DIAGNOSTIC GUIDE

RUCKUS FastIron Debug Command Reference, 09.0.10

Supporting FastIron Software Release 09.0.10

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Preface

Contacting RUCKUS Customer Services and Support

The Customer Services and Support (CSS) organization is available to provide assistance to customers with active warranties on their RUCKUS products, and customers and partners with active support contracts.

For product support information and details on contacting the Support Team, go directly to the RUCKUS Support Portal using https://support.ruckuswireless.com, or go to https://www.commscope.com/ruckus and select **Support**.

What Support Do I Need?

Technical issues are usually described in terms of priority (or severity). To determine if you need to call and open a case or access the self-service resources, use the following criteria:

- Priority 1 (P1)—Critical. Network or service is down and business is impacted. No known workaround. Go to the **Open a Case** section.
- Priority 2 (P2)—High. Network or service is impacted, but not down. Business impact may be high. Workaround may be available. Go to the **Open a Case** section.
- Priority 3 (P3)—Medium. Network or service is moderately impacted, but most business remains functional. Go to the **Self-Service Resources** section.
- Priority 4 (P4)—Low. Requests for information, product documentation, or product enhancements. Go to the **Self-Service Resources** section.

Open a Case

When your entire network is down (P1), or severely impacted (P2), call the appropriate telephone number listed below to get help:

- Continental United States: 1-855-782-5871
- Canada: 1-855-782-5871
- Europe, Middle East, Africa, Central and South America, and Asia Pacific, toll-free numbers are available at https://support.ruckuswireless.com/contact-us and Live Chat is also available.
- Worldwide toll number for our support organization. Phone charges will apply: +1-650-265-0903

We suggest that you keep a physical note of the appropriate support number in case you have an entire network outage.

Self-Service Resources

The RUCKUS Support Portal at https://support.ruckuswireless.com offers a number of tools to help you to research and resolve problems with your RUCKUS products, including:

- Technical Documentation—https://support.ruckuswireless.com/documents
- Community Forums—https://forums.ruckuswireless.com/
- Knowledge Base Articles—https://support.ruckuswireless.com/answers
- Software Downloads and Release Notes—https://support.ruckuswireless.com/#products_grid
- Security Bulletins—https://support.ruckuswireless.com/security

Using these resources will help you to resolve some issues, and will provide TAC with additional data from your troubleshooting analysis if you still require assistance through a support case or RMA. If you still require help, open and manage your case at https://support.ruckuswireless.com/case_management.

Document Feedback

RUCKUS is interested in improving its documentation and welcomes your comments and suggestions.

You can email your comments to RUCKUS at #Ruckus-Docs@commscope.com.

When contacting us, include the following information:

- Document title and release number
- Document part number (on the cover page)
- Page number (if appropriate)

For example:

- RUCKUS SmartZone Upgrade Guide, Release 5.0
- Part number: 800-71850-001 Rev A
- Page 7

RUCKUS Product Documentation Resources

Visit the RUCKUS website to locate related documentation for your product and additional RUCKUS resources.

Release Notes and other user documentation are available at https://support.ruckuswireless.com/documents. You can locate the documentation by product or perform a text search. Access to Release Notes requires an active support contract and a RUCKUS Support Portal user account. Other technical documentation content is available without logging in to the RUCKUS Support Portal.

White papers, data sheets, and other product documentation are available at https://www.commscope.com/ruckus .

Online Training Resources

To access a variety of online RUCKUS training modules, including free introductory courses to wireless networking essentials, site surveys, and products, visit the RUCKUS Training Portal at https://commscopeuniversity.myabsorb.com/. The registration is a two-step process described in this video. You create a CommScope account and then register for, and request access for, CommScope University.

Document Conventions

The following table lists the text conventions that are used throughout this guide.

TABLE 1 Text Conventions

Convention	Description	Example
`monospace`	Identifies command syntax examples	`device(config)# interface ethernet 1/1/6`
bold	User interface (UI) components such as screen or page names, keyboard keys, software buttons, and field names	On the **Start** menu, click **All Programs**.
italics	Publication titles	Refer to the *RUCKUS Small Cell Release Notes* for more information.

Notes, Cautions, and Safety Warnings

Notes, cautions, and warning statements may be used in this document. They are listed in the order of increasing severity of potential hazards.

NOTE
A NOTE provides a tip, guidance, or advice, emphasizes important information, or provides a reference to related information.

ATTENTION
An ATTENTION statement indicates some information that you must read before continuing with the current action or task.

CAUTION
A CAUTION statement alerts you to situations that can be potentially hazardous to you or cause damage to hardware, firmware, software, or data.

DANGER
A DANGER statement indicates conditions or situations that can be potentially lethal or extremely hazardous to you. Safety labels are also attached directly to products to warn of these conditions or situations.

Command Syntax Conventions

Bold and italic text identify command syntax components. Delimiters and operators define groupings of parameters and their logical relationships.

Convention	Description
bold text	Identifies command names, keywords, and command options.
italic text	Identifies a variable.
[ ]	Syntax components displayed within square brackets are optional. Default responses to system prompts are enclosed in square brackets.
{**x**| **y**| **z**}	A choice of required parameters is enclosed in curly brackets separated by vertical bars. You must select one of the options.
x|**y**	A vertical bar separates mutually exclusive elements.
< >	Nonprinting characters, for example, passwords, are enclosed in angle brackets.
...	Repeat the previous element, for example, *member*[*member*...].
\	Indicates a “soft” line break in command examples. If a backslash separates two lines of a command input, enter the entire command at the prompt without the backslash.

About This Document

Supported Hardware

This guide supports the following RUCKUS products:

- RUCKUS ICX 7850 Series Switches
- RUCKUS ICX 7650 Series Switches
- RUCKUS ICX 7550 Series Switches
- RUCKUS ICX 7450 Series Switches
- RUCKUS ICX 7250 Series Switches
- RUCKUS ICX 7150 Series Switches

For information about what models and modules these devices support, refer to the hardware installation guide for the specific product family.

New In This Document

The following list describes changes to this guide for all FastIron 09.0.10 and 09.0.00 releases.

NOTE
FastIron releases 09.0.00, 09.0.00a, and 09.0.10 are no longer available for download due to the discovery of a critical defect.

Refer to *TSB 2022-001 – FastIron 09.0.00 and 09.0.10 - Risk of Filesystem Corruption* on the Technical Support Bulletins page for more details.

RUCKUS recommends upgrading to FastIron release 09.0.10a or later for all ICX switches currently running any of the afore-mentioned releases.

All the software features supported in FastIron release 09.0.00, 09.0.00a, and 09.0.10 remain available and supported in FastIron release 09.0.10a and later releases unless specifically noted.

For completeness, the feature descriptions for all changes introduced in the unavailable releases; that is, FastIron 09.0.00, 09.0.00a, and 09.0.10, are included in this section.

TABLE 2 Summary of changes in FastIron release 09.0.10a

Feature	Description	Location
Distributed Logger	Distributed Logger is a simple debug log filtering facility for application debug logs. It provides a common infrastructure for each of the applications to filter logs at sub-module level and the corresponding sub-modules further with different severity levels. This filtering capability provided by the distributed logger helps to perform detailed debugging with complete control on enabling debug logs.	Refer to Distributed Logger on page 19
Accessing debug logs through Log Manager	Beginning with 09.0.00 release, the logs that are generated using the debug and distributed logger utilities are sent to the Log Manager. The Log Manager infrastructure provides the capability to store the application log files in a centralized repository. The centralized repository can be accessed to display the log files using the **show logging debug** command.	Refer to Log Manager on page 20
Log Manager	Log manager is enhanced to upload the fetched logs to an external server. It also allows you to monitor real-time updates to the specified logs on local units.	Refer to Log Manager on page 20
Unsupported hardware	This release and future releases do not support ICX 7750 devices.	References have been removed throughout the guide.
Unsupported feature	This release and future releases do not support Campus Fabric (SPX).	References have been removed throughout the guide.

New Commands for FastIron 09.0.10a

The following commands have been introduced in this release.

- **debug igmp-snoop mvr**

- **debug mem-leak**
- **debug system mem-leak**
- **debug ipv6 pim add-del-oif**
- **debug ipv6 pim level**
- **debug ipv6 pim vrf**
- **debug ipv6 mld event**
- **debug ipv6 mld ifname**
- **debug ipv6 mld ipc**
- **debug ipv6 mld profile**

Modified Commands for FastIron 09.0.10a

The following commands have been modified in this release.

- **debug igmp-snoop**
- **debug ip tcp**
- **debug ipv6 tcp status**
- **debug ipv6 tcp vrf**
- **debug ip pim nbr**
- **debug ipv6 pim nbr**

Deprecated Commands for FastIron 09.0.10a

The following commands have been deprecated in this release.

- **debug all**
- **debug acl log**
- **debug bum-rate-limit**
- **debug cluster aging-disable**
- **debug cluster all**
- **debug cluster bpdu-forwarding**
- **debug cluster ccp**
- **debug cluster client-auto-detect**
- **debug cluster config**
- **debug cluster forwarding**
- **debug cluster fsm**
- **debug cluster icl-na-disable**
- **debug cluster intf-mac**
- **debug cluster mdup**
- **debug cluster show**
- **debug cluster stp**
- **debug ddos-attack**

- **debug destination**
- **debug dot1x hitless**
- **debug dot1x-events**
- **debug dot1x-filter**
- **debug dot1x-misc**
- **debug dot1x-mka**
- **debug dot1x-packets**
- **debug dot1x-timers**
- **debug gvrp**
- **debug ip arp inspection**
- **debug ip dhcp snooping**
- **debug ip igmp add-del-oif all**
- **debug ip igmp down-port**
- **debug ip igmp packet**
- **debug ip igmp prime-port ethernet**
- **debug ip igmp timer**
- **debug ip pim control-source**
- **debug ip pim physical-port ethernet**
- **debug ip source guard**
- **debug ip source_guard_print_counter**
- **debug ip source_guard_print_timers**
- **debug ip source_guard_reset_counter**
- **debug ip source_guard_trasaction-db**
- **debug ipv6 mld add-del-oif all**
- **debug ipv6 mld detail**
- **debug ipv6 mld mcache-group**
- **debug ipv6 mld prime-port ethernet**
- **debug ipv6 mld timer**
- **debug ipv6 mld vlan**
- **debug ipv6 raguard**
- **debug mac-authentication**
- **debug mld-snoop mcache-group**
- **debug pp-bum-trunk-hash**
- **debug stack pe control**
- **debug stack pe mac**
- **debug stack pe topo**
- **debug tcam-snapshot-dump**
- **debug traffic-policy**
- **show tech-support**

- **restconf platform-debug-level**
- **restconf protocol-debug-level**

Using diagnostic commands

Enabling Debugs

This chapter describes how to use debug commands to monitor and troubleshoot the device configurations. The debug commands are accessible from the Privileged EXEC mode in the RUCKUS command line interface (CLI).

Many debug commands are specifically designed to be used in conjunction with calls to RUCKUS Technical Support. If you report a problem, the support engineer may ask you to execute one or more of the debug commands described in this guide.

> **ATTENTION**
> Some debug commands report information about internal hardware settings and registers, which is relevant primarily to the RUCKUS engineering staff. These commands are not described in this document.

There are 2 ways to enable debugs:

- Debug
- Distributed Logger

The logs that are generated using debug and distributed logger utilities are sent to Log Manager. For more information refer to Log Manager on page 20.

Debug

The debug commands display information about the device operations, generated or received traffic, and any error messages. The output from the **debug** commands provides diagnostic information that include a variety of events relating to protocol status and network activity in general.

Distributed Logger

Distributed Logger (dlogger) is a simple debug log filtering facility for application debug logs. It provides a common infrastructure for each of the applications to filter logs at sub-module level and the corresponding sub-modules further with different severity levels. This filtering capability provided by the distributed logger helps to perform detailed debugging with complete control on enabling debug logs.

It has the capability to classify always-on logs and on-demand logs based on severity level. The always-on logs that is, logs with high severity (0-4), are logged into Log Manager by default. Manual configuration is required to log the low-severity logs.

There are certain modules that are supported in distributed logger but do not have the filtering capability. Their logs are directly logged only into the circular buffer and will not be logged in the Log Manager. These logs can be displayed using the **show dlogger logs** command. For more information on enabling distributed logger and viewing the debug logs, refer to Viewing logs for debugs enabled using distributed logger utility on page 27.

Disabling debug commands

When activated, most debug commands instruct the system to collect specific information about router configurations and activity. In all cases, adding **no** in front of the command disables the debug function.

Log Manager

The Log Manager infrastructure provides the capability to store the application log files in a centralized repository. The centralized repository can be accessed for viewing the log files (to aid in taking appropriate troubleshooting actions). By default, all logs are enabled and the log files are categorized based on module, sub-module, and severity levels. Each entry in a log file has important information, including module, sub-module, severity level, unit number, and timestamp.

Log Manager provides the list of supported modules and sub-modules. To display the module and sub-module hierarchy, use the **logmgr hierarchy** command.

> **NOTE**
> You must use the exact module names and sub-module names as listed in the log manager hierarchy for all Log Manager operations.

Log Manager provides the following options:

- List Logs: Allows you to list the size of existing logs on any connected units using the **logmgr list** command. The logs are listed separately for each unit.
- Fetch Logs: Allows you to collect logs from any connected units and store them locally using the **logmgr fetch** command.
- Display Logs: Allows you to view the fetched logs using the **show logging debug** command. When viewing multiple logs, the log files are merged, sorted by timestamp, and stored in a file. If a fetch operation is not run or the fetched logs have been cleared using the **logmgr clear-fetched-logs** command, only local logs are displayed.
- Upload Logs: Allows you to upload the fetched logs to an external server using the **logmgr upload** command.
- Monitor Logs: Allows you to monitor real-time updates to the specified logs on local units.

You can use the **logmgr help** command to get the details about the usage, syntax, and examples of Log Manager commands.

The total memory reserved for all the log files in a unit is restricted to 5 MB on the RUCKUS ICX 7150, and 10 MB for all other ICX 7xxx platforms.

Log Message Severity Levels

The severity levels of the log messages are described in the following table.

TABLE 3 Log Message Severity Levels

Numerical Code	Severity	Description
0	Emergency	System is unusable
1	Alert	Action must be taken immediately
2	Critical	Critical conditions
3	Error	Error conditions
4	Warning	Warning conditions
5	Notice	Normal but significant conditions
6	Informational	Informational messages
7	Debug	Debug-level messages

Severity levels are further categorized into High and Low:

- High: Emergency, Alert, Critical, and Error
- Low: Warning, Notice, Informational, and Debug

Viewing logs for debugs enabled using debug utility

The following example shows the configuration steps to generate and view debug logs using debug utility.

1. Enable all debug functions or enable debugging for a specific module.

   ```
   device# debug metro-ring bpdu
   ```

   The logs will be generated and maintained in the Log Manager.

2. Find the Log Manager hierarchy of the supported modules and sub-modules.

```
device# logmgr hierarchy
-------------------------------------------------------------
| Module            | Submodule          |      Size (KB) |
-------------------------------------------------------------
  system              system_sub                      472.5
  system              Total                           472.5
  platform            platform_sub                     94.5
  platform            chassis                          94.5
  platform            link                             94.5
  platform            plm                              94.5
  platform            poe                              94.5
  platform            Total                           472.5
  infra               stacking                        109.4
  infra               cfg_sync_lib                     65.6
  infra               cfg_sync_proc                    65.6
  infra               qos                              65.6
  infra               logmgr_lib                       65.6
  infra               logmgr_proc                      65.6
  infra               log_clf_fe                       21.9
  infra               log_clf_be                       21.9
  infra               conf_archive                     65.6
  infra               infra_cmn                        21.9
  infra               fitrace_fe                       21.9
  infra               rcm                             109.4
  infra               itc                              65.6
  infra               ssave                            21.9
  infra               Total                           787.6
  l2                  l2_sub                           27.8
  l2                  vlan                             27.8
  l2                  lag                              27.8
  l2                  udld                             27.8
  l2                  mvrp                             27.8
  l2                  fdb                              27.8
  l2                  pvlan                            27.8
  l2                  stp                              27.8
  l2                  rstp                             27.8
  l2                  mstp                             27.8
  l2                  mrp                              27.8
  l2                  lldp                             27.8
  l2                  erlb                             27.8
  l2                  loam                             27.8
  l2                  l2port                           27.8
  l2                  mct                              27.8
  l2                  flexlink                         27.8
  l2                  Total                           472.5
  l3                  l3_sub                          472.5
  l3                  Total                           472.5
  mcast               mcast_sub                        94.5
  mcast               l3mcast                          94.5
  mcast               mcrep                            94.5
  mcast               igmp-snoop                       94.5
  mcast               mld-snoop                        94.5
  mcast               Total                           472.5
  security            security_sub                     22.5
  security            ra_gaurd                         22.5
  security            dhcp6snoop                       22.5
  security            dhcpsnoop                        22.5
  security            ndi                              22.5
  security            macsec                           22.5
  security            acl_accounting                   22.5
  security            flexauth                         22.5
  security            webauth                          22.5
  security            fvcmgr                           22.5
  security            aclinfra                         22.5
  security            pbrl                             22.5
  security            brl                              22.5
  security            utp                              22.5
  security            gendistfw                        22.5
  security            sflow                            22.5
```

```
security            ippolicy                    22.5
security            sourcegaurd                 22.5
security            aclhitless                  22.5
security            dai                         22.5
security            ddos                        22.5
security            Total                      472.5
management          nms_sub                     31.5
management          clish                       52.5
management          cli_dict                    52.5
management          clam                        52.5
management          lldp                        31.5
management          restconf                    31.5
management          dhcpv4_client               31.5
management          dhcpv4_server               31.5
management          dhcpv6_server               31.5
management          snmpagentd                  31.5
management          manager                     52.5
management          plugin                      31.5
management          slam                        31.5
management          aaa                         31.5
management          snmpd_traps                 31.5
management          web                         31.5
management          rcm                         52.5
management          cfg_par                     52.5
management          nginx                       31.5
management          uwsgi                       31.5
management          rconsole                    31.5
management          Total                      787.6
fi_debug            debug_logs                 472.5
fi_debug            Total                      472.5
```

You must use the exact module names and sub-module names as listed in the log manager hierarchy for all Log Manager operations.

In this example for "*metro-ring*", the corresponding module and sub-module names in the log manager hierarchy are "*L2*" and "*mrp*" .

3. Fetch (create a local copy) the required logs from local and remote units. Fetch is used for stack environment.

```
device# logmgr fetch l2 mrp all all
```

4. View debug logs from the log manager.

```
device# show logging debug l2 mrp all all
May 28 14:29:59:998237:debug:l2:mrp:1:659616782353921: rhp-processing : MASTER(ring3) dropping
RHP(ring#3) sequence number 1370
May 28 14:29:59:898500:debug:l2:mrp:1:659599602484737: rhp-processing : MASTER(ring3) dropping
RHP(ring#3) sequence number 1369
May 28 14:29:59:798146:debug:l2:mrp:1:659586717582849: rhp-processing : MASTER(ring3) dropping
RHP(ring#3) sequence number 1368
May 28 14:29:59:704492:debug:l2:mrp:1:659556652811777: rhp-processing : MASTER(ring3) dropping
RHP(ring#3) sequence number 1367
May 28 14:29:59:598217:debug:l2:mrp:1:659526588040705: rhp-processing : MASTER(ring3) dropping
RHP(ring#3) sequence number 1366
May 28 14:29:59:498257:debug:l2:mrp:1:659522293073409: rhp-processing : MASTER(ring3) dropping
RHP(ring#3) sequence number 1365
May 28 14:29:59:398655:debug:l2:mrp:1:659517998106113: rhp-processing : MASTER(ring3) dropping
RHP(ring#3) sequence number 1364
May 28 14:29:59:298205:debug:l2:mrp:1:659513703138817: rhp-processing : MASTER(ring3) dropping
RHP(ring#3) sequence number 1363
May 28 14:29:59:198234:debug:l2:mrp:1:659509408171521: rhp-processing : MASTER(ring3) dropping
RHP(ring#3) sequence number 1362
May 28 14:29:59:098150:debug:l2:mrp:1:659483638367745: rhp-processing : MASTER(ring3) dropping
RHP(ring#3) sequence number 1361
May 28 14:29:58:998129:debug:l2:mrp:1:659479343400449: rhp-processing : MASTER(ring3) dropping
RHP(ring#3) sequence number 1360
May 28 14:29:58:898510:debug:l2:mrp:1:659462163531265: rhp-processing : MASTER(ring3) dropping
RHP(ring#3) sequence number 1359
May 28 14:29:58:798604:debug:l2:mrp:1:659453573596673: rhp-processing : MASTER(ring3) dropping
RHP(ring#3) sequence number 1358
May 28 14:29:58:698561:debug:l2:mrp:1:659440688694785: rhp-processing : MASTER(ring3) dropping
RHP(ring#3) sequence number 1357
May 28 14:29:58:598168:debug:l2:mrp:1:659419213858305: rhp-processing : MASTER(ring3) dropping
RHP(ring#3) sequence number 1356
May 28 14:29:58:498128:debug:l2:mrp:1:659414918891009: rhp-processing : MASTER(ring3) dropping
RHP(ring#3) sequence number 1355
May 28 14:29:58:398702:debug:l2:mrp:1:659406328956417: rhp-processing : MASTER(ring3) dropping
RHP(ring#3) sequence number 1354
May 28 14:29:58:298202:debug:l2:mrp:1:659397739021825: rhp-processing : MASTER(ring3) dropping
RHP(ring#3) sequence number 1353
May 28 14:29:58:198209:debug:l2:mrp:1:659393444054529: rhp-processing : MASTER(ring3) dropping
RHP(ring#3) sequence number 1352
May 28 14:29:58:101057:debug:l2:mrp:1:659371969218049: rhp-processing : MASTER(ring3) dropping
RHP(ring#3) sequence number 1351
May 28 14:29:57:998183:debug:l2:mrp:1:659324724577793: rhp-processing : MASTER(ring3) dropping
RHP(ring#3) sequence number 1350
May 28 14:29:57:898609:debug:l2:mrp:1:659320429610497: rhp-processing : MASTER(ring3) dropping
RHP(ring#3) sequence number 1349
May 28 14:29:57:798197:debug:l2:mrp:1:659311839675905: rhp-processing : MASTER(ring3) dropping
RHP(ring#3) sequence number 1348
May 28 14:29:57:698229:debug:l2:mrp:1:659298954774017: rhp-processing : MASTER(ring3) dropping
RHP(ring#3) sequence number 1347
May 28 14:29:57:598799:debug:l2:mrp:1:659273184970241: rhp-processing : MASTER(ring3) dropping
RHP(ring#3) sequence number 1346
May 28 14:29:57:498128:debug:l2:mrp:1:659264595035649: rhp-processing : MASTER(ring3) dropping
RHP(ring#3) sequence number 1345
May 28 14:29:57:398716:debug:l2:mrp:1:659251710133761: rhp-processing : MASTER(ring3) dropping
RHP(ring#3) sequence number 1344
May 28 14:29:57:298657:debug:l2:mrp:1:659243120199169: rhp-processing : MASTER(ring3) dropping
RHP(ring#3) sequence number 1343
May 28 14:29:57:198594:debug:l2:mrp:1:659234530264577: rhp-processing : MASTER(ring3) dropping
RHP(ring#3) sequence number 1342
May 28 14:29:57:098158:debug:l2:mrp:1:659213055428097: rhp-processing : MASTER(ring3) dropping
RHP(ring#3) sequence number 1341
May 28 14:29:56:998116:debug:l2:mrp:1:659208760460801: rhp-processing : MASTER(ring3) dropping
RHP(ring#3) sequence number 1340
May 28 14:29:56:898522:debug:l2:mrp:1:659204465493505: rhp-processing : MASTER(ring3) dropping
RHP(ring#3) sequence number 1339
May 28 14:29:56:798210:debug:l2:mrp:1:659195875558913: rhp-processing : MASTER(ring3) dropping
RHP(ring#3) sequence number 1338
May 28 14:29:56:698104:debug:l2:mrp:1:659191580591617: rhp-processing : MASTER(ring3) dropping
RHP(ring#3) sequence number 1337
```

```
May 28 14:29:56:598673:debug:l2:mrp:1:659170105755137: rhp-processing : MASTER(ring3) dropping
RHP(ring#3) sequence number 1336
May 28 14:29:56:503194:debug:l2:mrp:1:659165810787841: rhp-processing : MASTER(ring3) dropping
RHP(ring#3) sequence number 1335
May 28 14:29:56:407092:debug:l2:mrp:1:659161515820545: rhp-processing : MASTER(ring3) dropping
RHP(ring#3) sequence number 1334
May 28 14:29:56:298204:debug:l2:mrp:1:659152925885953: rhp-processing : MASTER(ring3) dropping
RHP(ring#3) sequence number 1333
May 28 14:29:56:198137:debug:l2:mrp:1:659148630918657: rhp-processing : MASTER(ring3) dropping
RHP(ring#3) sequence number 1332
May 28 14:29:56:101185:debug:l2:mrp:1:659122861114881: rhp-processing : MASTER(ring3) dropping
RHP(ring#3) sequence number 1331
May 28 14:29:55:998206:debug:l2:mrp:1:659118566147585: rhp-processing : MASTER(ring3) dropping
RHP(ring#3) sequence number 1330
```

5. Optionally, view real-time updates to the specified logs on local units.

```
device# logmgr monitor l2:mrp:all
==> /logmgr/logs//l2/mrp_low_tmp.log <==
May 28 14:29:48:098137:debug:l2:mrp:1:658079184061953: rhp-processing : MASTER(ring3) dropping
RHP(ring#3) sequence number 1251
May 28 14:29:48:198297:debug:l2:mrp:1:658104953865729: rhp-processing : MASTER(ring3) dropping
RHP(ring#3) sequence number 1252
May 28 14:29:48:298275:debug:l2:mrp:1:658109248833025: rhp-processing : MASTER(ring3) dropping
RHP(ring#3) sequence number 1253
May 28 14:29:48:398603:debug:l2:mrp:1:658113543800321: rhp-processing : MASTER(ring3) dropping
RHP(ring#3) sequence number 1254
May 28 14:29:48:500269:debug:l2:mrp:1:658117838767617: rhp-processing : MASTER(ring3) dropping
RHP(ring#3) sequence number 1255
May 28 14:29:48:598161:debug:l2:mrp:1:658139313604097: rhp-processing : MASTER(ring3) dropping
RHP(ring#3) sequence number 1256
May 28 14:29:48:698116:debug:l2:mrp:1:658160788440577: rhp-processing : MASTER(ring3) dropping
RHP(ring#3) sequence number 1257
May 28 14:29:48:798215:debug:l2:mrp:1:658173673342465: rhp-processing : MASTER(ring3) dropping
RHP(ring#3) sequence number 1258
May 28 14:29:48:898517:debug:l2:mrp:1:658182263277057: rhp-processing : MASTER(ring3) dropping
RHP(ring#3) sequence number 1259
May 28 14:29:48:998207:debug:l2:mrp:1:658190853211649: rhp-processing : MASTER(ring3) dropping
RHP(ring#3) sequence number 1260

==> /logmgr/logs//l2/mrp_low_tmp.log <==
May 28 14:29:49:098163:debug:l2:mrp:1:658195148178945: rhp-processing : MASTER(ring3) dropping
RHP(ring#3) sequence number 1261
May 28 14:29:49:198520:debug:l2:mrp:1:658220917982721: rhp-processing : MASTER(ring3) dropping
RHP(ring#3) sequence number 1262
May 28 14:29:49:300810:debug:l2:mrp:1:658225212950017: rhp-processing : MASTER(ring3) dropping
RHP(ring#3) sequence number 1263
May 28 14:29:49:398608:debug:l2:mrp:1:658229507917313: rhp-processing : MASTER(ring3) dropping
RHP(ring#3) sequence number 1264
May 28 14:29:49:498174:debug:l2:mrp:1:658233802884609: rhp-processing : MASTER(ring3) dropping
RHP(ring#3) sequence number 1265
May 28 14:29:49:598270:debug:l2:mrp:1:658238097851905: rhp-processing : MASTER(ring3) dropping
RHP(ring#3) sequence number 1266
May 28 14:29:49:698679:debug:l2:mrp:1:658263867655681: rhp-processing : MASTER(ring3) dropping
RHP(ring#3) sequence number 1267
May 28 14:29:49:798155:debug:l2:mrp:1:658298227394049: rhp-processing : MASTER(ring3) dropping
RHP(ring#3) sequence number 1268
May 28 14:29:49:901303:debug:l2:mrp:1:658315407263233: rhp-processing : MASTER(ring3) dropping
RHP(ring#3) sequence number 1269
May 28 14:29:49:998135:debug:l2:mrp:1:658328292165121: rhp-processing : MASTER(ring3) dropping
RHP(ring#3) sequence number 1270
May 28 14:29:50:101427:debug:l2:mrp:1:658332587132417: rhp-processing : MASTER(ring3) dropping
RHP(ring#3) sequence number 1271
May 28 14:29:50:198157:debug:l2:mrp:1:658358356936193: rhp-processing : MASTER(ring3) dropping
RHP(ring#3) sequence number 1272
May 28 14:29:50:298291:debug:l2:mrp:1:658362651903489: rhp-processing : MASTER(ring3) dropping
RHP(ring#3) sequence number 1273
May 28 14:29:50:398631:debug:l2:mrp:1:658366946870785: rhp-processing : MASTER(ring3) dropping
RHP(ring#3) sequence number 1274
May 28 14:29:50:498190:debug:l2:mrp:1:658371241838081: rhp-processing : MASTER(ring3) dropping
RHP(ring#3) sequence number 1275
May 28 14:29:50:598267:debug:l2:mrp:1:658375536805377: rhp-processing : MASTER(ring3) dropping
RHP(ring#3) sequence number 1276
May 28 14:29:50:698145:debug:l2:mrp:1:658397011641857: rhp-processing : MASTER(ring3) dropping
RHP(ring#3) sequence number 1277
May 28 14:29:50:798501:debug:l2:mrp:1:658401306609153: rhp-processing : MASTER(ring3) dropping
RHP(ring#3) sequence number 1278
May 28 14:29:50:901608:debug:l2:mrp:1:658414191511041: rhp-processing : MASTER(ring3) dropping
RHP(ring#3) sequence number 1279
May 28 14:29:50:998128:debug:l2:mrp:1:658418486478337: rhp-processing : MASTER(ring3) dropping
RHP(ring#3) sequence number 1280
May 28 14:29:51:098291:debug:l2:mrp:1:658422781445633: rhp-processing : MASTER(ring3) dropping
RHP(ring#3) sequence number 1281
May 28 14:29:51:198188:debug:l2:mrp:1:658448551249409: rhp-processing : MASTER(ring3) dropping
RHP(ring#3) sequence number 1282
May 28 14:29:51:298162:debug:l2:mrp:1:658452846216705: rhp-processing : MASTER(ring3) dropping
```

```
RHP(ring#3) sequence number 1283
May 28 14:29:51:405487:debug:l2:mrp:1:658461436151297: rhp-processing : MASTER(ring3) dropping
RHP(ring#3) sequence number 1284
May 28 14:29:53:898510:debug:l2:mrp:1:658813623469569: rhp-processing : MASTER(ring3) dropping
RHP(ring#3) sequence number 1309
May 28 14:29:54:001360:debug:l2:mrp:1:658826508371457: rhp-processing : MASTER(ring3) dropping
RHP(ring#3) sequence number 1310
May 28 14:29:54:104241:debug:l2:mrp:1:658830803338753: rhp-processing : MASTER(ring3) dropping
RHP(ring#3) sequence number 1311
May 28 14:29:54:198134:debug:l2:mrp:1:658856573142529: rhp-processing : MASTER(ring3) dropping
RHP(ring#3) sequence number 1312
^Ctelnet@device#
```

This command enables the monitoring mode and simultaneously blocks the CLI. Press Ctrl+C to cancel the monitoring mode.

6. Optionally, upload the fetched logs to an external server.

```
device# logmgr upload tftp 10.198.137.97 GZ.tar
```

Viewing logs for debugs enabled using distributed logger utility

The following example shows the configuration steps to generate and view debug logs using distributed logger utility.

1. Enable debugging for a module registered with distributed logger.

```
device# dlogger module sec_macsec sub-module cli sev all
device# dlogger module sec_macsec sub-module keygen sev all
device# dlogger module sec_macsec sub-module mka sev all
device# dlogger module sec_macsec sub-module tx sev all
device# dlogger module sec_macsec sub-module rx sev all
device# dlogger module sec_macsec sub-module pdu sev all
device# dlogger module sec_macsec sub-module stacking sev all
device# dlogger module sec_macsec sub-module platform sev all
```

The logs will be generated and maintained in the Log Manager.

2. Find the mapping of distributed logger modules to Log Manager modules and sub-modules.

```
device# show dlogger module filter lm-map
Total Module 40
Logger Module to Log Manger Mapping:
-----------------------------------------------------------
 Idx Logger-M             LogMgr-M             LogMgr-Sub-M
-----------------------------------------------------------
   2 l3interface          fi_debug             debug_logs
   4 l3mcast              fi_debug             debug_logs
   6 bfd                  fi_debug             debug_logs
   8 arp                  fi_debug             debug_logs
  11 nexthop-mgr          fi_debug             debug_logs
  13 mcrep-sc             fi_debug             debug_logs
  16 ipv4-unicast         fi_debug             debug_logs
  17 ipv6-unicast         fi_debug             debug_logs
  18 openflow             fi_debug             debug_logs
  19 urpf                 fi_debug             debug_logs
  21 ip-nexthop           fi_debug             debug_logs
  22 keychain             fi_debug             debug_logs
  23 remote-ping          fi_debug             debug_logs
  24 remote-traceroute    fi_debug             debug_logs
  25 igmp-snoop           fi_debug             debug_logs
  26 mld-snoop            fi_debug             debug_logs
  27 mcrep-lc             fi_debug             debug_logs
  28 sec_acl              security             security_sub
  29 sec_acl_acct         fi_debug             debug_logs
  30 sec_macsec           security             macsec
  31 sec_dhcpsnoop        security             security_sub
  32 sec_dhcp6snoop       fi_debug             debug_logs
  33 sec_ndi              fi_debug             debug_logs
  34 sec_raguard          fi_debug             debug_logs
  35 sec_brl              fi_debug             debug_logs
  36 sec_pbrl             fi_debug             debug_logs
  37 sec_aclinfra         fi_debug             debug_logs
  38 webauth              security             webauth
  39 flexauth             security             flexauth
```

You must use the exact Log manager module names and Log manager sub-module names that correspond to the distributed logger module as listed in the **show dlogger module filter lm-map** command output for all Log Manager operations.

In this example for "*sec_macsec*" distributed logger module, the corresponding Log manager module and sub-mudule names are "*security*" and "*macsec*" respectively.

3. Fetch (create a local copy) the required logs from local and remote units.

```
device# logmgr fetch security macsec all all
```

4. View debug logs from the log manager.

```
device# show logging debug security macsec all all
May 29 19:36:50:904422:err:security:macsec:3:34132105102080: cli:[LOGON][CONFIG] - Key is not
configured
May 29 19:36:50:902259:err:security:macsec:3:34132105102080: stacking:[Master][Port-Cfg] Port 2/2/4,
Enable 0
May 29 19:36:50:901984:err:security:macsec:3:34132105102080: stacking:[Master][Port-Indication][Req]
Port 2/2/4
May 29 19:36:50:901807:err:security:macsec:3:34132105102080: Suppressed 1 times: stacking:[Master]
[Port-Cfg] Port 2/2/4, Enable 1
May 29 19:36:50:901254:err:security:macsec:3:34132105102080: stacking:[Master][Port-Cfg] Port 2/2/4,
Enable 1
May 29 19:36:50:004782:err:security:macsec:3:33449205302016: stacking:[Master][Port-Cfg] Port 2/2/4,
Enable 0
May 29 19:36:41:906799:err:security:macsec:3:27324581937920: cli:[LOGON][CONFIG] - Key is not
configured
May 29 19:36:41:905105:err:security:macsec:3:27324581937920: stacking:[Master][Port-Cfg] Port 2/2/4,
Enable 0
May 29 19:36:41:904694:err:security:macsec:3:27324581937920: stacking:[Master][Port-Indication][Req]
Port 2/2/4
May 29 19:36:41:904658:err:security:macsec:3:27324581937920: Suppressed 1 times: stacking:[Master]
[Port-Cfg] Port 2/2/4, Enable 1
May 29 19:36:41:903809:err:security:macsec:3:27324581937920: stacking:[Master][Port-Cfg] Port 2/2/4,
Enable 1
May 28 09:27:02:228373:err:security:macsec:3:34114925232896: cli:[LOGON][CONFIG] - Key is not
configured
May 28 09:27:02:226751:err:security:macsec:3:34114925232896: stacking:[Master][Port-Cfg] Port 2/2/4,
Enable 0
May 28 09:27:02:226484:err:security:macsec:3:34114925232896: stacking:[Master][Port-Indication][Req]
Port 2/2/4
May 28 09:27:02:226445:err:security:macsec:3:34114925232896: Suppressed 1 times: stacking:[Master]
[Port-Cfg] Port 2/2/4, Enable 1
May 28 09:27:02:225577:err:security:macsec:3:34114925232896: stacking:[Master][Port-Cfg] Port 2/2/4,
Enable 1
May 28 09:27:01:328816:err:security:macsec:3:33436320400128: stacking:[Master][Port-Cfg] Port 2/2/4,
Enable 0
May 28 09:26:53:204026:err:security:macsec:3:27328876905216: cli:[LOGON][CONFIG] - Key is not
configured
May 28 09:26:53:195392:err:security:macsec:3:27328876905216: stacking:[Master][Port-Cfg] Port 2/2/4,
Enable 0
May 28 09:26:53:194386:err:security:macsec:3:27328876905216: stacking:[Master][Port-Indication][Req]
Port 2/2/4
May 28 09:26:53:194264:err:security:macsec:3:27328876905216: Suppressed 1 times: stacking:[Master]
[Port-Cfg] Port 2/2/4, Enable 1
May 28 09:26:53:191865:err:security:macsec:3:27328876905216: stacking:[Master][Port-Cfg] Port 2/2/4,
Enable 1
```

5. Optionally, view real-time updates to the specified logs on local units.

```
device# logmgr monitor security:macsec:all
==> /logmgr/logs//security/macsec_high_tmp.log <==
May 29 19:36:41:904658:err:security:macsec:3:27324581937920: Suppressed 1 times: stacking:[Master]
[Port-Cfg] Port 2/2/4, Enable 1
May 29 19:36:41:904694:err:security:macsec:3:27324581937920: stacking:[Master][Port-Indication][Req]
Port 2/2/4
May 29 19:36:41:905105:err:security:macsec:3:27324581937920: stacking:[Master][Port-Cfg] Port 2/2/4,
Enable 0
May 29 19:36:41:906799:err:security:macsec:3:27324581937920: cli:[LOGON][CONFIG] - Key is not
configured
May 29 19:36:50:004782:err:security:macsec:3:33449205302016: stacking:[Master][Port-Cfg] Port 2/2/4,
Enable 0
May 29 19:36:50:901254:err:security:macsec:3:34132105102080: stacking:[Master][Port-Cfg] Port 2/2/4,
Enable 1
May 29 19:36:50:901807:err:security:macsec:3:34132105102080: Suppressed 1 times: stacking:[Master]
[Port-Cfg] Port 2/2/4, Enable 1
May 29 19:36:50:901984:err:security:macsec:3:34132105102080: stacking:[Master][Port-Indication][Req]
Port 2/2/4
May 29 19:36:50:902259:err:security:macsec:3:34132105102080: stacking:[Master][Port-Cfg] Port 2/2/4,
Enable 0
May 29 19:36:50:904422:err:security:macsec:3:34132105102080: cli:[LOGON][CONFIG] - Key is not
configured
```

   This command enables the monitoring mode and simultaneously blocks the CLI. Press Ctrl+C to cancel the monitoring mode.

6. (Optional) View the filter configuration of distributed logger modules and sub-modules.

```
device# show dlogger module filter config-fltr
```

7. (Optional) View the logged messages from circular buffer maintained by the distributed logger module.

```
device# show dlogger logs module sec_macsec
```

8. Optionally, upload the fetched logs to an external server.

```
device# logmgr upload tftp 10.198.137.97 GZ.tar
```

Debug Commands A - G

debug 802.1w all_802_1w_events

Debugs all the RSTP transactions, timers, and packets on a specific VLAN.

Syntax

debug 802.1w all_802_1w_eventsvlan*decimal*

Parameters

decimal

Refers to the number of the VLAN.

Modes

Privileged EXEC mode

Examples

If the events are enabled, output similar to the following is displayed.

```
device# debug 802.1w all_802_1w_events vlan 2
RSTP Enabling All events Debugging for VLAN 2
device# RSTP[daa69]: Timer Alert - helloWhen timer_expired On port 1/1/2(1) ,
VLAN 2
RSTP: PTX entering the Periodic state , port 1/1/2(1) VLAN 2
RSTP: PTX =>ROLE is ALTERNATE or BACKUP , port 1/1/2(1), VLAN 2
RSTP[daa69]: Timer Alert - helloWhen timer_expired On port 1/1/9(8) , VLAN 2
RSTP: PTX entering the Periodic state , port 1/1/9(8) VLAN 2
RSTP[daa69]: Tx RST Config BPDU Port 1/1/9(8) VLAN 2
0000 02 02 7e 80000012f2dbfd80 00004e20
8000002438154580 08 09 0100 1400 0200 0f00
RSTP: Rcvd RST Config BPDU: Port 1/1/1(0) VLAN 2
0000 02 02 7e 80000012f2dbfd80 00000000
80000012f2dbfd80 08 01 0000 0000 0000 0000
RSTP: PRT =>no valid transition found ,no error, port 1/1/1(0) VLAN 2
RSTP: Rcvd RST Config BPDU: Port 1/1/2(1) VLAN 2
0000 02 02 7e 80000012f2dbfd80 00000000
80000012f2dbfd80 08 02 0000 0000 0000 0000
RSTP[daa7d]: Timer Alert - helloWhen timer_expired On port 1/1/2(1) , VLAN 2
RSTP: PTX entering the Periodic state , port 1/1/2(1) VLAN 2
RSTP: PTX =>ROLE is ALTERNATE or BACKUP , port 1/1/2(1), VLAN 2
RSTP[daa7d]: Timer Alert - helloWhen timer_expired On port 1/1/9(8) , VLAN 2
RSTP: PTX entering the Periodic state , port 1/1/9(8) VLAN 2
RSTP[daa7d]: Tx RST Config BPDU Port 1/1/9(8) VLAN 2
0000 02 02 7e 80000012f2dbfd80 00004e20
8000002438154580 08 09 0100 1400 0200 0f00
RSTP: Rcvd RST Config BPDU: Port 1/1/1(0) VLAN 2
0000 02 02 7e 80000012f2dbfd80 00000000
80000012f2dbfd80 08 01 0000 0000 0000 0000
RSTP: PRT =>no valid transition found ,no error, port 1/1/1(0) VLAN 2
RSTP: Rcvd RST Config BPDU: Port 1/1/2(1) VLAN 2
0000 02 02 7e 80000012f2dbfd80 00000000
80000012f2dbfd80 08 02 0000 0000 0000 0000
RSTP[daa91]: Timer Alert - helloWhen timer_expired On port 1/1/2(1) , VLAN 2
RSTP: PTX entering the Periodic state , port 1/1/2(1) VLAN 2
RSTP: PTX =>ROLE is ALTERNATE or BACKUP , port 1/1/2(1), VLAN 2
RSTP[daa91]: Timer Alert - helloWhen timer_expired On port 1/1/9(8) , VLAN 2
RSTP: PTX entering the Periodic state , port 1/1/9(8) VLAN 2
RSTP[daa91]: Tx RST Config BPDU Port 1/1/9(8) VLAN 2
```

If the events are disabled, output similar to the following is displayed.

```
device# no debug 802.1w all_802_1w_events vlan 2
RSTP Disabling All 802.1w Debugging for VLAN 2
```

debug 802.1w messages

Displays BPDU information on a VLAN.

Syntax

debug 802.1w messages vlan *decimal*

no debug 802.1w messages vlan *decimal*

Parameters

decimal

Refers to the number of the VLAN.

Modes

Privileged EXEC mode

Examples

If the 802.1w messages are enabled, output similar to the following is displayed.

```
device# debug 802.1w messages vlan 2
RSTP Enabling packets Debugging for VLAN 2
device# RSTP: Rcvd RST Config BPDU: Port 1/1/1(0) VLAN 2
0000 02 02 7e 80000012f2dbfd80 00000000
80000012f2dbfd80 08 01 0000 0000 0000 0000
RSTP: Rcvd RST Config BPDU: Port 1/1/2(1) VLAN 2
0000 02 02 7e 80000012f2dbfd80 00000000
80000012f2dbfd80 08 02 0000 0000 0000 0000
RSTP[db06d]: Tx RST Config BPDU Port 1/1/9(8) VLAN 2
0000 02 02 7e 80000012f2dbfd80 00004e20
8000002438154580 08 09 0100 1400 0200 0f00
RSTP: Rcvd RST Config BPDU: Port 1/1/1(0) VLAN 2
0000 02 02 7e 80000012f2dbfd80 00000000
80000012f2dbfd80 08 01 0000 0000 0000 0000
RSTP: Rcvd RST Config BPDU: Port 1/1/2(1) VLAN 2
0000 02 02 7e 80000012f2dbfd80 00000000
80000012f2dbfd80 08 02 0000 0000 0000 0000
RSTP[db081]: Tx RST Config BPDU Port 1/1/9(8) VLAN 2
0000 02 02 7e 80000012f2dbfd80 00004e20
8000002438154580 08 09 0100 1400 0200 0f00
RSTP: Rcvd RST Config BPDU: Port 1/1/1(0) VLAN 2
0000 02 02 7e 80000012f2dbfd80 00000000
80000012f2dbfd80 08 01 0000 0000 0000 0000
RSTP: Rcvd RST Config BPDU: Port 1/1/2(1) VLAN 2
0000 02 02 7e 80000012f2dbfd80 00000000
80000012f2dbfd80 08 02 0000 0000 0000 0000
RSTP[db095]: Tx RST Config BPDU Port 1/1/9(8) VLAN 2
0000 02 02 7e 80000012f2dbfd80 00004e20
8000002438154580 08 09 0100 1400 0200 0f00
device# RSTP: Rcvd RST Config BPDU: Port 1/1/1(0) VLAN 2
0000 02 02 7e 80000012f2dbfd80 00000000
80000012f2dbfd80 08 01 0000 0000 0000 0000
RSTP: Rcvd RST Config BPDU: Port 1/1/2(1) VLAN 2
0000 02 02 7e 80000012f2dbfd80 00000000
80000012f2dbfd80 08 02 0000 0000 0000 0000
```

If the 802.1w messages are disabled, output similar to the following is displayed.

```
device# no debug 802.1w messages valn 2
RSTP Disabling Packets Debugging for VLAN 2
```

debug 802.1w timer

Debugs the RSTP (802.1w) timer expiration.

Syntax

debug 802.1w timer vlan *decimal*

no debug 802.1w timer vlan *decimal*

Parameters

decimal

Refers to the number of the VLAN.

Modes

Privileged EXEC mode

Examples

If the timer is enabled, output similar to the following is displayed.

```
device# debug 802.1w timer vlan 2
device# RSTP[db6fd]: Timer Alert - helloWhen timer_expired On port 1/1/2(1) ,
VLAN 2
RSTP[db6fd]: Timer Alert - helloWhen timer_expired On port 1/1/9(8) , VLAN 2
RSTP[db711]: Timer Alert - helloWhen timer_expired On port 1/1/2(1) , VLAN 2
RSTP[db711]: Timer Alert - helloWhen timer_expired On port 1/1/9(8) , VLAN 2
RSTP[db725]: Timer Alert - helloWhen timer_expired On port 1/1/2(1) , VLAN 2
RSTP[db725]: Timer Alert - helloWhen timer_expired On port 1/1/9(8) , VLAN 2
RSTP[db739]: Timer Alert - helloWhen timer_expired On port 1/1/2(1) , VLAN 2
```

If the timer is disabled, output similar to the following is displayed.

```
device# no debug 802.1w timer vlan 2
RSTP Disabling Timer Debugging for VLAN 2
```

debug 802.1w transitions

Debugs the RSTP state machine transitions.

Syntax

debug 802.1w transitions vlan *decimal*

no debug 802.1w transitions vlan *decimal*

Parameters

decimal

Refers to the number of the VLAN.

Modes

Privileged EXEC mode

Examples

If the 802.1w transtitions are enabled, output similar to the following is displayed.

```
device# debug 802.1w transitions vlan 2
RSTP Enabling Events Debugging for VLAN 2
device# RSTP: PRT =>no valid transition found ,no error, port 1/1/1(0) VLAN 2
RSTP: PTX entering the Periodic state , port 1/1/2(1) VLAN 2
RSTP: PTX =>ROLE is ALTERNATE or BACKUP , port 1/1/2(1), VLAN 2
RSTP: PTX entering the Periodic state , port 1/1/9(8) VLAN 2
RSTP: PRT =>no valid transition found ,no error, port 1/1/1(0) VLAN 2
RSTP: PTX entering the Periodic state , port 1/1/2(1) VLAN 2
RSTP: PTX =>ROLE is ALTERNATE or BACKUP , port 1/1/2(1), VLAN 2
RSTP: PTX entering the Periodic state , port 1/1/9(8) VLAN 2
RSTP: PRT =>no valid transition found ,no error, port 1/1/1(0) VLAN 2
RSTP: PTX entering the Periodic state , port 1/1/2(1) VLAN 2
RSTP: PTX =>ROLE is ALTERNATE or BACKUP , port 1/1/2(1), VLAN 2
RSTP: PTX entering the Periodic state , port 1/1/9(8) VLAN 2
```

If the 802.1w transtitions are disabled, output similar to the following is displayed.

```
device# no debug 802.1w transitions vlan 2
RSTP Disabling Events Debugging for VLAN 2
```

debug bfd

Displays debugging information about Bidirectional Forwarding Detection (BFD).

Syntax

debug bfd all

debug bfd application

debug bfd arp-nbr

debug bfd clear

debug bfd error

debug bfd event

debug bfd ha

debug bfd holdtime

debug bfd ip-addr *ip-address*

debug bfd ipc

debug bfd ipv6-addr *ipv6-address*

debug bfd issu

debug bfd itc

debug bfd ptimer

debug bfd session-id*session-id*

debug bfd state

debug bfd vrf*vrf-name*

Parameters

all

Displays debugging information about all BFD events.

application

Displays debugging information about BFD applications.

arb-nbr

Displays debugging information about Address Resolution Protocol (ARP) and neighbor changes.

clear

Displays debugging information about clear BFD settings.

error

Displays debugging information about BFD errors encountered.

event

Displays debugging information about BFD events.

ha
Displays debugging information about HA and stack-related processing.

holdtime
Displays debugging information about BFD holdtime.

ip-addr *ip-address*
Displays debugging information about BFD for the specified IP address.

ipc
Displays debugging information about BFD interprocess communication (IPC) activities.

ipv6-addr *ipv6-address*
Displays debugging information about BFD for the specified IPv6 address.

itc
Displays debugging information about BFD inter-task communication (ITC) activities.

ptimer
Displays debugging information about internal BFD timers.

session-id
Displays debugging information about a specified BFD session.

state
Displays debugging information about the BFD state.

vrf*vrf-id*
Displays debugging information about BFD for the specified VRF.

Modes

Privileged EXEC mode

Usage Guidelines

This command is supported for ICX 7850 device.

Examples

The following example displays debugging information about the BFD holdtime.

```
device# debug bfd holdtime

BFD:  holdtime debugging is on
```

The following example displays debugging information about BFD events.

```
device# debug bfd event

  BFD:  event debugging is on
```

History

Release version	Command history
08.0.90	This command was introduced.

debug bum-statistics

Enables BUM rate limit statistics debugging.

Syntax

debug bum-statistics *unit/slot/port bum-type*

no debug bum-statistics *unit/slot/port bum-type*

Parameters

unit/slot/port

Specifies the interface.

bum-type

Specifies the number that indicates the traffic type.

Modes

Privileged EXEC mode

Usage Guidelines

The **no** form of the command disables BUM rate limit statistics debugging.

Examples

The following example enables BUM rate limit statistics debugging.

```
device#debug bum-statistics 1/3/2 0
 Port-id : 1/3/2 BUM-type: BROADCAST
 Unit-num: 1 Traffic Policy: 64-tp_129_0

device#debug bum-statistics 1/3/2 1
 Port-id : 1/3/2 BUM-type: L2_MULTICAST
 Unit-num: 1 Traffic Policy: 64-tp_129_1
 Port-id : 1/3/2 BUM-type: L3_MULTICAST
 Unit-num: 1 Traffic Policy: 64-tp_129_3

device#debug bum-statistics 1/3/2 2
 Port-id : 1/3/2 BUM-type: UNKNOWN_UNICAST
 Unit-num: 1 Traffic Policy: 64-tp_129_2
```

debug coa

Enables debugging of Change of Authorization (COA) messages.

Syntax

debug coa

undebug coa

Modes

Privileged EXEC mode

Usage Guidelines

Examples

The following example enables debugging of COA messages.

```
device# debug coa
```

debug dhcp-client alarms

Displays the debugging information of the Dynamic Host Configuration Protocol (DHCP) client on a particular port ID.

Syntax

debug dhcp-client alarms

no debug dhcp-client alarms

Modes

Privileged EXEC mode

Examples

The following example displays information related to the debugging of the DHCP client on a particular port ID.

```
device# debug dhcp-client alarms

"DHCPC: failed to initialize port; dhcpc unable to continue”
"DHCPC: failed to initialize protocol timer"
"DHCPC: no tftp server address or name found. unable to download configuration
file”
"DHCPC: unable to construct dns request”
"DHCPC: dns failed to resolve tftp server name”
“DHCPC: dns aborted”
“DHCPC: No DHCP Servers found on any ports”
"DHCPC: No DHCP Servers found on any ports"
"DHCPC: setting 0 seconds lease time"
"DHCPC: setting 0 seconds lease time on port port-id"
"DHCPC: No DHCP Servers found on any ports"
"DHCPC: failed to allocate a dhcpc packet on port port-id"
"DHCPC: failed to send message on port port-id"
"DHCPC: failed to allocate a dhcpc packet on port port-id"
"DHCPC: failed to send message on port port-id "
"DHCPC: get_an_ip_send_packet () failed on port port-id"
```

History

Release version	Command history
08.0.80	This command was modified to include information in the output for option 67 enhancements where both the image type and flash location are specified by the user.

debug dhcp-client events

Displays debugging information about Dynamic Host Configuration Protocol (DHCP) client events related to configuration.

Syntax

debug dhcp-client events

no debug dhcp-client events

Modes

Privileged EXEC mode

Examples

The following example displays debugging information about DHCP client events related to the configuration.

```
device# debug dhcp-client events

"DHCPC: failed to delete static ip-address to ip-address"
"DHCPC: failed to set the port ip-address to ip-address; subnet mask ip-address"
"DHCPC: changing port port-id state from REQUEST to BOUND"
"DHCPC: exceeds maximum some-number DNS servers"
"DHCPC: added ip-address dns-server address"
"DHCPC: failed to set the port ip-address to ip-address; subnet mask ip-address"
"DHCPC: TFTP timeout error for bootfile name %s"
"DHCPC: TFTP client busy"
"DHCPC: TFTP error wrong file type"
"DHCPC: TFTP long file name error"
"DHCPC: TFTP vlan-id invalid"
"DHCPC: TFTP flash write errors"
"DHCPC: TFTP error out of buffer space"
"DHCPC: TFTP flash read error"
"DHCPC: TFTP flash preparation for read failed"
"DHCPC: TFTP flash preparation for write failed"
"DHCPC: %s failed to save running-configuration"
"DHCPC: changing protocol from running to stopped"
"DHCPC: changing protocol from stopped to running"
"DHCPC: Auto update in progress, cannot change DHCP client state on port port-id "
"DHCPC: invalid parameter for "
"DHCPC: dhcp_get_next_port() bad port number port-id"
"DHCPC: sent DHCP-REQUEST message on port port-id \"
"DHCPC: sent DHCP-RENEWING message on port port-id"
"DHCPC: sent DHCP-REBINDING message on port port-id "
"DHCPC: sent DHCP-RELEASE message on port port-id "
"DHCPC: received packet port port-id"
"DHCPC: received bad packet port port-id, no DHCP END OPT found"
"DHCPC: received offer message on port port-id"
"DHCPC: recieved non matching 'xid' (0x%X) in offer message"
"DHCPC: changing port port-id state from INIT-SELECTING to INIT-SELECTING"
"DHCPC: changing port port-id state from INIT-SELECTING to REQUEST"
"DHCPC: received DHCPCACK message on port port-id"
"DHCPC: recieved non matching 'xid'(0x%X) in DHCPCACK message"
"DHCPC: changing timer-event to SEEKING_CONFIGURATION_AND_WAITING_FOR_OFFERS"
"DHCPC: recieved non matching 'xid'(0x%X) in DHCPNAK message"
"DHCPC: deleting existing ip address configuration on port port-id"
"DHCPC: received DHCPNAK packet on port port-id"
"DHCPC: changing port port-id state from REQUEST to INIT-SELECTING"
"DHCPC: received DHCPCOFFER packet on port port-id> while in bound state"
"DHCPC: received DHCPCREQUEST packet on port port-id while in bound state"
"DHCPC: received DHCPCDECLINE packet on port port-id while in bound state"
"DHCPC: received DHCPCACK packet on port port-id while in bound state"
"DHCPC: received DHCPCNAK packet on port port-id while in bound state"
"DHCPC: received DHCPCRELEASE packet on port port-id while in bound state"
"DHCPC: received DHCPCINFORM packet on port port-id while in bound state"
"DHCPC: received DHCPCINFORM packet on port port-id while in bound state"
"DHCPC: received unknown packet on port port-id while in bound state"
"DHCPC: received DHCPACK packet in renewal-state on port port-id"
"DHCPC: received non matching 'xid'(0x%X) in RENEWAL message"
"DHCPC: TFTP flash read error"
"DHCPC: changing port port-id state from RENEWING to BOUND"
"DHCPC: received non matching 'xid'(0x%X) in DHCPNAK message"
"DHCPC: received DHCPNAK packet in renewal-state on port port-id"
"DHCPC: changing port port-id state from RENEWING to INIT-SELECTING"
"DHCPC: received DHCPACK packet in rebind-state on port port-id"
"DHCPC: received non matching 'xid'(0x%X) in REBIND message"
"DHCPC: changing port port-id state from REBINDING to BOUND"
"DHCPC: received non matching 'xid'(0x%X) in DHCPNAK message"
"DHCPC: received DHCPNAK packet in renewal-state on port port-id"
"DHCPC: changing port port-id state from REBIND to INIT-SELECTING"
"DHCPC: sending packet port port-id"
"DHCPC: send completion called on port: port-id"
"DHCPC: Freeing packet"
"DHCPC: unable to get some-number option from dhcp message from port port-id"
```

```
"DHCPC: received server id address opton: ip-address from port port-id"
"DHCPC: received lease-time option: some-number from port port-id"
"DHCPC: received domain-name option: %s from port port-id"
"DHCPC: received dns-server address option: ip-address from port port-id"
"DHCPC: received default-router address option: ip-address from port port-id"
"DHCPC: received TFTP server name option: %s from port port-id"
"DHCPC: received TFTP server address opton: ip-address from port port-id"
"DHCPC: received Bootfile name option: %s from port port-id"
"DHCPC: received 'hostname' option: %s from port port-id"
"DHCPC: received maximum message size option: some-number from port port-id"
"DHCPC: lease timer events called with invalid port"
"DHCPC: changing port port-id state from BOUND to REBINDING"
"DHCPC: changing port port-id state from BOUND to RENEWING"
"DHCPC: deleting existing ip address configuration on port port-id"
"DHCPC: changing port port-id state from REQUESTING to INIT-SELECTING"
"DHCPC: failed to renew ip address with dhcp server; continuing with lease period"
"DHCPC: changing port port-id state from REBINDING to INIT_SELECTING"
"DHCPC: changing port port-id state from REBINDING to REQUESTING"
```

History

Release version	Command history
08.0.80	This command was modified to include information in the output for option 67 enhancements where both the image type and flash location are specified by the user.

debug dhcp-client warnings

Displays debugging information about the Dynamic Host Configuration Protocol (DHCP) client.

Syntax

debug dhcp-client warnings

no debug dhcp-client warnings

Modes

Privileged EXEC mode

Examples

The following example displays debugging information related to DHCP client warnings.

```
device# debug dhcp-client warnings
```

History

Release version	Command history
08.0.80	This command was modified to include information in the output for option 67 enhancements where both the image type and flash location are specified by the user.

debug forwarding hw-clear

Debugs the events which trigger MAC clear in hardware.

Syntax

debug forwarding hw-clear{**debug-enable**|**disable** |**timer**|}

no debug forwarding hw-clear{**debug-enable**|**disable** |**timer**|}

Parameters

debug-enable

Enables debugging of the events which trigger MAC clear in hardware in MCT scenario, port down scenario, and so on.

disable

Specifies MAC clear disable debugging.

timer

Resets the timer associated debug prints of clear mac debugs.

Modes

Privileged EXEC mode

Usage Guidelines

The **no** form of the command disables debugging of MAC clear in hardware.

Examples

The following example enables debugging of the events which trigger MAC clear in hardware.

```
device#debug forwarding hw-clear debug-enable
```

Debug Commands H - P

debug hw

Enables the hardware backplane debugging feature in a device.

Syntax

debug hw

no debug hw

Examples

```
device# debug hw
HW BP: backplane debugging is on
```

debug igmp-snoop add-del-oif all

Displays information about the addition or deletion of all outgoing interfaces (OIFs).

Syntax

debug igmp-snoop add-del-oif all

no debug igmp-snoop add-del-oif all

Modes

Privileged EXEC mode

Examples

```
device# debug igmp-snoop add-del-oif all
Jun 25 18:42:05:428348:info:fi_debug:debug_logs:1:61767334847579649: Add e3/2/3 to (11.4.1.2 225.1.1.1)
vlan 100
Jun 25 18:42:05:432216:info:fi_debug:debug_logs:1:61767339142546945: Add e3/2/3 to (11.4.1.2 225.1.1.2)
vlan 100
Jun 25 18:42:18:605037:info:fi_debug:debug_logs:1:61768614747833857: Del e3/2/3  from (11.4.1.2
225.1.1.1) vlan 100
Jun 25 18:42:18:606885:info:fi_debug:debug_logs:1:61768619042801153: Del e3/2/3  from (11.4.1.2
225.1.1.2) vlan 100
```

debug igmp-snoop

Generates debugging information about IGMP snoop protocol activities.

Syntax

debug igmp-snoop [**mct** | **phy-port** { **ethernet** *unit/slot/port* | **lag** *lag-id* | **port-level** *num* | **mvr**]

no debug igmp-snoop [**mct** | **phy-port** { **ethernet** *unit/slot/port* | **lag** *lag-id* | **port-level** *num* | **mvr**]

Parameters

mct
Enables Multi-Chassis Trunking (MCT) debugging.

phy-port
Displays the IGMP snooping related debug information for the specified interface.

ethernet *unit/slot/port*
Displays information about the specified Ethernet interface.

lag *lag-id*
Displays information about the specified LAG interface.

port-level *num*
Sets port-level to debug port packet activity.

mvr
Enables Multiple VLAN Registration(MVR) debugging and prints debugs for group to mvlan mapping processing.

Modes

Privileged EXEC mode

Usage Guidelines

no

Examples

```
device#debug igmp-snoop mct
May 04 14:43:00:574293:info:fi_debug:debug_logs:1:227255607710713345: 1d 7:40:18 -
MCASTv4:MCAST_MCT_RTR_PORT_SYNC: port: lg5 nbr src 2.2.2.2
May 04 14:43:00:574705:info:fi_debug:debug_logs:1:86657628483093248: 1d 7:40:18 - MCASTv4:RTR port sync
bulk msg type 1, num of entries 1,nbr src: 2.2.2.2, rbridge_id: 2701

device#debug igmp-snoop
device#debug igmp-snoop phy-port ethernet 3/2/3
Jun 25 19:35:57:009850:info:fi_debug:debug_logs:1:62082284799395329: igmp_snoop_receive: receive igmp
on vlan 100, src_port 3/2/3 from 0010.9400.0002
Jun 25 19:35:57:009963:info:fi_debug:debug_logs:1:62082284799395329: IGMP: rcvd Report-V2(t=22)
g=225.1.1.1 resp=0, pkt S=11.3.1.2 to 225.1.1.1, on VL100 (phy e3/2/3), igmp_size=8
Jun 25 19:35:57:010079:info:fi_debug:debug_logs:1:62082284799395329:     forward to router fid 0x4FFF
Jun 25 19:35:57:010693:info:fi_debug:debug_logs:1:62082289094362625:

device#debug igmp-snoop mvr
Sep 16 04:50:24:035552:info:fi_debug:debug_logs:2:930183750092290: IGMP report/leave packet with group
address 226.0.0.5 received on vlan 11 is change to MVLAN 100 packet context
Sep 16 04:50:21:876342:info:fi_debug:debug_logs:2:930054901073410:     forward to router fid 0xE0E
Sep 16 04:50:21:876239:info:fi_debug:debug_logs:2:930054901073410: IGMP: rcvd Report-V2(t=22)
g=226.0.0.2 resp=0, pkt S=10.10.10.20 to 226.0.0.2, on VL100 (phy e1/1/25), igmp_size=8
Sep 16 04:50:21:876127:info:fi_debug:debug_logs:2:930054901073410: igmp_snoop_receive: receive igmp on
vlan 11, src_port 1/1/25 from 0010.9400.0001
Sep 16 04:50:21:876055:info:fi_debug:debug_logs:2:930054901073410:
----------------------------------
Sep 16 04:50:21:875943:info:fi_debug:debug_logs:2:930054901073410: IGMP report/leave packet with group
address 226.0.0.2 received on vlan 11 is change to MVLAN 100 packet context
Sep 16 04:50:21:628369:info:fi_debug:debug_logs:2:930042016171522:     forward to router fid 0xE0E
Sep 16 04:50:21:628267:info:fi_debug:debug_logs:2:930042016171522: IGMP: rcvd Report-V2(t=22)
g=226.0.0.6 resp=0, pkt S=10.10.10.20 to 226.0.0.6, on VL100 (phy e1/1/25), igmp_size=8
Sep 16 04:50:21:628155:info:fi_debug:debug_logs:2:930042016171522: igmp_snoop_receive: receive igmp on
vlan 11, src_port 1/1/25 from 0010.9400.0001
Sep 16 04:50:21:628085:info:fi_debug:debug_logs:2:930042016171522:
----------------------------------
Sep 16 04:50:21:627973:info:fi_debug:debug_logs:2:930042016171522: IGMP report/leave packet with group
address 226.0.0.6 received on vlan 11 is change to MVLAN 100 packet context
Sep 16 04:50:20:348603:info:fi_debug:debug_logs:2:929930347021826:     forward to router fid 0xE0E
Sep 16 04:50:20:348485:info:fi_debug:debug_logs:2:929930347021826: IGMP: rcvd Report-V2(t=22)
g=226.0.0.8 resp=0, pkt S=10.10.10.20 to 226.0.0.8, on VL100 (phy e1/1/25), igmp_size=8
Sep 16 04:50:20:348375:info:fi_debug:debug_logs:2:929930347021826: igmp_snoop_receive: receive igmp on
vlan 11, src_port 1/1/25 from 0010.9400.0001
Sep 16 04:50:20:348305:info:fi_debug:debug_logs:2:929930347021826:
----------------------------------
Sep 16 04:50:20:348195:info:fi_debug:debug_logs:2:929930347021826: IGMP report/leave packet with group
address 226.0.0.8 received on vlan 11 is change to MVLAN 100 packet context
Sep 16 04:50:20:294092:info:fi_debug:debug_logs:2:929926052054530:     forward to router fid 0xE0E
Sep 16 04:50:20:293988:info:fi_debug:debug_logs:2:929926052054530: IGMP: rcvd Report-V2(t=22)
g=226.0.0.3 resp=0, pkt S=10.10.10.20 to 226.0.0.3, on VL100 (phy e1/1/25), igmp_size=8
Sep 16 04:50:20:293874:info:fi_debug:debug_logs:2:929926052054530: igmp_snoop_receive: receive igmp on
vlan 11, src_port 1/1/25 from 0010.9400.0001
Sep 16 04:50:20:293805:info:fi_debug:debug_logs:2:929926052054530:
----------------------------------
Sep 16 04:50:20:293695:info:fi_debug:debug_logs:2:929926052054530: IGMP report/leave packet with group
address 226.0.0.3 received on vlan 11 is change to MVLAN 100 packet context
Sep 16 04:50:19:773012:info:fi_debug:debug_logs:2:929895987283458:     forward to router fid 0xE0E
Sep 16 04:50:19:772909:info:fi_debug:debug_logs:2:929895987283458: IGMP: rcvd Report-V2(t=22)
g=226.0.0.7 resp=0, pkt S=10.10.10.20 to 226.0.0.7, on VL100 (phy e1/1/25), igmp_size=8
Sep 16 04:50:19:772799:info:fi_debug:debug_logs:2:929895987283458: igmp_snoop_receive: receive igmp on
vlan 11, src_port 1/1/25 from 0010.9400.0001
Sep 16 04:50:19:772730:info:fi_debug:debug_logs:2:929895987283458:
----------------------------------
Sep 16 04:50:19:772620:info:fi_debug:debug_logs:2:929895987283458: IGMP report/leave packet with group
address 226.0.0.7 received on vlan 11 is change to MVLAN 100 packet context
Sep 16 04:50:17:903119:info:fi_debug:debug_logs:2:929728483558914:     forward to router fid 0xE0E
Sep 16 04:50:17:903018:info:fi_debug:debug_logs:2:929728483558914: IGMP: rcvd Report-V2(t=22)
g=226.0.0.10 resp=0, pkt S=10.10.10.20 to 226.0.0.10, on VL100 (phy e1/1/25), igmp_size=8
Sep 16 04:50:17:902908:info:fi_debug:debug_logs:2:929728483558914: igmp_snoop_receive: receive igmp on
vlan 11, src_port 1/1/25 from 0010.9400.0001
```

```
Sep 16 04:50:17:902839:info:fi_debug:debug_logs:2:929728483558914:
----------------------------------
```

History

Release version	Command history
09.0.10	This command was modified to add **mvr** option to enable group to mvlan trace debug information.

debug igmp-snoop clear

Clears all the IGMP snooping debug settings.

Syntax

debug igmp-snoop clear

no debug igmp-snoop clear

Modes

Privileged EXEC mode

Examples

```
device# debug igmp-snoop clear
```

debug igmp-snoop error

Displays the IGMP snooping multicast error messages.

Syntax

debug igmp-snoop error

no debug igmp-snoop error

Modes

Privileged EXEC mode

Examples

```
device# debug igmp-snoop error
Jun 25 19:05:44:929668:info:fi_debug:debug_logs:1:61905950622090753: IGMP: Error! ttl=255 (!= 1),
discard, pkt S=11.3.1.2 to 225.1.1.1, on VL100 (phy e3/2/3), igmp_size=28
Jun 25 19:05:45:929071:info:fi_debug:debug_logs:1:61906070881175041: IGMP: Error! ttl=255 (!= 1),
discard, pkt S=11.3.1.2 to 225.1.1.1, on VL100 (phy e3/2/3), igmp_size=28
Jun 25 19:05:46:919730:info:fi_debug:debug_logs:1:61906161075488257: IGMP: Error! ttl=255 (!= 1),
discard, pkt S=11.3.1.2 to 225.1.1.1, on VL100 (phy e3/2/3), igmp_size=28
Jun 25 19:05:47:913334:info:fi_debug:debug_logs:1:61906229794964993: IGMP: Error! ttl=255 (!= 1),
discard, pkt S=11.3.1.2 to 225.1.1.1, on VL100 (phy e3/2/3), igmp_size=28
```

debug igmp-snoop group

Displays the IGMP snooping multicast group information.

Syntax

debug igmp-snoop group*group_address*

no debug igmp-snoop group*group_address*

Parameters

group_address

Specifies the address of the IGMP snoop multicast group.

Modes

Privileged EXEC mode

Examples

```
device# debug igmp-snoop group 225.1.1.1
Jun 25 19:12:16:714795:info:fi_debug:debug_logs:1:61944089931679233: igmp_snoop_receive: receive igmp
on vlan 100, src_port 3/2/3 from 0010.9400.0002
Jun 25 19:12:16:714909:info:fi_debug:debug_logs:1:61944089931679233: IGMP: rcvd Report-V2(t=22)
g=225.1.1.1 resp=0, pkt S=11.3.1.2 to 225.1.1.1, on VL100 (phy e3/2/3), igmp_size=8
Jun 25 19:12:16:715022:info:fi_debug:debug_logs:1:61944089931679233:     forward to router fid 0x4FFF
Jun 25 19:12:19:815556:info:fi_debug:debug_logs:1:61944364809586177:
---------------------------------
Jun 25 19:12:19:815671:info:fi_debug:debug_logs:1:61944364809586177: igmp_snoop_receive: receive igmp
on vlan 100, src_port 3/2/3 from 0010.9400.0002
Jun 25 19:12:19:815781:info:fi_debug:debug_logs:1:61944364809586177: IGMP: rcvd Report-V2(t=22)
g=225.1.1.1 resp=0, pkt S=11.3.1.2 to 225.1.1.1, on VL100 (phy e3/2/3), igmp_size=8
Jun 25 19:12:19:815902:info:fi_debug:debug_logs:1:61944364809586177:     consume pkt
Jun 25 19:12:25:531587:info:fi_debug:debug_logs:1:61944927450301953:
---------------------------------
Jun 25 19:12:25:531701:info:fi_debug:debug_logs:1:61944927450301953: igmp_snoop_receive: receive igmp
on vlan 100, src_port 3/2/3 from 0010.9400.0002
Jun 25 19:12:25:531815:info:fi_debug:debug_logs:1:61944927450301953: IGMP: rcvd Leave(t=23)
g=225.1.1.1 resp=0, pkt S=11.3.1.2 to 224.0.0.2, on VL100 (phy e3/2/3), igmp_size=8
Jun 25 19:12:25:531902:info:fi_debug:debug_logs:1:61944927450301953:     V2 leave. fast-leave-v2, not
rtr port. removed immediately
Jun 25 19:12:25:531988:info:fi_debug:debug_logs:1:61944927450301953: IGMP del VL100 (e3/2/3) from group
entry 225.1.1.1
Jun 25 19:12:25:532068:info:fi_debug:debug_logs:1:61944927450301953:     forward to router fid 0x4FFF
```

debug igmp-snoop level

Sets the debugging level of IGMP snooping activity.

Syntax

debug igmp-snoop level*decimal*

no debug igmp-snoop level*decimal*

Parameters

decimal

Specifies the debugging level of IGMP snooping activity and it can take values from 1 through 3.

Modes

Privileged EXEC mode

Usage Guidelines

Level 3 displays more information than level 2, and level 0 displays no information.

Examples

```
device#debug igmp-snoop
device#debug igmp-snoop level 3
Jun 25 19:29:14:421310:info:fi_debug:debug_logs:1:62043033093277185: igmp_snoop_receive: receive igmp
on vlan 100, src_port 3/2/3 from 0010.9400.0002
Jun 25 19:29:14:421423:info:fi_debug:debug_logs:1:62043033093277185: IGMP: rcvd Report-V2(t=22)
g=225.1.1.1 resp=0, pkt S=11.3.1.2 to 225.1.1.1, on VL100 (phy e3/2/3), igmp_size=8
Jun 25 19:29:14:421534:info:fi_debug:debug_logs:1:62043033093277185:     group: 225.1.1.1, life = 1020
Jun 25 19:29:14:421612:info:fi_debug:debug_logs:1:62043033093277185:     forward to router fid 0x4FFF
Jun 25 19:29:14:422213:info:fi_debug:debug_logs:1:62043037388244481:
----------------------------------
Jun 25 19:29:14:422297:info:fi_debug:debug_logs:1:62043037388244481: igmp_snoop_receive: receive igmp
on vlan 100, src_port 3/2/3 from 0010.9400.0002
Jun 25 19:29:14:422396:info:fi_debug:debug_logs:1:62043037388244481: IGMP: rcvd Report-V2(t=22)
g=225.1.1.2 resp=0, pkt S=11.3.1.2 to 225.1.1.2, on VL100 (phy e3/2/3), igmp_size=8
Jun 25 19:29:14:422491:info:fi_debug:debug_logs:1:62043037388244481:     group: 225.1.1.2, life = 1020
Jun 25 19:29:14:422564:info:fi_debug:debug_logs:1:62043037388244481:     forward to router fid 0x4FFF
Jun 25 19:29:16:292982:info:fi_debug:debug_logs:1:62043252136609281:
----------------------------------
Jun 25 19:29:16:293091:info:fi_debug:debug_logs:1:62043252136609281: igmp_snoop_receive: receive igmp
on vlan 100, src_port 3/2/3 from 0010.9400.0002
Jun 25 19:29:16:293202:info:fi_debug:debug_logs:1:62043252136609281: IGMP: rcvd Report-V2(t=22)
g=225.1.1.1 resp=0, pkt S=11.3.1.2 to 225.1.1.1, on VL100 (phy e3/2/3), igmp_size=8
Jun 25 19:29:16:293312:info:fi_debug:debug_logs:1:62043252136609281:     group: 225.1.1.1, life = 1020
Jun 25 19:29:16:293387:info:fi_debug:debug_logs:1:62043252136609281:     igmp-report-control, filter out
Jun 25 19:29:16:293474:info:fi_debug:debug_logs:1:62043252136609281:     consume pkt
Jun 25 19:29:24:047698:info:fi_debug:debug_logs:1:62044008050853377:
----------------------------------
Jun 25 19:29:24:048390:info:fi_debug:debug_logs:1:62044008050853377: igmp_snoop_receive: receive igmp
on vlan 100, src_port 3/2/3 from 0010.9400.0002
Jun 25 19:29:24:048509:info:fi_debug:debug_logs:1:62044008050853377: IGMP: rcvd Report-V2(t=22)
g=225.1.1.2 resp=0, pkt S=11.3.1.2 to 225.1.1.2, on VL100 (phy e3/2/3), igmp_size=8
Jun 25 19:29:24:048611:info:fi_debug:debug_logs:1:62044008050853377:     group: 225.1.1.2, life = 1020
Jun 25 19:29:24:048685:info:fi_debug:debug_logs:1:62044008050853377:     igmp-report-control, filter out
Jun 25 19:29:24:048774:info:fi_debug:debug_logs:1:62044008050853377:     consume pkt
Jun 25 19:29:33:205523:info:fi_debug:debug_logs:1:62044914288952833:
----------------------------------
Jun 25 19:29:33:205633:info:fi_debug:debug_logs:1:62044914288952833: igmp_snoop_receive: receive igmp
on vlan 100, src_port 3/2/3 from 0010.9400.0002
Jun 25 19:29:33:205745:info:fi_debug:debug_logs:1:62044914288952833: IGMP: rcvd Leave(t=23)
g=225.1.1.1 resp=0, pkt S=11.3.1.2 to 224.0.0.2, on VL100 (phy e3/2/3), igmp_size=8
Jun 25 19:29:33:205830:info:fi_debug:debug_logs:1:62044914288952833:     V2 leave. fast-leave-v2, not
rtr port. removed immediately
Jun 25 19:29:33:205920:info:fi_debug:debug_logs:1:62044914288952833:     forward to router fid 0x4FFF
Jun 25 19:29:33:206503:info:fi_debug:debug_logs:1:62044918583920129:
----------------------------------
Jun 25 19:29:33:206586:info:fi_debug:debug_logs:1:62044918583920129: igmp_snoop_receive: receive igmp
on vlan 100, src_port 3/2/3 from 0010.9400.0002
Jun 25 19:29:33:206684:info:fi_debug:debug_logs:1:62044918583920129: IGMP: rcvd Leave(t=23)
g=225.1.1.2 resp=0, pkt S=11.3.1.2 to 224.0.0.2, on VL100 (phy e3/2/3), igmp_size=8
Jun 25 19:29:33:206762:info:fi_debug:debug_logs:1:62044918583920129:     V2 leave. fast-leave-v2, not
rtr port. removed immediately
Jun 25 19:29:33:206842:info:fi_debug:debug_logs:1:62044918583920129:     forward to router fid 0x4FFF
Jun 25 19:29:40:830761:info:fi_debug:debug_logs:1:62045644433393153:
----------------------------------
Jun 25 19:29:40:830873:info:fi_debug:debug_logs:1:62045644433393153: igmp_snoop_receive: receive igmp
on vlan 500, src_port 1/1/16 from 609c.9fbb.d94c
Jun 25 19:29:40:830985:info:fi_debug:debug_logs:1:62045644433393153: IGMP: rcvd Query(t=17) V2
g=0.0.0.0 resp=100, pkt S=150.1.1.2 to 224.0.0.1, on VL500 (phy lg4), igmp_size=8
Jun 25 19:29:40:831068:info:fi_debug:debug_logs:1:62045644433393153:     L2 fwd
```

debug igmp-snoop mvr

Displays the IGMP snooping multicast MVR information.

Syntax

debug igmp-snoop mvr

no debug igmp-snoop mvr

Modes

Privileged EXEC mode

Examples

The following example enables the displaying of IGMP snooping multicast MVR information.

```
device# debug igmp-snoop mvr
```

History

Release version	Command history
09.0.10 a	The command was introduced.

debug igmp-snoop packet

Displays debugging information related to the IGMP snoop packets.

Syntax

debug igmp-snoop packet*source_address group_address*

no debug igmp-snoop packet*source_address group_address*

Parameters

source_address

Specifies the source address of the IGMP snoop packet.

group_address

Specifies the address of the IGMP snoop multicast group.

Modes

Privileged EXEC mode

Examples

```
device#debug igmp-snoop group 225.1.1.1
Jun 25 19:12:16:714795:info:fi_debug:debug_logs:1:61944089931679233: igmp_snoop_receive: receive igmp
on vlan 100, src_port 3/2/3 from 0010.9400.0002
Jun 25 19:12:16:714909:info:fi_debug:debug_logs:1:61944089931679233: IGMP: rcvd Report-V2(t=22)
g=225.1.1.1 resp=0, pkt S=11.3.1.2 to 225.1.1.1, on VL100 (phy e3/2/3), igmp_size=8
Jun 25 19:12:16:715022:info:fi_debug:debug_logs:1:61944089931679233:     forward to router fid 0x4FFF
Jun 25 19:12:19:815556:info:fi_debug:debug_logs:1:61944364809586177:
---------------------------------
Jun 25 19:12:19:815671:info:fi_debug:debug_logs:1:61944364809586177: igmp_snoop_receive: receive igmp
on vlan 100, src_port 3/2/3 from 0010.9400.0002
Jun 25 19:12:19:815781:info:fi_debug:debug_logs:1:61944364809586177: IGMP: rcvd Report-V2(t=22)
g=225.1.1.1 resp=0, pkt S=11.3.1.2 to 225.1.1.1, on VL100 (phy e3/2/3), igmp_size=8
Jun 25 19:12:19:815902:info:fi_debug:debug_logs:1:61944364809586177:     consume pkt
Jun 25 19:12:25:531587:info:fi_debug:debug_logs:1:61944927450301953:
---------------------------------
Jun 25 19:12:25:531701:info:fi_debug:debug_logs:1:61944927450301953: igmp_snoop_receive: receive igmp
on vlan 100, src_port 3/2/3 from 0010.9400.0002
Jun 25 19:12:25:531815:info:fi_debug:debug_logs:1:61944927450301953: IGMP: rcvd Leave(t=23)
g=225.1.1.1 resp=0, pkt S=11.3.1.2 to 224.0.0.2, on VL100 (phy e3/2/3), igmp_size=8
Jun 25 19:12:25:531902:info:fi_debug:debug_logs:1:61944927450301953:     V2 leave. fast-leave-v2, not
rtr port. removed immediately
Jun 25 19:12:25:531988:info:fi_debug:debug_logs:1:61944927450301953: IGMP del VL100 (e3/2/3) from group
entry 225.1.1.1
Jun 25 19:12:25:532068:info:fi_debug:debug_logs:1:61944927450301953:     forward to router fid 0x4FFF
```

debug igmp-snoop port ethernet

Displays the IGMP snooping related debug information for the specified Ethernet interface.

Syntax

debug igmp-snoop port ethernet *num*

no debug igmp-snoop port ethernet *num*

Parameters

num

Specifies the stack ID, slot number, and port number of a specific Ethernet port.

Modes

Privileged EXEC mode

Examples

```
device# debug igmp-snoop port ethernet 1/1/2
IGMP: rcvd Report-V2(t=22) g=228.1.1.6 resp=0, pkt S=10.13.13.2 to 228.1.1.6, on
VL130 (phy e1/1/2), igmp_size=8
IGMP: rcvd Report-V2(t=22) g=228.1.1.8 resp=0, pkt S=10.13.13.2 to 228.1.1.8, on
VL130 (phy e1/1/2), igmp_size=8
```

debug igmp-snoop show

Displays all the IGMP snooping debug settings.

Syntax

debug igmp-snoop show

no debug igmp-snoop show

Modes

Privileged EXEC mode

Examples

```
device# debug igmp-snoop show
igmp debug-enable-any = 1
debug igmpsnoop is enabled
IGMP: rcvd Query(t=17) V2 g=0.0.0.0 resp=100, pkt S=10.1.15.1 to 224.0.0.1, on
VL100 (phy e3/1/6), igmp_size=8
IGMP: rcvd Report-V2(t=22) g=230.1.1.12 resp=0, pkt S=10.85.1.3 to 230.1.1.12, on
VL100 (phy e1/1/48), igmp_size=8
IGMP: rcvd Report-V2(t=22) g=230.1.4.148 resp=0, pkt S=10.85.1.3 to 230.1.4.148,
on VL100 (phy e1/1/48), igmp_size=8
IGMP: rcvd Report-V2(t=22) g=230.1.2.22 resp=0, pkt S=10.85.1.3 to 230.1.2.22, on
VL100 (phy e1/1/48), igmp_size=8
IGMP: rcvd Report-V2(t=22) g=230.1.1.92 resp=0, pkt S=10.85.1.3 to 230.1.1.92, on
VL100 (phy e1/1/48), igmp_size=8
```

debug igmp-snoop source

Displays the IGMP snooping related debug information for the specified source address

Syntax

debug igmp-snoop source*source_address*

no debug igmp-snoop source*source_address*

Parameters

source_address

Specifies the source address.

Modes

Privileged EXEC mode

Examples

```
device#debug igmp-snoop vlan 100
device#debug igmp-snoop source 100.1.3.2
Jun 14 14:09:49:387272:info:fi_debug:debug_logs:1:126061127287178753: IGMP: rcvd Report-V2(t=22)
g=225.1.1.1 resp=0, pkt S=100.1.3.2 to 225.1.1.1, on VL100 (phy e3/2/3), igmp_size=8
Jun 14 14:09:49:387423:info:fi_debug:debug_logs:1:126061127287178753:     forward to router fid 0xE1D
Jun 14 14:09:49:388627:info:fi_debug:debug_logs:1:126061131582146049: IGMP: rcvd Report-V2(t=22)
g=225.1.1.2 resp=0, pkt S=100.1.3.2 to 225.1.1.2, on VL100 (phy e3/2/3), igmp_size=8
Jun 14 14:09:49:388748:info:fi_debug:debug_logs:1:126061131582146049:     forward to router fid 0xE1D
Jun 14 14:09:55:677565:info:fi_debug:debug_logs:1:126061784417175041: IGMP: rcvd Report-V2(t=22)
g=225.1.1.1 resp=0, pkt S=100.1.3.2 to 225.1.1.1, on VL100 (phy e3/2/3), igmp_size=8
Jun 14 14:09:55:677720:info:fi_debug:debug_logs:1:126061784417175041:     consume pkt
Jun 14 14:09:55:899507:info:fi_debug:debug_logs:1:126061805892011521: IGMP: rcvd Report-V2(t=22)
g=225.1.1.2 resp=0, pkt S=100.1.3.2 to 225.1.1.2, on VL100 (phy e3/2/3), igmp_size=8
Jun 14 14:09:55:899664:info:fi_debug:debug_logs:1:126061805892011521:     consume pkt
Jun 14 14:09:58:363620:info:fi_debug:debug_logs:1:126062076474951169: IGMP: rcvd Leave(t=23)
g=225.1.1.1 resp=0, pkt S=100.1.3.2 to 224.0.0.2, on VL100 (phy e3/2/3), igmp_size=8
Jun 14 14:09:58:363745:info:fi_debug:debug_logs:1:126062076474951169:     V2 leave. fast-leave-v2, not
rtr port. removed immediately
Jun 14 14:09:58:363839:info:fi_debug:debug_logs:1:126062076474951169:     forward to router fid 0xE1D
Jun 14 14:09:58:364904:info:fi_debug:debug_logs:1:126062080769918465: IGMP: rcvd Leave(t=23)
g=225.1.1.2 resp=0, pkt S=100.1.3.2 to 224.0.0.2, on VL100 (phy e3/2/3), igmp_size=8
Jun 14 14:09:58:365004:info:fi_debug:debug_logs:1:126062080769918465:     V2 leave. fast-leave-v2, not
rtr port. removed immediately
Jun 14 14:09:58:365087:info:fi_debug:debug_logs:1:126062080769918465:     forward to router fid 0xE1D
```

debug igmp-snoop timer

Displays information about the IGMP snooping related timer events.

Syntax

debug igmp-snoop timer

no debug igmp-snoop timer

Modes

Privileged EXEC mode

Examples

```
device#debug igmp-snoop timer
Jun 25 20:09:38:129526:info:fi_debug:debug_logs:1:507852705613480704: IGMP timer, VL100(e3/2/3) change
V1 client age out
Jun 25 20:09:59:084433:info:fi_debug:debug_logs:1:507870113115931392: igmp timer, 225.1.1.1
VL100(e3/2/3) switch back to include mode
```

debug igmp-snoop vlan

Displays the IGMP snooping related debug information for the specified VLAN ID.

Syntax

debug igmp-snoop vlan*vlan_id*

no debug igmp-snoop vlan*vlan_id*

Parameters

vlan_id

Specifies the VLAN ID.

Modes

Privileged EXEC mode

Examples

```
device#debug igmp-snoop vlan 100
Jun 25 20:12:51:080503:info:fi_debug:debug_logs:1:508013371750089472: IGMP send Query(t=17) V2,
s=9.9.9.9 0.0.0.0 to VL100(ethe 3/2/3 lag lg6 ) rsp=200 igmp=8B, pkt=46B
Jun 25 20:12:51:081330:info:fi_debug:debug_logs:1:508013371750089472: IGMP send Query(t=17) V3,
s=9.9.9.9 0.0.0.0 to VL100(lag lg1 ) rsp=137 igmp=12B, pkt=50B
Jun 25 20:12:51:734767:info:fi_debug:debug_logs:1:62298343129220609: IGMP: rcvd Report-V2(t=22)
g=225.1.1.1 resp=0, pkt S=11.3.1.2 to 225.1.1.1, on VL100 (phy e3/2/3), igmp_size=8
Jun 25 20:12:51:736548:info:fi_debug:debug_logs:1:62298343129220609:     forward to router fid 0x4FFF
Jun 25 20:12:51:737200:info:fi_debug:debug_logs:1:62298347424187905: IGMP: rcvd Report-V2(t=22)
g=225.1.1.2 resp=0, pkt S=11.3.1.2 to 225.1.1.2, on VL100 (phy e3/2/3), igmp_size=8
Jun 25 20:12:51:739037:info:fi_debug:debug_logs:1:62298347424187905:     forward to router fid 0x4FFF
Jun 25 20:12:53:900280:info:fi_debug:debug_logs:1:62298557877585409: IGMP: rcvd Leave(t=23)
g=225.1.1.1 resp=0, pkt S=11.3.1.2 to 224.0.0.2, on VL100 (phy e3/2/3), igmp_size=8
Jun 25 20:12:53:900405:info:fi_debug:debug_logs:1:62298557877585409:     V2 leave. fast-leave-v2, not
rtr port. removed immediately
Jun 25 20:12:53:901592:info:fi_debug:debug_logs:1:62298557877585409:     forward to router fid 0x4FFF
Jun 25 20:12:53:902213:info:fi_debug:debug_logs:1:62298562172552705: IGMP: rcvd Leave(t=23)
g=225.1.1.2 resp=0, pkt S=11.3.1.2 to 224.0.0.2, on VL100 (phy e3/2/3), igmp_size=8
Jun 25 20:12:53:902307:info:fi_debug:debug_logs:1:62298562172552705:     V2 leave. fast-leave-v2, not
rtr port. removed immediately
Jun 25 20:12:53:904511:info:fi_debug:debug_logs:1:62298562172552705:     forward to router fid 0x4FFF
```

debug ikev2

Enables IKEv2 debugging.

Syntax

debug ikev2{**all**|**error**|**event**|**packet**[**detail**|**receive**|**send**]|**peer***ip-address*|**trace**[**info**]}

no debug ikev2{**all**|**error**|**event**|**packet**[**detail**|**receive**|**send**]|**peer***ip-address*|**trace**[**info**]}

Parameters

all
Enables debugging of all IKEv2 instances.

error
Enables IKEv2 error debugging.

event
Enables IKEv2 event debugging.

packet
Enables IKEv2 packet debugging.

detail
Enables detailed IKEv2 packet debugging.

receive
Enables IKEv2 receive packet debugging.

send
Enables IKEv2 send packet debugging.

peer*ip-address*
Enables IKEv2 peer debugging to filter messages for a specific peer.

trace
Enables IKEv2 trace debugging.

info
Enables IKEv2 trace debugging information.

