-id | svlan svlan-id}
vlan svlan port {slot/port | agg_num} cvlan customer-vlan-id no ipmvlan ipmvlan-id
show vlan ipmvlan [ipmvlan-id] c-tag
show vlan ipmvlan [ipmvlan-id] address
show vlan ipmvlan [ipmvlan-id] port-config

show vlan ipmvlan port-config [slot/port | agg_num]
show vlan ipmvlan port-binding [slot/port | agg_num]

```

AAA Commands

```

aaa radius-server server host {hostname | ip_address} [hostname2 | ip_address2] key
secret [retransmit retries] [timeout seconds] [auth-port auth_port] [acct-port
acct_port] [mac-address-format-status {enable | disable} mac-address-format
{uppercase | lowercase}] [nas-port {default | ifindex} |
nas-port-id {enable | disable}] nas-port-type [xds1 | x75x25 | x25 | wireless-other |
wireless-ieee-802-11 | virtual | sync | sds1-symmetric-dsl | p1afs | isdn-sync | isdn-async]

```

```

v120 | isdn-async-v110 | idsl |
hdlc-clear-channel | g3-fax | Ethernet | cable | async | adsl-dmt | adsl-cap-asymmetric-dsl |
[unique-acct-session-id {enable | disable}]
no aaa radius server server
aaa test-radius-server server-name type {authentication user user-name password
password [method {MD5 | PAP}] | accounting user user-name}
aaa tacacs+-server server [host {hostname | ip_address} {hostname2 | ip_address2}]
[key secret]
[timeout seconds] [port port]
no aaa tacacs+-server server
aaa tacacs command-authorization {enable | disable}
aaa tacacs server-wait-time num
aaa ldap-server server_name [host {hostname | ip_address} [{hostname2 |
ip_address2}]] [dn dn_name] [password super_password] [base search_base]
[retransmit retries] [timeout seconds] [ssl | no ssl] [port port]
no aaa ldap-server server-name
aaa ace-server clear
aaa authentication {console | telnet | ftp | http | snmp | ssh | default} server1 [server2...]
[local]
no aaa authentication {console | telnet | ftp | http | snmp | ssh | default}
aaa authentication {console | telnet | ftp | http | snmp | ssh} default
aaa authentication 802.1x server1 [server2] [server3] [server4] [server5]
no aaa authentication 802.1x
aaa authentication MAC server1 [server2] [server3] [server4] [server5]
no aaa authentication MAC
aaa accounting 802.1x server1 [server2...] [local]
no aaa accounting 802.1x
aaa accounting mac server1 [server2...] [local]
no aaa accounting mac
aaa accounting session server1 [server2...] [local]
no accounting session
aaa accounting command server1 [server2...] [local]
no accounting command
user username [password password] [expiration {day | date}] [read-only | read-write
[families... / domains... / all | none]] [no snmp | no auth | sha | md5 | sha+des |
md5+des] [end-user profile name]
no user username
password
user password-size min size
user password-expiration {day / disable}
user password-policy cannot-contain-username {enable | disable}
user password-policy min-uppercase number
user password-policy min-lowercase number
user password-policy min-digit number

```

```

user password-policy min-nonalpha number
user password-history number
user password-min-age days
user lockout-window minutes
user lockout-threshold number
user lockout-duration minutes
user profile {lockout | unlock}
aaa admin-logout {mac-address mac_address | port slot/port | user user_name | user-
network-profile name profile_name}
end-user profile name [read-only [area | all]] [read-write [area | all]] [disable [area | all]]
no end-user profile name
end-user profile name vlan-range vlan_range [vlan_range2...]
end-user profile name no vlan-range vlan1 [vlan2...]
aaa user-network-profile name profile_name vlan vlan-id [hic {enable | disable}] [redirect
url url_name] [policy-list-name list_name] [maximum-ingress-bandwidth num [K(kilo) |
M(mega) | G (giga) | T (tera)]] [maximum-egress-bandwidth num [K(kilo) | M(mega) | G
(giga) | T (tera)]] [maximum-default-depth num [K(kilo) | M(mega) | G (giga) | T (tera)]]
no aaa user-network-profile name name
aaa classification-rule mac-address mac_address user-network-profile name
profile_name
aaa classification-rule no mac-address mac_address
aaa classification-rule mac-address-range low_mac_address high_mac_address user-
network-profile name profile_name
aaa classification-rule no mac-address-range low_mac_address
aaa classification-rule ip-address ip_address [subnet_mask] user-network-profile name
profile_name
aaa classification-rule no ip-address ip_address [subnet_mask]
aaa hic server-name server ip-address ip_address key key [role {primary | backup}] [udp-
port udp_port]
aaa hic no server-name server
aaa hic allowed-name server ip-address ip_address [mask subnet_mask]
aaa hic no allowed-name server
aaa hic {enable | disable}
aaa hic web-agent-url url
aaa hic custom-proxy-port proxy_port
aaa hic redundancy background-poll-interval value
aaa hic server-failure mode {hold | passthrough}
aaa hic server-failure policy user-network-profile change unp1 to unp2
aaa hic server-failure policy user-network-profile no change
show aaa server [server_name]
show aaa authentication
show aaa authentication 802.1x
show aaa authentication mac
show aaa authentication 802.1x

```