Modes

Privileged EXEC mode

Examples

The following command debugs IKEv2 event during tunnel down and rekeying.

```
device# debug ikev2 event

May 27 11:33:23:860083:info:fi_debug:debug_logs:1:85943137406550784: IKE:
ipike_isakmp_resend_tmo_cb() :: for tunnel 1
May 27 11:33:19:629815:info:fi_debug:debug_logs:1:5041527101326849: IKE:
ike_ipsec_fpga_ingress_spi_hash_index_write:ingress spi 4935 removed from dummmy fpga bucket 234
```

The following command debugs IKEv2 error during mismatch in algorithms.

```
device# debug ikev2 error

IKEV2: ike error is enabled
Debug: Mar 13 20:14:08 IKE: ipike_isakmp_resend_tmo_cb() :: for tunnel 44
Debug: Mar 13 20:14:39 IKE: ipike_ipsec_sadb_sa_rekey() :: rekey timeout for IPsec SA 0x1224Debug: Mar
13 20:14:08
IKE: ipike_isakmp_resend_tmo_cb() :: for tunnel 44
Debug: Mar 13 20:14:39 IKE: ipike_ipsec_sadb_sa_rekey() :: rekey timeout for IPsec SA 0x1224
Debug: Mar 13 20:21:39 IKE: ipike_payload_notify_process_error() :: exchange rejected with
NO_PROPOSAL_CHOSEN for tunnel 31
Debug: Mar 13 20:21:39 IKE: ipike_exchange_sa_init_on_delete() :: the exchange was not finished,
removing (incomplete)
IKE SA for tunnel 31
Debug: Mar 13 20:21:44 IKE: ipike_policy_select_sa_param: no proposal was accepted
Debug: Mar 13 20:21:44 IKE: ipike_exchange_sa_init_on_delete() :: the exchange was not finished,
removing (incomplete)
IKE SA for tunnel 31
Debug: Mar 13 20:21:49 IKE: ipike_payload_notify_process_error() :: exchange rejected with
NO_PROPOSAL_CHOSEN for tunnel 31
Debug: Mar 13 20:21:49 IKE: ipike_exchange_sa_init_on_delete() :: the exchange was not finished,
removing (incomplete)
IKE SA for tunnel 31
Debug: Mar 13 20:21:54 IKE: ike_wr_policy_accept_id return 1
```

The following command debugs IKEv2 trace.

```
device# debug ikev2 trace

Debug: Mar 13 20:28:40 IKE: Locking IKE SA (ref count 1)
Debug: Mar 13 20:28:40 IKE:     initiator cookie: 0xe6e53f1404a54b7c
Debug: Mar 13 20:28:40 IKE:     responder cookie: 0xf81e5e7816388386
Debug: Mar 13 20:28:40 IKE: Locking IKE SA (ref count 2)
Debug: Mar 13 20:28:40 IKE:     initiator cookie: 0xe6e53f1404a54b7c
Debug: Mar 13 20:28:40 IKE:     responder cookie: 0xf81e5e7816388386
Debug: Mar 13 20:28:40 IKE: ipike_isakmp_hash_obj_cookie() :: hash key: id=721, type=37, init=1 -> val
= 816f120f
Debug: Mar 13 20:28:40 IKE: ipike_isakmp_hash_add() :: hash: id=721, type=37, init=1, phase1=0
Debug: Mar 13 20:28:40 IKE: Sending request to 103.1.1.2 [500]
Debug: Mar 13 20:28:40 IKE: Message encrypted 88 bytes
Debug: Mar 13 20:28:40 IKE: Send 88 octets from 106.1.1.1:500 to 103.1.1.2:500
Debug: Mar 13 20:28:40 IKE: Releasing IKE SA (ref count 1), for tunnel 2
Debug: Mar 13 20:28:40 IKE:     initiator cookie: 0xe6e53f1404a54b7c
Debug: Mar 13 20:28:40 IKE:     responder cookie: 0xf81e5e7816388386
Debug: Mar 13 20:28:40 IKE: Locking IKE SA (ref count 1)
Debug: Mar 13 20:28:40 IKE:     initiator cookie: 0xb23c157874ab5638
Debug: Mar 13 20:28:40 IKE:     responder cookie: 0x599cb6a1a4d3d0fb
Debug: Mar 13 20:28:40 IKE: Releasing IKE SA (ref count 0), for tunnel 17
Debug: Mar 13 20:28:40 IKE:     initiator cookie: 0xb23c157874ab5638
Debug: Mar 13 20:28:40 IKE:     responder cookie: 0x599cb6a1a4d3d0fb
Debug: Mar 13 20:28:40 ike ipv4 packet received with src 103.1.1.2 and dest 106.1.1.1 vrf 0 length 88
Debug: Mar 13 20:28:40 IKE: ipike_isakmp_hash_get_from_cookie() :: hash key: id=721, type=37, init=1
Debug: Mar 13 20:28:40 IKE: Message decrypted 88 bytes
Debug: Mar 13 20:28:40 IKE: ipike_check_payloads() :: no payloads exist according to the ISAKMP header
Debug: Mar 13 20:28:40 IKE: ipike_isakmp_process_message_response() :: destroying completed exchange
Debug: Mar 13 20:28:40 IKE: ipike_isakmp_free_exchange() :: exchange 193/1/9 type - INFORMATIONAL
Debug: Mar 13 20:28:40 IKE: ipike_isakmp_hash_obj_cookie() :: hash key: id=0, type=0, init=0 -> val =
816f120f
Debug: Mar 13 20:28:40 IKE: Releasing IKE SA (ref count 0), for tunnel 2
Debug: Mar 13 20:28:40 IKE:     initiator cookie: 0xe6e53f1404a54b7c
Debug: Mar 13 20:28:40 IKE:     responder cookie: 0xf81e5e7816388386
```

The following command debugs IKEv2 trace info.

```
device# debug ikev2 trace info

IKEV2: trace info is enabled
DUT1#Debug: Mar 13 20:27:18 IKE: Received response 18.18.18.2[500], INFORMATIONAL, #2(2), ID 2da
Debug: Mar 13 20:27:18 IKE: informational exchange done
Debug: Mar 13 20:27:18 IKE: Received response 13.13.13.2[500], INFORMATIONAL, #2(2), ID 2
Debug: Mar 13 20:27:18 IKE: informational exchange done
Debug: Mar 13 20:27:18 IKE: Received response 4.4.4.2[500], INFORMATIONAL, #2(2), ID 2bc
Debug: Mar 13 20:27:18 IKE: informational exchange done
Debug: Mar 13 20:27:28 IKE: Received response 22.22.22.2[500], INFORMATIONAL, #2(2), ID 2de
Debug: Mar 13 20:27:28 IKE: informational exchange done
Debug: Mar 13 20:27:28 IKE: Received response 2.2.2.2[500], INFORMATIONAL, #2(2), ID 2c7
Debug: Mar 13 20:27:28 IKE: informational exchange done
```

The following command debugs IKEv2 packet.

```
device# debug ikev2 packet

IKEV2:  packet debugging is on
Debug: Mar 13 20:29:26 ike ipv4 packet received with src 122.1.1.2 and dest 120.1.1.1 vrf 3 length 88
Debug: Mar 13 20:29:26 ike_transmit_packet send packet to 122.1.1.2:500 from 120.1.1.1:500 vrf:3 length
88
Debug: Mar 13 20:29:26 IKE sub task: packet transmitted to 122.1.1.2
Debug: Mar 13 20:29:37 ike ipv4 packet received with src 102.1.1.2 and dest 100.1.1.1 vrf 0 length 88
Debug: Mar 13 20:29:37 ike_transmit_packet send packet to 102.1.1.2:500 from 100.1.1.1:500 vrf:0 length
88
Debug: Mar 13 20:29:37 IKE sub task: packet transmitted to 102.1.1.2
Debug: Mar 13 20:29:41 ike_transmit_packet send packet to 12.12.12.2:500 from 12.12.12.1:500 vrf:0
length 88
Debug: Mar 13 20:29:41 IKE sub task: packet transmitted to 12.12.12.2
Debug: Mar 13 20:29:41 ike ipv4 packet received with src 12.12.12.2 and dest 12.12.12.1 vrf 0 length 88
Debug: Mar 13 20:29:58 IKE: Create notify payload with message type 16393
Debug: Mar 13 20:29:58 IKE: Create notify payload with message type 16394
Debug: Mar 13 20:29:58 ike_transmit_packet send packet to 20.20.20.2:500 from 20.20.20.1:500 vrf:0
length 248
Debug: Mar 13 20:29:58 IKE sub task: packet transmitted to 20.20.20.2
Debug: Mar 13 20:29:58 ike ipv4 packet received with src 20.20.20.2 and dest 20.20.20.1 vrf 0 length 248
Debug: Mar 13 20:29:58 IKE: Process initial contact notify payload for tunnel 20
Debug: Mar 13 20:29:58 ike_transmit_packet send packet to 20.20.20.2:500 from 20.20.20.1:500 vrf:0
length 88
Debug: Mar 13 20:29:58 IKE sub task: packet transmitted to 20.20.20.2
Debug: Mar 13 20:29:58 ike ipv4 packet received with src 20.20.20.2 and dest 20.20.20.1 vrf 0 length 88
Debug: Mar 13 20:29:58 ike ipv4 packet received with src 20.20.20.2 and dest 20.20.20.1 vrf 0 length 88
Debug: Mar 13 20:29:58 ike_transmit_packet send packet to 20.20.20.2:500 from 20.20.20.1:500 vrf:0
length 88
Debug: Mar 13 20:29:58 IKE sub task: packet transmitted to 20.20.20.2
```

The following command debugs IKEv2 send packet.

```
device# debug ikev2 packet send

Debug: Mar 13 20:30:53 ike_transmit_packet send packet to 19.19.19.2:500 from 19.19.19.1:500 vrf:0
length 88
```

The following command debugs IKEv2 receive packet.

```
device# debug ikev2 packet receive

Debug: Debug: Mar 13 20:31:32 ike ipv4 packet received with src 13.13.13.2 and dest 13.13.13.1 vrf 0
length 80
Debug: Mar 13 20:32:10 ike ipv4 packet received with src 122.1.1.2 and dest 120.1.1.1 vrf 3 length 88
Debug: Mar 13 20:32:11 ike ipv4 packet received with src 122.1.1.2 and dest 120.1.1.1 vrf 3 length 88
Debug: Mar 13 20:32:26 ike ipv4 packet received with src 18.18.18.2 and dest 18.18.18.1 vrf 0 length 88
Debug: Mar 13 20:32:26 ike ipv4 packet received with src 4.4.4.2 and dest 4.4.4.1 vrf 0 length 88
```

The following command debugs IKEv2 packets in detail.

```
device# debug ikev2 packet detail

Debug: Mar 13 20:33:17 +++ ISAKMP package start (message # 1) +++
Debug: Mar 13 20:33:17   < IKE Header >
Debug: Mar 13 20:33:17   IKE_SA Initiator's SPI: 0x333aa6c1ea301ed5
Debug: Mar 13 20:33:17   IKE_SA Responder's SPI: 0xb311338eb36cd7de
Debug: Mar 13 20:33:17   Next Payload:     none (0)
Debug: Mar 13 20:33:17   Version:          2.0
Debug: Mar 13 20:33:17   Exchange Type:    INFORMATIONAL
Debug: Mar 13 20:33:17   Flags:            [ INITIATOR ]
Debug: Mar 13 20:33:17   Message ID:       684
Debug: Mar 13 20:33:17   Length:           28 (#x)
Debug: Mar 13 20:33:17 --- ISAKMP package end (message # 1) ---
Debug: Mar 13 20:33:17 +++ ISAKMP package start (message # 2) +++
Debug: Mar 13 20:33:17   < IKE Header >
Debug: Mar 13 20:33:17   IKE_SA Initiator's SPI: 0x333aa6c1ea301ed5
Debug: Mar 13 20:33:17   IKE_SA Responder's SPI: 0xb311338eb36cd7de
Debug: Mar 13 20:33:17   Next Payload:     none (0)
Debug: Mar 13 20:33:17   Version:          2.0
Debug: Mar 13 20:33:17   Exchange Type:    INFORMATIONAL
Debug: Mar 13 20:33:17   Flags:            [ RESPONSE ]
Debug: Mar 13 20:33:17   Message ID:       684
Debug: Mar 13 20:33:17   Length:           28 (#x)
Debug: Mar 13 20:33:17 --- ISAKMP package end (message # 2) ---
Debug: Mar 13 20:33:23 +++ ISAKMP package start (message # 1) +++
Debug: Mar 13 20:33:23   < IKE Header >
Debug: Mar 13 20:33:23   IKE_SA Initiator's SPI: 0x506e28a9b3870d90
Debug: Mar 13 20:33:23   IKE_SA Responder's SPI: 0xb860b97a5b1995b8
Debug: Mar 13 20:33:23   Next Payload:     none (0)
Debug: Mar 13 20:33:23   Version:          2.0
Debug: Mar 13 20:33:23   Exchange Type:    INFORMATIONAL
Debug: Mar 13 20:33:23   Flags:            [ ]
Debug: Mar 13 20:33:23   Message ID:       2
Debug: Mar 13 20:33:23   Length:           28 (#x)
```

The following command debugs all IKEv2 instances.

```
device# debug ikev2 all

Debug: Mar 13 20:38:39 ike ipv4 packet received with src 102.1.1.2 and dest 100.1.1.1 vrf 0 length 88
Debug: Mar 13 20:38:39 IKE: ipike_isakmp_hash_get_from_cookie() :: hash key: id=6, type=37, init=0
Debug: Mar 13 20:38:39 IKE: ipike_isakmp_hash_get_from_cookie() :: hash key: id=6, type=37, init=0
Debug: Mar 13 20:38:39 IKE: New exchange started (INFORMATIONAL with Message ID: 6)
Debug: Mar 13 20:38:39 IKE: Locking IKE SA (ref count 1)
Debug: Mar 13 20:38:39 IKE:     initiator cookie: 0xd762b2a1b460a8da
Debug: Mar 13 20:38:39 IKE:     responder cookie: 0x22e7083e0ef7753a
Debug: Mar 13 20:38:39 IKE: ipike_isakmp_lookup_config() :: Found IKE SA in SADB database, id=tunnel44,
looking up in config database
Debug: Mar 13 20:38:39 IKE: Releasing IKE SA (ref count 0), for tunnel 44
Debug: Mar 13 20:38:39 IKE:     initiator cookie: 0xd762b2a1b460a8da
Debug: Mar 13 20:38:39 IKE:     responder cookie: 0x22e7083e0ef7753a
Debug: Mar 13 20:38:39 IKE: ipike_isakmp_lookup_config() :: Found IKE SA configuration based on SADB
entry
Debug: Mar 13 20:38:39 IKE: Locking IKE SA (ref count 1)
Debug: Mar 13 20:38:39 IKE:     initiator cookie: 0xd762b2a1b460a8da
Debug: Mar 13 20:38:39 IKE:     responder cookie: 0x22e7083e0ef7753a
Debug: Mar 13 20:38:39 IKE: ipike_isakmp_lookup_config() :: Found IKE SA in SADB database, id=tunnel44,
looking up in config database
Debug: Mar 13 20:38:39 IKE: Releasing IKE SA (ref count 0), for tunnel 44
Debug: Mar 13 20:38:39 IKE:     initiator cookie: 0xd762b2a1b460a8da
Debug: Mar 13 20:38:39 IKE:     responder cookie: 0x22e7083e0ef7753a
Debug: Mar 13 20:38:39 IKE: ipike_isakmp_lookup_config() :: Found IKE SA configuration based on SADB
entry
Debug: Mar 13 20:38:39 IKE: Locking IKE SA (ref count 1)
Debug: Mar 13 20:38:39 IKE:     initiator cookie: 0xd762b2a1b460a8da
Debug: Mar 13 20:38:39 IKE:     responder cookie: 0x22e7083e0ef7753a
Debug: Mar 13 20:38:39 IKE: ipike_isakmp_hash_obj_cookie() :: hash key: id=6, type=37, init=0 -> val =
f2d6968f
Debug: Mar 13 20:38:39 IKE: ipike_isakmp_hash_add() :: hash: id=6, type=37, init=0, phase1=0
Debug: Mar 13 20:38:39 IKE: Received request 102.1.1.2[500], INFORMATIONAL, #1(2), ID 6
Debug: Mar 13 20:38:39 IKE: Message decrypted 88 bytes
Debug: Mar 13 20:38:39 +++ ISAKMP package start (message # 1) +++
Debug: Mar 13 20:38:39   < IKE Header >
Debug: Mar 13 20:38:39   IKE_SA Initiator's SPI: 0xd762b2a1b460a8da
Debug: Mar 13 20:38:39   IKE_SA Responder's SPI: 0x22e7083e0ef7753a
Debug: Mar 13 20:38:39   Next Payload:     delete (42)
Debug: Mar 13 20:38:39   Version:          2.0
Debug: Mar 13 20:38:39   Exchange Type:    INFORMATIONAL
Debug: Mar 13 20:38:39   Flags:            [ INITIATOR ]
Debug: Mar 13 20:38:39   Message ID:       6
Debug: Mar 13 20:38:39   Length:           40 (#x)
Debug: Mar 13 20:38:39 IKE:   < delete >
Debug: Mar 13 20:38:39 IKE:       Next Payload: none (0)
Debug: Mar 13 20:38:39 IKE:     Payload Length: 12 (#x)
Debug: Mar 13 20:38:39 IKE:     protocol ID: IPSEC_ESP
Debug: Mar 13 20:38:39 IKE:     SPI 1: 00001748
Debug: Mar 13 20:38:39 --- ISAKMP package end (message # 1) ---
Debug: Mar 13 20:38:39 IKE: Deleting IPsec SA
Debug: Mar 13 20:38:39 IKE: Deleting IPsec SA
Debug: Mar 13 20:38:39 IKE: Sending response to 102.1.1.2 [500]
Debug: Mar 13 20:38:39 +++ ISAKMP package start (message # 2) +++
Debug: Mar 13 20:38:39   < IKE Header >
Debug: Mar 13 20:38:39   IKE_SA Initiator's SPI: 0xd762b2a1b460a8da
Debug: Mar 13 20:38:39   IKE_SA Responder's SPI: 0x22e7083e0ef7753a
Debug: Mar 13 20:38:39   Next Payload:     delete (42)
Debug: Mar 13 20:38:39   Version:          2.0
Debug: Mar 13 20:38:39   Exchange Type:    INFORMATIONAL
Debug: Mar 13 20:38:39   Flags:            [ RESPONSE ]
Debug: Mar 13 20:38:39   Message ID:       6
Debug: Mar 13 20:38:39   Length:           40 (#x)
Debug: Mar 13 20:38:39 IKE:   < delete >
Debug: Mar 13 20:38:39 IKE:       Next Payload: none (0)
Debug: Mar 13 20:38:39 IKE:     Payload Length: 12 (#x)
Debug: Mar 13 20:38:39 IKE:     protocol ID: IPSEC_ESP
Debug: Mar 13 20:38:39 IKE:     SPI 1: 00000b81
Debug: Mar 13 20:38:39 --- ISAKMP package end (message # 2) ---
```

```
Debug: Mar 13 20:38:39 IKE: Sending message 102.1.1.2[500]: INFORMATIONAL, #2(2), ID 6
Debug: Mar 13 20:38:39 IKE: Message encrypted 88 bytes
Debug: Mar 13 20:38:39 IKE: Send 88 octets from 100.1.1.1:500 to 102.1.1.2:500
Debug: Mar 13 20:38:39 IKE: informational exchange done
Debug: Mar 13 20:38:39 IKE: ipike_isakmp_add_ipsec_negotiation() :: Adding IPsec negotiation for
'tunnel44'
Debug: Mar 13 20:38:39 IKE: ipike_isakmp_add_ipsec_negotiation() :: looking up IKE SA based on addresses
Debug: Mar 13 20:38:39 IKE:          local address: 100.1.1.1
Debug: Mar 13 20:38:39 IKE:          remote address: 102.1.1.2
Debug: Mar 13 20:38:39 IKE: Locking IKE SA (ref count 2)
Debug: Mar 13 20:38:39 IKE:     initiator cookie: 0xd762b2a1b460a8da
Debug: Mar 13 20:38:39 IKE:     responder cookie: 0x22e7083e0ef7753a
Debug: Mar 13 20:38:39 IKE: ipike_isakmp_add_ipsec_negotiation() :: ipsec sa will not be started by
responder for tunnel 44
Debug: Mar 13 20:38:39 IKE: Releasing IKE SA (ref count 1), for tunnel 44
Debug: Mar 13 20:38:39 IKE:     initiator cookie: 0xd762b2a1b460a8da
Debug: Mar 13 20:38:39 IKE:     responder cookie: 0x22e7083e0ef7753a
Debug: Mar 13 20:38:39 IKE: ipike_dispatch_start_sa_negotiation() :: failed to start IPSec negotiation
(tunnel44_0)

SYSLOG: <14> Mar 13 20:38:39 DUT1 IPsec: IPSec session down Source 102.1.1.2 Destination 100.1.1.1 VRF
0 SPI 0xb81 Direction Ingress

SYSLOG: <14> Mar 13 20:38:39 DUT1 IPsec: IPSec session down Source 100.1.1.1 Destination 102.1.1.2 VRF
0 SPI 0x1748 Direction Egress
Debug: Mar 13 20:38:39 ike ipv4 packet received with src 102.1.1.2 and dest 100.1.1.1 vrf 0 length 88
Debug: Mar 13 20:38:39 IKE: ipike_isakmp_hash_get_from_cookie() :: hash key: id=7, type=37, init=0
Debug: Mar 13 20:38:39 IKE: ipike_isakmp_hash_get_from_cookie() :: hash key: id=7, type=37, init=0
Debug: Mar 13 20:38:39 IKE: New exchange started (INFORMATIONAL with Message ID: 7)
Debug: Mar 13 20:38:39 IKE: Locking IKE SA (ref count 2)
Debug: Mar 13 20:38:39 IKE:     initiator cookie: 0xd762b2a1b460a8da
Debug: Mar 13 20:38:39 IKE:     responder cookie: 0x22e7083e0ef7753a
Debug: Mar 13 20:38:39 IKE: ipike_isakmp_lookup_config() :: Found IKE SA in SADB database, id=tunnel44,
looking up in config database
Debug: Mar 13 20:38:39 IKE: Releasing IKE SA (ref count 1), for tunnel 44
Debug: Mar 13 20:38:39 IKE:     initiator cookie: 0xd762b2a1b460a8da
Debug: Mar 13 20:38:39 IKE:     responder cookie: 0x22e7083e0ef7753a
Debug: Mar 13 20:38:39 IKE: ipike_isakmp_lookup_config() :: Found IKE SA configuration based on SADB
entry
Debug: Mar 13 20:38:39 IKE: Locking IKE SA (ref count 2)
Debug: Mar 13 20:38:39 IKE:     initiator cookie: 0xd762b2a1b460a8da
Debug: Mar 13 20:38:39 IKE:     responder cookie: 0x22e7083e0ef7753a
Debug: Mar 13 20:38:39 IKE: ipike_isakmp_lookup_config() :: Found IKE SA in SADB database, id=tunnel44,
looking up in config database
Debug: Mar 13 20:38:39 IKE: Releasing IKE SA (ref count 1), for tunnel 44
Debug: Mar 13 20:38:39 IKE:     initiator cookie: 0xd762b2a1b460a8da
Debug: Mar 13 20:38:39 IKE:     responder cookie: 0x22e7083e0ef7753a
Debug: Mar 13 20:38:39 IKE: ipike_isakmp_lookup_config() :: Found IKE SA configuration based on SADB
entry
Debug: Mar 13 20:38:39 IKE: Locking IKE SA (ref count 2)
Debug: Mar 13 20:38:39 IKE:     initiator cookie: 0xd762b2a1b460a8da
Debug: Mar 13 20:38:39 IKE:     responder cookie: 0x22e7083e0ef7753a
Debug: Mar 13 20:38:39 IKE: ipike_isakmp_hash_obj_cookie() :: hash key: id=7, type=37, init=0 -> val =
bec1679
Debug: Mar 13 20:38:39 IKE: ipike_isakmp_hash_add() :: hash: id=7, type=37, init=0, phase1=0
Debug: Mar 13 20:38:39 IKE: Received request 102.1.1.2[500], INFORMATIONAL, #1(2), ID 7
Debug: Mar 13 20:38:39 IKE: Message decrypted 88 bytes
Debug: Mar 13 20:38:39 +++ ISAKMP package start (message # 1) +++
Debug: Mar 13 20:38:39   < IKE Header >
Debug: Mar 13 20:38:39   IKE_SA Initiator's SPI: 0xd762b2a1b460a8da
Debug: Mar 13 20:38:39   IKE_SA Responder's SPI: 0x22e7083e0ef7753a
Debug: Mar 13 20:38:39   Next Payload:     delete (42)
Debug: Mar 13 20:38:39   Version:          2.0
Debug: Mar 13 20:38:39   Exchange Type:    INFORMATIONAL
Debug: Mar 13 20:38:39   Flags:            [ INITIATOR ]
Debug: Mar 13 20:38:39   Message ID:       7
Debug: Mar 13 20:38:39   Length:           36 (#x)
Debug: Mar 13 20:38:39 IKE:   < delete >
Debug: Mar 13 20:38:39 IKE:       Next Payload: none (0)
Debug: Mar 13 20:38:39 IKE:     Payload Length: 8 (#x)
Debug: Mar 13 20:38:39 IKE:     protocol ID: ISAKMP
Debug: Mar 13 20:38:39 --- ISAKMP package end (message # 1) ---
```

```
Debug: Mar 13 20:38:39 IKE: Setting IKE SA (ref count 2) state to dying
Debug: Mar 13 20:38:39 IKE:     initiator cookie: 0xd762b2a1b460a8da
Debug: Mar 13 20:38:39 IKE:     responder cookie: 0x22e7083e0ef7753a
Debug: Mar 13 20:38:39 IKE: Sending response to 102.1.1.2 [500]
Debug: Mar 13 20:38:39 +++ ISAKMP package start (message # 2) +++
Debug: Mar 13 20:38:39   < IKE Header >
Debug: Mar 13 20:38:39   IKE_SA Initiator's SPI: 0xd762b2a1b460a8da
Debug: Mar 13 20:38:39   IKE_SA Responder's SPI: 0x22e7083e0ef7753a
Debug: Mar 13 20:38:39   Next Payload:     none (0)
Debug: Mar 13 20:38:39   Version:          2.0
Debug: Mar 13 20:38:39   Exchange Type:    INFORMATIONAL
Debug: Mar 13 20:38:39   Flags:            [ RESPONSE ]
Debug: Mar 13 20:38:39   Message ID:       7
Debug: Mar 13 20:38:39   Length:           32 (#x)
Debug: Mar 13 20:38:39 --- ISAKMP package end (message # 2) ---
Debug: Mar 13 20:38:39 IKE: Sending message 102.1.1.2[500]: INFORMATIONAL, #2(2), ID 7
Debug: Mar 13 20:38:39 IKE: Message encrypted 88 bytes
Debug: Mar 13 20:38:39 IKE: Send 88 octets from 100.1.1.1:500 to 102.1.1.2:500
Debug: Mar 13 20:38:39 IKE: informational exchange done
Debug: Mar 13 20:38:39 IKE sub task: packet transmitted to 102.1.1.2

SYSLOG: <14> Mar 13 20:38:39 DUT1 IKEv2: IKEv2 session down Source 100.1.1.1 Destination 102.1.1.2 VRF
0 SPI 0xd762b2a1b460a8da

SYSLOG: <14> Mar 13 20:38:39 DUT1 PORT: tn44 down due to  - IKE session down

SYSLOG: <14> Mar 13 20:38:39 DUT1 System: Interface ipsec_tnnl 44, state down  - IKE session down
Debug: Mar 13 20:38:39 IKE: local public DH value
2520515a f7536f69 27413bc7 0efc4262 0f501aa6 0deeed19 6ad81b3e 192ca278
cbc09936 34d4fe3d a60c2239 254a28f5 74225709 0bb186e0 95ee7777 134fdc4c
b6c021f4 39894aba 4c3dc91a e1f8c018 089b1570 57179b21 2ddcfd10 284cb2a8

Debug: Mar 13 20:38:39 IKE: ipike_isakmp_hash_obj_cookie() :: hash key: id=0, type=0, init=1 -> val =
78a81769
Debug: Mar 13 20:38:39 IKE: ipike_isakmp_hash_add() :: hash: id=0, type=34, init=1, phase1=1
Debug: Mar 13 20:38:39 Add Payload 33
Debug: Mar 13 20:38:39 Add Payload 47
Debug: Mar 13 20:38:39 Add Payload 41
Debug: Mar 13 20:38:39 Add Payload 34
Debug: Mar 13 20:38:39 Add Payload 40
Debug: Mar 13 20:38:39 IKE: Sending request to 102.1.1.2 [500]
Debug: Mar 13 20:38:39 +++ ISAKMP package start (message # 1) +++
Debug: Mar 13 20:38:39   < IKE Header >
Debug: Mar 13 20:38:39   IKE_SA Initiator's SPI: 0x4731b3c6a38c0641
Debug: Mar 13 20:38:39   IKE_SA Responder's SPI: 0x0000000000000000
Debug: Mar 13 20:38:39   Next Payload:     security association (33)
Debug: Mar 13 20:38:39   Version:          2.0
Debug: Mar 13 20:38:39   Exchange Type:    IKE_SA_INIT
Debug: Mar 13 20:38:39   Flags:            [ INITIATOR ]
Debug: Mar 13 20:38:39   Message ID:       0
Debug: Mar 13 20:38:39   Length:           248 (#x)
Debug: Mar 13 20:38:39 IKE:   < security association >
Debug: Mar 13 20:38:39 IKE:       Next Payload: key exchange (34)
Debug: Mar 13 20:38:39 IKE:     Payload Length: 48 (#x)
Debug: Mar 13 20:38:39     << proposal >>
Debug: Mar 13 20:38:39       Proposal #:  1
Debug: Mar 13 20:38:39       Protocol ID: ISAKMP
Debug: Mar 13 20:38:39       SPI Size:    0
Debug: Mar 13 20:38:39 IKE:       # of Transforms: 4
Debug: Mar 13 20:38:39       <<< transform >>>
Debug: Mar 13 20:38:39         Type: dh
Debug: Mar 13 20:38:39         ID:   ecp384
Debug: Mar 13 20:38:39       <<< transform >>>
Debug: Mar 13 20:38:39         Type: prf
Debug: Mar 13 20:38:39         ID:   sha384
Debug: Mar 13 20:38:39       <<< transform >>>
Debug: Mar 13 20:38:39         Type: encr
Debug: Mar 13 20:38:39         ID:   aes
Debug: Mar 13 20:38:39         Attr: 800e0100
Debug: Mar 13 20:38:39       <<< transform >>>
Debug: Mar 13 20:38:39         Type: integ
Debug: Mar 13 20:38:39         ID:   sha384
```

```
Debug: Mar 13 20:38:39 IKE:   < key exchange >
Debug: Mar 13 20:38:39 IKE:       Next Payload: nonce (40)
Debug: Mar 13 20:38:39 IKE:     Payload Length: 104 (#x)
Debug: Mar 13 20:38:39 IKE:     dh group: 'ecp384'
Debug: Mar 13 20:38:39 IKE:     data:
2520515a f7536f69 27413bc7 0efc4262 0f501aa6 0deeed19 6ad81b3e 192ca278
cbc09936 34d4fe3d a60c2239 254a28f5 74225709 0bb186e0 95ee7777 134fdc4c
b6c021f4 39894aba 4c3dc91a e1f8c018 089b1570 57179b21 2ddcfd10 284cb2a8

Debug: Mar 13 20:38:39 IKE:   < nonce >
Debug: Mar 13 20:38:39 IKE:       Next Payload: none (0)
Debug: Mar 13 20:38:39 IKE:     Payload Length: 68 (#x)
Debug: Mar 13 20:38:39 IKE:     data:
434bf3f8 3efe8553 e8c81844 2e3eed96 00380268 1908602d cd1437c2 624f4190
d00d7fe2 4e7fc709 20bdcc44 7373f178 0dfdd62c 370a97dc c01d7f35 3a0f6a3e

Debug: Mar 13 20:38:39 --- ISAKMP package end (message # 1) ---
Debug: Mar 13 20:38:39 IKE: Sending message 102.1.1.2[500]: IKE_SA_INIT, #1(4), ID 0
Debug: Mar 13 20:38:39 IKE: Send 248 octets from 100.1.1.1:500 to 102.1.1.2:500
Debug: Mar 13 20:38:39 IKE: Locking IKE SA (ref count 2)
Debug: Mar 13 20:38:39 IKE:     initiator cookie: 0x4731b3c6a38c0641
Debug: Mar 13 20:38:39 IKE:     responder cookie: 0x0000000000000000
Debug: Mar 13 20:38:39 IKE: Releasing IKE SA (ref count 1), for tunnel 44
Debug: Mar 13 20:38:39 IKE:     initiator cookie: 0x4731b3c6a38c0641
Debug: Mar 13 20:38:39 IKE:     responder cookie: 0x0000000000000000
Debug: Mar 13 20:38:39 ike_transmit_packet send packet to 102.1.1.2:500 from 100.1.1.1:500 vrf:0 length
248
Debug: Mar 13 20:38:39 IKE sub task: packet transmitted to 102.1.1.2
Debug: Mar 13 20:38:42 ike ipv4 packet received with src 102.1.1.2 and dest 100.1.1.1 vrf 0 length 248
Debug: Mar 13 20:38:42 IKE: ipike_isakmp_hash_get_from_cookie() :: hash key: id=0, type=0, init=0
Debug: Mar 13 20:38:42 IKE: ipike_isakmp_hash_get_from_cookie() :: hash key: id=0, type=0, init=0
Debug: Mar 13 20:38:42 IKE: New exchange started (IKE_SA_INIT with Message ID: 0)
Debug: Mar 13 20:38:42 IKE: ipike_isakmp_lookup_config() :: Found IKE SA configuration based on
addresses
Debug: Mar 13 20:38:42 IKE: ipike_isakmp_lookup_config() :: Found IKE SA configuration based on
addresses
Debug: Mar 13 20:38:42 IKE: Setting IKE SA (ref count 0) state to constructing
Debug: Mar 13 20:38:42 IKE:     initiator cookie: 0x20beacbe38bcb465
Debug: Mar 13 20:38:42 IKE:     responder cookie: 0x7f672fffc23b040d
Debug: Mar 13 20:38:42 IKE: Locking IKE SA (ref count 1)
Debug: Mar 13 20:38:42 IKE:     initiator cookie: 0x20beacbe38bcb465
Debug: Mar 13 20:38:42 IKE:     responder cookie: 0x7f672fffc23b040d
Debug: Mar 13 20:38:42 IKE: ipike_isakmp_hash_obj_cookie() :: hash key: id=0, type=0, init=0 -> val =
9b36fb21
Debug: Mar 13 20:38:42 IKE: ipike_isakmp_hash_add() :: hash: id=0, type=34, init=0, phase1=1
Debug: Mar 13 20:38:42 IKE: Received request 102.1.1.2[500], IKE_SA_INIT, #1(4), ID 0
Debug: Mar 13 20:38:42 +++ ISAKMP package start (message # 1) +++
Debug: Mar 13 20:38:42   < IKE Header >
Debug: Mar 13 20:38:42   IKE_SA Initiator's SPI: 0x20beacbe38bcb465
Debug: Mar 13 20:38:42   IKE_SA Responder's SPI: 0x0000000000000000
Debug: Mar 13 20:38:42   Next Payload:     security association (33)
Debug: Mar 13 20:38:42   Version:          2.0
Debug: Mar 13 20:38:42   Exchange Type:    IKE_SA_INIT
Debug: Mar 13 20:38:42   Flags:            [ INITIATOR ]
Debug: Mar 13 20:38:42   Message ID:       0
Debug: Mar 13 20:38:42   Length:           248 (#x)
Debug: Mar 13 20:38:42 IKE:   < security association >
Debug: Mar 13 20:38:42 IKE:       Next Payload: key exchange (34)
Debug: Mar 13 20:38:42 IKE:     Payload Length: 48 (#x)
Debug: Mar 13 20:38:42     << proposal >>
Debug: Mar 13 20:38:42       Proposal #:  1
Debug: Mar 13 20:38:42       Protocol ID: ISAKMP
Debug: Mar 13 20:38:42       SPI Size:    0
Debug: Mar 13 20:38:42 IKE:       # of Transforms: 4
Debug: Mar 13 20:38:42       <<< transform >>>
Debug: Mar 13 20:38:42         Type: dh
Debug: Mar 13 20:38:42         ID:   ecp384
Debug: Mar 13 20:38:42       <<< transform >>>
Debug: Mar 13 20:38:42         Type: prf
Debug: Mar 13 20:38:42         ID:   sha384
Debug: Mar 13 20:38:42       <<< transform >>>
Debug: Mar 13 20:38:42         Type: encr
```

```
Debug: Mar 13 20:38:42         ID:   aes
Debug: Mar 13 20:38:42         Attr: 800e0100
Debug: Mar 13 20:38:42       <<< transform >>>
Debug: Mar 13 20:38:42         Type: integ
Debug: Mar 13 20:38:42         ID:   sha384
Debug: Mar 13 20:38:42 IKE:   < key exchange >
Debug: Mar 13 20:38:42 IKE:       Next Payload: nonce (40)
Debug: Mar 13 20:38:42 IKE:     Payload Length: 104 (#x)
Debug: Mar 13 20:38:42 IKE:     dh group: 'ecp384'
Debug: Mar 13 20:38:42 IKE:     data:
d4d789d3 2d30c979 d856295d 5b740be8 32a7b1ff 6626d3d1 0d51f79c 9573fa48
4d158059 89d81198 1b525537 1c96102b e97e073d 8fe4b757 ebbbc40c 6ef76a3a
f5ac68f4 b24c094c 9af9c60d c8a02faa 9506dad8 5be9fe78 cf979743 22856a11

Debug: Mar 13 20:38:42 IKE:   < nonce >
Debug: Mar 13 20:38:42 IKE:       Next Payload: none (0)
Debug: Mar 13 20:38:42 IKE:     Payload Length: 68 (#x)
Debug: Mar 13 20:38:42 IKE:     data:
2d9db0d5 6453b7f2 0accc5d2 6117d17c 77518abf 1ff952d6 540658e0 98f4019d
c65b6824 ac19716d 25a398cd 16717c6d dc870989 149cff89 9ca77cf8 bbccb6f9

Debug: Mar 13 20:38:42 --- ISAKMP package end (message # 1) ---
Debug: Mar 13 20:38:42 IKE: selected 'aes' as encryption algorithm
Debug: Mar 13 20:38:42 IKE: selected '256' as key length
Debug: Mar 13 20:38:42 IKE: selected 'sha384' as hash algorithm
Debug: Mar 13 20:38:42 IKE: selected 'sha384' as integrity algorithm
Debug: Mar 13 20:38:42 IKE: selected 'ecp384' as DH group description
Debug: Mar 13 20:38:42 IKE: local public DH value
f20a76e2 a5f4ffd3 f1e602db 175e27a5 de6ee0bb 5398912b e42aa726 3707bffa
af06f3ab 07bd6d5e 91977b7d 71c29893 c6319ef9 5a8d8dbf 7d2f177c c6dd270b
01f81f5d 8fb8c352 6da36969 1c8252aa 4c251cda 68c6d48e 4dff1b3b 93644bbd

Debug: Mar 13 20:38:42 IKE: remote public DH value
d4d789d3 2d30c979 d856295d 5b740be8 32a7b1ff 6626d3d1 0d51f79c 9573fa48
4d158059 89d81198 1b525537 1c96102b e97e073d 8fe4b757 ebbbc40c 6ef76a3a
f5ac68f4 b24c094c 9af9c60d c8a02faa 9506dad8 5be9fe78 cf979743 22856a11

Debug: Mar 13 20:38:42 IKE: g^xy
23eb98ce 75f9e6b9 db74f391 943d6e62 99c1a70e 99661d30 5f2115b4 006abec2
d8c75633 dbac2fed 34812aea a6b37510
Debug: Mar 13 20:38:42 IKE: SKEYSEED: 6460e276 5e8521ee 2c660e02 672a1b40 1f9360af a9fa2d6a 3f2d7d7b
f063f98f
9c10967d 06c5267b ab3fd497 28ce695e
Debug: Mar 13 20:38:42 IKE: Key d:  d7c69fef 8f72fc49 0e059883 0a2809ce ea4a0920 e64914b7 da218b46
2b8b72fe
1f9e9c1c 5beda8da d4d4de43 3ba53661
Debug: Mar 13 20:38:42 IKE: Key ai: 4489ba21 e8a914c5 3a13694f f647c46b fbf0cef7 0ceb4c5d bdb623a5
5f4b01c5
62558333 0da07993 c6d187e0 1e638cb7
Debug: Mar 13 20:38:42 IKE: Key ar: 377095ad 1251bd49 265d66ef 3aaa090d d353bfff e98f651b 96a0ecfb
cd7c68d4
5058e99d 7e332161 8169a04e 8bae393f
Debug: Mar 13 20:38:42 IKE: Key ei: 8c31e91d f8011cdd c1674ea5 73b0ad12 6e60cc70 74cbf967 dbd35a49
99f0a679

Debug: Mar 13 20:38:42 IKE: Key er: 8e7881ff bf853fe2 a7b43864 67f9a587 827740e9 7f63125b 34526ac1
510b23fe

Debug: Mar 13 20:38:42 IKE: Key pi: f2646dde d9f565c4 72c1382e 94febb13 49762791 1152c357 64e7613f
00c538bb
ec2f5d4b 8c63b249 405769e9 35d8936c
Debug: Mar 13 20:38:42 IKE: Key pr: a917acb3 b370f56e 7501c8bc 50209201 375c7d6e 48820e68 f442c1a0
011d5f49
3773a2e1 23e8e867 6c288dcc f8d59a13
Debug: Mar 13 20:38:42 Add Payload 33
Debug: Mar 13 20:38:42 Add Payload 47
Debug: Mar 13 20:38:42 Add Payload 41
Debug: Mar 13 20:38:42 Add Payload 34
Debug: Mar 13 20:38:42 Add Payload 40
Debug: Mar 13 20:38:42 Add Payload 38
Debug: Mar 13 20:38:42 IKE: Sending response to 102.1.1.2 [500]
Debug: Mar 13 20:38:42 +++ ISAKMP package start (message # 2) +++
```

```
Debug: Mar 13 20:38:42   < IKE Header >
Debug: Mar 13 20:38:42   IKE_SA Initiator's SPI: 0x20beacbe38bcb465
Debug: Mar 13 20:38:42   IKE_SA Responder's SPI: 0x7f672fffc23b040d
Debug: Mar 13 20:38:42   Next Payload:     security association (33)
Debug: Mar 13 20:38:42   Version:          2.0
Debug: Mar 13 20:38:42   Exchange Type:    IKE_SA_INIT
Debug: Mar 13 20:38:42   Flags:            [ RESPONSE ]
Debug: Mar 13 20:38:42   Message ID:       0
Debug: Mar 13 20:38:42   Length:           248 (#x)
Debug: Mar 13 20:38:42 IKE:   < security association >
Debug: Mar 13 20:38:42 IKE:       Next Payload: key exchange (34)
Debug: Mar 13 20:38:42 IKE:     Payload Length: 48 (#x)
Debug: Mar 13 20:38:42     << proposal >>
Debug: Mar 13 20:38:42       Proposal #:  1
Debug: Mar 13 20:38:42       Protocol ID: ISAKMP
Debug: Mar 13 20:38:42       SPI Size:    0
Debug: Mar 13 20:38:42 IKE:       # of Transforms: 4
Debug: Mar 13 20:38:42       <<< transform >>>
Debug: Mar 13 20:38:42         Type: encr
Debug: Mar 13 20:38:42         ID:   aes
Debug: Mar 13 20:38:42         Attr: 800e0100
Debug: Mar 13 20:38:42       <<< transform >>>
Debug: Mar 13 20:38:42         Type: integ
Debug: Mar 13 20:38:42         ID:   sha384
Debug: Mar 13 20:38:42       <<< transform >>>
Debug: Mar 13 20:38:42         Type: prf
Debug: Mar 13 20:38:42         ID:   sha384
Debug: Mar 13 20:38:42       <<< transform >>>
Debug: Mar 13 20:38:42         Type: dh
Debug: Mar 13 20:38:42         ID:   ecp384
Debug: Mar 13 20:38:42 IKE:   < key exchange >
Debug: Mar 13 20:38:42 IKE:       Next Payload: nonce (40)
Debug: Mar 13 20:38:42 IKE:     Payload Length: 104 (#x)
Debug: Mar 13 20:38:42 IKE:     dh group: 'ecp384'
Debug: Mar 13 20:38:42 IKE:     data:
f20a76e2 a5f4ffd3 f1e602db 175e27a5 de6ee0bb 5398912b e42aa726 3707bffa
af06f3ab 07bd6d5e 91977b7d 71c29893 c6319ef9 5a8d8dbf 7d2f177c c6dd270b
01f81f5d 8fb8c352 6da36969 1c8252aa 4c251cda 68c6d48e 4dff1b3b 93644bbd

Debug: Mar 13 20:38:42 IKE:   < nonce >
Debug: Mar 13 20:38:42 IKE:       Next Payload: none (0)
Debug: Mar 13 20:38:42 IKE:     Payload Length: 68 (#x)
Debug: Mar 13 20:38:42 IKE:     data:
1d49d2fa 0b2c88d1 c01bcd5e 70dedfcd ef78d6dc e71584f0 df6beb24 38ff4e28
a431ba8f 892328dd e00f6029 9df67ff7 0d68de7a 143ca305 c42bbe53 78493a7f

Debug: Mar 13 20:38:42 --- ISAKMP package end (message # 2) ---
Debug: Mar 13 20:38:42 IKE: Sending message 102.1.1.2[500]: IKE_SA_INIT, #2(4), ID 0
Debug: Mar 13 20:38:42 IKE: Send 248 octets from 100.1.1.1:500 to 102.1.1.2:500
Debug: Mar 13 20:38:42 ike_transmit_packet send packet to 102.1.1.2:500 from 100.1.1.1:500 vrf:0 length
248
Debug: Mar 13 20:38:42 IKE sub task: packet transmitted to 102.1.1.2
Debug: Mar 13 20:38:42 ike ipv4 packet received with src 102.1.1.2 and dest 100.1.1.1 vrf 0 length 248
Debug: Mar 13 20:38:42 IKE: ipike_isakmp_hash_get_from_cookie() :: hash key: id=0, type=0, init=0
Debug: Mar 13 20:38:42 IKE: Received request 102.1.1.2[500], IKE_AUTH, #3(4), ID 1
Debug: Mar 13 20:38:42 IKE: Message decrypted 248 bytes
Debug: Mar 13 20:38:42 +++ ISAKMP package start (message # 3) +++
Debug: Mar 13 20:38:42   < IKE Header >
Debug: Mar 13 20:38:42   IKE_SA Initiator's SPI: 0x20beacbe38bcb465
Debug: Mar 13 20:38:42   IKE_SA Responder's SPI: 0x7f672fffc23b040d
Debug: Mar 13 20:38:42   Next Payload:     notify (41)
Debug: Mar 13 20:38:42   Version:          2.0
Debug: Mar 13 20:38:42   Exchange Type:    IKE_AUTH
Debug: Mar 13 20:38:42   Flags:            [ INITIATOR ]
Debug: Mar 13 20:38:42   Message ID:       1
Debug: Mar 13 20:38:42   Length:           188 (#x)
Debug: Mar 13 20:38:42 IKE:   < notify >
Debug: Mar 13 20:38:42 IKE:       Next Payload: identification initiator (35)
Debug: Mar 13 20:38:42 IKE:     Payload Length: 8 (#x)
Debug: Mar 13 20:38:42 IKE:     message type: ESP_TFC_PADDING_NOT_SUPPORTED (16394)
Debug: Mar 13 20:38:42 IKE:   < identification initiator >
Debug: Mar 13 20:38:42 IKE:       Next Payload: authentication (39)
```

```
Debug: Mar 13 20:38:42 IKE:     Payload Length: 12 (#x)
Debug: Mar 13 20:38:42 IKE:     id type: address
Debug: Mar 13 20:38:42 IKE:     id data: 00000000
Debug: Mar 13 20:38:42 IKE:   < authentication >
Debug: Mar 13 20:38:42 IKE:       Next Payload: security association (33)
Debug: Mar 13 20:38:42 IKE:     Payload Length: 56 (#x)
Debug: Mar 13 20:38:42 IKE:     method: 'pre_shared_key'
Debug: Mar 13 20:38:42 IKE:     data:
bf993791 8f2d42f5 3bc3ccad 59b8f2a5 761d9a83 d195d5d2 0f70de64 a5d0e677
25c2613a 47e72571 446cb83c 578f7b89
Debug: Mar 13 20:38:42 IKE:   < security association >
Debug: Mar 13 20:38:42 IKE:       Next Payload: traffic selector initiator (44)
Debug: Mar 13 20:38:42 IKE:     Payload Length: 36 (#x)
Debug: Mar 13 20:38:42     << proposal >>
Debug: Mar 13 20:38:42       Proposal #:  1
Debug: Mar 13 20:38:42       Protocol ID: IPSEC_ESP
Debug: Mar 13 20:38:42       SPI Size:    4
Debug: Mar 13 20:38:42 IKE:       spi data:    0000230e
Debug: Mar 13 20:38:42 IKE:       # of Transforms: 2
Debug: Mar 13 20:38:42       <<< transform >>>
Debug: Mar 13 20:38:42         Type: encr
Debug: Mar 13 20:38:42         ID:   aes256gcm
Debug: Mar 13 20:38:42         Attr: 800e0100
Debug: Mar 13 20:38:42       <<< transform >>>
Debug: Mar 13 20:38:42         Type: esn
Debug: Mar 13 20:38:42         ID:   off
Debug: Mar 13 20:38:42 IKE:   < traffic selector initiator >
Debug: Mar 13 20:38:42 IKE:       Next Payload: traffic selector responder (45)
Debug: Mar 13 20:38:42 IKE:     Payload Length: 24 (#x)
Debug: Mar 13 20:38:42 IKE:     Protocol:      any
Debug: Mar 13 20:38:42 IKE:     Address start: 0.0.0.0
Debug: Mar 13 20:38:42 IKE:     Address end:   255.255.255.255
Debug: Mar 13 20:38:42 IKE:     Port start:    0
Debug: Mar 13 20:38:42 IKE:     Port end:      65535
Debug: Mar 13 20:38:42 IKE:   < traffic selector responder >
Debug: Mar 13 20:38:42 IKE:       Next Payload: none (0)
Debug: Mar 13 20:38:42 IKE:     Payload Length: 24 (#x)
Debug: Mar 13 20:38:42 IKE:     Protocol:      any
Debug: Mar 13 20:38:42 IKE:     Address start: 0.0.0.0
Debug: Mar 13 20:38:42 IKE:     Address end:   255.255.255.255
Debug: Mar 13 20:38:42 IKE:     Port start:    0
Debug: Mar 13 20:38:42 IKE:     Port end:      65535
Debug: Mar 13 20:38:42 --- ISAKMP package end (message # 3) ---
Debug: Mar 13 20:38:42 IKE: Process initial contact notify payload for tunnel 44
Debug: Mar 13 20:38:42 IKE: ipike_crypto_read_cert: could not open tunnel_44
Debug: Mar 13 20:38:42 IKE: Message:
20beacbe 38bcb465 00000000 00000000 21202208 00000000 000000f8 22000030
0000002c 01010004 03000008 04000014 03000008 02000006 0300000c 0100000c
800e0100 00000008 0300000d 28000068 00140000 d4d789d3 2d30c979 d856295d
5b740be8 32a7b1ff 6626d3d1 0d51f79c 9573fa48 4d158059 89d81198 1b525537
1c96102b e97e073d 8fe4b757 ebbbc40c 6ef76a3a f5ac68f4 b24c094c 9af9c60d
c8a02faa 9506dad8 5be9fe78 cf979743 22856a11 00000044 2d9db0d5 6453b7f2
0accc5d2 6117d17c 77518abf 1ff952d6 540658e0 98f4019d c65b6824 ac19.
Debug: Mar 13 20:38:42 IKE: Authentication key:
7f602adf 7481a350 d4904150 ed0804b5 0a176fc3 46559ff4 19986e5f 5547be73
695b66ab 24eeabf4 1e9eabfa a0b0c75c
Debug: Mar 13 20:38:42 IKE: Authentication data:
bf993791 8f2d42f5 3bc3ccad 59b8f2a5 761d9a83 d195d5d2 0f70de64 a5d0e677
25c2613a 47e72571 446cb83c 578f7b89
Debug: Mar 13 20:38:42 IKE: Message:
20beacbe 38bcb465 7f672fff c23b040d 21202220 00000000 000000f8 22000030
0000002c 01010004 0300000c 0100000c 800e0100 03000008 0300000d 03000008
02000006 00000008 04000014 28000068 00140000 f20a76e2 a5f4ffd3 f1e602db
175e27a5 de6ee0bb 5398912b e42aa726 3707bffa af06f3ab 07bd6d5e 91977b7d
71c29893 c6319ef9 5a8d8dbf 7d2f177c c6dd270b 01f81f5d 8fb8c352 6da36969
1c8252aa 4c251cda 68c6d48e 4dff1b3b 93644bbd 00000044 1d49d2fa 0b2c88d1
c01bcd5e 70dedfcd ef78d6dc e71584f0 df6beb24 38ff4e28 a431ba8f 8923.
Debug: Mar 13 20:38:42 IKE: Authentication key:
7f602adf 7481a350 d4904150 ed0804b5 0a176fc3 46559ff4 19986e5f 5547be73
695b66ab 24eeabf4 1e9eabfa a0b0c75c
Debug: Mar 13 20:38:42 IKE: Authentication data:
3d9760af 143f7e57 7cd521b6 8034ddab e23e101c 54a584de d7ab54e9 0ce3365b
```

```
ab6d5db3 69d288eb 294c2aed f7f19a2c
Debug: Mar 13 20:38:42 IKE: use_esn from config: off

Debug: Mar 13 20:38:42 IKE: selected 'aes256gcm' as encryption algorithm
Debug: Mar 13 20:38:42 IKE: selected '256' as key length
Debug: Mar 13 20:38:42 IKE: selected 'off' for ESN
Debug: Mar 13 20:38:42 Add Payload 47
Debug: Mar 13 20:38:42 Add Payload 41
Debug: Mar 13 20:38:42 IKE: Create notify payload with message type 16394
Debug: Mar 13 20:38:42 Add Payload 36
Debug: Mar 13 20:38:42 Add Payload 37
Debug: Mar 13 20:38:42 Add Payload 39
Debug: Mar 13 20:38:42 Add Payload 33
Debug: Mar 13 20:38:42 Add Payload 44
Debug: Mar 13 20:38:42 Add Payload 45
Debug: Mar 13 20:38:42 Add Payload 48
Debug: Mar 13 20:38:42 IKE: Sending response to 102.1.1.2 [500]
Debug: Mar 13 20:38:42 +++ ISAKMP package start (message # 4) +++
Debug: Mar 13 20:38:42   < IKE Header >
Debug: Mar 13 20:38:42   IKE_SA Initiator's SPI: 0x20beacbe38bcb465
Debug: Mar 13 20:38:42   IKE_SA Responder's SPI: 0x7f672fffc23b040d
Debug: Mar 13 20:38:42   Next Payload:     notify (41)
Debug: Mar 13 20:38:42   Version:          2.0
Debug: Mar 13 20:38:42   Exchange Type:    IKE_AUTH
Debug: Mar 13 20:38:42   Flags:            [ RESPONSE ]
Debug: Mar 13 20:38:42   Message ID:       1
Debug: Mar 13 20:38:42   Length:           188 (#x)
Debug: Mar 13 20:38:42 IKE:   < notify >
Debug: Mar 13 20:38:42 IKE:       Next Payload: identification responder (36)
Debug: Mar 13 20:38:42 IKE:     Payload Length: 8 (#x)
Debug: Mar 13 20:38:42 IKE:     message type: ESP_TFC_PADDING_NOT_SUPPORTED (16394)
Debug: Mar 13 20:38:42 IKE:   < identification responder >
Debug: Mar 13 20:38:42 IKE:       Next Payload: authentication (39)
Debug: Mar 13 20:38:42 IKE:     Payload Length: 12 (#x)
Debug: Mar 13 20:38:42 IKE:     id type: address
Debug: Mar 13 20:38:42 IKE:     id data: 00000000
Debug: Mar 13 20:38:42 IKE:   < authentication >
Debug: Mar 13 20:38:42 IKE:       Next Payload: security association (33)
Debug: Mar 13 20:38:42 IKE:     Payload Length: 56 (#x)
Debug: Mar 13 20:38:42 IKE:     method: 'pre_shared_key'
Debug: Mar 13 20:38:42 IKE:     data:
3d9760af 143f7e57 7cd521b6 8034ddab e23e101c 54a584de d7ab54e9 0ce3365b
ab6d5db3 69d288eb 294c2aed f7f19a2c
Debug: Mar 13 20:38:42 IKE:   < security association >
Debug: Mar 13 20:38:42 IKE:       Next Payload: traffic selector initiator (44)
Debug: Mar 13 20:38:42 IKE:     Payload Length: 36 (#x)
Debug: Mar 13 20:38:42     << proposal >>
Debug: Mar 13 20:38:42       Proposal #:  1
Debug: Mar 13 20:38:42       Protocol ID: IPSEC_ESP
Debug: Mar 13 20:38:42       SPI Size:    4
Debug: Mar 13 20:38:42 IKE:       spi data:    000007fe
Debug: Mar 13 20:38:42 IKE:       # of Transforms: 2
Debug: Mar 13 20:38:42       <<< transform >>>
Debug: Mar 13 20:38:42         Type: esn
Debug: Mar 13 20:38:42         ID:   off
Debug: Mar 13 20:38:42       <<< transform >>>
Debug: Mar 13 20:38:42         Type: encr
Debug: Mar 13 20:38:42         ID:   aes256gcm
Debug: Mar 13 20:38:42         Attr: 800e0100
Debug: Mar 13 20:38:42 IKE:   < traffic selector initiator >
Debug: Mar 13 20:38:42 IKE:       Next Payload: traffic selector responder (45)
Debug: Mar 13 20:38:42 IKE:     Payload Length: 24 (#x)
Debug: Mar 13 20:38:42 IKE:     Protocol:      any
Debug: Mar 13 20:38:42 IKE:     Address start: 0.0.0.0
Debug: Mar 13 20:38:42 IKE:     Address end:   255.255.255.255
Debug: Mar 13 20:38:42 IKE:     Port start:    0
Debug: Mar 13 20:38:42 IKE:     Port end:      65535
Debug: Mar 13 20:38:42 IKE:   < traffic selector responder >
Debug: Mar 13 20:38:42 IKE:       Next Payload: none (0)
Debug: Mar 13 20:38:42 IKE:     Payload Length: 24 (#x)
Debug: Mar 13 20:38:42 IKE:     Protocol:      any
Debug: Mar 13 20:38:42 IKE:     Address start: 0.0.0.0
```

```
Debug: Mar 13 20:38:42 IKE:     Address end:   255.255.255.255
Debug: Mar 13 20:38:42 IKE:     Port start:    0
Debug: Mar 13 20:38:42 IKE:     Port end:      65535
Debug: Mar 13 20:38:42 --- ISAKMP package end (message # 4) ---
Debug: Mar 13 20:38:42 IKE: Sending message 102.1.1.2[500]: IKE_AUTH, #4(4), ID 1
Debug: Mar 13 20:38:42 IKE: Message encrypted 248 bytes
Debug: Mar 13 20:38:42 IKE: Send 248 octets from 100.1.1.1:500 to 102.1.1.2:500
Debug: Mar 13 20:38:42 IKE: ipike_sadb_get_from_ike_config() :: no IKE SA for peer 102.1.1.2, config id
'tunnel44'
Debug: Mar 13 20:38:42 IKE: Enc key inbound:  2d551d4a f27a5382 d6139507 9cd7ba09 b801f9f8 585ecd81
2703818e ff5aad8f
2720eb1c
Debug: Mar 13 20:38:42 IKE: Enc key outbound: c1984de9 10338d76 7d7c1d7a d47b84ee e9d7ba33 a116b639
dbab15f4 19fb8280
3e30fe3d
```

History

Release version	Command history
8.0.41	This command was introduced.

debug ip aaa

Activates the debugging of IP AAA/RADIUS protocol transactions.

Syntax

debug ip aaa

undebug ip aaa

Modes

Privileged EXEC mode

Usage Guidelines

Examples

The following example activates the debugging of IP AAA/RADIUS protocol transactions.

```
device# debug ip aaa
```

debug ip arp

Activates the debugging of ARP packets.

Syntax

debug ip arp { **create-delete** | **ip1** *ip_address* | **ip2** *ip_address* | **ip3** *ip_address* | **packets** | **processing** | **stacktrace** | **vrf** *vrf-name* }

no debug ip arp { **create-delete** | **ip1** *ip_address* | **ip2** *ip_address* | **ip3** *ip_address* | **packets** | **processing** | **stacktrace** | **vrf** *vrf-name* }

Parameters

create-delete
Specifies ARP creation deletion debugging.

ip1 *ip_address*
Specifies an IP address to watch.

ip2 *ip_address*
Specifies a second IP address to watch.

ip3 *ip_address*
Specifies a third IP address to watch.

packets
Specifies RX and TX packets.

processing
Specifies ARP processing.

stacktrace
Specifies the printing of stacktrace.

vrf *vrf-name*
Specifies a nondefault VRF instance.

Modes

Privileged EXEC mode

Usage Guidelines

no

Examples

The following example displays ARP creation deletion debugging information.

```
device# debug ip arp create-delete
ARP Creation / Deletion debugging: ON
```

The following example configures the watching of specified IP adddresses.

```
device# debug ip arp ip1 47.1.1.2
monitor arp 47.1.1.2
device# debug ip arp ip2 47.1.1.3
monitor arp 47.1.1.3
device# debug ip arp ip3 47.1.1.4
monitor arp 47.1.1.4
```

The following example enables ARP packet debugging and ARP processing.

```
device# debug ip arp packets
ARP packet debugging: ON
device# debug ip arp processing
ARP event handling debugging: ON
```

The following example enables the printing of stacktrace.

```
device# debug ip arp stacktrace
ARP Stack trace printing: ON
```

The following example activates the debugging of ARP information for a nondefault VRF instance.

```
device# debug ip arp vrf red
ARP Debugging set for VRF red
```

debug ip bgp

Enables BGP debugging information to be displayed.

Syntax

debug ip bgp [**address-family** { **ipv4** | **ipv6** } **unicast**

no debug ip bgp *neighbor_ip_address*

Parameters

address-family ipv4
Specifies an IPv4 address family.

address-family ipv6
Specifies an IPv6 address family.

unicast
Specifies unicast routing

Modes

Privileged EXEC mode

Usage Guidelines

The **no** form of the command disables BGP debugging information from being displayed.

Examples

The following example enables BGP debugging information.

```
device# debug ip bgp
```

debug ip bgp all-vrfs

Enables BGP debugging information to be displayed for all virtual routing and forwarding events (VRFs).

Syntax

debug ip bgp all-vrfs [**address-family** { **ipv4** | **ipv6** } | **bfd** | **dampening** | **events** | **general** | **graceful-restart** | **ip-prefix** *prefix-address/mask* | **ip-prefix-list** *prefix-list-name* | **keepalives** | **neighbor** { *ipv4-address* | *ipv6-address* } | **route-map** *route-map name* | **route-selection** | **updates** [**rx** | **tx**]]

no debug ip bgp all-vrfs [**address-family** { **ipv4** | **ipv6** } **unicast** | **bfd** | **dampening** | **events** | **general** | **graceful-restart** | **ip-prefix** *prefix-address/mask* | **ip-prefix-list** *prefix-list-name* | **keepalives** | **neighbor** { *ipv4-address* | *ipv6-address* } | **route-map** *route-map name* | **route-selection** | **updates** [**rx** | **tx**]]

Parameters

address-family ipv4
Specifies an IPv4 address family.

address-family ipv6
Specifies an IPv6 address family.

unicast
Specifies unicat routing

bfd
Specifies BGP BFD events.

dampening
Specifies BGP dampening.

events
Specifies BGP events.

general
Specifies common BGP debugs.

graceful-restart
Specifies BGP greaceful restart events.

ip-prefix *prefix-address/mask*
Specifies an IPv4 prefix.

ip-prefix-list *prefix-list-name*
Specifies an IPv4 prefix-list.

keepalives
Specifies BGP keepalives.

neighbor
Specifies a neighbor.

ipv4-address
Specifies an IPv4 address.

ipv6-address
Specifies an IPv6 address.

route-map *route-map name*
Specifies a route map.

route-selection
Specifies BGP route selection debugs.

updates
Specifies BGP receive, transmit, or receive and transmit update messages about debug processing.

rx
Specifies RX updates.

tx
Specifies TX updates.

Modes

Privileged EXEC mode

Usage Guidelines

The **no** form disables displaying BGP debugging information for all VRFs.

Examples

The following example enables debugging for all configured VRFs.

```
device# debug ip bgp all-vrfs events

         BGP:  events debugging is on
         BGP(vrf1):  events debugging is on
ICX7650-48F Router#
ICX7650-48F Router#

ICX7650-48F Router#debug ip bgp all-vrfs
         BGP:  bgp debugging is on
         BGP(vrf1):  bgp debugging is on
ICX7650-48F Router#
ICX7650-48F Router#debug ip bgp show
         BGP:  bgp debugging is on
         BGP:  events debugging is on
         BGP(vrf1):  bgp debugging is on
         BGP(vrf1):  events debugging is on
```

debug ip bgp dampening

Displays information about dampening process configurations, route penalties, durations, restraint, and release.

Syntax

debug ip bgp dampening

no debug ip bgp dampening

Modes

Privileged EXEC mode

Usage Guidelines

The **no** form disables the display of dampening-related information.

Examples

```
device# debug ip bgp dampening
BGP: 10.1.1.2 Decay 10.1.1.32/32, ostate <d>, oPnlty=6805, nPnlty=840, time=2712
BGP: 10.1.1.2 reuse_list_index=258, curr_offset=45
BGP: 10.1.1.2 10.1.1.32/32 not ready, state <d>, reuse_threshold=750, new_index=61, offset=45
BGP: 10.1.1.2 Decay 10.1.1.32/32, ostate <d>, oPnlty=6805, nPnlty=840, time=2712
BGP: 10.1.1.2 reuse_list_index=258, curr_offset=45
BGP: 10.1.1.2 10.1.1.32/32 not ready, state <d>, reuse_threshold=750, new_index=61, offset=45
BGP: 10.1.1.2 Decay 10.1.1.32/32, ostate <d>, oPnlty=6805, nPnlty=840, time=2712
BGP: 10.1.1.2 reuse_list_index=258, curr_offset=45
BGP: 10.1.1.2 10.1.1.32/32 not ready, state <d>, reuse_threshold=750, new_index=61, offset=45
BGP: 10.1.1.2 Decay 10.1.1.32/32, ostate <d>, oPnlty=6805, nPnlty=840, time=2712
BGP: 10.1.1.2 reuse_list_index=258, curr_offset=45
BGP: 10.1.1.2 10.1.1.32/32 not ready, state <d>, reuse_threshold=750, new_index=61, offset=45
BGP: 10.1.1.2 Decay 10.1.1.32/32, ostate <d>, oPnlty=6805, nPnlty=840, time=2712
BGP: 10.1.1.2 reuse_list_index=258, curr_offset=45
BGP: 10.1.1.2 10.1.1.32/32 not ready, state <d>, reuse_threshold=750, new_index=61, offset=45
```

debug ip bgp events

Generates information about BGP events, such as connection attempts and keepalive timer activity.

Syntax

debug ip bgp events

no debug ip bgp events

Modes

Privileged EXEC mode

Usage Guidelines

The **no** form disables the display of information about BGP events.

Examples

```
device# debug ip bgp events
          BGP:  events debugging is on
device# BGP: 10.1.34.10 rcv notification: CEASE Message
BGP: 10.1.34.10 Peer went to IDLE state (Rcv Notification)
BGP: 10.1.35.10 rcv notification: CEASE Message
BGP: 10.1.35.10 Peer went to IDLE state (Rcv Notification)
BGP: 10.1.34.10 sending Graceful Restart cap, rbit 0, fbit 0, time 120, length 6
BGP: 10.1.35.10 sending Graceful Restart cap, rbit 0, fbit 0, time 120, length 6
BGP: 10.1.34.10 rcv GR capability afi/safi=1/1 fbit 0
BGP: 10.1.34.10 Peer went to ESTABLISHED state
BGP: 10.1.35.10 rcv GR capability afi/safi=1/1 fbit 0
BGP: 10.1.35.10 Peer went to ESTABLISHED state
BGP: 10.1.34.10 rcv UPDATE EOR (0), waiting EOR 0
BGP: 10.1.35.10 rcv UPDATE EOR (0), waiting EOR 0
BGP: 10.1.34.10 sending EOR (safi 0)...
BGP: 10.1.35.10 sending EOR (safi 0)...
```

debug ip bgp general

Enables common BGP debugging information to be displayed.

Syntax

debug ip bgp general

no debug ip bgp general

Modes

Privileged EXEC mode

Usage Guidelines

The **no** form disables displaying common BGP debugging information.

Examples

The following example displays commong BGP debugging information.

```
device# debug ip bgp general
May 22 16:51:51:854970:info:fi_debug:debug_logs:1:707391389697: BGP: 70.1.10.1 stop peer, subcode 4
May 22 16:51:51:854993:info:fi_debug:debug_logs:1:707391389697: BGP: 70.1.10.1 sending NOTIFICATION
Cease (Administrative Reset)
May 22 16:51:51:855161:info:fi_debug:debug_logs:1:707391389697: BGP: 70.1.10.1 reset, BGP notification
Cease sent
May 22 16:51:51:855791:info:fi_debug:debug_logs:1:707391389697: BGP: 70.1.10.1 Closing TCP connection
0xdfc6dbdc state: 5 (0)
May 22 16:51:51:855945:info:fi_debug:debug_logs:1:707391389697: BGP: 70.1.10.1 BGP connection closed
May 22 16:51:51:856005:info:fi_debug:debug_logs:1:707391389697: BGP: Sync peer states to standby, peers
1
May 22 16:51:51:856030:info:fi_debug:debug_logs:1:707391389697: BGP: sending: peer (vrf 0) 70.1.10.1,
state 0, GR 1 (1, 0, 0), (1 0 0), safi 1, 0, 0
May 22 16:51:51:856051:info:fi_debug:debug_logs:1:707391389697: BGP: send IPC_MSGTYPE_BGP_STATE_UPDATE,
size 44
May 22 16:51:52:421261:info:fi_debug:debug_logs:1:96562669311493633: BGP: Rcv incoming TCP connection
check. handle 0:dfc6dbdc
May 22 16:51:52:672844:info:fi_debug:debug_logs:1:889028472370889472: BGP: 70.1.10.1 start peer
May 22 16:51:52:672878:info:fi_debug:debug_logs:1:889028472370889472: BGP: 70.1.10.1 Init TCP
Connection to peer, local IP 70.1.10.2
May 22 16:51:52:683217:info:fi_debug:debug_logs:1:96562686491362817: BGP: Rcv outgoing TCP connection
UP. handle 0:dfc6dbdc, key 0
May 22 16:51:52:683238:info:fi_debug:debug_logs:1:96562686491362817: BGP: 70.1.10.1 Active TCP
Connection is Open, local address 70.1.10.2
May 22 16:51:52:683253:info:fi_debug:debug_logs:1:96562686491362817: BGP: 70.1.10.1 TCP Connection
opened
May 22 16:51:52:683273:info:fi_debug:debug_logs:1:96562686491362817: BGP: 70.1.10.1 sending
MultiProtocol cap, afi/safi=1/1, length 4
May 22 16:51:52:683297:info:fi_debug:debug_logs:1:96562686491362817: BGP: 70.1.10.1 sending 4-octet ASN
cap, asn=64512, length 4
May 22 16:51:52:683313:info:fi_debug:debug_logs:1:96562686491362817: BGP: 70.1.10.1 sending Graceful
Restart cap, rbit 0,  time 120, length 6
May 22 16:51:52:683328:info:fi_debug:debug_logs:1:96562686491362817: BGP: 70.1.10.1 sending OPEN, My
asn=64512 holdTime=180 route_refresh=1 cooperative= 1, restart 1/0
May 22 16:51:52:685437:info:fi_debug:debug_logs:1:0: BGP: 70.1.10.1 rcv OPEN w/Option parameter length
34, My asn 64512, hold_time 180
May 22 16:51:52:685459:info:fi_debug:debug_logs:1:0: BGP: 70.1.10.1 rcv MP_EXT capability 1, len 4, afi/
safi=1/1
May 22 16:51:52:685474:info:fi_debug:debug_logs:1:0: BGP: 70.1.10.1 rcv capability 2, len 0
May 22 16:51:52:685486:info:fi_debug:debug_logs:1:0: BGP: 70.1.10.1 rcv capability 128, len 0
May 22 16:51:52:685500:info:fi_debug:debug_logs:1:0: BGP: 70.1.10.1 rcv 4-octet ASN capability 65, len
4, asn=64512,
May 22 16:51:52:685514:info:fi_debug:debug_logs:1:0:  BGP: 70.1.10.1 rcv Graceful  Restart capability
64, len 6, rbit 0, time 120
May 22 16:51:52:685526:info:fi_debug:debug_logs:1:0: BGP: 70.1.10.1 rcv GR capability afi/safi=1/1 fbit
0
May 22 16:51:52:712914:info:fi_debug:debug_logs:1:0: BGP: Sync peer states to standby, peers 1
May 22 16:51:52:712939:info:fi_debug:debug_logs:1:0: BGP: sending: peer (vrf 0) 70.1.10.1, state 1, GR
1 (1, 0, 0), (1 0 0), safi 1, 0, 0
May 22 16:51:52:712963:info:fi_debug:debug_logs:1:0: BGP: send IPC_MSGTYPE_BGP_STATE_UPDATE, size 44
```

debug ip bgp graceful-restart

Displays information about BGP graceful restarts. The graceful restart feature minimizes disruptions in forwarding and route flapping when a router restarts.

Syntax

debug ip bgp graceful-restart

no debug ip bgp graceful-restart

Modes

Privileged EXEC mode

Usage Guidelines

The **no** form of the command disables the display of information about BGP graceful restarts.

Examples

The following example displays debugging information for BGP Graceful Restart.

```
device# debug ip bgp graceful-restart

          BGP:  graceful-restart debugging is on
BGP: 10.1.251.6 save graceful restart parameters, #RIB_out 2 (safi 0)
10.1.251.6 RIB_out peer reset  #RIB_out 2 (safi 0)
 BGP: 10.1.251.6 sending Graceful Restart cap, rbit 0, fbit 0, time 120, length 6
BGP: 10.1.251.6 sending Graceful Restart cap, rbit 0, fbit 0, time 120, length 6
BGP: 10.1.251.6 sending Graceful Restart cap, rbit 0, fbit 0, time 120, length 6
BGP: 10.1.251.6 rcv GR capability afi/safi=1/1 fbit 1
BGP: 10.1.251.6 sending EOR (safi 0)...
```

debug ip bgp ip-prefix

Specifies the IPv4 prefix filter for BGP debugging information for all VRFs or for a specified VRF.

Syntax

debug ip bgp ip-prefix *prefix-address/mask*

no debug ip bgp all-vrfs *prefix-address/mask*

Parameters

prefix-address/mask

Specifies an IPv4 prefix.

Modes

Privileged EXEC mode

Usage Guidelines

Prefix filtering is functional with the **updates** [rx/tx], **route-selection**, and **dampening** keywords of the **debug ip bgp** command.

The **no** form disables the specification of the IPv4 prefix filter for BGP debugging information for all VRFs or for a specified VRF.

Examples

The following example specifies the IPv4 prefix filter for BGP debugging information for all VRFs.

```
device# debug ip bgp ip-prefix 1.0.6.0/24

May 22 16:57:39:833396:info:fi_debug:debug_logs:1:889374681094685440: BGP: select best route 1.0.6.0/24
load_share (ibgp 1, ip 1), (ebgp 1, ip 1)
May 22 16:57:39:833417:info:fi_debug:debug_logs:1:889374681094685440: BGP: eligible route 0
May 22 16:57:39:833433:info:fi_debug:debug_logs:1:889374681094685440: BGP: 150.0.0.3 Best path down
1.0.6.0/24, remove
May 22 16:57:39:833449:info:fi_debug:debug_logs:1:889374681094685440: BGP: 150.0.0.3 removing bgp route
advertisement 1.0.6.0/24
May 22 16:57:39:833477:info:fi_debug:debug_logs:1:889374681094685440: BGP: delete ipv4 route from fwd
table for 1.0.6.0/24
May 22 16:57:39:833495:info:fi_debug:debug_logs:1:889374681094685440: BGP: Clearing install flags for
1.0.6.0/24
May 22 16:57:40:662065:info:fi_debug:debug_logs:1:0: BGP: Adding 1.0.6.0/24 to ipv4 route table(0), bgp
next_hop=150.0.0.3
```

debug ip bgp ip-prefix-list

Specifies the IPv4 prefix filter for BGP debugging information for all VRFs or for a specified VRF.

Syntax

debug ip bgp ip-prefix-list *prefix-list-name*

no debug ip bgp ip-prefix-list *prefix-list-name*

Parameters

prefix-list-name

Specifies an IPv4 prefix-list.

Modes

Privileged EXEC mode

Usage Guidelines

Only one IPv4 prefix filter or prefix list can be configured on a VRF. Prefix filters and prefix lists cannot be configured simultaneously. IPv6 and IPv4 filters are applied separately.

The **no** form removes the specified IPv4 prefix filter for BGP debugging information.

Examples

The following example configures IPv4 prefix lists, and specifies these IPv4 prefix filters for BGP debugging information for all VRFs.

```
device# device(config)# ip prefix-list zzz permit 1.0.6.0/24
device(config)# ip prefix-list zzz permit 1.0.7.0/24
device(config)# ip prefix-list zzz permit 1.0.8.0/24
device(config)# exit
device #debug ip bgp ip-prefix-list zzz
                        permit 1.0.6.0/24
                        permit 1.0.7.0/24
                        permit 1.0.8.0/24
device# debug ip bgp show
         BGP:  bgp debugging is on
         BGP:  route-selection debugging is on
         BGP:  ip-prefix-list zzz debugging is on
                        permit 1.0.6.0/24
                        permit 1.0.7.0/24
                        permit 1.0.8.0/24

May 22 17:52:16:909851:info:fi_debug:debug_logs:1:892058704942203648: BGP: select best route 1.0.8.0/24
load_share (ibgp 1, ip 1), (ebgp 1, ip 1)
May 22 17:52:16:909872:info:fi_debug:debug_logs:1:892058704942203648: BGP: eligible route 0
May 22 17:52:16:909888:info:fi_debug:debug_logs:1:892058704942203648: BGP: 150.0.0.3 Best path down
1.0.8.0/24, remove
May 22 17:52:16:909904:info:fi_debug:debug_logs:1:892058704942203648: BGP: 150.0.0.3 removing bgp route
advertisement 1.0.8.0/24
May 22 17:52:16:909927:info:fi_debug:debug_logs:1:892058704942203648: BGP: delete ipv4 route from fwd
table for 1.0.8.0/24
May 22 17:52:16:909942:info:fi_debug:debug_logs:1:892058704942203648: BGP: Clearing install flags for
1.0.8.0/24
May 22 17:52:16:909973:info:fi_debug:debug_logs:1:892058704942203648: BGP: select best route 1.0.7.0/24
load_share (ibgp 1, ip 1), (ebgp 1, ip 1)
May 22 17:52:16:909988:info:fi_debug:debug_logs:1:892058704942203648: BGP: eligible route 0
May 22 17:52:16:910001:info:fi_debug:debug_logs:1:892058704942203648: BGP: 150.0.0.3 Best path down
1.0.7.0/24, remove
May 22 17:52:16:910016:info:fi_debug:debug_logs:1:892058704942203648: BGP: 150.0.0.3 removing bgp route
advertisement 1.0.7.0/24
May 22 17:52:16:910034:info:fi_debug:debug_logs:1:892058704942203648: BGP: delete ipv4 route from fwd
table for 1.0.7.0/24
May 22 17:52:16:910048:info:fi_debug:debug_logs:1:892058704942203648: BGP: Clearing install flags for
1.0.7.0/24
May 22 17:52:16:910076:info:fi_debug:debug_logs:1:892058704942203648: BGP: select best route 1.0.6.0/24
load_share (ibgp 1, ip 1), (ebgp 1, ip 1)
May 22 17:52:16:910089:info:fi_debug:debug_logs:1:892058704942203648: BGP: eligible route 0
May 22 17:52:16:910103:info:fi_debug:debug_logs:1:892058704942203648: BGP: 150.0.0.3 Best path down
1.0.6.0/24, remove
May 22 17:52:16:910116:info:fi_debug:debug_logs:1:892058704942203648: BGP: 150.0.0.3 removing bgp route
advertisement 1.0.6.0/24
May 22 17:52:16:910134:info:fi_debug:debug_logs:1:892058704942203648: BGP: delete ipv4 route from fwd
table for 1.0.6.0/24
May 22 17:52:16:910157:info:fi_debug:debug_logs:1:892058704942203648: BGP: Clearing install flags for
1.0.6.0/24
May 22 17:52:17:440097:info:fi_debug:debug_logs:1:0: BGP: Adding 1.0.6.0/24 to ipv4 route table(0), bgp
next_hop=150.0.0.3
May 22 17:52:17:440230:info:fi_debug:debug_logs:1:0: BGP: Adding 1.0.7.0/24 to ipv4 route table(0), bgp
next_hop=150.0.0.3
May 22 17:52:17:440289:info:fi_debug:debug_logs:1:0: BGP: Adding 1.0.8.0/24 to ipv4 route table(0), bgp
next_hop=150.0.0.3
```

debug ip bgp ipv6-prefix

Specifies the IPv6 prefix filter for BGP debugging information for all VRFs or for a specified VRF.

Syntax

debug ip bgp ipv6-prefix *ipv6-prefix-address/mask*

no debug ipv6 bgp all-vrfs *ipv6-prefix-address/mask*

Parameters

ipv6-prefix-address/mask
Specifies an IPv6 prefix.

Modes

Privileged EXEC mode

Usage Guidelines

Prefix filtering is functional with the **updates** [rx/tx], **route-selection**, and **dampening** keywords of the **debug ip bgp** command.

The **no** form removes the specified IPv6 prefix filter for BGP debugging information.

Examples

The following example specifies the IPv4 prefix filter for BGP debugging information for all VRFs.

```
device# debug ip bgp ipv6-prefix 2001:db8:8::/45

May 22 16:57:39:833396:info:fi_debug:debug_logs:1:889374681094685440: BGP: select best route
2001:db8:8::/45 load_share (ibgp 1, ip 1), (ebgp 1, ip 1)
May 22 16:57:39:833417:info:fi_debug:debug_logs:1:889374681094685440: BGP: eligible route 0
May 22 16:57:39:833433:info:fi_debug:debug_logs:1:889374681094685440: BGP: 150.0.0.3 Best path down
2001:db8:8::/45, remove
May 22 16:57:39:833449:info:fi_debug:debug_logs:1:889374681094685440: BGP: 150.0.0.3 removing bgp route
advertisement 2001:db8:8::/45
May 22 16:57:39:833477:info:fi_debug:debug_logs:1:889374681094685440: BGP: delete ipv4 route from fwd
table for 2001:db8:8::/45
May 22 16:57:39:833495:info:fi_debug:debug_logs:1:889374681094685440: BGP: Clearing install flags for
2001:db8:8::/45
May 22 16:57:40:662065:info:fi_debug:debug_logs:1:0: BGP: Adding 2001:db8:8::/45 to ipv4 route
table(0), bgp next_hop=150.0.0.3
```

debug ip bgp ipv6-prefix-list

Specifies the IPv6 prefix filter for BGP debugging information for all VRFs or for a specified VRF.

Syntax

debug ip bgp ipv6-prefix-list *prefix-list-name*

no debug ip bgp ipv6-prefix-list *prefix-list-name*

Parameters

prefix-list-name

Specifies an IPv6 prefix-list.

Modes

Privileged EXEC mode

Usage Guidelines

Only one IPv6 prefix filter or prefix list can be configured on a VRF. Prefix filters and prefix lists cannot be configured simultaneously. IPv6 and IPv4 filters are applied separately.

The **no** form removes the specified IPv6 prefix filter for BGP debugging information.

Examples

The following example configures IPv6 prefix lists, and specifies these IPv6 prefix filters for BGP debugging information for all VRFs.

```
device# device(config)# ipv6 prefix-list zzz permit 2001:db8:8::/45
device(config)# ipv6 prefix-list zzz permit 2002:db8:8::/454
device(config)# exit
device # debug ip bgp ipv6-prefix-list zzz
                        permit 2001:db8:8::/45
                        permit 2002:db8:8::/45
device# debug ip bgp show
         BGP:  bgp debugging is on
         BGP:  route-selection debugging is on
         BGP:  ip-prefix-list zzz debugging is on
                        permit 2001:db8:8::/45
                        permit 2002:db8:8::/45

May 22 17:52:16:909973:info:fi_debug:debug_logs:1:892058704942203648: BGP: select best route
2002:db8:8::/45 load_share (ibgp 1, ip 1), (ebgp 1, ip 1)
May 22 17:52:16:909988:info:fi_debug:debug_logs:1:892058704942203648: BGP: eligible route 0
May 22 17:52:16:910001:info:fi_debug:debug_logs:1:892058704942203648: BGP: 150.0.0.3 Best path down
2002:db8:8::/45, remove
May 22 17:52:16:910016:info:fi_debug:debug_logs:1:892058704942203648: BGP: 150.0.0.3 removing bgp route
advertisement 2002:db8:8::/45
May 22 17:52:16:910034:info:fi_debug:debug_logs:1:892058704942203648: BGP: delete ipv4 route from fwd
table for 2002:db8:8::/45
May 22 17:52:16:910048:info:fi_debug:debug_logs:1:892058704942203648: BGP: Clearing install flags for
2002:db8:8::/45
May 22 17:52:16:910076:info:fi_debug:debug_logs:1:892058704942203648: BGP: select best route
2001:db8:8::/45 load_share (ibgp 1, ip 1), (ebgp 1, ip 1)
May 22 17:52:16:910089:info:fi_debug:debug_logs:1:892058704942203648: BGP: eligible route 0
May 22 17:52:16:910103:info:fi_debug:debug_logs:1:892058704942203648: BGP: 150.0.0.3 Best path down
2001:db8:8::/45, remove
May 22 17:52:16:910116:info:fi_debug:debug_logs:1:892058704942203648: BGP: 150.0.0.3 removing bgp route
advertisement 2001:db8:8::/45
May 22 17:52:16:910134:info:fi_debug:debug_logs:1:892058704942203648: BGP: delete ipv4 route from fwd
table for 2001:db8:8::/45
May 22 17:52:16:910157:info:fi_debug:debug_logs:1:892058704942203648: BGP: Clearing install flags for
2001:db8:8::/45
May 22 17:52:17:440097:info:fi_debug:debug_logs:1:0: BGP: Adding 2001:db8:8::/45 to ipv4 route
table(0), bgp next_hop=150.0.0.3
May 22 17:52:17:440230:info:fi_debug:debug_logs:1:0: BGP: Adding 2001:db8:8::/454 to ipv4 route
table(0), bgp next_hop=150.0.0.3
```

debug ip bgp keepalives

Displays information about the status of a resource such as BGP.

Syntax

debug ip bgp keepalives

no debug ip bgp keepalives

Modes

Privileged EXEC mode

Usage Guidelines

The **no** form disables the display of information related to BGP status.

Examples

```
device# debug ip bgp keepalives
BGP: 10.1.1.2 sending KEEPALIVE
BGP: 10.1.1.2 KEEPALIVE received
```

debug ip bgp route-map

Associates an existing route map filter with BGP debugging.

Syntax

debug ip bgp route-map *route-map name*

no debug ip bgp route-map *route-map name*

Parameters

route-map name
Specifies a route map.

Modes

Privileged EXEC mode

Usage Guidelines

The route map filter is functional with the **route-selection** and **dampening** keywords of the **debug ip bgp** command.

The **no** form of the command disassociates an existing route map filter with BGP debugging.

Examples

The following example configures a route map and associates the route map filter with BGP debugging.

```
device(config)# route-map zzz permit 1
device(config-routemap zzz)# match ip address prefix-list zzz
device(config-routemap zzz)# exit
device(config)# exit
device# debug ip bgp route-map zzz
         BGP:  route-map zzz  debugging is on

ICX7650-48F Router#debug ip bgp show
         BGP:  bgp debugging is on
         BGP:  route-selection debugging is on
         BGP:  route-map zzz debugging is on

-----------------------------------------------
route-map zzz permit 1
 match ip address prefix-list zzz
-----------------------------------------------
ICX7650-48F Router#

May 22 19:57:56:587488:info:fi_debug:debug_logs:1:898045013179499264: BGP: select best route 1.0.8.0/24
load_share (ibgp 1, ip 1), (ebgp 1, ip 1)
May 22 19:57:56:587588:info:fi_debug:debug_logs:1:898045013179499264: BGP: eligible route 0
May 22 19:57:56:587645:info:fi_debug:debug_logs:1:898045013179499264: BGP: 150.0.0.3 Best path down
1.0.8.0/24, remove
May 22 19:57:56:587703:info:fi_debug:debug_logs:1:898045013179499264: BGP: 150.0.0.3 removing bgp route
advertisement 1.0.8.0/24
May 22 19:57:56:587769:info:fi_debug:debug_logs:1:898045013179499264: BGP: delete ipv4 route from fwd
table for 1.0.8.0/24
May 22 19:57:56:587828:info:fi_debug:debug_logs:1:898045013179499264: BGP: Clearing install flags for
1.0.8.0/24
May 22 19:57:56:588007:info:fi_debug:debug_logs:1:898045013179499264: BGP: select best route 1.0.7.0/24
load_share (ibgp 1, ip 1), (ebgp 1, ip 1)
May 22 19:57:56:588070:info:fi_debug:debug_logs:1:898045013179499264: BGP: eligible route 0
May 22 19:57:56:588088:info:fi_debug:debug_logs:1:898045013179499264: BGP: 150.0.0.3 Best path down
1.0.7.0/24, remove
May 22 19:57:56:588194:info:fi_debug:debug_logs:1:898045013179499264: BGP: 150.0.0.3 removing bgp route
advertisement 1.0.7.0/24
May 22 19:57:56:588257:info:fi_debug:debug_logs:1:898045013179499264: BGP: delete ipv4 route from fwd
table for 1.0.7.0/24
May 22 19:57:56:588311:info:fi_debug:debug_logs:1:898045013179499264: BGP: Clearing install flags for
1.0.7.0/24
May 22 19:57:56:588381:info:fi_debug:debug_logs:1:898045013179499264: BGP: select best route 1.0.6.0/24
load_share (ibgp 1, ip 1), (ebgp 1, ip 1)
May 22 19:57:56:588434:info:fi_debug:debug_logs:1:898045013179499264: BGP: eligible route 0
May 22 19:57:56:588487:info:fi_debug:debug_logs:1:898045013179499264: BGP: 150.0.0.3 Best path down
1.0.6.0/24, remove
May 22 19:57:56:588504:info:fi_debug:debug_logs:1:898045013179499264: BGP: 150.0.0.3 removing bgp route
advertisement 1.0.6.0/24
May 22 19:57:56:588604:info:fi_debug:debug_logs:1:898045013179499264: BGP: delete ipv4 route from fwd
table for 1.0.6.0/24
May 22 19:57:56:588622:info:fi_debug:debug_logs:1:898045013179499264: BGP: Clearing install flags for
1.0.6.0/24
May 22 19:57:56:705579:info:fi_debug:debug_logs:1:0: BGP: Adding 1.0.6.0/24 to ipv4 route table(0), bgp
next_hop=150.0.0.3
May 22 19:57:56:705714:info:fi_debug:debug_logs:1:0: BGP: Adding 1.0.7.0/24 to ipv4 route table(0), bgp
next_hop=150.0.0.3
May 22 19:57:56:705772:info:fi_debug:debug_logs:1:0: BGP: Adding 1.0.8.0/24 to ipv4 route table(0), bgp
next_hop=150.0.0.3
```

debug ip bgp route-selection

Enables BGP debugging information to be displayed for a BGP route selection.

Syntax

debug ip bgp route-selection

no debug ip bgp route-seletion

Modes

Privileged EXEC mode

Usage Guidelines

The **no** form disables the displaying of BGP debugging information for a BGP route selection.

Examples

The following example enables the displaying of BGP debugging information for a BGP route selection. and shows that it is enabled.

```
device# debug ip bgp route-selection
device# debug ip bgp show
         BGP:  bgp debugging is on
         BGP:  route-selection debugging is on
device#

May 22 20:01:15:022769:info:fi_debug:debug_logs:1:898214642912854784: BGP: select best route
1.0.25.0/24 load_share (ibgp 1, ip 1), (ebgp 1, ip 1)
May 22 20:01:15:022788:info:fi_debug:debug_logs:1:898214642912854784: BGP: eligible route 0
May 22 20:01:15:022805:info:fi_debug:debug_logs:1:898214642912854784: BGP: 150.0.0.4 Best path down
1.0.25.0/24, remove
May 22 20:01:15:022821:info:fi_debug:debug_logs:1:898214642912854784: BGP: 150.0.0.4 removing bgp route
advertisement 1.0.25.0/24
May 22 20:01:15:022852:info:fi_debug:debug_logs:1:898214642912854784: BGP: delete ipv4 route from fwd
table for 1.0.25.0/24
May 22 20:01:15:022871:info:fi_debug:debug_logs:1:898214642912854784: BGP: Clearing install flags for
1.0.25.0/24
May 22 20:01:15:022967:info:fi_debug:debug_logs:1:898214642912854784: BGP: select best route
1.0.24.0/24 load_share (ibgp 1, ip 1), (ebgp 1, ip 1)
May 22 20:01:15:022986:info:fi_debug:debug_logs:1:898214642912854784: BGP: eligible route 0
May 22 20:01:15:023002:info:fi_debug:debug_logs:1:898214642912854784: BGP: 150.0.0.4 Best path down
1.0.24.0/24, remove
May 22 20:01:15:023016:info:fi_debug:debug_logs:1:898214642912854784: BGP: 150.0.0.4 removing bgp route
advertisement 1.0.24.0/24
May 22 20:01:15:023039:info:fi_debug:debug_logs:1:898214642912854784: BGP: delete ipv4 route from fwd
table for 1.0.24.0/24
May 22 20:01:15:023054:info:fi_debug:debug_logs:1:898214642912854784: BGP: Clearing install flags for
1.0.24.0/24
May 22 20:01:15:023084:info:fi_debug:debug_logs:1:898214642912854784: BGP: select best route
1.0.23.0/24 load_share (ibgp 1, ip 1), (ebgp 1, ip 1)
May 22 20:01:15:023098:info:fi_debug:debug_logs:1:898214642912854784: BGP: eligible route 0
May 22 20:01:15:023112:info:fi_debug:debug_logs:1:898214642912854784: BGP: 150.0.0.4 Best path down
1.0.23.0/24, remove
May 22 20:01:15:023125:info:fi_debug:debug_logs:1:898214642912854784: BGP: 150.0.0.4 removing bgp route
advertisement 1.0.23.0/24
May 22 20:01:15:023143:info:fi_debug:debug_logs:1:898214642912854784: BGP: delete ipv4 route from fwd
table for 1.0.23.0/24
May 22 20:01:15:023157:info:fi_debug:debug_logs:1:898214642912854784: BGP: Clearing install flags for
1.0.23.0/24
May 22 20:01:15:023182:info:fi_debug:debug_logs:1:898214642912854784: BGP: select best route
1.0.22.0/24 load_share (ibgp 1, ip 1), (ebgp 1, ip 1)
May 22 20:01:15:023205:info:fi_debug:debug_logs:1:898214642912854784: BGP: eligible route 0
May 22 20:01:15:023219:info:fi_debug:debug_logs:1:898214642912854784: BGP: 150.0.0.4 Best path down
1.0.22.0/24, remove
May 22 20:01:15:023233:info:fi_debug:debug_logs:1:898214642912854784: BGP: 150.0.0.4 removing bgp route
advertisement 1.0.22.0/24
May 22 20:01:15:023251:info:fi_debug:debug_logs:1:898214642912854784: BGP: delete ipv4 route from fwd
table for 1.0.22.0/24
May 22 20:01:15:023264:info:fi_debug:debug_logs:1:898214642912854784: BGP: Clearing install flags for
1.0.22.0/24
May 22 20:01:15:023287:info:fi_debug:debug_logs:1:898214642912854784: BGP: select best route
1.0.21.0/24 load_share (ibgp 1, ip 1), (ebgp 1, ip 1)
May 22 20:01:15:023301:info:fi_debug:debug_logs:1:898214642912854784: BGP: eligible route 0
May 22 20:01:15:023315:info:fi_debug:debug_logs:1:898214642912854784: BGP: 150.0.0.4 Best path down
1.0.21.0/24, remove
May 22 20:01:15:023328:info:fi_debug:debug_logs:1:898214642912854784: BGP: 150.0.0.4 removing bgp route
advertisement 1.0.21.0/24
May 22 20:01:15:023346:info:fi_debug:debug_logs:1:898214642912854784: BGP: delete ipv4 route from fwd
table for 1.0.21.0/24
May 22 20:01:15:023360:info:fi_debug:debug_logs:1:898214642912854784: BGP: Clearing install flags for
1.0.21.0/24
May 22 20:01:15:023382:info:fi_debug:debug_logs:1:898214642912854784: BGP: select best route
1.0.20.0/24 load_share (ibgp 1, ip 1), (ebgp 1, ip 1)
May 22 20:01:15:023395:info:fi_debug:debug_logs:1:898214642912854784: BGP: eligible route 0
May 22 20:01:15:023408:info:fi_debug:debug_logs:1:898214642912854784: BGP: 150.0.0.4 Best path down
1.0.20.0/24, remove
May 22 20:01:15:023421:info:fi_debug:debug_logs:1:898214642912854784: BGP: 150.0.0.4 removing bgp route
```

```
advertisement 1.0.20.0/24
May 22 20:01:15:023443:info:fi_debug:debug_logs:1:898214642912854784: BGP: delete ipv4 route from fwd
table for 1.0.20.0/24
May 22 20:01:15:023458:info:fi_debug:debug_logs:1:898214642912854784: BGP: Clearing install flags for
1.0.20.0/24
May 22 20:01:15:023479:info:fi_debug:debug_logs:1:898214642912854784: BGP: select best route
1.0.19.0/24 load_share (ibgp 1, ip 1), (ebgp 1, ip 1)
May 22 20:01:15:023493:info:fi_debug:debug_logs:1:898214642912854784: BGP: eligible route 0
May 22 20:01:15:023506:info:fi_debug:debug_logs:1:898214642912854784: BGP: 150.0.0.4 Best path down
1.0.19.0/24, remove
May 22 20:01:15:023519:info:fi_debug:debug_logs:1:898214642912854784: BGP: 150.0.0.4 removing bgp route
advertisement 1.0.19
```

debug ip bgp show

Shows BGP debugging configurations for all VRFs that are currently enabled.

Syntax

debug ip bgp show

no debug ip bgp show

Modes

Privileged EXEC mode

Usage Guidelines

no

Examples

The following example shows BGP debugging configurations.

```
device# debug ip bgp show

          BGP:  bgp debugging is on
          BGP:  general debugging is on
          BGP:  events debugging is on
          BGP:  keepalives debugging is on
          BGP:  route-selection debugging is on
          BGP(vrf1):  general debugging is on
          BGP(vrf1):  events debugging is on
          BGP(vrf1):  keepalives debugging is on
```

debug ip bgp updates

Displays BGP receive, transmit, or receive and transmit update messages about debug processing.

Syntax

debug ip bgp updates[**rx**|**tx**]

no debug ip bgp updates[**rx**|**tx**]

Parameters

rx

Specifies RX updates.

tx

Specifies TX updates.

Modes

Privileged EXEC mode

Usage Guidelines

The **no** form disables the display of BGP messages about debug processing.

Examples

The following example displays information about BGP update messages.

```
device# debug ip bgp updates

BGP: safi(0): 10.1.1.2 sending UPDATE w/attr: Origin=IGP AS_PATH=65538 NEXT_HOP=10.1.1.1 MED=1
BGP: (0): 10.1.1.2 sending UPDATE Label=0 2001:DB8:83:e8:00:04:78:64:10.1.1.1/32
BGP: 10.1.1.2 rcv bad UPDATE (saif 0) due to AS loop, take as implicit withdraw!
BGP: BGP: 10.1.1.2  rcv UPDATE w/attr: Origin=INCOMP AS_PATH= AS_SEQ(2) 3 NextHop=10.1.1.2 MED=30
BGP: (0): 10.1.1.2 rcv UPDATE 10.1.1.2/32
BGP: 10.1.1.2 rcv bad UPDATE (saif 0) due to AS loop, take as implicit withdraw!
BGP: BGP: 10.1.1.2  rcv UPDATE w/attr: Origin=IGP AS_PATH= AS_SEQ(2) 3 NextHop=10.1.1.2 MED=5
BGP: (0): 10.1.1.2 rcv UPDATE 10.10.10.10/32
BGP: (0): 10.1.1.2 rcv UPDATE 10.213.0.0/16
BGP: (0): 10.1.1.2 rcv UPDATE 10.200.200.200/32
BGP: (0): 10.1.1.2 rcv UPDATE 10.18.18.0/24
BGP: (0): 10.1.1.2 rcv UPDATE 10.1.1.32/32
```

debug ip bgp vrf

Enables BGP debugging information to be displayed for a non-default virtual routing and forwarding events(VRF) instance.

Syntax

debug ip bgp vrf *vrf-name* [**address-family** { **ipv4** | **ipv6** } | **bfd** | **dampening** | **events** | **general** | **graceful-restart** | **ip-prefix** *prefix-address/mask* | **ip-prefix-list** *prefix-list-name* | **keepalives** | **neighbor** { *ipv4-address* | *ipv6-address* } | **route-map** *route-map name* | **route-selection** | **updates** [**rx** | **tx**]]

no debug ip bgp all-vrfs *vrf-name* [**address-family** { **ipv4** | **ipv6** } **unicast** | **bfd** | **dampening** | **events** | **general** | **graceful-restart** | **ip-prefix** *prefix-address/mask* | **ip-prefix-list** *prefix-list-name* | **keepalives** | **neighbor** { *ipv4-address* | *ipv6-address* } | **route-map** *route-map name* | **route-selection** | **updates** [**rx** | **tx**]]

Parameters

vrf-name
Specifies a VRF.

address-family ipv4
Specifies an IPv4 address family.

address-family ipv6
Specifies an IPv6 address family.

unicast
Specifies unicat routing

bfd
Specifies BGP BFD events.

dampening
Specifies BGP dampening.

events
Specifies BGP events.

general
Specifies common BGP debugs.

graceful-restart
Specifies BGP greaceful restart events.

ip-prefix *prefix-address/mask*
Specifies an IPv4 prefix.

ip-prefix-list *prefix-list-name*
Specifies an IPv4 prefix-list.

keepalives
Specifies BGP keepalives.

neighbor
Specifies a neighbor.

ipv4-address
Specifies an IPv4 address.

ipv6-address
Specifies an IPv6 address.

route-map *route-map name*
Specifies a route map.

route-selection
Specifies BGP route selection debugs.

updates
Specifies BGP receive, transmit, or receive and transmit update messages about debug processing.

rx
Specifies RX updates.

tx
Specifies TX updates.

Modes

Privileged EXEC mode

Usage Guidelines

no

Examples

```
device# debug ip bgp vrf vrf1

         BGP:  events debugging is on
         BGP(vrf1):  events debugging is on
ICX7650-48F Router#
ICX7650-48F Router#

ICX7650-48F Router#debug ip bgp all-vrfs
         BGP:  bgp debugging is on
         BGP(vrf1):  bgp debugging is on
ICX7650-48F Router#
ICX7650-48F Router#debug ip bgp show
         BGP:  bgp debugging is on
         BGP:  events debugging is on
         BGP(vrf1):  bgp debugging is on
         BGP(vrf1):  events debugging is on
```

debug ip gre

Activates Generic Routing Encapsulation (GRE) debugging options.

Syntax

debug ip gre keepalive { **keepalive** | **log** | **packet** }

no debug ip gre keepalive { **keepalive** | **log** | **packet** }

Parameters

keepalive

Specifies GRE keepalive debugging.

log

Activates the tunnel effects debugging.

packet

Activates the debugging of GRE packet processing.

Modes

Privileged EXEC mode

Usage Guidelines

The **no** form of the command disables GRE debugging options.

Examples

The following example activates the GRE keepalive debugging

```
device# debug ip gre keepalive

GRE_MP: Keepalive Bring DOWN GRE Tunnel  11
GRE_MP: Keepalive Bring UP GRE on Tunnel 11 - port is 2/1/2
GRE_MP: RX Keepalive packet on tnnl 11 src 10.22.33.254, dst 10.22.33.252
GRE_MP: TX Keepalive packet on tnnl 11 we need to find outgoing port
GRE_MP: TX Keepalive packet on tnnl 11 - outgoing_port is 2/1/2 with mac 0000.00bb.ef40 vlan 2
GRE_MP_KEEPALIVE: NO FREE BUFFER AVAILABLE
GRE_MP: For Tunnel 11, Keepalive timeout after 3 seconds
GRE_MP: For Tunnel 11, stop keep-alive
GRE_MP: For Tunnel 11, start keep-alive
GRE_MP: enqueue Keepalive packet on tunnel 11 at index 23
GRE_MP: dequeue Keepalive packet on tunnel 11 at index 23
```

The following example the debugging of GRE packet processing.

```
device# debug ip gre packet

GRE: Error - IP GRE packet with invalid Ptype 0x1A4
GRE: Error - IP GRE packet with invalid first word 0x2C
GRE: Error - IP GRE packet with invalid first word 0x2C
GRE fragment : Rx IP GRE Pkt: src 10.22.33.254, dst 224.0.0.5, len 64 id 324
GRE Packet too big - need extra processing: Rx IP GRE Pkt: src 10.22.33.254, dst 224.0.0.5, len 64
GRE Reassembly: Rx IP GRE Pkt: src 10.22.33.254, dst 224.0.0.5, len 64
GRE : Rx IP GRE Pkt: src 10.22.33.254, dst 224.0.0.5, len 64
GRE: Error - Rx IP Pkt with invalid Inner IPv4 header
GRE: Error - Rx IP Pkt with 2 GRE headers: Inner src 10.22.33.254, Inner dst 224.0.0.5, len 64
GRE: Dropping the packet as GRE tnnl 11  is not UP
GRE_LP: Error - LP TX GRE packet is in LOOP
GRE : FORWARD IP to GRE tunnel 11 - Pkt: src 10.22.33.254, dst 224.0.0.5, len 64
GRE : Failed to FORWARD IP to GRE tunnel 11  - Pkt: src 10.22.33.254, dst 224.0.0.5, No route
```

The following example activates the tunnel effects debugging.

```
device# debug ip gre log

Apply mtu 1400 failed for tunnel 11 as all mtu profiles are used
Clearing PMTU for tunnel 11 due to ip mtu 1400 configuration
Tunnel Create Sync-Receive event for tunnel: 11
Tunnel Create Sync-Successful for tunnel: 11
Tunnel Update TS Sync-Receive event for tunnel: 11
Tunnel Update TS Sync-Successful for tunnel: 11
Tunnel Update Nhop Sync-Receive event for tunnel: 11
Tunnel Update Nhop Sync-Successful for tunnel: 11
Tunnel Update TTI Sync-Receive event for tunnel: 11
Tunnel Port Up Sync-Receive event for tunnel: 11
Tunnel Port Up Sync-Successful for tunnel: 11
Tunnel Port Down Sync-Receive event for tunnel: 11
Tunnel Port Down Sync-Successful for tunnel: 11
Tunnel Update MTU Sync-Receive event for tunnel: 11
Tunnel Update MTU Sync-Successful for tunnel: 11
Tunnel Delete Sync-Receive event for tunnel: 11
Tunnel Delete Sync-Successful for tunnel: 11
Tunnel Delete Nhop Sync-Receive event for tunnel: 11
Tunnel Delete Nhop Sync-Successful for tunnel: 11
Tunnel Delete TTI Sync-Receive event for tunnel: 11
Tunnel Delete Origination entry Sync-Receive event for tunnel: 11
Tunnel Delete Origination entry Sync-Successful for tunnel: 11
process_one_l3_unicast_update: entryType 6
Fill Sync Tunnel Entry-Bad parameters. Failed for tunnel: 11
Fill Sync Tunnel Entry-Bad TS entry. Failed for tunnel: 11
pack_tunnel_entry_change called with tunnel_index: 11 operation: TUNNEL_SYNC_UPDATE_NHOP
pack_tunnel_entry_list called with tunnel_index: 11 operation: TUNNEL_SYNC_CREATE_ALL, from_beginning: 1
Sync-ing tunnel entry 11
[pp_puma_tunnel_hotswap_insert] No tunnel start info for tunnel 11
DEBUG 0x8: Tunnel 11 already deleted
DEBUG 0x8: Tunnel 11 pp_delete_tunnel_entry
DEBUG 0x8: Can not find route for tunnel id 11, hw index 23, src 10.22.33.254, dest 10.22.33.252
DEBUG 0x8: create GRE tunnel origination because find route for tunnel id 11, hw index 23, src
10.22.33.254, dest 10.22.33.252
DEBUG 0x8: Route for tunnel id 11 is via another tunnel or management port 22
DEBUG 0x8: Direct route for tunnel id 11 dest 10.22.33.252 has unresolved ARP
DEBUG 0x8: indirect route for tunnel id 11 dest 10.22.33.252 next hop 10.11.25.5  has unresolved ARP
DEBUG 0x8: indirect route for tunnel id 11 destination 10.22.33.252 next hop 10.11.25.5 has resolved
ARP - CMD => route
DEBUG 0x8: Set next hop to Drop for  tunnel id 11, hw index 23, src 10.22.33.254, dest 10.22.33.252
DEBUG 0x8: Tunnel 11 - next hop 10.11.25.5  has no link-layer
DEBUG 0x8: bring tunnel id 11 up with drop
DEBUG 0x8: Create tunnel id 11 with next hop 185276677 - old next hop is 125276633
DEBUG 0x8: bring tunnel id 11 up
Update_hw_routes for Tunnel 11
Path MTU: Tunnel 11 - reset path mtu timer 456 (3344)
Path MTU: Tunnel 11 - failed to reset path mtu timer 456 (3344)
```

debug ip hitless

Activates the debugging of IPv4 hitless information.

Syntax

debug ip hitless

no debug ip hitless

Modes

Privileged EXEC mode

Usage Guidelines

no

Examples

The following example activates the debugging of IPv4 hitless information.

```
device# debug ip hitless

        IPv4 HITLESS:  debugging is on
```

debug ip icmp

Activates ICMP transactions debugging.

Syntax

debug ip icmp events{**events**|**packets** }

no debug ip icmp events{**events**|**packets** }

Parameters

events

Activates ICMP events debugging.

packets

Activates ICMP packets debugging.

Modes

Privileged EXEC mode

Usage Guidelines

The **no** form of the command disables the ICMP transactions debugging.

Examples

The following example activates ICMP events debugging.

```
device# debug ip icmp events
         ICMP:  events debugging is on

device# ICMP: rcvd echo request packet of length 40 from 10.44.22.11
ICMP: send echo reply packet of length 60 to 10.44.22.11
ICMP: rcvd echo request packet of length 40 from 10.44.22.11
ICMP: send echo reply packet of length 60 to 10.44.22.11
ICMP: rcvd echo request packet of length 40 from 10.44.22.11
ICMP: send echo reply packet of length 60 to 10.44.22.11
ICMP: rcvd echo request packet of length 40 from 10.44.22.11
ICMP: send echo reply packet of length 60 to 10.44.22.11
```

The following example activates ICMP packtets debugging.

```
device# debug ip icmp packets
         ICMP:  packets debugging is on
device# !SR_SWITCH_ROUTER!ICMP_DEBUG_RX
ICMP: Received message from 10.44.22.11 to 10.44.22.36 port 1/1/1 size 40
!SR_SWITCH_ROUTER!ICMP_DEBUG_RX
ICMP: Received message from 10.44.22.11 to 10.44.22.36 port 1/1/1 size 40
!SR_SWITCH_ROUTER!ICMP_DEBUG_RX
ICMP: Received message from 10.44.22.11 to 10.44.22.36 port 1/1/1 size 40
!SR_SWITCH_ROUTER!ICMP_DEBUG_RX
ICMP: Received message from 10.44.22.11 to 10.44.22.36 port 1/1/1 size 40
```

debug ip igmp add-del-oif

Displays information about the addition or deletion of the outgoing interfaces (OIFs).

Syntax

debug ip igmp add-del-oif

no debug ip igmp add-del-oif

Modes

Privileged EXEC mode

Usage Guidelines

Examples

```
device# debug ip igmp add-del-oif
join sent:
May 01 17:37:12:111141:info:fi_debug:debug_logs:1:20266039409378817: IGMP.VRF0.FSM: [ Port 1/2/6,v3.
Grp 226.1.1.1 ] Action IS_EXCL (Srcs 0) ver 2 Static 0 SSM 0
May 01 17:37:12:111230:info:fi_debug:debug_logs:1:20266039409378817: IGMP.VRF0.FSM: [ Port 1/2/6,v3.
Grp 226.1.1.1 ] New  group added
May 01 17:37:12:111313:info:fi_debug:debug_logs:1:20266039409378817: IGMP.VRF0.FSM: [ Port 1/2/6,v3.
Grp 226.1.1.1 ] New group-membership added
May 01 17:37:12:111957:info:fi_debug:debug_logs:1:20266043704346113: IGMP.VRF0.FSM: [ Port 1/2/6,v3.
Grp 226.1.1.2 ] Action IS_EXCL (Srcs 0) ver 2 Static 0 SSM 0
May 01 17:37:12:112060:info:fi_debug:debug_logs:1:20266043704346113: IGMP.VRF0.FSM: [ Port 1/2/6,v3.
Grp 226.1.1.2 ] New  group added
May 01 17:37:12:112139:info:fi_debug:debug_logs:1:20266043704346113: IGMP.VRF0.FSM: [ Port 1/2/6,v3.
Grp 226.1.1.2 ] New group-membership added
May 01 17:37:12:112432:info:fi_debug:debug_logs:1:20266047999313409: IGMP.VRF0.FSM: [ Port 1/2/6,v3.
Grp 228.1.2.1 ] Action IS_EXCL (Srcs 0) ver 2 Static 0 SSM 0
May 01 17:37:12:112521:info:fi_debug:debug_logs:1:20266047999313409: IGMP.VRF0.FSM: [ Port 1/2/6,v3.
Grp 228.1.2.1 ] New  group added
May 01 17:37:12:112598:info:fi_debug:debug_logs:1:20266047999313409: IGMP.VRF0.FSM: [ Port 1/2/6,v3.
Grp 228.1.2.1 ] New group-membership added
May 01 17:37:12:112844:info:fi_debug:debug_logs:1:20266052294280705: IGMP.VRF0.FSM: [ Port 1/2/6,v3.
Grp 228.1.2.2 ] Action IS_EXCL (Srcs 0) ver 2 Static 0 SSM 0
May 01 17:37:12:112929:info:fi_debug:debug_logs:1:20266052294280705: IGMP.VRF0.FSM: [ Port 1/2/6,v3.
Grp 228.1.2.2 ] New  group added
May 01 17:37:12:113006:info:fi_debug:debug_logs:1:20266052294280705: IGMP.VRF0.FSM: [ Port 1/2/6,v3.
Grp 228.1.2.2 ] New group-membership added
May 01 17:37:13:444597:info:fi_debug:debug_logs:1:20266189733234177: IGMP.VRF0.FSM: [ Port 1/2/6,v3.
Grp 226.1.1.1 ] Action IS_EXCL (Srcs 0) ver 2 Static 0 SSM 0
May 01 17:37:17:804041:info:fi_debug:debug_logs:1:20266610640029185: IGMP.VRF0.FSM: [ Port 1/2/6,v3.
Grp 228.1.2.1 ] Action IS_EXCL (Srcs 0) ver 2 Static 0 SSM 0
May 01 17:37:18:987889:info:fi_debug:debug_logs:1:20266739489048065: IGMP.VRF0.FSM: [ Port 1/2/6,v3.
Grp 226.1.1.2 ] Action IS_EXCL (Srcs 0) ver 2 Static 0 SSM 0
May 01 17:37:19:559856:info:fi_debug:debug_logs:1:20266778143753729: IGMP.VRF0.FSM: [ Port 1/2/6,v3.
Grp 228.1.2.2 ] Action IS_EXCL (Srcs 0) ver 2 Static 0 SSM 0

Leave sent :

May 01 17 37:24:893446:info:fi_debug:debug_logs:1:20267284949894657: IGMP.VRF0.FSM: [ Port 1/2/6,v3.
Grp 226.1.1.1 ] Action TO_INCL (Srcs 0) ver 2 Static 0 SSM 0
May 01 17:37:24:894422:info:fi_debug:debug_logs:1:20267289244861953: IGMP.VRF0.FSM: [ Port 1/2/6,v3.
Grp 226.1.1.2 ] Action TO_INCL (Srcs 0) ver 2 Static 0 SSM 0
May 01 17:37:24:896809:info:fi_debug:debug_logs:1:20267293539829249: IGMP.VRF0.FSM: [ Port 1/2/6,v3.
Grp 228.1.2.1 ] Action TO_INCL (Srcs 0) ver 2 Static 0 SSM 0
May 01 17:37:24:898225:info:fi_debug:debug_logs:1:20267297834796545: IGMP.VRF0.FSM: [ Port 1/2/6,v3.
Grp 228.1.2.2 ] Action TO_INCL (Srcs 0) ver 2 Static 0 SSM 0
May 01 17:37:25:295287:info:fi_debug:debug_logs:1:8247032993023489: DHCPV4: received packet SIP:
0.0.0.0, DIP: 255.255.255.255, SP: 68, DP: 67, PROTO: 17
```

debug ip igmp add-del-oif stack

Monitors and displays instances of multicast cache activity, such as OIF additions or deletions, and generates a stack trace of the add or delete event.

Syntax

debug ip igmp add-del-oif stack

no debug ip igmp add-del-oif stack

Modes

Privileged EXEC mode

Usage Guidelines

no

Examples

```
device# debug ip igmp add-del-oif stack
Jun 25 21:31:16:593864:info:fi_debug:debug_logs:1:62756040614086145: stack: 0054536c 010ff684 0110c054
005c538c 005c5dec 011af768 b6cb9f0c b6ec0195
Jun 25 21:31:16:593977:info:fi_debug:debug_logs:1:62756040614086145: IGMP.VRF0.FSM: [ Port lg6,lg6. Grp
225.1.1.1 ] Action TO_INCL (Srcs 0) ver 2 Static 0 SSM 0
Jun 25 21:31:16:594964:info:fi_debug:debug_logs:1:62756044909053441: stack: 0054536c 010ff684 0110c054
005c538c 005c5dec 011af768 b6cb9f0c b6ec0195
Jun 25 21:31:16:595059:info:fi_debug:debug_logs:1:62756044909053441: IGMP.VRF0.FSM: [ Port lg6,lg6. Grp
225.1.1.2 ] Action TO_INCL (Srcs 0) ver 2 Static 0 SSM 0
Jun 25 21:31:26:186489:info:fi_debug:debug_logs:1:62757006981727745: stack: 0054536c 010ff684 0110da08
005c538c 005c5dec 011af768 b6cb9f0c b6ec0195
Jun 25 21:31:26:186604:info:fi_debug:debug_logs:1:62757006981727745: IGMP.VRF0.FSM: [ Port 1/2/2,1/2/2.
Grp 225.1.1.2 ] Action IS_EXCL (Srcs 0) ver 2 Static 0 SSM 0
Jun 25 21:31:27:337796:info:fi_debug:debug_logs:1:62757097176040961: stack: 0054536c 010ff684 0110da08
005c538c 005c5dec 011af768 b6cb9f0c b6ec0195
Jun 25 21:31:27:337917:info:fi_debug:debug_logs:1:62757097176040961: IGMP.VRF0.FSM: [ Port lg6,lg6. Grp
225.1.1.1 ] Action IS_EXCL (Srcs 0) ver 2 Static 0 SSM 0
Jun 25 21:31:27:338236:info:fi_debug:debug_logs:1:62757101471008257: stack: 0054536c 010ff684 0110da08
005c538c 005c5dec 011af768 b6cb9f0c b6ec0195
Jun 25 21:31:27:338327:info:fi_debug:debug_logs:1:62757101471008257: IGMP.VRF0.FSM: [ Port lg6,lg6. Grp
225.1.1.2 ] Action IS_EXCL (Srcs 0) ver 2 Static 0 SSM 0
Jun 25 21:31:29:092183:info:fi_debug:debug_logs:1:62757260384798209: stack: 0054536c 010ff684 0110da08
005c538c 005c5dec 011af768 b6cb9f0c b6ec0195
Jun 25 21:31:29:092299:info:fi_debug:debug_logs:1:62757260384798209: IGMP.VRF0.FSM: [ Port lg6,lg6. Grp
225.1.1.1 ] Action IS_EXCL (Srcs 0) ver 2 Static 0 SSM 0
Jun 25 21:31:30:390278:info:fi_debug:debug_logs:1:62757419298588161: stack: 0054536c 010ff684 0110da08
005c538c 005c5dec 011af768 b6cb9f0c b6ec0195
Jun 25 21:31:30:390393:info:fi_debug:debug_logs:1:62757419298588161: IGMP.VRF0.FSM: [ Port lg6,lg6. Grp
225.1.1.1 ] Action IS_EXCL (Srcs 0) ver 2 Static 0 SSM 0
```

debug ip igmp clear

Clears all the IGMP debug settings.

Syntax

debug ip igmp clear

no debug ip igmp clear

Modes

Privileged EXEC mode

Usage Guidelines

Examples

```
device# debug ip igmp clear
no debug ip igmp is enabled
```

debug ip igmp enable

Enables IGMP debugging.

Syntax

debug ip igmp enable

no debug ip igmp enable

Modes

Privileged EXEC mode

Usage Guidelines

Examples

```
device# debug ip igmp enable
debug ip igmp is enabled
```

debug ip igmp

Debugs Internet Group Management Protocol (IGMP) details.

Syntax

debug ip igmp [**profile** | **event** [**stack**] | **ifname** [**ethernet** *unit/slot/port* | **lag** *lag-id* | **ve** *ve-id*] | **ipc** [**stack**] | **proxy** { **all** | **ethernet** *unit/slot/port* | **flow** |**group** *group-address* | **ve** *ve-id* }]

no debug ip igmp [**profile** | **event** [**stack**] | **ifname** [**ethernet** *unit/slot/port* | **lag** *lag-id* | **ve** *ve-id*] | **ipc** [**stack**] | **proxy** { **all** | **ethernet** *unit/slot/port* | **flow** |**group** *group-address* | **ve** *ve-id* }]

Parameters

profile
Enables IGMP profile debugs.

event
Debugs infrastructure event and callback handling.

stack
Prints stack trace.

ifname
Specify the interface.

ethernet *unit/slot/port* |
Specifies the physical interface.

lag *lag-id*
Specifies the LAG interface.

ve *ve-id*
Specifies the virtual ethernet interface.

ipc
Debugs IPC messages between LP and MP.

physical-port
Displays information of PIM-SM physical ports that are connected.

ethernet *unit/slot/port*
Displays information of the specified PIM-SM physical interface.

lag *lag-id*
Displays information of the specified PIM-SM LAG interface.

proxy
Enables debugging of IGMP proxy details.

all
Prints all IGMP proxy details.

ethernet *unit/slot/port*
Specifies the physical interface.

flow

Stack trace of function names.

Modes

Privileged EXEC mode

Examples

```
device#debug ip igmp event
Jun 11 06:28:58:258717:info:fi_debug:debug_logs:1:178411418506232576: IGMP.VRF0.EVT: - Started timer
for ageing group membership 228.1.1.1 on port 1/2/2/1/2/2 for 301 seconds
Jun 11 06:28:58:258836:info:fi_debug:debug_logs:1:178411418506232576: IGMP.VRF0.EVT: - Started timer
for ageing group membership 228.1.1.2 on port 1/2/2/1/2/2 for 301 seconds
Jun 11 06:28:58:258918:info:fi_debug:debug_logs:1:178411418506232576: IGMP.VRF0.EVT: - Started timer
for ageing group membership 228.1.1.3 on port 1/2/2/1/2/2 for 301 seconds
Jun 11 06:28:58:258997:info:fi_debug:debug_logs:1:178411418506232576: IGMP.VRF0.EVT: - Started timer
for ageing group membership 228.1.1.4 on port 1/2/2/1/2/2 for 301 seconds

device#debug ip igmp event stack
Jun 11 06:30:42:250476:info:fi_debug:debug_logs:1:178497957802279680: IGMP.VRF0.EVT: Refreshing static
group 228.1.1.1
Jun 11 06:30:42:250775:info:fi_debug:debug_logs:1:178497957802279680: stack: 00544c98 010f7a70 010eb468
010f09c0 010f0b04 0011af04 010eb3bc 0119cb20 0009af90 0009be1c 005c02a4 005c1644 011a38f8 b6d1beb0
b6f22195
Jun 11 06:30:42:250854:info:fi_debug:debug_logs:1:178497957802279680: IGMP.VRF0.EVT: - Started FSM
timer for 200 seconds
Jun 11 06:30:42:251062:info:fi_debug:debug_logs:1:178497957802279680: stack: 00544c98 010f7a70 010eb520
010f09c0 010f0b04 0011af04 010eb3bc 0119cb20 0009af90 0009be1c 005c02a4 005c1644 011a38f8 b6d1beb0
b6f22195
Jun 11 06:30:42:251144:info:fi_debug:debug_logs:1:178497957802279680: IGMP.VRF0.EVT: - Started FSM
timer for 200 seconds
Jun 11 06:30:42:251344:info:fi_debug:debug_logs:1:178497957802279680: stack: 00544c98 010f7a70 010eb520
010f09c0 010f0b04 0011af04 010eb3bc 0119cb20 0009af90 0009be1c 005c02a4 005c1644 011a38f8 b6d1beb0
b6f22195

device#debug ip igmp protocol
device#debug ip igmp ifname ethernet 1/2/2
Jun 11 06:44:02:599972:info:fi_debug:debug_logs:1:179163600423748352: IGMP.VRF0: [ Port 1/2/2,1/2/2.
Grp 0.0.0.0 ] Sent version 3 Query. size 12. Src 1.2.2.1
Jun 11 06:44:02:600085:info:fi_debug:debug_logs:1:179163600423748352: IGMP.VRF0: [ Port 1/2/2,1/2/2 ]
Sent General Query version 3 using src 1.2.2.1
Jun 11 06:44:03:127003:info:fi_debug:debug_logs:1:21282861775586817: IGMP.VRF0: Type V2 Report Port
1/2/2,1/2/2 Grp 226.1.1.1
Jun 11 06:44:06:848958:info:fi_debug:debug_logs:1:21283269797479937: IGMP.VRF0: Type V2 Report Port
1/2/2,1/2/2 Grp 228.1.2.2
Jun 11 06:44:08:412470:info:fi_debug:debug_logs:1:21283381466629633: IGMP.VRF0: Type V2 Report Port
1/2/2,1/2/2 Grp 226.1.1.2
Jun 11 06:44:17:520881:info:fi_debug:debug_logs:1:21284309179565569: IGMP.VRF0: Type V2 Report Port
1/2/2,1/2/2 Grp 228.1.2.1

device#debug ip igmp protocol
device#debug ip igmp ifname lag 6
Jun 11 06:51:58:868319:info:fi_debug:debug_logs:1:21330024811464193: IGMP.VRF0: Type V2 Report Port
lg6,lg6 Grp 226.1.1.2
Jun 11 06:52:00:158032:info:fi_debug:debug_logs:1:21330123595712001: IGMP.VRF0: Type V2 Report Port
lg6,lg6 Grp 226.1.1.1
Jun 11 06:52:05:069883:info:fi_debug:debug_logs:1:21330664761591297: IGMP.VRF0: Type V2 Report Port
lg6,lg6 Grp 228.1.2.1
Jun 11 06:52:13:644920:info:fi_debug:debug_logs:1:21331532344985089: IGMP.VRF0: Type V2 Report Port
lg6,lg6 Grp 228.1.2.2

device#debug ip igmp protocol
device#debug ip igmp ifname ve 200
Jun 11 06:54:41:966689:info:fi_debug:debug_logs:1:21346135233791489: IGMP.VRF0: Type V2 Report Port
lg5,v200 Grp 228.1.2.1
Jun 11 06:54:41:967527:info:fi_debug:debug_logs:1:21346139528758785: IGMP.VRF0: Type V2 Report Port
lg5,v200 Grp 228.1.2.2
Jun 11 06:54:41:971418:info:fi_debug:debug_logs:1:21346143823726081: IGMP.VRF0: Type V2 Report Port
lg5,v200 Grp 226.1.1.1
Jun 11 06:54:41:982780:info:fi_debug:debug_logs:1:21346148118693377: IGMP.VRF0: Type V2 Report Port
lg5,v200 Grp 226.1.1.2

device#debug ip igmp protocol
device#debug ip igmp ipc
Jun 11 06:58:06:344905:info:fi_debug:debug_logs:1:21366467608970753: IGMP.VRF0: Type V2 Report Port
1/2/2,1/2/2 Grp 228.1.2.2
Jun 11 06:58:06:345188:info:fi_debug:debug_logs:1:21366467608970753: IGMP.VRF0.IPC: [ Port 1/2/2,1/2/2.
```

```
Grp 228.1.2.2 ] Interface added to group. Chg 0
Jun 11 06:58:07:165639:info:fi_debug:debug_logs:1:21366566393218561: IGMP.VRF0: Type V2 Report Port
1/2/2,1/2/2 Grp 226.1.1.1
Jun 11 06:58:07:165882:info:fi_debug:debug_logs:1:21366566393218561: IGMP.VRF0.IPC: [ Port 1/2/2,1/2/2.
Grp 226.1.1.1 ] Interface added to group. Chg 0
Jun 11 06:58:10:691615:info:fi_debug:debug_logs:1:21366871335896577: IGMP.VRF0: Type V2 Report Port
1/2/2,1/2/2 Grp 226.1.1.2

device#debug ip igmp protocol
device#debug ip igmp ipc stack
Jun 11 07:00:55:450115:info:fi_debug:debug_logs:1:180006358906569472: IGMP.VRF0: static V2Rept Port
lg6,lg6 Grp: 228.1.1.4
Jun 11 07:00:55:450266:info:fi_debug:debug_logs:1:180006358906569472: IGMP.VRF0.IPC: [ Port lg6,lg6.
Grp 228.1.1.4 ] Interface added to group. Chg 0
Jun 11 07:00:55:450371:info:fi_debug:debug_logs:1:180006358906569472: IGMP.VRF0: static V2Rept Port
lg6,lg6 Grp: 228.1.1.5
Jun 11 07:00:55:450522:info:fi_debug:debug_logs:1:180006358906569472: IGMP.VRF0.IPC: [ Port lg6,lg6.
Grp 228.1.1.5 ] Interface added to group. Chg 0
Jun 11 07:00:56:469584:info:fi_debug:debug_logs:1:180007200720159488: IGMP.VRF0: static V2Rept Port
lg5,v200 Grp: 228.1.1.1
Jun 11 07:00:56:469820:info:fi_debug:debug_logs:1:180007200720159488: IGMP.VRF0.IPC: [ Port lg5,v200.
Grp 228.1.1.1 ] Interface added to group. Chg 0
Jun 11 07:00:56:469967:info:fi_debug:debug_logs:1:180007200720159488: IGMP.VRF0: static V2Rept Port
lg5,v200 Grp: 228.1.1.2
Jun 11 07:00:56:470132:info:fi_debug:debug_logs:1:180007200720159488: IGMP.VRF0.IPC: [ Port lg5,v200.
Grp 228.1.1.2 ] Interface added to group. Chg 0
Jun 11 07:00:56:470242:info:fi_debug:debug_logs:1:180007200720159488: IGMP.VRF0: static V2Rept Port
lg5,v200 Grp: 228.1.1.3
Jun 11 07:00:56:470397:info:fi_debug:debug_logs:1:180007200720159488: IGMP.VRF0.IPC: [ Port lg5,v200.
Grp 228.1.1.3 ] Interface added to group. Chg 0

device#debug ip igmp protocol report
device#debug ip igmp profile
Jun 14 13:00:54:047139:info:fi_debug:debug_logs:1:125626884618716673: IGMP.PROFILE: nreports: 300,
nleave: 4, V1report:0ms, V2report: 394ms, V3report: 0ms, V2Leave: 2ms
Jun 14 13:00:54:058651:info:fi_debug:debug_logs:1:125626888913683969: IGMP.VRF0: Type V2 Report Port
1/2/2,1/2/2 Grp 225.1.1.154
Jun 14 13:00:54:069646:info:fi_debug:debug_logs:1:125626893208651265: IGMP.VRF0: Type V2 Report Port
1/2/2,1/2/2 Grp 225.1.1.76

device#debug ip igmp proxy rx
device#debug ip igmp proxy tx
device#debug ip igmp proxy ethernet 2/1/9
Jun 15 12:41:27:507418:info:fi_debug:debug_logs:1:6872039205897729:  MCPROXY_RX: [IPv4:default-vrf]
receive general query on port e2/1/9 max resp code 100
Jun 15 12:41:27:610658:info:fi_debug:debug_logs:1:53603095862575872:  MCPROXY_TX: [IPv4:default-vrf]
sending v1v2 grp 228.1.1.1 rprt to vir port e2/1/9 phy port 2/1/9
Jun 15 12:41:27:611175:info:fi_debug:debug_logs:1:53603095862575872:  MCPROXY_TX: [IPv4:default-vrf]
sending v1v2 grp 228.1.1.2 rprt to vir port e2/1/9 phy port 2/1/9
Jun 15 12:41:27:611626:info:fi_debug:debug_logs:1:53603095862575872:  MCPROXY_TX: [IPv4:default-vrf]
sending v1v2 grp 228.1.1.3 rprt to vir port e2/1/9 phy port 2/1/9
Jun 15 12:41:27:612060:info:fi_debug:debug_logs:1:53603095862575872:  MCPROXY_TX: [IPv4:default-vrf]
sending v1v2 grp 228.1.1.4 rprt to vir port e2/1/9 phy port 2/1/9
Jun 15 12:41:27:612515:info:fi_debug:debug_logs:1:53603095862575872:  MCPROXY_TX: [IPv4:default-vrf]
sending v1v2 grp 228.1.1.5 rprt to vir port e2/1/9 phy port 2/1/9
Jun 15 12:43:32:532816:info:fi_debug:debug_logs:1:6884430186546689:  MCPROXY_RX: [IPv4:default-vrf]
receive general query on port e2/1/9 max resp code 100
Jun 15 12:43:32:670050:info:fi_debug:debug_logs:1:53706973941596928:  MCPROXY_TX: [IPv4:default-vrf]
sending v1v2 grp 228.1.1.1 rprt to vir port e2/1/9 phy port 2/1/9
Jun 15 12:43:32:670525:info:fi_debug:debug_logs:1:53706973941596928:  MCPROXY_TX: [IPv4:default-vrf]
sending v1v2 grp 228.1.1.2 rprt to vir port e2/1/9 phy port 2/1/9
Jun 15 12:43:32:670935:info:fi_debug:debug_logs:1:53706973941596928:  MCPROXY_TX: [IPv4:default-vrf]
sending v1v2 grp 228.1.1.3 rprt to vir port e2/1/9 phy port 2/1/9
Jun 15 12:43:32:671326:info:fi_debug:debug_logs:1:53706973941596928:  MCPROXY_TX: [IPv4:default-vrf]
sending v1v2 grp 228.1.1.4 rprt to vir port e2/1/9 phy port 2/1/9
Jun 15 12:43:32:671703:info:fi_debug:debug_logs:1:53706973941596928:  MCPROXY_TX: [IPv4:default-vrf]
sending v1v2 grp 228.1.1.5 rprt to vir port e2/1/9 phy port 2/1/9
```

debug ip igmp error

Displays the IGMP multicast error messages.

Syntax

debug ip igmp error [**stack**]

no debug ip igmp error [**stack**]

Modes

Privileged EXEC mode

Usage Guidelines

no

Examples

```
device#debug ip igmp error stack
Jun 11 06:26:43:352395:info:fi_debug:debug_logs:1:21179838395057665: IGMP.VRF0.ERR: Rx packet ttl 255
not 1. Dropping packet
Jun 11 06:26:44:352365:info:fi_debug:debug_logs:1:21179907114534401: stack: 00544c98 010fcdd4 005c0be4
005c1644 011a38f8 b6d1beb0 b6f22195
Jun 11 06:26:44:352468:info:fi_debug:debug_logs:1:21179907114534401: IGMP.VRF0.ERR: Rx packet ttl 255
not 1. Dropping packet
Jun 11 06:26:45:352418:info:fi_debug:debug_logs:1:21180010193749505: stack: 00544c98 010fcdd4 005c0be4
005c1644 011a38f8 b6d1beb0 b6f22195
Jun 11 06:26:45:352524:info:fi_debug:debug_logs:1:21180010193749505: IGMP.VRF0.ERR: Rx packet ttl 255
not 1. Dropping packet
Jun 11 06:26:46:352437:info:fi_debug:debug_logs:1:21180113272964609: stack: 00544c98 010fcdd4 005c0be4
005c1644 011a38f8 b6d1beb0 b6f22195
```

debug ip igmp group

Matches the IGMP-enabled group based on the IP address.

Syntax

debug ip igmp group*ipaddr*

no debug ip igmp group *ipaddr*

Parameters

ipaddr

Refers to the IP address of the IGMP group.

Modes

Privileged EXEC mode

Examples

```
device# debug ip igmp protocol
device#debug ip igmp group 225.1.1.1
Jun 26 06:18:23:171492:info:fi_debug:debug_logs:1:65829931527964161: IGMP.VRF0: Type V2 Report Port
1/2/2,1/2/2 Grp 225.1.1.1
Jun 26 06:18:27:176535:info:fi_debug:debug_logs:1:65830288010249729: IGMP.VRF0: Type V2 Report Port
1/2/2,1/2/2 Grp 225.1.1.1
Jun 26 06:21:04:617438:info:fi_debug:debug_logs:1:65845612453561857: IGMP.VRF0: IGMP Leave, Type V2
Report Port 1/2/2,1/2/2 Grp 225.1.1.1
Jun 26 06:21:04:617949:info:fi_debug:debug_logs:1:65845612453561857: IGMP.VRF0: [ Port 1/2/2,1/2/2. Grp
225.1.1.1 ] Sent version 3 Query. size 12. Src 1.2.2.1
Jun 26 06:21:04:618038:info:fi_debug:debug_logs:1:65845612453561857: IGMP.VRF0: [ Port 1/2/2,1/2/2. Grp
225.1.1.1 ] Sent Grp-Qry Ver 3. ReTx 0(Cnt 0)
Jun 26 06:21:08:077314:info:fi_debug:debug_logs:1:538379550742020864: IGMP send Query(t=17) V2,
s=9.9.9.9 0.0.0.0 to VL100(ethe 3/2/3 ) rsp=200 igmp=8B, pkt=46B
Jun 26 06:21:08:078135:info:fi_debug:debug_logs:1:538379550742020864: IGMP send Query(t=17) V3,
s=9.9.9.9 0.0.0.0 to VL100(lag lg1 ) rsp=137 igmp=12B, pkt=50B
Jun 26 06:21:09:076398:info:fi_debug:debug_logs:1:538380371080774400: IGMP send Query(t=17) V2,
s=200.1.1.1 0.0.0.0 to VL200(all) rsp=200 igmp=8B, pkt=46B
Jun 26 06:21:09:238168:info:fi_debug:debug_logs:1:538380512814695168: IGMP.VRF0: [ Port 1/2/2,1/2/2.
Grp 225.1.1.1 ] Sent version 3 Query. size 12. Src 1.2.2.1
Jun 26 06:21:09:238280:info:fi_debug:debug_logs:1:538380512814695168: IGMP.VRF0: [ Port 1/2/2,1/2/2.
Grp 225.1.1.1 ] Sent Grp-Qry Ver 3. ReTx 1(Cnt 2)
Jun 26 06:21:11:126473:info:fi_debug:debug_logs:1:538382063297889024: IGMP send Query(t=17) V2,
s=3.3.3.3 0.0.0.0 to VL323(all) rsp=200 igmp=8B, pkt=46B
Jun 26 06:21:14:256690:info:fi_debug:debug_logs:1:538384635983299328: IGMP.VRF0: [ Port 1/2/2,1/2/2.
Grp 225.1.1.1 ] Sent version 3 Query. size 12. Src 1.2.2.1
Jun 26 06:21:14:256807:info:fi_debug:debug_logs:1:538384635983299328: IGMP.VRF0: [ Port 1/2/2,1/2/2.
Grp 225.1.1.1 ] Sent Grp-Qry Ver 3. ReTx 1(Cnt 1)
```

debug ip igmp level

Sets the debug level of the IGMP.

Syntax

debug ip igmp level*decimal*

no debug ip igmp level *decimal*

Parameters

decimal

Specifies the level of the IGMP. The valid values are from 1 through 3.

Modes

Privileged EXEC mode

Examples

```
device# debug ip igmp event
device#debug ip igmp level 3
Jun 11 08:21:54:021189:info:fi_debug:debug_logs:1:21865864931313153: IGMP.VRF0.EVT: Rx packet is valid.
Processing packet
Jun 11 08:21:54:021425:info:fi_debug:debug_logs:1:21865864931313153: IGMP.VRF0.QRY: Ver 3 MaxRespTm 50
GrpAddr 226.1.1.1
Jun 11 08:21:54:021504:info:fi_debug:debug_logs:1:21865864931313153:        QRV 2 RtrSupBit 1 QQICode
0.0.0.144 NumSrcs 0
Jun 11 08:21:54:021568:info:fi_debug:debug_logs:1:21865864931313153:
Jun 11 08:21:54:022373:info:fi_debug:debug_logs:1:21865864931313153: IGMP.VRF0.EVT: - Started FSM timer
for 5 seconds
Jun 11 08:21:54:022556:info:fi_debug:debug_logs:1:21865869226280449: IGMP.VRF0.EVT: Rx packet is valid.
Processing packet
Jun 11 08:21:54:022737:info:fi_debug:debug_logs:1:21865869226280449: IGMP.VRF0.QRY: Ver 3 MaxRespTm 50
GrpAddr 226.1.1.2
Jun 11 08:21:54:022813:info:fi_debug:debug_logs:1:21865869226280449:        QRV 2 RtrSupBit 1 QQICode
0.0.0.144 NumSrcs 0
Jun 11 08:21:54:022875:info:fi_debug:debug_logs:1:21865869226280449:
Jun 11 08:21:54:023358:info:fi_debug:debug_logs:1:21865869226280449: IGMP.VRF0.EVT: - Started FSM timer
for 5 seconds
Jun 11 08:21:54:023503:info:fi_debug:debug_logs:1:21865873521247745: IGMP.VRF0.EVT: Rx packet is valid.
Processing packet
Jun 11 08:21:54:023805:info:fi_debug:debug_logs:1:21865873521247745: IGMP.VRF0.EVT: - Started FSM timer
for 5 seconds
Jun 11 08:21:54:023941:info:fi_debug:debug_logs:1:21865877816215041: IGMP.VRF0.EVT: Rx packet is valid.
Processing packet
Jun 11 08:21:54:024199:info:fi_debug:debug_logs:1:21865877816215041: IGMP.VRF0.EVT: - Started FSM timer
for 5 seconds
Jun 11 08:21:58:550093:info:fi_debug:debug_logs:1:184051333336138496: IGMP.VRF0.QRY: Ver 3 MaxRespTm 50
GrpAddr 226.1.1.1
Jun 11 08:21:58:550203:info:fi_debug:debug_logs:1:184051333336138496:        QRV 2 RtrSupBit 1 QQICode
0.0.0.144 NumSrcs 0
Jun 11 08:21:58:550268:info:fi_debug:debug_logs:1:184051333336138496:
```

debug ip igmp physical-port

Matches the physical port that is connected.

Syntax

debug ip igmp physical-port [**ethernet***unit/slot/port* |**lag***lag-id*

no debug ip igmp physical-port [**ethernet***unit/slot/port* |**lag***lag-id*

Parameters

ethernet*unit/slot/port*

Specifies the physical interface.

lag*lag-id*

Specifies the LAG interface.

Modes

Privileged EXEC mode

Examples

```
device# debug ip igmp protocol
device#debug ip igmp phy-port ethernet 1/2/2
Jun 18 19:36:07:158398:info:fi_debug:debug_logs:1:470669700630017: IGMP.VRF0: IGMP Leave, Type V2
Report Port 1/2/2,1/2/2 Grp 225.1.1.5
Jun 18 19:36:07:158906:info:fi_debug:debug_logs:1:470669700630017: IGMP.VRF0: [ Port 1/2/2,1/2/2. Grp
225.1.1.5 ] Sent version 3 Query. size 12. Src 1.2.2.1
Jun 18 19:36:07:158994:info:fi_debug:debug_logs:1:470669700630017: IGMP.VRF0: [ Port 1/2/2,1/2/2. Grp
225.1.1.5 ] Sent Grp-Qry Ver 3. ReTx 0(Cnt 0)
Jun 18 19:36:07:159583:info:fi_debug:debug_logs:1:470673995597313: IGMP.VRF0: IGMP Leave, Type V2
Report Port 1/2/2,1/2/2 Grp 225.1.1.6
Jun 18 19:36:07:160038:info:fi_debug:debug_logs:1:470673995597313: IGMP.VRF0: [ Port 1/2/2,1/2/2. Grp
225.1.1.6 ] Sent version 3 Query. size 12. Src 1.2.2.1
Jun 18 19:36:07:160122:info:fi_debug:debug_logs:1:470673995597313: IGMP.VRF0: [ Port 1/2/2,1/2/2. Grp
225.1.1.6 ] Sent Grp-Qry Ver 3. ReTx 0(Cnt 0)
Jun 18 19:36:07:160367:info:fi_debug:debug_logs:1:470678290564609: IGMP.VRF0: IGMP Leave, Type V2
Report Port 1/2/2,1/2/2 Grp 225.1.1.7
Jun 18 19:36:07:160777:info:fi_debug:debug_logs:1:470678290564609: IGMP.VRF0: [ Port 1/2/2,1/2/2. Grp
225.1.1.7 ] Sent version 3 Query. size 12. Src 1.2.2.1

device#debug ip igmp show
debug ip igmp protocol
debug ip igmp phy_port lag 6
Jun 25 21:27:53:504152:info:fi_debug:debug_logs:1:2020086906881: PIMv4_CFG.VRF0: port lg6, ena_mode
Ena, mode SM
Jun 25 21:27:53:504318:info:fi_debug:debug_logs:1:2020086906881: PIM-EVT.VRF0: Receive intf lg6 Up
state_notify. AFI: IPv4.
Jun 25 21:28:30:530991:info:fi_debug:debug_logs:1:511790640868098816: IGMP.VRF0: [ Port lg6,lg6. Grp
0.0.0.0 ] Sent version 3 Query. size 12. Src 6.1.1.1
Jun 25 21:28:30:531096:info:fi_debug:debug_logs:1:511790640868098816: IGMP.VRF0: [ Port lg6,lg6 ] Sent
General Query version 3 using src 6.1.1.1
Jun 25 21:28:33:427046:info:fi_debug:debug_logs:1:62740243724371457: IGMP.VRF0: Type V2 Report Port
lg6,lg6 Grp 225.1.1.2
Jun 25 21:28:42:748459:info:fi_debug:debug_logs:1:62741149962470913: IGMP.VRF0: Type V2 Report Port
lg6,lg6 Grp 225.1.1.1
Jun 25 21:28:42:748786:info:fi_debug:debug_logs:1:62741154257438209: IGMP.VRF0: Type V2 Report Port
lg6,lg6 Grp 225.1.1.2
Jun 25 21:28:44:877794:info:fi_debug:debug_logs:1:62741360415868417: IGMP.VRF0: Type V2 Report Port
lg6,lg6 Grp 225.1.1.2
Jun 25 21:28:45:259119:info:fi_debug:debug_logs:1:62741394775606785: IGMP.VRF0: Type V2 Report Port
lg6,lg6 Grp 225.1.1.1
```

debug ip igmp protocol

Displays debugging information about the IGMP queries and reports transmitted and received.

Syntax

debug ip igmp protocol[**query**|**report**] [**stack**]

no debug ip igmp protocol[**query**|**report**] [**stack**]

Parameters

query

Displays debugging information about the IGMP queries transmitted and received.

report

Displays debugging information about the IGMP reports transmitted and received.

stack

Displays stack trace report packets.

Modes

Privileged EXEC mode

Examples

The following is the sample output from the **debug ip igmp protocol** command.

```
device#debug ip igmp protocol
Jun 25 21:08:15:970571:info:fi_debug:debug_logs:1:510777402248397568: IGMP.VRF2: [ Port 1/1/39,1/1/39 ]
Sent General Query version 3 using src 39.1.1.1
Jun 25 21:08:22:415486:info:fi_debug:debug_logs:1:62621990389810689: IGMP.VRF0: Type V2 Report Port
1/2/2,1/2/2 Grp 225.1.1.1
Jun 25 21:08:22:417549:info:fi_debug:debug_logs:1:62621994684777985: IGMP.VRF0: Type V2 Report Port
1/2/2,1/2/2 Grp 225.1.1.2
Jun 25 21:08:23:160244:info:fi_debug:debug_logs:1:0: Suppressed 1 times: IGMP.VRF0: Type V2 Report Port
1/2/2,1/2/2 Grp 225.1.1.2
Jun 25 21:08:32:186465:info:fi_debug:debug_logs:1:62622973937321473: IGMP.VRF0: Type V2 Report Port
1/2/2,1/2/2 Grp 225.1.1.1
Jun 25 21:08:41:220595:info:fi_debug:debug_logs:1:510798426113311488: IGMP.VRF0: [ Port 1/2/2,1/2/2.
Grp 0.0.0.0 ] Sent version 3 Query. size 12. Src 1.2.2.1
Jun 25 21:08:41:220679:info:fi_debug:debug_logs:1:510798426113311488: IGMP.VRF0: [ Port 1/2/2,1/2/2 ]
Sent General Query version 3 using src 1.2.2.1
Jun 25 21:08:41:830515:info:fi_debug:debug_logs:1:62623953189864961: IGMP.VRF0: Type V2 Report Port
1/2/2,1/2/2 Grp 225.1.1.1
Jun 25 21:08:54:961032:info:fi_debug:debug_logs:1:62625168665609729: IGMP.VRF0: Type V2 Report Port
1/2/2,1/2/2 Grp 225.1.1.2
Jun 25 21:08:59:559339:info:fi_debug:debug_logs:1:62625619637175809: IGMP.VRF0: IGMP Leave, Type V2
Report Port 1/2/2,1/2/2 Grp 225.1.1.1
Jun 25 21:08:59:559864:info:fi_debug:debug_logs:1:62625619637175809: IGMP.VRF0: [ Port 1/2/2,1/2/2. Grp
225.1.1.1 ] Sent version 3 Query. size 12. Src 1.2.2.1
Jun 25 21:08:59:559955:info:fi_debug:debug_logs:1:62625619637175809: IGMP.VRF0: [ Port 1/2/2,1/2/2. Grp
225.1.1.1 ] Sent Grp-Qry Ver 3. ReTx 0(Cnt 0)
Jun 25 21:08:59:560530:info:fi_debug:debug_logs:1:62625623932143105: IGMP.VRF0: IGMP Leave, Type V2
Report Port 1/2/2,1/2/2 Grp 225.1.1.2
Jun 25 21:08:59:560990:info:fi_debug:debug_logs:1:62625623932143105: IGMP.VRF0: [ Port 1/2/2,1/2/2. Grp
225.1.1.2 ] Sent version 3 Query. size 12. Src 1.2.2.1
Jun 25 21:08:59:561076:info:fi_debug:debug_logs:1:62625623932143105: IGMP.VRF0: [ Port 1/2/2,1/2/2. Grp
225.1.1.2 ] Sent Grp-Qry Ver 3. ReTx 0(Cnt 0)
Jun 25 21:09:04:301035:info:fi_debug:debug_logs:1:510817624617124608: IGMP.VRF0: [ Port 1/2/2,1/2/2.
Grp 225.1.1.1 ] Sent version 3 Query. size 12. Src 1.2.2.1
Jun 25 21:09:04:301152:info:fi_debug:debug_logs:1:510817624617124608: IGMP.VRF0: [ Port 1/2/2,1/2/2.
Grp 225.1.1.1 ] Sent Grp-Qry Ver 3. ReTx 1(Cnt 2)
Jun 25 21:09:04:301548:info:fi_debug:debug_logs:1:510817624617124608: IGMP.VRF0: [ Port 1/2/2,1/2/2.
Grp 225.1.1.2 ] Sent version 3 Query. size 12. Src 1.2.2.1
Jun 25 21:09:04:301631:info:fi_debug:debug_logs:1:510817624617124608: IGMP.VRF0: [ Port 1/2/2,1/2/2.
Grp 225.1.1.2 ] Sent Grp-Qry Ver 3. ReTx 1(Cnt 2)
Jun 25 21:09:09:400518:info:fi_debug:debug_logs:1:510821807915270912: IGMP.VRF0: [ Port 1/2/2,1/2/2.
Grp 225.1.1.1 ] Sent version 3 Query. size 12. Src 1.2.2.1
Jun 25 21:09:09:400632:info:fi_debug:debug_logs:1:510821807915270912: IGMP.VRF0: [ Port 1/2/2,1/2/2.
Grp 225.1.1.1 ] Sent Grp-Qry Ver 3. ReTx 1(Cnt 1)
Jun 25 21:09:09:401051:info:fi_debug:debug_logs:1:510821807915270912: IGMP.VRF0: [ Port 1/2/2,1/2/2.
Grp 225.1.1.2 ] Sent version 3 Query. size 12. Src 1.2.2.1
Jun 25 21:09:09:401136:info:fi_debug:debug_logs:1:510821807915270912: IGMP.VRF0: [ Port 1/2/2,1/2/2.
Grp 225.1.1.2 ] Sent Grp-Qry Ver 3. ReTx 1(Cnt 1)
```

The following is the sample output from the **debug ip igmp protocol query stack**command.

```
device#debug ip igmp query stack
Jun 25 21:13:18:609924:info:fi_debug:debug_logs:1:511029044382270208: stack: 0054536c 011102c4 01110570
010f013c 010fc84c 0011b038 010f70ac 011a8990 0009b33c 0009c1c8 005c4a4c 005c5dec 011af768 b6cb9f0c
b6ec0195
Jun 25 21:13:18:610045:info:fi_debug:debug_logs:1:511029044382270208: IGMP.VRF2: [ Port 1/1/39,1/1/39.
Grp 0.0.0.0 ] Sent version 3 Query. size 12. Src 39.1.1.1
Jun 25 21:13:18:610134:info:fi_debug:debug_logs:1:511029044382270208: stack: 0054536c 0111062c 010f013c
010fc84c 0011b038 010f70ac 011a8990 0009b33c 0009c1c8 005c4a4c 005c5dec 011af768 b6cb9f0c b6ec0195
Jun 25 21:13:18:610205:info:fi_debug:debug_logs:1:511029044382270208: IGMP.VRF2: [ Port 1/1/39,1/1/39 ]
Sent General Query version 3 using src 39.1.1.1
```

The following is the truncated sample output from the **debug ip igmp protocol stack** command.

```
device#debug ip igmp protocol stack
Jun 25 21:20:11:920762:info:fi_debug:debug_logs:1:511372796384772864: stack: 0054536c 011102c4 01110570
010f013c 010fc84c 0011b038 010f70ac 011a8990 0009b33c 0009c1c8 005c4a4c 005c5dec 011af768 b6cb9f0c
b6ec0195
Jun 25 21:20:11:920886:info:fi_debug:debug_logs:1:511372796384772864: IGMP.VRF0: [ Port 3/1/12,v312.
Grp 0.0.0.0 ] Sent version 3 Query. size 12. Src 3.12.1.2
Jun 25 21:20:11:920987:info:fi_debug:debug_logs:1:511372796384772864: stack: 0054536c 0111062c 010f013c
010fc84c 0011b038 010f70ac 011a8990 0009b33c 0009c1c8 005c4a4c 005c5dec 011af768 b6cb9f0c b6ec0195
Jun 25 21:20:11:921060:info:fi_debug:debug_logs:1:511372796384772864: IGMP.VRF0: [ Port 3/1/12,v312 ]
Sent General Query version 3 using src 3.12.1.2
Jun 25 21:20:28:980557:info:fi_debug:debug_logs:1:511386974071816960: stack: 0054536c 011102c4 01110570
010f013c 010fc84c 0011b038 010f70ac 011a8990 0009b33c 0009c1c8 005c4a4c 005c5dec 011af768 b6cb9f0c
b6ec0195
Jun 25 21:20:28:980676:info:fi_debug:debug_logs:1:511386974071816960: IGMP.VRF0: [ Port lg5,v312. Grp
0.0.0.0 ] Sent version 3 Query. size 12. Src 3.12.1.2
Jun 25 21:20:28:980763:info:fi_debug:debug_logs:1:511386974071816960: stack: 0054536c 0111062c 010f013c
010fc84c 0011b038 010f70ac 011a8990 0009b33c 0009c1c8 005c4a4c 005c5dec 011af768 b6cb9f0c b6ec0195
Jun 25 21:20:28:980833:info:fi_debug:debug_logs:1:511386974071816960: IGMP.VRF0: [ Port lg5,v312 ] Sent
General Query version 3 using src 3.12.1.2
```

debug ip igmp proxy clear

Clears all the IGMP proxy debug settings.

Syntax

debug ip igmp proxy clear

no debug ip igmp proxy clear

Modes

Privileged EXEC mode

debug ip igmp proxy error

Displays the IGMP proxy error messages.

Syntax

debug ip igmp proxy error

no debug ip igmp proxy error

Modes

Privileged EXEC mode

Examples

```
device# debug ip igmp proxy error
Debug: Jan 2 03:26:25 1d 3:26:43 - MCPROXY_ERROR: ref count 1 for group entry
235.5.4.145
Debug: Jan 2 03:46:35 - MCPROXY_ERROR: ref count 1 for group entry 235.5.4.241
Debug: Jan 2 03:48:55 - MCPROXY_ERROR: ref count 1 for group entry 235.5.4.49
```

debug ip igmp proxy event

Enables debugging of IGMP proxy events.

Syntax

debug ip igmp proxy event

no debug ip igmp proxy event

Modes

Privileged EXEC mode

Examples

```
device#debug ip igmp proxy event
Jun 11 15:36:53:160003:info:fi_debug:debug_logs:1:2754106884097:  MCPROXY_EVENT: GRP-FLTR-UPD:
interface v312, grp filter proxy-filter, acl id 17529668
Jun 11 15:37:07:887645:info:fi_debug:debug_logs:1:2801351524353:  MCPROXY_EVENT: GRP-FLTR-UPD:
interface e2/1/9, grp filter proxy-filter, acl id 17529668
```

debug ip igmp proxy packet

Displays debugging information related to the IGMP proxy packets.

Syntax

debug ip igmp proxy packet

no debug ip igmp proxy packet

Modes

Privileged EXEC mode

Examples

```
device#debug ip igmp proxy packet
device#debug ip igmp proxy tx
device#debug ip igmp proxy rx
device#debug ip igmp event
Jun 11 15:52:26:104057:info:fi_debug:debug_logs:1:26305688589305345:  MCPROXY_RX: [IPv4:default-vrf]
receive general query on port e3/1/12 max resp code 100
Jun 11 15:52:26:298692:info:fi_debug:debug_logs:1:206534787051029248:  MCPROXY_TX: [IPv4:default-vrf]
sending v1v2 grp 226.1.1.1 rprt to vir port v312 phy port 3/1/12
Jun 11 15:52:26:299152:info:fi_debug:debug_logs:1:206534787051029248:  MCPROXY_TX: [IPv4:default-vrf]
sending v1v2 grp 226.1.1.2 rprt to vir port v312 phy port 3/1/12
```

debug ip igmp proxy rx

Displays the IGMP proxy packets received.

Syntax

debug ip igmp proxy rx

no debug ip igmp proxy rx

Modes

Privileged EXEC mode

Examples

```
device#debug ip igmp proxy event
device#debug ip igmp proxy rx
Jun 11 15:56:36:197912:info:fi_debug:debug_logs:1:26458460576024065:  MCPROXY_RX: [IPv4:default-vrf]
receive general query on port e3/1/12 max resp code 100
```

debug ip igmp proxy show

Displays the IGMP proxy debug settings.

Syntax

debug ip igmp proxy show

no debug ip igmp proxy show

Modes

Privileged EXEC mode

Examples

```
device# debug ip igmp proxy show
Mcast Proxy debug for IPv4:
Receive debug is enable
Transmit debug is enable
Error debug is enable
```

debug ip igmp proxy tx

Displays the IGMP proxy packets transmitted.

Syntax

debug ip igmp proxy tx

no debug ip igmp proxy tx

Modes

Privileged EXEC mode

Examples

```
device#debug ip igmp proxy event
device#debug ip igmp proxy tx
Jun 11 16:02:51:617449:info:fi_debug:debug_logs:1:207054413669335808:  MCPROXY_TX: [IPv4:default-vrf]
sending v1v2 grp 226.1.1.1 rprt to vir port v312 phy port 3/1/12
Jun 11 16:02:51:617934:info:fi_debug:debug_logs:1:207054413669335808:  MCPROXY_TX: [IPv4:default-vrf]
sending v1v2 grp 226.1.1.2 rprt to vir port v312 phy port 3/1/12
```

debug ip igmp proxy vrf

Displays IGMP proxy related debug information for the specified VRF.

Syntax

debug ip igmp proxy vrf *vrf_name*

no debug ip igmp proxy vrf *vrf_name*

Parameters

vrf_name

Specifies the VRF name.

Modes

Privileged EXEC mode

Examples

```
device# debug ip igmp proxy vrf vrf1
Debug: Jan 1 21:43:08 21:43:26 - MCPROXY_TX: [IPv4:1] sending v1v2 grp 229.2.1.1
rprt to vir port v85 phy port 2/13
Debug: Jan 1 21:43:08 21:43:26 - MCPROXY_TX: [IPv4:1] receive group query
229.2.1.1 on port e2/13 max resp code 10
Debug: Jan 1 21:43:09 21:43:27 - MCPROXY_TX: [IPv4:1] receive group query
229.2.1.1 on port e2/13 max resp code 10
Debug: Jan 1 21:43:22 21:43:39 - MCPROXY_TX: [IPv4:1] sending v1v2 grp 229.2.1.1
rprt to vir port v85 phy port 2/13
Debug: Jan 1 21:43:23 21:43:41 - MCPROXY_TX: [IPv4:1] sending v1v2 grp 229.2.1.1
rprt to vir port v85 phy port 2/13
```

debug ip igmp rx

Displays the IGMP packets received.

Syntax

debug ip igmp rx

no debug ip igmp rx

Modes

Privileged EXEC mode

Examples

```
device#debug ip igmp protocol
device#debug ip igmp rx
Jun 11 08:05:34:363394:info:fi_debug:debug_logs:1:21767965446768129: IGMP.VRF0: Type V2 Report Port
lg5,v200 Grp 226.1.1.2
Jun 11 08:05:36:256440:info:fi_debug:debug_logs:1:21768184490100225: IGMP.VRF0: Query Port 3/1/12,v312
Grp 0.0.0.0
Jun 11 08:05:36:256560:info:fi_debug:debug_logs:1:21768184490100225: IGMP.QRY: [ Port 3/1/12,v312. Grp
0.0.0.0 ]. Processing version 2 query, max_response_time 10sec
Jun 11 08:05:37:786849:info:fi_debug:debug_logs:1:21768317634086401: IGMP.VRF0: Type V2 Report Port
lg5,v200 Grp 228.1.2.1
Jun 11 08:05:37:918714:info:fi_debug:debug_logs:1:21768326224020993: IGMP.VRF0: Type V2 Report Port
lg5,v200 Grp 226.1.1.1
Jun 11 08:05:45:460837:info:fi_debug:debug_logs:1:21769103613101569: IGMP.VRF0: Type V2 Report Port
lg5,v200 Grp 228.1.2.2
```

debug ip igmp show

Displays the IGMP debug settings.

Syntax

debug ip igmp show *decimal*

no debug ip igmp show *decimal*

Parameters

decimal

Specifies the level of the IGMP. The valid values are from 1 through 3.

Modes

Privileged EXEC mode

Usage Guidelines

Do not use the **show debug** command for this purpose. The **show debug** command displays general debug information.

Examples

```
device# debug ip igmp show
igmp debug-enable-any = 1
debug ip igmp port-down is enabled
debug ip igmp detail is enabled
debug ip igmp level 2 is enabled
```

debug ip igmp source

Matches the source of the control packet or IGMP V3 source packets.

Syntax

debug ip igmp source*ipaddr*

no debug ip igmp source*ipaddr*

Parameters

ipaddr

Specifies the IP address of the IGMP source.

Modes

Privileged EXEC mode

Examples

```
device#debug ip igmp protocol
device#debug ip igmp source 1.2.2.1
Jun 15 15:25:12:801836:info:fi_debug:debug_logs:1:61777277620323072: IGMP.VRF0: [ Port 1/2/2,1/2/2 ]
General Query Timer expired. Sending Query version 3
Jun 15 15:25:12:802386:info:fi_debug:debug_logs:1:61777277620323072: IGMP.VRF0: [ Port 1/2/2,1/2/2. Grp
0.0.0.0 ] Sent version 3 Query. size 12. Src 1.2.2.1
Jun 15 15:25:12:802480:info:fi_debug:debug_logs:1:61777277620323072: IGMP.VRF0: [ Port 1/2/2,1/2/2 ]
Sent General Query version 3 using src 1.2.2.1
Jun 15 15:25:15:831561:info:fi_debug:debug_logs:1:61779803061093120: IGMP.VRF2: [ Port 1/1/39,1/1/39 ]
General Query Timer expired. Sending Query version 3
```

debug ip igmp tx

Displays the IGMP packets transmitted.

Syntax

debug ip igmp tx

no debug ip igmp tx

Modes

Privileged EXEC mode

Examples

```
device#debug ip igmp protocol
device#debug ip igmp tx
Jun 11 08:07:33:950494:info:fi_debug:debug_logs:1:183331436687786752: IGMP.VRF0: [ Port lg6,lg6. Grp
0.0.0.0 ] Sent version 3 Query. size 12. Src 6.1.1.1
Jun 11 08:07:33:950623:info:fi_debug:debug_logs:1:183331436687786752: IGMP.VRF0: [ Port lg6,lg6 ] Sent
General Query version 3 using src 6.1.1.1
Jun 11 08:07:35:980380:info:fi_debug:debug_logs:1:183333116019999488: IGMP.VRF0: [ Port 3/2/3,v1423.
Grp 0.0.0.0 ] Sent version 1 Query. size 8. Src 0.0.0.0
Jun 11 08:07:35:980494:info:fi_debug:debug_logs:1:183333116019999488: IGMP.VRF0: [ Port 3/2/3,v1423 ]
Sent General Query version 1 using src 0.0.0.0
Jun 11 08:08:04:251508:info:fi_debug:debug_logs:1:183356703980389120: IGMP.VRF0: [ Port lg5,v200. Grp
0.0.0.0 ] Sent version 3 Query. size 12. Src 200.1.1.1
Jun 11 08:08:04:251592:info:fi_debug:debug_logs:1:183356703980389120: IGMP.VRF0: [ Port lg5,v200 ] Sent
General Query version 3 using src 200.1.1.1
```

debug ip igmp vrf

Displays IGMP-related debug information for the specified VRF.

Syntax

debug ip igmp vrf *vrf_name*

no debug ip igmp vrf *vrf_name*

Modes

Privileged EXEC mode

Examples

```
device#debug ip igmp protocol
device#debug ip igmp vrf vrf_1
device#debug ip igmp show
debug ip igmp protocol
debug ip igmp vrf vrf_1
```

debug ip msdp

Generates information about Multicast Source Discovery Protocol (MSDP) activities.

Syntax

debug ip msdp [**alarms** | **clear**| **enable** | **events** | **group** *group-address* | **message** | **peer** *peer-address* | **rpf-peer** | **show** | **source** *source-address*]

no debug ip msdp [**alarms** | **clear**| **enable** | **events** | **group** *group-address* | **message** | **peer** *peer-address* | **rpf-peer** | **show** | **source** *source-address*]

Parameters

alarms
Displays TCP packet related errors such as header length error, content error, and so on.

clear
Removes the debug commands enabled in MSDP.

enable
Enables all MSDP related debugs. This command needs to be clubbed with other debug commands.

events
Displays information about the MSDP events.

group *group-address*
Displays MSDP debugs limited to a group.

message
Displays information about the MSDP messages.

peer *peer-address*
Displays MSDP debugs limited to a peer.

rpf-peer
Displays debug message whenever MSDP SA message IP address fails RPF - PEER check.

show
Displays all the MSDP commands enabled in the system.

source *source-address*
Displays MSDP debugs limited to a source address.

vrf *vrf-name*
Displays MSDP debugs limited to a specific VRF.

Modes

Privileged EXEC mode

Examples

The following example displays information about the MSDP processing alarms.

```
device# debug ip msdp alarms
:MSDP[default-vrf]: Bad Header Read - Close connection to peer 8.1.1.1
```

The following example displays information about the MSDP events.

```
device# debug ip msdp
events
May 18 03:28:52:625984:info:fi_debug:debug_logs:1:84083343552938752: : MSDP[vrf1]: Originating SA
message ...
May 18 03:28:52:625898:info:fi_debug:debug_logs:1:84083343552938752: : MSDP[default-vrf]: Originating
SA message ...
May 18 03:28:40:576341:info:fi_debug:debug_logs:1:84072391386333952: : MSDP[vrf1]: Initiate Transport
Connection to MSDP peer 40.89.0.2 (Peer num=3):
May 18 03:28:40:576271:info:fi_debug:debug_logs:1:84072391386333952: : MSDP[vrf1]: Process START event
for peer 40.89.0.2, local = 40.89.0.1
May 18 03:28:36:550897:info:fi_debug:debug_logs:1:84068723484263168: : MSDP[default-vrf]: Keep Alive
timer expired: send keep alive to peer 40.70.0.1
May 18 03:28:30:000181:info:fi_debug:debug_logs:1:84062749184754432: : MSDP[vrf1]: Peer 40.89.0.2 back
to IDLE state
May 18 03:28:30:000102:info:fi_debug:debug_logs:1:84062749184754432: : MSDP[vrf1]: Closing TCP
connection to peer 40.89.0.2
```

The following example displays information about MSDP debugs limited to a group.

```
device# debug ip msdp message
device#debug ip msdp group
236.1.1.1                                                                                    May 18
03:31:39:226887:info:fi_debug:debug_logs:1:84235278021034752: : MSDP[default-vrf]: 40.70.0.1: State=4,
Rcv KA
May 18 03:31:37:241508:info:fi_debug:debug_logs:1:84233456954901248: : MSDP[default-vrf]: Peer
40.70.0.1: Xmt KA
May 18 03:31:22:178854:info:fi_debug:debug_logs:1:84219798958899968: : MSDP[vrf1]: 8.1.1.1: State=4,
Rcv KA
May 18 03:31:07:117002:info:fi_debug:debug_logs:1:84206037883683584:       (40.71.0.2,236.1.1.1)
(40.84.0.2,236.1.1.1)
May 18 03:31:07:116958:info:fi_debug:debug_logs:1:84206037883683584:   RP 40.70.0.1, SA count 4
May 18 03:31:07:116896:info:fi_debug:debug_logs:1:84206037883683584: : MSDP[default-vrf]: 40.70.0.1:
State=4, Rcv SA
May 18 03:31:05:110713:info:fi_debug:debug_logs:1:84204216817550080: : MSDP[vrf1]: Peer 8.1.1.1: Xmt KA
May 18 03:30:53:064816:info:fi_debug:debug_logs:1:84193251766043392: : MSDP[vrf1]: Originating SA
message ...
May 18 03:30:53:064726:info:fi_debug:debug_logs:1:84193251766043392: : MSDP[default-vrf]: Originating
SA message ...
May 18 03:30:39:023490:info:fi_debug:debug_logs:1:84180448468534016: : MSDP[default-vrf]: 40.70.0.1:
State=4, Rcv KA
May 18 03:30:37:010585:info:fi_debug:debug_logs:1:84178635992335104: : MSDP[default-vrf]: Peer
40.70.0.1: Xmt KA
May 18 03:30:21:945124:info:fi_debug:debug_logs:1:84164857737249536: : MSDP[vrf1]: 8.1.1.1: State=4,
Rcv KA
```

debug ip ntp

Displays NTP system information.

Syntax

debug ip ntp [**algorithms** | **association** | **broadcast** | **clockadjust** | **errors** | **packet** | **server**]

Parameters

algorithms
Displays information about the NTP system algorithms.

association
Displays information about the NTP server and peer association.

broadcast
Displays information about the NTP broadcast server and client.

clockadjust
Displays information about the NTP clock-adjust process.

errors
Displays information about the NTP error events.

packet
Displays information about the NTP input and output packets.

server
Displays information about the NTP server.

Modes

Privileged EXEC mode

Examples

The following example displays information about the NTP system algorithms.

```
device# debug ip ntp algorithms
NTP: ntp_peer_unfit: dist exceeded - root dist 16.00527999 of peer 10.25.96.13 has
exceeded max dist 1.50096000
NTP: ntp_peer_unfit: unreachable - peer 10.25.96.13 is not reachable [peer->reach
0]
device(config-ntp)# NTP: ntp_clock_filter: Adding offset 0, delay 0, disp 16 to
filter[0] for peer 10.25.96.13
NTP: ntp_clock_filter: No acceptable samples available
NTP: ntp_clock_filter: Adding offset 0.01133625, delay 0.27379156, disp
0.00001936 to filter[1] for peer 10.25.96.13
NTP: ntp_clock_filter: mitigated sample stats: n 1 offset 0.01133625 del
0.27379156 dsp 7.93750968 jit 0.00001525
NTP: ntp_peer_unfit: dist exceeded - root dist 8.07442072 of peer 10.25.96.13 has
exceeded max dist 1.50096000
NTP: ntp_clock_select: number of final survivors 0 and leap vote 0
NTP: ntp_clock_select: No survivors found. sys_peer is set to NULL
NTP: ntp_clock_filter: Adding offset 0.02724471, delay 0.30800050, disp
0.00001988 to filter[2] for peer 10.25.96.13
NTP: ntp_clock_filter: mitigated sample stats: n 2 offset 0.02724471 del
0.30800050 dsp 3.93752228 jit 0.00001525
NTP: ntp_peer_unfit: dist exceeded - root dist 4.09153779 of peer 10.25.96.13 has
exceeded max dist 1.50096000
NTP: ntp_clock_update: at 430 sample 430 associd 2
NTP: ntp_rstclock: mu 67 new state 5 old state 5 offset -0.00001326
```

The following example displays information about the NTP server and peer association.

```
device# debug ip ntp association
NTP: peer_clear: peer 10.25.96.13 next 646 refid INIT
NTP: newpeer: 10.25.96.13 mode client vers 4 poll 6 10 key 00000000
Flags Flags -> iBURST
SYSLOG: <14>Mar 21 17:44:33 Murali NTP: client association is mobilized for
10.25.96.13.
SYSLOG: <14>Mar 21 17:44:33 Murali NTP: The system clock is not synchronized to
any time source.
SYSLOG: <14>Mar 21 17:44:40 Murali NTP: Stratum is changed to 2.
SYSLOG: <14>Mar 21 17:44:40 Murali NTP: System clock is synchronized to
10.25.96.13.
```

The following example displays information about the NTP clock-adjust process.

```
device# debug ip ntp clockadjust
NTP: ntp_clock_update: at 327 sample 327 associd 3
NTP: ntp_local_clock: hufbuf - ptr 1 mindly 0.23329046 huffpuff correction
-0.00067095
NTP: ntp_local_clock: clk offset 0.00917431 clk jit 0 clk stab 0 sys_poll 6
NTP: ntp_set_freq: drift 0.00000010, old freq 50000000
NTP: ntp_set_freq: new freq 49999995
NTP: ntp_adj_host_clock: new offset 0.00917431, freq 49999995
NTP: Adjusting the clock. offset 0.00917431, calib used 251687
NTP: After adjusting the clock. offset 0.00817431, calib used 252687
NTP: Adjusting the clock. offset 0.00817431, calib used 252687
NTP: After adjusting the clock. offset 0.00717431, calib used 253687
NTP: Adjusting the clock. offset 0.00717431, calib used 253687
```

The following example displays information about the NTP input and output packets.

```
device# debug ip ntp packet
NTP: Sending the NTP client packet to 10.25.96.13 port 123 via port id INVALID
Leap 3, Version 4, Mode client, Stratum 16, Poll 6,
Precision 2**-16, Root delay 0, Root disp 167, Ref Id INIT,
Ref time 0.0 (00:00:00.0 GMT+00 Mon Jan 01 0)
Org 0.0 (00:00:00.0 GMT+00 Mon Jan 01 0)
Rec 0.0 (00:00:00.0 GMT+00 Mon Jan 01 0)
Xmt 230.745068249 (00:03:50.745068249 GMT+00 Mon Jan 01 0) pkt len = 48 key 0
NTP: Received NTP server packet from 10.25.96.13 on port 123 via port id mgmt1 at
00:03:50.1959316492 GMT+00 Mon Jan 01 0
Leap 0, Version 4, Mode server, Stratum 1, Poll 6,
Precision 2**-29, Root delay 0, Root disp 0, Ref Id 10.67.84.83,
Ref time 3572876227.2200200252 (17:37:07.2200200252 GMT+00 Thu Mar 21 2013)
Org 230.745068249 (00:03:50.745068249 GMT+00 Mon Jan 01 0)
Rec 3572876241.37257170 (17:37:21.37257170 GMT+00 Thu Mar 21 2013)
Xmt 3572876241.37302765 (17:37:21.37302765 GMT+00 Thu Mar 21 2013) pkt len =
48 key 0
NTP: Sending the NTP client packet to 10.25.96.13 port 123 via port id INVALID
Leap 3, Version 4, Mode client, Stratum 16, Poll 6,
Precision 2**-16, Root delay 0, Root disp 169, Ref Id INIT,
Ref time 0.0 (00:00:00.0 GMT+00 Mon Jan 01 0)
Org 3572876241.37302765 (17:37:21.37302765 GMT+00 Thu Mar 21 2013)
Rec 230.1959316492 (00:03:50.1959316492 GMT+00 Mon Jan 01 0)
Xmt 232.784360585 (00:03:52.784360585 GMT+00 Mon Jan 01 0) pkt len = 48 key 0
NTP: Received NTP server packet from 10.25.96.13 on port 123 via port id mgmt1 at
00:03:52.1904063455 GMT+00 Mon Jan 01 0
Leap 0, Version 4, Mode server, Stratum 1, Poll 6,
Precision 2**-29, Root delay 0, Root disp 0, Ref Id 10.67.84.83,
Ref time 3572876227.2200200252 (17:37:07.2200200252 GMT+00 Thu Mar 21 2013)
Org 232.784360585 (00:03:52.784360585 GMT+00 Mon Jan 01 0)
Rec 3572876243.75963892 (17:37:23.75963892 GMT+00 Thu Mar 21 2013)
Xmt 3572876243.76010686 (17:37:23.76010686 GMT+00 Thu Mar 21 2013) pkt len =
48 key 0
```

The following example displays information about the NTP server.

```
device# debug ip ntp server
NTP: Received NTP client packet from 172.26.67.52 on port 123 via port id mgmt1 at
18:02:44.1139927355 GMT+00 Thu Mar 21 2013
Leap 0, Version 4, Mode client, Stratum 3, Poll 6,
Precision 2**-16, Root delay 16102, Root disp 90471, Ref Id 172.26.67.65,
Ref time 3572877762.1183164018 (18:02:42.1183164018 GMT+00 Thu Mar 21 2013)
Org 3572877762.1141785444 (18:02:42.1141785444 GMT+00 Thu Mar 21 2013)
Rec 3572877762.1183164018 (18:02:42.1183164018 GMT+00 Thu Mar 21 2013)
Xmt 3572877764.1137502159 (18:02:44.1137502159 GMT+00 Thu Mar 21 2013) pkt len
= 48 key 0
device(config-ntp)# NTP: poll_update: for peer 10.250.229.100 hpoll 6 burst 0
retry 0 throttle 62 next poll 64
NTP: Received NTP server packet from 10.250.229.100 on port 123 via port id mgmt1
at 18:03:09.1891314446 GMT+00 Thu Mar 21 2013
Leap 0, Version 4, Mode server, Stratum 1, Poll 6,
Precision 2**-29, Root delay 0, Root disp 0, Ref Id 10.67.84.83,
Ref time 3572877762.155297680 (18:02:42.155297680 GMT+00 Thu Mar 21 2013)
Org 3572877789.878229501 (18:03:09.878229501 GMT+00 Thu Mar 21 2013)
Rec 3572877789.1401109720 (18:03:09.1401109720 GMT+00 Thu Mar 21 2013)
Xmt 3572877789.1401162509 (18:03:09.1401162509 GMT+00 Thu Mar 21 2013) pkt len
= 48 key 0
NTP: poll_update: for peer 10.250.229.100 hpoll 6 burst 0 retry 0 throttle 62 next
poll 67
```

debug ip ospf

Enables OSPF debugging information to be displayed.

Syntax

debug ip ospf [*ip-address* | **adj** | **error** | **events** | **flood** | **graceful-restart** | **log-empty-lsa** | **ls-id** | **lsa-generation** | **max-metric** | **packet** | **retransmission** | **route** *ip-address*]

no debug ip ospf [*ip-address* | **adj** | **error** | **events** | **flood** | **graceful-restart** | **log-debug-message** | **log-empty-lsa** | **ls-id** | **lsa-generation** | **max-metric** | **packet** | **retransmission** | **route** *ip-address*]

Parameters

ip-address
: Specifies an IP address.

adj
: Specifies information about OSPF adjacencies and authentication, including designated router (DR) and backup designated router (BDR) elections, sent and received hello packets, neighbor state transitions, and database description information.

error
: Reports the receipt of OSPF packets with errors, or mismatches between hello packet options.

events
: Specifies information about internal OSPF events related to configuration or interaction with the standby management processor and interface state transitions.

flood
: Specifies information about LSA flooding activity.

graceful-restart
: Specifies information about OSPF graceful restart events, including restart phases, graceful Link-State Advertisement (LSA) transmit and receive activity, and syslog messages.

log-empty-lsa
: Specifies information about empty link state advertisements (LSAs).

lsa-id
: Specifies information about OSPF LSA IDs.

lsa-generation
: Specifies information about LSAs.

max-metric
: Specifies information about about max-metric configurations.

packet
: Specifies information about OSPF packets.

retransmission
: Specifies information about OSPF retransmission of LSAs.

route *ip-address*
: Specifies information about an OSPF route.

Modes

Privileged EXEC mode

Usage Guidelines

The **no** form of the command disables OSPF debugging information from being displayed.

Examples

The following example displays OSPF debugging information.

```
device# debug ip ospf 10.1.1.2

OSPF: debug ospf neighbor 10.1.1.2
device(config)# OSPF: rcvd hello from 10.1.1.2 area 0 on interface 10.1.1.1,
state DR, DR 10.1.1.1, BDR 10.1.1.2
OSPF: Neighbor 10.1.1.2, int v115, state FULL processing event HELLO_RECEIVED
OSPF: rcvd hello from 10.1.1.2 area 0 on interface 10.1.1.1, state DR, DR
10.1.1.1, BDR 10.1.1.2
OSPF: Neighbor 10.1.1.2, int v115, state FULL processing event HELLO_RECEIVED
OSPF: rcvd hello from 10.1.1.2 area 0 on interface 10.1.1.1, state DR, DR
10.1.1.1, BDR 10.1.1.2
OSPF: Neighbor 10.1.1.2, int v115, state FULL processing event HELLO_RECEIVED
```

The following example displays information about OSPF adjacencies and authentication.

```
device# debug ip ospf adj
OSPF: adjacency events debugging is on
device# debug ip ospf adj OSPF: send hello on area 0 interface 10.1.1.1
OSPF: rcvd hello from 10.1.1.2 area 0 on interface 10.1.1.1, state DR, DR
10.1.1.1, BDR 10.1.1.2
OSPF: Neighbor 10.1.1.2, int v115, state FULL processing event HELLO_RECEIVED
OSPF: send hello on area 0 interface 10.1.1.1
OSPF: rcvd hello from 10.1.1.2 area 0 on interface 10.1.1.1, state DR, DR
10.1.1.1, BDR 10.1.1.2
OSPF: Neighbor 10.1.1.2, int v115, state FULL processing event HELLO_RECEIVED
OSPF: send hello on area 0 interface 10.1.1.1
OSPF: rcvd hello from 10.1.1.2 area 0 on interface 10.1.1.1, state DR, DR
10.1.1.1, BDR 10.1.1.2
OSPF: Neighbor 10.1.1.2, int v115, state FULL processing event HELLO_RECEIVED
```

The following example displays information for receipt of OSPF packets with errors, or mismatches between hello packet options

```
device# debug ip ospf error
OSPF: errors debugging is on
device(config-vif-9)# Debug: Jan 1 03:37:11 OSPF: invalid header or unable to
find neighbor, drop
Debug: Jan 1 03:37:11 OSPF: recv from:10.9.9.2 Intf:ve 9 Hello L:48 A:1
Rid:10.2.2.2 DR:10.9.9.2 BDR:0.0.0.0
Debug: Jan 1 03:37:23 OSPF: invalid header or unable to find neighbor, drop
Debug: Jan 1 03:37:23 OSPF: recv from:10.9.9.2 Intf:ve 9 Hello L:48 A:1
Rid:10.2.2.2 DR:10.9.9.2 BDR:0.0.0.0
Debug: Jan 1 03:37:34 OSPF: invalid header or unable to find neighbor, drop
Debug: Jan 1 03:37:34 OSPF: recv from:10.9.9.2 Intf:ve 9 Hello L:48 A:1
Rid:10.2.2.2 DR:10.9.9.2 BDR:0.0.0.0
```

The following example displays information about internal OSPF events.

```
device# debug ip ospf event
OSPF: events debugging is on
device# OSPF: Interface ve 18 (10.1.18.1) state Waiting processing event Wait
Timer
OSPF: DR/BDR election for 10.1.18.1 on ve 18
OSPF: Neighbor 10.213.213.213 int v18, state 2_WAY processing event ADJACENCY_OK
OSPF: send DBD to 10.213.213.213 on ve 18 flag 0x7 seq 0x18a3b9 len 32
OSPF: elect BDR(backup designated router): Router ID 10.213.213.213 IP interface
10.1.18.2
OSPF: elect DR(designated router): Router ID 10.10.10.77, IP interface 10.1.18.1
OSPF: Neighbor 10.116.116.1 int 2/1/21, state FULL processing event HELLO_RECEIVED
OSPF: Neighbor 10.116.116.1 int v511, state FULL processing event HELLO_RECEIVED
OSPF: Neighbor 10.116.116.1 int v911, state FULL processing event HELLO_RECEIVED
OSPF: Neighbor 41.41.41.41 int v35, state FULL processing event HELLO_RECEIVED
OSPF: Neighbor 10.213.213.213 int 2/1/14, state 2_WAY processing event
HELLO_RECEIVED
OSPF: Neighbor 10.116.116.1 int v511, state FULL processing event HELLO_RECEIVED
OSPF: send DBD to 10.213.213.213 on ve 18 flag 0x7 seq 0x18a3b9 len 32
OSPF: Neighbor 49.2.3.4 int v34, state FULL processing event HELLO_RECEIVED
OSPF: Neighbor 10.213.213.213 int v18, state EXCHANGE_START processing event
HELLO_RECEIVED
OSPF: Neighbor 10.213.213.213 int 4/1/12, state FULL processing event
HELLO_RECEIVED
device# OSPF: Interface ethernet 4/1/12 (10.1.51.2) state Down processing event
Interface Up
virtual interface 10.1.51.2 up, state changed to Other from Point To Point
no deOSPF: Neighbor 10.213.213.213 int 4/1/12, state DOWN processing event
HELLO_RECEIVED
OSPF: Neighbor 10.213.213.213 int 4/1/12, state INITIALIZING processing event
ONE_WAY
bug ip OSPF: Neighbor 10.213.213.213 int 4/1/12, state INITIALIZING processing
event HELLO_RECEIVED
```

The following example displays information about LSA flooding activity.

```
debug ip ospf flood
OSPF: flooding debugging is on
device(config-if-e1000-1/1/15)#OSPF: flood LSA Type:1 AdvRtr:10.2.1.1 Age:0
LsId:10.2.1.1
OSPF: flood advertisement 10.2.1.1 throughout a specific area = 0
OSPF: flood LSA Type:1 AdvRtr:10.2.1.1 Age:0 LsId:10.2.1.1
OSPF: flood advertisement 10.2.1.1 throughout a specific area = 0
OSPF: flooding type 1 advertisement out interface 10.1.1.1
OSPF: attempting to flood rcvd LSA area = 0 interface type = 1
OSPF: flood LSA Type:1 AdvRtr:10.3.1.1 Age:1 LsId:10.3.1.1
OSPF: flood advertisement 10.3.1.1 throughout a specific area = 0
OSPF: attempting to flood rcvd LSA area = 0 interface type = 1
OSPF: flood LSA Type:2 AdvRtr:10.3.1.1 Age:3600 LsId:10.1.1.2
OSPF: flood advertisement 10.1.1.2 throughout a specific area = 0
OSPF: flood LSA Type:1 AdvRtr:10.2.1.1 Age:0 LsId:10.2.1.1
OSPF: flood advertisement 10.2.1.1 throughout a specific area = 0
OSPF: flooding type 1 advertisement out interface 10.1.1.1
OSPF: attempting to flood rcvd LSA area = 0 interface type = 1
OSPF: flood LSA Type:1 AdvRtr:10.3.1.1 Age:1 LsId:10.3.1.1
OSPF: flood advertisement 10.3.1.1 throughout a specific area = 0
OSPF: attempting to flood rcvd LSA area = 0 interface type = 1
OSPF: flood LSA Type:2 AdvRtr:10.3.1.1 Age:1 LsId:10.1.1.2
OSPF: flood advertisement 10.1.1.2 throughout a specific area = 0
```

The following example displays information about OSPF graceful restart events.

```
device# debug ip ospf graceful-restart
OSPF: graceful-restart debugging is on
device# LSA flush rcvd Type:4 AdvRtr:83.83.10.11 LsId:10.213.213.213
LSA flush rcvd Type:4 AdvRtr:83.83.10.11 LsId:10.213.213.213
LSA flush rcvd Type:4 AdvRtr:10.116.116.1 LsId:10.205.205.205
LSA flush rcvd Type:4 AdvRtr:10.116.116.1 LsId:10.205.205.205
rcv GRACE LSA from 10.1.14.1, age 0, Adv 10.213.213.213
install new GraceLSA, int 269, neighbor 10.1.14.1, age 0
rcv Grace_LSA from 10.1.14.1, area 0.0.0.10
Recvd grace lsa id=50331648 state=8 0x2dd5d5d5 0x2dd5d5d5 age=0 gr-state=0
neighbor 10.1.14.1 entering graceful restart state, timer 120, lsa age 0, max
120, helping 0
flood grace LSA, AdvRtr:10.213.213.213, Age:0
rcv GRACE LSA from 10.1.51.1, age 0, Adv 10.213.213.213
install new GraceLSA, int 779, neighbor 10.1.51.1, age 0
rcv Grace_LSA from 10.1.51.1, area 0.0.0.10
Recvd grace lsa id=50331648 state=8 0x2dd5d5d5 0x2dd5d5d5 age=0 gr-state=0
neighbor 10.1.51.1 entering graceful restart state, timer 120, lsa age 0, max
120, helping 0
flood grace LSA, AdvRtr:10.213.213.213, Age:0
rcv GRACE LSA from 10.1.18.2, age 0, Adv 10.213.213.213
install new GraceLSA, int 2050, neighbor 10.1.18.2, age 0
rcv Grace_LSA from 10.1.18.2, area 0.0.0.10
Recvd grace lsa id=50331648 state=8 0x2dd5d5d5 0x2dd5d5d5 age=0 gr-state=0
neighbor 10.1.18.2 entering graceful restart state, timer 120, lsa age 0, max
120, helping 0
flood grace LSA, AdvRtr:10.213.213.213, Age:0
rcv GRACE LSA from 10.1.14.1, age 0, Adv 10.213.213.213
Update same instance GRACE LSA age to 0 in database, refresh neighbor 10.1.14.1
restart timer to 120
rcv GRACE LSA from 10.1.51.1, age 0, Adv 10.213.213.213
Update same instance GRACE LSA age to 0 in database, refresh neighbor 10.1.51.1
restart timer to 120
rcv GRACE LSA from 10.1.18.2, age 0, Adv 10.213.213.213
Update same instance GRACE LSA age to 0 in database, refresh neighbor 10.1.18.2
restart timer to 120
rcv GRACE LSA from 10.1.14.1, age 0, Adv 10.213.213.213
Update same instance GRACE LSA age to 0 in database, refresh neighbor 10.1.14.1
restart timer to 120
rcv GRACE LSA from 10.1.51.1, age 0, Adv 10.213.213.213
Update same instance GRACE LSA age to 0 in database, refresh neighbor 10.1.51.1
restart timer to 120
rcv GRACE LSA from 10.1.18.2, age 0, Adv 10.213.213.213
Update same instance GRACE LSA age to 0 in database, refresh neighbor 10.1.18.2
restart timer to 120
device# no debug ip ospf graceful-restart
OSPF: graceful-restart debugging is off
```

The following example displays information about empty LSAs.

```
device# debug ip ospf log-empty-lsa
device(config-if-e1000-1/1/15)# debug ip ospf log-empty-lsa
OSPF: empty-LSA logging debugging is on
device(config-if-e1000-1/1/15)# debug ip ospf flOSPF: originate router LSA, area
0
OSPF: No difference found, restart 0
OSPF: send ls request to neighbor 10.1.1.2, retran 0
OSPF: sending ls request last size 36, count 1
OSPF: LSA rcvd Type:1 AdvRtr:10.2.1.1 Age:297 LsId:10.2.1.1 Seq-Num 8000000e from
Neighbor 10.1.1.2
OSPF: Received self originated LSA type 1 with id = 10.2.1.1 Seq-Num 8000000e
OSPF: install a new lsa, type 1, ls_id 10.2.1.1, age 0, seq 8000000f area-id 0
OSPF: NSR Sync ACK received for LSA
OSPF: ls_header.id 10.2.1.1 type 1 ToBesyncedState 2
OSPF: NSR : Sync node add, type 1, ls_id 10.2.1.1, age 0, seq 8000000f
OSPF: send_ls_update to interface 10.1.1.1 (224.0.0.6) tb 962478204, retran 0
OSPF: tx LSA Type:1 AdvRtr:10.2.1.1 Age:1 LsId:10.2.1.1
OSPF: originate router LSA, area 0
OSPF: originate_router_links_advertisement gen new instance set 10.2.1.1 (not
sent - wait for MinLSInterval)
OSPF: LSA rcvd Type:1 AdvRtr:10.3.1.1 Age:1 LsId:10.3.1.1 Seq-Num 8000000f from
Neighbor 10.1.1.2
OSPF: install a new lsa, type 1, ls_id 10.3.1.1, age 1, seq 8000000f area-id 0
OSPF: NSR Sync ACK received for LSA
OSPF: ls_header.id 10.3.1.1 type 1 ToBesyncedState 2
OSPF: NSR : Sync node add, type 1, ls_id 10.3.1.1, age 1, seq 8000000f
OSPF: LSA rcvd Type:2 AdvRtr:10.3.1.1 Age:3600 LsId:115.1.1.2 Seq-Num 80000005
from Neighbor 10.1.1.2
OSPF: install a new lsa, type 2, ls_id 10.1.1.2, age 3600, seq 80000005 area-id 0
OSPF: NSR Sync ACK received for LSA
OSPF: ls_header.id 105.1.1.2 type 2 ToBesyncedState 2
OSPF: NSR : Sync node add, type 2, ls_id 10.1.1.2, age 3600, seq 80000005
oOSPF: trying age out LSA, id 10.1.1.2, len 32, type 2, from 10.3.1.1, age 3600
genNewLsa 0 area 0
OSPF: age out and remove lsa data base 10.1.1.2
odsOSPF: OSPF TIMER: Minlsa: sptr_database_entry generate_new_instance == TRUE
for 1.2.1.1
OSPF: originate_delayed LSA, type 1, parm1: 0x0
OSPF: originate router LSA, area 0
OSPF: difference found, restart 0
OSPF: install a new lsa, type 1, ls_id 10.2.1.1, age 0, seq 80000010 area-id 0
OSPF: NSR Sync ACK received for LSA
OSPF: ls_header.id 10.2.1.1 type 1 ToBesyncedState 2
OSPF: NSR : Sync node add, type 1, ls_id 10.2.1.1, age 0, seq 80000010
OSPF: OSPF: rcv LSA ack from 10.1.1.2, type 1, id 1.2.1.1, seq 0x8000000f, adv
10.2.1.1, age 1
OSPF: send_ls_update to interface 10.1.1.1 (224.0.0.6) tb 1017253324, retran 0
OSPF: tx LSA Type:1 AdvRtr:10.2.1.1 Age:1 LsId:10.2.1.1
OSPF: LSA rcvd Type:1 AdvRtr:10.3.1.1 Age:1 LsId:10.3.1.1 Seq-Num 80000010 from
Neighbor 10.1.1.2
OSPF: install a new lsa, type 1, ls_id 10.3.1.1, age 1, seq 80000010 area-id 0
OSPF: NSR Sync ACK received for LSA
OSPF: ls_header.id 10.3.1.1 type 1 ToBesyncedState 2
OSPF: NSR : Sync node add, type 1, ls_id 10.3.1.1, age 1, seq 80000010
OSPF: LSA rcvd Type:2 AdvRtr:10.3.1.1 Age:1 LsId:10.1.1.2 Seq-Num 80000006 from
Neighbor 10.1.1.2
OSPF: install a new lsa, type 2, ls_id 10.1.1.2, age 1, seq 80000006 area-id 0
OSPF: NSR Sync ACK received for LSA
OSPF: ls_header.id 10.1.1.2 type 2 ToBesyncedState 2
OSPF: NSR : Sync node add, type 2, ls_id 10.1.1.2, age 1, seq 80000006
OSPF: OSPF: rcv LSA ack from 10.1.1.2, type 1, id 10.2.1.1, seq 0x80000010, adv
10.2.1.1, age 1
OSPF: originate router LSA, area 0
OSPF: No difference found, restart 0
```

The following example displays information about OSPF LSA IDs.

```
device# debug ip ospf lsa-id
Debug message destination: Console
IP Routing:
OSPF: flooding debugging is on
OSPF: lsa generation debugging is on
OSPF: ls-id 10.2.2.2 debugging is on
device(config-ospf-router)# Debug: Jan 1 04:12:50 OSPF: LSA rcvd Type:1
AdvRtr:10.2.2.2 Age:1 LsId:10.2.2.2 Seq-Num 8000000e from Neighbor 10.9.9.2
Debug: Jan 1 04:12:50 OSPF: install a new lsa, type 1, ls_id 10.2.2.2, age 1, seq
8000000e area-id 0
Debug: Jan 1 04:12:50 OSPF: NSR Sync ACK received for LSA
Debug: Jan 1 04:12:50 OSPF: ls_header.id 10.2.2.2 type 1 ToBesyncedState 2
Debug: Jan 1 04:12:50 OSPF: NSR : Sync node add, type 1, ls_id 10.2.2.2, age 1,
seq 8000000e
Debug: Jan 1 04:12:50 OSPF: attempting to flood rcvd LSA area = 0 interface type
= 1
Debug: Jan 1 04:12:50 OSPF: flood LSA Type:1 AdvRtr:10.2.2.2 Age:1 LsId:10.2.2.2
Debug: Jan 1 04:12:50 OSPF: flood advertisement 10.2.2.2 throughout a specific
area = 0
Debug: Jan 1 04:12:51 OSPF: LSA rcvd Type:1 AdvRtr:10.2.2.2 Age:1 LsId:10.2.2.2
Seq-Num 8000000f from Neighbor 10.9.9.2
Debug: Jan 1 04:12:51 OSPF: install a new lsa, type 1, ls_id 10.2.2.2, age 1, seq
8000000f area-id 0
Debug: Jan 1 04:12:51 OSPF: NSR Sync ACK received for LSA
Debug: Jan 1 04:12:51 OSPF: ls_header.id 10.2.2.2 type 1 ToBesyncedState 2
Debug: Jan 1 04:12:51 OSPF: NSR : Sync node add, type 1, ls_id 10.2.2.2, age 1,
seq 8000000f
Debug: Jan 1 04:12:51 OSPF: attempting to flood rcvd LSA area = 0 interface type
= 1
Debug: Jan 1 04:12:51 OSPF: flood LSA Type:1 AdvRtr:10.2.2.2 Age:1 LsId:10.2.2.2
Debug: Jan 1 04:12:51 OSPF: flood advertisement 10.2.2.2 throughout a specific
area = 0
```

The following example displays information about LSAs.

```
device# debug ip ospf lsa-generation
OSPF: lsa generation debugging is on
device(config-if-e1000-1/1/15)#OSPF: originate router LSA, area 0
OSPF: trying age out LSA, id 10.2.1.1, len 36, type 1, from 10.2.1.1, age 3600
genNewLsa 0 area 0
OSPF: age out and remove lsa data base 10.2.1.1
```

The following example displays information about max-metric configurations.

```
device# debug ip ospf max-metric
OSPF: max-metric debugging is on
device(config-ospf-router)# max-metric router-lsa all-lsas
Debug: Jan 1 04:20:05 OSPF: Max-metric advertisement started due to configuration
change for vrf 0
```

The following example displays information about OSPF packets.

```
debug ip ospf packet
device# OSPF: recv from:10.1.14.1 to 224.0.0.5 Intf:e 2/1/14 LS-Ack L:104 Auth:0
ID:10.213.213.213
OSPF: recv from:10.1.18.2 to 224.0.0.5 Intf:ve 18 LS-Ack L:104 Auth:0
ID:10.213.213.213
OSPF: send to:224.0.0.5 Intf:ve 36 Hello L:44 Auth:0 ID:10.10.10.77 DR:10.36.2.1
BDR:0.0.0.0
OSPF: send to:224.0.0.5 Intf:ve 36 Hello L:44 Auth:0 ID:10.10.10.77
DR:10.36.100.1 BDR:0.0.0.0
OSPF: send to:224.0.0.5 Intf:ve 511 Hello L:48 Auth:0 ID:10.10.10.77
DR:10.1.251.7 BDR:10.1.251.6
OSPF: send to:224.0.0.5 Intf:e 2/1/14 Hello L:48 Auth:0 ID:10.10.10.77
DR:10.1.14.2 BDR:10.1.14.1
OSPF: send to:224.0.0.5 Intf:e 2/1/21 LS-Ack L:104 Auth:0 ID:10.10.10.77
OSPF: send to:224.0.0.5 Intf:e 2/1/21 Hello L:48 Auth:0 ID:10.10.10.77 DR:0.0.0.0
BDR:0.0.0.0
OSPF: send to:224.0.0.5 Intf:ve 35 Hello L:48 Auth:0 ID:10.10.10.77
DR:10.1.35.16 BDR:10.1.35.15
OSPF: send to:10.1.251.6 Intf:ve 511 Hello L:48 Auth:0 ID:10.10.10.77 DR:0.0.0.0
BDR:0.0.0.0
OSPF: send to:10.1.18.2 Intf:e 4/1/12 Hello L:48 Auth:0 ID:10.10.10.77 DR:0.0.0.0
BDR:0.0.0.0
OSPF: recv from:10.1.35.15 to 224.0.0.5 Intf:ve 35 LS-Ack L:104 Auth:0
ID:41.41.41.41
OSPF: recv from:10.1.251.18 to 10.1.251.17 Intf:e 2/1/21 Hello L:48 Auth:0
ID:10.116.116.1 DR:0.0.0.0 BDR:0.0.0.0
OSPF: recv from:10.1.34.10 to 224.0.0.5 Intf:ve 34 LS-Ack L:104 Auth:0
ID:49.2.3.4
OSPF: recv from:10.1.34.10 to 224.0.0.5 Intf:ve 34 Hello L:48 Auth:0 ID:49.2.3.4
DR:10.1.34.16 BDR:10.1.34.10
OSPF: recv from:10.1.251.18 to 224.0.0.5 Intf:e 2/1/21 LS-Upd L:136 Auth:0
ID:10.116.116.1 Cnt:3
OSPF: send to:224.0.0.5 Intf:ve 18 LS-Upd L:136 Auth:0 ID:10.10.10.77 Cnt:3
OSPF: send to:224.0.0.5 Intf:e 2/1/14 LS-Upd L:136 Auth:0 ID:10.10.10.77 Cnt:3
OSPF: send to:224.0.0.5 Intf:e 4/1/12 LS-Upd L:136 Auth:0 ID:10.10.10.77 Cnt:3
OSPF: send to:224.0.0.5 Intf:ve 34 LS-Upd L:136 Auth:0 ID:10.10.10.77 Cnt:3
OSPF: send to:224.0.0.5 Intf:ve 35 LS-Upd L:136 Auth:0 ID:10.10.10.77 Cnt:3
OSPF: recv from:10.1.251.6 to 224.0.0.5 Intf:ve 511 LS-Upd L:136 Auth:0
ID:10.116.116.1 Cnt:3
OSPF: send to:10.1.251.6 Intf:ve 511 LS-Ack L:84 Auth:0 ID:10.10.10.77
OSPF: recv from:10.1.91.18 to 224.0.0.5 Intf:ve 911 LS-Upd L:136 Auth:0
ID:10.116.116.1 Cnt:3
OSPF: send to:10.1.91.18 Intf:ve 911 LS-Ack L:84 Auth:0 ID:10.10.10.77
OSPF: recv from:10.1.14.1 to 224.0.0.5 Intf:e 2/1/14 LS-Upd L:136 Auth:0
ID:10.213.213.213 Cnt:3
OSPF: recv from:10.1.51.1 to 224.0.0.5 Intf:e 4/1/12 LS-Upd L:136 Auth:0
ID:10.213.213.213 Cnt:3
OSPF: recv from:10.1.18.2 to 224.0.0.5 Intf:ve 18 LS-Upd L:136 Auth:0
ID:10.213.213.213 Cnt:3
OSPF: recv from:10.1.14.1 to 224.0.0.5 Intf:e 2/1/14 LS-Ack L:84 Auth:0
ID:10.213.213.213
OSPF: recv from:10.1.18.2 to 224.0.0.5 Intf:ve 18 LS-Ack L:84 Auth:0
ID:10.213.213.213
OSPF: send to:224.0.0.5 Intf:ve 911 Hello L:48 Auth:0 ID:10.10.10.77
DR:10.1.91.16 BDR:10.1.91.18
OSPF: send to:224.0.0.5 Intf:loopback 1 Hello L:44 Auth:0 ID:10.10.10.77
DR:10.10.10.77 BDR:0.0.0.0
OSPF: send to:224.0.0.5 Intf:loopback 2 Hello L:44 Auth:0 ID:10.10.10.77
DR:10.10.62.10 BDR:0.0.0.0
OSPF: send to:224.0.0.5 Intf:loopback 3 Hello L:44 Auth:0 ID:10.10.10.77
DR:10.10.63.10 BDR:0.0.0.0
OSPF: send to:224.0.0.5 Intf:loopback 4 Hello L:44 Auth:0 ID:10.10.10.77
DR:10.10.64.10 BDR:0.0.0.0
OSPF: send to:224.0.0.5 Intf:e 2/1/21 LS-Ack L:84 Auth:0 ID:10.10.10.77
OSPF: recv from:10.1.35.15 to 224.0.0.5 Intf:ve 35 LS-Ack L:84 Auth:0
ID:41.41.41.41
OSPF: recv from:10.1.34.10 to 224.0.0.5 Intf:ve 34 LS-Ack L:84 Auth:0 ID:49.2.3.4
OSPF: recv from:10.1.251.18 to 224.0.0.5 Intf:e 2/1/21 LS-Upd L:100 Auth:0
ID:10.116.116.1 Cnt:2
```

```
OSPF: send to:224.0.0.5 Intf:ve 18 LS-Upd L:100 Auth:0 ID:10.10.10.77 Cnt:2
OSPF: send to:224.0.0.5 Intf:e 2/1/14 LS-Upd L:100 Auth:0 ID:10.10.10.77 Cnt:2
OSPF: send to:224.0.0.5 Intf:e 4/1/12 LS-Upd L:100 Auth:0 ID:10.10.10.77 Cnt:2
OSPF: send to:224.0.0.5 Intf:ve 34 LS-Upd L:100 Auth:0 ID:10.10.10.77 Cnt:2
OSPF: send to:224.0.0.5 Intf:ve 35 LS-Upd L:100 Auth:0 ID:10.10.10.77 Cnt:2
OSPF: recv from:10.1.251.6 to 224.0.0.5 Intf:ve 511 LS-Upd L:100 Auth:0
ID:10.116.116.1 Cnt:2
OSPF: send to:10.1.251.6 Intf:ve 511 LS-Ack L:64 Auth:0 ID:10.10.10.77
OSPF: recv from:10.1.91.18 to 224.0.0.5 Intf:ve 911 LS-Upd L:100 Auth:0
ID:10.116.116.1 Cnt:2
OSPF: send to:10.1.91.18 Intf:ve 911 LS-Ack L:64 Auth:0 ID:10.10.10.77
OSPF: recv from:10.1.14.1 to 224.0.0.5 Intf:e 2/1/14 LS-Upd L:100 Auth:0
ID:10.213.213.213 Cnt:2
OSPF: recv from:10.1.51.1 to 224.0.0.5 Intf:e 4/1/12 LS-Upd L:100 Auth:0
ID:10.213.213.213 Cnt:2
OSPF: recv from:10.1.18.2 to 224.0.0.5 Intf:ve 18 LS-Upd L:100 Auth:0
ID:10.213.213.213 Cnt:2
OSPF: recv from:10.1.251.6 to 224.0.0.5 Intf:ve 511 LS-Upd L:748 Auth:0
ID:10.116.116.1 Cnt:20
OSPF: send to:224.0.0.5 Intf:ve 18 LS-Upd L:748 Auth:0 ID:10.10.10.77 Cnt:20
OSPF: send to:224.0.0.5 Intf:e 2/1/14 LS-Upd L:748 Auth:0 ID:10.10.10.77 Cnt:20
OSPF: send to:224.0.0.5 Intf:e 4/1/12 LS-Upd L:748 Auth:0 ID:10.10.10.77 Cnt:20
OSPF: send to:224.0.0.5 Intf:ve 34 LS-Upd L:748 Auth:0 ID:10.10.10.77 Cnt:20
OSPF: send to:224.0.0.5 Intf:ve 35 LS-Upd L:748 Auth:0 ID:10.10.10.77 Cnt:20
```

The following example displays information about OSPF retransmission of LSAs.

```
device# debug ip ospf retransmission
device(config)# clear ip routeOSPF: examine each neighbor and add advertisement
ls-id 10.3.13.0 to the retransmission list if necessary
OSPF: examine each neighbor and add advertisement ls-id 10.3.13.0 to the
retransmission list if necessary
OSPF: examine each neighbor and add advertisement ls-id 10.1.2.0 to the
retransmission list if necessary
OSPF: examine each neighbor and add advertisement ls-id 10.1.2.0 to the
retransmission list if necessary
OSPF: examine each neighbor and add advertisement ls-id 10.3.3.0 to the
retransmission list if necessary
OSPF: examine each neighbor and add advertisement ls-id 10.3.3.0 to the
retransmission list if necessary
OSPF: examine each neighbor and add advertisement ls-id 10.1.2.0 to the
retransmission list if necessary
OSPF: examine each neighbor and add advertisement ls-id 10.1.2.0 to the
retransmission list if necessary
OSPF: examine each neighbor and add advertisement ls-id 10.24.2.0 to the
retransmission list if necessary
OSPF: examine each neighbor and add advertisement ls-id 10.24.2.0 to the
retransmission list if necessary
OSPF: examine each neighbor and add advertisement ls-id 10.3.3.0 to the
retransmission list if necessary
OSPF: examine each neighbor and add advertisement ls-id 10.3.3.0 to the
retransmission list if necessary
OSPF: examine each neighbor and add advertisement ls-id 10.3.13.0 to the
retransmission list if necessary
OSPF: examine each neighbor and add advertisement ls-id 10.3.13.0 to the
retransmission list if necessary
device(config)# OSPF: examine each neighbor and add advertisement ls-id 10.24.2.0
to the retransmission list if necessary
OSPF: examine each neighbor and add advertisement ls-id 10.24.2.0 to the
retransmission list if necessary
```

The following example shows information about a specified OSPF route.

```
debug ip ospf route 10.3.3.0
OSPF: debug ospf route 10.3.3.0
device(config-if-e1000-1/1/15)# debug ip ospf route 192.168.30.0
OSPF: debug ospf route 192.168.30.0
device(config-if-e1000-1/1/15)#OSPF: invalidate whole table - entry
192.168.30.0, state 0, path type 3
OSPF: calc ext route 192.168.30.0
OSPF: delete route 192.168.30.0 from rtm 0x367e7270, not_in_main 0
OSPF: calc ext route 192.168.30.0
OSPF: calc ext route 192.168.30.0
OSPF: calc ext route 192.168.30.0
OSPF: calc ext route 192.168.30.0
OSPF: ext route, net = 192.168.30.0, mask = 10.255.255.0 advrtr = 10.3.1.1, fwd =
0.0.0.0
OSPF: ext route changed 192.168.30.0, state 0
OSPF: ext route new 192.168.30.0, state 2, path type 3
OSPF: add route 192.168.30.0 to rtm, next hop 115.1.1.2, type 3, state 3,
not_in_main 1
OSPF: add to ospf route table, to valid 192.168.30.0, state 3, path type 3
OSPF: Modify route 192.168.30.0, type 3, state 3, not_in_main 0, next hop 10.1.1.2
OSPF: modify/modify route 192.168.30.0 (fwd 367e7333), type 3, state 3,
not_in_main 0, nhp 381c51c0
OSPF: validate route, new->valid 192.168.30.0, state 3, path type 3
```

debug ip ospf vrf

Generates debugging information about the Open Shortest Path First (OSPF) Virtual Routing and Forwarding (VRF) instance.