```

show aaa authentication mac [statistics]
show aaa accounting
show user [username]
show user password-size
show user password-expiration
show user password-policy
show user lockout-setting
debug command-info {enable | disable}
debug end-user profile name
show end-user profile name
show aaa classification-rule {mac-rule | mac-range-rule | ip-net-rule}
show aaa priv hexa [domain or family]
aaa redirect-server name ip-address ip_address url-list {redirect_url1 redirect_url2
redirect_url3}
aaa redirect name url {url_name}
aaa port-bounce [slot/port | slot | slot/port1-portn] {enable | disable}
aaa redirect pause-timer seconds

```

```

show aaa redirect-server
show aaa redirect url-list
show aaa port-bounce status slot/port
show aaa redirect pause-timer
show byod host
show byod status slot/port
show aaa user-network-profile

```

```

mdns-relay {enable | disable}
mdns-relay tunnel IP interface name
no mdns-relay tunnel IP interface name
show mdns-relay config

```

802.1x Commands

```

802.1x slot/port [direction {both | in}] [port-control {force-authorized | force-unauthorized
| auto}] [quiet-period seconds] [tx-period seconds] [supp-timeout seconds] [server-
timeout seconds] [max-req max_req] [re-authperiod seconds] [reauthentication | no
reauthentication]
802.1x initialize slot/port
802.1x reauthenticate slot/port
802.1x slot/port supp-polling retry retries
802.1x slot/port supplicant policy authentication [[pass] {group-mobility | vlan
vid | default-vlan | block | captive-portal}...] [[fail] {vlan vid | block | captive-portal}...]

```

```

802.1x slot/port non-supplicant policy authentication [[pass] {group-mobility |
vlan vid | default-vlan | block | captive-portal}] [[fail] {group-mobility | vlan vid /
default-vlan | block | captive-portal}]
802.1x captive-portal name cp_url_name
802.1x captive-portal no name
802.1x slot/port non-supplicant policy {group-mobility | vlan vid / default-vlan | block |
captive-portal}
802.1x slot/port {supplicant | non-supplicant} policy default
802.1x slot/port captive-portal policy authentication pass {group-mobility | vlan
vid | default-vlan | block} [fail] {group-mobility | vlan vid / default-vlan | block}
802.1x slot/port captive-portal session-limit time
802.1x slot/port captive-portal inactivity-logout {enable | disable}
802.1x slot/port captive-portal retry-count retries
802.1x captive-portal address ip_address
802.1x captive-portal proxy-server-url proxy_url
802.1x captive-portal proxy-server-port proxy_port
802.1x captive-portal no proxy-server-port proxy_port
802.1x captive-portal dns-keyword-list {keyword1 [keyword2] [keyword3]
[keyword4] }
802.1x captive-portal no dns-keyword-list
802.1x captive-portal success-redirect-url redirect_url
802.1x captive-portal no success-redirect-url
802.1x captive-portal fail-redirect-url redirect_url
802.1x captive-portal no fail-redirect-url
802.1x auth-server-down {enable | disable}
802.1x auth-server-down policy {user-network-profile profile_name | block}
802.1x auth-server-down re-authperiod {value}
802.1x auth-server-down {enable | disable}
802.1x auth-server-down policy {user-network-profile profile_name | block}
802.1x auth-server-down re-authperiod {value}
show 802.1x [slot/port]
show 802.1x users [slot/port]
show 802.1x [slot/port]
show 802.1x statistics [slot/port]
show 802.1x device classification policies [slot/port]
show 802.1x captive-portal configuration
show 802.1x non-supplicant [slot/port]
show 802.1x auth-server-down
show 802.1x rate-limit [slot/port]
802.1x slot/port supplicant bypass {enable | disable}
802.1x slot/port non-supplicant allow-eap {pass | fail | noauth | none}
802.1x pass-through {enable | disable}
show 802.1x captive-portal configuration [slot/port]

```

Switch Logging Commands

```
swlog
no swlog
swlog syslog-facility-id {facility_id | integer}
swlog appid {appid | integer} level {level | integer}
no swlog appid appid
swlog remote command-log {enable | disable}
swlog output {console | flash | socket [ip_address]}
no swlog output {console | flash | socket [ip_address]}
swlog output flash file-size bytes
swlog clear
show log swlog
show log swlog [session session_id] [timestamp start_time [end_time]] [appid appid]
[level level]
show swlog
```

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