Syntax

debug ip ospf vrf*vrf-name*[*ip-address*|**adj**|**error**|**events**|**flood**|**graceful-restart**|**log-debug-message**|**log-empty-lsa**|**ls-id**|**lsa-generation**|**max-metric**|**packet**|**retransmission**| **route** ip-address| **spf**]

no debug ip ospf vrf*vrf-name*[*ip-address*|**adj**|**error**|**events**|**flood**|**graceful-restart**|**log-debug-message**|**log-empty-lsa**|**ls-id**|**lsa-generation**|**max-metric**|**packet**|**retransmission**|**route** *ip-address*]

Parameters

ip-address

Specifies an IP address.

adj

Specifies information about OSPF adjacencies and authentication, including designated router (DR) and backup designated router (BDR) elections, sent and received hello packets, neighbor state transitions, and database description information.

error

Reports the receipt of OSPF packets with errors, or mismatches between hello packet options.

events

Specifies information about internal OSPF events related to configuration or interaction with the standby management processor and interface state transitions.

flood

Specifies information about LSA flooding activity.

graceful-restart

Specifies information about OSPF graceful restart events, including restart phases, graceful Link-State Advertisement (LSA) transmit and receive activity, and syslog messages.

log-debug-message

Specifies Enable OSPF debug message logging.

log-empty-lsa

Specifies information about empty link state advertisements (LSAs).

lsa-id

Specifies information about OSPF LSA IDs.

lsa-generation

Specifies information about LSAs.

max-metric

Specifies information about about max-metric configurations.

packet

Specifies information about OSPF packets.

retransmission

Specifies information about OSPF retransmission of LSAs.

route*ip-address*
Specifies information about an OSPF route.

spf
Specifies OSPF SPF tracing.

Modes

Privileged EXEC mode

Usage Guidelines

The **no** form of the command disables OSPF debugging information from being displayed for the nondefualt VRF instance.

Examples

The following example

```
device#
```

debug ip pim

Enables the Protocol Independent Multicast (PIM) debugging.

Syntax

debug ip pim[**fdb**|**hash**|**ipc**|**optimization**|**route-change**|**scaling**|**sync-lib**|**timer-type***num*]

no debug ip pim[**fdb**|**hash**|**ipc**|**optimization**|**route-change**|**scaling**|**sync-lib**|**timer-type***num*]

Parameters

fdb
: Enables application VLAN (vidx) and forwarding database debugging.

hash
: Displays hash address details for debugging.

ipc
: Debugs inter-process communication between MP and LP.

optimization
: Debugs multicast outgoing interface (OIF) list optimization.

route-change
: Monitors route change.

scaling
: Monitors scaling.

sync-lib
: Monitors sync-lib operations.

timer-type*num*
: Displays stack trace of timer.

Modes

Privileged EXEC mode

Usage Guidelines

The **no** form of the command disables PIM debugging.

Examples

```
device# debug ip pim
PIM: pim debugging is on
```

debug ip pim add-del-oif

Displays information about the mcache activity.

Syntax

debug ip pim add-del-oif

no debug ip pim add-del-oif

Modes

Privileged EXEC mode

Usage Guidelines

The command will work with the **debug ip pim group** or **debug ip pim source** commands.

Examples

```
device# debug ip pim add-del-oif
May 29 10:45:20:048649:info:fi_debug:debug_logs:1:755772510176769: Updating REP entry 299
OIFTL3:VL20/2. OIFTAny:VL4294967295/4294967040. F:1 L:4294967295
May 29 10:45:20:042437:info:fi_debug:debug_logs:1:755772510176769: PIM.VRF0:  OIF Update Fwdmask: Added
FwdPort L3OIF v20,lg1 to (10.1.1.55,225.1.1.55)  Action(Add)
May 29 10:45:20:042333:info:fi_debug:debug_logs:1:755772510176769: PIM-OIF.VRF0: (10.1.1.55 225.1.1.55)
Entry Flags 0x2042ace1: Add lg1 on 20 (L3). OIF_FLAGS: 1
May 29 10:45:20:041731:info:fi_debug:debug_logs:1:755772510176769: PIM.VRF0:  OIF Update Fwdmask: Added
FwdPort L3OIF v20,lg1 to (10.1.1.55,225.1.1.55)  Action(Add)
May 29 10:45:20:041654:info:fi_debug:debug_logs:1:755772510176769: PIM.VRF0: Update oifflg vl20/lg1
(10.1.1.55,225.1.1.55), rcode(ImmAdd), Act(Add) cstate(0x0) nstate(0x1) newflg 0x1, #immoifs 1 #bldoifs
0 #inhoifs 0       #fwdoifs 1 sync 1
May 29 10:45:20:041572:info:fi_debug:debug_logs:1:755772510176769: PIM.VRF0: Starting Oif timer for
lg1,lg1 from (10.1.1.55, 225.1.1.55) entry, Reason(ImmAdd) ; timer_type   ; interval 210
May 29 10:45:20:041479:info:fi_debug:debug_logs:1:755772510176769: PIM-OIF.VRF0: (10.1.1.55 225.1.1.55)
Entry Flags 0x42a8c1: Add lg1 on 20 (L3). OIF_FLAGS: 1
May 29 10:45:20:041397:info:fi_debug:debug_logs:1:755772510176769: PIM.VRF0: Add OIF: Adding L3OIF
v20,lg1 to (10.1.1.55,225.1.1.55), Reason(ImmAdd)  Action(Add) CurrentState(0x0) NewState(0x1) holdtime
210
May 29 10:45:20:041280:info:fi_debug:debug_logs:1:755772510176769: PIMSM.VRF0: OIF FSM 1 case for
(10.1.1.55, 225.1.1.55) entry Reason(ImmAdd), Action(Add) flagAction 3 CurrentState(0x0) NewState(0x1)
May 29 10:45:01:829101:info:fi_debug:debug_logs:1:754423890445825: PIM.VRF0:  OIF Add v10,3/1/5 to
(30.1.1.10 225.1.1.5) entry - receivers mbrship type 1
May 29 10:45:01:828961:info:fi_debug:debug_logs:1:754423890445825: PIMSM.VRF0: OIF FSM  1 for (*,
225.1.1.5) entry Reason(IgmpGrpJoin), Action(Update), flagAction(1) CurrentState(0x4) NewState(0x4)
May 29 10:44:54:387782:info:fi_debug:debug_logs:1:753839774893569: PIM.VRF0:  OIF Add v10,3/1/5 to
(30.1.1.10 225.1.1.5) entry - receivers mbrship type 1
May 29 10:44:54:387642:info:fi_debug:debug_logs:1:753839774893569: PIMSM.VRF0: OIF FSM  1 for (*,
225.1.1.5) entry Reason(IgmpGrpJoin), Action(Update), flagAction(1) CurrentState(0x4) NewState(0x4)
May 29 10:44:44:205900:info:fi_debug:debug_logs:1:753122515355137: PIM.VRF0:  OIF Add v10,3/1/5 to
(30.1.1.10 225.1.1.5) entry - receivers mbrship type 1
May 29 10:44:44:205762:info:fi_debug:debug_logs:1:753122515355137: PIMSM.VRF0: OIF FSM  1 for (*,
225.1.1.5) entry Reason(IgmpGrpJoin), Action(Update), flagAction(1) CurrentState(0x4) NewState(0x4)
May 29 10:44:40:897143:info:fi_debug:debug_logs:1:752903472023041: Updating REP entry 298
OIFTL3:VL10/1. OIFTAny:VL4294967295/4294967040. F:1 L:4294967295
May 29 10:44:40:896345:info:fi_debug:debug_logs:1:752903472023041: PIM.VRF0:  OIF Update Fwdmask: Added
FwdPort L3OIF v10,3/1/5 to (30.1.1.10,225.1.1.5)  Action(Add)
May 29 10:44:40:896266:info:fi_debug:debug_logs:1:752903472023041: PIM-OIF.VRF0: (30.1.1.10 225.1.1.5)
Entry Flags 0x600680e1: Add 3/1/5 on 10 (L3). OIF_FLAGS: 4
May 29 10:44:40:896169:info:fi_debug:debug_logs:1:752903472023041: PIM.VRF0:  OIF Update Fwdmask: Added
FwdPort L3OIF v10,3/1/5 to (*,225.1.1.5)  Action(Add)
May 29 10:44:40:896060:info:fi_debug:debug_logs:1:752903472023041: PIM-OIF.VRF0: (* 225.1.1.5) Entry
Flags 0x2604a0: Add 3/1/5 on 10 (L3). OIF_FLAGS: 4
May 29 10:44:40:895688:info:fi_debug:debug_logs:1:752903472023041: PIM.VRF0:  OIF Update Fwdmask: Added
FwdPort L3OIF v10,3/1/5 to (30.1.1.10,225.1.1.5)  Action(Add)
May 29 10:44:40:895614:info:fi_debug:debug_logs:1:752903472023041: PIM.VRF0: Update oifflg vl10/3/1/5
(30.1.1.10,225.1.1.5), rcode(IgmpGrpJoin), Act(Add) cstate(0x0) nstate(0x4) newflg 0x4, #immoifs 0
#bldoifs 0 #inhoifs 1 #fwdoifs 1 sync 1
May 29 10:44:40:895532:info:fi_debug:debug_logs:1:752903472023041: PIM-OIF.VRF0: (30.1.1.10 225.1.1.5)
Entry Flags 0x280c1: Add 3/1/5 on 10 (L3). OIF_FLAGS: 4
May 29 10:44:40:895455:info:fi_debug:debug_logs:1:752903472023041: PIM.VRF0: Add OIF: Adding L3OIF
v10,3/1/5 to (30.1.1.10,225.1.1.5), Reason(IgmpGrpJoin)  Action(Add) CurrentState(0x0) NewState(0x4)
holdtime 260
May 29 10:44:40:895378:info:fi_debug:debug_logs:1:752903472023041: PIMSM.VRF0: OIF FSM 1 case for
(30.1.1.10, 225.1.1.5) entry Reason(IgmpGrpJoin), Action(Add) flagAction 3 CurrentState(0x0)
NewState(0x4)
```

debug ip pim bootstrap

Enables bootstrap debugging.

Syntax

debug ip pim bootstrap

no debug ip pim bootstrap

Modes

Privileged EXEC mode

Usage Guidelines

The **no** form of the command disables bootstrap debugging.

Examples

```
device# debug ip pim bootstrap
Apr 22 20:01:07:098455:info:fi_debug:debug_logs:1:5657425411573249: PIM-BSR.VRF0: Intf v20 - accept BSM
from BSR 99.1.1.1(Pr 250), local state CandBSR, curr BSR 99.1.1.1 (Pr 250)
Apr 22 20:01:07:098344:info:fi_debug:debug_logs:1:5657425411573249: PIM-BSR.VRF0: Prefer BSR
99.1.1.1(Pr 250) over current BSR 99.1.1.1(Pr 250)
Apr 22 20:01:06:294257:info:fi_debug:debug_logs:1:2239486142449153: DHCPV4: received packet SIP:
0.0.0.0, DIP: 255.255.255.255, SP: 68, DP: 67, PROTO: 17
Apr 22 20:01:00:311204:info:fi_debug:debug_logs:1:60053310769464064: Found UcRte: Dist 110. OutIf 20.
NHop fe80::d6c1:9eff:fe4a:2114"
```

debug ip pim clear

Clears all the Protocol Independent Multicast (PIM) debug settings.

Syntax

debug ip pim clear

no debug ip pim clear

Modes

Privileged EXEC mode

Examples

```
device# debug ip pim clear
no debug ip pim is enabled
```

debug ip pim event

Enables debugging of Protocol Independent Multicast (PIM) events.

Syntax

debug ip pim event

no debug ip pim event

Modes

Privileged EXEC mode

Usage Guidelines

The **no** form of the command disables PIM events debugging.

Examples

```
device# debug ip pim event
May 29 10:57:40:627362:info:fi_debug:debug_logs:1:827262240818689: Mcastv4 receive event
EVENT_ID_TRUNK_MEMBER_UP(15)
May 29 10:57:40:627289:info:fi_debug:debug_logs:1:827262240818689: Suppressed 1 times: PIM-EVT: Receive
vport v21/1/1/1 (lg1) Dn state_notify
May 29 10:57:40:615591:info:fi_debug:debug_logs:1:827262240818689: PIM-EVT: Receive vport v21/1/1/1
(lg1) Dn state_notify
May 29 10:57:40:615514:info:fi_debug:debug_logs:1:827262240818689: Suppressed 1 times: PIM-EVT: Receive
vport v20/1/1/1 (lg1) Dn state_notify
May 29 10:57:40:600989:info:fi_debug:debug_logs:1:827262240818689: PIM-EVT: Receive vport v20/1/1/1
(lg1) Dn state_notify
May 29 10:57:40:491010:info:fi_debug:debug_logs:1:827262240818689: Mcastv4 receive event
EVENT_ID_TRUNK_MEMBER_UP(15)
May 29 10:57:35:882546:info:fi_debug:debug_logs:1:8879630136115968: Suppressed 1 times: PIM-EVT:
Receive vport v21/1/1/3 (lg1) Dn state_notify
May 29 10:57:01:729138:info:fi_debug:debug_logs:1:111669149697: PIM-EVT: Receive vport v21/1/1/3 (lg1)
Dn state_notify
May 29 10:57:01:729061:info:fi_debug:debug_logs:1:111669149697: Suppressed 1 times: PIM-EVT: Receive
vport v20/1/1/3 (lg1) Dn state_notify
May 29 10:57:01:716680:info:fi_debug:debug_logs:1:111669149697: PIM-EVT: Receive vport v20/1/1/3 (lg1)
Dn state_notify
May 29 10:57:01:656675:info:fi_debug:debug_logs:1:111669149697: PIM-EVT.VRF1: Receive intf v21 Dn
state_notify. AFI: IPv4.
May 29 10:57:01:656561:info:fi_debug:debug_logs:1:111669149697: MC-EVT: Port v21 state changed to DOWN.
AFI: IPv4.
May 29 10:57:01:651175:info:fi_debug:debug_logs:1:111669149697: PIM-EVT: Receive vport v21/1/1/3 (lg1)
Dn state_notify
May 29 10:57:01:616394:info:fi_debug:debug_logs:1:111669149697: PIM-EVT.VRF0: Receive intf v20 Dn
state_notify. AFI: IPv4.
May 29 10:57:01:616257:info:fi_debug:debug_logs:1:111669149697: MC-EVT: Port v20 state changed to DOWN.
AFI: IPv4.
May 29 10:57:01:601505:info:fi_debug:debug_logs:1:111669149697: PIM-EVT: Receive vport v20/1/1/3 (lg1)
Dn state_notify
May 29 10:57:01:521588:info:fi_debug:debug_logs:1:111669149697: Mcastv4 receive event
EVENT_ID_TRUNK_DOWN(13)
May 29 10:57:01:483463:info:fi_debug:debug_logs:1:111669149697: Mcastv4 receive event
EVENT_ID_TRUNK_MEMBER_DOWN(16)
May 29 10:57:01:442597:info:fi_debug:debug_logs:1:111669149697: PIM-EVT: Receive vport v21/1/1/1 (lg1)
Dn state_notify
May 29 10:57:01:405205:info:fi_debug:debug_logs:1:111669149697: PIM-EVT: Receive vport v20/1/1/1 (lg1)
Dn state_notify
May 29 10:57:01:273313:info:fi_debug:debug_logs:1:111669149697: Mcastv4 receive event
EVENT_ID_TRUNK_MEMBER_DOWN(16)"
```

debug ip pim group

Displays the Protocol Independent Multicast (PIM) related activities for the specified IP address of the PIM group.

Syntax

debug ip pim group*ip_address*

no debug ip pim group*ip_address*

Parameters

ip_address

Specifies the IP address of the PIM group.

Modes

Privileged EXEC mode

Examples

```
device# debug ip pim group 225.1.1.5
May 29 11:03:33:160353:info:fi_debug:debug_logs:1:9184328000996096: PIM.VRF0: Deallocated hw resources
for (* 225.1.1.5), parent: v20,Nil. olist empty
May 29 11:03:27:789834:info:fi_debug:debug_logs:1:9179758155793152: stack: 00546ee8 0114a590 010d4e38
010d6ba8 01161d70 01162008 011624d4 01146df4 010dff10 01102568 010e427c 010eb698 0011ab58 010e5e6c
011975d0 0009ac30 0009babc 005c15f8 005c2998 0119e3a8 b6d93eb0 b6f9a195
May 29 11:03:27:789701:info:fi_debug:debug_logs:1:9179758155793152: PIM.VRF0: Allocation of hw
resources for (30.1.1.10 225.1.1.5) successful. olist empty. FID NotReq. MVID Drop
May 29 11:02:58:280684:info:fi_debug:debug_logs:1:854037066941953: stack: 00546ee8 0114a590 010d4e38
010d5f48 01165f14 01166168 01166470 0116c2ec 01147130 01101c8c 010f1e9c 010fc7c8 005c1f38 005c2998
0119e3a8 b6d93eb0 b6f9a195
May 29 11:02:58:280558:info:fi_debug:debug_logs:1:854037066941953: PIM.VRF0: Allocation of hw resources
for (30.1.1.10 225.1.1.5) successful. olist not empty. FID NotReq. MVID   309
May 29 11:02:53:629497:info:fi_debug:debug_logs:1:9151295407522560: stack: 00546ee8 0114a590 010d4e38
010d6ba8 01161d70 01162008 011624d4 01146df4 010dff10 01102568 010e427c 010eb698 0011ab58 010e5e6c
011975d0 0009ac30 0009babc 005c15f8 005c2998 0119e3a8 b6d93eb0 b6f9a195
May 29 11:02:53:629353:info:fi_debug:debug_logs:1:9151295407522560: PIM.VRF0: Allocation of hw
resources for (30.1.1.10 225.1.1.5) successful. olist empty. FID NotReq. MVID Drop
```

debug ip pim join-prune

Controls join prune processing and displays debugging information related to the join prune messages.

Syntax

debug ip pim join-prune

no debug ip pim join-prune

Modes

Privileged EXEC mode

Examples

```
device# debug ip pim join-prune
May 29 11:07:24:230956:info:fi_debug:debug_logs:1:9376231434748672: PIM: End sending Join/Prune msg ---
May 29 11:07:24:230598:info:fi_debug:debug_logs:1:9376231434748672:     P-Src: 98.1.1.1, wc=1 rpt=1 SM=1
May 29 11:07:24:230522:info:fi_debug:debug_logs:1:9376231434748672: PIM-JP.VRF0:  Group: 225.1.1.5,
JoinSrcs: 0, PruneSrcs: 1
May 29 11:07:24:230410:info:fi_debug:debug_logs:1:9376231434748672: PIM-JP.VRF0: BEGIN SENDING Join/
Prune msg to 20.1.1.2 on v20
May 29 11:07:21:231309:info:fi_debug:debug_logs:1:9373757533586176: PIM: End sending Join/Prune msg ---
May 29 11:07:21:230896:info:fi_debug:debug_logs:1:9373757533586176:     P-Src: 30.1.1.10, wc=0 rpt=0
SM=1
May 29 11:07:21:230827:info:fi_debug:debug_logs:1:9373757533586176:     P-Src: 98.1.1.1, wc=1 rpt=1 SM=1
May 29 11:07:21:230753:info:fi_debug:debug_logs:1:9373757533586176: PIM-JP.VRF0:  Group: 225.1.1.5,
JoinSrcs: 0, PruneSrcs: 2
May 29 11:07:21:230644:info:fi_debug:debug_logs:1:9373757533586176: PIM-JP.VRF0: BEGIN SENDING Join/
Prune msg to 20.1.1.2 on v20
May 29 11:07:20:155433:info:fi_debug:debug_logs:1:873025117357569: PIMSM: END J/P proc.
---------------------
May 29 11:07:20:155366:info:fi_debug:debug_logs:1:873025117357569:   Group=225.1.1.55. Prune list: 0
srcs
May 29 11:07:20:155254:info:fi_debug:debug_logs:1:873025117357569:       PIM.VRF0: Processing (S,G)
Join (10.1.1.55 225.1.1.55) from 20.1.1.2, intf v20,lg1
May 29 11:07:20:155175:info:fi_debug:debug_logs:1:873025117357569:     J-Src=10.1.1.55, wc=0, rpt=0,
SM=1
May 29 11:07:20:155101:info:fi_debug:debug_logs:1:873025117357569:   Group=225.1.1.55. Join list: 1 srcs
May 29 11:07:20:154994:info:fi_debug:debug_logs:1:873025117357569: PIMSM.VRF0: BEGIN J/P proc: rpf_nbr
20.1.1.1, to_me=1 from 20.1.1.2, intf v20 ----
May 29 11:07:07:510301:info:fi_debug:debug_logs:1:9362307150775040: PIM: End sending Join/Prune msg ---
May 29 11:07:07:509749:info:fi_debug:debug_logs:1:9362307150775040:     J-Src: 30.1.1.10, wc=0 rpt=0
SM=1
May 29 11:07:07:509679:info:fi_debug:debug_logs:1:9362307150775040:     J-Src: 98.1.1.1, wc=1 rpt=1 SM=1
May 29 11:07:07:509606:info:fi_debug:debug_logs:1:9362307150775040: PIM-JP.VRF0:  Group: 225.1.1.5,
JoinSrcs: 2, PruneSrcs: 0
May 29 11:07:07:509498:info:fi_debug:debug_logs:1:9362307150775040: PIM-JP.VRF0: BEGIN SENDING Join/
Prune msg to 20.1.1.2 on v20
May 29 11:07:06:400040:info:fi_debug:debug_logs:1:9361388027773696:   PIM.VRF0: (10.1.1.55 225.1.1.55)
RPFIf v10. RPFNbr -. Send Join/Prune
May 29 11:07:05:288828:info:fi_debug:debug_logs:1:9360490379608832:   PIM.VRF0: (30.1.1.10 225.1.1.5)
RPFIf v20. RPFNbr 20.1.1.2. Send Join/Prune
May 29 11:07:04:210117:info:fi_debug:debug_logs:1:9359571256607488:   PIM.VRF0: (* 225.1.1.5) RPFIf
v20. RPFNbr 20.1.1.2. Send Join/Prune
May 29 11:07:01:999234:info:fi_debug:debug_logs:1:9357707240801024: PIM: End sending Join/Prune msg ---
May 29 11:07:01:998839:info:fi_debug:debug_logs:1:9357707240801024:     J-Src: 30.1.1.10, wc=0 rpt=0
SM=1
May 29 11:07:01:998768:info:fi_debug:debug_logs:1:9357707240801024:     J-Src: 98.1.1.1, wc=1 rpt=1 SM=1
May 29 11:07:01:998692:info:fi_debug:debug_logs:1:9357707240801024: PIM-JP.VRF0:  Group: 225.1.1.5,
JoinSrcs: 2, PruneSrcs: 0
May 29 11:07:01:998572:info:fi_debug:debug_logs:1:9357707240801024: PIM-JP.VRF0: BEGIN SENDING Join/
Prune msg to 20.1.1.2 on v20
```

debug ip pim level

Sets the Protocol Independent Multicast (PIM) level.

Syntax

debug ip pim level*decimal*

no debug ip pim level

Parameters

decimal

Specifies the number of the PIM level. The valid values are from 1 through 3.

Modes

Privileged EXEC mode

Examples

```
device#  debug ip pim level 3
device# debug ip pim packet 30.1.1.10 225.1.1.5 10
May 29 10:10:02:846290:err:fi_debug:debug_logs:1:590111326602753: mct-forw:local or peer rbridge is
incorrect, local rid 0, peer rid 0
May 29 10:10:01:741862:err:fi_debug:debug_logs:1:586383294989825: res-sharing:
[l3mcast_remove_mcache_from_mcrep_ack_wait_inst] removing VRF0 v4 Flow Entry (10.1.1.55 225.1.1.55)
from mcrep 294 wait tree
May 29 10:10:01:741784:err:fi_debug:debug_logs:1:586383294989825: Suppressed 2 times: mct-forw:local or
peer rbridge is incorrect, local rid 0, peer rid 0
May 29 10:10:00:901210:err:fi_debug:debug_logs:1:582157047170561: mct-forw:local or peer rbridge is
incorrect, local rid 0, peer rid 0
May 29 10:09:39:113678:err:fi_debug:debug_logs:1:579867829601793: res-sharing:
[l3mcast_remove_mcache_from_mcrep_ack_wait_inst] removing VRF0 v4 Flow Entry (30.1.1.10 225.1.1.5) from
mcrep 293 wait tree
May 29 10:09:38:687374:err:fi_debug:debug_logs:1:577402518373889: mct-forw:local or peer rbridge is
incorrect, local rid 0, peer rid 0
May 29 10:09:38:549022:info:fi_debug:debug_logs:1:577162000205313:    switch_to_spt: Yes. Thrshld: 1,
Cnt: 10. RPT=1, Local-Rcvr=1
May 29 10:09:38:548938:info:fi_debug:debug_logs:1:577162000205313:    SW forwarded pkt to 1 oif(s)
May 29 10:09:38:548462:info:fi_debug:debug_logs:1:577162000205313: 30.1.1.10 225.1.1.5: 1 pkt,from
v20(e1/1/3), dup. pkt to v10 phy e3/1/5, l2=0, 1/1/1 - lg1, 3/1/5-516
May 29 10:09:38:548286:info:fi_debug:debug_logs:1:577162000205313: Rx Pkt (30.1.1.10, 225.1.1.5) on
v20(1/1/3). hit=0
May 29 10:09:38:547264:info:fi_debug:debug_logs:1:577157705238017:    switch_to_spt: Yes. Thrshld: 1,
Cnt: 9. RPT=1, Local-Rcvr=1
May 29 10:09:38:547184:info:fi_debug:debug_logs:1:577157705238017:    SW forwarded pkt to 1 oif(s)
May 29 10:09:38:546433:info:fi_debug:debug_logs:1:577157705238017: 30.1.1.10 225.1.1.5: 1 pkt,from
v20(e1/1/3), dup. pkt to v10 phy e3/1/5, l2=0, 1/1/1 - lg1, 3/1/5-516
May 29 10:09:38:546304:info:fi_debug:debug_logs:1:577157705238017: Rx Pkt (30.1.1.10, 225.1.1.5) on
v20(1/1/3). hit=0
May 29 10:09:38:546046:info:fi_debug:debug_logs:1:577153410270721:    switch_to_spt: Yes. Thrshld: 1,
Cnt: 8. RPT=1, Local-Rcvr=1
May 29 10:09:38:545954:info:fi_debug:debug_logs:1:577153410270721:    SW forwarded pkt to 1 oif(s)
May 29 10:09:38:541631:info:fi_debug:debug_logs:1:577153410270721: 30.1.1.10 225.1.1.5: 1 pkt,from
v20(e1/1/3), dup. pkt to v10 phy e3/1/5, l2=0, 1/1/1 - lg1, 3/1/5-516
May 29 10:09:38:541498:info:fi_debug:debug_logs:1:577153410270721: Rx Pkt (30.1.1.10, 225.1.1.5) on
v20(1/1/3). hit=0
May 29 10:09:38:541224:info:fi_debug:debug_logs:1:577149115303425:    switch_to_spt: Yes. Thrshld: 1,
Cnt: 7. RPT=1, Local-Rcvr=1
May 29 10:09:38:541135:info:fi_debug:debug_logs:1:577149115303425:    SW forwarded pkt to 1 oif(s)
May 29 10:09:38:538983:info:fi_debug:debug_logs:1:577149115303425: 30.1.1.10 225.1.1.5: 1 pkt,from
v20(e1/1/3), dup. pkt to v10 phy e3/1/5, l2=0, 1/1/1 - lg1, 3/1/5-516
May 29 10:09:38:538846:info:fi_debug:debug_logs:1:577149115303425: Rx Pkt (30.1.1.10, 225.1.1.5) on
v20(1/1/3). hit=0
May 29 10:09:38:538565:info:fi_debug:debug_logs:1:577144820336129:    switch_to_spt: Yes. Thrshld: 1,
Cnt: 6. RPT=1, Local-Rcvr=1
May 29 10:09:38:538463:info:fi_debug:debug_logs:1:577144820336129:    SW forwarded pkt to 1 oif(s)
May 29 10:09:38:535620:info:fi_debug:debug_logs:1:577144820336129: 30.1.1.10 225.1.1.5: 1 pkt,from
v20(e1/1/3), dup. pkt to v10 phy e3/1/5, l2=0, 1/1/1 - lg1, 3/1/5-516
May 29 10:09:38:535500:info:fi_debug:debug_logs:1:577144820336129: Rx Pkt (30.1.1.10, 225.1.1.5) on
v20(1/1/3). hit=0
May 29 10:09:38:535266:info:fi_debug:debug_logs:1:577140525368833:    switch_to_spt: Yes. Thrshld: 1,
Cnt: 5. RPT=1, Local-Rcvr=1
May 29 10:09:38:535188:info:fi_debug:debug_logs:1:577140525368833:    SW forwarded pkt to 1 oif(s)
May 29 10:09:38:534785:info:fi_debug:debug_logs:1:577140525368833: 30.1.1.10 225.1.1.5: 1 pkt,from
v20(e1/1/3), dup. pkt to v10 phy e3/1/5, l2=0, 1/1/1 - lg1, 3/1/5-516
May 29 10:09:38:534659:info:fi_debug:debug_logs:1:577140525368833: Rx Pkt (30.1.1.10, 225.1.1.5) on
v20(1/1/3). hit=0
May 29 10:09:38:534408:info:fi_debug:debug_logs:1:577136230401537:    switch_to_spt: Yes. Thrshld: 1,
Cnt: 4. RPT=1, Local-Rcvr=1
May 29 10:09:38:534321:info:fi_debug:debug_logs:1:577136230401537:    SW forwarded pkt to 1 oif(s)
May 29 10:09:38:532312:info:fi_debug:debug_logs:1:577136230401537: 30.1.1.10 225.1.1.5: 1 pkt,from
v20(e1/1/3), dup. pkt to v10 phy e3/1/5, l2=0, 1/1/1 - lg1, 3/1/5-516
May 29 10:09:38:532194:info:fi_debug:debug_logs:1:577136230401537: Rx Pkt (30.1.1.10, 225.1.1.5) on
v20(1/1/3). hit=0
May 29 10:09:38:531955:info:fi_debug:debug_logs:1:577131935434241:    switch_to_spt: Yes. Thrshld: 1,
Cnt: 3. RPT=1, Local-Rcvr=1
May 29 10:09:38:531875:info:fi_debug:debug_logs:1:577131935434241:    SW forwarded pkt to 1 oif(s)
May 29 10:09:38:531459:info:fi_debug:debug_logs:1:577131935434241: 30.1.1.10 225.1.1.5: 1 pkt,from
```

```
v20(e1/1/3), dup. pkt to v10 phy e3/1/5, l2=0, 1/1/1 - lg1, 3/1/5-516
May 29 10:09:38:531331:info:fi_debug:debug_logs:1:577131935434241: Rx Pkt (30.1.1.10, 225.1.1.5) on
v20(1/1/3). hit=0
May 29 10:09:38:531061:info:fi_debug:debug_logs:1:577127640466945:    switch_to_spt: Yes. Thrshld: 1,
Cnt: 2. RPT=1, Local-Rcvr=1
May 29 10:09:38:530740:info:fi_debug:debug_logs:1:577127640466945:    SW forwarded pkt to 1 oif(s)
May 29 10:09:38:530333:info:fi_debug:debug_logs:1:577127640466945: 30.1.1.10 225.1.1.5: 1 pkt,from
v20(e1/1/3), dup. pkt to v10 phy e3/1/5, l2=0, 1/1/1 - lg1, 3/1/5-516
May 29 10:09:38:530204:info:fi_debug:debug_logs:1:577127640466945: Rx Pkt (30.1.1.10, 225.1.1.5) on
v20(1/1/3). hit=0
May 29 10:09:38:529933:info:fi_debug:debug_logs:1:577123345499649:    switch_to_spt: No. Thrshld: 1,
Cnt: 1. RPT=1, Local-Rcvr=1
May 29 10:09:38:529849:info:fi_debug:debug_logs:1:577123345499649:    SW forwarded pkt to 1 oif(s)
May 29 10:09:38:529365:info:fi_debug:debug_logs:1:577123345499649: 30.1.1.10 225.1.1.5: 1 pkt,from
v20(e1/1/3), dup. pkt to v10 phy e3/1/5, l2=0, 1/1/1 - lg1, 3/1/5-516
May 29 10:09:38:529238:info:fi_debug:debug_logs:1:577123345499649:   send MCAST_FIRST_DATA: entry phy
port: INVALID, pkt input port: lg1. SPT-F, FAST-F, MCT IIF Flag: F.
May 29 10:09:38:528808:info:fi_debug:debug_logs:1:577123345499649:    Rx flow on intf/port diff than
entry's intf v20 or port Nil
May 29 10:09:38:528694:info:fi_debug:debug_logs:1:577123345499649: Rx Pkt (30.1.1.10, 225.1.1.5) on
v20(1/1/3). hit=0
May 29 10:08:13:705055:info:fi_debug:debug_logs:1:21474836481: Cleanup Ended : 2021 May 29 09:08:13
May 29 10:08:13:704875:info:fi_debug:debug_logs:1:21474836481: Cleanup Started : 2021 May 29 09:08:13
May 29 09:52:49:280208:err:fi_debug:debug_logs:1:0: Suppressed 1 times: mct-forw:local or peer rbridge
is incorrect, local rid 0, peer rid 0
```

debug ip pim nbr

Controls the Protocol Independent Multicast (PIM) IPv4 neighbor changes.

Syntax

debug ip pim nbr*nbr_address*

no debug ip pim nbr*nbr_address*

Parameters

nbr_address

Specifies the IP address of the neighbor.

Modes

Privileged EXEC mode

Examples

```
device#debug ip pim nbr
May 29 11:10:24:499652:info:fi_debug:debug_logs:1:886373875713537: MLD: [ Port lg1 ] Query version
mismatch. Received query version 2 from fe80::d6c1:9eff:fe15:f999; Port version 1.
May 29 11:09:31:241269:info:fi_debug:debug_logs:1:9481690061734656: PIM-NBR.VRF1: Neighbor 21.0.0.2 on
interface v21, lg1 deleted on port-down
May 29 11:09:31:218936:info:fi_debug:debug_logs:1:9481690061734656: PIM-NBR.VRF0: Neighbor 20.1.1.2 on
interface v20, lg1 deleted on port-down
May 29 11:09:31:216709:info:fi_debug:debug_logs:1:9481690061734656: PIM.VRF0: (20.1.1.2 30.1.1.10) Nbr
225.1.1.5 moved; changing parent_phy_port from lg1 to INVALID
May 29 11:09:28:296654:info:fi_debug:debug_logs:1:882229232272897: PIM.VRF0: Rx Hello msg from 20.1.1.2
on intf v20, lg1
May 29 11:09:05:871728:info:fi_debug:debug_logs:1:880640094373377: PIM.VRF1: Rx Hello msg from 21.0.0.2
on intf v21, lg1
May 29 11:08:58:081982:info:fi_debug:debug_logs:1:880047388886529: PIM.VRF0: Rx Hello msg from 20.1.1.2
on intf v20, lg1
```

History

Release version	Command history
09.0.00	This command was modified to change the option **nbr-change** to **nbr**.

debug ip pim packet

Displays debugging information about the Protocol Independent Multicast (PIM) packets.

Syntax

debug ip pim packet*source_address**group_address*[**rate**]

Parameters

source_address

Specifies the source address of the PIM packet.

group_address

Specifies the group address of the PIM packet.

rate

Specifies the hardware rate.

Modes

Privileged EXEC mode

Examples

```
device#debug ip pim packet 30.1.1.10 225.1.1.5 10
device#debug ip pim level 3
May 29 10:10:02:846290:err:fi_debug:debug_logs:1:590111326602753: mct-forw:local or peer rbridge is
incorrect, local rid 0, peer rid 0
May 29 10:10:01:741862:err:fi_debug:debug_logs:1:586383294989825: res-sharing:
[l3mcast_remove_mcache_from_mcrep_ack_wait_inst] removing VRF0 v4 Flow Entry (10.1.1.55 225.1.1.55)
from mcrep 294 wait tree
May 29 10:10:01:741784:err:fi_debug:debug_logs:1:586383294989825: Suppressed 2 times: mct-forw:local or
peer rbridge is incorrect, local rid 0, peer rid 0
May 29 10:10:00:901210:err:fi_debug:debug_logs:1:582157047170561: mct-forw:local or peer rbridge is
incorrect, local rid 0, peer rid 0
May 29 10:09:39:113678:err:fi_debug:debug_logs:1:579867829601793: res-sharing:
[l3mcast_remove_mcache_from_mcrep_ack_wait_inst] removing VRF0 v4 Flow Entry (30.1.1.10 225.1.1.5) from
mcrep 293 wait tree
May 29 10:09:38:687374:err:fi_debug:debug_logs:1:577402518373889: mct-forw:local or peer rbridge is
incorrect, local rid 0, peer rid 0
May 29 10:09:38:549022:info:fi_debug:debug_logs:1:577162000205313:    switch_to_spt: Yes. Thrshld: 1,
Cnt: 10. RPT=1, Local-Rcvr=1
May 29 10:09:38:548938:info:fi_debug:debug_logs:1:577162000205313:    SW forwarded pkt to 1 oif(s)
May 29 10:09:38:548462:info:fi_debug:debug_logs:1:577162000205313: 30.1.1.10 225.1.1.5: 1 pkt,from
v20(e1/1/3), dup. pkt to v10 phy e3/1/5, l2=0, 1/1/1 - lg1, 3/1/5-516
May 29 10:09:38:548286:info:fi_debug:debug_logs:1:577162000205313: Rx Pkt (30.1.1.10, 225.1.1.5) on
v20(1/1/3). hit=0
May 29 10:09:38:547264:info:fi_debug:debug_logs:1:577157705238017:    switch_to_spt: Yes. Thrshld: 1,
Cnt: 9. RPT=1, Local-Rcvr=1
May 29 10:09:38:547184:info:fi_debug:debug_logs:1:577157705238017:    SW forwarded pkt to 1 oif(s)
May 29 10:09:38:546433:info:fi_debug:debug_logs:1:577157705238017: 30.1.1.10 225.1.1.5: 1 pkt,from
v20(e1/1/3), dup. pkt to v10 phy e3/1/5, l2=0, 1/1/1 - lg1, 3/1/5-516
May 29 10:09:38:546304:info:fi_debug:debug_logs:1:577157705238017: Rx Pkt (30.1.1.10, 225.1.1.5) on
v20(1/1/3). hit=0
May 29 10:09:38:546046:info:fi_debug:debug_logs:1:577153410270721:    switch_to_spt: Yes. Thrshld: 1,
Cnt: 8. RPT=1, Local-Rcvr=1
May 29 10:09:38:545954:info:fi_debug:debug_logs:1:577153410270721:    SW forwarded pkt to 1 oif(s)
May 29 10:09:38:541631:info:fi_debug:debug_logs:1:577153410270721: 30.1.1.10 225.1.1.5: 1 pkt,from
v20(e1/1/3), dup. pkt to v10 phy e3/1/5, l2=0, 1/1/1 - lg1, 3/1/5-516
May 29 10:09:38:541498:info:fi_debug:debug_logs:1:577153410270721: Rx Pkt (30.1.1.10, 225.1.1.5) on
v20(1/1/3). hit=0
May 29 10:09:38:541224:info:fi_debug:debug_logs:1:577149115303425:    switch_to_spt: Yes. Thrshld: 1,
Cnt: 7. RPT=1, Local-Rcvr=1
May 29 10:09:38:541135:info:fi_debug:debug_logs:1:577149115303425:    SW forwarded pkt to 1 oif(s)
May 29 10:09:38:538983:info:fi_debug:debug_logs:1:577149115303425: 30.1.1.10 225.1.1.5: 1 pkt,from
v20(e1/1/3), dup. pkt to v10 phy e3/1/5, l2=0, 1/1/1 - lg1, 3/1/5-516
May 29 10:09:38:538846:info:fi_debug:debug_logs:1:577149115303425: Rx Pkt (30.1.1.10, 225.1.1.5) on
v20(1/1/3). hit=0
May 29 10:09:38:538565:info:fi_debug:debug_logs:1:577144820336129:    switch_to_spt: Yes. Thrshld: 1,
Cnt: 6. RPT=1, Local-Rcvr=1
May 29 10:09:38:538463:info:fi_debug:debug_logs:1:577144820336129:    SW forwarded pkt to 1 oif(s)
May 29 10:09:38:535620:info:fi_debug:debug_logs:1:577144820336129: 30.1.1.10 225.1.1.5: 1 pkt,from
v20(e1/1/3), dup. pkt to v10 phy e3/1/5, l2=0, 1/1/1 - lg1, 3/1/5-516
May 29 10:09:38:535500:info:fi_debug:debug_logs:1:577144820336129: Rx Pkt (30.1.1.10, 225.1.1.5) on
v20(1/1/3). hit=0
May 29 10:09:38:535266:info:fi_debug:debug_logs:1:577140525368833:    switch_to_spt: Yes. Thrshld: 1,
Cnt: 5. RPT=1, Local-Rcvr=1
May 29 10:09:38:535188:info:fi_debug:debug_logs:1:577140525368833:    SW forwarded pkt to 1 oif(s)
May 29 10:09:38:534785:info:fi_debug:debug_logs:1:577140525368833: 30.1.1.10 225.1.1.5: 1 pkt,from
v20(e1/1/3), dup. pkt to v10 phy e3/1/5, l2=0, 1/1/1 - lg1, 3/1/5-516
May 29 10:09:38:534659:info:fi_debug:debug_logs:1:577140525368833: Rx Pkt (30.1.1.10, 225.1.1.5) on
v20(1/1/3). hit=0
May 29 10:09:38:534408:info:fi_debug:debug_logs:1:577136230401537:    switch_to_spt: Yes. Thrshld: 1,
Cnt: 4. RPT=1, Local-Rcvr=1
May 29 10:09:38:534321:info:fi_debug:debug_logs:1:577136230401537:    SW forwarded pkt to 1 oif(s)
May 29 10:09:38:532312:info:fi_debug:debug_logs:1:577136230401537: 30.1.1.10 225.1.1.5: 1 pkt,from
v20(e1/1/3), dup. pkt to v10 phy e3/1/5, l2=0, 1/1/1 - lg1, 3/1/5-516
May 29 10:09:38:532194:info:fi_debug:debug_logs:1:577136230401537: Rx Pkt (30.1.1.10, 225.1.1.5) on
v20(1/1/3). hit=0
May 29 10:09:38:531955:info:fi_debug:debug_logs:1:577131935434241:    switch_to_spt: Yes. Thrshld: 1,
Cnt: 3. RPT=1, Local-Rcvr=1
May 29 10:09:38:531875:info:fi_debug:debug_logs:1:577131935434241:    SW forwarded pkt to 1 oif(s)
May 29 10:09:38:531459:info:fi_debug:debug_logs:1:577131935434241: 30.1.1.10 225.1.1.5: 1 pkt,from
```

```
v20(e1/1/3), dup. pkt to v10 phy e3/1/5, l2=0, 1/1/1 - lg1, 3/1/5-516
May 29 10:09:38:531331:info:fi_debug:debug_logs:1:577131935434241: Rx Pkt (30.1.1.10, 225.1.1.5) on
v20(1/1/3). hit=0
May 29 10:09:38:531061:info:fi_debug:debug_logs:1:577127640466945:    switch_to_spt: Yes. Thrshld: 1,
Cnt: 2. RPT=1, Local-Rcvr=1
May 29 10:09:38:530740:info:fi_debug:debug_logs:1:577127640466945:    SW forwarded pkt to 1 oif(s)
May 29 10:09:38:530333:info:fi_debug:debug_logs:1:577127640466945: 30.1.1.10 225.1.1.5: 1 pkt,from
v20(e1/1/3), dup. pkt to v10 phy e3/1/5, l2=0, 1/1/1 - lg1, 3/1/5-516
May 29 10:09:38:530204:info:fi_debug:debug_logs:1:577127640466945: Rx Pkt (30.1.1.10, 225.1.1.5) on
v20(1/1/3). hit=0
May 29 10:09:38:529933:info:fi_debug:debug_logs:1:577123345499649:    switch_to_spt: No. Thrshld: 1,
Cnt: 1. RPT=1, Local-Rcvr=1
May 29 10:09:38:529849:info:fi_debug:debug_logs:1:577123345499649:    SW forwarded pkt to 1 oif(s)
May 29 10:09:38:529365:info:fi_debug:debug_logs:1:577123345499649: 30.1.1.10 225.1.1.5: 1 pkt,from
v20(e1/1/3), dup. pkt to v10 phy e3/1/5, l2=0, 1/1/1 - lg1, 3/1/5-516
May 29 10:09:38:529238:info:fi_debug:debug_logs:1:577123345499649:   send MCAST_FIRST_DATA: entry phy
port: INVALID, pkt input port: lg1. SPT-F, FAST-F, MCT IIF Flag: F.
May 29 10:09:38:528808:info:fi_debug:debug_logs:1:577123345499649:    Rx flow on intf/port diff than
entry's intf v20 or port Nil
May 29 10:09:38:528694:info:fi_debug:debug_logs:1:577123345499649: Rx Pkt (30.1.1.10, 225.1.1.5) on
v20(1/1/3). hit=0
May 29 10:08:13:705055:info:fi_debug:debug_logs:1:21474836481: Cleanup Ended : 2021 May 29 09:08:13
May 29 10:08:13:704875:info:fi_debug:debug_logs:1:21474836481: Cleanup Started : 2021 May 29 09:08:13
```

debug ip pim regproc

Controls register processing.

Syntax

debug ip pim regproc

no debug ip pim regproc

Modes

Privileged EXEC mode

Global Configuration mode

Examples

```
device# debug ip pim regproc
May 29 11:14:05:360798:info:fi_debug:debug_logs:1:9713102899643136: PIMSM-REG.VRF0: (10.1.1.55
225.1.1.55) Sending L2-Null Reg on iface v10
```

debug ip pim rp

Controls the Rendezvouz Point (RP) processing.

Syntax

debug ip pim rp

no debug ip pim rp

Modes

Privileged EXEC mode

Global Configuration mode

Examples

```
device# debug ip pim rp
May 29 11:12:03:440381:info:fi_debug:debug_logs:1:9611849045639936: PIMv4-RP.VRF1: processing C-RP-adv
from 199.1.1.1. PrefCnt 1
May 29 11:12:03:440304:info:fi_debug:debug_logs:1:9611849045639936: PIMv4-RP.VRF1: Looping C-RP-Adv msg
from 199.1.1.1 back to elected BSR (me)
May 29 11:12:03:440108:info:fi_debug:debug_logs:1:9611849045639936: PIMv4-RP.VRF0: processing C-RP-adv
from 99.1.1.1. PrefCnt 1
May 29 11:12:03:439992:info:fi_debug:debug_logs:1:9611849045639936: PIMv4-RP.VRF0: Looping C-RP-Adv msg
from 99.1.1.1 back to elected BSR (me)
```

debug ip pim show

Displays the PIM debug settings. Do not use the show debug command for this purpose. The show debug command displays general debug information.

Syntax

debug ip pim show

no debug ip pim show

Modes

Privileged EXEC mode

Examples

```
device#debug ip pim nbr
PIM nbr-change  debugging is on
device#debug ip pim rp
PIM rp debugging is on
device#debug ip pim join-prune
PIM join-prune debugging is on
device#
device#debug ip pim show
debug ip pim rp
debug ip pim join-prune
debug ip pim nbr-change
```

debug ip pim source

Monitors the content related to a specific PIM server. The ipaddr variable refers to the IP address of the PIM server source.

Syntax

debug ip pim source*ipaddress*

no debug ip pim source*ipaddress*

Modes

Privileged EXEC mode

Examples

```
device# debug ip pim source 10.1.1.55
Apr 22 20:53:02:171799:info:fi_debug:debug_logs:1:5889370825426433: stack: 00549994 0114c014 011547b0
011567b0 01158654 0115a1e0 0115a294 005c3a0c 005c446c 011a0308 b6d23eb0 b6f32195
Apr 22 20:53:02:171708:info:fi_debug:debug_logs:1:5889370825426433: PIM.VRF0: Allocation of hw
resources for (10.1.1.55 225.1.1.1) successful. olist empty. FID 0x4fff (D). MVID Drop
Apr 22 20:53:02:171582:info:fi_debug:debug_logs:1:5889370825426433: PIMSM.VRF0: receive first data,
(10.1.1.55 225.1.1.1) entry. RP 99.1.1.1. Flags 0x200c1
Apr 22 20:53:02:169529:info:fi_debug:debug_logs:1:5889366530459137: stack: 00549994 0114c014 01155220
01155a54 01156d54 0115a1e0 0115a294 005c3a0c 005c446c 011a0308 b6d23eb0 b6f32195
Apr 22 20:53:02:169441:info:fi_debug:debug_logs:1:5889366530459137: PIM.VRF0: Allocation of hw
resources for (10.1.1.55 225.1.1.1) successful. olist empty. FID 0x4fff (D). MVID Drop
Apr 22 20:53:02:169309:info:fi_debug:debug_logs:1:5889366530459137: PIMSM.VRF0: Created (10.1.1.55
225.1.1.1) from data event
Apr 22 20:53:01:067318:info:fi_debug:debug_logs:1:2334190171325953: DHCPV4: received packet SIP:
0.0.0.0, DIP: 255.255.255.255, SP: 68, DP: 67, PROTO: 17
Apr 22 20:52:52:614347:info:fi_debug:debug_logs:1:2491081031681: Cleanup Ended : 2021 Apr 22 20:52:51
Apr 22 20:52:52:614217:info:fi_debug:debug_logs:1:2491081031681: PIM.VRF0: Deallocated hw resources for
(10.1.1.55 225.1.1.1), parent: v20,Nil. olist empty
Apr 22 20:52:52:614115:info:fi_debug:debug_logs:1:2491081031681: stack: 00549994 0114c014 010d626c
010d7fdc 010d91a4 010c6230 010c6b38 01111904 01111a6c 01276104 01276550 012765fc 001229c0 01276678
005c3a0c 005c446c 0118b0bc b6d23eb0 b6f32195
Apr 22 20:52:52:613975:info:fi_debug:debug_logs:1:2491081031681: PIM.VRF0: Allocation of hw resources
for (10.1.1.55 225.1.1.1) successful. olist empty. FID NotReq. MVID Drop"""
```

debug ip pim vrf

Displays the PIM related debugging information for the specified VRF.

Syntax

debug ip pim vrf*vrf_name*

no debug ip pim vrf*vrf_name*

Modes

Privileged EXEC mode

Examples

```
device#debug ip pim add-del-oif
device#debug ip pim rp
device#debug ip pim event
device#debug ip pim vrf SP_TN
May 29 10:25:11:613618:err:fi_debug:debug_logs:1:662627554428417: mct-forw:local or peer rbridge is
incorrect, local rid 0, peer rid 0
May 29 10:25:11:613424:info:fi_debug:debug_logs:1:662627554428417: Updating REP entry 297
OIFTL3:VL20/3. OIFTAny:VL4294967295/4294967040. F:1 L:4294967295
May 29 10:25:01:208794:info:fi_debug:debug_logs:1:7252249847792384: PIMv4-RP.VRF1: processing C-RP-adv
from 199.1.1.1. PrefCnt 1
May 29 10:25:01:208717:info:fi_debug:debug_logs:1:7252249847792384: PIMv4-RP.VRF1: Looping C-RP-Adv msg
from 199.1.1.1 back to elected BSR (me)
May 29 10:25:01:208639:err:fi_debug:debug_logs:1:7252249847792384: Suppressed 1 times: mct-forw:local
or peer rbridge is incorrect, local rid 0, peer rid 0
May 29 10:24:42:709340:err:fi_debug:debug_logs:1:660531610387969: mct-forw:local or peer rbridge is
incorrect, local rid 0, peer rid 0
May 29 10:24:01:119549:info:fi_debug:debug_logs:1:7202097514676992: PIMv4-RP.VRF1: processing C-RP-adv
from 199.1.1.1. PrefCnt 1
May 29 10:24:01:119469:info:fi_debug:debug_logs:1:7202097514676992: PIMv4-RP.VRF1: Looping C-RP-Adv msg
from 199.1.1.1 back to elected BSR (me)
May 29 10:24:01:119392:err:fi_debug:debug_logs:1:7202097514676992: Suppressed 1 times: mct-forw:local
or peer rbridge is incorrect, local rid 0, peer rid 0
May 29 10:23:38:253929:err:fi_debug:debug_logs:1:655871570871809: mct-forw:local or peer rbridge is
incorrect, local rid 0, peer rid 0
May 29 10:23:38:253770:info:fi_debug:debug_logs:1:655871570871809: Updating REP entry 296
OIFTL3:VL10/2. OIFTAny:VL4294967295/4294967040. F:1 L:4294967295
May 29 10:23:38:253694:err:fi_debug:debug_logs:1:655871570871809: Suppressed 1 times: mct-forw:local or
peer rbridge is incorrect, local rid 0, peer rid 0
May 29 10:23:20:080353:err:fi_debug:debug_logs:1:654557310879233: mct-forw:local or peer rbridge is
incorrect, local rid 0, peer rid 0
May 29 10:23:20:080191:info:fi_debug:debug_logs:1:654557310879233: Updating REP entry 295
OIFTL3:VL20/1. OIFTAny:VL4294967295/4294967040. F:1 L:4294967295
May 29 10:23:20:080114:err:fi_debug:debug_logs:1:654557310879233: Suppressed 7 times: mct-forw:local or
peer rbridge is incorrect, local rid 0, peer rid 0
May 29 10:23:11:414297:err:fi_debug:debug_logs:1:85899345921: mct-forw:local or peer rbridge is
incorrect, local rid 0, peer rid 0
May 29 10:23:11:413635:info:fi_debug:debug_logs:1:85899345921: Cleanup Ended : 2021 May 29 09:23:10
May 29 10:23:11:412905:info:fi_debug:debug_logs:1:85899345921: Cleanup Started : 2021 May 29 09:23:10
May 29 10:23:01:068640:info:fi_debug:debug_logs:1:7152232944370432: PIMv4-RP.VRF1: processing C-RP-adv
from 199.1.1.1. PrefCnt 1
May 29 10:23:01:068520:info:fi_debug:debug_logs:1:7152232944370432: PIMv4-RP.VRF1: Looping C-RP-Adv msg
from 199.1.1.1 back to elected BSR (me)
```

debug ip rip vrf

Enables RIP debugging information to be displayed for a nondefault VRF instance.

Syntax

debug ip rip vrf *vrf-name* { **database** | **events** | **packet** | **trigger** }

no debug ip rip *vrf-name* { **database** | **events** | **packet** | **trigger** }

Parameters

vrf-name
: Specifies a nondefault VRF instance.

database
: Specifies RIP database events.

events
: Specifies RIP events.

packet
: Specifies RIP packets.

trigger
: Specifies RIP trigger extensions.

Modes

Privileged EXEC mode

Usage Guidelines

The **no** form of the command disables displaying RIP debugging information for a nondefault VRF instance.

Examples

The following example

```
device#
```

debug ip pimsm-snoop

describes the debug commands used for troubleshooting issues related to the IPv4 Protocol Independent Multicast Sparse mode (PIM-SM) snoop configurations.

Syntax

debug ip pimsm-snoop[**add-del-oif**|**all** |**clear** | **control-source***source-address*| **error**|**fsm**| **group***group-address* | **join-prune** |**physical-port** {**ethernet** *unit/slot/port*|**lag** *lag-id*}| **show** | **source***source-address* |**stacktrace** |**timer** | **vlan***vlan-id*]

no debug ip pimsm-snoop[**add-del-oif**|**all** |**clear** | **control-source***source-address*| **error**|**fsm**| **group***group-address* | **join-prune** | **physical-port** {**ethernet** *unit/slot/port*|**lag** *lag-id*}| **show** | **source***source-address* |**stacktrace** |**timer** | **vlan***vlan-id*]

Parameters

add-del-oif
Displays debugs related to the addition and deletion of outbound interfaces (OIFs) in Mcache.

all
Enables all PIM-SM snoop related debugs.

clear
Clears all PIM-SM snoop related debug settings.

control-source*source-address*
Displays PIM-SM snooping related debug information for the specified control source address.

error
Monitors error messages related to PIM-SM snoopng.

fsm
Enables debugging of Finite State Machine (FSM) transactions.

group*group-address*
Displays PIM-SM snooping information for a specific group.

join-prune
Monitors PIM-SM snoop join and prune messages.

physical-port
Displays information of PIM-SM physical ports that are connected.

ethernet *unit/slot/port*
Displays information of the specified PIM-SM physical interface.

lag *lag-id*
Displays information of the specified PIM-SM LAG interface.

show
Displays all PIM-SM snoop related debug settings..

source*source-address*
Displays PIM-SM snooping related debug information for the specified server source address.

stacktrace
Displays debug messages accompanied by call stack dump.

timer

Enables PIM-SM snoop timer debugging.

vlan *vlan-id*

Enables PIM-SM snoop debugging for a particular VLAN.

Modes

Privileged EXEC mode

Usage Guidelines

no

Examples

The following example displays debug messages related to the addition and deletion of outbound interfaces (OIFs) in Mcache.

```
device# debug ip pimsm-snoop add-del-oif
Jun 08 19:22:23:676757:info:fi_debug:debug_logs:1:1430307457729280:  v4PSNOOP_OIF_OP:Del lg1 from
Mcache (3.32.3.2, 227.1.1.1, 500) update_hw 1, change 1
Jun 08 19:22:23:678015:info:fi_debug:debug_logs:1:1430307457729280:  v4PSNOOP_OIF_OP:Del lg1 from
Mcache (3.32.3.2, 227.1.1.2, 500) update_hw 1, change 1

Jun 08 19:22:49:528757:info:fi_debug:debug_logs:1:192476408186369:  v4PSNOOP_OIF_OP:add lg1 into Mcache
(3.32.3.2, 227.1.1.1, 500) ref_count 1, update_hw 1, chagne 1
Jun 08 19:22:49:530507:info:fi_debug:debug_logs:1:192476408186369:  v4PSNOOP_OIF_OP:add lg1 into Mcache
(3.32.3.2, 227.1.1.2, 500) ref_count 1, update_hw 1, chagne 1
```

The following example displays debug messsages of Finite State Machine (FSM) transactions.

```
device# debug ip pimsm-snoop fsm
Jun 08 19:24:11:352252:info:fi_debug:debug_logs:1:200718450427393:  v4PSNOOP_FSM:   (* G) Join for
SG_RPT(3.27.3.2, 227.1.1.1, 500), oif(lg4): NI -> NI
Jun 08 19:24:11:352369:info:fi_debug:debug_logs:1:200718450427393:  v4PSNOOP_FSM:   (* G) Join for
SG_RPT(3.32.3.2, 227.1.1.1, 500), oif(lg4): P -> Px
Jun 08 19:24:11:352453:info:fi_debug:debug_logs:1:200718450427393:  v4PSNOOP_FSM:   RCV_SG(*,
227.1.1.1, 500), oif(lg4): J -> J
Jun 08 19:24:11:352533:info:fi_debug:debug_logs:1:200718450427393:  v4PSNOOP_FSM:   RCV_SG(3.27.3.2,
227.1.1.1, 500), oif(lg4): J -> J
Jun 08 19:24:11:352613:info:fi_debug:debug_logs:1:200718450427393:  v4PSNOOP_FSM:   PRUNE
SG_RPT(3.32.3.2, 227.1.1.1, 500), oif(lg4): Px -> P
Jun 08 19:24:11:352695:info:fi_debug:debug_logs:1:200718450427393:  v4PSNOOP_FSM:   (* G) Join for
SG_RPT(3.27.3.2, 227.1.1.2, 500), oif(lg4): NI -> NI
Jun 08 19:24:11:352784:info:fi_debug:debug_logs:1:200718450427393:  v4PSNOOP_FSM:   (* G) Join for
SG_RPT(3.32.3.2, 227.1.1.2, 500), oif(lg4): P -> Px
Jun 08 19:24:11:352859:info:fi_debug:debug_logs:1:200718450427393:  v4PSNOOP_FSM:   RCV_SG(*,
227.1.1.2, 500), oif(lg4): J -> J
Jun 08 19:24:11:352937:info:fi_debug:debug_logs:1:200718450427393:  v4PSNOOP_FSM:   RCV_SG(3.27.3.2,
227.1.1.2, 500), oif(lg4): J -> J
Jun 08 19:24:11:353016:info:fi_debug:debug_logs:1:200718450427393:  v4PSNOOP_FSM:   PRUNE
SG_RPT(3.32.3.2, 227.1.1.2, 500), oif(lg4): Px -> P
Jun 08 19:24:11:402315:info:fi_debug:debug_logs:1:200722745394689:  v4PSNOOP_FSM:   RCV_SG(3.32.3.2,
227.1.1.1, 500), oif(lg1): J -> J
Jun 08 19:24:11:402446:info:fi_debug:debug_logs:1:200722745394689:  v4PSNOOP_FSM:   RCV_SG(3.32.3.2,
227.1.1.2, 500), oif(lg1): J -> J
```

The following example displays all PIM-SM snoop related debugs messages.

```
device# debug ip pimsm-snoop all
Jun 08 19:25:57:293600:info:fi_debug:debug_logs:1:211116566251009:  v4PSNOOP_SRC:   PIMv2 Hello from
150.1.1.2 port lg4 on vlan 500
Jun 08 19:25:58:997906:info:fi_debug:debug_logs:1:211266890106369:  v4PSNOOP_SRC:   PIMv2 Hello from
150.1.1.1 port lg1 on vlan 500
Jun 08 19:26:10:874444:info:fi_debug:debug_logs:1:212465185981953:  v4PSNOOP_SRC:   PIMv2 Join/Prune
from 150.1.1.2 to upstream Neig-Addr 150.1.1.1  port lg4 on vlan 500, holdtime 210, payload length 86
Jun 08 19:26:10:874529:info:fi_debug:debug_logs:1:212465185981953:  v4PSNOOP_JP:    Rcv Join-Prune
Group : 227.1.1.1, #join src 2, #prune src 1
Jun 08 19:26:10:874606:info:fi_debug:debug_logs:1:212465185981953:  v4PSNOOP_JP:    join source 5.5.5.5
flags: S WC RPT
Jun 08 19:26:10:874679:info:fi_debug:debug_logs:1:212465185981953:  v4PSNOOP_JP:    Rcv Join: (*
227.1.1.1) -> lg4
Jun 08 19:26:10:874760:info:fi_debug:debug_logs:1:212465185981953:  v4PSNOOP_FSM:   (* G) Join for
SG_RPT(3.27.3.2, 227.1.1.1, 500), oif(lg4): NI -> NI
Jun 08 19:26:10:874835:info:fi_debug:debug_logs:1:212465185981953:  v4PSNOOP_FSM:   (* G) Join for
SG_RPT(3.32.3.2, 227.1.1.1, 500), oif(lg4): P -> Px
Jun 08 19:26:10:874919:info:fi_debug:debug_logs:1:212465185981953:  v4PSNOOP_TIMER: timer restart: 210
ticks, timer type: old SG -> new SG, fsm state: J
Jun 08 19:26:10:874994:info:fi_debug:debug_logs:1:212465185981953:  v4PSNOOP_FSM:   RCV_SG(*,
227.1.1.1, 500), oif(lg4): J -> J
Jun 08 19:26:10:875064:info:fi_debug:debug_logs:1:212465185981953:  v4PSNOOP_JP:    join source
3.27.3.2 flags: S
Jun 08 19:26:10:875134:info:fi_debug:debug_logs:1:212465185981953:  v4PSNOOP_JP:    Rcv Join: (3.27.3.2
227.1.1.1) -> lg4
Jun 08 19:26:10:875202:info:fi_debug:debug_logs:1:212465185981953:  v4PSNOOP_TIMER: timer restart: 219
ticks, timer type: old SG -> new SG, fsm state: J
Jun 08 19:26:10:875274:info:fi_debug:debug_logs:1:212465185981953:  v4PSNOOP_FSM:   RCV_SG(3.27.3.2,
227.1.1.1, 500), oif(lg4): J -> J
Jun 08 19:26:10:875343:info:fi_debug:debug_logs:1:212465185981953:  v4PSNOOP_JP:    prune source
3.32.3.2 flags: S RPT
Jun 08 19:26:10:875414:info:fi_debug:debug_logs:1:212465185981953:  v4PSNOOP_JP:    Rcv Prune:
(3.32.3.2 227.1.1.1) -> lg4
Jun 08 19:26:10:875484:info:fi_debug:debug_logs:1:212465185981953:  v4PSNOOP_TIMER: timer restart: 210
ticks, timer type: old SG_RPT -> new SG_RPT, fsm state: P
Jun 08 19:26:10:875557:info:fi_debug:debug_logs:1:212465185981953:  v4PSNOOP_FSM:   PRUNE
SG_RPT(3.32.3.2, 227.1.1.1, 500), oif(lg4): Px -> P
Jun 08 19:26:10:881000:info:fi_debug:debug_logs:1:212465185981953:  v4PSNOOP_JP:    Rcv Join-Prune
Group : 227.1.1.2, #join src 2, #prune src 1
```

The following example displays error messages related to PIM-SM snooping.

```
device#debug ip pimsm-snoop error
Jun 15 12:18:31:455039:info:fi_debug:debug_logs:1:6723248653862401:  v4PSNOOP_ERROR: pimsm_snoop_pkt(),
Xsum error,  Rcvd PIM from 150.1.1.1 1/1/2
Jun 15 12:18:31:889498:info:fi_debug:debug_logs:1:0: Suppressed 1 times:  v4PSNOOP_ERROR:
pimsm_snoop_pkt(), Xsum error,  Rcvd PIM from 150.1.1.1 1/1/2
Jun 15 12:18:32:275222:info:fi_debug:debug_logs:1:6723343143142913:  v4PSNOOP_ERROR: pimsm_snoop_pkt(),
Xsum error,  Rcvd PIM from 150.1.1.1 1/1/2
Jun 15 12:18:32:899741:info:fi_debug:debug_logs:1:0: Suppressed 1 times:  v4PSNOOP_ERROR:
pimsm_snoop_pkt(), Xsum error,  Rcvd PIM from 150.1.1.1 1/1/2
Jun 15 12:18:33:095859:info:fi_debug:debug_logs:1:6723429042488833:  v4PSNOOP_ERROR: pimsm_snoop_pkt(),
Xsum error,  Rcvd PIM from 150.1.1.1 1/1/2
Jun 15 12:18:33:909890:info:fi_debug:debug_logs:1:0: Suppressed 1 times:  v4PSNOOP_ERROR:
pimsm_snoop_pkt(), Xsum error,  Rcvd PIM from 150.1.1.1 1/1/2
Jun 15 12:18:33:915733:info:fi_debug:debug_logs:1:6723514941834753:  v4PSNOOP_ERROR: pimsm_snoop_pkt(),
Xsum error,  Rcvd PIM from 150.1.1.1 1/1/2
```

The following example displays PIM-SM snooping information for a specific group.

```
device#debug ip pimsm-snoop join-prune
device#debug ip pimsm-snoop group 227.1.1.1
Jun 09 05:37:32:654851:info:fi_debug:debug_logs:1:3837125526029825:  v4PSNOOP_JP:    Rcv Join-Prune
Group : 227.1.1.1, #join src 0, #prune src 2
Jun 09 05:37:32:654961:info:fi_debug:debug_logs:1:3837125526029825:  v4PSNOOP_JP:    prune source
5.5.5.5 flags: S WC RPT
Jun 09 05:37:32:655036:info:fi_debug:debug_logs:1:3837125526029825:  v4PSNOOP_JP:    Rcv Prune: (*
227.1.1.1) -> lg4
Jun 09 05:37:32:655116:info:fi_debug:debug_logs:1:3837125526029825:  v4PSNOOP_JP:    prune source
3.27.3.2 flags: S
Jun 09 05:37:32:655189:info:fi_debug:debug_logs:1:3837125526029825:  v4PSNOOP_JP:    Rcv Prune:
(3.27.3.2 227.1.1.1) -> lg4
Jun 09 05:37:39:882499:info:fi_debug:debug_logs:1:3837799835895297:  v4PSNOOP_JP:    Rcv Join-Prune
Group : 227.1.1.1, #join src 0, #prune src 2
Jun 09 05:37:39:882611:info:fi_debug:debug_logs:1:3837799835895297:  v4PSNOOP_JP:    prune source
5.5.5.5 flags: S WC RPT
Jun 09 05:37:39:882687:info:fi_debug:debug_logs:1:3837799835895297:  v4PSNOOP_JP:    Rcv Prune: (*
227.1.1.1) -> lg4
Jun 09 05:37:39:882773:info:fi_debug:debug_logs:1:3837799835895297:  v4PSNOOP_JP:    prune source
3.27.3.2 flags: S
Jun 09 05:37:39:882846:info:fi_debug:debug_logs:1:3837799835895297:  v4PSNOOP_JP:    Rcv Prune:
(3.27.3.2 227.1.1.1) -> lg4
Jun 09 05:37:48:425488:info:fi_debug:debug_logs:1:3838607289746945:  v4PSNOOP_JP:    Rcv Join-Prune
Group : 227.1.1.1, #join src 2, #prune src 0
Jun 09 05:37:48:425601:info:fi_debug:debug_logs:1:3838607289746945:  v4PSNOOP_JP:    join source
5.5.5.5 flags: S WC RPT
Jun 09 05:37:48:425677:info:fi_debug:debug_logs:1:3838607289746945:  v4PSNOOP_JP:    Rcv Join: (*
227.1.1.1) -> lg4
Jun 09 05:37:48:425759:info:fi_debug:debug_logs:1:3838607289746945:  v4PSNOOP_JP:    join source
3.27.3.2 flags: S
Jun 09 05:37:48:425833:info:fi_debug:debug_logs:1:3838607289746945:  v4PSNOOP_JP:    Rcv Join:
(3.27.3.2 227.1.1.1) -> lg4
Jun 09 05:37:48:516157:info:fi_debug:debug_logs:1:3838620174648833:  v4PSNOOP_JP:    Rcv Join-Prune
Group : 227.1.1.1, #join src 1, #prune src 0
Jun 09 05:37:48:516272:info:fi_debug:debug_logs:1:3838620174648833:  v4PSNOOP_JP:    join source
3.32.3.2 flags: S
Jun 09 05:37:48:516349:info:fi_debug:debug_logs:1:3838620174648833:  v4PSNOOP_JP:    Rcv Join:
(3.32.3.2 227.1.1.1) -> lg1
```

The following example displays PIM-SM snooping related debug information for the specified control source address.

```
device#debug ip pimsm-snoop all
device#debug ip pimsm-snoop control-source 150.1.1.1
Jun 15 11:54:10:755035:info:fi_debug:debug_logs:1:6570884689036801:  v4PSNOOP_SRC:   PIMv2 Hello from
150.1.1.1 port 1/1/2 on vlan 500
Jun 15 11:54:43:763109:info:fi_debug:debug_logs:1:6574187518887425:  v4PSNOOP_SRC:   PIMv2 Hello from
150.1.1.1 port 1/1/2 on vlan 500
```

The following is sample output from the debug ipv6 pimsm-snoop timer command.

```
device#debug ip pimsm-snoop timer
Jun 09 07:04:21:106341:info:fi_debug:debug_logs:1:4352182299133441:  v4PSNOOP_TIMER: timer restart: 218
ticks, timer type: old SG -> new SG, fsm state: J
Jun 09 07:04:21:106435:info:fi_debug:debug_logs:1:4352182299133441:  v4PSNOOP_TIMER: timer restart: 217
ticks, timer type: old SG -> new SG, fsm state: J
Jun 09 07:05:21:498159:info:fi_debug:debug_logs:1:4358199548315137:  v4PSNOOP_TIMER: timer restart: 210
ticks, timer type: old SG -> new SG, fsm state: J
Jun 09 07:05:21:498282:info:fi_debug:debug_logs:1:4358199548315137:  v4PSNOOP_TIMER: timer restart: 217
ticks, timer type: old SG -> new SG, fsm state: J
```

The following example displays PIM-SM snoop join and prune messages.

```
device#debug ip pimsm-snoop join-prune
Jun 09 06:50:20:735363:info:fi_debug:debug_logs:1:4269044617184769:  v4PSNOOP_JP:    join source
3.32.3.2 flags: S
Jun 09 06:50:20:735443:info:fi_debug:debug_logs:1:4269044617184769:  v4PSNOOP_JP:    Rcv Join:
(3.32.3.2 227.1.1.1) -> lg1
Jun 09 06:50:43:266071:info:fi_debug:debug_logs:1:4271243640440321:  v4PSNOOP_JP:    Rcv Join-Prune
Group : 227.1.1.1, #join src 2, #prune src 1
Jun 09 06:50:43:266157:info:fi_debug:debug_logs:1:4271243640440321:  v4PSNOOP_JP:    join source
5.5.5.5 flags: S WC RPT
Jun 09 06:50:43:266235:info:fi_debug:debug_logs:1:4271243640440321:  v4PSNOOP_JP:    Rcv Join: (*
227.1.1.1) -> lg4
Jun 09 06:50:43:266334:info:fi_debug:debug_logs:1:4271243640440321:  v4PSNOOP_JP:    join source
3.27.3.2 flags: S
Jun 09 06:50:43:266409:info:fi_debug:debug_logs:1:4271243640440321:  v4PSNOOP_JP:    Rcv Join:
(3.27.3.2 227.1.1.1) -> lg4
Jun 09 06:50:43:266484:info:fi_debug:debug_logs:1:4271243640440321:  v4PSNOOP_JP:    prune source
3.32.3.2 flags: S RPT
Jun 09 06:50:43:266556:info:fi_debug:debug_logs:1:4271243640440321:  v4PSNOOP_JP:    Rcv Prune:
(3.32.3.2 227.1.1.1) -> lg4
Jun 09 06:50:43:268162:info:fi_debug:debug_logs:1:4271247935407617:  v4PSNOOP_JP:    Rcv Join-Prune
Group : 227.1.1.1, #join src 1, #prune src 0
Jun 09 06:50:43:268254:info:fi_debug:debug_logs:1:4271247935407617:  v4PSNOOP_JP:    join source
3.32.3.2 flags: S
Jun 09 06:50:43:268329:info:fi_debug:debug_logs:1:4271247935407617:  v4PSNOOP_JP:    Rcv Join:
(3.32.3.2 227.1.1.1) -> lg1
Jun 09 06:51:21:171413:info:fi_debug:debug_logs:1:4275023211660801:  v4PSNOOP_JP:    Rcv Join-Prune
Group : 227.1.1.1, #join src 1, #prune src 0
Jun 09 06:51:21:171526:info:fi_debug:debug_logs:1:4275023211660801:  v4PSNOOP_JP:    join source
3.32.3.2 flags: S
Jun 09 06:51:21:171606:info:fi_debug:debug_logs:1:4275023211660801:  v4PSNOOP_JP:    Rcv Join:
(3.32.3.2 227.1.1.1) -> lg1

Jun 09 06:51:43:240313:info:fi_debug:debug_logs:1:4277187875177985:  v4PSNOOP_JP:    Rcv Join-Prune
Group : 227.1.1.1, #join src 2, #prune src 1
Jun 09 06:51:43:240426:info:fi_debug:debug_logs:1:4277187875177985:  v4PSNOOP_JP:    join source
5.5.5.5 flags: S WC RPT
Jun 09 06:51:43:240503:info:fi_debug:debug_logs:1:4277187875177985:  v4PSNOOP_JP:    Rcv Join: (*
227.1.1.1) -> lg4
Jun 09 06:51:43:240590:info:fi_debug:debug_logs:1:4277187875177985:  v4PSNOOP_JP:    join source
3.27.3.2 flags: S
Jun 09 06:51:43:240664:info:fi_debug:debug_logs:1:4277187875177985:  v4PSNOOP_JP:    Rcv Join:
(3.27.3.2 227.1.1.1) -> lg4
Jun 09 06:51:43:240738:info:fi_debug:debug_logs:1:4277187875177985:  v4PSNOOP_JP:    prune source
3.32.3.2 flags: S RPT
Jun 09 06:51:43:240810:info:fi_debug:debug_logs:1:4277187875177985:  v4PSNOOP_JP:    Rcv Prune:
(3.32.3.2 227.1.1.1) -> lg4
Jun 09 06:51:43:242107:info:fi_debug:debug_logs:1:4277192170145281:  v4PSNOOP_JP:    Rcv Join-Prune
Group : 227.1.1.1, #join src 1, #prune src 0
Jun 09 06:51:43:242201:info:fi_debug:debug_logs:1:4277192170145281:  v4PSNOOP_JP:    join source
3.32.3.2 flags: S
Jun 09 06:51:43:242276:info:fi_debug:debug_logs:1:4277192170145281:  v4PSNOOP_JP:    Rcv Join:
(3.32.3.2 227.1.1.1) -> lg1
```

The following example displays information of PIM-SM LAG interface.

```
device#debug ip pimsm-snoop all
device#debug ip pimsm-snoop physical-port lag 1
Jun 11 20:12:07:002602:info:fi_debug:debug_logs:1:35453401994102273:  v4PSNOOP_SRC:   PIMv2 Hello from
150.1.1.1 port lg1 on vlan 500
Jun 11 20:12:13:330197:info:fi_debug:debug_logs:1:35457276054603265:  v4PSNOOP_SRC:   PIMv2 Join/Prune
from 150.1.1.1 to upstream Neig-Addr 150.1.1.2  port lg1 on vlan 500, holdtime 210, payload length 54
Jun 11 20:12:13:330310:info:fi_debug:debug_logs:1:35457276054603265:  v4PSNOOP_JP:    Rcv Join-Prune
Group : 227.1.1.1, #join src 1, #prune src 0
Jun 11 20:12:13:330386:info:fi_debug:debug_logs:1:35457276054603265:  v4PSNOOP_JP:    join source
3.32.3.2 flags: S
Jun 11 20:12:13:330460:info:fi_debug:debug_logs:1:35457276054603265:  v4PSNOOP_JP:    Rcv Join:
(3.32.3.2 227.1.1.1) -> lg1
Jun 11 20:12:13:330534:info:fi_debug:debug_logs:1:35457276054603265:  v4PSNOOP_TIMER: timer restart:
211 ticks, timer type: old SG -> new SG, fsm state: J
Jun 11 20:12:13:330614:info:fi_debug:debug_logs:1:35457276054603265:  v4PSNOOP_FSM:   RCV_SG(3.32.3.2,
227.1.1.1, 500), oif(lg1): J -> J
Jun 11 20:12:13:330689:info:fi_debug:debug_logs:1:35457276054603265:  v4PSNOOP_JP:    Rcv Join-Prune
Group : 227.1.1.2, #join src 1, #prune src 0
Jun 11 20:12:13:330758:info:fi_debug:debug_logs:1:35457276054603265:  v4PSNOOP_JP:    join source
3.32.3.2 flags: S
Jun 11 20:12:13:330830:info:fi_debug:debug_logs:1:35457276054603265:  v4PSNOOP_JP:    Rcv Join:
(3.32.3.2 227.1.1.2) -> lg1
Jun 11 20:12:13:330901:info:fi_debug:debug_logs:1:35457276054603265:  v4PSNOOP_TIMER: timer restart:
219 ticks, timer type: old SG -> new SG, fsm state: J
Jun 11 20:12:13:330975:info:fi_debug:debug_logs:1:35457276054603265:  v4PSNOOP_FSM:   RCV_SG(3.32.3.2,
227.1.1.2, 500), oif(lg1): J -> J
```

debug ip rip

Enables RIP debugging information to be displayed.

Syntax

debug ip rip [**all-vrfs**] { **database** | **events** | **packet** | **trigger** }

no debug ip rip [**all-vrfs**] { **database** | **events** | **packet** | **trigger** }

Parameters

all-vrfs
Specifies all VRFs.

database
Specifies RIP database events.

events
Specifies RIP events.

packet
Specifies RIP packets.

trigger
Specifies RIP trigger extensions.

Modes

Privileged EXEC mode

Usage Guidelines

The **no** form of the command disables displaying RIP debugging information.

Examples

The following example

```
device#
```

debug ip rtm

Displays information about the routing table manager (RTM), including changes in the routing table.

Syntax

debug ip rtm { *ip_address* | **all** | **errors** | **nexthop** | **static-bfd** }

no debug ip rtm{ *ip-address* | **all** | **errors** | **nexthop** | **static-bfd** }

Parameters

ip_address
: Specifies an IP address.

all
: Specifies all RTM events.

errors
: Specifies IP RTM errorss.

nexthop
: Specifies the IP RTM nexthop.

static-bfd
: Specifies BFD-enabled static routes.

Modes

Privileged EXEC mode

Usage Guidelines

no

Examples

The following example enables the displaying of all RTM debugging information.

```
device# debug ip rtm all

May 22 22:43:02:920769:info:fi_debug:debug_logs:1:983550656513: RTM(default-vrf/0): Remove 133.3.3.3/32
(ospf)
May 22 22:43:02:920790:info:fi_debug:debug_logs:1:983550656513: RTM(default-vrf/0): un-install
133.3.3.3/32 (ospf)
May 22 22:43:02:920810:info:fi_debug:debug_logs:1:983550656513: RTM(default-vrf/0): install
133.3.3.3/32 (bgp)
May 22 22:43:02:920871:info:fi_debug:debug_logs:1:983550656513: RTM(default-vrf/0): Remove 133.3.3.4/32
(ospf)
May 22 22:43:02:920889:info:fi_debug:debug_logs:1:983550656513: RTM(default-vrf/0): un-install
133.3.3.4/32 (ospf)
May 22 22:43:02:920904:info:fi_debug:debug_logs:1:983550656513: RTM(default-vrf/0): install
133.3.3.4/32 (bgp)
May 22 22:43:02:920924:info:fi_debug:debug_logs:1:983550656513: RTM(default-vrf/0): delete nh_id 65565.
set delay timer. Total pending 1
May 22 22:43:02:920963:info:fi_debug:debug_logs:1:983550656513: RTM(default-vrf/0): spf not running for
protocol ospf
May 22 22:43:03:090952:info:fi_debug:debug_logs:1:905915192857068288: RTM(default-vrf/0): Redis action
(1)  1.0.6.0/24, bgp -> ospf
May 22 22:43:03:091017:info:fi_debug:debug_logs:1:905915192857068288: RTM(default-vrf/0): Redis action
(1)  1.0.7.0/24, bgp -> ospf
May 22 22:43:03:091037:info:fi_debug:debug_logs:1:905915192857068288: RTM(default-vrf/0): Redis action
(1)  1.0.8.0/24, bgp -> ospf
May 22 22:43:03:091053:info:fi_debug:debug_logs:1:905915192857068288: RTM(default-vrf/0): Redis action
(1)  1.0.9.0/24, bgp -> ospf
May 22 22:43:03:091083:info:fi_debug:debug_logs:1:905915192857068288: RTM(default-vrf/0): Redis action
(1)  1.0.10.0/24, bgp -> ospf
May 22 22:43:03:091099:info:fi_debug:debug_logs:1:905915192857068288: RTM(default-vrf/0): Redis action
(1)  1.0.11.0/24, bgp -> ospf
May 22 22:43:03:091114:info:fi_debug:debug_logs:1:905915192857068288: RTM(default-vrf/0): Redis action
(1)  1.0.12.0/24, bgp -> ospf
May 22 22:43:03:091129:info:fi_debug:debug_logs:1:905915192857068288: RTM(default-vrf/0): Redis action
(1)  1.0.13.0/24, bgp -> ospf
May 22 22:43:03:091144:info:fi_debug:debug_logs:1:905915192857068288: RTM(default-vrf/0): Redis action
(1)  1.0.14.0/24, bgp -> ospf
May 22 22:43:03:091159:info:fi_debug:debug_logs:1:905915192857068288: RTM(default-vrf/0): Redis action
(1)  1.0.15.0/24, bgp -> ospf
May 22 22:43:03:091174:info:fi_debug:debug_logs:1:905915192857068288: RTM(default-vrf/0): Redis action
(1)  1.0.16.0/24, bgp -> ospf
May 22 22:43:03:091189:info:fi_debug:debug_logs:1:905915192857068288: RTM(default-vrf/0): Redis action
(1)  1.0.17.0/24, bgp -> ospf
May 22 22:43:03:091204:info:fi_debug:debug_logs:1:905915192857068288: RTM(default-vrf/0): Redis action
(1)  1.0.18.0/24, bgp -> ospf
May 22 22:43:03:091218:info:fi_debug:debug_logs:1:905915192857068288: RTM(default-vrf/0): Redis action
(1)  1.0.19.0/24, bgp -> ospf
May 22 22:43:03:091232:info:fi_debug:debug_logs:1:905915192857068288: RTM(default-vrf/0): Redis action
(1)  1.0.20.0/24, bgp -> ospf
May 22 22:43:03:091246:info:fi_debug:debug_logs:1:905915192857068288: RTM(default-vrf/0): Redis action
(1)  1.0.21.0/24, bgp -> ospf
May 22 22:43:03:091261:info:fi_debug:debug_logs:1:905915192857068288: RTM(default-vrf/0): Redis action
(1)  1.0.22.0/24, bgp -> ospf
May 22 22:43:03:091275:info:fi_debug:debug_logs:1:905915192857068288: RTM(default-vrf/0): Redis action
(1)  1.0.23.0/24, bgp -> ospf
May 22 22:43:03:091289:info:fi_debug:debug_logs:1:905915192857068288: RTM(default-vrf/0): Redis action
(1)  1.0.24.0/24, bgp -> ospf
May 22 22:43:03:091303:info:fi_debug:debug_logs:1:905915192857068288: RTM(default-vrf/0): Redis action
(1)  1.0.25.0/24, bgp -> ospf
May 22 22:43:04:902290:info:fi_debug:debug_logs:1:0: RTM(default-vrf/0): Modify 90.1.1.0/24 path 1 (bgp)
May 22 22:43:04:902316:info:fi_debug:debug_logs:1:0: RTM(default-vrf/0): nh da1a58af (id 65574) added
avl tree, code 1
May 22 22:43:04:902341:info:fi_debug:debug_logs:1:0: RTM(default-vrf/0): allocate_nh id -1, got id
65574, path 1 (70.1.30.1, e 1/1/13)
May 22 22:43:04:902859:info:fi_debug:debug_logs:1:0: RTM(default-vrf/0): Modify 90.1.1.0/24 path 1 (bgp)
May 22 22:43:04:903128:info:fi_debug:debug_logs:1:0: RTM(default-vrf/0): nh da1a5a65 (id 65575) added
avl tree, code 1
May 22 22:43:04:903155:info:fi_debug:debug_logs:1:0: RTM(default-vrf/0): allocate_nh id -1, got id
```

```
65575, path 1 (70.1.31.1, e 1/1/15)
May 22 22:43:04:903701:info:fi_debug:debug_logs:1:0: RTM(default-vrf/0): delete nh_id 65574. set delay
timer. Total pending 2
May 22 22:43:04:903770:info:fi_debug:debug_logs:1:0: RTM(default-vrf/0): Modify 90.1.1.0/24 path 1 (bgp)
May 22 22:43:04:903791:info:fi_debug:debug_logs:1:0: RTM(default-vrf/0): nh da1a5aae (id 65576) added
avl tree, code 1
May 22 22:43:04:903807:info:fi_debug:debug_logs:1:0: RTM(default-vrf/0): allocate_nh id -1, got id
65576, path 1 (90.1.1.1, tunnel 1)
May 22 22:43:04:903822:info:fi_debug:debug_logs:1:0: RTM(default-vrf/0): delete nh_id 65575. set delay
timer. Total pending 3
May 22 22:43:10:236006:info:fi_debug:debug_logs:1:0: RTM(default-vrf/0): Add 133.3.3.3
```

debug ip ssh

activates the SSH debugging.

Syntax

debug ip ssh

no debug ip ssh

Modes

Privileged EXEC mode

Examples

```
device#  debug ip ssh
SSH: debugging is on
device(config)#SSH: Incoming connection request received
SSH: ssh_get_free_session_id: ssh.client[0].in_use is 0
SSH: Client session (0) established
SSH: Outgoing connection is ready
ShtcpConnectionStatus[0]: connection established
SSH:ShtcpSend[0]: eSendComplete: the string length [24] !
ShtcpSendStatus[0]: eSendComplete
SSH: Outgoing connection is ready
SSH: Data is ready to receive
ShtcpReceiveStatus[0]: the string length [47]
SSH:ShtcpSend[0]: eSendComplete: the string length [216] !
ShtcpSendStatus[0]: eSendComplete
SSH: Outgoing connection is ready
SSH: Data is ready to receive
ShtcpReceiveStatus[0]: the string length [464]
```

debug ip sync

Displays debugging information about IP synchronization and faults in synchronization.

Syntax

debug ip sync [**arp** *ip-address* | **arp-all** | **cache** *ip-address* | **cache-all** | **default-route** | **download** | **next-hop redownload** | **route** *ip-address* [*ip-mask*] |**route-all** | **show** | **stats** {**clear** | **show** }]

no debug ip sync[**arp** *ip-address* | **arp-all** | **cache** *ip-address* | **cache-all** | **default-route** | **download** | **next-hop redownload** | **route** *ip-address* [*ip-mask*] |**route-all** | **show** | **stats** {**clear** | **show** }]

Parameters

arp*ip-address*

Monitors ARP synchronisation, matches with the IP address of the ARP entry.

arp-all

Monitors all ARP synchronization.

cache*ip-address*

Monitors IP cache synchronization, matches with the cache IP address.

cache-all

Monitors all IP cache synchronization.

default-route

Monitors default IP route synchronization.

download

Monitors the activity during download.

next-hop

Monitors next-hop synchronization.

redownload

Monitors the activity during redownload.

route*ip-address ip-mask*

Monitors IP route synchronization, matches with the IP address or IP subnet mask.

route-all

Monitors all IP route synchronization.

show

Displays all IP synchronization debug information.

stats

Displays IP tables and syunchronization information.

clear

Clears synchronization statistics for IP tables.

show

Displays synchronization statistics for IP tables.

Modes

Privileged EXEC mode

Examples

The following example displays debugging information about ARP IP synchronization.

```
device# debug ip sync arp-all
         IP_Sync:  all arps debugging is on
device#
May 23 18:39:31:940804:info:fi_debug:debug_logs:1:1112399675393: ARP delete sync: sent ip:70.1.10.1 mac:
609c.9f21.4c80 type:dynamic port:lg10 rtr:TRUE status:valid to all other units
May 23 18:39:31:940983:info:fi_debug:debug_logs:1:1112399675393: ARP delete sync: sent ip:70.1.30.1 mac:
609c.9f21.4c80 type:dynamic port:1/1/13 rtr:TRUE status:valid to all other units
May 23 18:39:31:941030:info:fi_debug:debug_logs:1:1112399675393: ARP delete sync: sent ip:70.1.31.1 mac:
609c.9f21.4c80 type:dynamic port:1/1/15 rtr:TRUE status:valid to all other units
May 23 18:39:31:941068:info:fi_debug:debug_logs:1:1112399675393: ARP delete sync: sent ip:150.0.0.2 mac:
0010.9400.0004 type:dynamic port:1/1/37 rtr:FALSE status:valid to all other units
May 23 18:39:31:941100:info:fi_debug:debug_logs:1:1112399675393: ARP delete sync: sent ip:150.0.0.3 mac:
0010.9400.0005 type:dynamic port:1/1/37 rtr:TRUE status:valid to all other units
May 23 18:39:31:941130:info:fi_debug:debug_logs:1:1112399675393: ARP delete sync: sent ip:150.0.0.4 mac:
0010.9400.0006 type:dynamic port:1/1/37 rtr:TRUE status:valid to all other units
May 23 18:39:31:941161:info:fi_debug:debug_logs:1:1112399675393: ARP delete sync: sent ip:150.0.0.2
mac:none type:dynamic port:v3001 rtr:TRUE status:pend to all other units
May 23 18:39:31:941193:info:fi_debug:debug_logs:1:1112399675393: ARP delete sync: sent ip:50.0.1.1 mac:
609c.9f21.4c80 type:dynamic port:1/1/21 rtr:FALSE status:valid to all other units
May 23 18:39:31:941231:info:fi_debug:debug_logs:1:1112399675393: ARP delete sync: sent ip:150.0.0.5 mac:
0010.9400.0007 type:dynamic port:1/1/37 rtr:FALSE status:valid to all other units
May 23 18:39:31:941261:info:fi_debug:debug_logs:1:1112399675393: ARP delete sync: sent ip:150.0.0.6 mac:
0010.9400.0008 type:dynamic port:1/1/37 rtr:TRUE status:valid to all other units
May 23 18:39:31:941290:info:fi_debug:debug_logs:1:1112399675393: ARP delete sync: sent ip:150.0.0.7 mac:
0010.9400.0009 type:dynamic port:1/1/37 rtr:TRUE status:valid to all other units
May 23 18:39:31:941514:info:fi_debug:debug_logs:1:1112399675393: ARP add sync: sent ip:70.1.10.1
mac:none type:dynamic port:v110 rtr:TRUE status:pend to all other units
May 23 18:39:31:942043:info:fi_debug:debug_logs:1:1112399675393: ARP add sync: sent ip:70.1.30.1
mac:none type:dynamic port:1/1/13 rtr:TRUE status:pend to all other units
May 23 18:39:31:942472:info:fi_debug:debug_logs:1:1112399675393: ARP add sync: sent ip:70.1.31.1
mac:none type:dynamic port:1/1/15 rtr:TRUE status:pend to all other units
May 23 18:39:31:942550:info:fi_debug:debug_logs:1:1112399675393: ARP add sync: sent ip:150.0.0.3
mac:none type:dynamic port:v3000 rtr:TRUE status:pend to all other units
May 23 18:39:31:942971:info:fi_debug:debug_logs:1:1112399675393: ARP add sync: sent ip:150.0.0.4
mac:none type:dynamic port:v3000 rtr:TRUE status:pend to all other units
May 23 18:39:31:943355:info:fi_debug:debug_logs:1:1112399675393: ARP add sync: sent ip:150.0.0.2
mac:none type:dynamic port:v3001 rtr:TRUE status:pend to all other units
May 23 18:39:31:943723:info:fi_debug:debug_logs:1:1112399675393: ARP add sync: sent ip:150.0.0.6
mac:none type:dynamic port:v3001 rtr:TRUE status:pend to all other units
May 23 18:39:31:944139:info:fi_debug:debug_logs:1:1112399675393: ARP add sync: sent ip:150.0.0.7
mac:none type:dynamic port:v3001 rtr:TRUE status:pend to all other units
May 23 18:39:32:332315:info:fi_debug:debug_logs:1:105217161556919809: ARP add sync: sent ip:70.1.30.1
mac:609c.9f21.4c80 type:dynamic port:1/1/13 rtr:TRUE status:valid to all other units
May 23 18:39:32:722538:info:fi_debug:debug_logs:1:105217238866331137: ARP add sync: sent ip:70.1.10.1
mac:609c.9f21.4c80 type:dynamic port:lg10 rtr:TRUE status:valid to all other units
May 23 18:39:32:722929:info:fi_debug:debug_logs:1:105217243161298433: ARP add sync: sent ip:70.1.31.1
mac:609c.9f21.4c80 type:dynamic port:1/1/15 rtr:TRUE status:valid to all other units
May 23 18:39:32:723012:info:fi_debug:debug_logs:1:105217247456265729: ARP add sync: sent ip:150.0.0.3
mac:0010.9400.0005 type:dynamic port:1/1/37 rtr:TRUE status:valid to all other units
May 23 18:39:32:723083:info:fi_debug:debug_logs:1:105217251751233025: ARP add sync: sent ip:150.0.0.4
mac:0010.9400.0006 type:dynamic port:1/1/37 rtr:TRUE status:valid to all other units
May 23 18:39:32:725872:info:fi_debug:debug_logs:1:105217256046200321: ARP add sync: sent ip:150.0.0.6
mac:0010.9400.0008 type:dynamic port:1/1/37 rtr:TRUE status:valid to all other units
May 23 18:39:32:726320:info:fi_debug:debug_logs:1:105217260341167617: ARP add sync: sent ip:150.0.0.7
mac:0010.9400.0009 type:dynamic port:1/1/37 rtr:TRUE status:valid to all other units
May 23 18:39:34:945961:info:fi_debug:debug_logs:1:962784257822950144: ARP add sync: sent ip:150.0.0.5
mac:none type:dynamic port:v3001 rtr:FALSE status:pend to all other units
```

The following example displays IP route syncronization debugging information.

```
device# debug ip sync route-all
         IP_Sync:  all routes debugging is on
device#
May 23 18:41:33:008634:info:fi_debug:debug_logs:1:1163939282945: IP route delete sync: Not sending ip
route 0.0.0.0/0(vrf:0,path:1) since outgoing int is Mgmt port
May 23 18:41:33:008688:info:fi_debug:debug_logs:1:1163939282945: RTM(default-vrf/0): delete nh_id
65536. set delay timer. Total pending 1
May 23 18:41:33:008724:info:fi_debug:debug_logs:1:1163939282945: IP route delete sync: sent ip route
1.0.0.0/8(vrf:0,path:1) to all other units
May 23 18:41:33:008745:info:fi_debug:debug_logs:1:1163939282945: RTM(default-vrf/0): delete nh_id
65534. set delay timer. Total pending 2
May 23 18:41:33:009026:info:fi_debug:debug_logs:1:1163939282945: IP route delete sync: sent ip route
1.0.6.0/24(vrf:0,path:1) to all other units
May 23 18:41:33:009061:info:fi_debug:debug_logs:1:1163939282945: IP route delete sync: sent ip route
1.0.7.0/24(vrf:0,path:1) to all other units
May 23 18:41:33:009086:info:fi_debug:debug_logs:1:1163939282945: IP route delete sync: sent ip route
1.0.8.0/24(vrf:0,path:1) to all other units
May 23 18:41:33:009108:info:fi_debug:debug_logs:1:1163939282945: IP route delete sync: sent ip route
1.0.9.0/24(vrf:0,path:1) to all other units
May 23 18:41:33:009128:info:fi_debug:debug_logs:1:1163939282945: IP route delete sync: sent ip route
1.0.10.0/24(vrf:0,path:1) to all other units
May 23 18:41:33:009148:info:fi_debug:debug_logs:1:1163939282945: IP route delete sync: sent ip route
1.0.11.0/24(vrf:0,path:1) to all other units
May 23 18:41:33:009169:info:fi_debug:debug_logs:1:1163939282945: IP route delete sync: sent ip route
1.0.12.0/24(vrf:0,path:1) to all other units
May 23 18:41:33:009189:info:fi_debug:debug_logs:1:1163939282945: IP route delete sync: sent ip route
1.0.13.0/24(vrf:0,path:1) to all other units
May 23 18:41:33:009209:info:fi_debug:debug_logs:1:1163939282945: IP route delete sync: sent ip route
1.0.14.0/24(vrf:0,path:1) to all other units
May 23 18:41:33:009228:info:fi_debug:debug_logs:1:1163939282945: IP route delete sync: sent ip route
1.0.15.0/24(vrf:0,path:1) to all other units
May 23 18:41:33:009244:info:fi_debug:debug_logs:1:1163939282945: RTM(default-vrf/0): delete nh_id
65566. set delay timer. Total pending 3
May 23 18:41:33:009266:info:fi_debug:debug_logs:1:1163939282945: IP route delete sync: sent ip route
1.0.16.0/24(vrf:0,path:1) to all other units
May 23 18:41:33:009286:info:fi_debug:debug_logs:1:1163939282945: IP route delete sync: sent ip route
1.0.17.0/24(vrf:0,path:1) to all other units
May 23 18:41:33:009307:info:fi_debug:debug_logs:1:1163939282945: IP route delete sync: sent ip route
1.0.18.0/24(vrf:0,path:1) to all other units
May 23 18:41:33:009327:info:fi_debug:debug_logs:1:1163939282945: IP route delete sync: sent ip route
1.0.19.0/24(vrf:0,path:1) to all other units
May 23 18:41:33:009347:info:fi_debug:debug_logs:1:1163939282945: IP route delete sync: sent ip route
1.0.20.0/24(vrf:0,path:1) to all other units
May 23 18:41:33:009372:info:fi_debug:debug_logs:1:1163939282945: IP route delete sync: sent ip route
1.0.21.0/24(vrf:0,path:1) to all other units
May 23 18:41:33:009393:info:fi_debug:debug_logs:1:1163939282945: IP route delete sync: sent ip route
1.0.22.0/24(vrf:0,path:1) to all other units
May 23 18:41:33:009414:info:fi_debug:debug_logs:1:1163939282945: IP route delete sync: sent ip route
1.0.23.0/24(vrf:0,path:1) to all other units
May 23 18:41:33:009434:info:fi_debug:debug_logs:1:1163939282945: IP route delete sync: sent ip route
1.0.24.0/24(vrf:0,path:1) to all other units
May 23 18:41:33:009455:info:fi_debug:debug_logs:1:1163939282945: IP route delete sync: sent ip route
1.0.25.0/24(vrf:0,path:1) to all other units
May 23 18:41:33:009471:info:fi_debug:debug_logs:1:1163939282945: RTM(default-vrf/0): delete nh_id
65564. set delay timer. Total pending 4
May 23 18:41:33:009492:info:fi_debug:debug_logs:1:1163939282945: IP route delete sync: sent ip route
2.2.2.2/32(vrf:0,path:1) to all other units
May 23 18:41:33:009553:info:fi_debug:debug_logs:1:1163939282945: RTM(default-vrf/0): delete nh_id 4607.
set delay timer. Total pending 5
May 23 18:41:33:009578:info:fi_debug:debug_logs:1:1163939282945: IP route delete sync: sent ip route
2.2.2.3/32(vrf:0,path:1) to all other units
May 23 18:41:33:009593:info:fi_debug:debug_logs:1:1163939282945: RTM(default-vrf/0): delete nh_id 4608.
set delay timer. Total pending 6
May 23 18:41:33:009613:info:fi_debug:debug_logs:1:1163939282945: IP route delete sync: Not sending ip
route 10.176.183.0/24(vrf:0,path:1) since outgoing int is Mgmt port
May 23 18:41:33:009630:info:fi_debug:debug_logs:1:1163939282945: RTM(default-vrf/0): delete nh_id 48.
set delay timer. Total pending 7
May 23 18:41:33:009652:info:fi_debug:debug_logs:1:1163939282945: IP route delete sync: sent ip route
```

```
45.1.1.0/24(vrf:0,path:1) to all other units
May 23 18:41:33:009673:info:fi_debug:debug_logs:1:1163939282945: IP route dele
```

debug ip tcp

Displays debugging information about Transmission Control Protocol (TCP) transactions.

Syntax

debug ip tcp [**adjust-mss** | **ao** | **close** | **driver** | **memory** |**packet** | **sack** | **status** | **transactions** | **vrf**] { *ipv4-address* | *ipv6-address* }

no debug ip tcp [**adjust-mss** | **ao** | **close** | **driver** | **memory** | **packet** | **sack** | **status** | **transactions** | **vrf**] { *ipv4-address* | *ipv6-address* }

Parameters

adjust-mss
Specifies IPv4 TCP MSS.

ao
Specifies TCP keychain authentication (AO) options.

close
Specifies TCP close events.

driver
Specifies TCP driver events.

memory
Specifies TCP memory usage.

packet
Specifies TCP packets.

sack
Specifies TCP Selective-Acknowledgment (SACK).

status
Specifies the status of TCP connections.

transactions
Specifies significant TCP events.

vrf
Specifies VRF-based TCP.

ipv4-address
Specifies an IPv4 address.

ipv6-address
Specifies an IPv6 address.

Modes

Privileged EXEC mode

Usage Guidelines

The **no** form of the command disables TCP debugging options.

Examples

The following example displays debugging information about TCP transactions.

```
device# debug ip tcp 2001:DB8::192:111:101:25
TCP: ipv6 address 2001:DB8::192:111:101:25 debugging is on
Debug: Feb 11 10:46:57 TCP: sent packet (len=41) 2001:DB8::192:111:101:111:8197 ->
2001:DB8::192:111:101:25:179
packet:
syn:0,ack:1,rst:0,fin:0,hlen:5,chksum:18c2,seqn:11211247,ackn:835929143
Debug: Feb 11 10:46:57 TCP: sent packet (len=41) 2001:DB8::192:111:101:111:8197 ->
2001:DB8::192:111:101:25:179
packet:
syn:0,ack:1,rst:0,fin:1,hlen:5,chksum:14ac,seqn:11211268,ackn:835929143
Debug: Feb 11 10:46:57 TCP: rcvd packet (len=20) 2001:DB8::192:111:101:25:179 ->
2001:DB8::192:111:101:111:8197
packet:
syn:0,ack:1,rst:0,fin:0,hlen:5,chksum:3bfa,seqn:835929143,ackn:11211268
Debug: Feb 11 10:46:57 TCP: rcvd packet (len=20) 2001:DB8::192:111:101:25:179 ->
2001:DB8::192:111:101:111:8197
packet:
syn:0,ack:1,rst:0,fin:0,hlen:5,chksum:3bf9,seqn:835929143,ackn:11211290
Debug: Feb 11 10:46:57 TCP: rcvd packet (len=20) 2001:DB8::192:111:101:25:179 ->
2001:DB8::192:111:101:111:8197
packet:
syn:0,ack:1,rst:0,fin:1,hlen:5,chksum:3bce,seqn:835929143,ackn:11211290
Debug: Feb 11 10:46:57 TCP: sent packet (len=20) 2001:DB8::192:111:101:111:8197 ->
2001:DB8::192:111:101:25:179
packet:
syn:0,ack:1,rst:0,fin:0,hlen:5,chksum:1bce,seqn:11211290,ackn:835929144
Debug: Feb 11 10:47:05 TCP: sent packet (len=24) 2001:DB8::192:111:101:111:8178 ->
2001:DB8::192:111:101:25:179
packet: syn:1,ack:0,rst:0,fin:0,hlen:6,chksum:26f,seqn:4002716695,ackn:0
Debug: Feb 11 10:47:05 TCP: rcvd packet (len=24) 2001:DB8::192:111:101:25:179 ->
2001:DB8::192:111:101:111:8178
packet:
syn:1,ack:1,rst:0,fin:0,hlen:6,chksum:17a4,seqn:2607451983,ackn:4002716696
Debug: Feb 11 10:47:05 TCP: sent packet (len=20) 2001:DB8::192:111:101:111:8178 ->
2001:DB8::192:111:101:25:179
packet:
syn:0,ack:1,rst:0,fin:0,hlen:5,chksum:ef48,seqn:4002716696,ackn:2607451984
Debug: Feb 11 10:47:05 TCP: sent packet (len=75) 2001:DB8::192:111:101:111:8178 ->
2001:DB8::192:111:101:25:179
packet:
syn:0,ack:1,rst:0,fin:0,hlen:5,chksum:17de,seqn:4002716696,ackn:2607451984
Debug: Feb 11 10:47:05 TCP: rcvd packet (len=20) 2001:DB8::192:111:101:25:179 ->
2001:DB8::192:111:101:111:8178
packet:
syn:0,ack:1,rst:0,fin:0,hlen:5,chksum:2f49,seqn:2607451984,ackn:4002716751
Debug: Feb 11 10:47:05 TCP: rcvd packet (len=57) 2001:DB8::192:111:101:25:179 ->
2001:DB8::192:111:101:111:8178
packet:
syn:0,ack:1,rst:0,fin:0,hlen:5,chksum:fc84,seqn:2607451984,ackn:4002716751
Debug: Feb 11 10:47:05 TCP: sent packet (len=20) 2001:DB8::192:111:101:111:8178 ->
2001:DB8::192:111:101:25:179
packet:
syn:0,ack:1,rst:0,fin:0,hlen:5,chksum:ef11,seqn:4002716751,ackn:2607452021
Debug: Feb 11 10:47:05 TCP: rcvd packet (len=39) 2001:DB8::192:111:101:25:179 ->
2001:DB8::192:111:101:111:8178
packet:
syn:0,ack:1,rst:0,fin:0,hlen:5,chksum:2af6,seqn:2607452021,ackn:4002716751
Debug: Feb 11 10:47:05 TCP: sent packet (len=20) 2001:DB8::192:111:101:111:8178 ->
2001:DB8::192:111:101:25:179
packet:
syn:0,ack:1,rst:0,fin:0,hlen:5,chksum:ef11,seqn:4002716751,ackn:2607452040
Debug: Feb 11 10:47:05 TCP: sent packet (len=39) 2001:DB8::192:111:101:111:8178 ->
2001:DB8::192:111:101:25:179
packet:
syn:0,ack:1,rst:0,fin:0,hlen:5,chksum:eabe,seqn:4002716751,ackn:2607452040
Debug: Feb 11 10:47:05 TCP: rcvd packet (len=20) 2001:DB8::192:111:101:25:179 ->
2001:DB8::192:111:101:111:8178
```

```
packet:
syn:0,ack:1,rst:0,fin:0,hlen:5,chksum:2f11,seqn:2607452040,ackn:4002716770
Debug: Feb 11 10:47:05 TCP: rcvd packet (len=108) 2001:DB8::192:111:101:25:179 ->
2001:DB8::192:111:101:111:8178
packet:
syn:0,ack:1,rst:0,fin:0,hlen:5,chksum:aa71,seqn:2607452040,ackn:4002716770
Debug: Feb 11 10:47:05 TCP: sent packet (len=20) 2001:DB8::192:111:101:111:8178 ->
2001:DB8::192:111:101:25:179
packet:
syn:0,ack:1,rst:0,fin:0,hlen:5,chksum:eec6,seqn:4002716770,ackn:2607452128
Debug: Feb 11 10:47:05 TCP: rcvd packet (len=39) 2001:DB8::192:111:101:25:179 ->
2001:DB8::192:111:101:111:8178
packet:
syn:0,ack:1,rst:0,fin:0,hlen:5,chksum:2a8b,seqn:2607452128,ackn:4002716770
Debug: Feb 11 10:47:05 TCP: sent packet (len=20) 2001:DB8::192:111:101:111:8178 ->
2001:DB8::192:111:101:25:179
packet:
syn:0,ack:1,rst:0,fin:0,hlen:5,chksum:eec6,seqn:4002716770,ackn:2607452147
Debug: Feb 11 10:47:05 TCP: rcvd packet (len=108) 2001:DB8::192:111:101:25:179 ->
2001:DB8::192:111:101:111:8178
packet:
syn:0,ack:1,rst:0,fin:0,hlen:5,chksum:80c6,seqn:2607452147,ackn:4002716770
Debug: Feb 11 10:47:05 TCP: sent packet (len=20) 2001:DB8::192:111:101:111:8178 ->
2001:DB8::192:111:101:25:179
packet:
syn:0,ack:1,rst:0,fin:0,hlen:5,chksum:eec6,seqn:4002716770,ackn:2607452235
Debug: Feb 11 10:47:06 TCP: rcvd packet (len=108) 2001:DB8::192:111:101:25:179 ->
2001:DB8::192:111:101:111:8178
packet:
syn:0,ack:1,rst:0,fin:0,hlen:5,chksum:cd4a,seqn:2607452235,ackn:4002716770
Debug: Feb 11 10:47:06 TCP: sent packet (len=20) 2001:DB8::192:111:101:111:8178 ->
2001:DB8::192:111:101:25:17
```

The following example activates TCP driver events debugging.

```
device# debug ip tcp driver
TCP: driver debugging is on
```

The following example activates TCP memory debugging.

```
device# debug ip tcp memory
TCP: memory debugging is on
```

The following example activates TCP packets debugging.

```
device# debug ip tcp packet
TCP: packet debugging is on
```

The following example activates TCP SACK debugging.

```
device# debug ip tcp sack
TCP: sack debugging is on
```

The following example displays details for TCP transactions debugging.

```
device# debug ip tcp transactions
TCP: transactions debugging is on
TCP: transactions debugging is on
Debug: Feb 11 10:47:39 TCP: 2001:DB8::192:111:101:111:8178 ->
2001:DB8::192:111:101:25:179: state change ESTABLISHED -> FIN-WAIT-1
Debug: Feb 11 10:47:39 TCP: sending FIN to 2001:DB8::192:111:101:25 port 179
Debug: Feb 11 10:47:39 TCP: FIN to 2001:DB8::192:111:101:111 port 8178 acked
Debug: Feb 11 10:47:39 TCP: 2001:DB8::192:111:101:111:8178 ->
2001:DB8::192:111:101:25:179: state change FIN-WAIT-1 -> FIN-WAIT-2
Debug: Feb 11 10:47:39 TCP: 2001:DB8::192:111:101:111:8178 ->
2001:DB8::192:111:101:25:179: state change FIN-WAIT-2 -> TIME-WAIT
Debug: Feb 11 10:47:39 TCP: FIN processed
Debug: Feb 11 10:47:39 TCP: 2001:DB8::192:111:101:111:8178 ->
2001:DB8::192:111:101:25:179: state change TIME-WAIT -> CLOSED
Debug: Feb 11 10:47:39 TCP: TCB 14440934 destroyed
Debug: Feb 11 10:47:58 TCP: 2001:DB8::192:111:101:111:8064 ->
2001:DB8::192:111:101:25:179: state change CLOSED -> SYN-SENT
Debug: Feb 11 10:47:58 TCP: connected to 2001:DB8::192:111:101:111 port 8064
advertising MSS 1436
Debug: Feb 11 10:47:58 TCP: connection to 10.146.1.17 port 179 received MSS 1436
MSS is 1436
Debug: Feb 11 10:47:58 TCP: 2001:DB8::192:111:101:111:8064 ->
2001:DB8::192:111:101:25:179: state change SYN-SENT -> ESTABLISHED
```

The following example debugs TCP keychain authentication (AO) options.

```
device# debug ip tcp ao
          TCP:  ao debugging is on
```

The following example displays TCP status debugging information for the specified IP addresses.

```
device# debug ip tcp status 17.1.1.2 8003 17.1.1.1 179
TCP: TCB = 0xa4138b3b
TCP: 17.1.1.2:8003 <-> 17.1.1.1:179: state: ESTABLISHED
  Send: initial sequence number = 17564913
  Send: first unacknowledged sequence number = 17883929
  Send: current send pointer = 17883929
  Send: next sequence number to send = 17883929
  Send: remote received window = 16365
  Send: total unacknowledged sequence number = 0
  Send: last window update sequence number = 154132788
  Send: last window update ack number = 17883929
  Send: need to send ack = 0, probe = 0
  Send: total used buffers 0
  Receive: initial incoming sequence number = 153787685
  Receive: expected incoming sequence number = 154132788
  Receive: received window = 16384
  Receive: bytes in receive queue = 0
  Receive: congestion window = 1439
    TCP Connection state: ESTABLISHED, timer state 0
     TCP Keychain name      : 1
     TCP-AO Enabled         : YES
     TCP-AO in use          : YES
     Keychain valid         : YES
     No of segments dropped : 0
     Send-Active-Key
     ---------------
       Key-id               : 1
       Crypto Algorithm     : AES-128-CMAC
       Send-id              : 100
       Recv-id              : 100
       Include-tcp-options  : YES
       Accept-ao-mismatch   : YES
     Recv-Active-Key
     ---------------
       Key-id               : 1
       Crypto Algorithm     : AES-128-CMAC
       Send-id              : 100
       Recv-id              : 100
       Include-tcp-options  : YES
       Accept-ao-mismatch   : YES

       Maximum segment size: 1420
       Local host:  17.1.1.2, Local  Port: 8003
       Remote host: 17.1.1.1, Remote Port: 179
       ISentSeq:   17564913  SendNext:   17883929  TotUnAck:          0
       TotSent:      319016  ReTrans:          40  UnAckSeq:   17883929
       SeqLastWin:   154132788  AckLastWin:    17883929  SendAck: 0
       IRcvSeq:   153787685  RcvNext:   154132788  SendWnd:       16365
       TotalRcv:     345103  DupliRcv:       1083  RcvWnd:        16384
       SendQue:           0  RcvQue:            0  CngstWnd:       1439
```

The following example displays TCP debugging information for the specified VRF and IP addresses.

```
device# debug ip tcp vrf blue status 15.1.1.2 179 15.1.1.1 8220
TCP: TCB = 0xa413abd5
TCP: 15.1.1.2:179 <-> 15.1.1.1:8220: state: ESTABLISHED
  Send: initial sequence number = 21517275
  Send: first unacknowledged sequence number = 21836345
  Send: current send pointer = 21836345
  Send: next sequence number to send = 21836345
  Send: remote received window = 16365
  Send: total unacknowledged sequence number = 0
  Send: last window update sequence number = 155899645
  Send: last window update ack number = 21836345
  Send: need to send ack = 0, probe = 0
  Send: total used buffers 0
  Receive: initial incoming sequence number = 155554412
  Receive: expected incoming sequence number = 155899645
  Receive: received window = 16384
  Receive: bytes in receive queue = 0
  Receive: congestion window = 3017
    TCP Connection state: ESTABLISHED, timer state 0
     TCP Keychain name      : 1
     TCP-AO Enabled         : YES
     TCP-AO in use          : YES
     Keychain valid         : YES
     No of segments dropped : 0
     Send-Active-Key
     ---------------
       Key-id               : 1
       Crypto Algorithm     : AES-128-CMAC
       Send-id              : 100
       Recv-id              : 100
       Include-tcp-options  : YES
       Accept-ao-mismatch   : YES
     Recv-Active-Key
     ---------------
       Key-id               : 1
       Crypto Algorithm     : AES-128-CMAC
       Send-id              : 100
       Recv-id              : 100
       Include-tcp-options  : YES
       Accept-ao-mismatch   : YES

       Maximum segment size: 1420
       Local host:  15.1.1.2, Local  Port: 179
       Remote host: 15.1.1.1, Remote Port: 8220
       ISentSeq:   21517275  SendNext:   21836345  TotUnAck:          0
       TotSent:      319070  ReTrans:           0  UnAckSeq:   21836345
       SeqLastWin:   155899645  AckLastWin:    21836345  SendAck: 0
       IRcvSeq:   155554412  RcvNext:   155899645  SendWnd:       16365
       TotalRcv:     345233  DupliRcv:          0  RcvWnd:        16384
       SendQue:           0  RcvQue:            0  CngstWnd:       3017
```

History

Release version	Command history
09.0.10	This command was modified to add TCP keychain authentication (AO) option debugging.

debug ip udp

Activates the UDP debugging.

Syntax

debug ip udp

no debug ip udp

Modes

Privileged EXEC mode

Usage Guidelines

The **no** form of the command disables UDP options.

Examples

```
device#  debug ip udp
UDP: debugging is on
```

debug ip vrrp packet

displays debugging information of any VRRP or VRRP-E packets within the device.

Syntax

debug ip vrrp packet

no debug ip vrrp packet

Modes

Privileged EXEC mode

Examples

```
device#  debug ip vrrp packet
VRRP: packet debugging is on
VRRP (IPv6): send advertise! ver:3 type:1 vrid:100 pri:255 num of ip:1 adv:100
chk:44853
Num of ip addr 1
2000::7:1
VRRP (IPv4): rcvd packet! ver:2 type:1 vrid:10 pri:255 #ip:1 aut:0 adv:1
chk:52198
Num of ip addr 1 10.10.10.2 from sender 10.10.10.2
VRRP (IPv6): rcvd packet! ver:3 type:1 vrid:10 pri:255 #ip:1 aut:0 adv:100
chk:53518
Num of ip addr 1
fe80::7:2 from sender 2000::7:2
VRRP (IPv6): rcvd packet! ver:3 type:1 vrid:11 pri:255 #ip:1 aut:0 adv:200
chk:53417
Num of ip addr 1
fe80::8:2 from sender ::
```

debug ip vrf

Activates IP VRF debugging.

Syntax

debug ip vrf

no debug ip vrf

Modes

Privileged EXEC mode

Usage Guidelines

The **no** form of the command disables IP VRF debugging.

Examples

The following example activates IP VRF debugging.

```
device#  debug ip vrf
        IP:  vrf debugging is on
```

debug ip vrrp

Displays debugging information for VRRP.

Syntax

debug ip vrrp{**events**|**packetv4**|**packetv6**}

no debug ip vrrp{**events**|**packetv4**|**packetv6**}

events

Specifies VRRP events.

packetv4

Specifies debugging information for VRRP or VRRP-E packets specific to IPv4.

packetv6

Specifies debugging information for VRRP or VRRP-E packets specific to IPv6.

Modes

Privileged EXEC mode

Usage Guidelines

The **no** form of the command disables the displaying of VRRP debugging information.

Examples

The following example dislplays information for IP VRRP events.

```
device#  debug ip vrrp events
VRRP: events debugging is on
[44fd]VRRP (IPv4): 10.10.10.1 transit to master! IP addr 10.10.10.2 vrid 10, pri
100
[44fd]VRRP (IPv6): fe80::7:1 transit to master! IP addr fe80::7:1 vrid 10, pri 100
[4511]VRRP (IPv6): fe80::8:1 transit to master! IP addr fe80::8:1 vrid 11, pri 255
```

The following example displays information for VRRP or VRRP-E packets specific to IPv4.

```
device#  debug ip vrrp packet v4
VRRP (IPv4): packet debugging is on
VRRP (IPv4): rcvd packet! ver:2 type:1 vrid:10 pri:255 #ip:1 aut:0 adv:1 chk:52198
Num of ip addr 1
10.10.10.2 from sender 10.10.10.2
VRRP (IPv4): rcvd packet! ver:2 type:1 vrid:10 pri:255 #ip:1 aut:0 adv:1 chk:52198
Num of ip addr 1
10.10.10.2 from sender 10.10.10.2
VRRP (IPv4): rcvd packet! ver:2 type:1 vrid:10 pri:255 #ip:1 aut:0 adv:1 chk:52198
Num of ip addr 1
10.10.10.2 from sender 10.10.10.2
```

The following example displays information for VRRP or VRRP-E packets specific to IPv6.

```
device#  debug ip vrrp packet v6
VRRP (IPv6): packet debugging is on
VRRP (IPv6): rcvd packet! ver:3 type:1 vrid:10 pri:255 #ip:1 aut:0 adv:100
chk:53518
Num of ip addr 1
fe80::7:2 from sender 2000::7:2
VRRP (IPv6): rcvd packet! ver:3 type:1 vrid:11 pri:255 #ip:1 aut:0 adv:200
chk:53417
Num of ip addr 1
fe80::8:2 from sender ::
VRRP (IPv6): send advertise! ver:3 type:1 vrid:100 pri:255 num of ip:1 adv:100
chk:44853
Num of ip addr 1
2000::7:1
VRRP (IPv6): rcvd packet! ver:3 type:1 vrid:10 pri:255 #ip:1 aut:0 adv:100
chk:53518
Num of ip addr 1
fe80::7:2 from sender 2000::7:2
10.10.10.2 from sender 10.10.10.2
```

debug ip web

Activates the web debugging.

Syntax

debug ip web

no debug ip web

Modes

Privileged EXEC mode

Examples

```
device# debug ip web
WEB: debugging is on
```

debug ip web-ssl

Activates web Secured Socket Layer (SSL) debugging.

Syntax

debug ip web-ssl

no debug ip web-ssl

Modes

Privileged EXEC mode

Usage Guidelines

The no form of the command deactivates web SSL debugging.

Examples

```
device# debug ip web-ssl
WEB SSL: debugging is on
```

debug ipsec all

Displays all debugging information related to IPsec operation.

Syntax

debug ipsec all

no debug ipsec all

Modes

Privileged EXEC mode

Examples

```
device# debug ipsec all
IPSec: all debugging is on
device(config-ospf6-router)# no area 0 auth ipsec spi 400 esp sha1
abcef12345678901234fedcba098765432109876IPSEC,SA: ipipsec_pfkeyv2_input() ::
receiving 'DELETE' command
IPSEC,SA: Removing SA: ESP in spi=0x190 dst=FE80::
IPSEC,Policy: Removing flow [input use 'prot=OSPF src=FE80::/10:0 dst=::/0:0' ->
SA: ESP in spi=0x190 dst=FE80::] : ok
IPSEC,SA: ipipsec_pfkeyv2_input() :: succeeded
```

debug ipsec esp

Enables debugging of Encapsulating Security Payload (ESP)

Syntax

debug ipsec esp

no debug ipsec esp

Modes

Privileged EXEC mode

Examples

```
device# debug ipsec esp
IPSec: esp debugging is on
device(config-ospf6-router)# Debug: Jan 1 02:03:27 IPSEC,ESP: decrypt ok, seq=0
(SA: ESP in spi=0x190 dst=FE80::)
Debug: Jan 1 02:03:27 IPSEC,ESP: decrypt ok, seq=0 (SA: ESP in spi=0x190
dst=FE80::)
Debug: Jan 1 02:03:36 IPSEC,ESP: decrypt ok, seq=0 (SA: ESP in spi=0x190
dst=FE80::)
Debug: Jan 1 02:03:36 IPSEC,ESP: decrypt ok, seq=0 (SA: ESP in spi=0x190
dst=FE80::)
Debug: Jan 1 02:03:45 IPSEC,ESP: decrypt ok, seq=0 (SA: ESP in spi=0x190
dst=FE80::)
Debug: Jan 1 02:03:45 IPSEC,ESP: decrypt ok, seq=0 (SA: ESP in spi=0x190
dst=FE80::)
```

debug ipsec in

Enables the display of debugging information related to inbound OSPFv3 packets with IPsec.

Syntax

debug ipsec in

no debug ipsec in

Modes

Privileged EXEC mode

Examples

```
device# debug ipsec in
IPSec: in debugging is on
device(config-ospf6-router)# Debug: Jan 1 02:04:15 IPSEC,IN: ESP spi=400 (pkt
'ESP FE80:: -> FE80::') payloadlength =64
Debug: Jan 1 02:04:15 IPSEC,IN: Incoming packet matches Policy : input use
'prot=OSPF src=FE80::/10:0 dst=::/0:0' -> SA: ESP in spi=0x190 dst=FE80::
Debug: Jan 1 02:04:15 IPSEC,IN: ESP spi=400 (pkt 'ESP FE80:: -> FE80::')
payloadlength =64
Debug: Jan 1 02:04:15 IPSEC,IN: Incoming packet matches Policy : input use
'prot=OSPF src=FE80::/10:0 dst=::/0:0' -> SA: ESP in spi=0x190 dst=FE80::
Debug: Jan 1 02:04:26 IPSEC,IN: ESP spi=400 (pkt 'ESP FE80:: -> FE80::')
payloadlength =64
Debug: Jan 1 02:04:26 IPSEC,IN: Incoming packet matches Policy : input use
'prot=OSPF src=FE80::/10:0 dst=::/0:0' -> SA: ESP in spi=0x190 dst=FE80::
Debug: Jan 1 02:04:26 IPSEC,IN: ESP spi=400 (pkt 'ESP FE80:: -> FE80::')
payloadlength =64
Debug: Jan 1 02:04:26 IPSEC,IN: Incoming packet matches Policy : input use
'prot=OSPF src=FE80::/10:0 dst=::/0:0' -> SA: ESP in spi=0x190 dst=FE80::
Debug: Jan 1 02:04:36 IPSEC,IN: ESP spi=400 (pkt 'ESP FE80:: -> FE80::')
payloadlength =64
Debug: Jan 1 02:04:36 IPSEC,IN: Incoming packet matches Policy : input use
'prot=OSPF src=FE80::/10:0 dst=::/0:0' -> SA: ESP in spi=0x190 dst=FE80::
Debug: Jan 1 02:04:36 IPSEC,IN: ESP spi=400 (pkt 'ESP FE80:: -> FE80::')
payloadlength =64
Debug: Jan 1 02:04:36 IPSEC,IN: Incoming packet matches Policy : input use
'prot=OSPF src=FE80::/10:0 dst=::/0:0' -> SA: ESP in spi=0x190 dst=FE80::
```

debug ipsec out

Enables the display of debugging information related to outbound OSPFv3 packets with IPsec.

Syntax

debug ipsec out

no debug ipsec out

Modes

Privileged EXEC mode

Examples

```
device# debug ipsec out
IPSec: out debugging is on
device(config-ospf6-router)# Debug: Jan 1 02:04:55 IPSEC,OUT: Matching Flow:
output use 'prot=OSPF src=FE80::/10:0 dst=::/0:0' -> SA: ESP out spi=0x190 dst=::
Debug: Jan 1 02:04:55 IPSEC,OUT: SA ESP out spi=0x190 dst=:: payloadlength =64
Debug: Jan 1 02:04:56 IPSEC,OUT: OSPF FE80:: -> FE80::, payloadlength =40
Debug: Jan 1 02:04:56 IPSEC,OUT: OSPF FE80:: -> FE80::, payloadlength =40
Debug: Jan 1 02:05:06 IPSEC,OUT: Matching Flow: output use 'prot=OSPF
src=FE80::/10:0 dst=::/0:0' -> SA: ESP out spi=0x190 dst=::
Debug: Jan 1 02:05:06 IPSEC,OUT: SA ESP out spi=0x190 dst=:: payloadlength =64
Debug: Jan 1 02:05:07 IPSEC,OUT: OSPF FE80:: -> FE80::, payloadlength =40
Debug: Jan 1 02:05:07 IPSEC,OUT: OSPF FE80:: -> FE80::, payloadlength =40
Debug: Jan 1 02:05:15 IPSEC,OUT: Matching Flow: output use 'prot=OSPF
src=FE80::/10:0 dst=::/0:0' -> SA: ESP out spi=0x190 dst=::
Debug: Jan 1 02:05:15 IPSEC,OUT: SA ESP out spi=0x190 dst=:: payloadlength =64
Debug: Jan 1 02:05:16 IPSEC,OUT: OSPF FE80:: -> FE80::, payloadlength =40
Debug: Jan 1 02:05:16 IPSEC,OUT: OSPF FE80:: -> FE80::, payloadlength =40
```

debug ipsec policy

Enables the display of debugging information for IPsec policy.

Syntax

debug ipsec policy

no debug ipsec policy

Modes

Privileged EXEC mode

Examples

```
device# debug ipsec policy
IPSec: policy debugging is on
device(config-ospf6-router)#no area 0 auth ipsec spi 400 esp sha1
abcef12345678901234fedcba098765432109876
Debug: Jan 1 01:57:05 IPSEC,Policy: Removing flow [input use 'prot=OSPF
src=FE80::/10:0 dst=::/0:0' -> SA: ESP in spi=0x190 dst=FE80::] : ok
device(config-ospf6-router)#area 0 auth ipsec spi 400 esp sha1
abcef12345678901234fedcba098765432109876
Debug: Jan 1 01:57:26 IPSEC,Policy: Creating flow [input use 'prot=OSPF
src=FE80::/10:0 dst=::/0:0' -> SA: ESP in spi=0x190 dst=FE80::] : ok
device(config-ospf6-router)#Debug: Jan 1 02:02:21 IPSEC,Policy: Creating flow
[output use 'prot=OSPF src=FE80::/10:0 dst=::/0:0' -> SA: ESP out spi=0x190
dst=::] : ok
```

debug ipv6 address

Enables the collection of information about configured IPv6 address packets.

Syntax

debug ipv6 address*ipv6-address*

Parameters

address

Specifies the IPv6 address.

Modes

Privileged EXEC mode

Usage Guidelines

The **no** form of the command disables the collection of information about configured IPv6 address packets.

Examples

The following example the collection of information about configured IPv6 address packets.

```
device#  debug ipv6 address 2001:1::1:1
        ipv6:  address 2001:1::1:1 debugging is on
```

debug ipv6 cache

Enables the collection of information about configured IPv6 cahce entries.

Syntax

debug ipv6 cahce*ipv6-address*

Parameters

address

Specifies an IPv6 address.

Modes

Privileged EXEC mode

Usage Guidelines

The **no** form of the command disables the collection of information about configured IPv6 cache entries.

Examples

The following example the collection of information about configured IPv6 cache entries.

```
device#  debug ipv6 cache 2001:1::1:1
          IPv6 :  cache 2001:1::1:1 debugging is on
```

debug ipv6 dhcp relay

Displays debug information related to Dynamic Host Configuration Protocol for IPv6 (DHCPv6) relay agent.

Syntax

debug ipv6 dhcp relay

no debug ipv6 dhcp relay

Modes

Privileged EXEC mode

Examples

The following output will be displayed when you enable the DHCPv6 relay agent on the Ethernet interface 8/2.

```
device# debug ipv6 dhcp relay
DHCP6:  relay debugging is on
device# Debug: Dec  9 11:15:20 DHCP6: DHCP6 relay-forward message sent [fc00:b000:cade::a-
>fc00:b000:cade::2]
Debug: Dec  9 11:15:20 DHCP6: DHCP6 relay-forward message sent [fc00:b000:cade::a->fc00:b000:cade::a1]
Debug: Dec  9 11:15:20 DHCP6: DHCP6 relay-forward message sent [fc00:b000:cade::a->fc00:b000:cade::a2]
Debug: Dec  9 11:15:20 DHCP6: DHCP6 relay-forward message sent [fc00:b000:cade::a->fc00:b000:cade::a3]
Debug: Dec  9 11:15:20 DHCP6: DHCP6 relay-forward message sent [fc00:b000:cade::a->fc00:b000:cade::a4]
Debug: Dec  9 11:15:20 DHCP6: DHCP6 relay-forward message sent [fc00:b000:cade::a->fc00:b000:cade::a5]
Debug: Dec  9 11:15:20 DHCP6: DHCP6 relay-forward message sent [fc00:b000:cade::a->fc00:b000:cade::a6]
Debug: Dec  9 11:15:20 DHCP6: DHCP6 relay-forward message sent [fc00:b000:cade::a->fc00:b000:cade::a7]
Debug: Dec  9 11:15:20 DHCP6: DHCP6 relay-forward message sent [fc00:b000:cade::a->fc00:b000:cade::a8]
Debug: Dec  9 11:15:20 DHCP6: DHCP6 relay-forward message sent [fc00:b000:cade::a->fc00:b000:cade::a9]
Debug: Dec  9 11:15:20 DHCP6: DHCP6 relay-forward message sent [fc00:b000:cade::a->fc00:b000:cade::aa]
Debug: Dec  9 11:15:20 DHCP6: DHCP6 relay-forward message sent [fc00:b000:cade::a->fc00:b000:cade::ab]
Debug: Dec  9 11:15:20 DHCP6: DHCP6 relay-forward message sent [fc00:b000:cade::a->fc00:b000:cade::ac]
Debug: Dec  9 11:15:20 DHCP6: DHCP6 relay-forward message sent [fc00:b000:cade::a->fc00:b000:cade::ad]
Debug: Dec  9 11:15:20 DHCP6: DHCP6 relay-forward message sent [fc00:b000:cade::a->fc00:b000:cade::ae]
Debug: Dec  9 11:15:20 DHCP6: DHCP6 relay-forward message sent [fc00:b000:cade::a->fc00:b000:cade::af]
```

debug ipv6 hitless

Enables the collection of hitless information.

Syntax

debug ipv6 hitless

Modes

Privileged EXEC mode

Usage Guidelines

The **no** form of the command disables the collection of hitless information.

Examples

The following example enables the collection of hitless information.

```
device# debug ipv6 hitless
         ipv6 hiltess:  debugging is on
```

debug ipv6 icmp

Enables the collection of ICMPv6 information.

Syntax

debug ipv6 icmp

Modes

Privileged EXEC mode

Usage Guidelines

The **no** form of the command disables the collection of ICMPv6 information.

Examples

The following example enables the collection of ICMPv6 information.

```
device# debug ipv6 icmp
          ipv6:  icmp debugging is on
```

debug ipv6 mld

Displays the debugging information about the received and sent packets of the Multicast Listening Discovery (MLD).

Syntax

debug ipv6 mld[**event**|**ipc**|**profile**|**ifname**[**ethernet***unit/slot/port*|**lag***lag-id*|**ve***ve-num*]]

no debug ipv6 mld[**event**|**ipc**|**profile**|**ifname**[**ethernet***unit/slot/port*|**lag***lag-id*|**ve***ve-num*]]

Parameters

event
Enables debugging of all infrastructure event and callback handling.

ipc
Debugs inter-process communication between MP and LP.

profile
Enables MLD profile debugging.

ifname
Displays matching in/out interface details.

ethernet*unit/slot/port*
Specifies the physical interface.

lag*lag-id*
Specifies the LAG interface.

ve*ve-num*
Specifies the virtual interface.

Modes

Privileged EXEC mode

Examples

The following examples enables debugging of all infrastructure events.

```
device# debug ipv6 mld event
May 28 09:29:35:301853:info:fi_debug:debug_logs:1:74650826573313: MLD.VRF0.EVT: - Started FSM timer for
255 seconds
May 28 09:29:35:301655:info:fi_debug:debug_logs:1:74650826573313: MLD.VRF0.EVT: Rx packet is valid.
Processing packet
May 28 09:29:35:301579:err:fi_debug:debug_logs:1:74650826573313: Suppressed 1 times: mct-forw:local or
peer rbridge is incorrect, local rid 0, peer rid 0
May 28 09:29:30:767894:err:fi_debug:debug_logs:1:74294344287745: mct-forw:local or peer rbridge is
incorrect, local rid 0, peer rid 0
May 28 09:29:30:766798:info:fi_debug:debug_logs:1:74294344287745: MLD.VRF0.EVT: - Started FSM timer for
260 seconds
May 28 09:29:30:765631:info:fi_debug:debug_logs:1:74294344287745: MLD.VRF0.EVT: Rx packet is valid.
Processing packet
May 28 09:29:30:765555:err:fi_debug:debug_logs:1:74294344287745: Suppressed 1 times: mct-forw:local or
peer rbridge is incorrect, local rid 0, peer rid 0
May 28 09:29:26:098315:err:fi_debug:debug_logs:1:587525756289792: mct-forw:local or peer rbridge is
incorrect, local rid 0, peer rid 0
May 28 09:29:26:096915:info:fi_debug:debug_logs:1:587525756289792: MLD.VRF0: Group ff1e::5:1 EXCL mode
aged out on port 3/1/5. Moving to INCL
May 28 09:29:25:580841:info:fi_debug:debug_logs:1:0: Suppressed 1 times: MLD.VRF0.EVT: - Started timer
for ageing group membership ff1e::5:1 on port v10/3/1/5 for 1 seconds
May 28 09:29:24:086440:info:fi_debug:debug_logs:1:585850719044352: MLD.VRF0.EVT: - Started timer for
ageing group membership ff1e::5:1 on port v10/3/1/5 for 1 seconds
May 28 09:29:23:610291:info:fi_debug:debug_logs:1:73705933768193: MLD.VRF0.EVT: - Started FSM timer for
1 seconds
May 28 09:29:23:609357:info:fi_debug:debug_logs:1:73705933768193: MLD.VRF0.EVT: Rx packet is valid.
Processing packet
May 28 09:29:23:076566:info:fi_debug:debug_logs:1:585000315519744: MLD.VRF0: [ Port 2/1/45,v10 ]
General Query Timer expired. Sending Query version 1
```

The following examples displays debugging information about MLD interprocess communication (IPC) activities.

```
device# debug ipv6 mld ipc
May 28 09:28:18:736997:err:fi_debug:debug_logs:1:68904160331265: mct-forw:local or peer rbridge is
incorrect, local rid 0, peer rid 0
May 28 09:28:18:735277:info:fi_debug:debug_logs:1:68904160331265: MLD.VRF0.IPC: [ Port 3/1/5,v10. Grp
ff1e::5:1 ] Setting src list in EXCL mode
May 28 09:28:18:734878:info:fi_debug:debug_logs:1:68904160331265: MLD.VRF0.IPC: [ Port 3/1/5,v10. Grp
ff1e::5:1 ] Interface added to group. Chg 0
May 28 09:28:18:734439:info:fi_debug:debug_logs:1:68904160331265: MLD.VRF0.IPC: [ Port 3/1/5,v10. Grp
ff1e::5:1 ] Adding port"
```

The following enables MLD profile debugging.

```
device# debug ipv6 mld profile
Jun 22 13:51:14:621348:info:fi_debug:debug_logs:1:191784854488577: MLD.PROFILE: nreports: 202, nleave:
100, V1report:32ms, V2report: 0ms, V1Leave: 36ms
Jun 22 13:49:56:803603:info:fi_debug:debug_logs:1:185810554979841: MLD.PROFILE: nreports: 200, nleave:
0, V1report:32ms, V2report: 0ms, V1Leave: 0ms
Jun 22 13:49:47:002093:info:fi_debug:debug_logs:1:184668093679105: MLD.PROFILE: nreports: 100, nleave:
0, V1report:19ms, V2report: 0ms, V1Leave: 0ms
```

History

Release version	Command history
09.0.00	The following sub-options were introduced: **event**, **ifname**, **ipc**, and **profile**.

debug ipv6 mld add-del-oif

Enabled with the MLD **debug ipv6 mcache-source** or **debug ipv6 mcache-group** commands at the same time.

Syntax

debug ipv6 mld add-del-oif

no debug ipv6 mld add-del-oif

Modes

Privileged EXEC mode

Examples

```
device# debug ipv6 mld add-del-oif
May 26 18:53:28:910108:info:fi_debug:debug_logs:1:8978740801439233: MLD.VRF0.FSM: [ Port 3/1/5,v10. Grp
ff1e::5:1 ] Action IS_EXCL (Srcs 0) ver 1 Static 0 SSM 0
```

debug ipv6 mld add-del-oif stack

Displays the MLD stack trace.

Syntax

debug ipv6 mld add-del-oif stack

no debug ipv6 mld add-del-oif stack

Modes

Privileged EXEC mode

Examples

```
device# debug ipv6 mld add-del-oif stack
device# debug ipv6 mld show
debug ip6 mld mcache-source 681D is enabled
debug ip6 mld add-del-oif stack is enabled
device# Debug: Sep 16 00:33:08 MLD Snoop: Create (0x0 0x252502) vlan 1000
Debug: Sep 16 00:33:08 stack: 20C3DA54 2064096C 206414A8 20732A14 202884C4
204C1EEC 204C2288 204C235C 204C2420 20569EF0 205F0474 2056E85C 205F23E8 5010 15B58
1AAF4
Debug: Sep 16 00:33:08 Add 7/1/17 to (0x0 0x252502) vlan 1000
Debug: Sep 16 00:33:08 stack: 20C3DA54 20640AB8 20640EB4 20642100 208C0D68
2064217C 20641554 20732A14 202884C4 204C1EEC 204C2288 204C235C 204C2420 20569EF0
205F0474 2056E85C 205F23E8 5010 15B58 1AAF4
Debug: Sep 16 00:33:08 Add 3/1/12 to (0x0 0x252502) vlan 1000
Debug: Sep 16 00:33:08 stack: 20C3DA54 20640AB8 20641588 20732A14 202884C4
204C1EEC 204C2288 204C235C 204C2420 20569EF0 205F0474 2056E85C 205F23E8 5010 15B58
1AAF4
Debug: Sep 16 00:33:08 MLD Snoop: Create (0x0 0x252503) vlan 1000
Debug: Sep 16 00:33:08 stack: 20C3DA54 2064096C 206414A8 20732A14 202884C4
204C1EEC 204C2288 204C235C 204C2420 20569EF0 205F0474 2056E85C 205F23E8 5010 15B58
1AAF4
Debug: Sep 16 00:33:08 Add 7/1/17 to (0x0 0x252503) vlan 1000
Debug: Sep 16 00:33:08 stack: 20C3DA54 20640AB8 20640EB4 20642100 208C0D68
2064217C 20641554 20732A14 202884C4 204C1EEC 204C2288 204C235C 204C2420 20569EF0
205F0474 2056E85C 205F23E8 5010 15B58 1AAF4
Debug: Sep 16 00:33:08 Add 3/1/12 to (0x0 0x252503) vlan 1000
Debug: Sep 16 00:33:08 stack: 20C3DA54 20640AB8 20641588 20732A14 202884C4
204C1EEC 204C2288 204C235C 204C2420 20569EF0 205F0474 2056E85C 205F23E8 5010 15B58
1AAF4
Debug: Sep 16 00:33:08 MLD Snoop: Create (0x0 0x252504) vlan 1000
Debug: Sep 16 00:33:08 stack: 20C3DA54 2064096C 206414A8 20732A14 202884C4
204C1EEC 204C2288 204C235C 204C2420 20569EF0 205F0474 2056E85C 205F23E8 5010 15B58
1AAF4
Debug: Sep 16 00:33:08 Add 7/1/17 to (0x0 0x252504) vlan 1000
Debug: Sep 16 00:33:08 stack: 20C3DA54 20640AB8 20640EB4 20642100 208C0D68
2064217C 20641554 20732A14 202884C4 204C1EEC 204C2288 204C235C 204C2420 20569EF0
205F0474 2056E85C 205F23E8 5010 15B58 1AAF4
Debug: Sep 16 00:33:08 Add 3/1/12 to (0x0 0x252504) vlan 1000
Debug: Sep 16 00:33:08 stack: 20C3DA54 20640AB8 20641588 20732A14 202884C4
204C1EEC 204C2288 204C235C 204C2420 20569EF0 205F0474 2056E85C 205F23E8 5010 15B58
1AAF4
Debug: Sep 16 00:33:08 MLD Snoop: Create (0x0 0x252500) vlan 1000
Debug: Sep 16 00:33:08 stack: 20C3DA54 2064096C 206414A8 20732A14 202884C4
204C1EEC 204C2288 204C235C 204C2420 20569EF0 205F0474 2056E85C 205F23E8 5010 15B58
1AAF4
Debug: Sep 16 00:33:08 Add 7/1/17 to (0x0 0x252500) vlan 1000
Debug: Sep 16 00:33:08 stack: 20C3DA54 20640AB8 20640EB4 20642100 208C0D68
2064217C 20641554 20732A14 202884C4 204C1EEC 204C2288 204C235C 204C2420 20569EF0
205F0474 2056E85C 205F23E8 5010 15B58 1AAF4
Debug: Sep 16 00:33:08 Add 3/1/12 to (0x0 0x252500) vlan 1000
Debug: Sep 16 00:33:08 stack: 20C3DA54 20640AB8 20641588 20732A14 202884C4
204C1EEC 204C2288 204C235C 204C2420 20569EF0 205F0474 2056E85C 205F23E8 5010 15B58
1AAF4
Debug: Sep 16 00:33:08 MLD Snoop: Create (0x0 0x252501) vlan 1000
Debug: Sep 16 00:33:08 stack: 20C3DA54 2064096C 206414A8 20732A14 202884C4
204C1EEC 204C2288 204C235C 204C2420 20569EF0 205F0474 2056E85C 205F23E8 5010 15B58
1AAF4
Debug: Sep 16 00:33:08 Add 7/1/17 to (0x0 0x252501) vlan 1000
Debug: Sep 16 00:33:08 stack: 20C3DA54 20640AB8 20640EB4 20642100 208C0D68
2064217C 20641554 20732A14 202884C4 204C1EEC 204C2288 204C235C 204C2420 20569EF0
205F0474 2056E85C 205F23E8 5010 15B58 1AAF4
Debug: Sep 16 00:33:08 Add 3/1/12 to (0x0 0x252501) vlan 1000
Debug: Sep 16 00:33:08 stack: 20C3DA54 20640AB8 20641588 20732A14 202884C4
204C1EEC 204C2288 204C235C 204C2420 20569EF0 205F0474 2056E85C 205F23E8 5010 15B58
1AAF4
```

debug ipv6 mld clear

Clears all the MLD debug settings..

Syntax

debug ipv6 mld clear

no debug ipv6 mld clear

Modes

Privileged EXEC mode

Examples

```
device# debug ipv6 mld show
debug ipv6 mld protocol query
debug ipv6 mld event
debug ipv6 mld ipc
debug ipv6 mld add-del-oif
debug ipv6 mld vrf SP_TN
device#debug ipv6 mld clear
device#debug ipv6 mld show
```

debug ipv6 mld enable

Enables debugging of MLD configurations.

Syntax

debug ipv6 mld enable

no debug ipv6 mld enable

Modes

Privileged EXEC mode

Usage Guidelines

The no form of the command disables debugging of MLD configurations.

Examples

```
device# debug ipv6 mld enable
debug ipv6 mld is enabled
```

debug ipv6 mld error

Displays error information related to MLD.

Syntax

debug ipv6 mld error

no debug ipv6 mld error

Modes

Privileged EXEC mode

Examples

```
device# debug ipv6 mld error
May 28 09:26:09:460070:info:fi_debug:debug_logs:1:0: Suppressed 1 times: MLD.VRF0.ERR: Not a
forwardable group-address ff02::5. Dropping Report
May 28 09:26:05:864307:info:fi_debug:debug_logs:1:59103044961793: MLD.VRF0.ERR: Not a forwardable group-
address ff02::5. Dropping Report
```

debug ipv6 mld group

Debugs the MLD group matching.

Syntax

debug ipv6 mld group*ipv6addr*

no debug ipv6 mld group*ipv6addr*

Parameters

ipv6addr

Specifies the address of the IPv6 route.

Modes

Privileged EXEC mode

Examples

```
device# debug ipv6 mld add-del-oif
device#debug ipv6 mld group ff1e::5:1
device#Debug: May 28 14:43:44 MLD.VRF0.FSM: [ Port 3/1/5,v10. Grp ff1e::5:1 ] Action IS_EXCL (Srcs 0)
ver 1 Static 0 SSM 0
Debug: May 28 14:43:44 MLD.VRF0.FSM: [ Port 3/1/5,v10. Grp ff1e::5:1 ] New  group added
Debug: May 28 14:43:44 MLD.VRF0.FSM: [ Port 3/1/5,v10. Grp ff1e::5:1 ] New group-membership added
Debug: May 28 14:43:51 MLD.VRF0.FSM: [ Port 3/1/5,v10. Grp ff1e::5:1 ] Action IS_EXCL (Srcs 0) ver 1
Static 0 SSM 0
Debug: May 28 14:44:24 MLD.VRF0.FSM: [ Port 3/1/5,v10. Grp ff1e::5:1 ] Action IS_EXCL (Srcs 0) ver 1
Static 0 SSM 0"
```

debug ipv6 mld phy-port ethernet

Matches the input of the physical port.

Syntax

debug ipv6 mld phy-port ethernet*stackid/slot/port*

no debug ipv6 mld phy-port ethernet*stackid/slot/port*

Parameters

stackid/slot/port

Specifies the stack ID, slot number, and port number of a specific Ethernet port.

Modes

Privileged EXEC mode

Examples

```
device# debug ipv6 mld add-del-oif
device#debug ipv6 mld phy-port e3/1/5
May 28 09:24:53:989993:err:fi_debug:debug_logs:1:0: Suppressed 1 times: mct-forw:local or peer rbridge
is incorrect, local rid 0, peer rid 0
May 28 09:24:49:822673:err:fi_debug:debug_logs:1:53412213294593: mct-forw:local or peer rbridge is
incorrect, local rid 0, peer rid 0
May 28 09:24:49:821071:info:fi_debug:debug_logs:1:53412213294593: MLD.VRF0.FSM: [ Port 3/1/5,v10. Grp
ff1e::5:1 ] New group-membership added
May 28 09:24:49:820989:info:fi_debug:debug_logs:1:53412213294593: MLD.VRF0.FSM: [ Port 3/1/5,v10. Grp
ff1e::5:1 ] New  group added
May 28 09:24:49:820901:info:fi_debug:debug_logs:1:53412213294593: MLD.VRF0.FSM: [ Port 3/1/5,v10. Grp
ff1e::5:1 ] Action IS_EXCL (Srcs 0) ver 1 Static 0 SSM 0
May 28 09:24:49:820824:err:fi_debug:debug_logs:1:53412213294593: Suppressed 1 times: mct-forw:local or
peer rbridge is incorrect, local rid 0, peer rid 0
May 28 09:24:45:097708:err:fi_debug:debug_logs:1:353570297742080: mct-forw:local or peer rbridge is
incorrect, local rid 0, peer rid 0
May 28 09:24:42:891899:info:fi_debug:debug_logs:1:52905407153665: MLD.VRF0.FSM: [ Port 3/1/5,v10. Grp
ff1e::5:1 ] Action TO_INCL (Srcs 0) ver 1 Static 0 SSM 0
May 28 09:24:34:901445:info:fi_debug:debug_logs:1:52368536241665: MLD.VRF0.FSM: [ Port 3/1/5,v10. Grp
ff1e::5:1 ] Action IS_EXCL (Srcs 0) ver 1 Static 0 SSM 0
May 28 09:24:32:358027:info:fi_debug:debug_logs:1:52170967746049: MLD.VRF0.FSM: [ Port 3/1/5,v10. Grp
ff1e::5:1 ] Action TO_INCL (Srcs 0) ver 1 Static 0 SSM 0"
```

debug ipv6 mld protocol

Displays debugging information about the IPv6 MLD queries and reports transmitted and received.

Syntax

debug ipv6 mld protocol[**query** |**report**|**stack**]

no debug ipv6 mld protocol[**query** |**report**|**stack**]

Parameters

query
Displays the IPv6 MLD query.

report
Displays the IPv6 MLD report.

report
Displays the IPv6 MLD stack trace.

Modes

Privileged EXEC mode

Examples

The following is the sample output from the **debug ipv6 mld protocol query** command.

```
device# debug ipv6 mld protocol query
May 28 09:31:02:644302:info:fi_debug:debug_logs:1:668064983024384: MLD.VRF0: [ Port 3/1/5,v10. Grp
ff1e::5:1 ] Sent Grp-Qry Ver 1. ReTx 1(Cnt 1)
May 28 09:31:01:929747:info:fi_debug:debug_logs:1:81046032877057: MLD.VRF0: [ Port 3/1/5,v10. Grp ff1e::
5:1 ] Sent Grp-Qry Ver 1. ReTx 0(Cnt 0)
May 28 09:30:20:378051:info:fi_debug:debug_logs:1:632768941785856: MLD.VRF0: [ Port 3/1/5,v10. Grp
ff1e::5:1 ] Sent Grp-Qry Ver 1. ReTx 1(Cnt 1)
May 28 09:30:19:827178:info:fi_debug:debug_logs:1:77867757078017: MLD.VRF0: [ Port 3/1/5,v10. Grp ff1e::
5:1 ] Sent Grp-Qry Ver 1. ReTx 0(Cnt 0)
```

The following is the sample output from the **debug ipv6 mld protocol report** command.

```
device# debug ipv6 mld protocol report
May 28 09:32:42:322248:info:fi_debug:debug_logs:1:88463441397249: MLD.VRF0.RCV: Type V1 Report Port
3/1/5,v10 Grp ff1e::5:1
May 28 09:32:33:492347:info:fi_debug:debug_logs:1:87776246629889: MLD.VRF0.RCV: Type V1 Report Port
3/1/5,v10 Grp ff1e::5:1
```

The following is the sample output from the **debug ipv6 mld protocol stack** command.

```
device# debug ipv6 mld protocol stack
May 28 09:33:48:828442:info:fi_debug:debug_logs:1:806332865184512: MLD.VRF0: [ Port lg1,v20 ] Sent
General Query version 1 using src fe80::629c:9fff:fec1:b8d0
May 28 09:33:48:828361:info:fi_debug:debug_logs:1:806332865184512: stack: 00546ee8 01123080 010def28
010eb60c 0011ab58 010e5e6c 011b0a08 0009ac30 0009babc 005c15f8 005c2998 011b177c b6cfaeb0 b6f01195
May 28 09:33:48:828280:err:fi_debug:debug_logs:1:806332865184512: Suppressed 1 times: mct-forw:local or
peer rbridge is incorrect, local rid 0, peer rid 0
May 28 09:33:42:798038:info:fi_debug:debug_logs:1:801346408153856: stack: 00546ee8 011238e8 010e3ba4
010eb698 0011ab58 010e5e6c 011b0a08 0009ac30 0009babc 005c15f8 005c2998 011b177c b6cfaeb0 b6f01195
May 28 09:33:42:266896:info:fi_debug:debug_logs:1:92895847646721: MLD.VRF0: [ Port 3/1/5,v10. Grp ff1e::
5:1 ] Sent Grp-Qry Ver 1. ReTx 0(Cnt 0)
May 28 09:33:42:266783:info:fi_debug:debug_logs:1:92895847646721: stack: 00546ee8 011238e8 010f0ff8
01121b24 005c1f38 005c2998 011b177c b6cfaeb0 b6f01195
May 28 09:33:42:248896:info:fi_debug:debug_logs:1:92895847646721: MLD.VRF0.RCV: Type V1 Leave Port
3/1/5,v10 Grp ff1e::5:1
May 28 09:33:42:248780:info:fi_debug:debug_logs:1:92895847646721: stack: 00546ee8 01121908 005c1f38
005c2998 011b177c b6cfaeb0 b6f01195
May 28 09:33:35:917030:info:fi_debug:debug_logs:1:92470645884417: MLD.VRF0.RCV: Type V1 Report Port
3/1/5,v10 Grp ff1e::5:1
May 28 09:33:35:916913:info:fi_debug:debug_logs:1:92470645884417: stack: 00546ee8 0112123c 005c1f38
005c2998 011b177c b6cfaeb0 b6f01195
May 28 09:33:34:797829:info:fi_debug:debug_logs:1:794740748452608: MLD.VRF0: [ Port 2/1/45,v10 ] Sent
General Query version 1 using src fe80::629c:9fff:fec1:b8d0
May 28 09:33:34:797746:info:fi_debug:debug_logs:1:794740748452608: stack: 00546ee8 01123080 010def28
010eb60c 0011ab58 010e5e6c 011b0a08 0009ac30 0009babc 005c15f8 005c2998 011b177c b6cfaeb0 b6f01195
May 28 09:33:34:797667:err:fi_debug:debug_logs:1:794740748452608: Suppressed 1 times: mct-forw:local or
peer rbridge is incorrect, local rid 0, peer rid 0
May 28 09:33:32:889617:info:fi_debug:debug_logs:1:92200062944769: MLD.VRF0.RCV: Type V1 Report Port
3/1/5,v10 Grp ff1e::5:1
May 28 09:33:32:889501:info:fi_debug:debug_logs:1:92200062944769: stack: 00546ee8 0112123c 005c1f38
005c2998 011b177c b6cfaeb0 b6f01195
```

debug ipv6 mld rx

Displays the IPv6 MLD packets received.

Syntax

debug ipv6 mld rx

no debug ipv6 mld rx

Modes

Privileged EXEC mode

Examples

```
device# debug ipv6 mld rx
device#debug ipv6 mld protocol
show log debug fi_debug all all
Jun 22 13:56:39:688858:info:fi_debug:debug_logs:1:337319821313537: MLD.VRF0.RCV: Type V1 Report Port
3/1/5,v10 Grp ff1e::5:1
Jun 22 13:56:30:047586:info:fi_debug:debug_logs:1:305549948225025: MLD.VRF0.RCV: Type V1 Leave Port
3/1/5,v10 Grp ff1e::5:1
```

debug ipv6 mld show

Displays the IPv6 MLD debug settings.

Syntax

debug ipv6 mld show

Modes

Privileged EXEC mode

Examples

```
device# debug ipv6 mld show
debug ipv6 mld protocol query
debug ipv6 mld event
debug ipv6 mld ipc
debug ipv6 mld add-del-oif
debug ipv6 mld vrf SP_TN
device#
```

debug ipv6 mld source

Displays the MLD related debug information for the specified source address.

Syntax

debug ipv6 mld source*ipaddr*

no debug ipv6 mld source*ipaddr*

Parameters

ipaddr

Specifies the IP address.

Modes

Privileged EXEC mode

Examples

```
device# debug ipv6 mld source fe80::629c:9fff:fec1:b8d0
device#debug ipv6 mld protocol
Jun 22 14:02:22:616028:info:fi_debug:debug_logs:1:1466733011404289: MLD.VRF0.RCV: Type V1 Report Port
3/1/5,v10 Grp ff1e::5:1
Jun 22 14:02:17:604561:info:fi_debug:debug_logs:1:1450236042020353: MLD.VRF0.RCV: Type V1 Report Port
3/1/5,v10 Grp ff1e::5:1
Jun 22 14:02:09:448224:info:fi_debug:debug_logs:1:2515521075413760: MLD.VRF0: [ Port 3/1/5,v10. Grp
ff1e::5:1 ] Sent Grp-Qry Ver 1. ReTx 1(Cnt 1)
Jun 22 14:02:08:324605:info:fi_debug:debug_logs:1:1419642989970945: MLD.VRF0: [ Port 3/1/5,v10. Grp
ff1e::5:1 ] Sent Grp-Qry Ver 1. ReTx 0(Cnt 0)
Jun 22 14:02:08:324090:info:fi_debug:debug_logs:1:1419642989970945: MLD.VRF0.RCV: Type V1 Leave Port
3/1/5,v10 Grp ff1e::5:1
Jun 22 14:02:06:921385:info:fi_debug:debug_logs:1:1415047374964225: MLD.VRF0.RCV: Type V1 Report Port
3/1/5,v10 Grp ff1e::5:1
Jun 22 14:01:59:052456:info:fi_debug:debug_logs:1:1389002693281281: MLD.VRF0.RCV: Type V1 Report Port
3/1/5,v10 Grp ff1e::5:1
Jun 22 14:01:54:312502:info:fi_debug:debug_logs:1:2502795087315712: MLD.VRF1: [ Port lg1,v21 ] Sent
General Query version 1 using src fe80::629c:9fff:fec1:b8d0
Jun 22 14:01:54:308156:info:fi_debug:debug_logs:1:2502795087315712: MLD.VRF0: [ Port 3/1/5,v10. Grp
ff1e::5:1 ] Sent Grp-Qry Ver 1. ReTx 1(Cnt 1)
Jun 22 14:01:53:839937:info:fi_debug:debug_logs:1:1371874363704833: MLD.VRF0: [ Port 3/1/5,v10. Grp
ff1e::5:1 ] Sent Grp-Qry Ver 1. ReTx 0(Cnt 0)
Jun 22 14:01:53:839417:info:fi_debug:debug_logs:1:1371874363704833: MLD.VRF0.RCV: Type V1 Leave Port
3/1/5,v10 Grp ff1e::5:1
Jun 22 14:01:53:288178:info:fi_debug:debug_logs:1:2501957568692992: MLD.VRF0: [ Port lg1,v20 ] Sent
General Query version 1 using src fe80::629c:9fff:fec1:b8d0
Jun 22 14:01:51:035084:info:fi_debug:debug_logs:1:1362678838724097: MLD.VRF0.RCV: Type V1 Report Port
3/1/5,v10 Grp ff1e::5:1
Jun 22 14:01:48:282786:info:fi_debug:debug_logs:1:2497765680612096: MLD.VRF0: [ Port 3/1/5,v10 ] Sent
General Query version 1 using src fe80::629c:9fff:fec1:b8d0
```

debug ipv6 mld tx

Displays the IPv6 MLD packets transmitted..

Syntax

debug ipv6 mld tx

no debug ipv6 mld tx

Modes

Privileged EXEC mode

Examples

```
device#debug ipv6 mld tx
device#debug ipv6 mld protocol
Jun 22 13:52:42:308030:info:fi_debug:debug_logs:1:2043590068929280: MLD.VRF0: [ Port 3/1/5,v10. Grp
ff1e::5:1 ] Sent Grp-Qry Ver 1. ReTx 1(Cnt 1)
Jun 22 13:52:41:132541:info:fi_debug:debug_logs:1:198055506740737: MLD.VRF0: [ Port 3/1/5,v10. Grp
ff1e::5:1 ] Sent Grp-Qry Ver 1. ReTx 0(Cnt 0)
Jun 22 13:52:33:247743:info:fi_debug:debug_logs:1:2036073876161280: MLD.VRF1: [ Port 3/1/5,v11 ] Sent
General Query version 1 using src fe80::629c:9fff:fec1:b8d0
```

debug ipv6 mld vrf

Displays MLD related debug information for the specified VRF.

Syntax

debug ipv6 mld vrf*vrf_name*

no debug ipv6 mld vrf*vrf_name*

Parameters

vrf_name

Specifies the VRF name.

Modes

Privileged EXEC mode

Examples

```
device# debug ipv6 mld vrf SP_TN
device#debug ipv6 mld protocol query
device#debug ipv6 mld event
device#debug ipv6 mld ipc
device#debug ipv6 mld add-del-oif
May 29 08:42:25:981956:info:fi_debug:debug_logs:1:199780403774977: MLD.VRF1.EVT: - Started FSM timer
for 256 seconds
May 29 08:42:25:981832:info:fi_debug:debug_logs:1:199780403774977: MLD.VRF1.IPC: [ Port 3/1/5,v11. Grp
ff1e::9:10 ] Interface added to group. Chg 0
May 29 08:42:25:981732:info:fi_debug:debug_logs:1:199780403774977: MLD.VRF1.FSM: [ Port 3/1/5,v11. Grp
ff1e::9:10 ] Action IS_EXCL (Srcs 0) ver 1 Static 0 SSM 0
May 29 08:42:25:981607:info:fi_debug:debug_logs:1:199780403774977: MLD.VRF1.EVT: Rx packet is valid.
Processing packet
May 29 08:42:22:720141:info:fi_debug:debug_logs:1:199531295671809: MLD.VRF1.EVT: - Started FSM timer
for 260 seconds
May 29 08:42:22:720057:info:fi_debug:debug_logs:1:199531295671809: MLD.VRF1.IPC: [ Port 3/1/5,v11. Grp
ff1e::9:10 ] Setting src list in EXCL mode
May 29 08:42:22:719881:info:fi_debug:debug_logs:1:199531295671809: MLD.VRF1.IPC: [ Port 3/1/5,v11. Grp
ff1e::9:10 ] Interface added to group. Chg 0
May 29 08:42:22:719500:info:fi_debug:debug_logs:1:199531295671809: MLD.VRF1.IPC: [ Port 3/1/5,v11. Grp
ff1e::9:10 ] Adding port
May 29 08:42:22:719405:info:fi_debug:debug_logs:1:199531295671809: MLD.VRF1.FSM: [ Port 3/1/5,v11. Grp
ff1e::9:10 ] New group-membership added
May 29 08:42:22:719325:info:fi_debug:debug_logs:1:199531295671809: MLD.VRF1.FSM: [ Port 3/1/5,v11. Grp
ff1e::9:10 ] New  group added
May 29 08:42:22:719241:info:fi_debug:debug_logs:1:199531295671809: MLD.VRF1.FSM: [ Port 3/1/5,v11. Grp
ff1e::9:10 ] Action IS_EXCL (Srcs 0) ver 1 Static 0 SSM 0
May 29 08:42:22:719117:info:fi_debug:debug_logs:1:199531295671809: MLD.VRF1.EVT: Rx packet is valid.
Processing packet
May 29 08:42:20:928518:info:fi_debug:debug_logs:1:2126915049620224: MLD.VRF1.IPC: [ Port v11,v11. Grp
ff1e::9:10 ] Interface deleted from group.Chg 1
May 29 08:42:20:928268:info:fi_debug:debug_logs:1:2126915049620224: MLD.VRF1.IPC: Deleting group entry
from GLB for ff1e::9:10
May 29 08:42:20:927506:info:fi_debug:debug_logs:1:2126915049620224: MLD.VRF1.IPC: [ Port 3/1/5,v11. Grp
ff1e::9:10 ] Deleting port
May 29 08:42:20:927419:info:fi_debug:debug_logs:1:2126915049620224: MLD.VRF1.IPC: [ Port 3/1/5,v11. Grp
ff1e::9:10 ] Physical port deleted from group. Chg 1
May 29 08:42:20:927267:info:fi_debug:debug_logs:1:2126915049620224: MLD.VRF1: Group ff1e::9:10 EXCL
mode aged out on port 3/1/5. Moving to INCL
May 29 08:42:19:938481:info:fi_debug:debug_logs:1:2126073236030208: MLD.VRF1.EVT: - Started timer for
ageing group membership ff1e::9:10 on port v11/3/1/5 for 1 seconds
May 29 08:42:19:938364:info:fi_debug:debug_logs:1:2126073236030208: MLD.VRF1: [ Port 3/1/5,v11. Grp
ff1e::9:10 ] Sent Grp-Qry Ver 1. ReTx 1(Cnt 1)
May 29 08:42:19:501616:info:fi_debug:debug_logs:1:199312252339713: MLD.VRF1.EVT: - Started FSM timer
for 1 seconds
May 29 08:42:19:501225:info:fi_debug:debug_logs:1:199312252339713: MLD.VRF1.IPC: [ Port 3/1/5,v11. Grp
ff1e::9:10 ] Setting src list in EXCL mode
May 29 08:42:19:501095:info:fi_debug:debug_logs:1:199312252339713: MLD.VRF1.IPC: [ Port 3/1/5,v11. Grp
ff1e::9:10 ] Interface added to group. Chg 0
May 29 08:42:19:500999:info:fi_debug:debug_logs:1:199312252339713: MLD.VRF1: [ Port 3/1/5,v11. Grp
ff1e::9:10 ] Sent Grp-Qry Ver 1. ReTx 0(Cnt 0)
May 29 08:42:19:500506:info:fi_debug:debug_logs:1:199312252339713: MLD.VRF1.FSM: [ Port 3/1/5,v11. Grp
ff1e::9:10 ] Action TO_INCL (Srcs 0) ver 1 Static 0 SSM 0
May 29 08:42:19:500380:info:fi_debug:debug_logs:1:199312252339713: MLD.VRF1.EVT: Rx packet is valid.
Processing packet
```

debug ipv6 nd

Enables Neighbor Discovery (ND) debug logs and displays the debugging information about dropped Neighbor Solicitation (NS) and Neighbor Advertisement (NA) packets.

Syntax

debug ipv6 nd{**all**|**cache**|**error**|**event**|**fsm**|**nh-prog**|**packet**|**proxy**|**timer**}

no debug ipv6 nd{**all**|**cache**|**error**|**event**|**fsm**|**nh-prog**|**packet**|**proxy**|**timer**}

Parameters

all
Specifies all debugs.

cache
Specifies ND cache operations.

error
Specifies errors.

event
Specifies events.

fsm
Specifies neighbor state changes.

nh-prog
Specifies nexthop updates.

packet
Specifies protocol packets.

proxy
Specifies proxy.

timer
Specifies neighbor timers.

Modes

Privileged EXEC mode

Usage Guidelines

The **no** form of the command disables the ND debug logs.

Examples

The following example shows the ND debug logs.

```
device# debug ipv6 nd

ipv6: nd debugging is on
device(config)#ND Inspect: src-ip, src-mac mismatch, packet dropped rx-sip
2001:DB8::1 rx-smac 0000.0000.0066 inspect-ip 2001:DB8::1 inspect-mac
0000.0000.0088 vlan_id 2 vrf_id 0
device(config)#show ipv6 neighbor inspection statistics
Total number of ND Solicit received 4
Total number of ND Adevert received 4
Total number of ND dropped 6
```

debug ipv6 ospf

Displays debugging information for OSPFv3.

Syntax

debug ipv6 ospf [**all-vrfs**] { **bfd** | **error** | **events** | **ipsec** | **ism** | **ism-events** | **ism-status** | **lsa** | **lsa-flooding** | **lsa-generation** | **lsa-install** | **lsa-inter-area** | **lsa-maxage** | **lsa-refresh** | **match-prefix** { *ipv6-prefix* | **all** } | **nsm** | **nsm-events** | **nsm-status** | **packet** | **packet-dd** | **packet-hello** | **packet-lsa-ack** | **packet-lsa-req** | **packet-lsa-update** | **route** | **route-calc-extrenal** | **route-calc-inter-area** | **route-calc-intra-area** | **route-calc-spf** | **route-calc-transit** | **route-install** | **virtual-link** }

no debug ipv6 ospf[**all-vrfs**] { **bfd** | **error** | **events** |**ipsec** | **ism** | **ism-events** | **ism-status** | **lsa** | **lsa-flooding** | **lsa-generation** | **lsa-install** | **lsa-inter-area** | **lsa-maxage** | **lsa-refresh** | **match-prefix** { *ipv6-prefix* | **all** } | **nsm** | **nsm-events** | **nsm-status** | **packet** | **packet-dd** | **packet-hello** | **packet-lsa-ack** | **packet-lsa-req** | **packet-lsa-update** | **route** | **route-calc-extrenal** | **route-calc-inter-area** | **route-calc-intra-area** |**route-calc-spf** | **route-calc-transit** | **route-install** | **virtual-link** }

Parameters

all-vrfs
Specifies all VRFs.

bfd
Specifies BFD.

error
Reports the receipt of OSPFv6 packets with errors, or mismatches between hello packet options.

events
Specifies information about internal OSPFv6 events related to configuration or interaction with the standby management processor and interface state transitions.

ipsec
Specifies information about IPsec events. This command can show if IPsec is actually providing its services to IPv6 OSPFv3.

ism
Specifies the interface state machine (ISM).

ism-events
Specifies ISM events.

ism-status
Specifies ISM status.

lsa
Specifies LSAs.

lsa-flooding
Specifies LSA flooding activity.

lsa-generation
Specifies information about LSA generation.

lsa-install
Specifies installed LSAs.

lsa-inter-area
Specifies inter-area LSAs.

lsa-maxage
Specifies LSA maximum aging.

lsa-refresh
Specifies LSA refresh information.

match-prefix
Specifies matching prefixes.

ipv6-prefix
Specifies an IPv6 prefix.

all
Specifies all prefixes.

nsm
Specifies the neighbor state machine (NSM).

nsm-events
Specifies NSM events.

nsm-status
Specifies NSM status.

packet
Specifies OSPFv3 packets, in rx and tx mode.

packet-dd
Specifies OSPFv3 data description packets.

packet-hello
Specifies OSPFv3 hello packets.

packet-lsa-ack
Specifies OSPFv3 LSA acknowledgment packets.

packet-lsa-req
Specifies OSPFv3 LSA request packets.

packet-lsa-update
Specifies OSPFv3 LSA update packets.

route
Specifies information about OSPFv3 routes.

route-calc-extrenal
Specifies external route calculations.

route-calc-inter-area
Specifies inter-area route calculations.

route-calc-intra-area
Specifies intra-area route calculations.

route-calc-spf
Specifies SPF route calculations.

route-calc-transit

Specifies transit route calculations.

route-install

Specifies all OSPFv3 installed routes.

virtual-link

Specifies virtual links.

Modes

Privileged EXEC mode

Examples

The following output shows debugging information for IPsec events.

```
device# debug ipv6 ospf ipsec

OSPFv3: ipsec debugging is on
device(config-ospf6-router)# no area 0 auth ipsec spi 400 esp sha1
abcef12345678901234fedcba098765432109876Debug: Jan 1 02:22:09 OSPFv3:
ITC_AUTHENTICATION_CONFIG message received
Debug: Jan 1 02:22:09 OSPFv3: Auth timer started
Debug: Jan 1 02:22:09 OSPFv3: Key Rollover, for area 0.0.0.0, state change
NOT_ACTIVE->STARTED
Debug: Jan 1 02:22:09 OSPFv3: Key Rollover, for v9, state change
NOT_ACTIVE->STARTED
```

The following example shows debugging information about ISM.

```
device# debug ipv6 ospf ism

         OSPFv3:  ism debugging is on
Debug: Dec  9 10:47:25 OSPFv3: ISM[14368]: InterfaceDown
Debug: Dec  9 10:47:25 OSPFv3: ISM[14368]: Status change BDR -> Down (Configured)
Debug: Dec  9 10:47:25 OSPFv3: ISM[14368]: {dr:7.0.0.3,bdr:1.0.0.1} -> {dr:0.0.0.0,bdr:0.0.0.0}
Debug: Dec  9 10:47:40 OSPFv3: ISM[14368]: InterfaceUp
Debug: Dec  9 10:47:40 OSPFv3: ISM[14368]: Status change Down -> Waiting (Priority > 0)
Debug: Dec  9 10:47:40 OSPFv3: ISM[14368]: Start Wait_Timer at 639966, 619070
Debug: Dec  9 10:47:44 OSPFv3: ISM[14368]: BackupSeen
Debug: Dec  9 10:47:44 OSPFv3: ISM[14368]: Status change Waiting -> DROther (BackupSeen:DR Election)
Debug: Dec  9 10:47:44 OSPFv3: ISM[14368]: {dr:0.0.0.0,bdr:0.0.0.0} -> {dr:7.0.0.3,bdr:1.0.0.11}
Debug: Dec  9 10:47:44 OSPFv3: ISM[14368]: NeighborChange
Debug: Dec  9 10:47:44 OSPFv3: ISM[14368]: Status change DROther -> DROther (NeighborChange:DR Election)
Debug: Dec  9 10:47:44 OSPFv3: ISM[14368]: NeighborChange
Debug: Dec  9 10:47:44 OSPFv3: ISM[14368]: Status change DROther -> DROther (NeighborChange:DR Election)
```

The following example shows debugging information about ISM events.

```
device# debug ipv6 ospf ism-events

         OSPFv3:  ism-events debugging is on
Debug: Dec  9 10:53:04 OSPFv3: ISM[14368]: InterfaceDown
Debug: Dec  9 10:53:15 OSPFv3: interface (14367) cost change to 9 due to speed change
Debug: Dec  9 10:53:15 OSPFv3: ISM[14368]: InterfaceUp
Debug: Dec  9 10:53:15 OSPFv3: ISM[14368]: Start Wait_Timer at 643319, 622306
Debug: Dec  9 10:53:22 OSPFv3: ISM[14368]: BackupSeen
```

The following example shows debugging information about ISM status.

```
device# debug ipv6 ospf ism-status

         OSPFv3:  ism-status debugging is on
Debug: Dec  9 10:55:38 OSPFv3: ISM[14368]: Status change DROther -> Down (Configured)
Debug: Dec  9 10:55:58 OSPFv3: ISM[14368]: Status change Down -> Waiting (Priority > 0)
Debug: Dec  9 10:56:01 OSPFv3: ISM[14368]: Status change Waiting -> DROther (BackupSeen:DR Election)
Debug: Dec  9 10:56:01 OSPFv3: ISM[14368]: {dr:0.0.0.0,bdr:0.0.0.0} -> {dr:1.0.0.11,bdr:1.0.0.11}
Debug: Dec  9 10:56:02 OSPFv3: ISM[14368]: Status change DROther -> DROther (NeighborChange:DR Election)
Debug: Dec  9 10:56:02 OSPFv3: ISM[14368]: {dr:1.0.0.11,bdr:1.0.0.11} -> {dr:7.0.0.3,bdr:1.0.0.11}
Debug: Dec  9 10:56:07 OSPFv3: ISM[14368]: Status change DROther -> DROther (NeighborChange:DR Election)
```

The following example displays debugging information for LSAs.

```
device# debug ipv6 ospf lsa

OSPFv3: lsa debugging is on
device(config-vif-9)#Debug: Jan 1 17:05:01 OSPFv3: LSA: Update Router-LSA for
area 0.0.0.0
Debug: Jan 1 17:05:01 OSPFv3: LSA: Create LSA Type :Router Id: 0 Advrouter:
10.4.4.8
Debug: Jan 1 17:05:01 OSPFv3: LSA: Type: 8193 ID: 0 AdvRouter: 10.4.4.8, Supress
Updating
Debug: Jan 1 17:05:01 OSPFv3: LSA: Delete LSA Type :Router Id: 0.0.0.0 Advrouter:
10.4.4.8
Debug: Jan 1 17:05:01 OSPFv3: LSA Update Intra-Area-Prefix(Stub): Checking
Interface 644
Debug: Jan 1 17:05:01 OSPFv3: LSA Update Intra-Area-Prefix(Stub): include
5001::/64
Debug: Jan 1 17:05:01 OSPFv3: LSA: Create LSA Type :IntraPrefix Id: 0 Advrouter:
10.4.4.8
Debug: Jan 1 17:05:01 OSPFv3: LSA: Type: 8201 ID: 0 AdvRouter: 10.4.4.8, Supress
Updating
Debug: Jan 1 17:05:01 OSPFv3: LSA: Delete LSA Type :IntraPrefix Id: 0.0.0.0
Advrouter: 10.4.4.8
Debug: Jan 1 17:05:01 OSPFv3: LSA Update Intra-Area-Prefix(Stub): Area 0.0.0.0
Debug: Jan 1 17:05:02 OSPFv3: LSA: Create LSA Header Type :Router Id: 0
Advrouter: 10.2.2.2
Debug: Jan 1 17:05:02 OSPFv3: LSA[10.2.2.2]: request Type =8193 ADvRtr =10.2.2.2
ID=0
Debug: Jan 1 17:05:02 OSPFv3: LSA: Create LSA Header Type :IntraPrefix Id: 0
Advrouter: 10.2.2.2
Debug: Jan 1 17:05:02 OSPFv3: LSA[10.2.2.2]: request Type =8201 ADvRtr =10.2.2.2
ID=0
Debug: Jan 1 17:05:02 OSPFv3: LSA: Create LSA Header Type :Link Id: 2052
Advrouter: 10.2.2.2
Debug: Jan 1 17:05:02 OSPFv3: LSA[10.2.2.2]: request Type =8 ADvRtr =10.2.2.2
ID=2052
Debug: Jan 1 17:05:02 OSPFv3: LSA: Create LSA Type :Router Id: 0 Advrouter:
10.2.2.2
Debug: Jan 1 17:05:02 OSPFv3: LSA: Delete LSA HEADER Type :Router Id: 0.0.0.0
Advrouter: 10.2.2.2
Debug: Jan 1 17:05:02 OSPFv3: LSA[418103392]: delayed ack
Debug: Jan 1 17:05:02 OSPFv3: LSA: Create LSA Type :IntraPrefix Id: 0 Advrouter:
10.2.2.2
Debug: Jan 1 17:05:02 OSPFv3: LSA: Delete LSA HEADER Type :IntraPrefix Id:
0.0.0.0 Advrouter: 10.2.2.2
Debug: Jan 1 17:05:02 OSPFv3: LSA[418103392]: delayed ack
Debug: Jan 1 17:05:02 OSPFv3: LSA: Create LSA Type :Link Id: 2052 Advrouter:
10.2.2.2
Debug: Jan 1 17:05:02 OSPFv3: LSA: Delete LSA HEADER Type :Link Id: 10.0.8.4
Advrouter: 10.2.2.2
Debug: Jan 1 17:05:02 OSPFv3: LSA Update Intra-Area-Prefix(Transit):Interface 644
is Stub
Debug: Jan 1 17:05:02 OSPFv3: LSA Update Intra-Area-Prefix(Stub): Checking
Interface 644
Debug: Jan 1 17:05:02 OSPFv3: LSA Update Intra-Area-Prefix(Stub): include
5001::/64
Debug: Jan 1 17:05:02 OSPFv3: LSA: Create LSA Type :IntraPrefix Id: 0 Advrouter:
10.4.4.8
Debug: Jan 1 17:05:02 OSPFv3: LSA: Type: 8201 ID: 0 AdvRouter: 10.4.4.8, Supress
Updating
Debug: Jan 1 17:05:02 OSPFv3: LSA: Delete LSA Type :IntraPrefix Id: 0.0.0.0
Advrouter: 10.4.4.8
Debug: Jan 1 17:05:02 OSPFv3: LSA Update Intra-Area-Prefix(Stub): Area 0.0.0.0
Debug: Jan 1 17:05:02 OSPFv3: LSA[418103392]: delayed ack
Debug: Jan 1 17:05:02 OSPFv3: LSA: Create LSA Type :Router Id: 0 Advrouter:
10.2.2.2
Debug: Jan 1 17:05:02 OSPFv3: LSA: Turnover type:Router Lsa Id:0.0.0.0
AdvRouter:10.2.2.2: Debug: Jan 1 17:05:02 OSPFv3: contents changed
Debug: Jan 1 17:05:02 OSPFv3: LSA: Delete LSA Type :Router Id: 0.0.0.0 Advrouter:
10.2.2.2
Debug: Jan 1 17:05:02 OSPFv3: LSA[418103392]: delayed ack
```

```
Debug: Jan 1 17:05:02 OSPFv3: LSA: Create LSA Type :Router Id: 0 Advrouter:
10.2.2.2
Debug: Jan 1 17:05:02 OSPFv3: LSA[10.2.2.2]: direct ack
Debug: Jan 1 17:05:02 OSPFv3: LSA: Delete LSA Type :Router Id: 0.0.0.0 Advrouter:
10.2.2.2
Debug: Jan 1 17:05:02 OSPFv3: LSA: Create LSA Type :IntraPrefix Id: 0 Advrouter:
10.2.2.2
Debug: Jan 1 17:05:02 OSPFv3: LSA: Turnover type:IntraPrefix Lsa Id:0.0.0.0
AdvRouter:10.2.2.2: Debug: Jan 1 17:05:02 OSPFv3: contents changed
Debug: Jan 1 17:05:02 OSPFv3: LSA: Delete LSA Type :IntraPrefix Id: 0.0.0.0
Advrouter: 10.2.2.2
Debug: Jan 1 17:05:02 OSPFv3: LSA[418103392]: delayed ack
Debug: Jan 1 17:05:02 OSPFv3: LSA: Create LSA Type :IntraPrefix Id: 0 Advrouter:
10.2.2.2
Debug: Jan 1 17:05:02 OSPFv3: LSA[10.2.2.2]: direct ack
Debug: Jan 1 17:05:02 OSPFv3: LSA: Delete LSA Type :IntraPrefix Id: 0.0.0.0
Advrouter: 10.2.2.2
Debug: Jan 1 17:05:02 OSPFv3: LSA: Create LSA Type :IntraPrefix Id: 0 Advrouter:
10.2.2.2
Debug: Jan 1 17:05:02 OSPFv3: LSA[10.2.2.2]: direct ack
Debug: Jan 1 17:05:02 OSPFv3: LSA: Delete LSA Type :IntraPrefix Id: 0.0.0.0
Advrouter: 10.2.2.2
Debug: Jan 1 17:05:02 OSPFv3: LSA: Create LSA Type :IntraPrefix Id: 0 Advrouter:
10.2.2.2
Debug: Jan 1 17:05:02 OSPFv3: LSA[10.2.2.2]: direct ack
Debug: Jan 1 17:05:02 OSPFv3: LSA: Delete LSA Type :IntraPrefix Id: 0.0.0.0
Advrouter: 10.2.2.2
Debug: Jan 1 17:05:02 OSPFv3: LSA: Update Router-LSA for area 0.0.0.0
Debug: Jan 1 17:05:02 OSPFv3: LSA: Create LSA Type :Router Id: 0 Advrouter:
10.4.4.8
Debug: Jan 1 17:05:02 OSPFv3: LSA: Turnover type:Router Lsa Id:0.0.0.0
AdvRouter:10.4.4.8: Debug: Jan 1 17:05:02 OSPFv3: contents changed
Debug: Jan 1 17:05:02 OSPFv3: LSA: Delete LSA Type :Router Id: 0.0.0.0 Advrouter:
10.4.4.8
Debug: Jan 1 17:05:02 OSPFv3: LSA: schedule flooding 10.2.2.2
Debug: Jan 1 17:05:02 OSPFv3: LSA Update Network: Interface 644
Debug: Jan 1 17:05:02 OSPFv3: LSA: Create LSA Type :Network Id: 644 Advrouter:
10.4.4.8
Debug: Jan 1 17:05:02 OSPFv3: LSA: schedule flooding 10.2.2.2
Debug: Jan 1 17:05:02 OSPFv3: LSA Update Intra-Area-Prefix(Transit): Interface
644
Debug: Jan 1 17:05:02 OSPFv3: LSA Update Intra-Area-Prefix(Transit):Checking Type
:Link Id 10.0.2.132: Adv Routr : 10.4.4.8
Debug: Jan 1 17:05:02 OSPFv3: LSA Update Intra-Area-Prefix(Transit): 1
Debug: Jan 1 17:05:02 OSPFv3: LSA Update Intra-Area-Prefix(Transit): Prefix
5001::
Debug: Jan 1 17:05:02 OSPFv3: LSA Update Intra-Area-Prefix(Transit): including
5001::
Debug: Jan 1 17:05:02 OSPFv3: LSA Update Intra-Area-Prefix(Transit):Checking Type
:Link Id 10.0.8.4: Adv Routr : 10.2.2.2
Debug: Jan 1 17:05:02 OSPFv3: LSA Update Intra-Area-Prefix(Transit): 1
Debug: Jan 1 17:05:02 OSPFv3: LSA Update Intra-Area-Prefix(Transit): Prefix
5001::
Debug: Jan 1 17:05:02 OSPFv3: LSA Update Intra-Area-Prefix(Transit): 5001:: is
Duplicate
Debug: Jan 1 17:05:02 OSPFv3: LSA: Create LSA Type :IntraPrefix Id: 19320
Advrouter: 10.4.4.8
Debug: Jan 1 17:05:02 OSPFv3: LSA: schedule flooding 10.2.2.2
```

The following example dislpays information about LSA flooding activity.

```
device# debug ipv6 ospf lsa-flooding

OSPFv3: lsa-flooding debugging is on
device(config)# ipv6 router ospf
device(config-ospf6-router)# redistribute connected
device(config-ospf6-router)# redistribute connected Debug: Jan 1 17:17:49
OSPFv3: LSA: schedule flooding 10.2.2.2
Debug: Jan 1 17:17:49 OSPFv3: LSA: schedule flooding 10.2.2.2
Debug: Jan 1 17:17:49 OSPFv3: LSA: schedule flooding 10.2.2.2
Debug: Jan 1 17:17:49 OSPFv3: LSA: schedule flooding 10.2.2.2
Debug: Jan 1 17:17:49 OSPFv3: LSA: schedule flooding 10.2.2.2
Debug: Jan 1 17:17:49 OSPFv3: LSA: schedule flooding 10.2.2.2
```

The following example displays debugging information about LSA generation.

```
device# debug ipv6 ospf lsa-generation
OSPFv3: lsa-generation debugging is on
device(config-ospf6-router)# Debug: Jan 1 18:53:55 OSPFv3: LSA: Create LSA Type
:Router Id: 0 Advrouter: 10.4.4.8
Debug: Jan 1 18:53:55 OSPFv3: LSA: Delete LSA Type :Router Id: 0.0.0.0 Advrouter:
10.4.4.8
Debug: Jan 1 18:53:55 OSPFv3: LSA: Create LSA Type :ASExternal Id: 1 Advrouter:
10.4.4.8
Debug: Jan 1 18:53:55 OSPFv3: LSA: Delete LSA Type :ASExternal Id: 10.0.0.1
Advrouter: 10.4.4.8
Debug: Jan 1 18:53:55 OSPFv3: LSA: Create LSA Type :ASExternal Id: 2 Advrouter:
10.4.4.8
Debug: Jan 1 18:53:55 OSPFv3: LSA: Delete LSA Type :ASExternal Id: 10.0.0.2
Advrouter: 10.4.4.8
Debug: Jan 1 18:53:55 OSPFv3: LSA: Create LSA Type :ASExternal Id: 3 Advrouter:
10.4.4.8
Debug: Jan 1 18:53:55 OSPFv3: LSA: Delete LSA Type :ASExternal Id: 10.0.0.3
Advrouter: 10.4.4.8
Debug: Jan 1 18:53:55 OSPFv3: LSA: Create LSA Type :ASExternal Id: 4 Advrouter:
10.4.4.8
Debug: Jan 1 18:53:55 OSPFv3: LSA: Delete LSA Type :ASExternal Id: 10.0.0.4
Advrouter: 10.4.4.8
Debug: Jan 1 18:53:55 OSPFv3: LSA: Create LSA Type :ASExternal Id: 5 Advrouter:
10.4.4.8
Debug: Jan 1 18:53:55 OSPFv3: LSA: Delete LSA Type :ASExternal Id: 10.0.0.5
Advrouter: 10.4.4.8
Debug: Jan 1 18:53:55 OSPFv3: LSA: Create LSA Type :Router Id: 0 Advrouter:
10.4.4.8
Debug: Jan 1 18:53:55 OSPFv3: LSA: Delete LSA Type :Router Id: 0.0.0.0 Advrouter:
10.4.4.8
Debug: Jan 1 18:53:55 OSPFv3: LSA: Create LSA Type :ASExternal Id: 1 Advrouter:
10.4.4.8
Debug: Jan 1 18:53:55 OSPFv3: LSA: Delete LSA Type :ASExternal Id: 10.0.0.1
Advrouter: 10.4.4.8
Debug: Jan 1 18:53:55 OSPFv3: LSA: Create LSA Type :ASExternal Id: 2 Advrouter:
10.4.4.8
Debug: Jan 1 18:53:55 OSPFv3: LSA: Delete LSA Type :ASExternal Id: 10.0.0.2
Advrouter: 10.4.4.8
Debug: Jan 1 18:53:55 OSPFv3: LSA: Create LSA Type :ASExternal Id: 3 Advrouter:
10.4.4.8
Debug: Jan 1 18:53:55 OSPFv3: LSA: Delete LSA Type :ASExternal Id: 10.0.0.3
Advrouter: 10.4.4.8
Debug: Jan 1 18:53:55 OSPFv3: LSA: Create LSA Type :ASExternal Id: 4 Advrouter:
10.4.4.8
Debug: Jan 1 18:53:55 OSPFv3: LSA: Delete LSA Type :ASExternal Id: 10.0.0.4
Advrouter: 10.4.4.8
Debug: Jan 1 18:53:55 OSPFv3: LSA: Create LSA Type :ASExternal Id: 5 Advrouter:
10.4.4.8
Debug: Jan 1 18:53:55 OSPFv3: LSA: Delete LSA Type :ASExternal Id: 10.0.0.5 Advrouter: 10.4.4.8
```

The following example displays debugging information about installed LSAs.

```
device# debug ipv6 ospf lsa-install

OSPFv3: lsa-install debugging is on
device(config-ospf6-router)# Debug: Jan 1 19:03:16 OSPFv3: LSA: Turnover
type:Router Lsa Id:0.0.0.0 AdvRouter:10.4.4.8: Debug: Jan 1 19:03:16 OSPFv3:
contents changed
Debug: Jan 1 19:03:59 OSPFv3: LSA: Turnover type:Router Lsa Id:0.0.0.0
AdvRouter:10.4.4.8: Debug: Jan 1 19:03:59 OSPFv3: contents changed
```

The following example displays debugging information about inter-area LSAs.

```
device# debug ipv6 ospf lsa-inter-area
OSPFv3: lsa-inter-area debugging is on
device(config-vif-7)# disable
device(config-vif-7)# enable
device(config-vif-7)# OSPFv3: Inter Area LSA not generated, path type = External
OSPFv3: Inter Area LSA not generated, path type = External
OSPFv3: Installing in LSDB Inter Area Prefix LSA for area 0.0.0.0 and prefix
2001:DB8::/64
OSPFv3: Inter Area LSA not generated, route is in same area.
OSPFv3: Inter Area LSA not generated, path type = External
OSPFv3: Inter Area LSA not generated, path type = External
OSPFv3: Inter Area LSA not generated, route is in same area.
OSPFv3: Installing in LSDB Inter Area Prefix LSA for area 10.0.0.1 and prefix
2001:DB8::/64
OSPFv3: Inter Area LSA not generated, path type = External
OSPFv3: Inter Area LSA not generated, path type = External
OSPFv3: Inter Area LSA not generated, path type = External
OSPFv3: Inter Area LSA not generated, path type = External
OSPFv3: Inter Area LSA not generated, route is in same area.
shOSPFv3: Inter Area LSA not generated, route is in same area.
```

The following example displays debugging information about LSA refresh information.

```
device# debug ipv6 ospf lsa-refresh
OSPFv3: lsa-refresh debugging is on
device(config-ospf6-router)# Debug: Jan 1 19:01:39 OSPFv3: LSA: Update
Router-LSA for area 0.0.0.0
Debug: Jan 1 19:01:39 OSPFv3: LSA Update Intra-Area-Prefix(Stub): Checking
Interface 644
Debug: Jan 1 19:01:39 OSPFv3: LSA Update Intra-Area-Prefix(Stub): Interface 644
is down
Debug: Jan 1 19:01:39 OSPFv3: LSA Update Intra-Area-Prefix(Stub): No prefix to
advertise for Area 0.0.0.0
Debug: Jan 1 19:01:39 OSPFv3: LSA Update Intra-Area-Prefix(Stub): Area 0.0.0.0
Debug: Jan 1 19:01:39 OSPFv3: LSA Update Network: Interface 644 is not DR
Debug: Jan 1 19:01:39 OSPFv3: LSA Update Intra-Area-Prefix(Transit):Interface 644
is not DR
Debug: Jan 1 19:01:39 OSPFv3: LSA Update Intra-Area-Prefix(Stub): Checking
Interface 644
Debug: Jan 1 19:01:39 OSPFv3: LSA Update Intra-Area-Prefix(Stub): Interface 644
is down
Debug: Jan 1 19:01:39 OSPFv3: LSA Update Intra-Area-Prefix(Stub): No prefix to
advertise for Area 0.0.0.0
Debug: Jan 1 19:01:39 OSPFv3: LSA Update Intra-Area-Prefix(Stub): Area 0.0.0.0
Debug: Jan 1 19:01:44 OSPFv3: LSA: Update Router-LSA for area 0.0.0.0
Debug: Jan 1 19:02:42 OSPFv3: LSA: Update Router-LSA for area 0.0.0.0
Debug: Jan 1 19:02:42 OSPFv3: LSA: LSA Update AS-External: ID 10.0.0.6
Debug: Jan 1 19:02:42 OSPFv3: LSA: LSA Update AS-External: ID 10.0.0.7debug ip
Debug: Jan 1 19:02:42 OSPFv3: LSA: LSA Update AS-External: ID 10.0.0.8
Debug: Jan 1 19:02:42 OSPFv3: LSA: LSA Update AS-External: ID 10.0.0.9
Debug: Jan 1 19:02:42 OSPFv3: LSA: LSA Update AS-External: ID 10.0.0.10
Debug: Jan 1 19:02:42 OSPFv3: LSA Update Intra-Area-Prefix(Stub): Checking
Interface 644
Debug: Jan 1 19:02:42 OSPFv3: LSA Update Intra-Area-Prefix(Stub): include
2001:DB8::/64
Debug: Jan 1 19:02:42 OSPFv3: LSA Update Intra-Area-Prefix(Stub): Area 0.0.0.0
Debug: Jan 1 19:02:42 OSPFv3: LSA Update Link: Interface 644
Debug: Jan 1 19:02:46 OSPFv3: LSA Update Link: Interface 644
Debug: Jan 1 19:02:46 OSPFv3: LSA: Type: 8 ID: 644 AdvRouter: 10.4.4.8, Supress
Updating
Debug: Jan 1 19:02:46 OSPFv3: LSA Update Link: Interface 644
Debug: Jan 1 19:02:46 OSPFv3: LSA: Type: 8 ID: 644 AdvRouter: 10.4.4.8, Supress
Updating
Debug: Jan 1 19:02:47 OSPFv3: LSA Update Intra-Area-Prefix(Stub): Checking
Interface 644
Debug: Jan 1 19:02:47 OSPFv3: LSA Update Intra-Area-Prefix(Stub): include
2001:DB8::/64
Debug: Jan 1 19:02:47 OSPFv3: LSA: Type: 8201 ID: 0 AdvRouter: 10.4.4.8, Supress
Updating
Debug: Jan 1 19:02:47 OSPFv3: LSA Update Intra-Area-Prefix(Stub): Area 0.0.0.0
Debug: Jan 1 19:02:47 OSPFv3: LSA: Update Router-LSA for area 0.0.0.0
Debug: Jan 1 19:02:47 OSPFv3: LSA: Type: 8193 ID: 0 AdvRouter: 10.4.4.8, Supress
```

The following example displays debugging information about NSM.

```
device# debug ipv6 ospf nsm
         OSPFv3:  nsm debugging is on
Debug: Dec  9 11:08:20 OSPFv3: NSM[14689]: SendHello at 652364
Debug: Dec  9 11:08:21 OSPFv3: NSM[2.0.0.1, 14341]: HelloReceived at 652379, 631072
Debug: Dec  9 11:08:22 OSPFv3: NSM[14366]: SendHello at 652386
Debug: Dec  9 11:08:24 OSPFv3: NSM[14364]: SendHello at 652403
Debug: Dec  9 11:08:25 OSPFv3: NSM[14688]: SendHello at 652415
Debug: Dec  9 11:08:25 OSPFv3: NSM[14337]: SendHello at 652416
Debug: Dec  9 11:08:26 OSPFv3: NSM[14369]: SendHello at 652430
Debug: Dec  9 11:08:27 OSPFv3: NSM[1.0.0.13, 14364]: HelloReceived at 652434, 631127
Debug: Dec  9 11:08:27 OSPFv3: NSM[1.0.0.11, 14368]: HelloReceived at 652437, 631130
Debug: Dec  9 11:08:27 OSPFv3: NSM[1.0.0.11]: Status change [Down]->[Init](HelloReceived)
Debug: Dec  9 11:08:27 OSPFv3: NSM[1.0.0.11]: 2Way-Received
Debug: Dec  9 11:08:27 OSPFv3: NSM[1.0.0.11]: Status change [Init]->[2-way](No Need Adjacency)
Debug: Dec  9 11:08:27 OSPFv3: NSM[1.0.0.11]: AdjOK?
Debug: Dec  9 11:08:27 OSPFv3: NSM[1.0.0.11]: Status change [2-way]->[ExStart](Need Adjacency)
Debug: Dec  9 11:08:28 OSPFv3: NSM[1.0.0.14, 14366]: HelloReceived at 652446, 631139
Debug: Dec  9 11:08:28 OSPFv3: NSM[1.0.0.11, 14369]: HelloReceived at 652447, 631140
Debug: Dec  9 11:08:29 OSPFv3: NSM[14341]: SendHello at 652453
Debug: Dec  9 11:08:29 OSPFv3: NSM[14371]: SendHello at 652457
Debug: Dec  9 11:08:30 OSPFv3: NSM[1.0.0.12, 14371]: HelloReceived at 652461, 631153
Debug: Dec  9 11:08:30 OSPFv3: NSM[14689]: SendHello at 652464
Debug: Dec  9 11:08:30 OSPFv3: NSM[14368]: SendHello at 652468
Debug: Dec  9 11:08:30 OSPFv3: NSM[1.0.0.11]: NegotiationDone
```

The following example displays debugging information about NSM events.

```
device# debug ipv6 ospf nsm-events
    OSPFv3:  nsm-events debugging is on
Debug: Dec  9 11:10:59 OSPFv3: NSM[1.0.0.12, 14368]: HelloReceived at 653956, 632600
Debug: Dec  9 11:10:59 OSPFv3: NSM[1.0.0.11, 14368]: HelloReceived at 653956, 632600
Debug: Dec  9 11:11:00 OSPFv3: NSM[7.0.0.3, 14368]: HelloReceived at 653968, 632612
Debug: Dec  9 11:11:01 OSPFv3: NSM[2.0.0.1, 14341]: HelloReceived at 653971, 632615
Debug: Dec  9 11:11:01 OSPFv3: NSM[14364]: SendHello at 653974
Debug: Dec  9 11:11:01 OSPFv3: NSM[14368]: SendHello at 653980
Debug: Dec  9 11:11:02 OSPFv3: NSM[1.0.0.13, 14364]: HelloReceived at 653981, 632625
Debug: Dec  9 11:11:02 OSPFv3: NSM[14337]: SendHello at 653983
Debug: Dec  9 11:11:02 OSPFv3: NSM[1.0.0.11, 14369]: HelloReceived at 653984, 632628
Debug: Dec  9 11:11:02 OSPFv3: NSM[1.0.0.12, 14371]: HelloReceived at 653985, 632628
Debug: Dec  9 11:11:02 OSPFv3: NSM[14688]: SendHello at 653985
Debug: Dec  9 11:11:03 OSPFv3: NSM[14341]: SendHello at 653993
Debug: Dec  9 11:11:03 OSPFv3: NSM[14369]: SendHello at 653993
Debug: Dec  9 11:11:03 OSPFv3: NSM[1.0.0.14, 14366]: HelloReceived at 653996, 632640
Debug: Dec  9 11:11:05 OSPFv3: NSM[14689]: SendHello at 654011
Debug: Dec  9 11:11:06 OSPFv3: NSM[14371]: SendHello at 654025
Debug: Dec  9 11:11:07 OSPFv3: NSM[14366]: SendHello at 654038
```

The following example displays debugging information about the status of NSM.

```
device# debug ipv6 ospf nsm-status
OSPFv3:  nsm-status debugging is on
Debug: Dec  9 11:12:19 OSPFv3: NSM[1.0.0.12]: Status change [Down]->[Init](HelloReceived)
Debug: Dec  9 11:12:19 OSPFv3: NSM[1.0.0.12]: Status change [Init]->[2-way](No Need Adjacency)
Debug: Dec  9 11:12:19 OSPFv3: NSM[1.0.0.11]: Status change [Down]->[Init](HelloReceived)
Debug: Dec  9 11:12:19 OSPFv3: NSM[1.0.0.11]: Status change [Init]->[2-way](No Need Adjacency)
Debug: Dec  9 11:12:19 OSPFv3: NSM[1.0.0.11]: Status change [2-way]->[ExStart](Need Adjacency)
Debug: Dec  9 11:12:19 OSPFv3: NSM[1.0.0.11]: Status change [ExStart]->[ExChange](NegotiationDone)
Debug: Dec  9 11:12:19 OSPFv3: NSM[1.0.0.11]: Status change [ExChange]->[Loading](Requestlist Not Empty)
Debug: Dec  9 11:12:20 OSPFv3: NSM[1.0.0.11]: Status change [Loading]->[Full](LoadingDone)
Debug: Dec  9 11:12:20 OSPFv3: NSM[7.0.0.3]: Status change [Down]->[Init](HelloReceived)
Debug: Dec  9 11:12:20 OSPFv3: NSM[7.0.0.3]: Status change [Init]->[2-way](No Need Adjacency)
Debug: Dec  9 11:12:20 OSPFv3: NSM[7.0.0.3]: Status change [2-way]->[ExStart](Need Adjacency)
Debug: Dec  9 11:12:20 OSPFv3: NSM[7.0.0.3]: Status change [ExStart]->[ExChange](NegotiationDone)
Debug: Dec  9 11:12:21 OSPFv3: NSM[7.0.0.3]: Status change [ExChange]->[Full](Requestlist Empty)
```

The following example displays debugging information about OSPFv3 packets.

```
device# device# debug ipv6 ospf packet
OSPFv3: packet debugging is on
device(config-ospf6-router)# Debug: Jan 1 17:20:18 OSPFv3: Rcv Hello on ve 9
OSPFv3: (fe80::224:38ff:fed6:7800->OSPFv3: ff02::5)
RtrID:10.2.2.2 DR:10.4.4.8 BDR:10.2.2.2
Debug: Jan 1 17:20:18 OSPFv3: Rcv Hello on ve 9 OSPFv3:
(fe80::224:38ff:fed6:7800->OSPFv3: ff02::5)
RtrID:10.2.2.2 DR:10.4.4.8 BDR:10.2.2.2
Debug: Jan 1 17:20:23 OSPFv3: Snd Hello on ve 9 OSPFv3:
(fe80::224:38ff:fe21:6400->OSPFv3: ff02::5)
RtrID:10.4.4.8 DR:10.4.4.8 BDR:10.2.2.2
Debug: Jan 1 17:20:29 OSPFv3: Rcv Hello on ve 9 OSPFv3:
(fe80::224:38ff:fed6:7800->OSPFv3: ff02::5)
RtrID:10.2.2.2 DR:10.4.4.8 BDR:10.2.2.2
Debug: Jan 1 17:20:29 OSPFv3: Rcv Hello on ve 9 OSPFv3:
(fe80::224:38ff:fed6:7800->OSPFv3: ff02::5)
RtrID:10.2.2.2 DR:10.4.4.8 BDR:10.2.2.2
Debug: Jan 1 17:20:32 OSPFv3: Snd Hello on ve 9 OSPFv3:
(fe80::224:38ff:fe21:6400->OSPFv3: ff02::5)
RtrID:10.4.4.8 DR:10.4.4.8 BDR:10.2.2.2
Debug: Jan 1 17:20:38 OSPFv3: Rcv Hello on ve 9 OSPFv3:
(fe80::224:38ff:fed6:7800->OSPFv3: ff02::5)
RtrID:10.2.2.2 DR:10.4.4.8 BDR:10.2.2.2
Debug: Jan 1 17:20:38 OSPFv3: Rcv Hello on ve 9 OSPFv3:
(fe80::224:38ff:fed6:7800->OSPFv3: ff02::5)
RtrID:10.2.2.2 DR:10.4.4.8 BDR:10.2.2.2
Debug: Jan 1 17:20:43 OSPFv3: Snd Hello on ve 9 OSPFv3:
(fe80::224:38ff:fe21:6400->OSPFv3: ff02::5)
RtrID:10.4.4.8 DR:10.4.4.8 BDR:10.2.2.2
Debug: Jan 1 17:20:49 OSPFv3: Rcv Hello on ve 9 OSPFv3:
(fe80::224:38ff:fed6:7800->OSPFv3: ff02::5)
RtrID:10.2.2.2 DR:10.4.4.8 BDR:10.2.2.2
Debug: Jan 1 17:20:49 OSPFv3: Rcv Hello on ve 9 OSPFv3:
(fe80::224:38ff:fed6:7800->OSPFv3: ff02::5)
RtrID:10.2.2.2 DR:10.4.4.8 BDR:10.2.2.2
Debug: Jan 1 17:20:54 OSPFv3: Snd Hello on ve 9 OSPFv3:
(fe80::224:38ff:fe21:6400->OSPFv3: ff02::5)
RtrID:10.4.4.8 DR:10.4.4.8 BDR:10.2.2.2
Debug: Jan 1 17:20:58 OSPFv3: Rcv Hello on ve 9 OSPFv3:
(fe80::224:38ff:fed6:7800->OSPFv3: ff02::5)
RtrID:10.2.2.2 DR:10.4.4.8 BDR:10.2.2.2
Debug: Jan 1 17:20:58 OSPFv3: Rcv Hello on ve 9 OSPFv3:
(fe80::224:38ff:fed6:7800->OSPFv3: ff02::5)
RtrID:10.2.2.2 DR:10.4.4.8 BDR:10.2.2.2
Debug: Jan 1 17:21:04 OSPFv3: Snd Hello on ve 9 OSPFv3:
(fe80::224:38ff:fe21:6400->OSPFv3: ff02::5)
RtrID:10.4.4.8 DR:10.4.4.8 BDR:10.2.2.2
Debug: Jan 1 17:21:09 OSPFv3: Rcv Hello on ve 9 OSPFv3:
(fe80::224:38ff:fed6:7800->OSPFv3: ff02::5)
RtrID:10.2.2.2 DR:10.4.4.8 BDR:10.2.2.2
Debug: Jan 1 17:21:09 OSPFv3: Rcv Hello on ve 9 OSPFv3:
(fe80::224:38ff:fed6:7800->OSPFv3: ff02::5)
RtrID:10.2.2.2 DR:10.4.4.8 BDR:10.2.2.2
Debug: Jan 1 17:21:14 OSPFv3: Snd Hello on ve 9 OSPFv3:
(fe80::224:38ff:fe21:6400->OSPFv3: ff02::5)
RtrID:10.4.4.8 DR:10.4.4.8 BDR:10.2.2.2
```

The following example displays debugging information about OSPFv3 data description packets.

```
device# debug ipv6 ospf packet-dd
OSPFv3: packet-dd debugging is on
device(config-ospf6-router)# Debug: Jan 1 19:06:18 OSPFv3: Rcv DbDesc on ve 9
OSPFv3: (fe80::224:38ff:fed6:7800->OSPFv3: fe80::224:38ff:fe21:6400)
Debug: Jan 1 19:06:18 Option:00-00-13, Bits:07 SEQ:19b40
Debug: Jan 1 19:06:18 OSPFv3: DbDesc from 10.2.2.2 Ignored: state less than Init
Debug: Jan 1 19:06:19 OSPFv3: set dbdesc seqnum 000aa922 for 10.2.2.2
Debug: Jan 1 19:06:19 OSPFv3: Snd DbDesc on ve 9 OSPFv3:
(fe80::224:38ff:fe21:6400->OSPFv3: fe80::224:38ff:fed6:7800)
Debug: Jan 1 19:06:19 Option:00-00-13, Bits:07 SEQ:aa922
Debug: Jan 1 19:06:19 OSPFv3: Rcv DbDesc on ve 9 OSPFv3:
(fe80::224:38ff:fed6:7800->OSPFv3: fe80::224:38ff:fe21:6400)
Debug: Jan 1 19:06:19 Option:00-00-13, Bits:00 SEQ:aa922
Debug: Jan 1 19:06:19 OSPFv3: Snd DbDesc on ve 9 OSPFv3:
(fe80::224:38ff:fe21:6400->OSPFv3: fe80::224:38ff:fed6:7800)
Debug: Jan 1 19:06:19 Option:00-00-13, Bits:01 SEQ:aa923
Debug: Jan 1 19:06:19 OSPFv3: Rcv DbDesc on ve 9 OSPFv3:
(fe80::224:38ff:fed6:7800->OSPFv3: fe80::224:38ff:fe21:6400)
Debug: Jan 1 19:06:19 Option:00-00-13, Bits:00 SEQ:aa923
```

The following example displays debugging information about OSPFv3 hello packets

```
device# debug ipv6 ospf packet-hello
OSPFv3: packet-hello debugging is on
device(config-ospf6-router)# Debug: Jan 1 18:52:05 OSPFv3: Snd Hello on ve 9
OSPFv3: (fe80::224:38ff:fe21:6400->OSPFv3: ff02::5)
RtrID:10.4.4.8 DR:10.4.4.8 BDR:10.2.2.2
Debug: Jan 1 18:52:07 OSPFv3: Rcv Hello on ve 9 OSPFv3:
(fe80::224:38ff:fed6:7800->OSPFv3: ff02::5)
RtrID:10.2.2.2 DR:10.4.4.8 BDR:10.2.2.2
Debug: Jan 1 18:52:07 OSPFv3: Rcv Hello on ve 9 OSPFv3:
(fe80::224:38ff:fed6:7800->OSPFv3: ff02::5)
RtrID:10.2.2.2 DR:10.4.4.8 BDR:10.2.2.2
Debug: Jan 1 18:52:16 OSPFv3: Snd Hello on ve 9 OSPFv3:
(fe80::224:38ff:fe21:6400->OSPFv3: ff02::5)
RtrID:10.4.4.8 DR:10.4.4.8 BDR:10.2.2.2
Debug: Jan 1 18:52:16 OSPFv3: Rcv Hello on ve 9 OSPFv3:
(fe80::224:38ff:fed6:7800->OSPFv3: ff02::5)
RtrID:10.2.2.2 DR:10.4.4.8 BDR:10.2.2.2
Debug: Jan 1 18:52:16 OSPFv3: Rcv Hello on ve 9 OSPFv3:
(fe80::224:38ff:fed6:7800->OSPFv3: ff02::5)
RtrID:10.2.2.2 DR:10.4.4.8 BDR:10.2.2.2
```

The following example displays debugging information about OSPFv3 LSA acknowledgment packets.

```
device# debug ipv6 ospf packet-lsa-ack
OSPFv3: packet-lsa-ack debugging is on
Debug: Dec  9 11:15:08 OSPFv3: Rcv LSAck on ve 2150  OSPFv3: (fe80::768e:f8ff:fe46:bf60->OSPFv3:
ff02::5)
  Type:2009, LSID:0 Adv:1.0.0.1 SEQ:80000b5e AGE:1
Debug: Dec  9 11:15:08 OSPFv3: Rcv LSAck on ve 2250  OSPFv3: (fe80::224:38ff:fe76:2a40->OSPFv3: ff02::5)
  Type:2009, LSID:0 Adv:1.0.0.1 SEQ:80000b5e AGE:1
Debug: Dec  9 11:15:08 OSPFv3: Rcv LSAck on ve 2122  OSPFv3: (fe80::277:77ff:fe77:1111->OSPFv3: ff02::5)
  Type:2009, LSID:0 Adv:1.0.0.1 SEQ:80000b5e AGE:2
Debug: Dec  9 11:15:08 OSPFv3: neighbor 7.0.0.3 not found, reject received LS ACK
Debug: Dec  9 11:15:08 OSPFv3: Rcv LSAck on ve 120  OSPFv3: (fe80::204:80ff:fe11:1111->OSPFv3: ff02::5)
  Type:2009, LSID:0 Adv:1.0.0.1 SEQ:80000b5e AGE:1
Debug: Dec  9 11:15:08 OSPFv3: Rcv LSAck on ve 1737  OSPFv3: (fe80::768e:f8ff:fef9:b8dc->OSPFv3:
ff02::5)
  Type:2009, LSID:0 Adv:1.0.0.1 SEQ:80000b5e AGE:1
Debug: Dec  9 11:15:08 OSPFv3: Rcv LSAck on ve 1837  OSPFv3: (fe80::768e:f8ff:fe34:b570->OSPFv3:
ff02::5)
  Type:2009, LSID:0 Adv:1.0.0.1 SEQ:80000b5e AGE:1
Debug: Dec  9 11:15:12 OSPFv3: Snd LSAck on ve 2250 OSPFv3: (fe80::ce4e:24ff:fe39:4480->OSPFv3:
fe80::224:38ff:fe76:2a40)
  Type:2002, LSID:3085 Adv:7.0.0.3 SEQ:80000035 AGE:2
Debug: Dec  9 11:15:13 OSPFv3: Snd LSAck on ve 2150 OSPFv3: (fe80::ce4e:24ff:fe39:4480->OSPFv3:
fe80::768e:f8ff:fe46:bf60)
  Type:2001, LSID:0 Adv:7.0.0.3 SEQ:800008cc AGE:1
Debug: Dec  9 11:15:13 OSPFv3: Snd LSAck on ve 2250 OSPFv3: (fe80::ce4e:24ff:fe39:4480->OSPFv3:
fe80::224:38ff:fe76:2a40)
  Type:2001, LSID:0 Adv:7.0.0.3 SEQ:800008cc AGE:1
Debug: Dec  9 11:15:13 OSPFv3: Snd LSAck on ve 2250 OSPFv3: (fe80::ce4e:24ff:fe39:4480->OSPFv3:
fe80::224:38ff:fe76:2a40)
  Type:2002, LSID:3085 Adv:7.0.0.3 SEQ:80000036 AGE:1
Debug: Dec  9 11:15:13 OSPFv3: Snd LSAck on ve 2150 OSPFv3: (fe80::ce4e:24ff:fe39:4480->OSPFv3:
fe80::768e:f8ff:fe46:bf60)
  Type:2002, LSID:3085 Adv:7.0.0.3 SEQ:80000036 AGE:1
Debug: Dec  9 11:15:13 OSPFv3: Snd LSAck on ve 2250 OSPFv3: (fe80::ce4e:24ff:fe39:4480->OSPFv3:
fe80::224:38ff:fe76:2a40)
  Type:2009, LSID:92550 Adv:7.0.0.3 SEQ:8000002d AGE:1
Debug: Dec  9 11:15:13 OSPFv3: Snd LSAck on ve 2150 OSPFv3: (fe80::ce4e:24ff:fe39:4480->OSPFv3:
fe80::768e:f8ff:fe46:bf60)
  Type:2009, LSID:92550 Adv:7.0.0.3 SEQ:8000002d AGE:1
Debug: Dec  9 11:15:13 OSPFv3: Rcv LSAck on ve 2122  OSPFv3: (fe80::768e:f8ff:fe46:bf60->OSPFv3:
ff02::5)
  Type:2001, LSID:0 Adv:7.0.0.3 SEQ:800008cc AGE:1
  Type:2002, LSID:3085 Adv:7.0.0.3 SEQ:80000036 AGE:1
  Type:2009, LSID:92550 Adv:7.0.0.3 SEQ:8000002d AGE:1
```

The following example displays debugging information about OSPFv3 LSA request packets.

```
device# debug ipv6 ospf packet-lsa-req
OSPFv3: packet-lsa-req debugging is on
Debug: Dec  9 11:18:25 OSPFv3: Snd LSReq on ve 2122 OSPFv3: (fe80::207:50ff:fe75:750->OSPFv3:
fe80::768e:f8ff:fe46:bf60)
  Type:0008, LSID:2049 Adv-Router:1.0.0.11
  Type:0008, LSID:2049 Adv-Router:1.0.0.12
  Type:0008, LSID:14368 Adv-Router:1.0.0.1
  Type:0008, LSID:3085 Adv-Router:7.0.0.3
Debug: Dec  9 11:18:25 OSPFv3: Snd LSReq on ve 2122 OSPFv3: (fe80::207:50ff:fe75:750->OSPFv3:
fe80::768e:f8ff:fe46:bf60)
  Type:0008, LSID:2049 Adv-Router:1.0.0.11
  Type:0008, LSID:2049 Adv-Router:1.0.0.12
  Type:0008, LSID:14368 Adv-Router:1.0.0.1
  Type:0008, LSID:3085 Adv-Router:7.0.0.3
Debug: Dec  9 11:18:26 OSPFv3: Rcv LSReq on ve 2122  OSPFv3: (fe80::277:77ff:fe77:1111->OSPFv3:
fe80::207:50ff:fe75:750)
  Type:2001, LSID:0 Adv-Router:1.0.0.1
  Type:2009, LSID:0 Adv-Router:1.0.0.1
  Type:0008, LSID:14368 Adv-Router:1.0.0.1
```

The following example displays debugging information about OSPFv3 LSA update packets.

```
device# debug ipv6 ospf packet-lsa-update
OSPFv3: packet-lsa-update debugging is on
Debug: Dec  9 11:20:18 OSPFv3: Rcv LSUpdate on ve 2150  OSPFv3:(fe80::768e:f8ff:fe46:bf60-
>OSPFv3:ff02::5)
  Type:2002, LSID:3085 Adv:7.0.0.3 SEQ:80000039 AGE:2
Debug: Dec  9 11:20:18 OSPFv3: Rcv LSUpdate on ve 2250  OSPFv3:(fe80::224:38ff:fe76:2a40->OSPFv3:
ff02::5)
  Type:2002, LSID:3085 Adv:7.0.0.3 SEQ:80000039 AGE:2
Debug: Dec  9 11:20:18 OSPFv3: Snd LSUpdate on ve 120  OSPFv3:(fe80::ce4e:24ff:fe39:4480->OSPFv3:
ff02::5)
  Type:2002, LSID:3085 Adv:7.0.0.3 SEQ:80000039 AGE:3
Debug: Dec  9 11:20:18 OSPFv3: Snd LSUpdate on ve 1737 OSPFv3:(fe80::ce4e:24ff:fe39:4480->OSPFv3:
ff02::5)
  Type:2002, LSID:3085 Adv:7.0.0.3 SEQ:80000039 AGE:3
Debug: Dec  9 11:20:18 OSPFv3: Snd LSUpdate on ve 1837 OSPFv3:(fe80::ce4e:24ff:fe39:4480->OSPFv3:
ff02::5)
  Type:2002, LSID:3085 Adv:7.0.0.3 SEQ:80000039 AGE:3
Debug: Dec  9 11:20:18 OSPFv3: Snd LSUpdate on ve 2250 OSPFv3:(fe80::ce4e:24ff:fe39:4480->OSPFv3:
ff02::5)
  Type:2002, LSID:3085 Adv:7.0.0.3 SEQ:80000039 AGE:3
```

The following example displays debugging information about OSPFv3 routes.

```
device# debug ipv6 ospf route
OSPFv3: route debugging is on
Debug: Dec  9 11:24:18 OSPFv3: add to spf list Inst vrf id 0, flag 0
Debug: Dec  9 11:24:24 OSPFv3: delete from spf list Inst vrf id 0, flag 1
Debug: Dec  9 11:24:24 OSPFv3 ROUTE: release semaphore 1
Debug: Dec  9 11:24:24 OSPFv3: SPF: Calculation for area 0.0.0.0
Debug: Dec  9 11:24:24 OSPFv3: SPF: installing vertex 1.0.0.1
Debug: Dec  9 11:24:24 OSPFv3: SPF: 2.0.0.1:14337 is the first hop
Debug: Dec  9 11:24:24 OSPFv3: SPF : 2.0.0.1:14337 nexthop :: ifindex 14341
Debug: Dec  9 11:24:24 OSPFv3: SPF: Examining Vertex: 2.0.0.1:14337
Debug: Dec  9 11:24:24 OSPFv3: SPF: new node added to candidate list: 2.0.0.1:14337
Debug: Dec  9 11:24:24 OSPFv3: SPF: 1.0.0.13:2050 is the first hop
Debug: Dec  9 11:24:24 OSPFv3: SPF : 1.0.0.13:2050 nexthop :: ifindex 14364
Debug: Dec  9 11:24:24 OSPFv3: SPF: Examining Vertex: 1.0.0.13:2050
Debug: Dec  9 11:24:24 OSPFv3: SPF: new node added to candidate list: 1.0.0.13:2050
Debug: Dec  9 11:24:24 OSPFv3: SPF: 1.0.0.14:2050 is the first hop
Debug: Dec  9 11:24:24 OSPFv3: SPF : 1.0.0.14:2050 nexthop :: ifindex 14366
Debug: Dec  9 11:24:24 OSPFv3: SPF: Examining Vertex: 1.0.0.14:2050
Debug: Dec  9 11:24:24 OSPFv3: SPF: new node added to candidate list: 1.0.0.14:2050
Debug: Dec  9 11:24:24 OSPFv3: SPF: 1.0.0.11:2050 is the first hop
Debug: Dec  9 11:24:24 OSPFv3: SPF : 1.0.0.11:2050 nexthop :: ifindex 14369
Debug: Dec  9 11:24:24 OSPFv3: SPF: Examining Vertex: 1.0.0.11:2050
Debug: Dec  9 11:24:24 OSPFv3: SPF: new node added to candidate list: 1.0.0.11:2050
Debug: Dec  9 11:24:24 OSPFv3: SPF: 1.0.0.12:2050 is the first hop
Debug: Dec  9 11:24:24 OSPFv3: SPF : 1.0.0.12:2050 nexthop :: ifindex 14371
Debug: Dec  9 11:24:24 OSPFv3: SPF: Examining Vertex: 1.0.0.12:2050
Debug: Dec  9 11:24:24 OSPFv3: SPF: new node added to candidate list: 1.0.0.12:2050
Debug: Dec  9 11:24:24 OSPFv3: SPF: installing vertex 2.0.0.1:14337
Debug: Dec  9 11:24:24 OSPFv3: ROUTE: Creating route: 2.0.0.1:14337
```

The following example displays debugging information about external route calculations.

```
device# debug ipv6 ospf route-calc-external
OSPFv3: route-calc-external debugging is on
device(config-if-e1000-8/9)# Debug: Jan 1 19:21:07 OSPFv3: EXTERNAL ROUTE:
External LSA(ID= 37) is Self-originated:
Debug: Jan 1 19:21:07 OSPFv3: EXTERNAL ROUTE: Forwarding flag specified
Debug: Jan 1 19:21:07 OSPFv3: EXTERNAL ROUTE: Forwarding flag specified
Debug: Jan 1 19:21:07 OSPFv3: EXTERNAL ROUTE: Forwarding flag specified
Debug: Jan 1 19:21:07 OSPFv3: EXTERNAL ROUTE: Forwarding flag specified
Debug: Jan 1 19:21:07 OSPFv3: EXTERNAL ROUTE: External LSA(ID= 39) is
Self-originated:
Debug: Jan 1 19:21:07 OSPFv3: EXTERNAL ROUTE: Forwarding flag specified
Debug: Jan 1 19:21:07 OSPFv3: EXTERNAL ROUTE: Forwarding flag specified
Debug: Jan 1 19:21:07 OSPFv3: EXTERNAL ROUTE: Forwarding flag specified
Debug: Jan 1 19:21:07 OSPFv3: EXTERNAL ROUTE: External LSA(ID= 36) is
Self-originated:
Debug: Jan 1 19:21:07 OSPFv3: EXTERNAL ROUTE: Forwarding flag specified
Debug: Jan 1 19:21:07 OSPFv3: EXTERNAL ROUTE: Forwarding flag specified
Debug: Jan 1 19:21:07 OSPFv3: EXTERNAL ROUTE: Forwarding flag specified
Debug: Jan 1 19:21:07 OSPFv3: EXTERNAL ROUTE: External LSA(ID= 38) is
Self-originated:
Debug: Jan 1 19:21:07 OSPFv3: EXTERNAL ROUTE: Forwarding flag specified
Debug: Jan 1 19:21:07 OSPFv3: EXTERNAL ROUTE: Forwarding flag specified
Debug: Jan 1 19:21:07 OSPFv3: EXTERNAL ROUTE: Forwarding flag specified
Debug: Jan 1 19:21:07 OSPFv3: EXTERNAL ROUTE: Forwarding flag specified
Debug: Jan 1 19:21:07 OSPFv3: EXTERNAL ROUTE: External LSA(ID= 40) is
Self-originated:
Debug: Jan 1 19:21:07 OSPFv3: EXTERNAL ROUTE: Forwarding flag specified
```

The following example displays debugging information about inter-area route calculations.

```
device# debug ipv6 ospf route-calc-inter-area
OSPFv3: route-calc-inter-area debugging is on
device(config-vif-7)# ipv6 ospf area 1
device(config-vif-7)# sOSPFv3: INTER AREA ROUTE: Inter Area Prefix LSA(ID= 2,
prefix 2001:DB8::/64) is Self-originated. Area id 0.0.0.0
OSPFv3: INTER AREA ROUTE: Inter Area Prefix LSA(ID= 2, prefix 2001:DB8::/64) is
Self-originated. Area id 0.0.0.0
device(config-vif-7)# disable
device(config-vif-7)# OSPFv3: INTER AREA ROUTE: Inter Area Prefix LSA(ID= 2,
prefix 2001:DB8::/64) is Self-originated. Area id 0.0.0.0
device(config-vif-7)# enable
device(config-vif-7)# OSPFv3: INTER AREA ROUTE: Inter Area Prefix LSA(ID= 11,
prefix 2001:DB8::/64) is Self-originated. Area id 0.0.0.0
device(config)# Debug: Jan 1 00:32:22 OSPFv3: INTER AREA ROUTE: Inter Area route
for prefix 2001:DB8::/64 created
```

The following example displays debugging information about intra-area route calculations.

```
device# debug ipv6 ospf route-calc-intra-area
OSPFv3:  route-calc-intra-area debugging is on
Debug: Dec  9 11:26:41 OSPFv3: Calculating Intra Area routes for area 0.0.0.0
Debug: Dec  9 11:26:41 OSPFv3: INTRA AREA ROUTE: Calculating Intra Area Stub Routes
Debug: Dec  9 11:26:41 OSPFv3: INTRA AREA ROUTE: found Prefix LSA type : IntraPrefix : for Id 0.0.0.0
Advrouter 1.0.0.1
Debug: Dec  9 11:26:41 OSPFv3: INTRA AREA ROUTE: Intra Area route install 1001:1:1:1::/64 cost 1,
area 0.0.0.0
Debug: Dec  9 11:26:41 OSPFv3: INTRA AREA ROUTE: Intra Area route install 1001:101:1:1::/64 cost 100,
area 0.0.0.0
Debug: Dec  9 11:26:41 OSPFv3: INTRA AREA ROUTE: Intra Area route install 1001:200:1:1::/64 cost 100,
area 0.0.0.0
Debug: Dec  9 11:26:41 OSPFv3: INTRA AREA ROUTE: Intra Area route install 1001:205:1:1::/64 cost 100,
area 0.0.0.0
Debug: Dec  9 11:26:41 OSPFv3: INTRA AREA ROUTE: Intra Area route install 1001:210:1:1::/64 cost 100,
 area 0.0.0.0
Debug: Dec  9 11:26:41 OSPFv3: INTRA AREA ROUTE: Intra Area route install 1001:220:1:1::/64 cost 100,
area 0.0.0.0
Debug: Dec  9 11:26:41 OSPFv3: INTRA AREA ROUTE: Intra Area route install 1001:593:1:1::/64 cost 17,
area 0.0.0.0
Debug: Dec  9 11:26:41 OSPFv3: INTRA AREA ROUTE: Intra Area route install 1001:2122:1:1::/64 cost 9,
area 0.0.0.0
Debug: Dec  9 11:26:41 OSPFv3: INTRA AREA ROUTE: found Prefix LSA type : IntraPrefix : for Id 0.0.0.0
Advrouter 1.0.0.11
Debug: Dec  9 11:26:41 OSPFv3: INTRA AREA ROUTE: Intra Area route install 1001:1011::1/128 cost 100,
area 0.0.0.0
Debug: Dec  9 11:26:41 OSPFv3: INTRA AREA ROUTE: found Prefix LSA type : IntraPrefix : for Id 0.0.0.0
Advrouter 1.0.0.12
Debug: Dec  9 11:26:41 OSPFv3: INTRA AREA ROUTE: Intra Area route install 1001:1012::1/128 cost 100,
area 0.0.0.0
```

The following example displays debugging information about SPF route calculations.

```
device# debug ipv6 ospf route-calc-spf
OSPFv3: route-calc-spf debugging is on
Debug: Dec  9 11:29:11 OSPFv3: Schedule routing table build
Debug: Dec  9 11:29:11 OSPFv3: add to spf list Inst vrf id 0, flag 0
Debug: Dec  9 11:29:17 OSPFv3: delete from spf list Inst vrf id 0, flag 1
Debug: Dec  9 11:29:17 OSPFv3: SPF: Calculation for area 0.0.0.0
Debug: Dec  9 11:29:17 OSPFv3: SPF: installing vertex 1.0.0.1
Debug: Dec  9 11:29:17 OSPFv3: SPF: 2.0.0.1:14337 is the first hop
Debug: Dec  9 11:29:17 OSPFv3: SPF : 2.0.0.1:14337 nexthop :: ifindex 14341
Debug: Dec  9 11:29:17 OSPFv3: SPF: Examining Vertex: 2.0.0.1:14337
Debug: Dec  9 11:29:17 OSPFv3: SPF: new node added to candidate list: 2.0.0.1:14337
Debug: Dec  9 11:29:17 OSPFv3: SPF: 1.0.0.13:2050 is the first hop
Debug: Dec  9 11:29:17 OSPFv3: SPF : 1.0.0.13:2050 nexthop :: ifindex 14364
Debug: Dec  9 11:29:17 OSPFv3: SPF: Examining Vertex: 1.0.0.13:2050
Debug: Dec  9 11:29:17 OSPFv3: SPF: new node added to candidate list: 1.0.0.13:2050
Debug: Dec  9 11:29:17 OSPFv3: SPF: 1.0.0.14:2050 is the first hop
Debug: Dec  9 11:29:17 OSPFv3: SPF : 1.0.0.14:2050 nexthop :: ifindex 14366
Debug: Dec  9 11:29:17 OSPFv3: SPF: Examining Vertex: 1.0.0.14:2050
Debug: Dec  9 11:29:17 OSPFv3: SPF: new node added to candidate list: 1.0.0.14:2050
Debug: Dec  9 11:29:17 OSPFv3: SPF: 1.0.0.11:2050 is the first hop
Debug: Dec  9 11:29:17 OSPFv3: SPF : 1.0.0.11:2050 nexthop :: ifindex 14369
Debug: Dec  9 11:29:17 OSPFv3: SPF: Examining Vertex: 1.0.0.11:2050
Debug: Dec  9 11:29:17 OSPFv3: SPF: new node added to candidate list: 1.0.0.11:2050
Debug: Dec  9 11:29:17 OSPFv3: SPF: 1.0.0.12:2050 is the first hop
Debug: Dec  9 11:29:17 OSPFv3: SPF : 1.0.0.12:2050 nexthop :: ifindex 14371
Debug: Dec  9 11:29:17 OSPFv3: SPF: Examining Vertex: 1.0.0.12:2050
Debug: Dec  9 11:29:17 OSPFv3: SPF: new node added to candidate list: 1.0.0.12:2050
Debug: Dec  9 11:29:17 OSPFv3: SPF: installing vertex 2.0.0.1:14337
Debug: Dec  9 11:29:17 OSPFv3: SPF : 2.0.0.1:0 nexthop fe80::204:80ff:fe11:1111 ifindex 14341
```

The following example displays debugging information about all OSPFv3 installed routes.

```
device# debug ipv6 ospf route-install
OSPFv3: route-install debugging is on
Debug: Dec  9 11:33:52 OSPFv3: ROUTE: Creating route: 2.0.0.1:14337
Debug: Dec  9 11:33:52 OSPFv3: ROUTE: Creating route: 2.0.0.1:0
Debug: Dec  9 11:33:52 OSPFv3: ROUTE: Creating route: 1.0.0.13:2050
Debug: Dec  9 11:33:52 OSPFv3: ROUTE: Creating route: 1.0.0.14:2050
Debug: Dec  9 11:33:52 OSPFv3: ROUTE: Creating route: 1.0.0.11:2050
Debug: Dec  9 11:33:52 OSPFv3: ROUTE: Creating route: 1.0.0.12:2050
Debug: Dec  9 11:33:52 OSPFv3: ROUTE: Creating route: 1.0.0.12:0
Debug: Dec  9 11:33:52 OSPFv3: ROUTE: Creating route: 1.0.0.11:0
Debug: Dec  9 11:33:52 OSPFv3: ROUTE: Creating route: 1.0.0.14:0
Debug: Dec  9 11:33:52 OSPFv3: ROUTE: Creating route: 1.0.0.13:0
Debug: Dec  9 11:33:52 OSPFv3: ROUTE: Creating route: 7.0.0.3:3085
Debug: Dec  9 11:33:52 OSPFv3: ROUTE: Creating route: 7.0.0.3:0
Debug: Dec  9 11:33:52 OSPFv3: ROUTE: Creating route: 1001:1:1:1::/64
Debug: Dec  9 11:33:52 OSPFv3: ROUTE: Creating route: 1001:101:1:1::/64
Debug: Dec  9 11:33:52 OSPFv3: ROUTE: Creating route: 1001:200:1:1::/64
Debug: Dec  9 11:33:52 OSPFv3: ROUTE: Creating route: 1001:205:1:1::/64
Debug: Dec  9 11:33:52 OSPFv3: ROUTE: Creating route: 1001:210:1:1::/64
Debug: Dec  9 11:33:52 OSPFv3: ROUTE: Creating route: 1001:220:1:1::/64
Debug: Dec  9 11:33:52 OSPFv3: ROUTE: Creating route: 1001:593:1:1::/64
Debug: Dec  9 11:33:52 OSPFv3: ROUTE: Creating route: 1001:2122:1:1::/64
Debug: Dec  9 11:33:52 OSPFv3: ROUTE: route changed, new route preferred: 1001:2122:1:1::/64
Debug: Dec  9 11:33:52 OSPFv3: ROUTE: Creating route: 1001:1011::1/128
Debug: Dec  9 11:33:52 OSPFv3: ROUTE: Creating route: 1001:1012::1/128
Debug: Dec  9 11:33:52 OSPFv3: ROUTE: Creating route: 1002:201:1:1::/64
Debug: Dec  9 11:33:52 OSPFv3: ROUTE: Creating route: 1001:21:5:1::/64
Debug: Dec  9 11:33:52 OSPFv3: ROUTE: Creating route: 1001:22:5:1::/64
Debug: Dec  9 11:33:52 OSPFv3: ROUTE: Creating route: 1001:17:37:1::/64
Debug: Dec  9 11:33:52 OSPFv3: ROUTE: Creating route: 1001:18:37:1::/64
Debug: Dec  9 11:33:52 OSPFv3: ROUTE: Creating route: 1001:2122:1:1::/64
Debug: Dec  9 11:33:52 OSPFv3: ROUTE: Creating route: 1001:120:1:1::/64
Debug: Dec  9 11:33:52 OSPFv3: ROUTE: Creating route: 1001:1392:1:1::/64
Debug: Dec  9 11:33:52 OSPFv3: ROUTE: Creating route: 1001:1382:1:1::/64
Debug: Dec  9 11:33:52 OSPFv3: ROUTE: Validate routing table
Debug: Dec  9 11:33:52 OSPFv3: Validating route 1001:1:1:1::/64, nexthop cnt 1, route_info->flag 0x2
Debug: Dec  9 11:33:52 OSPFv3: Validating route 1001:17:37:1::/64, nexthop cnt 1, route_info->flag 0x2
Debug: Dec  9 11:33:52 OSPFv3: Validating route 1001:18:37:1::/64, nexthop cnt 1, route_info->flag 0x2
Debug: Dec  9 11:33:52 OSPFv3: Validating route 1001:21:5:1::/64, nexthop cnt 1, route_info->flag 0x2
Debug: Dec  9 11:33:52 OSPFv3: Validating route 1001:22:5:1::/64, nexthop cnt 1, route_info->flag 0x2
Debug: Dec  9 11:33:52 OSPFv3: Validating route 1001:101:1:1::/64, nexthop cnt 1, route_info->flag 0x2
Debug: Dec  9 11:33:52 OSPFv3: Validating route 1001:120:1:1::/64, nexthop cnt 1, route_info->flag 0x2
Debug: Dec  9 11:33:52 OSPFv3: Validating route 1001:200:1:1::/64, nexthop cnt 1, route_info->flag 0x2
```

debug ipv6 ospf vrf

Displays debugging information for OSPFv3 for a non-default VRF instance.

Syntax

debug ipv6 ospf vrf*vrf-name* { **bfd** | **error** | **events** | **ipsec** | **ism** | **ism-events** | **ism-status** | **lsa** | **lsa-flooding** | **lsa-generation** | **lsa-install** | **lsa-inter-area** | **lsa-maxage** | **lsa-refresh** | **match-prefix** { *ipv6-prefix* | **all** } | **nsm** | **nsm-events** | **nsm-status** | **packet** | **packet-dd** | **packet-hello** | **packet-lsa-ack** | **packet-lsa-req** | **packet-lsa-update** | **route** | **route-calc-extrenal** | **route-calc-inter-area** | **route-calc-intra-area** | **route-calc-spf** | **route-calc-transit** | **route-install** | **virtual-link** }

no debug ipv6 ospf[**all-vrfs**] { **bfd** | **error** | **events** |**ipsec** | **ism** | **ism-events** | **ism-status** | **lsa** | **lsa-flooding** | **lsa-generation** | **lsa-install** | **lsa-inter-area** | **lsa-maxage** | **lsa-refresh** | **match-prefix** { *ipv6-prefix* | **all** } | **nsm** | **nsm-events** | **nsm-status** | **packet** | **packet-dd** | **packet-hello** | **packet-lsa-ack** | **packet-lsa-req** | **packet-lsa-update** | **route** | **route-calc-extrenal** | **route-calc-inter-area** | **route-calc-intra-area** |**route-calc-spf** | **route-calc-transit** | **route-install** | **virtual-link** }

Parameters

vrf-name
Specifies a non-default VRF instance.

bfd
Specifies BFD.

error
Reports the receipt of OSPFv6 packets with errors, or mismatches between hello packet options.

events
Specifies information about internal OSPFv6 events related to configuration or interaction with the standby management processor and interface state transitions.

ipsec
Specifies IPsec events. This command can show if IPsec is actually providing its services to IPv6 OSPFv3.

ism
Specifies the interface state machine (ISM).

ism-events
Specifies ISM events.

ism-status
Specifies ISM status.

lsa
Specifies LSAs.

lsa-flooding
Specifies LSA flooding activity.

lsa-generation
Specifies information about LSA generation.

lsa-install
Specifies installed LSAs.

lsa-inter-area
Specifies inter-area LSAs.

lsa-maxage
Specifies LSA maximum aging.

lsa-refresh
Specifies LSA refresh information.

match-prefix
Specifies matching prefixes.

ipv6-prefix
Specifies an IPv6 prefix.

all
Specifies all IPv6 prefixes.

nsm
Specifies the neighbor state machine (NSM).

nsm-events
Specifies NSM events.

nsm-status
Specifies NSM status.

packet
Specifies OSPFv3 packets, in rx and tx mode.

packet-dd
Specifies OSPFv3 data description packets.

packet-hello
Specifies OSPFv3 hello packets.

packet-lsa-ack
Specifies OSPFv3 LSA acknowledgment packets.

packet-lsa-req
Specifies OSPFv3 LSA request packets.

packet-lsa-update
Specifies OSPFv3 LSA update packets.

route
Specifies information about OSPFv3 routes.

route-calc-extrenal
Specifies external route calculations.

route-calc-inter-area
Specifies inter-area route calculations.

route-calc-intra-area
Specifies intra-area route calculations.

route-calc-spf
Specifies SPF route calculations.

route-calc-transit
Specifies transit route calculations.

route-install
Specifies all OSPFv3 installed routes.

virtual-link
Specifies virtual links.

Modes

Privileged EXEC mode

Examples

The following example displays debugging information for OSPFv3 events for a non-default VRF instance.

```
device# debug ipv6 ospf vrf 11 events
         OSPFv3(11):  events debugging is on
Spatha-27
OSPFv3: LSA: Create LSA  Type :Network Id: 288 Advrouter: 0.0.0.33
Aug 25 22:37:21:891878:info:fi_debug:debug_logs:1:219092375045633: OSPFv3: LSA[38]: delayed ack
Aug 25 22:37:21:891953:info:fi_debug:debug_logs:1:219092375045633: OSPFv3: LSA: Delete LSA Type:
Network Id: 0.0.1.32
```

The following example displays debugging information for OSPFv3 LSA flooding activity for a non-default VRF instance.

```
device# debug ipv6 ospf vrf 11 lsa-flooding
         OSPFv3(11):  lsa-flooding debugging is on
device#
Aug 25 22:52:02:191674:info:fi_debug:debug_logs:1:265538151384577: OSPFv3: LSA: Delete LSA Type:
IntraPrefix Id: 0.0.0.0 Advrouter: 0.0.0.49
Aug 25 22:52:02:191752:info:fi_debug:debug_logs:1:265538151384577: OSPFv3: Adding to LSDB: lsaType=9
(0x2009) lsaId=0x0 advRtr=0.0.0.49 lock=1
Aug 25 22:52:02:191835:info:fi_debug:debug_logs:1:265538151384577: OSPFv3: LSA: schedule flooding
0.0.0.26
Aug 25 22:52:02:191921:info:fi_debug:debug_logs:1:265538151384577: OSPFv3: LSA: Create LSA
Type :IntraPrefix Id: 0 Advrouter: 0.0.0.49
Aug 25 22:52:02:191990:info:fi_debug:debug_logs:1:265538151384577: OSPFv3: LSA[38]: delayed ack

Advrouter: 0.0.0.33
```

debug ipv6 ospf packet-lsa-ack

Displays all OSPFv3 LSA acknowledgment packets in rx or tx mode.

Syntax

debug ipv6 ospf packet-lsa-ack

no debug ipv6 ospf packet-lsa-ack

Modes

Privileged EXEC mode

Global configuration mode

Examples

```
device# debug ipv6 ospf packet-lsa-ack
OSPFv3: packet-lsa-ack debugging is on
Debug: Dec  9 11:15:08 OSPFv3: Rcv LSAck on ve 2150  OSPFv3: (fe80::768e:f8ff:fe46:bf60->OSPFv3:
ff02::5)
  Type:2009, LSID:0 Adv:1.0.0.1 SEQ:80000b5e AGE:1
Debug: Dec  9 11:15:08 OSPFv3: Rcv LSAck on ve 2250  OSPFv3: (fe80::224:38ff:fe76:2a40->OSPFv3: ff02::5)
  Type:2009, LSID:0 Adv:1.0.0.1 SEQ:80000b5e AGE:1
Debug: Dec  9 11:15:08 OSPFv3: Rcv LSAck on ve 2122  OSPFv3: (fe80::277:77ff:fe77:1111->OSPFv3: ff02::5)
  Type:2009, LSID:0 Adv:1.0.0.1 SEQ:80000b5e AGE:2
Debug: Dec  9 11:15:08 OSPFv3: neighbor 7.0.0.3 not found, reject received LS ACK
Debug: Dec  9 11:15:08 OSPFv3: Rcv LSAck on ve 120  OSPFv3: (fe80::204:80ff:fe11:1111->OSPFv3: ff02::5)
  Type:2009, LSID:0 Adv:1.0.0.1 SEQ:80000b5e AGE:1
Debug: Dec  9 11:15:08 OSPFv3: Rcv LSAck on ve 1737  OSPFv3: (fe80::768e:f8ff:fef9:b8dc->OSPFv3:
ff02::5)
  Type:2009, LSID:0 Adv:1.0.0.1 SEQ:80000b5e AGE:1
Debug: Dec  9 11:15:08 OSPFv3: Rcv LSAck on ve 1837  OSPFv3: (fe80::768e:f8ff:fe34:b570->OSPFv3:
ff02::5)
  Type:2009, LSID:0 Adv:1.0.0.1 SEQ:80000b5e AGE:1
Debug: Dec  9 11:15:12 OSPFv3: Snd LSAck on ve 2250 OSPFv3: (fe80::ce4e:24ff:fe39:4480->OSPFv3:
fe80::224:38ff:fe76:2a40)
  Type:2002, LSID:3085 Adv:7.0.0.3 SEQ:80000035 AGE:2
Debug: Dec  9 11:15:13 OSPFv3: Snd LSAck on ve 2150 OSPFv3: (fe80::ce4e:24ff:fe39:4480->OSPFv3:
fe80::768e:f8ff:fe46:bf60)
  Type:2001, LSID:0 Adv:7.0.0.3 SEQ:800008cc AGE:1
Debug: Dec  9 11:15:13 OSPFv3: Snd LSAck on ve 2250 OSPFv3: (fe80::ce4e:24ff:fe39:4480->OSPFv3:
fe80::224:38ff:fe76:2a40)
  Type:2001, LSID:0 Adv:7.0.0.3 SEQ:800008cc AGE:1
Debug: Dec  9 11:15:13 OSPFv3: Snd LSAck on ve 2250 OSPFv3: (fe80::ce4e:24ff:fe39:4480->OSPFv3:
fe80::224:38ff:fe76:2a40)
  Type:2002, LSID:3085 Adv:7.0.0.3 SEQ:80000036 AGE:1
Debug: Dec  9 11:15:13 OSPFv3: Snd LSAck on ve 2150 OSPFv3: (fe80::ce4e:24ff:fe39:4480->OSPFv3:
fe80::768e:f8ff:fe46:bf60)
  Type:2002, LSID:3085 Adv:7.0.0.3 SEQ:80000036 AGE:1
Debug: Dec  9 11:15:13 OSPFv3: Snd LSAck on ve 2250 OSPFv3: (fe80::ce4e:24ff:fe39:4480->OSPFv3:
fe80::224:38ff:fe76:2a40)
  Type:2009, LSID:92550 Adv:7.0.0.3 SEQ:8000002d AGE:1
Debug: Dec  9 11:15:13 OSPFv3: Snd LSAck on ve 2150 OSPFv3: (fe80::ce4e:24ff:fe39:4480->OSPFv3:
fe80::768e:f8ff:fe46:bf60)
  Type:2009, LSID:92550 Adv:7.0.0.3 SEQ:8000002d AGE:1
Debug: Dec  9 11:15:13 OSPFv3: Rcv LSAck on ve 2122  OSPFv3: (fe80::768e:f8ff:fe46:bf60->OSPFv3:
ff02::5)
  Type:2001, LSID:0 Adv:7.0.0.3 SEQ:800008cc AGE:1
  Type:2002, LSID:3085 Adv:7.0.0.3 SEQ:80000036 AGE:1
  Type:2009, LSID:92550 Adv:7.0.0.3 SEQ:8000002d AGE:1
```

debug ipv6 ospf route

Displays all OSPFv3 routes.

Syntax

debug ipv6 ospf route

no debug ipv6 ospf route

Modes

Privileged EXEC mode

Global configuration mode

Examples

```
device# debug ipv6 ospf route
OSPFv3: route debugging is on
Debug: Dec  9 11:24:18 OSPFv3: add to spf list Inst vrf id 0, flag 0
Debug: Dec  9 11:24:24 OSPFv3: delete from spf list Inst vrf id 0, flag 1
Debug: Dec  9 11:24:24 OSPFv3 ROUTE: release semaphore 1
Debug: Dec  9 11:24:24 OSPFv3: SPF: Calculation for area 0.0.0.0
Debug: Dec  9 11:24:24 OSPFv3: SPF: installing vertex 1.0.0.1
Debug: Dec  9 11:24:24 OSPFv3: SPF: 2.0.0.1:14337 is the first hop
Debug: Dec  9 11:24:24 OSPFv3: SPF : 2.0.0.1:14337 nexthop :: ifindex 14341
Debug: Dec  9 11:24:24 OSPFv3: SPF: Examining Vertex: 2.0.0.1:14337
Debug: Dec  9 11:24:24 OSPFv3: SPF: new node added to candidate list: 2.0.0.1:14337
Debug: Dec  9 11:24:24 OSPFv3: SPF: 1.0.0.13:2050 is the first hop
Debug: Dec  9 11:24:24 OSPFv3: SPF : 1.0.0.13:2050 nexthop :: ifindex 14364
Debug: Dec  9 11:24:24 OSPFv3: SPF: Examining Vertex: 1.0.0.13:2050
Debug: Dec  9 11:24:24 OSPFv3: SPF: new node added to candidate list: 1.0.0.13:2050
Debug: Dec  9 11:24:24 OSPFv3: SPF: 1.0.0.14:2050 is the first hop
Debug: Dec  9 11:24:24 OSPFv3: SPF : 1.0.0.14:2050 nexthop :: ifindex 14366
Debug: Dec  9 11:24:24 OSPFv3: SPF: Examining Vertex: 1.0.0.14:2050
Debug: Dec  9 11:24:24 OSPFv3: SPF: new node added to candidate list: 1.0.0.14:2050
Debug: Dec  9 11:24:24 OSPFv3: SPF: 1.0.0.11:2050 is the first hop
Debug: Dec  9 11:24:24 OSPFv3: SPF : 1.0.0.11:2050 nexthop :: ifindex 14369
Debug: Dec  9 11:24:24 OSPFv3: SPF: Examining Vertex: 1.0.0.11:2050
Debug: Dec  9 11:24:24 OSPFv3: SPF: new node added to candidate list: 1.0.0.11:2050
Debug: Dec  9 11:24:24 OSPFv3: SPF: 1.0.0.12:2050 is the first hop
Debug: Dec  9 11:24:24 OSPFv3: SPF : 1.0.0.12:2050 nexthop :: ifindex 14371
Debug: Dec  9 11:24:24 OSPFv3: SPF: Examining Vertex: 1.0.0.12:2050
Debug: Dec  9 11:24:24 OSPFv3: SPF: new node added to candidate list: 1.0.0.12:2050
Debug: Dec  9 11:24:24 OSPFv3: SPF: installing vertex 2.0.0.1:14337
Debug: Dec  9 11:24:24 OSPFv3: ROUTE: Creating route: 2.0.0.1:14337
```

debug ipv6 pim

Enables theIPv6 Protocol Independent Multicast (PIM) debugging.

Syntax

debug ipv6 pim[**fdb**|**hash**|**ipc**|**optimization**|**route-change**|**scaling**|**sync-lib**|**timer-type***num*]

no debug ipv6 pim[**fdb**|**hash**|**ipc**|**optimization**|**route-change**|**scaling**|**sync-lib**|**timer-type***num*]

Parameters

fdb
Enables application VLAN (vidx) and forwarding database debugging.

hash
Displays hash address details for debugging.

ipc
Debugs inter-process communication between MP and LP.

optimization
Debugs multicast outgoing interface (OIF) list optimization.

route-change
Monitors route change.

scaling
Monitors scaling.

sync-lib
Monitors sync-lib operations.

timer-type*num*
Displays stack trace of timer.

Modes

Privileged EXEC mode

Usage Guidelines

The **no** form of the command disables PIM debugging.

Examples

```
device# debug ipv6 pim
```

debug ipv6 pim add-del-oif

Displays information about the mcache activity.

Syntax

debug ipv6 pim add-del-oif

no debug ipv6 pim add-del-oif

Modes

Privileged EXEC mode

Usage Guidelines

The command will work with the **debug ipv6 pim group** or **debug ipv6 pim source** commands.

Examples

```
device#debug ipv6 pim add-del-oif
May 29 11:22:05:295426:info:fi_debug:debug_logs:1:940808291223041: PIM.VRF0: KAT Reset for (3111::12
ff1e::5:1) to -1
May 29 11:22:05:294522:info:fi_debug:debug_logs:1:940808291223041: [mcastFlowEntrySetup]: VRF0 Setting
up mcast flow entry (3111::12 ff1e::5:1)
May 29 11:22:05:294396:info:fi_debug:debug_logs:1:940808291223041: PIM.VRF0:  OIF Update Fwdmask: Added
FwdPort L3OIF v10,3/1/5 to (3111::12,ff1e::5:1)  Action(Add)
May 29 11:22:05:294292:info:fi_debug:debug_logs:1:940808291223041: PIM-OIF.VRF0: (3111::12 ff1e::5:1)
Entry Flags 0x200680e1: Add 3/1/5 on 10 (L3). OIF_FLAGS: 4
May 29 11:22:05:293690:info:fi_debug:debug_logs:1:940808291223041: VRF0 Flow Entry removal (3111::12
ff1e::5:1) in HW: 0
May 29 11:22:05:293587:info:fi_debug:debug_logs:1:940808291223041: [freeMCEntryForFlow]: VRF0 Deleting
mcast flow entry (3111::12 ff1e::5:1) free_l2_mac
May 29 11:22:05:290566:info:fi_debug:debug_logs:1:940808291223041: PIM.VRF0: Remove OIF: NOP: L2OIF for
v20,lg1 from (3111::12, ff1e::5:1) entry, remove_now=1, Reason(IIFmatch)  Action(Nop) CurrentState(0x0)
NewState(0x200)
May 29 11:22:05:290394:info:fi_debug:debug_logs:1:940808291223041: PIMSM.VRF0: OIF FSM 0 case for
(3111::12, ff1e::5:1) entry Reason(IIFmatch), Action(Nop) flagAction 0 CurrentState(0x0)
NewState(0x200)
May 29 11:22:05:290316:info:fi_debug:debug_logs:1:940808291223041: PIM.VRF0: OIF FSM common events
Remove for (3111::12, ff1e::5:1) entry Reason(IIFmatch), Action(Nop), flagAction(0) CurrentState(0x0)
NewFlag(0x200)
May 29 11:22:05:290187:info:fi_debug:debug_logs:1:940808291223041: PIM.VRF0: KAT Reset for (3111::12
ff1e::5:1) to 180
May 29 11:22:05:191240:info:fi_debug:debug_logs:1:940808291223041: (3111::12.ff1e::5:1).VRF0, parent
v20, vlan_tnnl 20, oift 1 parent-phy-port 1/1/1, parent oif not found
May 29 11:22:05:185471:info:fi_debug:debug_logs:1:940533413316097: hal_fwd_mcache_insert_hash_entry
allocated VRF0 (3111::12, ff1e::5:1) entry
May 29 11:22:05:185379:info:fi_debug:debug_logs:1:940533413316097: PIM.VRF0:  OIF Update Fwdmask: Added
FwdPort L3OIF v10,3/1/5 to (3111::12,ff1e::5:1)  Action(Add)
May 29 11:22:05:185291:info:fi_debug:debug_logs:1:940533413316097: PIM-OIF.VRF0: (3111::12 ff1e::5:1)
Entry Flags 0x200600e0: Add 3/1/5 on 10 (L3). OIF_FLAGS: 4
May 29 11:22:05:185181:info:fi_debug:debug_logs:1:940533413316097: [freeMCEntryForFlow]: VRF0 Deleting
mcast flow entry (3111::12 ff1e::5:1) free_l2_mac
May 29 11:22:05:184111:info:fi_debug:debug_logs:1:940537708283393: PIM.VRF0: KAT Reset for (3111::12
ff1e::5:1) to 180
May 29 11:22:05:183968:info:fi_debug:debug_logs:1:940537708283393: PIMSM.VRF0: Created (3111::12 ff1e::
5:1) entry. Parent v20. RP=98::1. Flags 0x200600e0
May 29 11:22:05:168250:info:fi_debug:debug_logs:1:940537708283393: PIM.VRF0: Remove OIF: NOP: L2OIF for
v20,lg1 from (3111::12, ff1e::5:1) entry, remove_now=1, Reason(IIFmatch)  Action(Nop) CurrentState(0x0)
NewState(0x200)
May 29 11:22:05:168173:info:fi_debug:debug_logs:1:940537708283393: PIMSM.VRF0: OIF FSM 0 case for
(3111::12, ff1e::5:1) entry Reason(IIFmatch), Action(Nop) flagAction 0 CurrentState(0x0)
NewState(0x200)
May 29 11:22:05:167746:info:fi_debug:debug_logs:1:940537708283393: PIM.VRF0: OIF FSM common events
Remove for (3111::12, ff1e::5:1) entry Reason(IIFmatch), Action(Nop), flagAction(0) CurrentState(0x0)
NewFlag(0x200)
May 29 11:22:05:167664:info:fi_debug:debug_logs:1:940537708283393: PIM.VRF0: Remove OIF: NOP: L2OIF for
v20,INVALID from (3111::12, ff1e::5:1) entry, remove_now=1, Reason(IIFNoMatch)  Action(Nop)
CurrentState(0x0) NewState(0x200)
May 29 11:22:05:167590:info:fi_debug:debug_logs:1:940537708283393: PIMSM.VRF0: OIF FSM 0 case for
(3111::12, ff1e::5:1) entry Reason(IIFNoMatch), Action(Nop) flagAction 0 CurrentState(0x0)
NewState(0x200)
May 29 11:22:05:167510:info:fi_debug:debug_logs:1:940537708283393: PIM.VRF0: OIF FSM common events
Remove for (3111::12, ff1e::5:1) entry Reason(IIFNoMatch), Action(Nop), flagAction(0) CurrentState(0x0)
NewFlag(0x200)
May 29 11:22:05:167321:info:fi_debug:debug_logs:1:940537708283393: PIM.VRF0:  OIF Update Fwdmask: Added
FwdPort L3OIF v10,3/1/5 to (3111::12,ff1e::5:1)  Action(Add)
May 29 11:22:05:167244:info:fi_debug:debug_logs:1:940537708283393: PIM.VRF0: Update oifflg v110/3/1/5
(3111::12,ff1e::5:1), rcode(IgmpGrpJoin), Act(Add) cstate(0x2) nstate(0x4) newflg 0x4, #immoifs 0
#bldoifs 0 #inhoifs 0  #fwdoifs 0 sync 1
May 29 11:22:05:167157:info:fi_debug:debug_logs:1:940537708283393: PIM-OIF.VRF0: (3111::12 ff1e::5:1)
Entry Flags 0x220080: Add 3/1/5 on 10 (L3). OIF_FLAGS: 4
May 29 11:22:05:167074:info:fi_debug:debug_logs:1:940537708283393: PIM.VRF0: Add OIF: Adding L3OIF
v10,3/1/5 to (3111::12,ff1e::5:1), Reason(IgmpGrpJoin)  Action(Add) CurrentState(0x2) NewState(0x4)
holdtime 210
May 29 11:22:05:166955:info:fi_debug:debug_logs:1:940537708283393: PIMSM.VRF0: OIF FSM 1 case for
(3111::12, ff1e::5:1) entry Reason(IgmpGrpJoin), Action(Add) flagAction 3 CurrentState(0x0)
NewState(0x4)
```

```
May 29 11:22:05:099842:info:fi_debug:debug_logs:1:940533413316097: (*.ff1e::5:1).VRF0, parent v20,
vlan_tnnl 20, oift 1 parent-phy-port 1/1/1, parent oif not found
May 29 11:21:58:769582:info:fi_debug:debug_logs:1:940129686390273: PIMSM.VRF0: OIF FSM  1 for (*, ff1e::
5:1) entry Reason(IgmpGrpJoin), Action(Update), flagAction(1) CurrentState(0x4) NewState(0x4)
May 29 11:21:53:845103:info:fi_debug:debug_logs:1:939730254431745: PIM.VRF0:  OIF Update Fwdmask: Added
FwdPort L3OIF v10,3/1/5 to (*,ff1e::5:1)  Action(Add)
May 29 11:21:53:844411:info:fi_debug:debug_logs:1:939730254431745: PIM-OIF.VRF0: (* ff1e::5:1) Entry
Flags 0x2604a0: Add 3/1/5 on 10 (L3). OIF_FLAGS: 4
May 29 11:21:53:842639:info:fi_debug:debug_logs:1:939730254431745: PIM.VRF0:  OIF Update Fwdmask: Added
FwdPort L3OIF v10,3/1/5 to (*,ff1e::5:1)  Action(Add)
May 29 11:21:53:842519:info:fi_debug:debug_logs:1:939730254431745: PIM.VRF0: Update oifflg vl10/3/1/5
(*,ff1e::5:1), rcode(IgmpGrpJoin), Act(Add) cstate(0x0) nstate(0x4) newflg 0x4, #immoifs 1 #bldoifs 0
#inhoifs 0 #fwdoifs 1 sync 1
May 29 11:21:53:828095:info:fi_debug:debug_logs:1:939730254431745: PIM-OIF.VRF0: (* ff1e::5:1) Entry
Flags 0x220080: Add 3/1/5 on 10 (L3). OIF_FLAGS: 4
May 29 11:21:53:828015:info:fi_debug:debug_logs:1:939730254431745: PIM.VRF0: Add OIF: Adding L3OIF
v10,3/1/5 to (*,ff1e::5:1), Reason(IgmpGrpJoin)  Action(Add) CurrentState(0x0) NewState(0x4) holdtime
260
May 29 11:21:53:827903:info:fi_debug:debug_logs:1:939730254431745: PIMSM.VRF0: OIF FSM  1 for (*, ff1e::
5:1) entry Reason(IgmpGrpJoin), Action(Add), flagAction(1) CurrentState(0x0) NewState(0x4)
May 29 11:21:53:827513:info:fi_debug:debug_logs:1:939730254431745: PIMSM.VRF0: Created (* ff1e::5:1)
entry. Parent ff1e::5:1. RP=v20. LIFid 141292240. Flags 0x0
```

History

Release version	Command history
09.0.00	This command was introduced.

debug ipv6 pim bootstrap

Enables IPv6 Protocol Independent Multicast (PIM) bootstrap debugging.

Syntax

debug ipv6 pim bootstrap

no debug ipv6 pim bootstrap

Modes

Privileged EXEC mode

Usage Guidelines

The no form of the command disables IPv6 PIM bootstrap debugging.

Examples

```
device#debug ipv6 pim bootstrap
Apr 23 15:12:03:078131:info:fi_debug:debug_logs:1:4397840352675329: DHCPV4: received packet SIP:
0.0.0.0, DIP: 255.255.255.255, SP: 68, DP: 67, PROTO: 17
Apr 23 15:12:00:810368:info:fi_debug:debug_logs:1:10556329533900289: PIM-BSR.VRF0: Intf v20 - accept
BSM from BSR 99::11(Pr 200), local state AccPref, curr BSR 99::11 (Pr 200)
Apr 23 15:12:00:810289:info:fi_debug:debug_logs:1:10556329533900289: PIM-BSR.VRF0: Prefer BSR 99::11(Pr
200) over current BSR 99::11(Pr 200)
Apr 23 15:12:00:810213:info:fi_debug:debug_logs:1:10556329533900289: Suppressed 4 times: DHCPV4:
received packet SIP: 0.0.0.0, DIP: 255.255.255.255, SP: 68, DP: 67, PROTO: 17
Apr 23 15:11:13:815545:info:fi_debug:debug_logs:1:4396341409089025: DHCPV4: received packet SIP:
0.0.0.0, DIP: 255.255.255.255, SP: 68, DP: 67, PROTO: 17
Apr 23 15:11:00:749204:info:fi_debug:debug_logs:1:10552064631375361: PIM-BSR.VRF0: Intf v20 - accept
BSM from BSR 99::11(Pr 200), local state AccPref, curr BSR 99::11 (Pr 200)
Apr 23 15:11:00:749126:info:fi_debug:debug_logs:1:10552064631375361: PIM-BSR.VRF0: Prefer BSR 99::11(Pr
200) over current BSR 99::11(Pr 200)
Apr 23 15:11:00:749048:info:fi_debug:debug_logs:1:10552064631375361: Suppressed 8 times: DHCPV4:
received packet SIP: 0.0.0.0, DIP: 255.255.255.255, SP: 68, DP: 67, PROTO: 17"
```

debug ipv6 pim clear

Clears all the IPv6 PIM debug settings.

Syntax

debug ipv6 pim clear

no debug ipv6 pim clear

Modes

Privileged EXEC mode

Examples

If no settings are enabled, output similar to the following will be displayed.

```
device# debug ipv6 pim event
PIM6 event debugging is on
device#
device#debug ipv6 pim show
debug ipv6 pim event
device#debug ipv6 pim clear
device#debug ipv6 pim show
device#
```

debug ipv6 pim event

Enables debugging of IPv6 PIM events.

Syntax

debug ipv6 pim event

no debug ipv6 pim event

Modes

Privileged EXEC mode

Usage Guidelines

The no form of the command disables debugging of IPv6 PIM events.

Examples

```
device# debug ipv6 pim event
May 29 11:28:28:809869:info:fi_debug:debug_logs:1:10433072562438912: PIM-EVT.VRF0: Receive intf v20 Up
state_notify. AFI: IPv6.
May 29 11:28:28:809753:info:fi_debug:debug_logs:1:10433072562438912: PIM6-EVT: Recv linklocal addr add
nfn on intf v20, new link local addr fe80::629c:9fff:fec1:b8d0
May 29 11:28:28:790368:info:fi_debug:debug_logs:1:10433072562438912: PIM-EVT.VRF0: Receive intf v20 Dn
state_notify. AFI: IPv6.
May 29 11:28:28:790231:info:fi_debug:debug_logs:1:10433072562438912: PIM6-EVT: Recv global addr change
nfn on intf v20, new global addr 2111::11
May 29 11:28:28:788155:info:fi_debug:debug_logs:1:10433072562438912: PIM-EVT.VRF0: Receive intf v20 Dn
state_notify. AFI: IPv6.
May 29 11:28:28:753468:info:fi_debug:debug_logs:1:10433072562438912: PIM-EVT.VRF1: Receive intf v21 Up
state_notify. AFI: IPv6.
May 29 11:28:28:753353:info:fi_debug:debug_logs:1:10433072562438912: PIM6-EVT: Recv linklocal addr add
nfn on intf v21, new link local addr fe80::629c:9fff:fec1:b8d0
May 29 11:28:28:733333:info:fi_debug:debug_logs:1:10433072562438912: PIM-EVT.VRF1: Receive intf v21 Dn
state_notify. AFI: IPv6.
May 29 11:28:28:733216:info:fi_debug:debug_logs:1:10433072562438912: PIM6-EVT: Recv global addr change
nfn on intf v21, new global addr 21::21
May 29 11:28:28:732620:info:fi_debug:debug_logs:1:10433072562438912: PIM-EVT.VRF1: Receive intf v21 Dn
state_notify. AFI: IPv6.
May 29 11:28:27:403374:info:fi_debug:debug_logs:1:969146485442049: MLD: [ Port lg1 ] Query version
mismatch. Received query version 2 from fe80::d6c1:9eff:fe15:f999; Port version 1.
May 29 11:28:26:039090:info:fi_debug:debug_logs:1:10430130509841152: PIM6-EVT: Received vport v21/1/1/3
(lg1) Up state notify
May 29 11:28:26:013784:info:fi_debug:debug_logs:1:10430130509841152: PIM-EVT.VRF1: Receive intf v21 Up
state_notify. AFI: IPv6.
May 29 11:28:26:013667:info:fi_debug:debug_logs:1:10430130509841152: MC-EVT: Port v21 state changed to
UP. AFI: IPv6.
May 29 11:28:25:974696:info:fi_debug:debug_logs:1:10430130509841152: PIM6-EVT: Received vport v21/1/1/1
(lg1) Up state notify
May 29 11:28:25:943949:info:fi_debug:debug_logs:1:10430130509841152: PIM6-EVT: Received vport v20/1/1/3
(lg1) Up state notify
May 29 11:28:25:933560:info:fi_debug:debug_logs:1:10430130509841152: PIM-EVT.VRF0: Receive intf v20 Up
state_notify. AFI: IPv6.
May 29 11:28:25:933443:info:fi_debug:debug_logs:1:10430130509841152: MC-EVT: Port v20 state changed to
UP. AFI: IPv6.
May 29 11:28:25:908923:info:fi_debug:debug_logs:1:10430130509841152: PIM6-EVT: Received vport v20/1/1/1
(lg1) Up state notify
May 29 11:27:55:068982:info:fi_debug:debug_logs:1:966745598723585: Mcast6v6 receive event
EVENT_ID_TRUNK_MEMBER_UP(15)
May 29 11:27:55:068905:info:fi_debug:debug_logs:1:966745598723585: Suppressed 1 times: PIM6-EVT:
Received vport v21/1/1/3 (lg1) Dn state notify
May 29 11:27:55:057461:info:fi_debug:debug_logs:1:966745598723585: PIM6-EVT: Received vport v21/1/1/3
(lg1) Dn state notify
May 29 11:27:55:057387:info:fi_debug:debug_logs:1:966745598723585: Suppressed 1 times: PIM6-EVT:
Received vport v20/1/1/3 (lg1) Dn state notify
May 29 11:27:55:046795:info:fi_debug:debug_logs:1:966745598723585: PIM6-EVT: Received vport v20/1/1/3
(lg1) Dn state notify
May 29 11:27:54:975293:info:fi_debug:debug_logs:1:966745598723585: Mcast6v6 receive event
EVENT_ID_TRUNK_MEMBER_UP(15)
May 29 11:27:50:183693:info:fi_debug:debug_logs:1:10399193860408064: Suppressed 1 times: PIM6-EVT:
Received vport v21/1/1/3 (lg1) Dn state notify
May 29 11:27:13:730348:info:fi_debug:debug_logs:1:42949672961: PIM6-EVT: Received vport v21/1/1/3 (lg1)
Dn state notify
May 29 11:27:13:730273:info:fi_debug:debug_logs:1:42949672961: Suppressed 1 times: PIM6-EVT: Received
vport v20/1/1/3 (lg1) Dn state notify
May 29 11:27:13:717412:info:fi_debug:debug_logs:1:42949672961: PIM6-EVT: Received vport v20/1/1/3 (lg1)
Dn state notify
May 29 11:27:13:666429:info:fi_debug:debug_logs:1:42949672961: PIM-EVT.VRF1: Receive intf v21 Dn
state_notify. AFI: IPv6.
May 29 11:27:13:666314:info:fi_debug:debug_logs:1:42949672961: MC-EVT: Port v21 state changed to DOWN.
AFI: IPv6.
May 29 11:27:13:660870:info:fi_debug:debug_logs:1:42949672961: PIM6-EVT: Received vport v21/1/1/3 (lg1)
Dn state notify
May 29 11:27:13:626511:info:fi_debug:debug_logs:1:42949672961: PIM-EVT.VRF0: Receive intf v20 Dn
state_notify. AFI: IPv6.
May 29 11:27:13:626376:info:fi_debug:debug_logs:1:42949672961: MC-EVT: Port v20 state changed to DOWN.
AFI: IPv6.
```

```
May 29 11:27:13:602469:info:fi_debug:debug_logs:1:42949672961: PIM6-EVT: Received vport v20/1/1/3 (lg1)
Dn state notify
May 29 11:27:13:522699:info:fi_debug:debug_logs:1:42949672961: Mcast6v6 receive event
EVENT_ID_TRUNK_DOWN(13)
May 29 11:27:13:505021:info:fi_debug:debug_logs:1:42949672961: Mcast6v6 receive event
EVENT_ID_TRUNK_MEMBER_DOWN(16)
May 29 11:27:13:407392:info:fi_debug:debug_logs:1:42949672961: PIM6-EVT: Received vport v21/1/1/1 (lg1)
Dn state notify
May 29 11:27:13:386449:info:fi_debug:debug_logs:1:42949672961: PIM6-EVT: Received vport v20/1/1/1 (lg1)
Dn state notify
May 29 11:27:13:248202:info:fi_debug:debug_logs:1:42949672961: Mcast6v6 receive event
EVENT_ID_TRUNK_MEMBER_DOWN(16)
May 29 11:27:13:223184:info:fi_debug:debug_logs:1:42949672961: PIM-EVT.VRF1: Receive intf v21 Dn
state_notify. AFI: IPv6.
May 29 11:27:13:223076:info:fi_debug:debug_logs:1:42949672961: PIM6-EVT: Recv linklocal addr del nfn on
intf v21,sent 0 holdtime hello, link local addr unset
May 29 11:27:13:221555:info:fi_debug:debug_logs:1:42949672961: PIM-EVT.VRF0: Receive intf v20 Dn
state_notify. AFI: IPv6.
May 29 11:27:13:221413:info:fi_debug:debug_logs:1:42949672961: PIM6-EVT: Recv linklocal addr del nfn on
intf v20,sent 0 holdtime hello, link local addr unset
```

debug ipv6 pim group

Displays the IPv6 PIM related debugging information for the specified PIM group.

Syntax

debug ipv6 pim group*group_addr*

no debug ipv6 pim group*group_addr*

Parameters

group_addr

Specifies the group address of the PIM.

Modes

Privileged EXEC mode

Examples

```
device# debug ipv6 pim group ff1e::5:1
May 29 11:33:39:710097:info:fi_debug:debug_logs:1:995642138691073: stack: 00546ee8 0114a590 010d4e38
010d5f48 01165f14 01166168 01166470 0116c2ec 01147130 01101d20 010f1e9c 01121458 005c1f38 005c2998
011b177c b6d93eb0 b6f9a195
May 29 11:33:39:709971:info:fi_debug:debug_logs:1:995642138691073: PIM.VRF0: Allocation of hw resources
for (3111::12 ff1e::5:1) successful. olist not empty. FID NotReq. MVID   321
May 29 11:33:33:141266:info:fi_debug:debug_logs:1:10686467042968320: PIM.VRF0: Deallocated hw resources
for (* ff1e::5:1), parent: v20,Nil. olist empty
May 29 11:33:33:046453:info:fi_debug:debug_logs:1:210453397505: stack: 00546ee8 0114a590 010d4e38
010d6ba8 01161d70 01162008 011624d4 01146df4 010dff10 01102568 010e3438 010e3660 01289698 01289e6c
01289ec0 01289f40 00123350 01289fd8 005c1f38 005c2998 01187f10 b6d93eb0 b6f9a195
May 29 11:33:33:046299:info:fi_debug:debug_logs:1:210453397505: PIM.VRF0: Allocation of hw resources
for (3111::12 ff1e::5:1) successful. olist empty. FID NotReq. MVID Drop
```

debug ipv6 pim join-prune

Controls join prune processing and displays debugging information related to the IPv6 join prune messages.

Syntax

debug ipv6 pim join-prune

no debug ipv6 pim join-prune

Modes

Privileged EXEC mode

Examples

```
device# debug ipv6 pim join-prune
May 29 11:31:54:591512:info:fi_debug:debug_logs:1:10604531951862528: PIM: End sending Join/Prune msg
---
May 29 11:31:54:590934:info:fi_debug:debug_logs:1:10604531951862528:     J-Src: 3111::12, wc=0 rpt=0
SM=1
May 29 11:31:54:590864:info:fi_debug:debug_logs:1:10604531951862528:     J-Src: 98::1, wc=1 rpt=1 SM=1
May 29 11:31:54:590790:info:fi_debug:debug_logs:1:10604531951862528: PIM-JP.VRF0:  Group: ff1e::5:1,
JoinSrcs: 2, PruneSrcs: 0
May 29 11:31:54:590684:info:fi_debug:debug_logs:1:10604531951862528: PIM-JP.VRF0: BEGIN SENDING Join/
Prune msg to fe80::d6c1:9eff:fe15:f999 on v20
May 29 11:31:53:600477:info:fi_debug:debug_logs:1:10603677253370624: PIM: End sending Join/Prune msg
---
May 29 11:31:53:600014:info:fi_debug:debug_logs:1:10603677253370624:     P-Src: 98::1, wc=1 rpt=1 SM=1
May 29 11:31:53:599939:info:fi_debug:debug_logs:1:10603677253370624: PIM-JP.VRF0:  Group: ff1e::5:1,
JoinSrcs: 0, PruneSrcs: 1
May 29 11:31:53:599834:info:fi_debug:debug_logs:1:10603677253370624: PIM-JP.VRF0: BEGIN SENDING Join/
Prune msg to fe80::d6c1:9eff:fe15:f999 on v20
May 29 11:31:50:541119:info:fi_debug:debug_logs:1:10601117452862208: PIM: End sending Join/Prune msg
---
May 29 11:31:50:540698:info:fi_debug:debug_logs:1:10601117452862208:     P-Src: 3111::12, wc=0 rpt=0
SM=1
May 29 11:31:50:540627:info:fi_debug:debug_logs:1:10601117452862208:     P-Src: 98::1, wc=1 rpt=1 SM=1
May 29 11:31:50:540553:info:fi_debug:debug_logs:1:10601117452862208: PIM-JP.VRF0:  Group: ff1e::5:1,
JoinSrcs: 0, PruneSrcs: 2
May 29 11:31:50:540438:info:fi_debug:debug_logs:1:10601117452862208: PIM-JP.VRF0: BEGIN SENDING Join/
Prune msg to fe80::d6c1:9eff:fe15:f999 on v20
```

debug ipv6 pim level

Sets the IPv6 Protocol Independent Multicast (PIM) level.

Syntax

debug ipv6 pim level*decimal*

no debug ipv6 pim level

Parameters

decimal

Specifies the number of the PIM level. The valid values are from 1 through 3.

Modes

Privileged EXEC mode

Examples

```
device#debug ipv6 pim level 3
device#debug ipv6 pim packet 3111::12 ff1e::5:1 5
May 29 11:48:14:387969:info:fi_debug:debug_logs:1:1066715257505281:    (3111::12,ff1e::5:1), pkt
incoming at v20, REG: OFF, FWD_FAST: OFF, hw_drop: ON
May 29 11:48:14:387877:info:fi_debug:debug_logs:1:1066715257505281: Rx Pkt (3111::12, ff1e::5:1) on
v20(1/1/1). hit=0
May 29 11:48:14:387636:info:fi_debug:debug_logs:1:1066710962537985:    (3111::12,ff1e::5:1), pkt
incoming at v20, REG: OFF, FWD_FAST: OFF, hw_drop: ON
May 29 11:48:14:387542:info:fi_debug:debug_logs:1:1066710962537985: Rx Pkt (3111::12, ff1e::5:1) on
v20(1/1/1). hit=0
May 29 11:48:14:387293:info:fi_debug:debug_logs:1:1066706667570689:    (3111::12,ff1e::5:1), pkt
incoming at v20, REG: OFF, FWD_FAST: OFF, hw_drop: ON
May 29 11:48:14:387194:info:fi_debug:debug_logs:1:1066706667570689: Rx Pkt (3111::12, ff1e::5:1) on
v20(1/1/1). hit=0
May 29 11:48:14:386918:info:fi_debug:debug_logs:1:1066702372603393:    (3111::12,ff1e::5:1), pkt
incoming at v20, REG: OFF, FWD_FAST: OFF, hw_drop: ON
May 29 11:48:14:386823:info:fi_debug:debug_logs:1:1066702372603393:   send MCAST_FIRST_DATA: entry phy
port: INVALID, pkt input port: lg1. SPT-F, FAST-F, MCT IIF Flag: F.
May 29 11:48:14:386518:info:fi_debug:debug_logs:1:1066702372603393:    Rx flow on intf/port diff than
entry's intf v20 or port INVALID
May 29 11:48:14:386443:info:fi_debug:debug_logs:1:1066702372603393: Rx Pkt (3111::12, ff1e::5:1) on
v20(1/1/1). hit=0
May 29 11:48:14:386119:info:fi_debug:debug_logs:1:1066698077636097:   LP sends create nfn to MP for
intermediate (3111::12,ff1e::5:1) as hw drop route, pkt incoming at v20
May 29 11:48:14:385630:info:fi_debug:debug_logs:1:1066698077636097:    pimsm, fail longest_match,drop
packet
May 29 11:48:14:385497:info:fi_debug:debug_logs:1:1066698077636097: Rx Pkt (3111::12, ff1e::5:1) on
v20(1/1/1). hit=0
May 29 11:48:14:365293:info:fi_debug:debug_logs:1:107374182401: Cleanup Ended : 2021 May 29 10:48:13
May 29 11:48:14:364622:info:fi_debug:debug_logs:1:107374182401: Cleanup Started : 2021 May 29 10:48:13
```

History

Release version	Command history
09.0.00	This command was introduced.

debug ipv6 pim nbr

Controls the IPv6 PIM neighbor changes.

Syntax

debug ipv6 pim nbr[*nbr_address*]

no debug ipv6 pim nbr[*nbr_address*]

Parameters

nbr_address

Specifies the neighbor address.

Modes

Privileged EXEC mode

Global configuration mode

Examples

```
device#debug ipv6 pim nbr
May 29 11:35:23:261982:info:fi_debug:debug_logs:1:1003257115706881: PIM.VRF1: Rx Hello msg from
fe80::d6c1:9eff:fe15:f999 on intf v21, lg1
May 29 11:35:23:261790:info:fi_debug:debug_logs:1:1003252820739585: PIM.VRF0: Rx Hello msg from
fe80::d6c1:9eff:fe15:f999 on intf v20, lg1
May 29 11:35:22:046056:info:fi_debug:debug_logs:1:1003196986164737: PIM-NBR.VRF0: Neighbor
fe80::d6c1:9eff:fe15:f999 on interface v20, lg1 added
May 29 11:35:22:042670:info:fi_debug:debug_logs:1:1003196986164737: PIM-NBR.VRF0: GenId changed for
Neighbor fe80::d6c1:9eff:fe15:f999 on interface v20, lg1 ; new GenId 1599030656
May 29 11:35:22:042562:info:fi_debug:debug_logs:1:1003196986164737: PIM-NBR.VRF0: Neighbor
fe80::d6c1:9eff:fe15:f999 on interface v20, lg1 genid changed from 2695936639 to 1599030656
May 29 11:35:22:040830:info:fi_debug:debug_logs:1:1003196986164737: PIM.VRF0: Rx Hello msg from
fe80::d6c1:9eff:fe15:f999 on intf v20, lg1
May 29 11:35:21:992606:info:fi_debug:debug_logs:1:1003188396230145: PIM-NBR.VRF1: Neighbor
fe80::d6c1:9eff:fe15:f999 on interface v21, lg1 added
May 29 11:35:21:989672:info:fi_debug:debug_logs:1:1003188396230145: PIM-NBR.VRF1: GenId changed for
Neighbor fe80::d6c1:9eff:fe15:f999 on interface v21, lg1 ; new GenId 866894994
May 29 11:35:21:989557:info:fi_debug:debug_logs:1:1003188396230145: PIM-NBR.VRF1: Neighbor
fe80::d6c1:9eff:fe15:f999 on interface v21, lg1 genid changed from 3428072301 to 866894994
May 29 11:35:21:987511:info:fi_debug:debug_logs:1:1003188396230145: PIM.VRF1: Rx Hello msg from
fe80::d6c1:9eff:fe15:f999 on intf v21, lg1
May 29 11:35:20:992019:info:fi_debug:debug_logs:1:1003119676753409: ** Warning ** IPv6 - rcvd PIM V2
packet on v21. Interface is disabled.
May 29 11:35:20:991877:info:fi_debug:debug_logs:1:1003115381786113: ** Warning ** IPv6 - rcvd PIM V2
packet on v20. Interface is disabled.
May 29 11:35:20:924054:info:fi_debug:debug_logs:1:1003089611982337: ** Warning ** IPv6 - rcvd PIM V2
packet on v21. Interface is disabled.
May 29 11:35:20:906631:info:fi_debug:debug_logs:1:1003068137145857: MLD: [ Port lg1 ] Query version
mismatch. Received query version 2 from fe80::d6c1:9eff:fe15:f999; Port version 1.
May 29 11:35:20:906441:info:fi_debug:debug_logs:1:1003063842178561: ** Warning ** IPv6 - rcvd PIM V2
packet on v20. Interface is disabled.
May 29 11:34:33:751694:info:fi_debug:debug_logs:1:10736920023794432: PIM-NBR.VRF1: Neighbor
fe80::d6c1:9eff:fe15:f999 on interface v21, lg1 deleted on port-down
May 29 11:34:33:751147:info:fi_debug:debug_logs:1:10736920023794432: PIM-NBR.VRF0: Neighbor
fe80::d6c1:9eff:fe15:f999 on interface v20, lg1 deleted on port-down
May 29 11:34:33:750413:info:fi_debug:debug_logs:1:10736920023794432: PIM.VRF0:
(fe80::d6c1:9eff:fe15:f999 3111::12) Nbr ff1e::5:1 moved; changing parent_phy_port from lg1 to INVALID
```

History

Release version	Command history
09.0.00	This command was modified to change the option **nbr-change** to **nbr**.

debug ipv6 pim packet

Displays debugging information about the IPv6 PIM packets.

Syntax

debug ipv6 pim packet*source_address group_address* [**rate**]

no debug ipv6 pim packet*source_address group_address* [**rate**]

Parameters

source_address

Specifies the IPv6 source address of the PIM packet.

group_address

Specifies the IPv6 group address of the PIM packet.

rate

Specifies the hardware rate.

Modes

Privileged EXEC mode

Examples

```
device# debug ipv6 pim level 3
device#debug ipv6 pim packet 3111::12 ff1e::5:1 5
May 29 11:48:14:387969:info:fi_debug:debug_logs:1:1066715257505281:    (3111::12,ff1e::5:1), pkt
incoming at v20, REG: OFF, FWD_FAST: OFF, hw_drop: ON
May 29 11:48:14:387877:info:fi_debug:debug_logs:1:1066715257505281: Rx Pkt (3111::12, ff1e::5:1) on
v20(1/1/1). hit=0
May 29 11:48:14:387636:info:fi_debug:debug_logs:1:1066710962537985:    (3111::12,ff1e::5:1), pkt
incoming at v20, REG: OFF, FWD_FAST: OFF, hw_drop: ON
May 29 11:48:14:387542:info:fi_debug:debug_logs:1:1066710962537985: Rx Pkt (3111::12, ff1e::5:1) on
v20(1/1/1). hit=0
May 29 11:48:14:387293:info:fi_debug:debug_logs:1:1066706667570689:    (3111::12,ff1e::5:1), pkt
incoming at v20, REG: OFF, FWD_FAST: OFF, hw_drop: ON
May 29 11:48:14:387194:info:fi_debug:debug_logs:1:1066706667570689: Rx Pkt (3111::12, ff1e::5:1) on
v20(1/1/1). hit=0
May 29 11:48:14:386918:info:fi_debug:debug_logs:1:1066702372603393:    (3111::12,ff1e::5:1), pkt
incoming at v20, REG: OFF, FWD_FAST: OFF, hw_drop: ON
May 29 11:48:14:386823:info:fi_debug:debug_logs:1:1066702372603393:   send MCAST_FIRST_DATA: entry phy
port: INVALID, pkt input port: lg1. SPT-F, FAST-F, MCT IIF Flag: F.
May 29 11:48:14:386518:info:fi_debug:debug_logs:1:1066702372603393:    Rx flow on intf/port diff than
entry's intf v20 or port INVALID
May 29 11:48:14:386443:info:fi_debug:debug_logs:1:1066702372603393: Rx Pkt (3111::12, ff1e::5:1) on
v20(1/1/1). hit=0
May 29 11:48:14:386119:info:fi_debug:debug_logs:1:1066698077636097:   LP sends create nfn to MP for
intermediate (3111::12,ff1e::5:1) as hw drop route, pkt incoming at v20
May 29 11:48:14:385630:info:fi_debug:debug_logs:1:1066698077636097:    pimsm, fail longest_match,drop
packet
May 29 11:48:14:385497:info:fi_debug:debug_logs:1:1066698077636097: Rx Pkt (3111::12, ff1e::5:1) on
v20(1/1/1). hit=0
May 29 11:48:14:365293:info:fi_debug:debug_logs:1:107374182401: Cleanup Ended : 2021 May 29 10:48:13
May 29 11:48:14:364622:info:fi_debug:debug_logs:1:107374182401: Cleanup Started : 2021 May 29 10:48:13
```

debug ipv6 pim regproc

Controls IPv6 PIM register processing.

Syntax

debug ipv6 pim regproc

no debug ipv6 pim regproc

Modes

Privileged EXEC mode

Examples

```
device# debug ipv6 pim regproc
PIM6 regproc debugging is on
Apr 17 18:51:09:212526:info:fi_debug:debug_logs:1:68082816553845504: PIMSM-REG.VRF0: (10::11 ff1e::1:4)
Sending L2-Null Reg on iface v10
Apr 17 18:50:09:341680:info:fi_debug:debug_logs:1:68032385047855872: PIMSM-REG.VRF0: (10::11 ff1e::1:4)
Sending L2-Null Reg on iface v10"
```

debug ipv6 pim rp

Controls the Rendezvouz Point (RP) processing for IPv6 PIM events.

Syntax

debug ipv6 pim rp

no debug ipv6 pim rp

Modes

Privileged EXEC mode

Examples

```
device# debug ipv6 pim rp
Apr 17 18:34:06:102442:info:fi_debug:debug_logs:1:67222410050405120: PIMv6-RP.VRF0: processing C-RP-adv
from 99::11. PrefCnt 1
Apr 17 18:34:06:102358:info:fi_debug:debug_logs:1:67222410050405120: PIMv6-RP.VRF0: Looping C-RP-Adv
msg from fe80::d6c1:9eff:fe4a:2114 back to elected BSR (me)"
```

debug ipv6 pim show

Displays the IPv6 PIM debug settings.

Syntax

debug ipv6 pim show

no debug ipv6 pim show

Modes

Privileged EXEC mode

Examples

```
device# debug ipv6 pim event
PIM6 event debugging is on
device#
device#debug ipv6 pim show
debug ipv6 pim event
```

debug ipv6 pim source

Displays the IPv6 PIM related debugging information for the specified source address.

Syntax

debug ipv6 pim source*ipaddr*

no debug ipv6 pim source*ipaddr*

Parameters

ipaddr

Specifies the source IP address.

Modes

Privileged EXEC mode

Examples

```
device# debug ipv6 pim source 10::11
PIM6 source 10::11 debugging is on
Apr 17 18:40:30:729083:info:fi_debug:debug_logs:1:7821393144055297: stack: 00549994 0114c014 011547b0
011567b0 01158654 0115a1e0 011af8ac 005c3a0c 005c446c 011b39fc b6d22eb0 b6f31195
Apr 17 18:40:30:728992:info:fi_debug:debug_logs:1:7821393144055297: PIM.VRF0: Allocation of hw
resources for (10::11 ff1e::1:4) successful. olist empty. FID 0x4fff (D). MVID Drop
Apr 17 18:40:30:728835:info:fi_debug:debug_logs:1:7821393144055297: PIMSM.VRF0: receive first data,
(10::11 ff1e::1:4) entry. RP 99::11. Flags 0x4288c1
Apr 17 18:40:30:727724:info:fi_debug:debug_logs:1:7821393144055297: stack: 00549994 0114c014 01155220
01155a54 01156d54 0115a1e0 011af8ac 005c3a0c 005c446c 011b39fc b6d22eb0 b6f31195
Apr 17 18:40:30:727436:info:fi_debug:debug_logs:1:7821393144055297: PIM.VRF0: Allocation of hw
resources for (10::11 ff1e::1:4) successful. olist empty. FID 0x4fff (D). MVID Drop
Apr 17 18:40:30:727297:info:fi_debug:debug_logs:1:7821393144055297: PIM.VRF0: (S,G) entry (10::11 ff1e::
1:4) created. Src Local. RP 99::11. Flags 0x4288c0. Sent L2 regist"
```

debug ipv6 pim vrf

Displays the IPv6 PIM related debugging information for the specified VRF.

Syntax

debug ipv6 pim vrf*vrf_name*

no debug ipv6 pim vrf*vrf_name*

Modes

Privileged EXEC mode

Examples

```
device#debug ipv6 pim vrf SP_TN
device#debug ipv6 pim add-del-oif
device#debug ipv6 pim event
device#debug ipv6 pim join-prune
May 29 11:39:55:499149:info:fi_debug:debug_logs:1:1027046939559425: PIM.VRF1:  OIF Add v11,3/1/5 to
(31::22 ff1e::9:10) entry - receivers mbrship type 1
May 29 11:39:55:498997:info:fi_debug:debug_logs:1:1027046939559425: PIMSM.VRF1: OIF FSM  1 for (*,
ff1e::9:10) entry Reason(IgmpGrpJoin), Action(Update), flagAction(1) CurrentState(0x4) NewState(0x4)
May 29 11:39:54:930103:info:fi_debug:debug_logs:1:11007399884227328: PIM: End sending Join/Prune msg
---
May 29 11:39:54:929623:info:fi_debug:debug_logs:1:11007399884227328:     J-Src: 31::22, wc=0 rpt=0 SM=1
May 29 11:39:54:929549:info:fi_debug:debug_logs:1:11007399884227328: PIM-JP.VRF1:  Group: ff1e::9:10,
JoinSrcs: 1, PruneSrcs: 0
May 29 11:39:54:929442:info:fi_debug:debug_logs:1:11007399884227328: PIM-JP.VRF1: BEGIN SENDING Join/
Prune msg to fe80::d6c1:9eff:fe15:f999 on v21
May 29 11:39:54:716279:info:fi_debug:debug_logs:1:1026991104984577: PIM.VRF1:  OIF Update Fwdmask:
Added FwdPort L3OIF v11,3/1/5 to (31::22,ff1e::9:10)  Action(Add)
May 29 11:39:54:716200:info:fi_debug:debug_logs:1:1026991104984577: PIM-OIF.VRF1: (31::22 ff1e::9:10)
Entry Flags 0x600680e1: Add 3/1/5 on 11 (L3). OIF_FLAGS: 4
May 29 11:39:54:716107:info:fi_debug:debug_logs:1:1026991104984577: PIM.VRF1:  OIF Update Fwdmask:
Added FwdPort L3OIF v11,3/1/5 to (*,ff1e::9:10)  Action(Add)
May 29 11:39:54:716008:info:fi_debug:debug_logs:1:1026991104984577: PIM-OIF.VRF1: (* ff1e::9:10) Entry
Flags 0x2604a0: Add 3/1/5 on 11 (L3). OIF_FLAGS: 4
May 29 11:39:54:715608:info:fi_debug:debug_logs:1:1026991104984577: PIM.VRF1:  OIF Update Fwdmask:
Added FwdPort L3OIF v11,3/1/5 to (31::22,ff1e::9:10)  Action(Add)
May 29 11:39:54:715535:info:fi_debug:debug_logs:1:1026991104984577: PIM.VRF1: Update oifflg vl11/3/1/5
(31::22,ff1e::9:10), rcode(IgmpGrpJoin), Act(Add) cstate(0x0) nstate(0x4) newflg 0x4, #immoifs 0
#bldoifs 0 #inhoifs 1  #fwdoifs 0 sync 1
May 29 11:39:54:715455:info:fi_debug:debug_logs:1:1026991104984577: PIM-OIF.VRF1: (31::22 ff1e::9:10)
Entry Flags 0x200280e1: Add 3/1/5 on 11 (L3). OIF_FLAGS: 4
May 29 11:39:54:715381:info:fi_debug:debug_logs:1:1026991104984577: PIM.VRF1: Add OIF: Adding L3OIF
v11,3/1/5 to (31::22,ff1e::9:10), Reason(IgmpGrpJoin)  Action(Add) CurrentState(0x0) NewState(0x4)
holdtime 260
May 29 11:39:54:715306:info:fi_debug:debug_logs:1:1026991104984577: PIMSM.VRF1: OIF FSM 1 case for
(31::22, ff1e::9:10) entry Reason(IgmpGrpJoin), Action(Add) flagAction 3 CurrentState(0x0)
NewState(0x4)
May 29 11:39:54:715220:info:fi_debug:debug_logs:1:1026991104984577: PIM.VRF1:  OIF Add v11,3/1/5 to
(31::22 ff1e::9:10) entry - receivers mbrship type 1
May 29 11:39:54:715107:info:fi_debug:debug_logs:1:1026991104984577: PIM.VRF1:  OIF Update Fwdmask:
Added FwdPort L3OIF v11,3/1/5 to (*,ff1e::9:10)  Action(Add)
May 29 11:39:54:715031:info:fi_debug:debug_logs:1:1026991104984577: PIM.VRF1: Update oifflg vl11/3/1/5
(*,ff1e::9:10), rcode(IgmpGrpJoin), Act(Add) cstate(0x0) nstate(0x4) newflg 0x4, #immoifs 1 #bldoifs 0
#inhoifs 0       #fwdoifs 1 sync 1
May 29 11:39:54:714944:info:fi_debug:debug_logs:1:1026991104984577: PIM-OIF.VRF1: (* ff1e::9:10) Entry
Flags 0x220080: Add 3/1/5 on 11 (L3). OIF_FLAGS: 4
May 29 11:39:54:714866:info:fi_debug:debug_logs:1:1026991104984577: PIM.VRF1: Add OIF: Adding L3OIF
v11,3/1/5 to (*,ff1e::9:10), Reason(IgmpGrpJoin)  Action(Add) CurrentState(0x0) NewState(0x4) holdtime
260
May 29 11:39:54:714782:info:fi_debug:debug_logs:1:1026991104984577: PIMSM.VRF1: OIF FSM  1 for (*,
ff1e::9:10) entry Reason(IgmpGrpJoin), Action(Add), flagAction(1) CurrentState(0x0) NewState(0x4)
May 29 11:39:54:714656:info:fi_debug:debug_logs:1:1026991104984577: PIMSM.VRF1: Created (* ff1e::9:10)
entry. Parent ff1e::9:10. RP=NIL. LIFid 141292112. Flags 0x0
May 29 11:39:54:714580:info:fi_debug:debug_logs:1:1026991104984577: Suppressed 1 times: PIM-ENTRY.VRF1:
Deleting entry (* ff1e::9:10)
May 29 11:39:54:159535:info:fi_debug:debug_logs:1:11006794293838592: PIM-ENTRY.VRF1: Deleting entry (*
ff1e::9:10)
May 29 11:39:54:159460:info:fi_debug:debug_logs:1:11006794293838592: Entry (* ff1e::9:10) timed out as
it has no OIFs, vrf 1
May 29 11:39:54:159377:info:fi_debug:debug_logs:1:11006794293838592: Suppressed 1 times: PIM.VRF1:  OIF
Update Fwdmask: Removed FwdPort L3OIF v11,3/1/5 to (31::22,ff1e::9:10)  Action(Remove)
May 29 11:39:47:944844:info:fi_debug:debug_logs:1:11001554433737472: PIM.VRF1:  OIF Update Fwdmask:
Removed FwdPort L3OIF v11,3/1/5 to (31::22,ff1e::9:10)  Action(Remove)
May 29 11:39:47:944762:info:fi_debug:debug_logs:1:11001554433737472: PIM-OIF.VRF1: (31::22 ff1e::9:10)
Entry Flags 0x200280e1: Del 3/1/5 on 11 (L3). OIF_FLAGS: 0 DelIf. #Ifs 1
May 29 11:39:47:944710:info:fi_debug:debug_logs:1:11001554433737472: Suppressed 1 times: PIM.VRF1:  OIF
Update Fwdmask: Removed FwdPort L3OIF v11,3/1/5 to (*,ff1e::9:10)  Action(Remove)
May 29 11:39:47:944547:info:fi_debug:debug_logs:1:11001554433737472: PIM.VRF1:  OIF Update Fwdmask:
Removed FwdPort L3OIF v11,3/1/5 to (*,ff1e::9:10)  Action(Remove)
May 29 11:39:47:944413:info:fi_debug:debug_logs:1:11001554433737472: PIM-OIF.VRF1: (* ff1e::9:10) Entry
```

```
Flags 0x2200a0: Del 3/1/5 on 11 (L3). OIF_FLAGS: 0 DelIf. #Ifs 1
May 29 11:39:47:921003:info:fi_debug:debug_logs:1:11001554433737472: PIM: End sending Join/Prune msg
---
May 29 11:39:47:920589:info:fi_debug:debug_logs:1:11001554433737472:     P-Src: 31::22, wc=0 rpt=0 SM=1
May 29 11:39:47:920516:info:fi_debug:debug_logs:1:11001554433737472: PIM-JP.VRF1:  Group: ff1e::9:10,
JoinSrcs: 0, PruneSrcs: 1
May 29 11:39:47:920440:info:fi_debug:debug_logs:1:11001554433737472: PIM-JP.VRF1: BEGIN SENDING Join/
Prune msg to fe80::d6c1:9eff:fe15:f999 on v21
May 29 11:39:47:920255:info:fi_debug:debug_logs:1:11001554433737472: PIM.VRF1: Remove OIF: Removed
L3OIF v11,3/1/5 from (31::22, ff1e::9:10) entry, remove_now=1,      Reason(IgmpGrpLeave)
Action(Remove) CurrentState(0x4) NewState(0x0)
May 29 11:39:47:920110:info:fi_debug:debug_logs:1:11001554433737472: PIM.VRF1:  OIF Update Fwdmask:
Removed FwdPort L3OIF v11,3/1/5 to (31::22,ff1e::9:10)  Action(Remove)
May 29 11:39:47:920036:info:fi_debug:debug_logs:1:11001554433737472: PIM.VRF1: Update oifflg vl11/3/1/5
(31::22,ff1e::9:10), rcode(IgmpGrpLeave), Act(Remove) cstate(0x4) nstate(0x0) newflg 0x0, #immoifs 0
#bldoifs 0 #inhoifs 0     #fwdoifs 65535 sync 2
May 29 11:39:47:919956:info:fi_debug:debug_logs:1:11001554433737472: PIM.VRF1:  OIF Update Fwdmask:
Removed FwdPort L3OIF v11,3/1/5 to (31::22,ff1e::9:10)  Action(Remove)
May 29 11:39:47:919876:info:fi_debug:debug_logs:1:11001554433737472: PIM-OIF.VRF1: (31::22 ff1e::9:10)
Entry Flags 0x200680e1: Del 3/1/5 on 11 (L3). OIF_FLAGS: 0 DelIf. #Ifs 1
May 29 11:39:47:919795:info:fi_debug:debug_logs:1:11001554433737472: PIMSM.VRF1: OIF FSM 0 case for
(31::22, ff1e::9:10) entry Reason(IgmpGrpLeave), Action(Remove) flagAction 3 CurrentState(0x4)
NewState(0x0)
May 29 11:39:47:919709:info:fi_debug:debug_logs:1:11001554433737472: PIMSM.VRF1: Deleting oif v11,3/1/5
from (31::22 ff1e::9:10) entry, reason 9
May 29 11:39:47:919602:info:fi_debug:debug_logs:1:11001554433737472: PIM.VRF1: Remove OIF: Removed
L3OIF v11,3/1/5 from (*, ff1e::9:10) entry, remove_now=1,   Reason(IgmpGrpLeave)  Action(Remove)
CurrentState(0x4) NewState(0x0)
May 29 11:39:47:919492:info:fi_debug:debug_logs:1:11001554433737472: PIM.VRF1:  OIF Update Fwdmask:
Removed FwdPort L3OIF v11,3/1/5 to (*,ff1e::9:10)  Action(Remove)
May 29 11:39:47:919413:info:fi_debug:debug_logs:1:11001554433737472: PIM.VRF1: Update oifflg vl11/3/1/5
(*,ff1e::9:10), rcode(IgmpGrpLeave), Act(Remove) cstate(0x4) nstate(0x0) newflg 0x0, #immoifs 0
#bldoifs 0 #inhoifs 0  #fwdoifs 0 sync 2
May 29 11:39:47:919324:info:fi_debug:debug_logs:1:11001554433737472: PIM.VRF1:  OIF Update Fwdmask:
Removed FwdPort L3OIF v11,3/1/5 to (*,ff1e::9:10)  Action(Remove)
May 29 11:39:47:919232:info:fi_debug:debug_logs:1:11001554433737472: PIM-OIF.VRF1: (* ff1e::9:10) Entry
Flags 0x2604a0: Del 3/1/5 on 11 (L3). OIF_FLAGS: 0 DelIf. #Ifs 1
May 29 11:39:47:919131:info:fi_debug:debug_logs:1:11001554433737472: PIMSM.VRF1: OIF FSM  0 for (*,
ff1e::9:10) entry Reason(IgmpGrpLeave), Action(Remove), flagAction(2) CurrentState(0x4) NewState(0x0)
May 29 11:39:47:918505:info:fi_debug:debug_logs:1:11001554433737472: PIMSM.VRF1: Deleting oif v11,3/1/5
from (* ff1e::9:10) entry, reason 9
May 29 11:39:45:293272:info:fi_debug:debug_logs:1:1026260960544257: PIM.VRF1:  OIF Add v11,3/1/5 to
(31::22 ff1e::9:10) entry - receivers mbrship type 1
```

History

Release version	Command history
09.0.00	This command was introduced.

debug ipv6 pimsm-snoop

Troubleshoots issues related to IPv6 PIM-SM snoop configurations.

Syntax

debug ipv6 pimsm-snoop[**add-del-oif**|**all** |**clear** | **control-source***source-address*| **error**|**fsm**| **group***group-address* | **join-prune** |**physical-port** {**ethernet** *unit/slot/port*|**lag** *lag-id*}| **show** | **source***source-address* |**stacktrace** |**timer** | **vlan***vlan-id*]

no debug ipv6 pimsm-snoop[**add-del-oif**|**all** |**clear** | **control-source***source-address*| **error**|**fsm**| **group***group-address* | **join-prune** | **physical-port** {**ethernet** *unit/slot/port*|**lag** *lag-id*}| **show** | **source***source-address* |**stacktrace** |**timer** | **vlan***vlan-id*]

Parameters

add-del-oif
Displays debugs related to the addition and deletion of outbound interfaces (OIFs) in Mcache.

all
Enables all PIM-SM snoop related debugs.

clear
Clears all PIM-SM snoop related debug settings.

control-source*source-address*
Displays PIM-SM snooping related debug information for the specified control source address.

error
Monitors error messages related to PIM-SM snooping.

fsm
Enables debugging of Finite State Machine (FSM) transactions.

group*group-address*
Displays PIM-SM snooping information for a specific group.

join-prune
Monitors PIM-SM snoop join and prune messages.

physical-port
Displays information of PIM-SM physical ports that are connected.

ethernet *unit/slot/port*
Displays information of the specified PIM-SM physical interface.

lag *lag-id*
Displays information of the specified PIM-SM LAG interface.

show
Displays all PIM-SM snoop related debug settings.

source*source-address*
Displays PIM-SM snooping related debug information for the specified server source address.

stacktrace
Displays debug messages accompanied by call stack dump.

timer

Enables PIM-SM snoop timer debugging.

vlan *vlan-id*

Enables PIM-SM snoop debugging for a particular VLAN.

Modes

Privileged EXEC mode

Global configuration mode

Usage Guidelines

no

Examples

The following example displays debug messages related to the addition and deletion of outbound interfaces (OIFs) in Mcache.

```
device# debug ipv6 pimsm-snoop add-del-oif
Jun 11 20:34:33:729983:info:fi_debug:debug_logs:1:220601973176533760:  v6PSNOOP_OIF_OP:Decrement oif
1/1/16 (3:27:3::2, ff1e::7:1, 500) ref_count 1
Jun 11 20:34:33:730101:info:fi_debug:debug_logs:1:220601973176533760:  v6PSNOOP_OIF_OP:Del 1/1/16 from
Mcache (3:27:3::2, ff1e::7:1, 500) update_hw 1, change 1
Jun 11 20:34:33:731377:info:fi_debug:debug_logs:1:220601973176533760:  v6PSNOOP_OIF_OP:Decrement oif
1/1/16 (3:27:3::2, ff1e::7:2, 500) ref_count 1
Jun 11 20:34:33:731496:info:fi_debug:debug_logs:1:220601973176533760:  v6PSNOOP_OIF_OP:Del 1/1/16 from
Mcache (3:27:3::2, ff1e::7:2, 500) update_hw 1, change 1
```

The following example displays debug messsages of Finite State Machine (FSM) transactions.

```
device# debug ipv6 pimsm-snoop fsm
Jun 11 20:36:09:579011:info:fi_debug:debug_logs:1:36331718511166977:  v6PSNOOP_FSM:   RCV_SG(3:32:3::2,
ff1e::7:1, 500), oif(lg1): J -> J
Jun 11 20:36:09:579139:info:fi_debug:debug_logs:1:36331718511166977:  v6PSNOOP_FSM:   RCV_SG(3:32:3::2,
ff1e::7:2, 500), oif(lg1): J -> J
Jun 11 20:36:30:442423:info:fi_debug:debug_logs:1:36344392959657473:  v6PSNOOP_FSM:   (* G) Join for
SG_RPT(3:32:3::2, ff1e::7:1, 500), oif(1/1/16): P -> Px
Jun 11 20:36:30:444113:info:fi_debug:debug_logs:1:36344392959657473:  v6PSNOOP_FSM:   RCV_SG(*, ff1e::
7:1, 500), oif(1/1/16): NI -> J
Jun 11 20:36:30:444238:info:fi_debug:debug_logs:1:36344392959657473:  v6PSNOOP_FSM:   RCV_SG(3:27:3::2,
ff1e::7:1, 500), oif(1/1/16): NI -> J
Jun 11 20:36:30:445939:info:fi_debug:debug_logs:1:36344392959657473:  v6PSNOOP_FSM:   EOM SG_RPT(ff1e::
7:1,3:32:3::2,500), oif(1/1/16): Px -> NI
Jun 11 20:36:30:448915:info:fi_debug:debug_logs:1:36344405844559361:  v6PSNOOP_FSM:   RCV_SG(3:32:3::2,
ff1e::7:1, 500), oif(lg1): J -> J
Jun 11 20:36:30:555744:info:fi_debug:debug_logs:1:36344457384166913:  v6PSNOOP_FSM:   (* G) Join for
SG_RPT(3:32:3::2, ff1e::7:2, 500), oif(1/1/16): P -> Px
Jun 11 20:36:30:556992:info:fi_debug:debug_logs:1:36344457384166913:  v6PSNOOP_FSM:   RCV_SG(*, ff1e::
7:2, 500), oif(1/1/16): NI -> J
Jun 11 20:36:30:557110:info:fi_debug:debug_logs:1:36344457384166913:  v6PSNOOP_FSM:   RCV_SG(3:27:3::2,
ff1e::7:2, 500), oif(1/1/16): NI -> J
Jun 11 20:36:30:559095:info:fi_debug:debug_logs:1:36344457384166913:  v6PSNOOP_FSM:   EOM SG_RPT(ff1e::
7:2,3:32:3::2,500), oif(1/1/16): Px -> NI
Jun 11 20:36:30:682413:info:fi_debug:debug_logs:1:36344526103643649:  v6PSNOOP_FSM:   RCV_SG(3:32:3::2,
ff1e::7:2, 500), oif(lg1): J -> J
```

The following example displays all PIM-SM snoop related debugs messages.

```
device# debug ipv6 pimsm-snoop all
Jun 11 20:38:28:400061:info:fi_debug:debug_logs:1:36415779611084289:  v6PSNOOP_SRC:   PIMv2 Join/Prune
from fe80::629c:9fff:febb:d94c to upstream Neig-Addr fe80::629c:9fff:fe08:1f04  port 1/1/16 on vlan
500, holdtime 210, payload length 194
Jun 11 20:38:28:400178:info:fi_debug:debug_logs:1:36415779611084289:  v6PSNOOP_JP:    Rcv Join-Prune
Group : ff1e::7:1, #join src 2, #prune src 1
Jun 11 20:38:28:400256:info:fi_debug:debug_logs:1:36415779611084289:  v6PSNOOP_JP:    join source
5:5:5::5 flags: S WC RPT
Jun 11 20:38:28:400331:info:fi_debug:debug_logs:1:36415779611084289:  v6PSNOOP_JP:    Rcv Join: (*
ff1e::7:1) -> 1/1/16
Jun 11 20:38:28:400413:info:fi_debug:debug_logs:1:36415779611084289:  v6PSNOOP_FSM:   (* G) Join for
SG_RPT(3:27:3::2, ff1e::7:1, 500), oif(1/1/16): NI -> NI
Jun 11 20:38:28:400490:info:fi_debug:debug_logs:1:36415779611084289:  v6PSNOOP_FSM:   (* G) Join for
SG_RPT(3:32:3::2, ff1e::7:1, 500), oif(1/1/16): P -> Px
Jun 11 20:38:28:400572:info:fi_debug:debug_logs:1:36415779611084289:  v6PSNOOP_TIMER: timer restart:
215 ticks, timer type: old SG -> new SG, fsm state: J
Jun 11 20:38:28:400648:info:fi_debug:debug_logs:1:36415779611084289:  v6PSNOOP_FSM:   RCV_SG(*, ff1e::
7:1, 500), oif(1/1/16): J -> J
Jun 11 20:38:28:400718:info:fi_debug:debug_logs:1:36415779611084289:  v6PSNOOP_JP:    join source
3:27:3::2 flags: S
Jun 11 20:38:28:400788:info:fi_debug:debug_logs:1:36415779611084289:  v6PSNOOP_JP:    Rcv Join:
(3:27:3::2 ff1e::7:1) -> 1/1/16
Jun 11 20:38:28:400855:info:fi_debug:debug_logs:1:36415779611084289:  v6PSNOOP_TIMER: timer restart:
218 ticks, timer type: old SG -> new SG, fsm state: J
Jun 11 20:38:28:400927:info:fi_debug:debug_logs:1:36415779611084289:  v6PSNOOP_FSM:   RCV_SG(3:27:3::2,
ff1e::7:1, 500), oif(1/1/16): J -> J
Jun 11 20:38:28:400995:info:fi_debug:debug_logs:1:36415779611084289:  v6PSNOOP_JP:    prune source
3:32:3::2 flags: S RPT
Jun 11 20:38:28:401065:info:fi_debug:debug_logs:1:36415779611084289:  v6PSNOOP_JP:    Rcv Prune:
(3:32:3::2 ff1e::7:1) -> 1/1/16
Jun 11 20:38:28:401134:info:fi_debug:debug_logs:1:36415779611084289:  v6PSNOOP_TIMER: timer restart:
210 ticks, timer type: old SG_RPT -> new SG_RPT, fsm state: P
Jun 11 20:38:28:401208:info:fi_debug:debug_logs:1:36415779611084289:  v6PSNOOP_FSM:   PRUNE
SG_RPT(3:32:3::2, ff1e::7:1, 500), oif(1/1/16): Px -> P
Jun 11 20:38:28:401282:info:fi_debug:debug_logs:1:36415779611084289:  v6PSNOOP_JP:    Rcv Join-Prune
Group : ff1e::7:2, #join src 2, #prune src 1
Jun 11 20:38:28:401351:info:fi_debug:debug_logs:1:36415779611084289:  v6PSNOOP_JP:    join source
5:5:5::5 flags: S WC RPT
Jun 11 20:38:28:401419:info:fi_debug:debug_logs:1:36415779611084289:  v6PSNOOP_JP:    Rcv Join: (*
ff1e::7:2) -> 1/1/16
Jun 11 20:38:28:401492:info:fi_debug:debug_logs:1:36415779611084289:  v6PSNOOP_FSM:   (* G) Join for
SG_RPT(3:27:3::2, ff1e::7:2, 500), oif(1/1/16): NI -> NI
Jun 11 20:38:28:401564:info:fi_debug:debug_logs:1:36415779611084289:  v6PSNOOP_FSM:   (* G) Join for
SG_RPT(3:32:3::2, ff1e::7:2, 500), oif(1/1/16): P -> Px
Jun 11 20:38:28:401631:info:fi_debug:debug_logs:1:36415779611084289:  v6PSNOOP_TIMER: timer restart:
218 ticks, timer type: old SG -> new SG, fsm state: J
Jun 11 20:38:28:401702:info:fi_debug:debug_logs:1:36415779611084289:  v6PSNOOP_FSM:   RCV_SG(*, ff1e::
7:2, 500), oif(1/1/16): J -> J
Jun 11 20:38:28:401771:info:fi_debug:debug_logs:1:36415779611084289:  v6PSNOOP_JP:    join source
3:27:3::2 flags: S
Jun 11 20:38:28:401840:info:fi_debug:debug_logs:1:36415779611084289:  v6PSNOOP_JP:    Rcv Join:
(3:27:3::2 ff1e::7:2) -> 1/1/16
Jun 11 20:38:28:401908:info:fi_debug:debug_logs:1:36415779611084289:  v6PSNOOP_TIMER: timer restart:
212 ticks, timer type: old SG -> new SG, fsm state: J
Jun 11 20:38:28:401979:info:fi_debug:debug_logs:1:36415779611084289:  v6PSNOOP_FSM:   RCV_SG(3:27:3::2,
ff1e::7:2, 500), oif(1/1/16): J -> J
Jun 11 20:38:28:402047:info:fi_debug:debug_logs:1:36415779611084289:  v6PSNOOP_JP:    prune source
3:32:3::2 flags: S RPT
Jun 11 20:38:28:402116:info:fi_debug:debug_logs:1:36415779611084289:  v6PSNOOP_JP:    Rcv Prune:
(3:32:3::2 ff1e::7:2) -> 1/1/16
Jun 11 20:38:28:402185:info:fi_debug:debug_logs:1:36415779611084289:  v6PSNOOP_TIMER: timer restart:
210 ticks, timer type: old SG_RPT -> new SG_RPT, fsm state: P
Jun 11 20:38:28:402257:info:fi_debug:debug_logs:1:36415779611084289:  v6PSNOOP_FSM:   PRUNE
SG_RPT(3:32:3::2, ff1e::7:2, 500), oif(1/1/16): Px -> P
Jun 11 20:38:29:134675:info:fi_debug:debug_logs:1:36416243467552257:  v6PSNOOP_SRC:   PIMv2 Join/Prune
from fe80::629c:9fff:fe08:1f04 to upstream Neig-Addr fe80::629c:9fff:febb:d94c  port lg1 on vlan 500,
holdtime 210, payload length 114
Jun 11 20:38:29:134790:info:fi_debug:debug_logs:1:36416243467552257:  v6PSNOOP_JP:    Rcv Join-Prune
Group : ff1e::7:1, #join src 1, #prune src 0
```

```
Jun 11 20:38:29:134866:info:fi_debug:debug_logs:1:36416243467552257:  v6PSNOOP_JP:    join source
3:32:3::2 flags: S
Jun 11 20:38:29:134936:info:fi_debug:debug_logs:1:36416243467552257:  v6PSNOOP_JP:    Rcv Join:
(3:32:3::2 ff1e::7:1) -> lg1
Jun 11 20:38:29:135024:info:fi_debug:debug_logs:1:36416243467552257:  v6PSNOOP_TIMER: timer restart:
216 ticks, timer type: old SG -> new SG, fsm state: J
Jun 11 20:38:29:135103:info:fi_debug:debug_logs:1:36416243467552257:  v6PSNOOP_FSM:   RCV_SG(3:32:3::2,
ff1e::7:1, 500), oif(lg1): J -> J
Jun 11 20:38:29:135178:info:fi_debug:debug_logs:1:36416243467552257:  v6PSNOOP_JP:    Rcv Join-Prune
Group : ff1e::7:2, #join src 1, #prune src 0
Jun 11 20:38:29:135248:info:fi_debug:debug_logs:1:36416243467552257:  v6PSNOOP_JP:    join source
3:32:3::2 flags: S
Jun 11 20:38:29:135316:info:fi_debug:debug_logs:1:36416243467552257:  v6PSNOOP_JP:    Rcv Join:
(3:32:3::2 ff1e::7:2) -> lg1
Jun 11 20:38:29:135384:info:fi_debug:debug_logs:1:36416243467552257:  v6PSNOOP_TIMER: timer restart:
218 ticks, timer type: old SG -> new SG, fsm state: J
Jun 11 20:38:29:135456:info:fi_debug:debug_logs:1:36416243467552257:  v6PSNOOP_FSM:   RCV_SG(3:32:3::2,
ff1e::7:2, 500), oif(lg1): J -> J
Jun 11 20:38:35:387263:info:fi_debug:debug_logs:1:36420177657595393: PIMv2 Hello from fe80::629c:
9fff:fe08:1f04 on port lg1, vlan 500
```

The following example displays error messages related to PIM-SM snooping.

```
device#debug ipv6 pimsm-snoop error
Jun 17 19:38:00:442762:info:fi_debug:debug_logs:1:0: Suppressed 2 times: *** pim snoop PIMV2 rcvd Join/
Prune from 1:1::2:1 to 69:200:80:ff1e:: Len 0 on lg1 (e1/1/2), xsum error from src 150:1:1::1
Jun 17 19:38:00:763228:info:fi_debug:debug_logs:1:2770234136069633: *** pim snoop PIMV2 rcvd Join/Prune
from 1:1::2:1 to 69:200:80:ff1e:: Len 0 on lg1 (e1/1/2), xsum error from src 150:1:1::1
Jun 17 19:38:01:453646:info:fi_debug:debug_logs:1:0: Suppressed 1 times: *** pim snoop PIMV2 rcvd Join/
Prune from 1:1::2:1 to 69:200:80:ff1e:: Len 0 on lg1 (e1/1/2), xsum error from src 150:1:1::1
```

The following example displays PIM-SM snooping information for a specific group.

```
device#debug ipv6 pimsm-snoop all
device#debug ipv6 pimsm-snoop group ff1e::7:1
Jun 11 20:50:09:898124:info:fi_debug:debug_logs:1:36842974238213633:  v6PSNOOP_SRC:   PIMv2 Join/Prune
from fe80::629c:9fff:fe08:1f04 to upstream Neig-Addr fe80::629c:9fff:febb:d94c  port lg1 on vlan 500,
holdtime 210, payload length 114
Jun 11 20:50:09:898242:info:fi_debug:debug_logs:1:36842974238213633:  v6PSNOOP_JP:    Rcv Join-Prune
Group : ff1e::7:1, #join src 1, #prune src 0
Jun 11 20:50:09:898319:info:fi_debug:debug_logs:1:36842974238213633:  v6PSNOOP_JP:    join source
3:32:3::2 flags: S
Jun 11 20:50:09:898391:info:fi_debug:debug_logs:1:36842974238213633:  v6PSNOOP_JP:    Rcv Join:
(3:32:3::2 ff1e::7:1) -> lg1
Jun 11 20:50:09:899021:info:fi_debug:debug_logs:1:36842974238213633:  v6PSNOOP_TIMER: timer restart:
213 ticks, timer type: old SG -> new SG, fsm state: J
Jun 11 20:50:09:899131:info:fi_debug:debug_logs:1:36842974238213633:  v6PSNOOP_FSM:   RCV_SG(3:32:3::2,
ff1e::7:1, 500), oif(lg1): J -> J
Jun 11 20:50:14:456679:info:fi_debug:debug_logs:1:36845753082054145: PIMv2 Hello from fe80::629c:
9fff:febb:d94c on port 1/1/16, vlan 500
```

The following example displays PIM-SM snooping related debug information for the specified control source address.

```
device#debug ipv6 pimsm-snoop all
device#debug ipv6 pimsm-snoop control-source fe80::629c:9fff:fe08:1f04
Jun 17 18:51:40:499307:info:fi_debug:debug_logs:1:2496271057159681: PIMv2 Hello from fe80::629c:
9fff:fe08:1f04 on port lg1, vlan 500
Jun 17 18:52:13:693193:info:fi_debug:debug_logs:1:2499419268187649: PIMv2 Hello from fe80::629c:
9fff:fe08:1f04 on port lg1, vlan 500
```

The following is sample output from the debug ipv6 pimsm-snoop timer command.

```
device# debug ipv6 pimsm-snoop timer
Jun 11 20:59:29:261221:info:fi_debug:debug_logs:1:37182534352635393:  v6PSNOOP_TIMER: timer restart:
215 ticks, timer type: old SG -> new SG, fsm state: J
Jun 11 20:59:29:261339:info:fi_debug:debug_logs:1:37182534352635393:  v6PSNOOP_TIMER: timer restart:
219 ticks, timer type: old SG -> new SG, fsm state: J
Jun 11 20:59:29:261422:info:fi_debug:debug_logs:1:37182534352635393:  v6PSNOOP_TIMER: timer restart:
210 ticks, timer type: old SG_RPT -> new SG_RPT, fsm state: P
Jun 11 20:59:29:261509:info:fi_debug:debug_logs:1:37182534352635393:  v6PSNOOP_TIMER: timer restart:
213 ticks, timer type: old SG -> new SG, fsm state: J
Jun 11 20:59:29:261584:info:fi_debug:debug_logs:1:37182534352635393:  v6PSNOOP_TIMER: timer restart:
212 ticks, timer type: old SG -> new SG, fsm state: J
Jun 11 20:59:29:261659:info:fi_debug:debug_logs:1:37182534352635393:  v6PSNOOP_TIMER: timer restart:
210 ticks, timer type: old SG_RPT -> new SG_RPT, fsm state: P
Jun 11 20:59:29:545753:info:fi_debug:debug_logs:1:37182710446294529:  v6PSNOOP_TIMER: timer restart:
212 ticks, timer type: old SG -> new SG, fsm state: J
Jun 11 20:59:29:545880:info:fi_debug:debug_logs:1:37182710446294529:  v6PSNOOP_TIMER: timer restart:
210 ticks, timer type: old SG -> new SG, fsm state: J
```

The following example displays PIM-SM snoop join and prune messages.

```
device#debug ipv6 pimsm-snoop join-prune
Jun 11 20:53:10:156998:info:fi_debug:debug_logs:1:36952319810602497:  v6PSNOOP_JP:    Rcv Join-Prune
Group : ff1e::7:1, #join src 1, #prune src 0
Jun 11 20:53:10:157114:info:fi_debug:debug_logs:1:36952319810602497:  v6PSNOOP_JP:    join source
3:32:3::2 flags: S
Jun 11 20:53:10:157190:info:fi_debug:debug_logs:1:36952319810602497:  v6PSNOOP_JP:    Rcv Join:
(3:32:3::2 ff1e::7:1) -> lg1
Jun 11 20:53:10:157281:info:fi_debug:debug_logs:1:36952319810602497:  v6PSNOOP_JP:    Rcv Join-Prune
Group : ff1e::7:2, #join src 1, #prune src 0
Jun 11 20:53:10:157354:info:fi_debug:debug_logs:1:36952319810602497:  v6PSNOOP_JP:    join source
3:32:3::2 flags: S
Jun 11 20:53:10:157424:info:fi_debug:debug_logs:1:36952319810602497:  v6PSNOOP_JP:    Rcv Join:
(3:32:3::2 ff1e::7:2) -> lg1
Jun 11 20:53:29:020274:info:fi_debug:debug_logs:1:36963735833675265:  v6PSNOOP_JP:    Rcv Join-Prune
Group : ff1e::7:1, #join src 2, #prune src 1
Jun 11 20:53:29:020390:info:fi_debug:debug_logs:1:36963735833675265:  v6PSNOOP_JP:    join source
5:5:5::5 flags: S WC RPT
Jun 11 20:53:29:020468:info:fi_debug:debug_logs:1:36963735833675265:  v6PSNOOP_JP:    Rcv Join: (*
ff1e::7:1) -> 1/1/16
Jun 11 20:53:29:020557:info:fi_debug:debug_logs:1:36963735833675265:  v6PSNOOP_JP:    join source
3:27:3::2 flags: S
Jun 11 20:53:29:020643:info:fi_debug:debug_logs:1:36963735833675265:  v6PSNOOP_JP:    Rcv Join:
(3:27:3::2 ff1e::7:1) -> 1/1/16
```

The following example displays information of PIM-SM LAG interface.

```
device#debug ipv6 pimsm-snoop all
device#debug ipv6 pimsm-snoop physical-port lag 1
Jun 11 21:06:04:664300:info:fi_debug:debug_logs:1:37423615161927169: PIMv2 Hello from fe80::629c:
9fff:fe08:1f04 on port lg1, vlan 500
Jun 11 21:06:10:576483:info:fi_debug:debug_logs:1:37427197164652033:  v6PSNOOP_SRC:   PIMv2 Join/Prune
from fe80::629c:9fff:fe08:1f04 to upstream Neig-Addr fe80::629c:9fff:febb:d94c  port lg1 on vlan 500,
holdtime 210, payload length 114
Jun 11 21:06:10:576600:info:fi_debug:debug_logs:1:37427197164652033:  v6PSNOOP_JP:    Rcv Join-Prune
Group : ff1e::7:1, #join src 1, #prune src 0
Jun 11 21:06:10:576678:info:fi_debug:debug_logs:1:37427197164652033:  v6PSNOOP_JP:    join source
3:32:3::2 flags: S
Jun 11 21:06:10:576751:info:fi_debug:debug_logs:1:37427197164652033:  v6PSNOOP_JP:    Rcv Join:
(3:32:3::2 ff1e::7:1) -> lg1
Jun 11 21:06:10:576828:info:fi_debug:debug_logs:1:37427197164652033:  v6PSNOOP_TIMER: timer restart:
219 ticks, timer type: old SG -> new SG, fsm state: J
Jun 11 21:06:10:576907:info:fi_debug:debug_logs:1:37427197164652033:  v6PSNOOP_FSM:   RCV_SG(3:32:3::2,
ff1e::7:1, 500), oif(lg1): J -> J
Jun 11 21:06:10:576985:info:fi_debug:debug_logs:1:37427197164652033:  v6PSNOOP_JP:    Rcv Join-Prune
Group : ff1e::7:2, #join src 1, #prune src 0
Jun 11 21:06:10:577056:info:fi_debug:debug_logs:1:37427197164652033:  v6PSNOOP_JP:    join source
3:32:3::2 flags: S
Jun 11 21:06:10:577127:info:fi_debug:debug_logs:1:37427197164652033:  v6PSNOOP_JP:    Rcv Join:
(3:32:3::2 ff1e::7:2) -> lg1
Jun 11 21:06:10:577197:info:fi_debug:debug_logs:1:37427197164652033:  v6PSNOOP_TIMER: timer restart:
214 ticks, timer type: old SG -> new SG, fsm state: J
Jun 11 21:06:10:577271:info:fi_debug:debug_logs:1:37427197164652033:  v6PSNOOP_FSM:   RCV_SG(3:32:3::2,
ff1e::7:2, 500), oif(lg1): J -> J
```

debug ipv6 ra

Enables router advertisement (RA) message debug logs and displays the debugging information about ingoing and outgoing RA messages.

Syntax

debug ipv6 ra

no debug ipv6 ra

Modes

Privileged EXEC mode

Usage Guidelines

The no form of the command disables the RA debug logs.

Examples

The following example displays debugging information for Recursive DNS server (RDNSS) address entries in an RA message.

```
device# debug ipv6 ra
…
ICMPv6-RA:  DNS server list with lifetime 400
          [1] DNS address 1::1
          [2] DNS address 1::2
ICMPv6-RA:  DNS server list with lifetime 800
          [1] DNS address 1::5
          [2] DNS address 1::6
ICMPv6-RA:  DNS server list with lifetime 1200
          [1] DNS address 1::3
          [2] DNS address 1::4
…
```

The following example displays debugging information for Domain Name System Search List (DNSSL) entries in an RA message.

```
device# debug ipv6 ra
…
ICMPv6-RA:  Domain Name list with lifetime 400
          [1] Domain Name a.com
          [2] Domain Name b.com
          [3] Domain Name c.com
          [4] Domain Name d.com

ICMPv6-RA:  Domain Name list with lifetime 800
          [1] Domain Name h.com
          [2] Domain Name i.com
          [3] Domain Name j.com
          [4] Domain Name k.com
          [5] Domain Name l.com

ICMPv6-RA:  Domain Name list with lifetime 1200
          [1] Domain Name e.com
          [2] Domain Name f.com
…
```

History

Release version	Command history
08.0.80	This command was modified to display information about DNSSL and RDNSS entries.

debug ipv6 raguard

Enables RA guard debug messages.

Syntax

debug ipv6 raguard

no debug ipv6 raguard

Modes

Privileged EXEC mode

Examples

```
device# debug ipv6 raguard
00 days 00h40m49s:I:RAGuard: prefix in router advertisement rejected by
prefix-list
00 days 00h40m49s:I:RAGuard: prefix in router advertisement passed prefix-list
00 days 00h40m49s:I:RAGuard: Packet received on Host port 1/1/5. Dropped.
00 days 00h40m49s:I:RAGuard: Packet received on a Trusted port 1/1/5. Forward.
00 days 00h40m49s:I:RAGuard: Packet preference is greater than policy configured
maximum on port 1/1/5, vlan 10
00 days 00h40m49s:I:RAGuard: IPv6 address of packet matches Whitelist
fe80:100::100:1 on port 1/1/5, vlan 10
00 days 00h40m49s:I:RAGuard: IPv6 address of the packet does not match the
whitelist fe80:100::100:1 on port 1/1/5, vlan 10
00 days 00h40m49s:I:RAGuard: packet passes prefix-list examplelist1 on port 1/1/5,
vlan 10
00 days 00h40m49s:I:RAGuard: packet does not pass prefix-list examplelist1 on port
1/1/5, vlan 10
00 days 00h40m49s:I:RAGuard: prefix-list examplelist1 on policy examplepolicy1
not found
00 days 00h40m49s:I:RAGuard: Not enabled for vlan 10, port 1/1/5
00 days 00h40m49s:I:RAGuard: Feature ON for vlan 10, port 1/1/5
```

debug ipv6 rip

Displays debugging information about the IPv6 Routing Information Protocol (RIP) events.

Syntax

debug ipv6 rip eventsevents

debug ipv6 rip{**receive**|**transmit**}{**ethernet***stackid/slot/port*|**lag***number*|**tunnel***number*| **ve***number*}

no debug ipv6 rip{**receive**|**transmit**}[**ethernet***stackid/slot/port*|**lag***number*|**tunnel***number*| **ve***number*]

Parameters

events
Specifies RIP events.

receive
Specifies IPv6 RIP packets received.

transmit
Specifies IPv6 RIP packets transmitted.

ethernet*stackid/slot/port*
Specifies an Ethernet interface.

lag*number*
Specifies a LAG interface.

tunnel*number*
Specifies a tunnel interface.

ve*number*
Specifies a VE interface.

Modes

Privileged EXEC mode

Usage Guidelines

The **no** form of the command disables the displaying of IPv6 RIP debugging information.

Examples

The following example displays debugging information for IPv6 RIP packets received.

```
device# debug ipv6 rip events
device(config-vif-11)# RIPng: update timer expired
clear ipv routeRIPng: triggered update
RIPng: garbage prefix 2001:DB8::/64 timer 1, metric 0, tag 0
from :: on interface NULL
RIPng: garbage prefix 2001:DB8::/64 timer 1, metric 0, tag 0
from :: on interface NULL
RIPng: Adding local connected route 2001:DB8::1/64 on interface v11
RIPng: Adding local connected route 2001:DB8::1/64 on interface v12
RIPng: update timer expired
RIPng: Redistribute add route 2001:DB8::/64, type CONNECTED (1/0)
RIPng: Redistribute add route 2001:DB8::/64, type CONNECTED (1/0)
```

debug ipv6 rtm

Enables route table manager (RTM) debugging information to be displayed.

Syntax

debug ipv6 rtm { *ipv6_address* | **error** | **general** | **nexthop** | **static-bfd** }

no debug ipv6 rtm { *ipv6_address* | **error** | **general** | **nexthop** | **static-bfd** }

Parameters

ipv6_address
Specifies an IPv6 address.

error
Specifies IP RTM errorss.

general
Specifies general RTM events.

nexthop
Specifies the IP RTM nexthop.

static-bfd
Specifies BFD-enabled static routes.

Modes

Privileged EXEC mode

Usage Guidelines

no

Examples

The following example enables the displaying of general RTM debugging information.

```
device# debug ipv6 rtm general

        ipv6:   rtm general debugging is on
```

debug ipv6 sync

Displays debugging information about IP synchronization and faults in synchronization.

Syntax

debug ipv6 sync [**cache** *ipv6-address* | **cache-all** | **default-route** | **download** | **download-portdb** | **nd** *ipv6-address* |**nd-all** | **next-hop redownload** | **route** *ipv6-address* [*ipv6-mask*] |**route-all** | **show** | **stats** {**clear** | **show** }]

no debug ipv6 sync[**cache** *ip-address* | **cache-all** | **default-route** | **download** | **download-portdb** | **next-hop redownload** | **route** *ip-address* [*ip-mask*] |**route-all** | **show** | **stats** {**clear** | **show** }]

Parameters

cache*ipv6-address*

Monitors IPv6 cache synchronization, matches with the cache IPv6 address.

cache-all

Monitors all IPv6 cache synchronization.

default-route

Monitors default IPv6 route synchronization.

download

Monitors the activity during download.

download-portdb

Monitors the activity during portdb download.

nd *ipv6-address*

Monitors ND syncronization and matches the IPv6 address of ND.

nd-all

Monitors all ND syncronization.

next-hop

Monitors next-hop synchronization.

redownload

Monitors the activity during redownload.

route*ipv6-address ipv6-mask*

Monitors IPv6 route synchronization, and matches with the IPv6 address or IPv6 subnet mask.

route-all

Monitors all IPv6 route synchronization.

show

Displays all IPv6 synchronization debug information.

stats

Displays IPv6 tables and syunchronization information.

clear

Clears synchronization statistics for IPv6 tables.

show
: Displays synchronization statistics for IPv6 tables.

Modes

Privileged EXEC mode

Examples

The following example displays debugging information about all ND syncronization.

```
device#  debug ipv6 sync nd-all

         IPv6 Sync:  all NDs debugging is on
```

debug ipv6 tcp

Displays debugging information about IPv6 Transmission Control Protocol (TCP) transactions.

Syntax

debug ipv6 tcp adjust-mss

debug ipv6 tcp status *ipv6-address*

debug ipv6 tcp vrf *vrf-name* [**status** *ipv6-address*]

no debug ipv6 tcp adjust-mss

no debug ipv6 tcp status *ipv6-address*

no debug ipv6 tcp vrf *vrf-name* [**status** *ipv6-address*]

Parameters

adjust-mss
Specifies IPv6 TCP MSS debugging.

status *ipv6-address*
Specifies the status for TCP connections.

vrf *vrf-name*
Specifies a non-default VRF instance.

Modes

Privileged EXEC mode

Usage Guidelines

The **no** form of the command disables IPv6 TCP debugging options.

Examples

The following example displays debugging information about TCP transactions.

```
device# debug ipv6 tcp
```

The following example displays debugging information about IPv6 TCP status.

```
device# debug ipv6 tcp status 2021:17::1:1:2 8028 2021:17::1:1:1 179
TCP: TCB = 0xa4139619
TCP: 2021:17::1:1:2:8028 <-> 2021:17::1:1:1:179: state: ESTABLISHED
  Send: initial sequence number = 17791259
  Send: first unacknowledged sequence number = 18110620
  Send: current send pointer = 18110620
  Send: next sequence number to send = 18110620
  Send: remote received window = 16384
  Send: total unacknowledged sequence number = 0
  Send: last window update sequence number = 154385241
  Send: last window update ack number = 18110620
  Send: need to send ack = 0, probe = 0
  Send: total used buffers 0
  Receive: initial incoming sequence number = 154039983
  Receive: expected incoming sequence number = 154385260
  Receive: received window = 16384
  Receive: bytes in receive queue = 0
  Receive: congestion window = 1420
    TCP Connection state: ESTABLISHED, timer state 0
     TCP Keychain name      : 1
     TCP-AO Enabled         : YES
     TCP-AO in use          : YES
     Keychain valid         : YES
     No of segments dropped : 0
     Send-Active-Key
     ---------------
       Key-id               : 1
       Crypto Algorithm     : AES-128-CMAC
       Send-id              : 100
       Recv-id              : 100
       Include-tcp-options  : YES
       Accept-ao-mismatch   : YES
     Recv-Active-Key
     ---------------
       Key-id               : 1
       Crypto Algorithm     : AES-128-CMAC
       Send-id              : 100
       Recv-id              : 100
       Include-tcp-options  : YES
       Accept-ao-mismatch   : YES

       Maximum segment size: 1420
       Local host:  2021:17::1:1:2, Local  Port: 8028
       Remote host: 2021:17::1:1:1, Remote Port: 179
       ISentSeq:   17791259  SendNext:   18110620  TotUnAck:          0
       TotSent:      319361  ReTrans:           2  UnAckSeq:   18110620
       SeqLastWin:   154385241  AckLastWin:    18110620  SendAck: 0
       IRcvSeq:   154039983  RcvNext:   154385260  SendWnd:       16384
       TotalRcv:     345277  DupliRcv:          0  RcvWnd:        16384
       SendQue:           0  RcvQue:            0  CngstWnd:       1420
```

The following example displays TCP debugging information for a specific VRF.

```
device# debug ipv6 tcp vrf blue status 2021:15::1:1:2 179 2021:15::1:1:1 8070
TCP: TCB = 0xa413a0f7
TCP: 2021:15::1:1:2:179 <-> 2021:15::1:1:1:8070: state: ESTABLISHED
  Send: initial sequence number = 21557428
  Send: first unacknowledged sequence number = 21876637
  Send: current send pointer = 21876637
  Send: next sequence number to send = 21876637
  Send: remote received window = 16365
  Send: total unacknowledged sequence number = 0
  Send: last window update sequence number = 155872258
  Send: last window update ack number = 21876637
  Send: need to send ack = 0, probe = 0
  Send: total used buffers 0
  Receive: initial incoming sequence number = 155526791
  Receive: expected incoming sequence number = 155872258
  Receive: received window = 16384
  Receive: bytes in receive queue = 0
  Receive: congestion window = 3017
    TCP Connection state: ESTABLISHED, timer state 0
     TCP Keychain name      : 1
     TCP-AO Enabled         : YES
     TCP-AO in use          : YES
     Keychain valid         : YES
     No of segments dropped : 0
     Send-Active-Key
     ---------------
       Key-id               : 1
       Crypto Algorithm     : AES-128-CMAC
       Send-id              : 100
       Recv-id              : 100
       Include-tcp-options  : YES
       Accept-ao-mismatch   : YES
     Recv-Active-Key
     ---------------
       Key-id               : 1
       Crypto Algorithm     : AES-128-CMAC
       Send-id              : 100
       Recv-id              : 100
       Include-tcp-options  : YES
       Accept-ao-mismatch   : YES

       Maximum segment size: 1420
       Local host:  2021:15::1:1:2, Local  Port: 179
       Remote host: 2021:15::1:1:1, Remote Port: 8070
       ISentSeq:   21557428  SendNext:   21876637  TotUnAck:          0
       TotSent:      319209  ReTrans:           0  UnAckSeq:   21876637
       SeqLastWin:   155872258  AckLastWin:    21876637  SendAck: 0
       IRcvSeq:   155526791  RcvNext:   155872258  SendWnd:       16365
       TotalRcv:     345467  DupliRcv:          0  RcvWnd:        16384
       SendQue:           0  RcvQue:            0  CngstWnd:       3017
```

History

Release version	Command history
09.0.10	This command added TCP keychain (AO) option information to debug ipv6 tcp status and debug ipv6 tcp vrf output.

debug keychain

Enables keychain debugging.

Syntax

debug keychain{*keychain-name*|*key-id*|**all**|**config**|**error**|**events**|**show**}

no debug keychain{*keychain-name*|*key-id*|**all**|**config**|**error**|**events**|**show**}

Parameters

keychain-name
: Enables debugging of all operations with a specific keychain name.

key-id
: Enables debugging of all operations with a specific key ID of a keychain.

all
: Enables debugging of all keychain instances.

config
: Displays debugging during configuration.

error
: Displays error messages from the keychain module.

events
: Enables debugging of all timer-related events.

show
: Displays the keychain debug settings.

Modes

Privileged EXEC mode

Usage Guidelines

If the key ID is under multiple keychains, the debug message will be displayed.

The **no** form of the command disables keychain debugging.

Examples

The following example prints debugging during configuration.

```
device# debug keychain config
keychain config debug is enabled
ICX7450-24 Router#conf t
ICX7450-24 Router(config)#keychain abc
Debug: Sep 21 13:32:37  KEYCHAIN_DEBUG_CONFIG: Keychain abc configuration success.
Debug: Sep 21 13:32:37  KEYCHAIN_DEBUG_CONFIG: Keychain configuration success conf type Keychain Create-
Update-Delete
Debug: Sep 21 13:32:37  KEYCHAIN_DEBUG_CONFIG: Keychain configuration success keychain name abc
ICX7450-24 Router(config-keychain-abc)#
```

The following example enables debugging of all keychain instances.

```
device# debug keychain all

keychain all debug is enabled

Debug: Sep 21 13:41:02  Year: 2017, Mon: 9, Day: 21, Hour: 13, Min: 40, Sec: 0 TZone: 2 -- (Secs:
3714990000, SummTime: 3714990000, GMT: 0)
Debug: Sep 21 13:41:02  Year: 2017, Mon: 9, Day: 21, Hour: 13, Min: 42, Sec: 0 TZone: 2 -- (Secs:
3714990120, SummTime: 3714990120, GMT: 0)
Debug: Sep 21 13:41:02  Keychain abc Key-Id 1: Send key end duration 58 sec □ How long the key is going
to be active
Debug: Sep 21 13:41:02  KEYCHAIN_DEBUG_EVENTS: Send Timer Started - Keychain abc Key-Id 1 Active 1, 29
sec
Debug: Sep 21 13:41:31  Year: 2017, Mon: 9, Day: 21, Hour: 13, Min: 40, Sec: 0 TZone: 2 -- (Secs:
3714990000, SummTime: 3714990000, GMT: 0)
Debug: Sep 21 13:41:31  Year: 2017, Mon: 9, Day: 21, Hour: 13, Min: 42, Sec: 0 TZone: 2 -- (Secs:
3714990120, SummTime: 3714990120, GMT: 0)
Debug: Sep 21 13:41:31  Keychain abc Key-Id 1: Send key end duration 29 sec
Debug: Sep 21 13:41:31  KEYCHAIN_DEBUG_EVENTS: Send Timer Started - Keychain abc Key-Id 1 Active 1, 14
sec
Debug: Sep 21 13:41:45  Year: 2017, Mon: 9, Day: 21, Hour: 13, Min: 40, Sec: 0 TZone: 2 -- (Secs:
3714990000, SummTime: 3714990000, GMT: 0)
Debug: Sep 21 13:41:45  Year: 2017, Mon: 9, Day: 21, Hour: 13, Min: 42, Sec: 0 TZone: 2 -- (Secs:
3714990120, SummTime: 3714990120, GMT: 0)
Debug: Sep 21 13:41:45  Keychain abc Key-Id 1: Send key end duration 15 sec □ 15 seconds
Debug: Sep 21 13:41:45  KEYCHAIN_DEBUG_EVENTS: Send Timer Started - Keychain abc Key-Id 1 Active 1, 7
sec
Debug: Sep 21 13:41:47  keychain tick Last Expire 15976056, Current 15977098 Diff 1042 Delta 212715814
```

History

Release version	Command history
08.0.70	This command was introduced.

debug lacp messages

Enables Link Aggregation Control Protocol (LACP) PDU debugging.

Syntax

debug lacp messages { **rx-pdu** | **tx-pdu** }

no debug lacp messages { **rx-pdu** | **tx-pdu** }

Parameters

rx-pdu

Enables debugging of LACP PDUs that are received.

tx-pdu

Enables debugging of LACP PDUs that are transmitted.

Modes

Privileged EXEC mode

Usage Guidelines

The **no** form of the command disables LACP debugging.

Examples

The following example enables debugging of LACP Rx PDUs.

```
device#debug lacp messages rx-pdu
LACP  Enabling packets Rx Debugging
Jul 06 08:38:30:092469:info:l2:lag:1:64607485292447233: LACP RX(port=2/1/12,T=7360803) -> PDU info
Jul 06 08:38:30:092602:debug:l2:lag:1:64607485292447233: AC SP1.609c.9fbc.14ac:PP1.PN10=K20
(Act/LT/Agg/SYN/Col/Dist/UN-Def/UN-Exp)
Jul 06 08:38:30:092972:debug:l2:lag:1:64607485292447233: PA SP1.609c.9f1d.cbb0:PP1.PN26=K20
(Act/LT/Agg/SYN/Col/Dist/UN-Def/UN-Exp)
Jul 06 08:38:30:097379:info:l2:lag:1:64607489587414529: LACP RX(port=1/1/11,T=7360803) -> PDU info
Jul 06 08:38:30:097501:debug:l2:lag:1:64607489587414529: AC SP1.609c.9fbc.14ac:PP1.PN 5=K20
(Act/LT/Agg/SYN/Col/Dist/UN-Def/UN-Exp)
Jul 06 08:38:30:097577:debug:l2:lag:1:64607489587414529: PA SP1.609c.9f1d.cbb0:PP1.PN11=K20
(Act/LT/Agg/SYN/Col/Dist/UN-Def/UN-Exp)
Jul 06 08:38:50:283802:info:l2:lag:1:551756381245408000: LACP TX(port=1/1/11,T=7361005,TX_count=24475)
Tx on VLAN 1, time from last Tx 301 (ticks) (debug_lacp_stop_tx=0,LACPCTRL_STOP_TX_PORTS=1) -> PDU
info(lacp_global_tx_count=48949)
Jul 06 08:38:50:283942:debug:l2:lag:1:551756381245408000: AC SP1.609c.9f1d.cbb0:PP1.PN11=K20
(Act/LT/Agg/SYN/Col/Dist/UN-Def/UN-Exp)
Jul 06 08:38:50:284018:debug:l2:lag:1:551756381245408000: PA SP1.609c.9fbc.14ac:PP1.PN 5=K20
(Act/LT/Agg/SYN/Col/Dist/UN-Def/UN-Exp)
Jul 06 08:38:50:284479:info:l2:lag:1:551756381245408000: LACP TX(port=2/1/12,T=7361005,TX_count=24474)
Tx on VLAN 1, time from last Tx 301 (ticks) (debug_lacp_stop_tx=0,LACPCTRL_STOP_TX_PORTS=1) -> PDU
info(lacp_global_tx_count=48950)
Jul 06 08:38:50:284576:debug:l2:lag:1:551756381245408000: AC SP1.609c.9f1d.cbb0:PP1.PN26=K20
(Act/LT/Agg/SYN/Col/Dist/UN-Def/UN-Exp)
Jul 06 08:38:50:284646:debug:l2:lag:1:551756381245408000: PA SP1.609c.9fbc.14ac:PP1.PN10=K20
(Act/LT/Agg/SYN/Col/Dist/UN-Def/UN-Exp)
Jul 06 08:39:00:191842:info:l2:lag:1:64610126697334273: LACP RX(port=2/1/12,T=7361104) -> PDU info
Jul 06 08:39:00:191973:debug:l2:lag:1:64610126697334273: AC SP1.609c.9fbc.14ac:PP1.PN10=K20
(Act/LT/Agg/SYN/Col/Dist/UN-Def/UN-Exp)
Jul 06 08:39:00:192052:debug:l2:lag:1:64610126697334273: PA SP1.609c.9f1d.cbb0:PP1.PN26=K20
(Act/LT/Agg/SYN/Col/Dist/UN-Def/UN-Exp)
Jul 06 08:39:00:192650:info:l2:lag:1:64610130992301569: LACP RX(port=1/1/11,T=7361104) -> PDU info
Jul 06 08:39:00:192743:debug:l2:lag:1:64610130992301569: AC SP1.609c.9fbc.14ac:PP1.PN 5=K20
(Act/LT/Agg/SYN/Col/Dist/UN-Def/UN-Exp)
Jul 06 08:39:00:192815:debug:l2:lag:1:64610130992301569: PA SP1.609c.9f1d.cbb0:PP1.PN11=K20
(Act/LT/Agg/SYN/Col/Dist/UN-Def/UN-Exp)
```

debug license

Displays the package information on which the license has been loaded.

Syntax

debug license

no debug license

Modes

Privileged EXEC mode

Global configuration mode

Usage Guidelines

show license

Examples

After enabling debugging:

```
device# debug license
License all debugging ON
device# license delete  unit   unit id
device# license delete unit 1    all     delete all software licenses
  index   software license index
device# license delet unit 1 index 2 Can't delete the license specified by index(2) -
141(LICENSE_IN_USE)
device# license delet unit 1 index 2
SYSLOG: <44> Dec  9 11:18:38 device Stack 1: The 'ICX7450-PREM-LIC-SW' license has been deleted
on this unit and is available for redeployment on another unit in accordance with the terms and
conditions of use. All features associated to this license must be disabled.

SYSLOG: <46> Dec  9 11:18:38 device License: Normal license package ICX7450-PREM-LIC-SW
with LID ENG08D21100 is removed on unit 1
device# show license
Index    Lic Mode        Lic Name              Lid/Serial No  Lic Type  StatusLic Period    Lic
Capacity
Stack unit 1:
2        Non-Node Lock   ICX7450-PREM-LIC-SW    EN09429C1D8    Normal      Active   Unlimited     1
Stack unit 12:
1        Non-Node Lock   ICX7450-PREM-LIC-SW    ENG08D21100    Normal      Active   Unlimited     1
```

debug loop-detect

Allows the RUCKUS devices to detect loops using the RUCKUS Port Loop Detection (PLD) protocol and disable a port that is on the receiving end of a loop. The loop is detected by sending Bridge Packet Data Unit (BPDU) test packets.

Syntax

debug loop-detect

no debug loop-detect

Usage Guidelines

Examples

The following example debugs loop detection.

```
device# debug loop-detect
device#show logging debug l2 l2hitless all all
Jun 11 12:01:52:400510:debug:l2:l2hitless:1:342924188452353: Loop-detection: port 1/1/20 (vlan=2), put
into errdisable state
Jun 11 12:01:47:400477:debug:l2:l2hitless:1:342894123681281: Loop-detection: port 1/2/2 (vlan=2), put
into errdisable state
Jun 11 12:01:46:401255:debug:l2:l2hitless:1:342881238779393: Loop-detection: port 1/2/1 (vlan=2), put
into errdisable state
Jun 11 12:01:39:329626:debug:l2:l2hitless:1:10532283126645504: [T=152567]send loop-detect to vlan2
Jun 11 12:01:38:329175:debug:l2:l2hitless:1:10531544392270592: [T=152557]send loop-detect to vlan2
Jun 11 12:01:37:329256:debug:l2:l2hitless:1:10530831427699456: [T=152547]send loop-detect to vlan2
Jun 11 12:01:36:334607:debug:l2:l2hitless:1:10530114168161024: [T=152537]send loop-detect to vlan2
Jun 11 12:01:35:334394:debug:l2:l2hitless:1:10529396908622592: [T=152527]send loop-detect to vlan2
Jun 11 12:01:34:330183:debug:l2:l2hitless:1:10528683944051456: [T=152517]send loop-detect to vlan2
Jun 11 12:01:33:334048:debug:l2:l2hitless:1:10527975274447616: [T=152507]send loop-detect to vlan2
Jun 11 12:01:32:382143:debug:l2:l2hitless:1:342842584073729: insert_disable primary 1/1/19, vlan=2
Jun 11 12:01:32:382028:debug:l2:l2hitless:1:342842584073729: Recv loop-detect from 1/1/19, vlan=2, pkt:
port=Nil, vlan=2
Jun 11 12:01:32:310693:debug:l2:l2hitless:1:342838289106433: Loop-detection: port lg1 (vlan=2), put
into errdisable state
Jun 11 12:01:32:310599:debug:l2:l2hitless:1:342838289106433: insert_disable primary lg1, vlan=2
Jun 11 12:01:32:310453:debug:l2:l2hitless:1:342838289106433: Recv loop-detect from 1/1/22, vlan=2, pkt:
port=Nil, vlan=2
Jun 11 12:01:32:299618:debug:l2:l2hitless:1:10527206475301632: [T=152496]send loop-detect to vlan2
Jun 11 12:01:31:299460:debug:l2:l2hitless:1:10526472035894016: [T=152486]send loop-detect to vlan2
Jun 11 12:01:30:299226:debug:l2:l2hitless:1:10525750481388288: [T=152476]send loop-detect to vlan2
Jun 11 12:01:29:302573:debug:l2:l2hitless:1:10525016041980672: [T=152466]send loop-detect to vlan2
Jun 11 12:01:28:299907:debug:l2:l2hitless:1:10524268717671168: [T=152456]send loop-detect to vlan2
Jun 11 12:01:27:299130:debug:l2:l2hitless:1:10523547163165440: [T=152446]send loop-detect to vlan2
Jun 11 12:01:26:299457:debug:l2:l2hitless:1:10522825608659712: [T=152436]send loop-detect to vlan2
Jun 11 12:01:25:300172:debug:l2:l2hitless:1:10522108349121280: [T=152426]send loop-detect to vlan2
Jun 11 12:01:24:324905:debug:l2:l2hitless:1:10521403974484736: port lg1 enabled
Jun 11 12:01:24:324693:debug:l2:l2hitless:1:10521403974484736: port 1/1/22 enabled
Jun 11 12:01:24:314172:debug:l2:l2hitless:1:10521403974484736: remove disable lg1, vlan=2
Jun 11 12:01:24:314015:debug:l2:l2hitless:1:10521403974484736: port 1/1/21 enabled
```

debug loop-detect level

Debugs loop detection in a particular level.

Syntax

debug loop-detect level*decimal*

no debug loop-detect level*decimal*

Parameters

decimal

Specifies the level.

Examples

```
device# debug loop-detect
device#debug loop-detect level 3
device#no debug loop-detect level 3
device#no debug loop-detect port ethernet 1/1/19
device#no debug loop-detect port ethernet 1/2/1
device#show logging debug l2 l2hitless all all
Jun 11 12:01:52:400510:debug:l2:l2hitless:1:342924188452353: Loop-detection: port 1/1/20 (vlan=2), put
into errdisable state
Jun 11 12:01:47:400477:debug:l2:l2hitless:1:342894123681281: Loop-detection: port 1/2/2 (vlan=2), put
into errdisable state
Jun 11 12:01:46:401255:debug:l2:l2hitless:1:342881238779393: Loop-detection: port 1/2/1 (vlan=2), put
into errdisable state
Jun 11 12:01:39:329626:debug:l2:l2hitless:1:10532283126645504: [T=152567]send loop-detect to vlan2
Jun 11 12:01:38:329175:debug:l2:l2hitless:1:10531544392270592: [T=152557]send loop-detect to vlan2
Jun 11 12:01:37:329256:debug:l2:l2hitless:1:10530831427699456: [T=152547]send loop-detect to vlan2
Jun 11 12:01:36:334607:debug:l2:l2hitless:1:10530114168161024: [T=152537]send loop-detect to vlan2
Jun 11 12:01:35:334394:debug:l2:l2hitless:1:10529396908622592: [T=152527]send loop-detect to vlan2
Jun 11 12:01:34:330183:debug:l2:l2hitless:1:10528683944051456: [T=152517]send loop-detect to vlan2
Jun 11 12:01:33:334048:debug:l2:l2hitless:1:10527975274447616: [T=152507]send loop-detect to vlan2
Jun 11 12:01:32:382143:debug:l2:l2hitless:1:342842584073729: insert_disable primary 1/1/19, vlan=2
Jun 11 12:01:32:382028:debug:l2:l2hitless:1:342842584073729: Recv loop-detect from 1/1/19, vlan=2, pkt:
port=Nil, vlan=2
Jun 11 12:01:32:310693:debug:l2:l2hitless:1:342838289106433: Loop-detection: port lg1 (vlan=2), put
into errdisable state
Jun 11 12:01:32:310599:debug:l2:l2hitless:1:342838289106433: insert_disable primary lg1, vlan=2
Jun 11 12:01:32:310453:debug:l2:l2hitless:1:342838289106433: Recv loop-detect from 1/1/22, vlan=2, pkt:
port=Nil, vlan=2
Jun 11 12:01:32:299618:debug:l2:l2hitless:1:10527206475301632: [T=152496]send loop-detect to vlan2
Jun 11 12:01:31:299460:debug:l2:l2hitless:1:10526472035894016: [T=152486]send loop-detect to vlan2
Jun 11 12:01:30:299226:debug:l2:l2hitless:1:10525750481388288: [T=152476]send loop-detect to vlan2
Jun 11 12:01:29:302573:debug:l2:l2hitless:1:10525016041980672: [T=152466]send loop-detect to vlan2
Jun 11 12:01:28:299907:debug:l2:l2hitless:1:10524268717671168: [T=152456]send loop-detect to vlan2
Jun 11 12:01:27:299130:debug:l2:l2hitless:1:10523547163165440: [T=152446]send loop-detect to vlan2
Jun 11 12:01:26:299457:debug:l2:l2hitless:1:10522825608659712: [T=152436]send loop-detect to vlan2
Jun 11 12:01:25:300172:debug:l2:l2hitless:1:10522108349121280: [T=152426]send loop-detect to vlan2
Jun 11 12:01:24:324905:debug:l2:l2hitless:1:10521403974484736: port lg1 enabled
Jun 11 12:01:24:324693:debug:l2:l2hitless:1:10521403974484736: port 1/1/22 enabled
Jun 11 12:01:24:314172:debug:l2:l2hitless:1:10521403974484736: remove disable lg1, vlan=2
Jun 11 12:01:24:314015:debug:l2:l2hitless:1:10521403974484736: port 1/1/21 enabled
```

debug loop-detect port

Debugs loop detection on a physical port or VLAN.

Syntax

debug loop-detect port { **ethernet** *unit/slot/port* | **vlan** *vlan-id* }

no debug loop-detect port { **ethernet** *unit/slot/port* | **vlan** *vlan-id* }

Parameters

ethernet*unit/slot/port*
: Specifies the physical port.

vlan*vlan-id*
: Specifies the VLAN.

Modes

Privileged EXEC mode

Usage Guidelines

The **no** form of the command disables the loop detection on the phyical port or VLAN.

Examples

```
device# debug loop-detect port vlan 2
Loop-detect vlan 2 debugging is on
device#debug loop-detect port vlan 2
Loop-detect debugging enabled for vlan :2
device#debug loop-detect port ethernet 1/1/19
Loop-detect debugging enabled for port :ethernet 1/1/19
device#debug loop-detect port ethernet 1/2/1
Loop-detect debugging enabled for port :ethernet 1/2/1
device#show logging debug l2 l2hitless all all
Jun 11 12:01:52:400510:debug:l2:l2hitless:1:342924188452353: Loop-detection: port 1/1/20 (vlan=2), put
into errdisable state
Jun 11 12:01:47:400477:debug:l2:l2hitless:1:342894123681281: Loop-detection: port 1/2/2 (vlan=2), put
into errdisable state
Jun 11 12:01:46:401255:debug:l2:l2hitless:1:342881238779393: Loop-detection: port 1/2/1 (vlan=2), put
into errdisable state
Jun 11 12:01:39:329626:debug:l2:l2hitless:1:10532283126645504: [T=152567]send loop-detect to vlan2
Jun 11 12:01:38:329175:debug:l2:l2hitless:1:10531544392270592: [T=152557]send loop-detect to vlan2
Jun 11 12:01:37:329256:debug:l2:l2hitless:1:10530831427699456: [T=152547]send loop-detect to vlan2
Jun 11 12:01:36:334607:debug:l2:l2hitless:1:10530114168161024: [T=152537]send loop-detect to vlan2
Jun 11 12:01:35:334394:debug:l2:l2hitless:1:10529396908622592: [T=152527]send loop-detect to vlan2
Jun 11 12:01:34:330183:debug:l2:l2hitless:1:10528683944051456: [T=152517]send loop-detect to vlan2
Jun 11 12:01:33:334048:debug:l2:l2hitless:1:10527975274447616: [T=152507]send loop-detect to vlan2
Jun 11 12:01:32:382143:debug:l2:l2hitless:1:342842584073729: insert_disable primary 1/1/19, vlan=2
Jun 11 12:01:32:382028:debug:l2:l2hitless:1:342842584073729: Recv loop-detect from 1/1/19, vlan=2, pkt:
port=Nil, vlan=2
Jun 11 12:01:32:310693:debug:l2:l2hitless:1:342838289106433: Loop-detection: port lg1 (vlan=2), put
into errdisable state
Jun 11 12:01:32:310599:debug:l2:l2hitless:1:342838289106433: insert_disable primary lg1, vlan=2
Jun 11 12:01:32:310453:debug:l2:l2hitless:1:342838289106433: Recv loop-detect from 1/1/22, vlan=2, pkt:
port=Nil, vlan=2
Jun 11 12:01:32:299618:debug:l2:l2hitless:1:10527206475301632: [T=152496]send loop-detect to vlan2
Jun 11 12:01:31:299460:debug:l2:l2hitless:1:10526472035894016: [T=152486]send loop-detect to vlan2
Jun 11 12:01:30:299226:debug:l2:l2hitless:1:10525750481388288: [T=152476]send loop-detect to vlan2
Jun 11 12:01:29:302573:debug:l2:l2hitless:1:10525016041980672: [T=152466]send loop-detect to vlan2
Jun 11 12:01:28:299907:debug:l2:l2hitless:1:10524268717671168: [T=152456]send loop-detect to vlan2
Jun 11 12:01:27:299130:debug:l2:l2hitless:1:10523547163165440: [T=152446]send loop-detect to vlan2
Jun 11 12:01:26:299457:debug:l2:l2hitless:1:10522825608659712: [T=152436]send loop-detect to vlan2
Jun 11 12:01:25:300172:debug:l2:l2hitless:1:10522108349121280: [T=152426]send loop-detect to vlan2
Jun 11 12:01:24:324905:debug:l2:l2hitless:1:10521403974484736: port lg1 enabled
Jun 11 12:01:24:324693:debug:l2:l2hitless:1:10521403974484736: port 1/1/22 enabled
Jun 11 12:01:24:314172:debug:l2:l2hitless:1:10521403974484736: remove disable lg1, vlan=2
Jun 11 12:01:24:314015:debug:l2:l2hitless:1:10521403974484736: port 1/1/21 enabled
```

debug mac

Enables the Media Access Control (MAC) address debugging action.

Syntax

debug mac{ **action** *number* | **mac** *mac-address* | **show** }

no debug mac{ **action** *number* | **mac** *mac-address* | **show** }

Parameters

action*number*

Monitors the MAC action based on the specified level.

mac*mac-address*

Specifies the MAC address for debugging.

show

Displays MAC address debug settings.

Modes

Privileged EXEC mode

Usage Guidelines

no

Examples

```
device# debug mac action 1
         MAC:  ACTION debugging is on

device#debug mac show
debug mac action 3
debug mac mac 0000.0000.0101
debug mac hw-index 0
```

debug mecid

Displays debugging information for ME-CID Manager.

Syntax

debug mecid [**all** | **cascade-port** | **error** | **event** | **flow** | **fsm** | **mecid** | **rx** | **show** | **tx**]

no debug mecid [**all** | **cascade-port** | **error** | **event** | **flow** | **fsm** | **mecid** | **rx** | **show** | **tx**]

Parameters

all
Generates all debugging information related to ME-CID.

cascade-port
Enables debugging for a specific cascade port.

error
Displays ME-CID errors.

event
Displays ME-CID events.

flow
Displays ME-CID control flow.

fsm
Displays ME-CID FSM events.

mecid
Enables debugging for a specific ME-CID manager.

rx
Displays the ME-CID packets received from a Port Extender (PE).

show
Displays debugging information enabled for ME-CID.

tx
Displays the ME-CID packets sent to a Port Extender (PE).

Modes

Privileged EXEC mode

Examples

```
device# debug mecid all
9:9:28 - MECID_FSM: mecid 16360, FSM: DELETE_AW - > delete
9:9:28 - MECID_RX: Received E-Channel Register Response from PE 18 for ECID: 16360(Msg Id: 436), ECIDs
waiting for response : 24
9:9:28 - MECID_RX: Received E-Channel Register Response from PE 18 for ECID: 16331(Msg Id: 437), ECIDs
waiting for response : 23
9:9:28 - MECID_RX: Received E-Channel Register Response from PE 18 for ECID: 16324(Msg Id: 438), ECIDs
waiting for response : 22
9:9:28 - MECID_FSM: mecid 16346, FSM: DELETE_AW - > delete
9:9:28 - MECID_RX: Received E-Channel Register Response from PE 18 for ECID: 16346(Msg Id: 439), ECIDs
waiting for response : 21
9:9:28 - MECID_FSM: mecid 16358, FSM: DELETE_AW - > delete
9:9:28 - MECID_FSM: mecid 16360, FSM: DELETE_AW - > delete
9:9:27 - MECID_RX: Received E-Channel Register Response from PE 18 for ECID: 16347(Msg Id: 435), ECIDs
waiting for response : 0
9:9:28 - MECID_TX: PE 18 tx timer scheduled
stack: 1044264c 10a48824 10cf1120 10a48d60 10cf3f20 10cf4434 10d000fc 10a48ca0 10b94550 11ee536c
11f2b490
 Tx Count: 1
 Sending port array TLV to unit 18 (MsgId: 436)
    ECID: 16360, Number of Ports: 1
           1. Port: e18/1/3, Action: DELETE
.
.
.
(output truncated)
```

debug mem-leak

Enables or disables memory leak detection.

Syntax

debug mem-leak { **off** | **on** } [**process-name** *name*]

Parameters

off

Turns off memory leak tracking. This action will result in clearing all tracking results.

on

Turns on memory leak tracking.

process-name *name*

Specifies the name of the process for which you want to enable memory leak tracking.

Modes

Privileged EXEC mode

Examples

The following example turns on memory leak tracking for FastIron process.

```
device# debug mem-leak on
Start memory leak monitoring in FastIron
Tracking is on
Will automatically turn off after 3 months
```

The following example turns on memory leak tracking for poed process.

```
device# debug mem-leak on process-name poed
Start memory leak monitoring in poed
Tracking is on
Will automatically turn off after 3 months
```

The following example turns off memory leak tracking for poed process.

```
device# debug mem-leak off process-name poed
Stop memory leak monitoring in poed
tracking is off and all results are cleared
```

History

Release version	Command history
09.0.00	This command was introduced.

debug metro-ring bpdu

Monitors metro ring protocol (MRP) Bridge Packet Data Unit (BPDU) packets.

Syntax

debug metro-ring bpdu

no debug metro-ring bpdu

Modes

Privileged EXEC mode

Usage Guidelines

The **no** form of the command disables MRP BPDU packet monitoring.

Examples

The following example monitors MRP BPDU packets.

```
device# debug metro-ring bpdu
         bpdu:  Trace debugging is on
device# show log debug l2 mrp all all
Jun 11 08:10:49:758081:debug:l2:mrp:1:68583152420353: rhp-processing : MASTER(ring2) dropping
RHP(ring#2) sequence number 13151
Jun 11 08:10:49:657543:debug:l2:mrp:1:68578857453057: rhp-processing : MASTER(ring2) dropping
RHP(ring#2) sequence number 13150
Jun 11 08:10:49:557831:debug:l2:mrp:1:68574562485761: rhp-processing : MASTER(ring2) dropping
RHP(ring#2) sequence number 13149
Jun 11 08:10:49:457594:debug:l2:mrp:1:68570267518465: rhp-processing : MASTER(ring2) dropping
RHP(ring#2) sequence number 13148
Jun 11 08:10:49:364263:debug:l2:mrp:1:68548792681985: rhp-processing : MASTER(ring2) dropping
RHP(ring#2) sequence number 13147
Jun 11 08:10:49:265651:debug:l2:mrp:1:68544497714689: rhp-processing : MASTER(ring2) dropping
RHP(ring#2) sequence number 13146
Jun 11 08:10:49:157606:debug:l2:mrp:1:68540202747393: rhp-processing : MASTER(ring2) dropping
RHP(ring#2) sequence number 13145
Jun 11 08:10:49:059683:debug:l2:mrp:1:68535907780097: rhp-processing : MASTER(ring2) dropping
RHP(ring#2) sequence number 13144
```

debug metro-ring diags

Enables metro ring protocol (MRP) diagnostics.

Syntax

debug metro-ring diags

no debug metro-ring diags

Modes

Privileged EXEC mode

Usage Guidelines

The **no** form of the command disables MRP diagnostics.

Examples

The following example enables MRP diagnostics.

```
device# debug metro-ring diags
         diags:  diags debugging is on
device# show log debug l2 mrp all all
Jun 11 08:19:15:947823:debug:l2:mrp:1:94911301944833: mrp-debug: mrp_diags_receive_packet. rpdu with
sequence number 18186 has been lost. Reseting timers
Jun 11 08:19:15:363445:debug:l2:mrp:1:94868352271873: mrp-debug: mrp_diags_receive_packet. Diag frame
received when diags are untriggered
Jun 11 08:19:15:248229:debug:l2:mrp:1:94864057304577: mrp-debug: mrp_diags_receive_packet. rpdu with
sequence number 18180 has been lost. Reseting timers
Jun 11 08:19:14:648409:debug:l2:mrp:1:94838287500801: mrp-debug: mrp_diags_receive_packet. rpdu with
sequence number 18174 has been lost. Reseting timers
Jun 11 08:19:14:047981:debug:l2:mrp:1:94808222729729: mrp-debug: mrp_diags_receive_packet. rpdu with
sequence number 18168 has been lost. Reseting timers
Jun 11 08:19:13:448711:debug:l2:mrp:1:94765273056769: mrp-debug: mrp_diags_receive_packet. rpdu with
sequence number 18162 has been lost. Reseting timers
Jun 11 08:19:12:853484:debug:l2:mrp:1:94739503252993: mrp-debug: mrp_diags_receive_packet. rpdu with
sequence number 18156 has been lost. Reseting timers
Jun 11 08:19:12:248068:debug:l2:mrp:1:94713733449217: mrp-debug: mrp_diags_receive_packet. rpdu with
sequence number 18150 has been lost. Reseting timers
Jun 11 08:19:11:648217:debug:l2:mrp:1:94687963645441: mrp-debug: mrp_diags_receive_packet. rpdu with
sequence number 18144 has been lost. Reseting timers
Jun 11 08:19:11:047654:debug:l2:mrp:1:94645013972481: mrp-debug: mrp_diags_receive_packet. rpdu with
sequence number 18138 has been lost. Reseting timers
Jun 11 08:19:10:466977:debug:l2:mrp:1:94619244168705: mrp-debug: mrp_diags_receive_packet. rpdu with
sequence number 18132 has been lost. Reseting timers
```

debug metro-ring event

Displays debugging information about metro ring protocol (MRP) events.

Syntax

debug metro-ring event

no debug metro-ring event

Modes

Privileged EXEC mode

Usage Guidelines

The **no** form of the command disables MRP event debugging.

Examples

The following example displays debugging information about MRP events.

```
device# debug metro-ring event
         event:  events debugging is on
device# show log debug l2 mrp all all
Jun 11 08:33:23:352452:debug:l2:mrp:1:1516451659777: mrp_utils_prog_filter(T=27607)(caller_ring_id=2)
mode=0 -> 2 (MIR=2,TRAP=1)
Jun 11 08:33:19:825067:debug:l2:mrp:1:1512156692481: mrp_utils_prog_filter(T=27571)(caller_ring_id=2)
mode=2 -> 0 (MIR=2,TRAP=1)
Jun 11 08:31:46:160903:debug:l2:mrp:1:1776601451725568: mrp_utils_prog_filter(T=26635)
(caller_ring_id=2) mode=1 -> 2 (MIR=2,TRAP=1)
Jun 11 08:31:46:007792:debug:l2:mrp:1:1056890159105: mrp_utils_prog_filter(T=26633)(caller_ring_id=2)
mode=2 -> 1 (MIR=2,TRAP=1)
Jun 11 08:30:05:331676:debug:l2:mrp:1:1708367306294016: mrp_utils_prog_filter(T=25627)
(caller_ring_id=2) mode=1 -> 2 (MIR=2,TRAP=1)
Jun 11 08:30:05:180302:debug:l2:mrp:1:1001055584257: mrp_utils_prog_filter(T=25625)(caller_ring_id=2)
mode=2 -> 1 (MIR=2,TRAP=1)
Jun 11 08:26:05:306038:debug:l2:mrp:1:713292775425: mrp_utils_prog_filter(T=23226)(caller_ring_id=2)
mode=0 -> 2 (MIR=2,TRAP=1)
Jun 11 08:25:57:495209:debug:l2:mrp:1:696112906241: mrp_utils_prog_filter(T=23148)(caller_ring_id=2)
mode=2 -> 0 (MIR=2,TRAP=1)
Jun 11 08:25:37:376994:debug:l2:mrp:1:1506645577302784: mrp_utils_prog_filter(T=22947)
(caller_ring_id=2) mode=1 -> 2 (MIR=2,TRAP=1)
Jun 11 08:25:33:751927:debug:l2:mrp:1:631688396801: mrp_utils_prog_filter(T=22911)(caller_ring_id=2)
mode=2 -> 1 (MIR=2,TRAP=1)
```

debug metro-ring ring-id

Sets the ring ID for metro ring protocol (MRP) events.

Syntax

debug metro-ring ring-id *id*

no debug metro-ring ring-id *id*

Modes

Privileged EXEC mode

Usage Guidelines

The **no** form of the command disables the ring ID for MRP events.

Examples

The following example sets the ring ID for MRP events.

```
device# debug metro-ring ring-id 2
device# debug metro-ring event
         event:  events debugging is on
device(config)#no vlan 2device(config)#vlan 2 by port
 tagged ethe 1/1/19 to 1/1/20
 metro-ring ICX7450-48P Router(config-vlan-2)# tagged ethe 1/1/19 to 1/1/20
2
  master
  ring-interfaces ethernet 1/1/1Added tagged port(s) ethe 1/1/19 to 1/1/20 to port-vlan 2.
device(config-vlan-2)# metro-ring 2
9 ethernet 1/1/20
  enable
!device(config-vlan-2-mrp-2)#  master
device(config-vlan-2-mrp-2)#  ring-interfaces ethernet 1/1/19 ethernet 1/1/20
device(config-vlan-2-mrp-2)#  enable
device(config-vlan-2-mrp-2)#!
device(config-vlan-2-mrp-2)#exit
device(config)#no vlan 3
device(config)#!
device(config)#vlan 3 by port
 tagged ethe 1/2/1 to 1/2/2
 metro-ring 3
  master
  ring-interfaces ethernet 1/2/1 ethernet 1/2/2
device(config-vlan-3)# tagged ethe 1/2/1 to 1/2/2
  enable
!Added tagged port(s) ethe 1/2/1 to 1/2/2 to port-vlan 3.
device(config-vlan-3)# metro-ring 3
device(config-vlan-3-mrp-3)#  master
device(config-vlan-3-mrp-3)#  ring-interfaces ethernet 1/2/1 ethernet 1/2/2
device(config-vlan-3-mrp-3)#  enable
device(config-vlan-3-mrp-3)#exit
device# show log debug l2 mrp all all
Jun 11 08:44:43:575652:debug:l2:mrp:1:2303851636982528: mrp-debug(T=34409): (master) STOP TC for ring 2
Jun 11 08:44:43:280569:debug:l2:mrp:1:2362560217089: mrp_state_init: Exit-1 ring 2
Jun 11 08:44:43:279519:debug:l2:mrp:1:2362560217089: mrp_utils_update_ring_mac_in_cam(T=34406): called
for vlan_id 2 done hw_timer_gone=(0 msec)
Jun 11 08:44:43:279426:debug:l2:mrp:1:2362560217089: mrp_utils_add_ring_control_mac_in_hw : added
control mac for ring 2,vlan 2
Jun 11 08:44:43:279305:debug:l2:mrp:1:2362560217089: mrp_add_ring_rhp_mac_to_hw : Added rhp-mac for
ring 2
Jun 11 08:44:43:278295:debug:l2:mrp:1:2362560217089: mrp_utils_update_ring_mac_in_cam(T=34406): called
for vlan_id 2 done hw_timer_gone=(0 msec)
Jun 11 08:44:43:278167:debug:l2:mrp:1:2362560217089: mrp-debug(T=34406): ** state BLOCKING for port
1/1/20 in ring 2 (owner=2) **
Jun 11 08:44:43:267519:debug:l2:mrp:1:2362560217089: mrp_utils_update_ring_mac_in_cam(T=34406): called
for vlan_id 2 done hw_timer_gone=(0 msec)
Jun 11 08:44:43:267428:debug:l2:mrp:1:2362560217089: mrp-debug(T=34406): ** state FORWARDING for port
1/1/19 in ring 2 (owner=2) **
Jun 11 08:44:43:267340:debug:l2:mrp:1:2362560217089:
mrp_utils_change_oper_port(ring=2,primary=0,new_port=1/1/20)(T=34406)
Jun 11 08:44:43:267256:debug:l2:mrp:1:2362560217089: mrp_state_init(ring_id=2,port=#19(1/1/20),sec) get
oper_port=1/1/20 -> mrp_utils_change_oper_port
Jun 11 08:44:43:267164:debug:l2:mrp:1:2362560217089:
mrp_utils_change_oper_port(ring=2,primary=1,new_port=1/1/19)(T=34406)
Jun 11 08:44:43:267058:debug:l2:mrp:1:2362560217089: mrp_state_init(ring_id=2,port=#18(1/1/19),pri) get
oper_port=1/1/19 -> mrp_utils_change_oper_port
Jun 11 08:44:43:266805:debug:l2:mrp:1:2362560217089: mrp-debug: event - mrp_state_init vlan 2 stg 4
Jun 11 08:44:43:258092:debug:l2:mrp:1:2362560217089: mrp-debug: ** state INIT for ring 2 **
Jun 11 08:44:43:257964:debug:l2:mrp:1:2362560217089: mrp_state_init: Enter ring 2
Jun 11 08:44:43:198517:debug:l2:mrp:1:2358265249793:
mrp_utils_change_oper_port(ring=2,primary=0,new_port=1/1/20)(T=34405)
Jun 11 08:44:43:198424:debug:l2:mrp:1:2358265249793:
mrp_conf_add_ring_interface(ring_id=2,port=#19(1/1/20),sec) get oper_port=1/1/20 ->
mrp_utils_change_oper_port
Jun 11 08:44:43:198290:debug:l2:mrp:1:2358265249793:
mrp_conf_add_ring_interface(ring_id=2,port=#19(1/1/20),sec)
```

```
Jun 11 08:44:43:198198:debug:l2:mrp:1:2358265249793:
mrp_utils_change_oper_port(ring=2,primary=1,new_port=1/1/19)(T=34405)
Jun 11 08:44:43:198100:debug:l2:mrp:1:2358265249793:
mrp_conf_add_ring_interface(ring_id=2,port=#18(1/1/19),pri) get oper_port=1/1/19 ->
mrp_utils_change_oper_port
Jun 11 08:44:43:197890:debug:l2:mrp:1:2358265249793:
mrp_conf_add_ring_interface(ring_id=2,port=#18(1/1/19),pri)
Jun 11 08:44:43:082003:debug:l2:mrp:1:2349675315201: mrp_conf_add_ring_in_group(ring=2,vlan=2) ->
Install MRP_MAC_RANGE_FILTER_MIRROR
Jun 11 08:44:30:835167:debug:l2:mrp:1:2336790413313: mrp_utils_update_ring_mac_in_cam(T=34282): called
for vlan_id 2 done hw_timer_gone=(0 msec)
Jun 11 08:44:30:835051:debug:l2:mrp:1:2336790413313: mrp_add_ring_rhp_mac_to_hw : Deleted rhp-mac for
ring 2
Jun 11 08:44:30:834677:debug:l2:mrp:1:2336790413313: mrp_utils_delete_ring_control_mac_in_hw : no
control-mac to delete for ring 2,vlan 2
Jun 11 08:44:30:834524:debug:l2:mrp:1:2336790413313:
mrp_utils_change_oper_port(ring=2,primary=0,new_port=INVALID)(T=34282)
Jun 11 08:44:30:834323:debug:l2:mrp:1:2336790413313: mrp_conf_del_ring_interface(ring=2,port=#19(1/1/20)
Jun 11 08:44:30:834151:debug:l2:mrp:1:2336790413313:
mrp_utils_change_oper_port(ring=2,primary=1,new_port=INVALID)(T=34282)
Jun 11 08:44:30:833923:debug:l2:mrp:1:2336790413313: mrp_conf_del_ring_interface(ring=2,port=#18(1/1/19)
Jun 11 08:44:30:833805:debug:l2:mrp:1:2336790413313: mrp_state_end: Exit ring 2
Jun 11 08:44:30:832859:debug:l2:mrp:1:2336790413313: mrp_utils_update_ring_mac_in_cam(T=34282): called
for vlan_id 2 done hw_timer_gone=(0 msec)
Jun 11 08:44:30:832760:debug:l2:mrp:1:2336790413313: mrp-debug(T=34282): ** state FORWARDING for port
1/1/20 in ring 2 (owner=2) **
Jun 11 08:44:30:832616:debug:l2:mrp:1:2336790413313: mrp_utils_delete_ring_control_mac_in_hw : Deleted
control mac for ring 2,vlan 2
Jun 11 08:44:30:810245:debug:l2:mrp:1:2336790413313: mrp-debug: ** state END for ring 2 **
Jun 11 08:44:30:810141:debug:l2:mrp:1:2336790413313: mrp_state_end: Enter ring 2
Jun 11 08:43:13:827824:debug:l2:mrp:1:2242867396346624: mrp_tx(T=33512): ring 3, skip RHP/TC(0) seq=3059
Jun 11 08:43:13:727452:debug:l2:mrp:1:2242815856739072: mrp_tx(T=33511): ring 3, skip RHP/TC(0) seq=3058
Jun 11 08:43:13:628275:debug:l2:mrp:1:2242712777523968: mrp_tx(T=33510): ring 3, skip RHP/TC(0) seq=3057
Jun 11 08:43:13:527877:debug:l2:mrp:1:2242652647981824: mrp_tx(T=33509): ring 3, skip RHP/TC(0) seq=3056
Jun 11 08:43:13:427532:debug:l2:mrp:1:2242583928505088: mrp_tx(T=33508): ring 3, skip RHP/TC(0) seq=3055
Jun 11 08:43:13:327828:debug:l2:mrp:1:2242528093930240: mrp_tx(T=33507): ring 3, skip RHP/TC(0) seq=3054
Jun 11 08:43:13:228413:debug:l2:mrp:1:2242467964388096: mrp_tx(T=33506): ring 3, skip RHP/TC(0) seq=3053
Jun 11 08:43:13:144003:debug:l2:mrp:1:2242377770074880: mrp_tx(T=33505): ring 3, skip RHP/TC(0) seq=3052
Jun 11 08:43:13:028600:debug:l2:mrp:1:2242296165696256: mrp_tx(T=33504): ring 3, skip RHP/TC(0) seq=3051
```

debug metro-ring trace-l2

Enables metro ring protocol (MRP) trace debugging.

Syntax

debug metro-ring trace-l2

no debug metro-ring trace-l2

Modes

Privileged EXEC mode

Usage Guidelines

The **no** form of the disables MRP trace debugging.

Examples

The following example enables MRP trace debugging.

```
device# debug metro-ring trace-l2
         trace-l2:  trace-l2 debugging is on
```

debug metro-ring tx_bpdu

Debugs metro ring protocol (MRP) transmit BPDU packets.

Syntax

debug metro-ring tx_bpdu

no debug metro-ring tx_bpdu

Modes

Privileged EXEC mode

Usage Guidelines

The **no** form of the command disables MRP transmit BPDU packets debugging.

Examples

The following example debugs MRP transmit BPDU packets.

```
device# debug metro-ring tx_bpdu
         tx_bpdu:  Trace debugging is on
device# show log debug l2 mrp all all
Jun 11 08:59:47:233117:debug:l2:mrp:1:2916786419794688: mrp_tx(T=43446,seq=3317): VLAN 2, ring 2
sending RHP tx_port  1/1/19 [fid = 0x12] hw_timer_gone=(1 msec)
Jun 11 08:59:47:232069:debug:l2:mrp:1:2916786419794688: mrp_tx(T=43446,seq=6668): VLAN 3, ring 3
sending RHP tx_port  1/2/1 [fid = 0x40] hw_timer_gone=(103 msec)
Jun 11 08:59:47:128305:debug:l2:mrp:1:2916726290252544: mrp_tx(T=43445,seq=3316): VLAN 2, ring 2
sending RHP tx_port  1/1/19 [fid = 0x12] hw_timer_gone=(0 msec)
Jun 11 08:59:47:127354:debug:l2:mrp:1:2916726290252544: mrp_tx(T=43445,seq=6667): VLAN 3, ring 3
sending RHP tx_port  1/2/1 [fid = 0x40] hw_timer_gone=(97 msec)
Jun 11 08:59:47:029732:debug:l2:mrp:1:2916644685873920: mrp_tx(T=43444,seq=3315): VLAN 2, ring 2
sending RHP tx_port  1/1/19 [fid = 0x12] hw_timer_gone=(1 msec)
Jun 11 08:59:47:028133:debug:l2:mrp:1:2916644685873920: mrp_tx(T=43444,seq=6666): VLAN 3, ring 3
sending RHP tx_port  1/2/1 [fid = 0x40] hw_timer_gone=(99 msec)
Jun 11 08:59:46:928336:debug:l2:mrp:1:2916558786528000: mrp_tx(T=43443,seq=3314): VLAN 2, ring 2
sending RHP tx_port  1/1/19 [fid = 0x12] hw_timer_gone=(0 msec)
Jun 11 08:59:46:927410:debug:l2:mrp:1:2916558786528000: mrp_tx(T=43443,seq=6665): VLAN 3, ring 3
sending RHP tx_port  1/2/1 [fid = 0x40] hw_timer_gone=(98 msec)
Jun 11 08:59:46:829009:debug:l2:mrp:1:2916528721756928: mrp_tx(T=43442,seq=3313): VLAN 2, ring 2
sending RHP tx_port  1/1/19 [fid = 0x12] hw_timer_gone=(0 msec)
Jun 11 08:59:46:828080:debug:l2:mrp:1:2916528721756928: mrp_tx(T=43442,seq=6664): VLAN 3, ring 3
sending RHP tx_port  1/2/1 [fid = 0x40] hw_timer_gone=(93 msec)
Jun 11 08:59:46:734706:debug:l2:mrp:1:2916468592214784: mrp_tx(T=43441,seq=3312): VLAN 2, ring 2
sending RHP tx_port  1/1/19 [fid = 0x12] hw_timer_gone=(6 msec)
Jun 11 08:59:46:728602:debug:l2:mrp:1:2916468592214784: mrp_tx(T=43441,seq=6663): VLAN 3, ring 3
sending RHP tx_port  1/2/1 [fid = 0x40] hw_timer_gone=(99 msec)
Jun 11 08:59:46:628690:debug:l2:mrp:1:2916412757639936: mrp_tx(T=43440,seq=3311): VLAN 2, ring 2
sending RHP tx_port  1/1/19 [fid = 0x12] hw_timer_gone=(0 msec)
```

debug mld-snoop

Displays Multicast Listener Discovery (MLD) snooping debugging information.

Syntax

debug mld-snoop [**detail** | **down-port** | **level** *num* | **mct** | [**phy-port** | **port**] [**ethernet** *unit/slot/port* | **lag** *lag-id*] | **port-level** *num* | [**rx** | **tx**] *num* | **show-always** | **source** *source-address* | **vlan** *vlan-id*]

no debug mld-snoop [**detail** | **down-port** | **level** *num* | **mct** | [**phy-port** | **port**] [**ethernet** *unit/slot/port* | **lag** *lag-id*] | **port-level** *num* | [**rx** | **tx**] *num* | **show-always** | **source** *source-address* | **vlan** *vlan-id*]

Parameters

detail
Displays detailed MLD snooping logs.

down-port
Monitors MLD snooping ports.

level *num*
Displays MLD snoop debugging information in detail.

mct
Displays MLD snoop debugging information related to MCT.

phy-port
Displays physical port debugging information.

port
Displays information about the activity of the specific port.

ethernet *unit/slot/port*
Specifies the interface.

lag *lag-id*
Specifies the LAG interface.

port-level *num*
Displays port-level packets.

rx *num*
Displays MLD snooping rx packets.

tx *num*
Displays MLD snooping tx packets.

show-always
Enables show command to ignore snoop enable check.

source *source-address*
Filters particular source packet.

vlan *vlan-id*
Displays VLAN level MLD snooping packets.

Modes

Privileged EXEC mode

Usage Guidelines

The **debug mld-snoop source** command must be enabled along with the **packet** option.

The **no** form of the command disables MLD snooping debugging.

Examples

The following example displays detailed MLD snooping logs.

```
device# debug mld-snoop detail
Jun 29 07:42:17:444270:info:fi_debug:debug_logs:1:36495867553777153: MLD del VL900 (e6/2/4) from group
entry ff1e::70:1:1
Jun 29 07:42:17:444180:info:fi_debug:debug_logs:1:36495867553777153: tracking, all source gone, remove
immediately
Jun 29 07:42:17:444062:info:fi_debug:debug_logs:1:36495867553777153: MLD: rcvd Report-V2(ty=143)
#rec=1, pkt S=fe80::1 to ff02::16, on VL900 (phy e6/2/4), mld_size=28
Jun 29 07:41:54:709145:info:fi_debug:debug_logs:1:13386216197064193: Suppressed 1 times: MLD: rcvd
Report-V2(ty=143) #rec=1, pkt S=fe80::1 to ff02::16, on VL900 (phy e6/2/4), mld_size=28
```

The following example monitors MLD snooping ports.

```
device# debug mld-snoop down-port
May 28 17:49:47:481867:info:fi_debug:debug_logs:6:1959024778019584: stack: 008b30d8 00ac56d8 00a37620
00a5d680 00a5bb08 00a5bda4 00a36ce0 000aa530 0071aef8 0029d274 0009ac78 0009bb04 005c1380 005c2720
003add08 002ae808 003b8ca8 b6d81eb0 b6f88195
May 28 17:49:47:481735:info:fi_debug:debug_logs:6:1959024778019584: mcast_snoop_vport_state_notify:
vlan 1, port_type 0, port 6/2/4 event 1
May 28 17:49:46:681778:info:fi_debug:debug_logs:6:1958432072532736: stack: 008b30d8 00ac56d8 00a37620
00a5d680 00a5bb08 00a5bda4 00a36ce0 000aa530 0071aef8 0029d274 0009ac78 0009bb04 005c1380 005c2720
003add08 002ae808 003b8ca8 b6d81eb0 b6f88195
May 28 17:49:46:681653:info:fi_debug:debug_logs:6:1958432072532736: mcast_snoop_vport_state_notify:
vlan 900, port_type 0, port 6/2/4 event 1
May 28 17:49:16:662032:info:fi_debug:debug_logs:6:1935930738868992: MLD down VL900(e6/2/4)
```

The following example displays MLD snoop debugging information in detail.

```
device# debug mld-snoop level 3
Jun 29 07:45:05:691513:info:fi_debug:debug_logs:1:36509783247816193:     forward to router fid 4FFF
Jun 29 07:45:05:691441:info:fi_debug:debug_logs:1:36509783247816193:     group: ff1e::70:1:1, life = 620
Jun 29 07:45:05:691336:info:fi_debug:debug_logs:1:36509783247816193:
Jun 29 07:45:05:691274:info:fi_debug:debug_logs:1:36509783247816193:     G=ff1e::70:1:1, TO_EX, #_src=0
Jun 29 07:45:05:691162:info:fi_debug:debug_logs:1:36509783247816193: MLD: rcvd Report-V2(ty=143)
#rec=1, pkt S=fe80::1 to ff02::16, on VL900 (phy e6/2/4), mld_size=28
```

The following example displays MLD snoop debugging information related to MCT.

```
device# debug mld-snoop mct
May 04 14:37:33:499413:info:fi_debug:debug_logs:1:86405586917262080: 1d 7:34:51 - MCASTv6:RTR port sync
bulk msg type 1, num of entries 1,nbr src: fe80::629c:9fff:fe52:6504, rbridge_id: 2701
May 04 14:37:33:523347:info:fi_debug:debug_logs:1:227228841474524673: 1d 7:34:51 -
MCASTv6:MCAST_MCT_RTR_PORT_SYNC: port: lg5 nbr src fe80::629c:9fff:fe52:6504
```

debug mld-snoop add-del-oif all

Displays information about the addition or deletion of all the OIFs that are Multicast Listener Discovery (MLD) snooping-enabled.

Syntax

debug mld-snoop add-del-oif [**all**|**stack**]

no debug mld-snoop add-del-oif [**all**|**stack**]

Parameters

all

Monitors all groups.

stack

Displays stack trace.

Modes

Privileged EXEC mode

Examples

```
device# debug mld-snoop add-del-oif all
May 27 06:11:15:509757:info:fi_debug:debug_logs:1:1553798908610049: Create (2001::6 ff1e::10:1)  vlan
900
May 27 06:11:07:612855:info:fi_debug:debug_logs:1:1551183273526785: Create (2001::8 ff1e::80:1:1)  vlan
1000
May 27 06:14:47:192725:info:fi_debug:debug_logs:1:1572653815039489: Del e6/2/4  from (2001::6 ff1e::
10:1)  vlan 900
May 27 06:14:47:190304:info:fi_debug:debug_logs:1:1572649520072193: Del e7/1/1  from (2001::8 ff1e::
80:1:1)  vlan 1000

device#debug mld-snoop add-del-oif stack
May 27 06:26:45:057455:info:fi_debug:debug_logs:1:1638736181855745: stack: 008bc7d8 008b3998 00f28380
0055c294 00315dc8 00316200 002b4784 003ade20 002ae9dc 003b8ea8 b6db0eb0 b6fb7195
May 27 06:26:45:057333:info:fi_debug:debug_logs:1:1638736181855745: Create (2001::8 ff1e::80:1:1)  vlan
1000
May 27 06:26:45:021638:info:fi_debug:debug_logs:1:1638242260616705: stack: 008bc7d8 008b3998 00f28380
0055c294 00315dc8 00316200 002b4784 003ade20 002ae9dc 003b8ea8 b6db0eb0 b6fb7195
May 27 06:26:45:021508:info:fi_debug:debug_logs:1:1638242260616705: Create (2001::6 ff1e::10:1)  vlan
900
May 27 06:28:05:252959:info:fi_debug:debug_logs:1:949187772417: stack: 008bc160 008bc2b4 0089e2dc
000f14ac 0089ee60 0089f1d0 0089f450 0089e408 00123328 0089fa6c 005c1f14 005c2974 008ac1c4 b6db0eb0
b6fb7195
May 27 06:28:05:252839:info:fi_debug:debug_logs:1:949187772417: Delete (2001::8 ff1e::80:1:1)  vlan 1000
May 27 06:28:05:249282:info:fi_debug:debug_logs:1:949187772417: stack: 008bc160 008bc2b4 0089e2dc
000f14ac 0089ee60 0089f1d0 0089f450 0089e408 00123328 0089fa6c 005c1f14 005c2974 008ac1c4 b6db0eb0
b6fb7195
May 27 06:28:05:249165:info:fi_debug:debug_logs:1:949187772417: Delete (2001::6 ff1e::10:1)  vlan 900
```

debug mld-snoop clear

Clears all the MLD snooping debug settings.

Syntax

debug mld-snoop clear

no debug mld-snoop clear

Modes

Privileged EXEC mode

Examples

```
device# debug mld-snoop clear
debug mld-snoop is disabled
```

debug mld-snoop error

Displays the MLD snooping multicast error messages.

Syntax

debug mld-snoop error

no debug mld-snoop error

Modes

Privileged EXEC mode

Examples

```
device# debug mld-snoop error
May 28 17:54:34:948001:info:fi_debug:debug_logs:6:0: Suppressed 3 times: MLD:  Error : Ignoring MLD
version 2 Report pkt due to version mismatch , pkt S=fe80::1 to ff02::16, on VL900 (phy e6/2/4),
mld_size=44
May 28 17:54:24:260167:info:fi_debug:debug_logs:6:246904784946694: MLD:  Error : Ignoring MLD version 2
Report pkt due to version mismatch , pkt S=fe80::1 to ff02::16, on VL900 (phy e6/2/4), mld_size=44
```

debug mld-snoop group

Displays the MLD snooping multicast group information.

Syntax

debug mld-snoop group*group_address*

no debug mld-snoop group*group_address*

Parameters

group_address

Specifies the address of the MLD snoop multicast group.

Modes

Privileged EXEC mode

Examples

```
device# debug mld-snoop group 2001:DB8::23:1
device# debug mld-snoop packet 2001::6 ff1e::70:1:1
Jun 29 07:34:43:152233:info:fi_debug:debug_logs:1:36454077521987073: Create (2001::6 ff1e::70:1:1)
vlan 900
Jun 29 07:34:43:152128:info:fi_debug:debug_logs:1:36454077521987073: rtr_l2mcast_fwd_data (pkts:319),
(2001::6 ff1e::70:1:1), from e7/2/4 vlan 900, new fwd_entry
```

debug mld-snoop packet

Displays debugging information related to the MLD snoop packets.

Syntax

debug mld-snoop packet*source_address group_address*

no debug mld-snoop packet*source_address group_address*

Parameters

source_address

Specifies the 32-bit source address of the MLD snoop packet.

group_address

Specifies the address of the MLD snoop multicast group.

Modes

Privileged EXEC mode

Global configuration mode

Examples

```
device# debug mld-snoop packet 2001::6 ff1e::70:1:1

Jun 29 07:34:43:152233:info:fi_debug:debug_logs:1:36454077521987073: Create (2001::6 ff1e::70:1:1)
vlan 900
Jun 29 07:34:43:152128:info:fi_debug:debug_logs:1:36454077521987073: rtr_l2mcast_fwd_data (pkts:319),
(2001::6 ff1e::70:1:1), from e7/2/4 vlan 900, new fwd_entry
```

debug mld-snoop show

Displays all the MLD snooping debug settings.

Syntax

debug mld-snoop show

no debug mld-snoop show

Modes

Privileged EXEC mode

Examples

```
device# debug mld-snoop show
mld-snoop debug-enable-any = 1
debug mld-snoop add-del-oif all
```

debug mld-snoop timer

Displays the MLD snooping related timer events.

Syntax

debug mld-snoop timer

no debug mld-snoop timer

Modes

Privileged EXEC mode

Examples

```
device# debug mld-snoop timer
Jun 29 08:44:27:951775:info:fi_debug:debug_logs:1:36812690111333889: MLDSnoop-VL900: (2001::6, ff1e::
70:1:1) Start age timer for 46 sec
Jun 29 08:44:27:951700:info:fi_debug:debug_logs:1:36812690111333889: Suppressed 1 times: MLD: rcvd
Report-V2(ty=143) #rec=1, pkt S=fe80::1 to ff02::16, on VL900 (phy e6/2/4), mld_size=28
Jun 29 08:44:20:326299:info:fi_debug:debug_logs:1:36812080225977857: MLD: rcvd Report-V2(ty=143)
#rec=1, pkt S=fe80::1 to ff02::16, on VL900 (phy e6/2/4), mld_size=28
```

debug mstp bpdu

Monitors Multiple Spanning Tree Protocol (MSTP) Bridge Packet Data Units (BPDUs).

Syntax

debug mstp bpdu

no debug mstp bpdu

Modes

Privileged EXEC mode

Usage Guidelines

Use this command to record and display information in conjunction with the **debug mstp enable** and **debug mstp events** commands.

Examples

If this command is enabled, output similar to the following is displayed.

```
device# debug mstp bpdu
MSTP Bpdu debugging ON
sh log debug l2 mstp all all
Jun 11 11:22:17:140784:info:l2:mstp:1:320659077989889: mstpmgr_rx_bpdu(pid=3072;size=135;T=128945)
Jun 11 11:22:17:140567:info:l2:mstp:1:320654783022593: mstpmgr_rx_bpdu(pid=65;size=135;T=128945)
Jun 11 11:22:17:140321:info:l2:mstp:1:320650488055297: mstpmgr_rx_bpdu(pid=64;size=135;T=128945)
Jun 11 11:22:17:140027:info:l2:mstp:1:320646193088001: mstpmgr_rx_bpdu(pid=19;size=135;T=128945)
Jun 11 11:22:17:138033:info:l2:mstp:1:320641898120705: mstpmgr_rx_bpdu(pid=18;size=135;T=128945)
Jun 11 11:22:15:142718:info:l2:mstp:1:320637603153409: mstpmgr_rx_bpdu(pid=3072;size=135;T=128925)
Jun 11 11:22:15:142502:info:l2:mstp:1:320633308186113: mstpmgr_rx_bpdu(pid=65;size=135;T=128925)
Jun 11 11:22:15:142268:info:l2:mstp:1:320629013218817: mstpmgr_rx_bpdu(pid=64;size=135;T=128925)
Jun 11 11:22:15:142033:info:l2:mstp:1:320624718251521: mstpmgr_rx_bpdu(pid=19;size=135;T=128925)
Jun 11 11:22:15:141686:info:l2:mstp:1:320620423284225: mstpmgr_rx_bpdu(pid=18;size=135;T=128925)
Jun 11 11:22:13:140148:info:l2:mstp:1:320611833349633: mstpmgr_rx_bpdu(pid=3072;size=135;T=128905)
Jun 11 11:22:13:139928:info:l2:mstp:1:320607538382337: mstpmgr_rx_bpdu(pid=65;size=135;T=128905)
Jun 11 11:22:13:139666:info:l2:mstp:1:320603243415041: mstpmgr_rx_bpdu(pid=64;size=135;T=128905)
Jun 11 11:22:13:138123:info:l2:mstp:1:320598948447745: mstpmgr_rx_bpdu(pid=19;size=135;T=128905)
Jun 11 11:22:13:137839:info:l2:mstp:1:320594653480449: mstpmgr_rx_bpdu(pid=18;size=135;T=128905)
Jun 11 11:22:11:139331:info:l2:mstp:1:320590358513153: mstpmgr_rx_bpdu(pid=3072;size=135;T=128885)
Jun 11 11:22:11:139114:info:l2:mstp:1:320586063545857: mstpmgr_rx_bpdu(pid=65;size=135;T=128885)
Jun 11 11:22:11:138865:info:l2:mstp:1:320581768578561: mstpmgr_rx_bpdu(pid=64;size=135;T=128885)
Jun 11 11:22:11:138141:info:l2:mstp:1:320577473611265: mstpmgr_rx_bpdu(pid=19;size=135;T=128885)
Jun 11 11:22:11:137799:info:l2:mstp:1:320573178643969: mstpmgr_rx_bpdu(pid=18;size=135;T=128885)
Jun 11 11:22:09:140431:info:l2:mstp:1:320568883676673: mstpmgr_rx_bpdu(pid=3072;size=135;T=128865)
Jun 11 11:22:09:140215:info:l2:mstp:1:320564588709377: mstpmgr_rx_bpdu(pid=65;size=135;T=128865)
Jun 11 11:22:09:139983:info:l2:mstp:1:320560293742081: mstpmgr_rx_bpdu(pid=64;size=135;T=128865)
Jun 11 11:22:09:139747:info:l2:mstp:1:320555998774785: mstpmgr_rx_bpdu(pid=19;size=135;T=128865)
Jun 11 11:22:09:139399:info:l2:mstp:1:320551703807489: mstpmgr_rx_bpdu(pid=18;size=135;T=128865)
Jun 11 11:22:07:109629:info:l2:mstp:1:320547408840193: mstpmgr_rx_bpdu(pid=3072;size=135;T=128844)
Jun 11 11:22:07:109381:info:l2:mstp:1:320543113872897: mstpmgr_rx_bpdu(pid=65;size=135;T=128844)
Jun 11 11:22:07:109044:info:l2:mstp:1:320538818905601: mstpmgr_rx_bpdu(pid=64;size=135;T=128844)
Jun 11 11:22:07:108087:info:l2:mstp:1:320534523938305: mstpmgr_rx_bpdu(pid=19;size=135;T=128844)
Jun 11 11:22:07:107734:info:l2:mstp:1:320530228971009: mstpmgr_rx_bpdu(pid=18;size=135;T=128844)
Jun 11 11:22:05:811869:debug:l2:mstp:1:8829483212604160: MSTP: transmit_bpdu Port lg1, real-prot
1/1/21, send type=2, vlan=4087
Jun 11 11:22:05:811775:debug:l2:mstp:1:8829483212604160: MSTP[0x1f73f]: PTX IDLE->TRANSMIT_RSTP - Port
lg1
Jun 11 11:22:05:811652:debug:l2:mstp:1:8829483212604160: MSTP[0x1f73f]: PTX IDLE->TRANSMIT_PERIODIC -
Port lg1
Jun 11 11:22:05:810434:debug:l2:mstp:1:8829483212604160: MSTP: transmit_bpdu Port 1/1/19, real-prot
1/1/19, send type=2, vlan=4087
Jun 11 11:22:05:810331:debug:l2:mstp:1:8829483212604160: MSTP[0x1f73f]: PTX IDLE->TRANSMIT_RSTP - Port
1/1/19
Jun 11 11:22:05:810174:debug:l2:mstp:1:8829483212604160: MSTP[0x1f73f]: PTX IDLE->TRANSMIT_PERIODIC -
Port 1/1/19
Jun 11 11:22:05:113474:debug:l2:mstp:1:320525934003713: MSTP: mstp_updtRcvdInfoWhileMsti mst=2, Port
lg1, rcvdInfoWhile 4->6
Jun 11 11:22:05:113391:debug:l2:mstp:1:320525934003713: MSTP[0x1f738]: PIM RECEIVE->REPEATED_DESIGNATED
- MST 2, Port lg1
Jun 11 11:22:05:113307:debug:l2:mstp:1:320525934003713: MSTP[0x1f738]: PIM CURRENT->RECEIVE - MST 2,
Port lg1
Jun 11 11:22:05:113217:debug:l2:mstp:1:320525934003713: MSTP[0x1f738]: PIM RECEIVE->OTHER - MST 0, Port
lg1
Jun 11 11:22:05:113130:debug:l2:mstp:1:320525934003713: MSTP[0x1f738]: PIM CURRENT->RECEIVE - MST 0,
Port lg1
Jun 11 11:22:05:113029:debug:l2:mstp:1:320525934003713: MSTP[0x1f738]: PRX RECEIVE->RECEIVE - Port lg1
Jun 11 11:22:05:112938:info:l2:mstp:1:320525934003713: mstpmgr_rx_bpdu(pid=3072;size=135;T=128824)
Jun 11 11:22:05:112723:info:l2:mstp:1:320521639036417: mstpmgr_rx_bpdu(pid=65;size=135;T=128824)
Jun 11 11:22:05:112490:info:l2:mstp:1:320517344069121: mstpmgr_rx_bpdu(pid=64;size=135;T=128824)
Jun 11 11:22:05:112247:info:l2:mstp:1:320513049101825: mstpmgr_rx_bpdu(pid=19;size=135;T=128824)
Jun 11 11:22:05:112029:debug:l2:mstp:1:320508754134529: MSTP: mstp_updtRcvdInfoWhileMsti mst=1, Port
1/1/19, rcvdInfoWhile 4->6
Jun 11 11:22:05:111941:debug:l2:mstp:1:320508754134529: MSTP[0x1f738]: PIM RECEIVE->REPEATED_DESIGNATED
- MST 1, Port 1/1/19
Jun 11 11:22:05:111853:debug:l2:mstp:1:320508754134529: MSTP[0x1f738]: PIM CURRENT->RECEIVE - MST 1,
Port 1/1/19
Jun 11 11:22:05:111758:debug:l2:mstp:1:320508754134529: MSTP[0x1f738]: PIM RECEIVE->OTHER - MST 0, Port
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1/1/19
Jun 11 11:22:05:111665:debug:l2:mstp:1:320508754134529: MSTP[0x1f738]: PIM CURRENT->RECEIVE - MST 0,
Port 1/1/19
Jun 11 11:22:05:111539:debug:l2:mstp:1:320508754134529: MSTP[0x1f738]: PRX RECEIVE->RECEIVE - Port
1/1/19
Jun 11 11:22:05:111364:info:l2:mstp:1:320508754134529: mstpmgr_rx_bpdu(pid=18;size=135;T=128824)
Jun 11 11:22:03:810395:debug:l2:mstp:1:8828014333788928: MSTP: transmit_bpdu Port lg1, real-prot
1/1/21, send type=2, vlan=4087
Jun 11 11:22:03:810303:debug:l2:mstp:1:8828014333788928: MSTP[0x1f72b]: PTX IDLE->TRANSMIT_RSTP - Port
lg1
Jun 11 11:22:03:810184:debug:l2:mstp:1:8828014333788928: MSTP[0x1f72b]: PTX IDLE->TRANSMIT_PERIODIC -
Port lg1
Jun 11 11:22:03:808971:debug:l2:mstp:1:8828014333788928: MSTP: transmit_bpdu Port 1/1/19, real-prot
1/1/19, send type=2, vlan=4087
Jun 11 11:22:03:808867:debug:l2:mstp:1:8828014333788928: MSTP[0x1f72b]: PTX IDLE->TRANSMIT_RSTP - Port
1/1/19
Jun 11 11:22:03:808703:debug:l2:mstp:1:8828014333788928: MSTP[0x1f72b]: PTX IDLE->TRANSMIT_PERIODIC -
Port 1/1/19
Jun 11 11:22:03:110408:debug:l2:mstp:1:320504459167233: MSTP: mstp_updtRcvdInfoWhileMsti mst=2, Port
lg1, rcvdInfoWhile 4->6
Jun 11 11:22:03:110325:debug:l2:mstp:1:320504459167233: MSTP[0x1f724]: PIM RECEIVE->REPEATED_DESIGNATED
- MST 2, Port lg1
Jun 11 11:22:03:110239:debug:l2:mstp:1:320504459167233: MSTP[0x1f724]: PIM CURRENT->RECEIVE - MST 2,
Port lg1
Jun 11 11:22:03:110151:debug:l2:mstp:1:320504459167233: MSTP[0x1f724]: PIM RECEIVE->OTHER - MST 0, Port
lg1
Jun 11 11:22:03:110064:debug:l2:mstp:1:320504459167233: MSTP[0x1f724]: PIM CURRENT->RECEIVE - MST 0,
Port lg1
Jun 11 11:22:03:109962:debug:l2:mstp:1:320504459167233: MSTP[0x1f724]: PRX RECEIVE->RECEIVE - Port lg1
Jun 11 11:22:03:109870:info:l2:mstp:1:320504459167233: mstpmgr_rx_bpdu(pid=3072;size=135;T=128804)
Jun 11 11:22:03:109653:info:l2:mstp:1:320500164199937: mstpmgr_rx_bpdu(pid=65;size=135;T=128804)
Jun 11 11:22:03:109421:info:l2:mstp:1:320495869232641: mstpmgr_rx_bpdu(pid=64;size=135;T=128804)
Jun 11 11:22:03:109189:info:l2:mstp:1:320491574265345: mstpmgr_rx_bpdu(pid=19;size=135;T=128804)
Jun 11 11:22:03:108961:debug:l2:mstp:1:320487279298049: MSTP: mstp_updtRcvdInfoWhileMsti mst=1, Port
1/1/19, rcvdInfoWhile 4->6
Jun 11 11:22:03:108871:debug:l2:mstp:1:320487279298049: MSTP[0x1f724]: PIM RECEIVE->REPEATED_DESIGNATED
- MST 1, Port 1/1/19
Jun 11 11:22:03:108780:debug:l2:mstp:1:320487279298049: MSTP[0x1f724]: PIM CURRENT->RECEIVE - MST 1,
Port 1/1/19
Jun 11 11:22:03:108658:debug:l2:mstp:1:320487279298049: MSTP[0x1f724]: PIM RECEIVE->OTHER - MST 0, Port
1/1/19
Jun 11 11:22:03:108102:debug:l2:mstp:1:320487279298049: MSTP[0x1f724]: PIM CURRENT->RECEIVE - MST 0,
Port 1/1/19
Jun 11 11:22:03:107974:debug:l2:mstp:1:320487279298049: MSTP[0x1f724]: PRX RECEIVE->RECEIVE - Port
1/1/19
Jun 11 11:22:03:107810:info:l2:mstp:1:320487279298049: mstpmgr_rx_bpdu(pid=18;size=135;T=128804)
Jun 11 11:22:01:780730:debug:l2:mstp:1:8826579814712064: MSTP: transmit_bpdu Port lg1, real-prot
1/1/21, send type=2, vlan=4087
Jun 11 11:22:01:780635:debug:l2:mstp:1:8826579814712064: MSTP[0x1f717]: PTX IDLE->TRANSMIT_RSTP - Port
lg1
Jun 11 11:22:01:780517:debug:l2:mstp:1:8826579814712064: MSTP[0x1f717]: PTX IDLE->TRANSMIT_PERIODIC -
Port lg1
Jun 11 11:22:01:779301:debug:l2:mstp:1:8826579814712064: MSTP: transmit_bpdu Port 1/1/19, real-prot
1/1/19, send type=2, vlan=4087
Jun 11 11:22:01:779196:debug:l2:mstp:1:8826579814712064: MSTP[0x1f717]: PTX IDLE->TRANSMIT_RSTP - Port
1/1/19
Jun 11 11:22:01:779027:debug:l2:mstp:1:8826579814712064: MSTP[0x1f717]: PTX IDLE->TRANSMIT_PERIODIC -
Port 1/1/19
Jun 11 11:22:01:110568:debug:l2:mstp:1:320478689363457: MSTP: mstp_updtRcvdInfoWhileMsti mst=2, Port
lg1, rcvdInfoWhile 4->6
Jun 11 11:22:01:110484:debug:l2:mstp:1:320478689363457: MSTP[0x1f710]: PIM RECEIVE->REPEATED_DESIGNATED
- MST 2, Port lg1
Jun 11 11:22:01:110399:debug:l2:mstp:1:320478689363457: MSTP[0x1f710]: PIM CURRENT->RECEIVE - MST 2,
Port lg1
Jun 11 11:22:01:110312:debug:l2:mstp:1:320478689363457: MSTP[0x1f710]: PIM RECEIVE->OTHER - MST 0, Port
lg1
Jun 11 11:22:01:110227:debug:l2:mstp:1:320478689363457: MSTP[0x1f710]: PIM CURRENT->RECEIVE - MST 0,
Port lg1
Jun 11 11:22:01:110125:debug:l2:mstp:1:320478689363457: MSTP[0x1f710]: PRX RECEIVE->RECEIVE - Port lg1
Jun 11 11:22:01:110029:info:l2:mstp:1:320478689363457: mstpmgr_rx_bpdu(pid=3072;size=135;T=128784)
Jun 11 11:22:01:109811:info:l2:mstp:1:320474394396161: mstpmgr_rx_bpdu(pid=65;size=135;T=128784)
Jun 11 11:22:01:109570:info:l2:mstp:1:320470099428865: mstpmgr_rx_bpdu(pid=64;size=135;T=128784)
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Jun 11 11:22:01:109283:info:l2:mstp:1:320465804461569: mstpmgr_rx_bpdu(pid=19;size=135;T=128784)
Jun 11 11:22:01:107773:debug:l2:mstp:1:320461509494273: MSTP: mstp_updtRcvdInfoWhileMsti mst=1, Port
1/1/19, rcvdInfoWhile 4->6
Jun 11 11:22:01:107686:debug:l2:mstp:1:320461509494273: MSTP[0x1f710]: PIM RECEIVE->REPEATED_DESIGNATED
- MST 1, Port 1/1/19
Jun 11 11:22:01:107597:debug:l2:mstp:1:320461509494273: MSTP[0x1f710]: PIM CURRENT->RECEIVE - MST 1,
Port 1/1/19
Jun 11 11:22:01:107501:debug:l2:mstp:1:320461509494273: MSTP[0x1f710]: PIM RECEIVE->OTHER - MST 0, Port
1/1/19
Jun 11 11:22:01:107407:debug:l2:mstp:1:320461509494273: MSTP[0x1f710]: PIM CURRENT->RECEIVE - MST 0,
Port 1/1/19
Jun 11 11:22:01:107283:debug:l2:mstp:1:320461509494273: MSTP[0x1f710]: PRX RECEIVE->RECEIVE - Port
1/1/19
Jun 11 11:22:01:107112:info:l2:mstp:1:320461509494273: mstpmgr_rx_bpdu(pid=18;size=135;T=128784)
Jun 11 11:21:59:780451:debug:l2:mstp:1:8825145295635200: MSTP: transmit_bpdu Port lg1, real-prot
1/1/21, send type=2, vlan=4087
Jun 11 11:21:59:780357:debug:l2:mstp:1:8825145295635200: MSTP[0x1f703]: PTX IDLE->TRANSMIT_RSTP - Port
lg1
Jun 11 11:21:59:780237:debug:l2:mstp:1:8825145295635200: MSTP[0x1f703]: PTX IDLE->TRANSMIT_PERIODIC -
Port lg1
Jun 11 11:21:59:779028:debug:l2:mstp:1:8825145295635200: MSTP: transmit_bpdu Port 1/1/19, real-prot
1/1/19, send type=2, vlan=4087
Jun 11 11:21:59:778926:debug:l2:mstp:1:8825145295635200: MSTP[0x1f703]: PTX IDLE->TRANSMIT_RSTP - Port
1/1/19
Jun 11 11:21:59:778762:debug:l2:mstp:1:8825145295635200: MSTP[0x1f703]: PTX IDLE->TRANSMIT_PERIODIC -
Port 1/1/19
Jun 11 11:21:59:121122:debug:l2:mstp:1:320452919559681: MSTP: mstp_updtRcvdInfoWhileMsti mst=2, Port
lg1, rcvdInfoWhile 4->6
Jun 11 11:21:59:121037:debug:l2:mstp:1:320452919559681: MSTP[0x1f6fc]: PIM RECEIVE->REPEATED_DESIGNATED
- MST 2, Port lg1
Jun 11 11:21:59:120953:debug:l2:mstp:1:320452919559681: MSTP[0x1f6fc]: PIM CURRENT->RECEIVE - MST 2,
Port lg1
Jun 11 11:21:59:120866:debug:l2:mstp:1:320452919559681: MSTP[0x1f6fc]: PIM RECEIVE->OTHER - MST 0, Port
lg1
Jun 11 11:21:59:120780:debug:l2:mstp:1:320452919559681: MSTP[0x1f6fc]: PIM CURRENT->RECEIVE - MST 0,
Port lg1
Jun 11 11:21:59:120680:debug:l2:mstp:1:320452919559681: MSTP[0x1f6fc]: PRX RECEIVE->RECEIVE - Port lg1
Jun 11 11:21:59:120590:info:l2:mstp:1:320452919559681: mstpmgr_rx_bpdu(pid=3072;size=135;T=128764)
Jun 11 11:21:59:120377:info:l2:mstp:1:320448624592385: mstpmgr_rx_bpdu(pid=65;size=135;T=128764)
Jun 11 11:21:59:120148:info:l2:mstp:1:320444329625089: mstpmgr_rx_bpdu(pid=64;size=135;T=128764)
Jun 11 11:21:59:119922:info:l2:mstp:1:320440034657793: mstpmgr_rx_bpdu(pid=19;size=135;T=128764)
Jun 11 11:21:59:119704:debug:l2:mstp:1:320435739690497: MSTP: mstp_updtRcvdInfoWhileMsti mst=1, Port
1/1/19, rcvdInfoWhile 4->6
Jun 11 11:21:59:119617:debug:l2:mstp:1:320435739690497: MSTP[0x1f6fc]: PIM RECEIVE->REPEATED_DESIGNATED
- MST 1, Port 1/1/19
Jun 11 11:21:59:119523:debug:l2:mstp:1:320435739690497: MSTP[0x1f6fc]: PIM CURRENT->RECEIVE - MST 1,
Port 1/1/19
Jun 11 11:21:59:119410:debug:l2:mstp:1:320435739690497: MSTP[0x1f6fc]: PIM RECEIVE->OTHER - MST 0, Port
1/1/19
Jun 11 11:21:59:119314:debug:l2:mstp:1:320435739690497: MSTP[0x1f6fc]: PIM CURRENT->RECEIVE - MST 0,
Port 1/1/19
Jun 11 11:21:59:119186:debug:l2:mstp:1:320435739690497: MSTP[0x1f6fc]: PRX RECEIVE->RECEIVE - Port
1/1/19
Jun 11 11:21:59:119007:info:l2:mstp:1:320435739690497: mstpmgr_rx_bpdu(pid=18;size=135;T=128764)
Jun 11 11:21:57:780420:debug:l2:mstp:1:8823706481591040: MSTP: transmit_bpdu Port lg1, real-prot
1/1/21, send type=2, vlan=4087
Jun 11 11:21:57:780325:debug:l2:mstp:1:8823706481591040: MSTP[0x1f6ef]: PTX IDLE->TRANSMIT_RSTP - Port
lg1
Jun 11 11:21:57:780208:debug:l2:mstp:1:8823706481591040: MSTP[0x1f6ef]: PTX IDLE->TRANSMIT_PERIODIC -
Port lg1
Jun 11 11:21:57:779002:debug:l2:mstp:1:8823706481591040: MSTP: transmit_bpdu Port 1/1/19, real-prot
1/1/19, send type=2, vlan=4087
Jun 11 11:21:57:778898:debug:l2:mstp:1:8823706481591040: MSTP[0x1f6ef]: PTX IDLE->TRANSMIT_RSTP - Port
1/1/19
Jun 11 11:21:57:778730:debug:l2:mstp:1:8823706481591040: MSTP[0x1f6ef]: PTX IDLE->TRANSMIT_PERIODIC -
Port 1/1/19
Jun 11 11:21:57:106684:debug:l2:mstp:1:320431444723201: MSTP: mstp_updtRcvdInfoWhileMsti mst=2, Port
lg1, rcvdInfoWhile 4->6
Jun 11 11:21:57:106601:debug:l2:mstp:1:320431444723201: MSTP[0x1f6e8]: PIM RECEIVE->REPEATED_DESIGNATED
- MST 2, Port lg1
Jun 11 11:21:57:106516:debug:l2:mstp:1:320431444723201: MSTP[0x1f6e8]: PIM CURRENT->RECEIVE - MST 2,
Port lg1
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Jun 11 11:21:57:106427:debug:l2:mstp:1:320431444723201: MSTP[0x1f6e8]: PIM RECEIVE->OTHER - MST 0, Port
lg1
Jun 11 11:21:57:106340:debug:l2:mstp:1:320431444723201: MSTP[0x1f6e8]: PIM CURRENT->RECEIVE - MST 0,
Port lg1
Jun 11 11:21:57:106225:debug:l2:mstp:1:320431444723201: MSTP[0x1f6e8]: PRX RECEIVE->RECEIVE - Port lg1
Jun 11 11:21:57:105619:debug:l2:mstp:1:320414264854017: MSTP: mstp_updtRcvdInfoWhileMsti mst=1, Port
1/1/19, rcvdInfoWhile 4->6
Jun 11 11:21:57:105530:debug:l2:mstp:1:320414264854017: MSTP[0x1f6e8]: PIM RECEIVE->REPEATED_DESIGNATED
- MST 1, Port 1/1/19
Jun 11 11:21:57:105442:debug:l2:mstp:1:320414264854017: MSTP[0x1f6e8]: PIM CURRENT->RECEIVE - MST 1,
Port 1/1/19
Jun 11 11:21:57:105346:debug:l2:mstp:1:320414264854017: MSTP[0x1f6e8]: PIM RECEIVE->OTHER - MST 0, Port
1/1/19
Jun 11 11:21:57:105248:debug:l2:mstp:1:320414264854017: MSTP[0x1f6e8]: PIM CURRENT->RECEIVE - MST 0,
Port 1/1/19
Jun 11 11:21:57:105057:debug:l2:mstp:1:320414264854017: MSTP[0x1f6e8]: PRX RECEIVE->RECEIVE - Port
1/1/19
Jun 11 11:21:55:780537:debug:l2:mstp:1:8822241897743104: MSTP: transmit_bpdu Port lg1, real-prot
1/1/21, send type=2, vlan=4087
Jun 11 11:21:55:780443:debug:l2:mstp:1:8822241897743104: MSTP[0x1f6db]: PTX IDLE->TRANSMIT_RSTP - Port
lg1
Jun 11 11:21:55:780324:debug:l2:mstp:1:8822241897743104: MSTP[0x1f6db]: PTX IDLE->TRANSMIT_PERIODIC -
Port lg1
Jun 11 11:21:55:779118:debug:l2:mstp:1:8822241897743104: MSTP: transmit_bpdu Port 1/1/19, real-prot
1/1/19, send type=2, vlan=4087
Jun 11 11:21:55:779018:debug:l2:mstp:1:8822241897743104: MSTP[0x1f6db]: PTX IDLE->TRANSMIT_RSTP - Port
1/1/19
Jun 11 11:21:55:778854:debug:l2:mstp:1:8822241897743104: MSTP[0x1f6db]: PTX IDLE->TRANSMIT_PERIODIC -
Port 1/1/19
Jun 11 11:21:55:114749:debug:l2:mstp:1:320405674919425: MSTP: mstp_updtRcvdInfoWhileMsti mst=2, Port
lg1, rcvdInfoWhile 4->6
Jun 11 11:21:55:114665:debug:l2:mstp:1:320405674919425: MSTP[0x1f6d4]: PIM RECEIVE->REPEATED_DESIGNATED
- MST 2, Port lg1
Jun 11 11:21:55:114580:debug:l2:mstp:1:320405674919425: MSTP[0x1f6d4]: PIM CURRENT->RECEIVE - MST 2,
Port lg1
Jun 11 11:21:55:114491:debug:l2:mstp:1:320405674919425: MSTP[0x1f6d4]: PIM RECEIVE->OTHER - MST 0, Port
lg1
Jun 11 11:21:55:114403:debug:l2:mstp:1:320405674919425: MSTP[0x1f6d4]: PIM CURRENT->RECEIVE - MST 0,
Port lg1
Jun 11 11:21:55:114287:debug:l2:mstp:1:320405674919425: MSTP[0x1f6d4]: PRX RECEIVE->RECEIVE - Port lg1
Jun 11 11:21:55:113670:debug:l2:mstp:1:320388495050241: MSTP: mstp_updtRcvdInfoWhileMsti mst=1, Port
1/1/19, rcvdInfoWhile 4->6
Jun 11 11:21:55:113580:debug:l2:mstp:1:320388495050241: MSTP[0x1f6d4]: PIM RECEIVE->REPEATED_DESIGNATED
- MST 1, Port 1/1/19
Jun 11 11:21:55:113477:debug:l2:mstp:1:320388495050241: MSTP[0x1f6d4]: PIM CURRENT->RECEIVE - MST 1,
Port 1/1/19
Jun 11 11:21:55:113383:debug:l2:mstp:1:320388495050241: MSTP[0x1f6d4]: PIM RECEIVE->OTHER - MST 0, Port
1/1/19
Jun 11 11:21:55:113285:debug:l2:mstp:1:320388495050241: MSTP[0x1f6d4]: PIM CURRENT->RECEIVE - MST 0,
Port 1/1/19
Jun 11 11:21:55:113093:debug:l2:mstp:1:320388495050241: MSTP[0x1f6d4]: PRX RECEIVE->RECEIVE - Port
1/1/19
Jun 11 11:21:53:785377:debug:l2:mstp:1:8820815968600832: MSTP: transmit_bpdu Port lg1, real-prot
1/1/21, send type=2, vlan=4087
Jun 11 11:21:53:785286:debug:l2:mstp:1:8820815968600832: MSTP[0x1f6c7]: PTX IDLE->TRANSMIT_RSTP - Port
lg1
Jun 11 11:21:53:785173:debug:l2:mstp:1:8820815968600832: MSTP[0x1f6c7]: PTX IDLE->TRANSMIT_PERIODIC -
Port lg1
Jun 11 11:21:53:783977:debug:l2:mstp:1:8820815968600832: MSTP: transmit_bpdu Port 1/1/19, real-prot
1/1/19, send type=2, vlan=4087
Jun 11 11:21:53:783875:debug:l2:mstp:1:8820815968600832: MSTP[0x1f6c7]: PTX IDLE->TRANSMIT_RSTP - Port
1/1/19
Jun 11 11:21:53:783709:debug:l2:mstp:1:8820815968600832: MSTP[0x1f6c7]: PTX IDLE->TRANSMIT_PERIODIC -
Port 1/1/19
Jun 11 11:21:53:111538:debug:l2:mstp:1:320384200082945: MSTP: mstp_updtRcvdInfoWhileMsti mst=2, Port
lg1, rcvdInfoWhile 4->6
Jun 11 11:21:53:111456:debug:l2:mstp:1:320384200082945: MSTP[0x1f6c0]: PIM RECEIVE->REPEATED_DESIGNATED
- MST 2, Port lg1
Jun 11 11:21:53:111371:debug:l2:mstp:1:320384200082945: MSTP[0x1f6c0]: PIM CURRENT->RECEIVE - MST 2,
Port lg1
Jun 11 11:21:53:111284:debug:l2:mstp:1:320384200082945: MSTP[0x1f6c0]: PIM RECEIVE->OTHER - MST 0, Port
lg1
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Jun 11 11:21:53:111198:debug:l2:mstp:1:320384200082945: MSTP[0x1f6c0]: PIM CURRENT->RECEIVE - MST 0,
Port lg1
Jun 11 11:21:53:111084:debug:l2:mstp:1:320384200082945: MSTP[0x1f6c0]: PRX RECEIVE->RECEIVE - Port lg1
Jun 11 11:21:53:110480:debug:l2:mstp:1:320367020213761: MSTP: mstp_updtRcvdInfoWhileMsti mst=1, Port
1/1/19, rcvdInfoWhile 4->6
Jun 11 11:21:53:110394:debug:l2:mstp:1:320367020213761: MSTP[0x1f6c0]: PIM RECEIVE->REPEATED_DESIGNATED
- MST 1, Port 1/1/19
Jun 11 11:21:53:110304:debug:l2:mstp:1:320367020213761: MSTP[0x1f6c0]: PIM CURRENT->RECEIVE - MST 1,
Port 1/1/19
Jun 11 11:21:53:110207:debug:l2:mstp:1:320367020213761: MSTP[0x1f6c0]: PIM RECEIVE->OTHER - MST 0, Port
1/1/19
Jun 11 11:21:53:110106:debug:l2:mstp:1:320367020213761: MSTP[0x1f6c0]: PIM CURRENT->RECEIVE - MST 0,
Port 1/1/19
Jun 11 11:21:53:109910:debug:l2:mstp:1:320367020213761: MSTP[0x1f6c0]: PRX RECEIVE->RECEIVE - Port
1/1/19
Jun 11 11:21:51:730613:debug:l2:mstp:1:8819372859589376: MSTP: transmit_bpdu Port lg1, real-prot
1/1/21, send type=2, vlan=4087
Jun 11 11:21:51:730522:debug:l2:mstp:1:8819372859589376: MSTP[0x1f6b3]: PTX IDLE->TRANSMIT_RSTP - Port
lg1
Jun 11 11:21:51:730406:debug:l2:mstp:1:8819372859589376: MSTP[0x1f6b3]: PTX IDLE->TRANSMIT_PERIODIC -
Port lg1
Jun 11 11:21:51:729196:debug:l2:mstp:1:8819372859589376: MSTP: transmit_bpdu Port 1/1/19, real-prot
1/1/19, send type=2, vlan=4087
Jun 11 11:21:51:729094:debug:l2:mstp:1:8819372859589376: MSTP[0x1f6b3]: PTX IDLE->TRANSMIT_RSTP - Port
1/1/19
Jun 11 11:21:51:728933:debug:l2:mstp:1:8819372859589376: MSTP[0x1f6b3]: PTX IDLE->TRANSMIT_PERIODIC -
Port 1/1/19
Jun 11 11:21:51:110561:debug:l2:mstp:1:320354135311873: MSTP: mstp_updtRcvdInfoWhileMsti mst=2, Port
lg1, rcvdInfoWhile 4->6
Jun 11 11:21:51:110478:debug:l2:mstp:1:320354135311873: MSTP[0x1f6ac]: PIM RECEIVE->REPEATED_DESIGNATED
- MST 2, Port lg1
Jun 11 11:21:51:110394:debug:l2:mstp:1:320354135311873: MSTP[0x1f6ac]: PIM CURRENT->RECEIVE - MST 2,
Port lg1
Jun 11 11:21:51:110307:debug:l2:mstp:1:320354135311873: MSTP[0x1f6ac]: PIM RECEIVE->OTHER - MST 0, Port
lg1
Jun 11 11:21:51:110218:debug:l2:mstp:1:320354135311873: MSTP[0x1f6ac]: PIM CURRENT->RECEIVE - MST 0,
Port lg1
Jun 11 11:21:51:110095:debug:l2:mstp:1:320354135311873: MSTP[0x1f6ac]: PRX RECEIVE->RECEIVE - Port lg1
Jun 11 11:21:51:109450:debug:l2:mstp:1:320336955442689: MSTP: mstp_updtRcvdInfoWhileMsti mst=1, Port
1/1/19, rcvdInfoWhile 4->6
Jun 11 11:21:51:109339:debug:l2:mstp:1:320336955442689: MSTP[0x1f6ac]: PIM RECEIVE->REPEATED_DESIGNATED
- MST 1, Port 1/1/19
Jun 11 11:21:51:109145:debug:l2:mstp:1:320336955442689: MSTP[0x1f6ac]: PIM CURRENT->RECEIVE - MST 1,
Port 1/1/19
Jun 11 11:21:51:109016:debug:l2:mstp:1:320336955442689: MSTP[0x1f6ac]: PIM RECEIVE->OTHER - MST 0, Port
1/1/19
Jun 11 11:21:51:108147:debug:l2:mstp:1:320336955442689: MSTP[0x1f6ac]: PIM CURRENT->RECEIVE - MST 0,
Port 1/1/19
Jun 11 11:21:51:108019:debug:l2:mstp:1:320336955442689: MSTP[0x1f6ac]: PRX RECEIVE->RECEIVE - Port
1/1/19
Jun 11 11:21:49:730467:debug:l2:mstp:1:8817929750577920: MSTP: transmit_bpdu Port lg1, real-prot
1/1/21, send type=2, vlan=4087
Jun 11 11:21:49:730373:debug:l2:mstp:1:8817929750577920: MSTP[0x1f69f]: PTX IDLE->TRANSMIT_RSTP - Port
lg1
Jun 11 11:21:49:730255:debug:l2:mstp:1:8817929750577920: MSTP[0x1f69f]: PTX IDLE->TRANSMIT_PERIODIC -
Port lg1
Jun 11 11:21:49:729025:debug:l2:mstp:1:8817929750577920: MSTP: transmit_bpdu Port 1/1/19, real-prot
1/1/19, send type=2, vlan=4087
Jun 11 11:21:49:728907:debug:l2:mstp:1:8817929750577920: MSTP[0x1f69f]: PTX IDLE->TRANSMIT_RSTP - Port
1/1/19
Jun 11 11:21:49:728743:debug:l2:mstp:1:8817929750577920: MSTP[0x1f69f]: PTX IDLE->TRANSMIT_PERIODIC -
Port 1/1/19
Jun 11 11:21:49:088841:debug:l2:mstp:1:320328365508097: MSTP: mstp_updtRcvdInfoWhileMsti mst=2, Port
lg1, rcvdInfoWhile 4->6
Jun 11 11:21:49:088718:debug:l2:mstp:1:320328365508097: MSTP[0x1f698]: PIM RECEIVE->REPEATED_DESIGNATED
- MST 2, Port lg1
Jun 11 11:21:49:088070:debug:l2:mstp:1:320328365508097: MSTP[0x1f698]: PIM CURRENT->RECEIVE - MST 2,
Port lg1
Jun 11 11:21:49:087983:debug:l2:mstp:1:320328365508097: MSTP[0x1f698]: PIM RECEIVE->OTHER - MST 0, Port
lg1
Jun 11 11:21:49:087895:debug:l2:mstp:1:320328365508097: MSTP[0x1f698]: PIM CURRENT->RECEIVE - MST 0,
Port lg1
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Jun 11 11:21:49:087780:debug:l2:mstp:1:320328365508097: MSTP[0x1f698]: PRX RECEIVE->RECEIVE - Port lg1
Jun 11 11:21:49:087175:debug:l2:mstp:1:320311185638913: MSTP: mstp_updtRcvdInfoWhileMsti mst=1, Port
1/1/19, rcvdInfoWhile 4->6
Jun 11 11:21:49:087087:debug:l2:mstp:1:320311185638913: MSTP[0x1f698]: PIM RECEIVE->REPEATED_DESIGNATED
- MST 1, Port 1/1/19
Jun 11 11:21:49:086999:debug:l2:mstp:1:320311185638913: MSTP[0x1f698]: PIM CURRENT->RECEIVE - MST 1,
Port 1/1/19
Jun 11 11:21:49:086902:debug:l2:mstp:1:320311185638913: MSTP[0x1f698]: PIM RECEIVE->OTHER - MST 0, Port
1/1/19
Jun 11 11:21:49:086800:debug:l2:mstp:1:320311185638913: MSTP[0x1f698]: PIM CURRENT->RECEIVE - MST 0,
Port 1/1/19
Jun 11 11:21:49:086602:debug:l2:mstp:1:320311185638913: MSTP[0x1f698]: PRX RECEIVE->RECEIVE - Port
1/1/19
Jun 11 11:21:47:731377:debug:l2:mstp:1:8816495231501056: MSTP: transmit_bpdu Port lg1, real-prot
1/1/21, send type=2, vlan=4087
Jun 11 11:21:47:731283:debug:l2:mstp:1:8816495231501056: MSTP[0x1f68b]: PTX IDLE->TRANSMIT_RSTP - Port
lg1
Jun 11 11:21:47:731163:debug:l2:mstp:1:8816495231501056: MSTP[0x1f68b]: PTX IDLE->TRANSMIT_PERIODIC -
Port lg1
Jun 11 11:21:47:729938:debug:l2:mstp:1:8816495231501056: MSTP: transmit_bpdu Port 1/1/19, real-prot
1/1/19, send type=2, vlan=4087
Jun 11 11:21:47:729835:debug:l2:mstp:1:8816495231501056: MSTP[0x1f68b]: PTX IDLE->TRANSMIT_RSTP - Port
1/1/19
Jun 11 11:21:47:729682:debug:l2:mstp:1:8816495231501056: MSTP[0x1f68b]: PTX IDLE->TRANSMIT_PERIODIC -
Port 1/1/19
Jun 11 11:21:47:064795:debug:l2:mstp:1:320302595704321: MSTP: mstp_updtRcvdInfoWhileMsti mst=2, Port
lg1, rcvdInfoWhile 4->6
Jun 11 11:21:47:064705:debug:l2:mstp:1:320302595704321: MSTP[0x1f684]: PIM RECEIVE->REPEATED_DESIGNATED
- MST 2, Port lg1
Jun 11 11:21:47:064609:debug:l2:mstp:1:320302595704321: MSTP[0x1f684]: PIM CURRENT->RECEIVE - MST 2,
Port lg1
Jun 11 11:21:47:064445:debug:l2:mstp:1:320302595704321: MSTP[0x1f684]: PIM RECEIVE->OTHER - MST 0, Port
lg1
Jun 11 11:21:47:058083:debug:l2:mstp:1:320302595704321: MSTP[0x1f684]: PIM CURRENT->RECEIVE - MST 0,
Port lg1
Jun 11 11:21:47:057970:debug:l2:mstp:1:320302595704321: MSTP[0x1f684]: PRX RECEIVE->RECEIVE - Port lg1
Jun 11 11:21:47:057362:debug:l2:mstp:1:320285415835137: MSTP: mstp_updtRcvdInfoWhileMsti mst=1, Port
1/1/19, rcvdInfoWhile 4->6
Jun 11 11:21:47:057276:debug:l2:mstp:1:320285415835137: MSTP[0x1f684]: PIM RECEIVE->REPEATED_DESIGNATED
- MST 1, Port 1/1/19
Jun 11 11:21:47:057184:debug:l2:mstp:1:320285415835137: MSTP[0x1f684]: PIM CURRENT->RECEIVE - MST 1,
Port 1/1/19
Jun 11 11:21:47:057088:debug:l2:mstp:1:320285415835137: MSTP[0x1f684]: PIM RECEIVE->OTHER - MST 0, Port
1/1/19
Jun 11 11:21:47:056985:debug:l2:mstp:1:320285415835137: MSTP[0x1f684]: PIM CURRENT->RECEIVE - MST 0,
Port 1/1/19
Jun 11 11:21:47:056787:debug:l2:mstp:1:320285415835137: MSTP[0x1f684]: PRX RECEIVE->RECEIVE - Port
1/1/19
Jun 11 11:21:45:730889:debug:l2:mstp:1:8815065007391488: MSTP: transmit_bpdu Port lg1, real-prot
1/1/21, send type=2, vlan=4087
Jun 11 11:21:45:730796:debug:l2:mstp:1:8815065007391488: MSTP[0x1f677]: PTX IDLE->TRANSMIT_RSTP - Port
lg1
Jun 11 11:21:45:730673:debug:l2:mstp:1:8815065007391488: MSTP[0x1f677]: PTX IDLE->TRANSMIT_PERIODIC -
Port lg1
Jun 11 11:21:45:729437:debug:l2:mstp:1:8815065007391488: MSTP: transmit_bpdu Port 1/1/19, real-prot
1/1/19, send type=2, vlan=4087
Jun 11 11:21:45:729335:debug:l2:mstp:1:8815065007391488: MSTP[0x1f677]: PTX IDLE->TRANSMIT_RSTP - Port
1/1/19
Jun 11 11:21:45:729167:debug:l2:mstp:1:8815065007391488: MSTP[0x1f677]: PTX IDLE->TRANSMIT_PERIODIC -
Port 1/1/19
Jun 11 11:21:45:061995:debug:l2:mstp:1:320281120867841: MSTP: mstp_updtRcvdInfoWhileMsti mst=2, Port
lg1, rcvdInfoWhile 4->6
Jun 11 11:21:45:061912:debug:l2:mstp:1:320281120867841: MSTP[0x1f670]: PIM RECEIVE->REPEATED_DESIGNATED
- MST 2, Port lg1
Jun 11 11:21:45:061828:debug:l2:mstp:1:320281120867841: MSTP[0x1f670]: PIM CURRENT->RECEIVE - MST 2,
Port lg1
Jun 11 11:21:45:061740:debug:l2:mstp:1:320281120867841: MSTP[0x1f670]: PIM RECEIVE->OTHER - MST 0, Port
lg1
Jun 11 11:21:45:061650:debug:l2:mstp:1:320281120867841: MSTP[0x1f670]: PIM CURRENT->RECEIVE - MST 0,
Port lg1
Jun 11 11:21:45:061535:debug:l2:mstp:1:320281120867841: MSTP[0x1f670]: PRX RECEIVE->RECEIVE - Port lg1
Jun 11 11:21:45:060924:debug:l2:mstp:1:320263940998657: MSTP: mstp_updtRcvdInfoWhileMsti mst=1, Port
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1/1/19, rcvdInfoWhile 4->6
Jun 11 11:21:45:060837:debug:l2:mstp:1:320263940998657: MSTP[0x1f670]: PIM RECEIVE->REPEATED_DESIGNATED
- MST 1, Port 1/1/19
Jun 11 11:21:45:060749:debug:l2:mstp:1:320263940998657: MSTP[0x1f670]: PIM CURRENT->RECEIVE - MST 1,
Port 1/1/19
Jun 11 11:21:45:060651:debug:l2:mstp:1:320263940998657: MSTP[0x1f670]: PIM RECEIVE->OTHER - MST 0, Port
1/1/19
Jun 11 11:21:45:060551:debug:l2:mstp:1:320263940998657: MSTP[0x1f670]: PIM CURRENT->RECEIVE - MST 0,
Port 1/1/19
Jun 11 11:21:45:060359:debug:l2:mstp:1:320263940998657: MSTP[0x1f670]: PRX RECEIVE->RECEIVE - Port
1/1/19
Jun 11 11:21:43:730435:debug:l2:mstp:1:8813609013478144: MSTP: transmit_bpdu Port lg1, real-prot
1/1/21, send type=2, vlan=4087
Jun 11 11:21:43:730342:debug:l2:mstp:1:8813609013478144: MSTP[0x1f663]: PTX IDLE->TRANSMIT_RSTP - Port
lg1
Jun 11 11:21:43:730222:debug:l2:mstp:1:8813609013478144: MSTP[0x1f663]: PTX IDLE->TRANSMIT_PERIODIC -
Port lg1
Jun 11 11:21:43:729002:debug:l2:mstp:1:8813609013478144: MSTP: transmit_bpdu Port 1/1/19, real-prot
1/1/19, send type=2, vlan=4087
Jun 11 11:21:43:728896:debug:l2:mstp:1:8813609013478144: MSTP[0x1f663]: PTX IDLE->TRANSMIT_RSTP - Port
1/1/19
Jun 11 11:21:43:728733:debug:l2:mstp:1:8813609013478144: MSTP[0x1f663]: PTX IDLE->TRANSMIT_PERIODIC -
Port 1/1/19
Jun 11 11:21:43:059086:debug:l2:mstp:1:320255351064065: MSTP: mstp_updtRcvdInfoWhileMsti mst=2, Port
lg1, rcvdInfoWhile 4->6
Jun 11 11:21:43:058132:debug:l2:mstp:1:320255351064065: MSTP[0x1f65c]: PIM RECEIVE->REPEATED_DESIGNATED
- MST 2, Port lg1
Jun 11 11:21:43:058045:debug:l2:mstp:1:320255351064065: MSTP[0x1f65c]: PIM CURRENT->RECEIVE - MST 2,
Port lg1
Jun 11 11:21:43:057955:debug:l2:mstp:1:320255351064065: MSTP[0x1f65c]: PIM RECEIVE->OTHER - MST 0, Port
lg1
Jun 11 11:21:43:057866:debug:l2:mstp:1:320255351064065: MSTP[0x1f65c]: PIM CURRENT->RECEIVE - MST 0,
Port lg1
Jun 11 11:21:43:057740:debug:l2:mstp:1:320255351064065: MSTP[0x1f65c]: PRX RECEIVE->RECEIVE - Port lg1
Jun 11 11:21:43:056832:debug:l2:mstp:1:320238171194881: MSTP: mstp_updtRcvdInfoWhileMsti mst=1, Port
1/1/19, rcvdInfoWhile 4->6
Jun 11 11:21:43:056745:debug:l2:mstp:1:320238171194881: MSTP[0x1f65c]: PIM RECEIVE->REPEATED_DESIGNATED
- MST 1, Port 1/1/19
Jun 11 11:21:43:056655:debug:l2:mstp:1:320238171194881: MSTP[0x1f65c]: PIM CURRENT->RECEIVE - MST 1,
Port 1/1/19
Jun 11 11:21:43:056558:debug:l2:mstp:1:320238171194881: MSTP[0x1f65c]: PIM RECEIVE->OTHER - MST 0, Port
1/1/19
Jun 11 11:21:43:056457:debug:l2:mstp:1:320238171194881: MSTP[0x1f65c]: PIM CURRENT->RECEIVE - MST 0,
Port 1/1/19
Jun 11 11:21:43:056265:debug:l2:mstp:1:320238171194881: MSTP[0x1f65c]: PRX RECEIVE->RECEIVE - Port
1/1/19
Jun 11 11:21:41:780466:debug:l2:mstp:1:8812226034008832: MSTP: transmit_bpdu Port lg1, real-prot
1/1/21, send type=2, vlan=4087
Jun 11 11:21:41:780370:debug:l2:mstp:1:8812226034008832: MSTP[0x1f64f]: PTX IDLE->TRANSMIT_RSTP - Port
lg1
Jun 11 11:21:41:780248:debug:l2:mstp:1:8812226034008832: MSTP[0x1f64f]: PTX IDLE->TRANSMIT_PERIODIC -
Port lg1
Jun 11 11:21:41:779006:debug:l2:mstp:1:8812226034008832: MSTP: transmit_bpdu Port 1/1/19, real-prot
1/1/19, send type=2, vlan=4087
Jun 11 11:21:41:778900:debug:l2:mstp:1:8812226034008832: MSTP[0x1f64f]: PTX IDLE->TRANSMIT_RSTP - Port
1/1/19
Jun 11 11:21:41:778734:debug:l2:mstp:1:8812226034008832: MSTP[0x1f64f]: PTX IDLE->TRANSMIT_PERIODIC -
Port 1/1/19
Jun 11 11:21:41:058719:debug:l2:mstp:1:320233876227585: MSTP: mstp_updtRcvdInfoWhileMsti mst=2, Port
lg1, rcvdInfoWhile 4->6
Jun 11 11:21:41:058098:debug:l2:mstp:1:320233876227585: MSTP[0x1f648]: PIM RECEIVE->REPEATED_DESIGNATED
- MST 2, Port lg1
Jun 11 11:21:41:058012:debug:l2:mstp:1:320233876227585: MSTP[0x1f648]: PIM CURRENT->RECEIVE - MST 2,
Port lg1
Jun 11 11:21:41:057924:debug:l2:mstp:1:320233876227585: MSTP[0x1f648]: PIM RECEIVE->OTHER - MST 0, Port
lg1
Jun 11 11:21:41:057838:debug:l2:mstp:1:320233876227585: MSTP[0x1f648]: PIM CURRENT->RECEIVE - MST 0,
Port lg1
Jun 11 11:21:41:057726:debug:l2:mstp:1:320233876227585: MSTP[0x1f648]: PRX RECEIVE->RECEIVE - Port lg1
Jun 11 11:21:41:057124:debug:l2:mstp:1:320216696358401: MSTP: mstp_updtRcvdInfoWhileMsti mst=1, Port
1/1/19, rcvdInfoWhile 4->6
Jun 11 11:21:41:057038:debug:l2:mstp:1:320216696358401: MSTP[0x1f648]: PIM RECEIVE->REPEATED_DESIGNATED
```

```
- MST 1, Port 1/1/19
Jun 11 11:21:41:056950:debug:l2:mstp:1:320216696358401: MSTP[0x1f648]: PIM CURRENT->RECEIVE - MST 1,
Port 1/1/19
Jun 11 11:21:41:056857:debug:l2:mstp:1:320216696358401: MSTP[0x1f648]: PIM RECEIVE->OTHER - MST 0, Port
1/1/19
Jun 11 11:21:41:056760:debug:l2:mstp:1:320216696358401: MSTP[0x1f648]: PIM CURRENT->RECEIVE - MST 0,
Port 1/1/19
Jun 11 11:21:41:056579:debug:l2:mstp:1:320216696358401: MSTP[0x1f648]: PRX RECEIVE->RECEIVE - Port
1/1/19
Jun 11 11:21:39:780549:debug:l2:mstp:1:8810838759572224: MSTP: transmit_bpdu Port lg1, real-prot
1/1/21, send type=2, vlan=4087
Jun 11 11:21:39:780456:debug:l2:mstp:1:8810838759572224: MSTP[0x1f63b]: PTX IDLE->TRANSMIT_RSTP - Port
lg1
Jun 11 11:21:39:780342:debug:l2:mstp:1:8810838759572224: MSTP[0x1f63b]: PTX IDLE->TRANSMIT_PERIODIC -
Port lg1
Jun 11 11:21:39:779133:debug:l2:mstp:1:8810838759572224: MSTP: transmit_bpdu Port 1/1/19, real-prot
1/1/19, send type=2, vlan=4087
Jun 11 11:21:39:779031:debug:l2:mstp:1:8810838759572224: MSTP[0x1f63b]: PTX IDLE->TRANSMIT_RSTP - Port
1/1/19
Jun 11 11:21:39:778852:debug:l2:mstp:1:8810838759572224: MSTP[0x1f63b]: PTX IDLE->TRANSMIT_PERIODIC -
Port 1/1/19
Jun 11 11:21:39:063656:debug:l2:mstp:1:320212401391105: MSTP: mstp_updtRcvdInfoWhileMsti mst=2, Port
lg1, rcvdInfoWhile 4->6
Jun 11 11:21:39:063563:debug:l2:mstp:1:320212401391105: MSTP[0x1f634]: PIM RECEIVE->REPEATED_DESIGNATED
- MST 2, Port lg1
Jun 11 11:21:39:063475:debug:l2:mstp:1:320212401391105: MSTP[0x1f634]: PIM CURRENT->RECEIVE - MST 2,
Port lg1
Jun 11 11:21:39:063383:debug:l2:mstp:1:320212401391105: MSTP[0x1f634]: PIM RECEIVE->OTHER - MST 0, Port
lg1
Jun 11 11:21:39:063287:debug:l2:mstp:1:320212401391105: MSTP[0x1f634]: PIM CURRENT->RECEIVE - MST 0,
Port lg1
Jun 11 11:21:39:063146:debug:l2:mstp:1:320212401391105: MSTP[0x1f634]: PRX RECEIVE->RECEIVE - Port lg1
Jun 11 11:21:39:062094:debug:l2:mstp:1:320195221521921: MSTP: mstp_updtRcvdInfoWhileMsti mst=1, Port
1/1/19, rcvdInfoWhile 4->6
Jun 11 11:21:39:062005:debug:l2:mstp:1:320195221521921: MSTP[0x1f634]: PIM RECEIVE->REPEATED_DESIGNATED
- MST 1, Port 1/1/19
Jun 11 11:21:39:061916:debug:l2:mstp:1:320195221521921: MSTP[0x1f634]: PIM CURRENT->RECEIVE - MST 1,
Port 1/1/19
Jun 11 11:21:39:061818:debug:l2:mstp:1:320195221521921: MSTP[0x1f634]: PIM RECEIVE->OTHER - MST 0, Port
1/1/19
Jun 11 11:21:39:061704:debug:l2:mstp:1:320195221521921: MSTP[0x1f634]: PIM CURRENT->RECEIVE - MST 0,
Port 1/1/19
Jun 11 11:21:39:061218:debug:l2:mstp:1:320195221521921: MSTP[0x1f634]: PRX RECEIVE->RECEIVE - Port
1/1/19
Jun 11 11:21:37:765430:debug:l2:mstp:1:8809391355593472: MSTP: transmit_bpdu Port lg1, real-prot
1/1/21, send type=2, vlan=4087
Jun 11 11:21:37:765331:debug:l2:mstp:1:8809391355593472: MSTP[0x1f627]: PTX IDLE->TRANSMIT_RSTP - Port
lg1
Jun 11 11:21:37:765203:debug:l2:mstp:1:8809391355593472: MSTP[0x1f627]: PTX IDLE->TRANSMIT_PERIODIC -
Port lg1
Jun 11 11:21:37:764010:debug:l2:mstp:1:8809391355593472: MSTP: transmit_bpdu Port 1/1/19, real-prot
1/1/19, send type=2, vlan=4087
Jun 11 11:21:37:763909:debug:l2:mstp:1:8809391355593472: MSTP[0x1f627]: PTX IDLE->TRANSMIT_RSTP - Port
1/1/19
Jun 11 11:21:37:763744:debug:l2:mstp:1:8809391355593472: MSTP[0x1f627]: PTX IDLE->TRANSMIT_PERIODIC -
Port 1/1/19
Jun 11 11:21:37:037706:debug:l2:mstp:1:320190926554625: MSTP: mstp_updtRcvdInfoWhileMsti mst=2, Port
lg1, rcvdInfoWhile 4->6
Jun 11 11:21:37:037624:debug:l2:mstp:1:320190926554625: MSTP[0x1f620]: PIM RECEIVE->REPEATED_DESIGNATED
- MST 2, Port lg1
Jun 11 11:21:37:037540:debug:l2:mstp:1:320190926554625: MSTP[0x1f620]: PIM CURRENT->RECEIVE - MST 2,
Port lg1
Jun 11 11:21:37:037452:debug:l2:mstp:1:320190926554625: MSTP[0x1f620]: PIM RECEIVE->OTHER - MST 0, Port
lg1
Jun 11 11:21:37:037363:debug:l2:mstp:1:320190926554625: MSTP[0x1f620]: PIM CURRENT->RECEIVE - MST 0,
Port lg1
Jun 11 11:21:37:037247:debug:l2:mstp:1:320190926554625: MSTP[0x1f620]: PRX RECEIVE->RECEIVE - Port lg1
Jun 11 11:21:37:036640:debug:l2:mstp:1:320173746685441: MSTP: mstp_updtRcvdInfoWhileMsti mst=1, Port
1/1/19, rcvdInfoWhile 4->6
Jun 11 11:21:37:036553:debug:l2:mstp:1:320173746685441: MSTP[0x1f620]: PIM RECEIVE->REPEATED_DESIGNATED
- MST 1, Port 1/1/19
Jun 11 11:21:37:036463:debug:l2:mstp:1:320173746685441: MSTP[0x1f620]: PIM CURRENT->RECEIVE - MST 1,
```

```
Port 1/1/19
Jun 11 11:21:37:036367:debug:l2:mstp:1:320173746685441: MSTP[0x1f620]: PIM RECEIVE->OTHER - MST 0, Port
1/1/19
Jun 11 11:21:37:036267:debug:l2:mstp:1:320173746685441: MSTP[0x1f620]: PIM CURRENT->RECEIVE - MST 0,
Port 1/1/19
Jun 11 11:21:37:036081:debug:l2:mstp:1:320173746685441: MSTP[0x1f620]: PRX RECEIVE->RECEIVE - Port
1/1/19
Jun 11 11:21:35:761110:debug:l2:mstp:1:8807974016385792: MSTP: transmit_bpdu Port lg1, real-prot
1/1/21, send type=2, vlan=4087
Jun 11 11:21:35:761014:debug:l2:mstp:1:8807974016385792: MSTP[0x1f613]: PTX IDLE->TRANSMIT_RSTP - Port
lg1
Jun 11 11:21:35:760891:debug:l2:mstp:1:8807974016385792: MSTP[0x1f613]: PTX IDLE->TRANSMIT_PERIODIC -
Port lg1
Jun 11 11:21:35:759664:debug:l2:mstp:1:8807974016385792: MSTP: transmit_bpdu Port 1/1/19, real-prot
1/1/19, send type=2, vlan=4087
Jun 11 11:21:35:759562:debug:l2:mstp:1:8807974016385792: MSTP[0x1f613]: PTX IDLE->TRANSMIT_RSTP - Port
1/1/19
Jun 11 11:21:35:759393:debug:l2:mstp:1:8807974016385792: MSTP[0x1f613]: PTX IDLE->TRANSMIT_PERIODIC -
Port 1/1/19
Jun 11 11:21:35:041936:debug:l2:mstp:1:320169451718145: MSTP: mstp_updtRcvdInfoWhileMsti mst=2, Port
lg1, rcvdInfoWhile 4->6
Jun 11 11:21:35:041852:debug:l2:mstp:1:320169451718145: MSTP[0x1f60c]: PIM RECEIVE->REPEATED_DESIGNATED
- MST 2, Port lg1
Jun 11 11:21:35:041767:debug:l2:mstp:1:320169451718145: MSTP[0x1f60c]: PIM CURRENT->RECEIVE - MST 2,
Port lg1
Jun 11 11:21:35:041679:debug:l2:mstp:1:320169451718145: MSTP[0x1f60c]: PIM RECEIVE->OTHER - MST 0, Port
lg1
Jun 11 11:21:35:041592:debug:l2:mstp:1:320169451718145: MSTP[0x1f60c]: PIM CURRENT->RECEIVE - MST 0,
Port lg1
Jun 11 11:21:35:041478:debug:l2:mstp:1:320169451718145: MSTP[0x1f60c]: PRX RECEIVE->RECEIVE - Port lg1
Jun 11 11:21:35:040873:debug:l2:mstp:1:320152271848961: MSTP: mstp_updtRcvdInfoWhileMsti mst=1, Port
1/1/19, rcvdInfoWhile 4->6
Jun 11 11:21:35:040786:debug:l2:mstp:1:320152271848961: MSTP[0x1f60c]: PIM RECEIVE->REPEATED_DESIGNATED
- MST 1, Port 1/1/19
Jun 11 11:21:35:040698:debug:l2:mstp:1:320152271848961: MSTP[0x1f60c]: PIM CURRENT->RECEIVE - MST 1,
Port 1/1/19
Jun 11 11:21:35:040603:debug:l2:mstp:1:320152271848961: MSTP[0x1f60c]: PIM RECEIVE->OTHER - MST 0, Port
1/1/19
Jun 11 11:21:35:040503:debug:l2:mstp:1:320152271848961: MSTP[0x1f60c]: PIM CURRENT->RECEIVE - MST 0,
Port 1/1/19
Jun 11 11:21:35:040321:debug:l2:mstp:1:320152271848961: MSTP[0x1f60c]: PRX RECEIVE->RECEIVE - Port
1/1/19
Jun 11 11:21:33:761114:debug:l2:mstp:1:8806513727505152: MSTP: transmit_bpdu Port lg1, real-prot
1/1/21, send type=2, vlan=4087
Jun 11 11:21:33:761015:debug:l2:mstp:1:8806513727505152: MSTP[0x1f5ff]: PTX IDLE->TRANSMIT_RSTP - Port
lg1
Jun 11 11:21:33:760874:debug:l2:mstp:1:8806513727505152: MSTP[0x1f5ff]: PTX IDLE->TRANSMIT_PERIODIC -
Port lg1
Jun 11 11:21:33:759661:debug:l2:mstp:1:8806513727505152: MSTP: transmit_bpdu Port 1/1/19, real-prot
1/1/19, send type=2, vlan=4087
Jun 11 11:21:33:759557:debug:l2:mstp:1:8806513727505152: MSTP[0x1f5ff]: PTX IDLE->TRANSMIT_RSTP - Port
1/1/19
Jun 11 11:21:33:759407:debug:l2:mstp:1:8806513727505152: MSTP[0x1f5ff]: PTX IDLE->TRANSMIT_PERIODIC -
Port 1/1/19
Jun 11 11:21:33:037379:debug:l2:mstp:1:320147976881665: MSTP: mstp_updtRcvdInfoWhileMsti mst=2, Port
lg1, rcvdInfoWhile 4->6
Jun 11 11:21:33:037296:debug:l2:mstp:1:320147976881665: MSTP[0x1f5f8]: PIM RECEIVE->REPEATED_DESIGNATED
- MST 2, Port lg1
Jun 11 11:21:33:037210:debug:l2:mstp:1:320147976881665: MSTP[0x1f5f8]: PIM CURRENT->RECEIVE - MST 2,
Port lg1
Jun 11 11:21:33:037121:debug:l2:mstp:1:320147976881665: MSTP[0x1f5f8]: PIM RECEIVE->OTHER - MST 0, Port
lg1
Jun 11 11:21:33:037032:debug:l2:mstp:1:320147976881665: MSTP[0x1f5f8]: PIM CURRENT->RECEIVE - MST 0,
Port lg1
Jun 11 11:21:33:036918:debug:l2:mstp:1:320147976881665: MSTP[0x1f5f8]: PRX RECEIVE->RECEIVE - Port lg1
Jun 11 11:21:33:036311:debug:l2:mstp:1:320130797012481: MSTP: mstp_updtRcvdInfoWhileMsti mst=1, Port
1/1/19, rcvdInfoWhile 4->6
Jun 11 11:21:33:036220:debug:l2:mstp:1:320130797012481: MSTP[0x1f5f8]: PIM RECEIVE->REPEATED_DESIGNATED
- MST 1, Port 1/1/19
Jun 11 11:21:33:036130:debug:l2:mstp:1:320130797012481: MSTP[0x1f5f8]: PIM CURRENT->RECEIVE - MST 1,
Port 1/1/19
Jun 11 11:21:33:036032:debug:l2:mstp:1:320130797012481: MSTP[0x1f5f8]: PIM RECEIVE->OTHER - MST 0, Port
```

```
1/1/19
Jun 11 11:21:33:035934:debug:l2:mstp:1:320130797012481: MSTP[0x1f5f8]: PIM CURRENT->RECEIVE - MST 0,
Port 1/1/19
Jun 11 11:21:33:035742:debug:l2:mstp:1:320130797012481: MSTP[0x1f5f8]: PRX RECEIVE->RECEIVE - Port
1/1/19
Jun 11 11:21:31:730511:debug:l2:mstp:1:8805079208428288: MSTP: transmit_bpdu Port lg1, real-prot
1/1/21, send type=2, vlan=4087
Jun 11 11:21:31:730418:debug:l2:mstp:1:8805079208428288: MSTP[0x1f5eb]: PTX IDLE->TRANSMIT_RSTP - Port
lg1
Jun 11 11:21:31:730298:debug:l2:mstp:1:8805079208428288: MSTP[0x1f5eb]: PTX IDLE->TRANSMIT_PERIODIC -
Port lg1
Jun 11 11:21:31:729077:debug:l2:mstp:1:8805079208428288: MSTP: transmit_bpdu Port 1/1/19, real-prot
1/1/19, send type=2, vlan=4087
Jun 11 11:21:31:728972:debug:l2:mstp:1:8805079208428288: MSTP[0x1f5eb]: PTX IDLE->TRANSMIT_RSTP - Port
1/1/19
Jun 11 11:21:31:728811:debug:l2:mstp:1:8805079208428288: MSTP[0x1f5eb]: PTX IDLE->TRANSMIT_PERIODIC -
Port 1/1/19
Jun 11 11:21:31:037501:debug:l2:mstp:1:320122207077889: MSTP: mstp_updtRcvdInfoWhileMsti mst=2, Port
lg1, rcvdInfoWhile 4->6
Jun 11 11:21:31:037416:debug:l2:mstp:1:320122207077889: MSTP[0x1f5e4]: PIM RECEIVE->REPEATED_DESIGNATED
- MST 2, Port lg1
Jun 11 11:21:31:037331:debug:l2:mstp:1:320122207077889: MSTP[0x1f5e4]: PIM CURRENT->RECEIVE - MST 2,
Port lg1
Jun 11 11:21:31:037242:debug:l2:mstp:1:320122207077889: MSTP[0x1f5e4]: PIM RECEIVE->OTHER - MST 0, Port
lg1
Jun 11 11:21:31:037151:debug:l2:mstp:1:320122207077889: MSTP[0x1f5e4]: PIM CURRENT->RECEIVE - MST 0,
Port lg1
Jun 11 11:21:31:037024:debug:l2:mstp:1:320122207077889: MSTP[0x1f5e4]: PRX RECEIVE->RECEIVE - Port lg1
Jun 11 11:21:31:036116:debug:l2:mstp:1:320105027208705: MSTP: mstp_updtRcvdInfoWhileMsti mst=1, Port
1/1/19, rcvdInfoWhile 4->6
Jun 11 11:21:31:036027:debug:l2:mstp:1:320105027208705: MSTP[0x1f5e4]: PIM RECEIVE->REPEATED_DESIGNATED
- MST 1, Port 1/1/19
Jun 11 11:21:31:035940:debug:l2:mstp:1:320105027208705: MSTP[0x1f5e4]: PIM CURRENT->RECEIVE - MST 1,
Port 1/1/19
Jun 11 11:21:31:035845:debug:l2:mstp:1:320105027208705: MSTP[0x1f5e4]: PIM RECEIVE->OTHER - MST 0, Port
1/1/19
Jun 11 11:21:31:035745:debug:l2:mstp:1:320105027208705: MSTP[0x1f5e4]: PIM CURRENT->RECEIVE - MST 0,
Port 1/1/19
Jun 11 11:21:31:035554:debug:l2:mstp:1:320105027208705: MSTP[0x1f5e4]: PRX RECEIVE->RECEIVE - Port
1/1/19
Jun 11 11:21:29:730739:debug:l2:mstp:1:8803640394384128: MSTP: transmit_bpdu Port lg1, real-prot
1/1/21, send type=2, vlan=4087
Jun 11 11:21:29:730624:debug:l2:mstp:1:8803640394384128: MSTP[0x1f5d7]: PTX IDLE->TRANSMIT_RSTP - Port
lg1
```

debug mstp enable

Enables MSTP debugging.

Syntax

debug mstp enable

Modes

Privileged EXEC mode

Examples

The following example enables MSTP debugging.

```
device# debug mstp enable
```

debug mstp events

Displays MSTP state machine events.

Syntax

debug mstp events

no debug mstp events

Modes

Privileged EXEC mode

Usage Guidelines

Use this command to monitor any MSTP event that takes place.

Examples

If MSTP events are enabled, output similar to the following is displayed.

```
device# debug mstp events
MSTP Event debugging ON
device# debug mstp enable
device# MSTP[0xeda7f]: PRX RECEIVE->RECEIVE - Port 1/1/1
MSTP[0xeda7f]: PIM CURRENT->RECEIVE - MST 0, Port 1/1/1
MSTP[0xeda7f]: PIM RECEIVE->REPEATED_DESIGNATED - MST 0, Port 1/1/1
MSTP: mstp_updtRcvdInfoWhileCist mst=0, Port 1/1/1, rcvdInfoWhile 5->7
MSTP[0xeda7f]: PRX RECEIVE->RECEIVE - Port 1/1/2
MSTP[0xeda7f]: PIM CURRENT->RECEIVE - MST 0, Port 1/1/2
MSTP[0xeda7f]: PIM RECEIVE->REPEATED_DESIGNATED - MST 0, Port 1/1/2
MSTP: mstp_updtRcvdInfoWhileCist mst=0, Port 1/1/2, rcvdInfoWhile 5->7
MSTP[0xeda89]: PTX IDLE->TRANSMIT_PERIODIC - Port 1/1/1
MSTP[0xeda89]: PTX IDLE->TRANSMIT_PERIODIC - Port 1/1/2
MSTP[0xeda93]: PRX RECEIVE->RECEIVE - Port 1/1/1
MSTP[0xeda93]: PIM CURRENT->RECEIVE - MST 0, Port 1/1/1
MSTP[0xeda93]: PIM RECEIVE->REPEATED_DESIGNATED - MST 0, Port 1/1/1
```

If MSTP events are disabled, output similar to the following is displayed.

```
device# no debug mstp events
MSTP Event debugging OFF
```

debug mstp msti

Displays information for a specific MSTP instance.

Syntax

debug mstp msti *decimal*

no debug mstp msti *decimal*

Parameters

decimal

Specifies the following values:
Value 0 for the Common and Internal Spanning Tree (CIST)
Value from 1 through 4094 for the Multiple Spanning Tree Instance (MSTI).

Modes

Privileged EXEC mode

Examples

```
device#debug mstp msti 0
MSTP debugging turned on for instances 0
```

If this command is enabled, output similar to the following is displayed.

```
device#debug mstp msti 2
MSTP debugging turned on for instances 2 ,0
device# debug mstp enable
device# debug mstp events
MSTP Event debugging ON
device# MSTP[0x175f15]: PTX IDLE->TRANSMIT_PERIODIC - Port 1/1/1
MSTP[0x175f15]: PTX IDLE->TRANSMIT_PERIODIC - Port 1/1/2
MSTP[0x175f21]: PRX RECEIVE->RECEIVE - Port 1/1/1
MSTP[0x175f21]: PIM CURRENT->RECEIVE - MST 0, Port 1/1/1
MSTP[0x175f21]: PIM RECEIVE->REPEATED_DESIGNATED - MST 0, Port 1/1/1
MSTP: mstp_updtRcvdInfoWhileCist mst=0, Port 1/1/1, rcvdInfoWhile 5->7
MSTP[0x175f21]: PIM CURRENT->RECEIVE - MST 2, Port 1/1/1
MSTP[0x175f21]: PIM RECEIVE->REPEATED_DESIGNATED - MST 2, Port 1/1/1
MSTP: mstp_updtRcvdInfoWhileMsti mst=2, Port 1/1/1, rcvdInfoWhile 4->7
MSTP[0x175f21]: PRX RECEIVE->RECEIVE - Port 1/1/2
MSTP[0x175f21]: PIM CURRENT->RECEIVE - MST 0, Port 1/1/2
MSTP[0x175f21]: PIM RECEIVE->REPEATED_DESIGNATED - MST 0, Port 1/1/2
MSTP: mstp_updtRcvdInfoWhileCist mst=0, Port 1/1/2, rcvdInfoWhile 5->7
MSTP[0x175f21]: PIM CURRENT->RECEIVE - MST 2, Port 1/1/2
MSTP[0x175f21]: PIM RECEIVE->REPEATED_DESIGNATED - MST 2, Port 1/1/2
MSTP: mstp_updtRcvdInfoWhileMsti mst=2, Port 1/1/2, rcvdInfoWhile 4->7
MSTP[0x175f29]: PTX IDLE->TRANSMIT_PERIODIC - Port 1/1/1
MSTP[0x175f29]: PTX IDLE->TRANSMIT_PERIODIC - Port 1/1/2
noMSTP[0x175f35]: PRX RECEIVE->RECEIVE - Port 1/1/1
MSTP[0x175f35]: PIM CURRENT->RECEIVE - MST 0, Port 1/1/1
MSTP[0x175f35]: PIM RECEIVE->REPEATED_DESIGNATED - MST 0, Port 1/1/1
MSTP: mstp_updtRcvdInfoWhileCist mst=0, Port 1/1/1, rcvdInfoWhile 5->7
MSTP[0x175f35]: PIM CURRENT->RECEIVE - MST 2, Port 1/1/1
MSTP[0x175f35]: PIM RECEIVE->REPEATED_DESIGNATED - MST 2, Port 1/1/1
MSTP: mstp_updtRcvdInfoWhileMsti mst=2, Port 1/1/1, rcvdInfoWhile 4->7
MSTP[0x175f35]: PRX RECEIVE->RECEIVE - Port 1/1/2
MSTP[0x175f35]: PIM CURRENT->RECEIVE - MST 0, Port 1/1/2
MSTP[0x175f35]: PIM RECEIVE->REPEATED_DESIGNATED - MST 0, Port 1/1/2
MSTP: mstp_updtRcvdInfoWhileCist mst=0, Port 1/1/2, rcvdInfoWhile 5->7
MSTP[0x175f35]: PIM CURRENT->RECEIVE - MST 2, Port 1/1/2
MSTP[0x175f35]: PIM RECEIVE->REPEATED_DESIGNATED - MST 2, Port 1/1/2
MSTP: mstp_updtRcvdInfoWhileMsti mst=2, Port 1/1/2, rcvdInfoWhile 4->7
deMSTP[0x175f3d]: PTX IDLE->TRANSMIT_PERIODIC - Port 1/1/1
MSTP[0x175f3d]: PTX IDLE->TRANSMIT_PERIODIC - Port 1/1/2
bug msMSTP[0x175f49]: PRX RECEIVE->RECEIVE - Port 1/1/1
MSTP[0x175f49]: PIM CURRENT->RECEIVE - MST 0, Port 1/1/1
MSTP[0x175f49]: PIM RECEIVE->REPEATED_DESIGNATED - MST 0, Port 1/1/1
MSTP: mstp_updtRcvdInfoWhileCist mst=0, Port 1/1/1, rcvdInfoWhile 5->7
MSTP[0x175f49]: PIM CURRENT->RECEIVE - MST 2, Port 1/1/1
MSTP[0x175f49]: PIM RECEIVE->REPEATED_DESIGNATED - MST 2, Port 1/1/1
MSTP: mstp_updtRcvdInfoWhileMsti mst=2, Port 1/1/1, rcvdInfoWhile 4->7
MSTP[0x175f49]: PRX RECEIVE->RECEIVE - Port 1/1/2
MSTP[0x175f49]: PIM CURRENT->RECEIVE - MST 0, Port 1/1/2
MSTP[0x175f49]: PIM RECEIVE->REPEATED_DESIGNATED - MST 0, Port 1/1/2
MSTP: mstp_updtRcvdInfoWhileCist mst=0, Port 1/1/2, rcvdInfoWhile 5->7
MSTP[0x175f49]: PIM CURRENT->RECEIVE - MST 2, Port 1/1/2
MSTP[0x175f49]: PIM RECEIVE->REPEATED_DESIGNATED - MST 2, Port 1/1/2
MSTP: mstp_updtRcvdInfoWhileMsti mst=2, Port 1/1/2, rcvdInfoWhile 4->7
tpMSTP[0x175f51]: PTX IDLE->TRANSMIT_PERIODIC - Port 1/1/1
MSTP[0x175f51]: PTX IDLE->TRANSMIT_PERIODIC - Port 1/1/2
eventMSTP[0x175f5d]: PRX RECEIVE->RECEIVE - Port 1/1/1
```

debug mstp ports

Debugs specific MSTP ports.

Syntax

debug mstp ports{**ethernet** *unit/slot/port* |**lag** *lag-id*}

no debug mstp ports{**ethernet** *unit/slot/port* |**lag** *lag-id*}

Parameters

ethernet *unit/slot/port*
Specifies the physical port.

lag *lag-id*
Specifies the LAG .

Modes

Privileged EXEC mode

Usage Guidelines

The **no** form of the command disables the debugging on specific MSTP ports.

Examples

```
device# debug mstp ports lag 10
```

debug mstp port-level

Displays the hardware level of the port on which the MSTP is running.

Syntax

debug mstp port-level *decimal*

no debug mstp port-level *decimal*

Parameters

decimal

Specifies the following values:
Value 0 for the Common and Internal Spanning Tree (CIST)
Value from 1 through 4094 for the Multiple Spanning Tree Instance (MSTI).

Modes

Privileged EXEC mode

Usage Guidelines

Use this command to determine the port-level information.

Examples

```
device# debug mstp port-level 1
Configuration for port-level 1 :
device# debug mstp port-level
DECIMAL 0 -- print nothing
device# debug mstp port-level 1
device# configure terminal
device(config)# interface ethernet 1/1/1
device(config-if-e1000-1/1/1)# disable
device(config-if-e1000-1/1/1)# enable
device(config-if-e1000-1/1/1)# ^Z
```

debug mstp show

Displays the currently enabled MSTP debug parameters.

Syntax

debug mstp show

no debug mstp show

Modes

Privileged EXEC mode

Examples

```
device#debug mstp show
mstp debug is on because of enabled, level or port-level level 4
parameters: Brief, StateMachineEvents BpduEvents are being tracked
Ports: All
MSTP instances: 0
```

debug mstp state

Displays information about the MSTP port state events.

Syntax

debug mstp state

no debug mstp state

Modes

Privileged EXEC mode

Examples

```
device#debug mstp state
MSTP Port State debugging ON
```

debug mstp verbose

Displays the MSTP debug information in the verbose mode.

Syntax

debug mstp verbose

no debug mstp verbose

Modes

Privileged EXEC mode

Examples

```
device#debug mstp verbose
MSTP debugging set to VERBOSE mode
```

debug mvrp

Enables Multiple VLAN Registration Protocol (MVRP) debugging.

Syntax

debug mvrp [**all** | **cli** | **config** | **db-event** | **error-event** | **ethernet** *unit/slot/port* | **event** | **itc** | **lag** *lag-id* | **pdu** { **err** | **rx** | **tx** } | **reset** | **rx-event** | **show** | **sm-event** | **timer** | **tx-event** | **verbose**]

no debug mvrp [**all** | **cli** | **config** | **db-event** | **error-event** | **ethernet** *unit/slot/port* | **event** | **itc** | **lag** *lag-id* | **pdu** { **err** | **rx** | **tx** } | **reset** | **rx-event** | **show** | **sm-event** | **timer** | **tx-event** | **verbose**]

Parameters

all
Enables all attributes and for all ports.

cli
Enables MVRP CLI debugging.

config
Enables MVRP configuration debugging.

db-event
Enables MVRP database event debugging.

error-event
Enables MVRP error event debugging.

ethernet *unit/slot/port*
Enables MVRP port debugging.

event
Enables MVRP event debugging.

itc
Enables MVRP ITC debugging.

lag *lag-id*
Enables MVRP LAG port debugging.

pdu
Enables MVRPDU message debugging.

err
Enables MVRPDU error message debugging.

rx
Enables MVRPDU RX message debugging.

tx
Enables MVRPDU TX message debugging.

reset
Resets all MVRP debugging parameters to the default.

rx-event

Enables MVRP Rx-Event debugging.

show

Displays current MVRP debug parameters.

sm-event

Enables MVRP State-machine event debugging.

timer

Enables MVRP timer debugging.

tx-event

Enables MVRP TX event debugging.

verbose

Enables MVRP verbose debugging mode.

Modes

Privileged EXEC mode

Examples

The following example sets debugging on the MVRP CLI.

```
device# debug mvrp cli
MVRP CLI debugging ON
device# debug mvrp
```

The following example displays current MVRP debug parameters.

```
device# debug mvrp show

MVRP Debug Parameters
---------------------
MVRP ALL debugging is ON [Mode: Brief]
 Event: ON
 PDU Tx: OFF
 PDU Rx: OFF
 PDU Error: OFF
 Timer: OFF
 CLI: ON
 Config: ON
 ITC: OFF
 Rx-Event: OFF
 Tx-Event: OFF
 Db-Event: OFF
 Error-Event: OFF
 State-machine Event: OFF
```

History

Release version	Command history
08.0.90	This command was introduced.

debug packet-capture

Displays information about packet-capture activity.

Syntax

debug packet-capture [**all** | **count-reset** | **count-show** | **exclude-mgmt-port** | **filter** | **max** | **mode** | **no-l2-ctrl-packet** | **no-limit** | **no-mgmt-port** | **receive** | **send**]

Parameters

all
Displays the debugging information of the packets transmitted and received.

count-reset
Clears the total packet count of the packets captured.

count-show
Displays the total packet count of the packets captured for debugging.

exclude-mgmt-port
Enables debugging of the packets that are excluded for the management.

filter
Enables the raw packet filter for debugging.

max
Displays the maximum number of packets.

mode
Displays the various packet modes.

no-l2-ctrl-packet
Toggles to display the packets excluding L2 control packets.

no-limit
Displays the debugging information of an unlimited number of packets.

no-mgmt-port
Toggles the display of packets from the management port.

receive
Debugs only the packets that are received.

send
Debugs only the packets that are transmitted.

Modes

Privileged EXEC mode

debug packet-capture filter

Enables the filter option for the raw packets.

Syntax

debug packet-capture filter *filter_index filter_options*

Parameters

filter_index

Specifies the filter number. The decimal value ranges from 1 through 20.

filter_options

Specifies the filter option.

Modes

Privileged EXEC mode

Usage Guidelines

There are 36 filter options that can be configured within a single filter.

- all—Matches all packets
- arp—Matches an ARP request or response
- broadcast-mac—Matches the destination broadcast MAC address (0000.00FF.FFFF)
- cdp—Matches with the CDP
- clear—Clears the filter entry
- clear-counter—Clears the counter
- cpu-code—Matches the CPU code
- da—Matches the destination MAC address
- dhcp—Matches with the DHCP
- dot1x—Matches the dot1x protocol
- dpa—Matches the destination IP address
- dport—Matches the destination protocol port
- ether-type—Matches the Ethernet type packets
- fdp—Matches with the FDP
- in-port—Matches the input port
- l2-802.1w—Matches the 802.1w BPDU
- l2-lacp—Matches the LACP PDU
- l2-mstp—Matches the MSTP BPD
- l2-stp—Matches the spanning tree BPDU
- l3-bgp—Matches with the BGP

- l3-ospf—Matches the OSPF protocol
- l3-vrrp—Matches the VRRP
- l3-vrrpe—Matches the VRRP-E
- lldp—Matches the LLDP
- mrp—Matches the MRP
- out-port—Matches the output port
- priority—Matches the priority
- protocol—Matches the IP
- pvst—Matches the PVST protocol
- sa—Matches the source MAC address
- snmp—Matches the SNMP
- spa—Matches the source IP address
- sport—Matches the source protocol port
- udld—Matches the UDLD protocol
- vlan-id—Matches the VLAN ID
- vsrp—Matches the VSRP

Examples

```
device# debug packet-capture filter 2 protocol
```

debug packet-capture filter match

Toggles to display all matched packets.

Syntax

debug packet-capture filter match

Modes

Privileged EXEC mode

Examples

```
device# debug packet-capture filter match
```

debug packet-capture filter none

Removes all the filters that are configured.

Syntax

debug packet-capture filter none

Modes

Privileged EXEC mode

Examples

```
device# debug packet-capture filter none
```

debug packet-capture filter show

Displays the filter information for the particular filter index..

Syntax

debug packet-capture filter show [**all** | *decimal*]

Parameters

decimal

Specifies the number of the packet captured for filter.

Modes

Privileged EXEC mode

Examples

Execute the following command to display the complete filter information.

```
device# debug packet-capture filter show all
Filter 1:
                                Match STP
Filter 2:
                                Match 802.1W
```

Execute the following command to display filter information for a particular filter number.

```
device# debug packet-capture filter show 2
Filter 2:
                                Match 802.1W
```

debug packet-capture mode

Displays the format of the packets to be captured for debugging information.

Syntax

debug packet-capture mode [**brief** | **no-display** | **normal** | **pcap-fmt** { **default** | *decimal* }]

Parameters

brief
: Specifies the increment counters and displays the packet summary.

no-display
: Specifies the increment counters alone.

normal
: Specifies the increment counters and displays the packet header and the first 48 raw bytes.

pcap-fmt
: Specifies the increment counters and dumps the packet in pcap (packet capture) hexadecimal format.

default
: Specifies the normal mode.

decimal
: Specifies the first 48 bytes of the packets received.

Modes

Privileged EXEC mode

debug pki

Enables Public Key Infrastructure (PKI) debugging.

Syntax

debug pki { **error** | **itc** | **logging** | **timer** | **trace** | **user** }

no debug pki { **error** | **itc** | **logging** | **timer** | **trace** | **user** }

Parameters

error
Enables error debugging for PKI.

itc
Enables ITC messages exchange debugging for PKI.

logging
Captures information whenever a PKI message is logged.

timer
Enables debugging when timer is started/renewed/expired.

trace
Enables trace path debugging for PKI messages.

user
Enables debugging whenever there is a PKI user request received.

Modes

Privileged EXEC mode

Usage Guidelines

The no form of the command disables the PKI debugging.

Examples

```
device# debug pki error
May 27 10:50:16:966541:info:fi_debug:debug_logs:1:51539607553: KEY already exist with label
trustpoint210
May 27 10:23:39:778688:info:fi_debug:debug_logs:1:0: PKI : Error msg from slam : HTTP operation timed
out
May 27 10:23:39:778574:info:fi_debug:debug_logs:1:0: PKI : Output buffer length is zero for the Slam
response with request-id 73 msg-type 3
```

debug port hw-state

Monitors the hardware status of a port.

Syntax

debug port hw-state

no debug port hw-state

Modes

Privileged EXEC mode

Usage Guidelines

Use this command to enable or disable port debugging in the hardware state.

Examples

```
device# debug port hw-state
Topology: Port 1/1/31 is connected to port 1/1/32.
```

If port 1/1/31 is disabled, an output similar to the following is displayed.

```
device(config)# interface ethernet 1/1/31
device(config-if-e1000-1/1/31)# disable ( when port is disabled)
Change port 1/1/31 hw_state from PORT_READY(7) to DISABLED(0)
stack: 4040 2050A970 2050AA44 2060D498 20608BF8 2060B5A4 20576A90 20576C74
2057707C 202A50A8 20491E9C 20492DC0 204906D8 2050BF48 204A03C8 204A0418 2011BBC8
20047698 2011CF7C 5008
device(config-if-e1000-1/1/31)# change port 1/1/32 hw_state from PORT_READY(7)
to SEEQ_INIT(1)
stack: 4040 2050A970 2050AA44 2060D498 20608E18 20609344 20609AFC 2055FA50
2050A214 200478DC 2011BBCC 20047698 2011CF7C 5008 135C8 18524
```

If port 1/1/31 is enabled, an output similar to the following is displayed.

```
device(config-if-e1000-1/1/32)# interface ethernet 1/1/31
device(config-if-e1000-1/1/31)# enable
Change port 1/1/31 hw_state from DISABLED(0) to SEEQ_INIT(1)
stack: 4040 2050A970 2050AA44 2060D498 20608A34 2060B598 20576BC4 20576C74
2057707C 202A4F84 20491E9C 20492DC0 204906D8 2050BF48 204A03C8 204A0418 2011BBC8
20047698 2011CF7C 5008
device(config-if-e1000-1/1/31)# change port 1/1/31 hw_state from SEEQ_INIT(1) to
PORT_READY(7)
stack: 4040 2050A970 2050AA44 2060D498 206093D0 20609AFC 2055FA50 2050A214
200478DC 2011BBCC 20047698 2011CF7C 5008 135C8 18524
Change port 1/1/32 hw_state from SEEQ_INIT(1) to PORT_READY(7)
stack: 4040 2050A970 2050AA44 2060D498 206093D0 20609AFC 2055FA50 2050A214
200478DC 2011BBCC 20047698 2011CF7C 5008 135C8 18524
```

debug port port

Monitors a specific physical port.

Syntax

debug port port *stackid/slot/port*

Parameters

stackid/slot/port

Identifies the specific interface (port), by device, slot, and port number in the format shown.

Modes

Privileged EXEC mode

Global configuration mode

Usage Guidelines

debug port up-downdebug port hw-state

Examples

```
device# debug port port 1/1/2
Topology: Port 1/1/31 is connected to port 1/1/2.
```

When the **debug port hw-state** command is enabled after the **debug port port** command, the output similar to the following example is displayed.

```
device# debug port port 1/1/2
monitor port 1/1/2
device# debug port hw-state
```

If port 1/1/2 is disabled, an output similar to the following is displayed.

```
device(config-if-e1000-1/1/2)# disable
port_disable_cmd: for port 0x1 1/1/2
U1, hal_pp_link_port_enable(1/1/2, 0), is_stby=0, to_shadow=0, parsed = 3,
stack=1
stack: 0116c83c 000de8f0 00accc3c 00acd6ac 00ad21f4 0136c614 0136c850 0136cf00
012b842c 0084b3b0 0084e0a0 00847608 00966c0c 0086c110 0086c154 00243f98 000f0524
00246f54 0159f920 017713c4
pp_link_port_en_dis(port=1/1/2, 0), return 0
stack: 0116ca20 000de8f0 00accc3c 00acd6ac 00ad21f4 0136c614 0136c850 0136cf00
012b842c 0084b3b0 0084e0a0 00847608 00966c0c 0086c110 0086c154 00243f98 000f0524
00246f54 0159f920 017713c4
Change 1/1/2 state from Forward to Disable
stack: 00acb98c 00ad1e14 00aebd74 0071dddc 0071ebbc 00af0e8c 00af18e8 00ad0e20
00acccf4 00acd6ac 00ad21f4 0136c614 0136c850 0136cf00 012b842c 0084b3b0 0084e0a0
00847608 00966c0c 0086c110 0086c154 00243f98 000f0524 00246f54 0159f920 017713c4
Change port 1/1/2 hw_state from PORT_READY(7) to DISABLED(0)
stack: 00ad5d4c 00accd2c 00acd6ac 00ad21f4 0136c614 0136c850 0136cf00 012b842c
0084b3b0 0084e0a0 00847608 00966c0c 0086c110 0086c154 00243f98 000f0524 00246f54
0159f920 017713c4
Change 1/1/2 state from Disable to Blocked
stack: 00acb98c 00acba3c 00acbce4 00accd38 00acd6ac 00ad21f4 0136c614 0136c850
0136cf00 012b842c 0084b3b0 0084e0a0 00847608 00966c0c 0086c110 0086c154 00243f98
000f0524 00246f54 0159f920 017713c4
Change 1/1/2 state from Blocked to Disable
stack: 00acb98c 00acba3c 00accd48 00acd6ac 00ad21f4 0136c614 0136c850 0136cf00
012b842c 0084b3b0 0084e0a0 00847608 00966c0c 0086c110 0086c154 00243f98 000f0524
00246f54 0159f920 017713c4
```

If port 1/1/2 is enabled, an output similar to the following is displayed.

```
device(config-if-e1000-1/1/2)# enable
device(config-if-e1000-1/1/2)# change port 1/1/2 hw_state from SEEQ_INIT(1) to
PORT_READY(7)
stack: 4040 2050A970 2050AA44 2060D498 206093D0 20609AFC 2055FA50 2050A214
200478DC 2011BBCC 20047698 2011CF7C 5008 135C8 18524
Change 1/1/2 state from Disable to Blocked
stack: 4040 2050A970 2050AA44 206082E0 2060B354 206215F8 203F9F10 203FB4D8
203FA2B4 2062268C 20623404 2060A624 20609520 20609AFC 2055FA50 2050A214 200478DC
2011BBCC 20047698 2011CF7C
Change 1/1/2 state from Blocked to Listen
stack: 4040 2050A970 2050AA44 206082E0 2060B354 20621734 203F9F10 203FD490
203FD1C4 203FA2BC 2062268C 20623404 2060A624 20609520 20609AFC 2055FA50 2050A214
200478DC 2011BBCC 20047698
Change 1/1/2 state from Listen to Learn
stack: 4040 2050A970 2050AA44 206082E0 2060B354 2062178C 203F9F10 20400F38
20400C84 20400A1C 203F9980 2050A214 200478DC 2011BBCC 20047698 2011CF7C 5008 135C8
18524
Change 1/1/2 state from Learn to Blocked
stack: 4040 2050A970 2050AA44 206082E0 2060B354 206215F8 203F9F10 203FD70C
203FD248 203FDFD8 204F3C8C 20616AB8 20612D30 200DC33C 200DC600 200DC6C0 200DC780
200444C4 2011BC28 20047698
```

The **debug port up-down** command disables or enables a port to get output information of the specified port. When the **debug port up-down** command is enabled after the **debug port port** command, output similar to the following example is displayed.

```
device# debug port port 1/1/32
monitor port 1/1/32
device# debug port up-down
```

If port 1/1/32 is disabled, an output similar to the following is displayed.

```
device(config-if-e1000-1/1/32)# disable
port_down_indication. port=1/1/32, UNTAG, vlan-idx=1
stack: 4040 2050A970 2050AA44 2060A8FC 20608BEC 2060B5A4 20576A90 20576C74
2057707C 202A50A8 20491E9C 20492DC0 204906D8 2050BF48 204A03C8 204A0418 2011BBC8
20047698 2011CF7C 5008
Change 1/1/32 state from Blocked to Disable
stack: 4040 2050A970 2050AA44 206082E0 2060B354 206214F0 203F9F10 203FA3A0
20622F60 20623404 2060AA38 20608BEC 2060B5A4 20576A90 20576C74 2057707C 202A50A8
20491E9C 20492DC0 204906D8
Change 1/1/32 state from Disable to Blocked
stack: 4040 2050A970 2050AA44 206082E0 20608330 206084C4 20608C00 2060B5A4
20576A90 20576C74 2057707C 202A50A8 20491E9C 20492DC0 204906D8 2050BF48 204A03C8
204A0418 2011BBC8 20047698
Change 1/1/32 state from Blocked to Disable
stack: 4040 2050A970 2050AA44 206082E0 20608330 20608C0C 2060B5A4 20576A90
20576C74 2057707C 202A50A8 20491E9C 20492DC0 204906D8 2050BF48 204A03C8 204A0418
2011BBC8 20047698 2011CF7C
```

If port 1/1/32 is enabled, an output similar to the following is displayed.

```
device(config-if-e1000-1/1/32)# enable
Change 1/1/32 state from Disable to Blocked
stack: 4040 2050A970 2050AA44 206082E0 206089A0 2060B598 20576BC4 20576C74
2057707C 202A4F84 20491E9C 20492DC0 204906D8 2050BF48 204A03C8 204A0418 2011BBC8
20047698 2011CF7C 5008
device(config-if-e1000-1/1/32)# pp_link_change_final. port=1/1/32, up=1
port_up_indication. port=1/1/32, UNTAG, vlan-idx=1
stack: 4040 2050A970 2050AA44 2060A2C8 20609520 20609AFC 2055FA50 2050A214
200478DC 2011BBCC 20047698 2011CF7C 5008 135C8 18524
Change 1/1/32 state from Blocked to Listen
stack: 4040 2050A970 2050AA44 206082E0 2060B354 20621734 203F9F10 203FD490
203FD1C4 203FA2BC 2062268C 20623404 2060A624 20609520 20609AFC 2055FA50 2050A214
200478DC 2011BBCC 20047698
Change 1/1/32 state from Listen to Blocked
stack: 4040 2050A970 2050AA44 206082E0 2060B354 206215F8 203F9F10 203FD70C
203FD248 203FDFD8 204F3C8C 20616AB8 20612D30 200DC33C 200DC600 200DC6C0 200DC780
200444C4 2011BC28 20047698
```

debug port ten-gig

Monitors all 10 Gigabit ports in the Ruckus RUCKUS devices.

Syntax

debug port ten-gig

Modes

Privileged EXEC mode

Global configuration mode

Usage Guidelines

Use this command in conjunction with the **debug port hw-state** command.

Examples

```
device# debug port ten-gig
Topology: Port 2/3/1 is the 10 gig port which is Up and forwarding on stack.
device# debug port ten-gig
device# debug port hw-state
hw-state monitor hw_state change
device# debug port hw-state
```

If port 2/3/1 is disabled, an output similar to the following is displayed.

```
device(config-if-e10000-2/3/1)# disable
Change port 2/3/1 hw_state from PORT_READY(7) to DISABLED(0)
stack: 4040 2050A970 2050AA44 2060D498 20608BF8 2060B5A4 20576A90 20576C74
2057707C 202A50A8 20491E9C 20492DC0 204906D8 2050BF48 2027FD8C 20280888 202809F0
2015FCDC 2015FF44 20160B80
```

If port 2/3/1 is enabled, an output similar to the following is displayed.

```
device(config-if-e10000-2/3/1)# enable
Change port 2/3/1 hw_state from DISABLED(0) to SEEQ_INIT(1)
stack: 4040 2050A970 2050AA44 2060D498 20608A34 2060B598 20576BC4 20576C74
2057707C 202A4F84 20491E9C 20492DC0 204906D8 2050BF48 2027FD8C 20280888 202809F0
2015FCDC 2015FF44 20160B80
device(config-if-e10000-2/3/1)# change port 2/3/1 hw_state from SEEQ_INIT(1) to
PORT_READY(7)
stack: 4040 2050A970 2050AA44 2060D498 206093D0 20609AFC 2055FA50 2050A214
200478DC 2011BBCC 20047698 2011CF7C 5008 135C8 18524
```

debug port up-down

Monitors the status of the ports.

Syntax

debug port up-down *decimal*

no debug port up-down *decimal*

Parameters

decimal

Specifies the status of the port.

Modes

Privileged EXEC mode

Global configuration mode

Usage Guidelines

This command disables or enables a port to get output information of the specified port. The port status up, down, and up/down are indicated by 1, 2, and 3 respectively.

Examples

```
device# debug port up-down 1
Monitor port up
Topology: Port 1/1/31 is connected to port 1/1/32.
```

If port 1/1/31 is disabled, an output similar to the following is displayed.

```
device(config)# interface ethernet 1/1/31
device(config-if-e1000-1/1/31)# disable
port_down_indication. port=1/1/31, UNTAG, vlan-idx=1
stack: 4040 2050A970 2050AA44 2060A8FC 20608BEC 2060B5A4 20576A90 20576C74
2057707C 202A50A8 20491E9C 20492DC0 204906D8 2050BF48 204A03C8 204A0418 2011BBC8
20047698 2011CF7C 5008
device(config-if-e1000-1/1/31)# port_down_indication. port=1/1/32, UNTAG,
vlan-idx=3
stack: 4040 2050A970 2050AA44 2060A8FC 20608DA0 20609344 20609AFC 2055FA50
2050A214 200478DC 2011BBCC 20047698 2011CF7C 5008 135C8 18524
pp_link_change_final. port=1/1/32, up=0
```

If port 1/1/31 is enabled, an output similar to the following is displayed.

```
device(config-if-e1000-1/1/31)# enable
device(config-if-e1000-1/1/31)# pp_link_change_final. port=1/1/31, up=1
port_up_indication. port=1/1/31, UNTAG, vlan-idx=1
stack: 4040 2050A970 2050AA44 2060A2C8 20609520 20609AFC 2055FA50 2050A214
200478DC 2011BBCC 20047698 2011CF7C 5008 135C8 18524
pp_link_change_final. port=1/1/32, up=1
port_up_indication. port=1/1/32, UNTAG, vlan-idx=3
stack: 4040 2050A970 2050AA44 2060A2C8 20609520 20609AFC 2055FA50 2050A214
200478DC 2011BBCC 20047698 2011CF7C 5008 135C8 18524
```

History

Release version	Command history
	This command was introduced.
	This command was modified to...

debug port vlan

Monitors a specific VLAN.

Syntax

debug port vlan *decimal*

no debug port vlan *decimal*

Parameters

decimal

Specifies the number of the VLAN.

Modes

Privileged EXEC mode

Global configuration mode

Usage Guidelines

debug port up-downdebug port port

Examples

```
device# debug port vlan 1
monitor vlan 1
Topology: Port 1/1/31 is connected to port 1/1/32.
device# debug port vlan 2
monitor vlan 2
device# debug port up-down
up-down monitor port up/down event. 1: up, 2: down, 3: up/down
device# debug port up-down 3
Monitor both port up and down
```

If port 1/1/31 is disabled, an output similar to the following is displayed.

```
device(config-if-e1000-1/1/31)# disable
port_down_indication. port=1/1/31, TAG, vlan-idx=4096
stack: 4040 2050A970 2050AA44 2060A8FC 20608BEC 2060B5A4 20576A90 20576C74
2057707C 202A50A8 20491E9C 20492DC0 204906D8 2050BF48 204A03C8 204A0418 2011BBC8
20047698 2011CF7C 5008
device(config-if-e1000-1/1/31)# port_down_indication. port=1/1/32, TAG,
vlan-idx=4096
stack: 4040 2050A970 2050AA44 2060A8FC 20608DA0 20609344 20609AFC 2055FA50
2050A214 200478DC 2011BBCC 20047698 2011CF7C 5008 135C8 18524
pp_link_change_final. port=1/1/32, up=0
```

If port 1/1/31 is enabled, an output similar to the following is displayed.

```
device(config-if-e1000-1/1/31)# enable
device(config-if-e1000-1/1/31)# pp_link_change_final. port=1/1/31, up=1
port_up_indication. port=1/1/31, TAG, vlan-idx=4096
stack: 4040 2050A970 2050AA44 2060A2C8 20609520 20609AFC 2055FA50 2050A214
200478DC 2011BBCC 20047698 2011CF7C 5008 135C8 18524
pp_link_change_final. port=1/1/32, up=1
port_up_indication. port=1/1/32, TAG, vlan-idx=4096
stack: 4040 2050A970 2050AA44 2060A2C8 20609520 20609AFC 2055FA50 2050A214
200478DC 2011BBCC 20047698 2011CF7C 5008 135C8 18524
```

debug pp-trunk-hash

Traces and displays the output port through which a given packet can be sent out in a LAG.

Syntax

debug pp-trunk-hash *lag-id* { **non-unicast-distribution** | **unicast-distribution** } **ip** *vlan-id dst_ipv4/ipv6 src_ipv4/ipv6 protocol_num dest_tcp/udp tcp/udp_src_port*

debug pp-trunk-hash *lag-id* { **non-unicast-distribution** | **unicast-distribution** } **non-ip** *dmac smac*

no debug pp-trunk-hash

Parameters

lag_id
Specifies the ID of the LAG.

non-unicast-distribution
Generates debugging information related to non-unicast distribution for unknown unicast destination or destination lookup failed traffic.

unicast-distribution
Generates debugging information related to unicast distribution for single trunk destination.

ip
Generates debugging information related to IP traffic distribution.

non-ip
Generates debugging information related to routed traffic.

vlan_id
Specifies the VLAN ID in the packet.

dst_ipv4/ipv6
Specifies the destination IPv4 address or destination IPv6 address.

src_ipv4/ipv6
Specifies the source IPv4 address or destination IPv6 address.

protocol-number
Specifies the protocol in IP headers.

dest_tcp/udp
Specifies the destination TCP or UDP port number.

tcp/udp_src_port
Specifies the source TCP or UDP port number.

dmac
Specifies the destination MAC address.

smac
Specifies the source MAC address.

Modes

Privileged EXEC mode

Examples

For the non-unicast IPv4 distribution, the command resembles the following example.

```
device#debug pp-trunk-hash 3 non-unicast-distribution ip 1 2.2.2.2 3.3.3.3 6 22 23
Lag with id 1 (hw_trunk_i=3)does not have any up ports. Atleast one up port should be present in the lag
```

For the non-unicast IPv6 distribution, the command resembles the following example.

```
device#debug pp-trunk-hash 3 non-unicast-distribution ip 1 2:2::2:2 4:4::4:4 3 22 23
Lag with id 1 (hw_trunk_i=3)does not have any up ports. Atleast one up port should be present in the lag
```

For the non-unicast non-IP distribution, the command resembles the following example.

```
device#debug pp-trunk-hash 3 non-unicast-distribution non-ip 2222.3333.4444 4444.3333.2222
Lag with id 1 (hw_trunk_i=3)does not have any up ports. Atleast one up port should be present in the lag
```

For the unicast IP distribution, the command resembles the following example.

```
device#debug pp-trunk-hash 3 unicast-distribution ip 2 2.2.2.2 3.3.3.3 6 22 23
Lag with id 1 (hw_trunk_i=3)does not have any up ports. Atleast one up port should be present in the lag
```

For the unicast non-IP distribution, the command resembles the following example.

```
device#debug pp-trunk-hash 3 unicast-distribution non-ip 2222.3333.4444 4444.3333.2222
Lag with id 1 (hw_trunk_i=3)does not have any up ports. Atleast one up port should be present in the lag
```

debug pvlan cli

Debugs private VLAN (PVLAN) CLI.

Syntax

debug pvlan cli

no debug pvlan cli

Modes

Privileged EXEC mode

Usage Guidelines

The **no** form of the command disables the debugging of PVLAN CLI.

Examples

The following example debugs PVLAN CLI.

```
device# debug pvlan cli
device# show log debug l2 pvlan all all
Jun 11 10:48:24:653301:debug:l2:pvlan:1:6936700387329: PVLAN: cu_show_pvlan() vlan 14 is not a primary
Jun 11 10:48:24:647723:debug:l2:pvlan:1:6936700387329: PVLAN: cu_show_pvlan() vlan 13 is not a primary
Jun 11 10:48:24:647563:debug:l2:pvlan:1:6936700387329: PVLAN: cu_show_pvlan() vlan 4 is not a primary
Jun 11 10:48:24:647402:debug:l2:pvlan:1:6936700387329: PVLAN: cu_show_pvlan() vlan 3 is not a primary
Jun 11 10:39:51:376523:debug:l2:pvlan:1:6833621172225: cpssDxChBrgStpEntryGet 1/2/4 vlan 14 stp 5 state
3
Jun 11 10:38:04:635720:debug:l2:pvlan:1:6704772153345: PVLAN: removing vlan 14
Jun 11 10:38:04:568381:debug:l2:pvlan:1:6704772153345: PVLAN: removing vlan 13
Jun 11 10:38:04:473738:debug:l2:pvlan:1:6704772153345: PVLAN: removing vlan 12
Jun 11 10:38:04:472285:debug:l2:pvlan:1:6704772153345: cpssDxChBrgStpEntryGet 1/2/4 vlan 14 stp 5 state
0
Jun 11 10:38:00:703442:debug:l2:pvlan:1:6696182218753: PVLAN: removing vlan 4
Jun 11 10:38:00:632858:debug:l2:pvlan:1:6696182218753: PVLAN: removing vlan 3
Jun 11 10:38:00:605732:debug:l2:pvlan:1:6696182218753: PVLAN: removing vlan 2
Jun 11 10:37:54:089673:debug:l2:pvlan:1:6683297316865: PVLAN: cu_show_pvlan() vlan 14 is not a primary
Jun 11 10:37:54:089581:debug:l2:pvlan:1:6683297316865: PVLAN: cu_show_pvlan() vlan 13 is not a primary
Jun 11 10:37:54:089421:debug:l2:pvlan:1:6683297316865: PVLAN: cu_show_pvlan() vlan 4 is not a primary
Jun 11 10:37:54:089303:debug:l2:pvlan:1:6683297316865: PVLAN: cu_show_pvlan() vlan 3 is not a primary
Jun 11 09:58:13:017866:debug:l2:pvlan:1:6000397516801: PVLAN: cu_show_pvlan() vlan 14 is not a primary
Jun 11 09:58:13:017746:debug:l2:pvlan:1:6000397516801: PVLAN: cu_show_pvlan() vlan 13 is not a primary
Jun 11 09:58:13:017040:debug:l2:pvlan:1:6000397516801: PVLAN: cu_show_pvlan() vlan 4 is not a primary
Jun 11 09:58:13:016941:debug:l2:pvlan:1:6000397516801: PVLAN: cu_show_pvlan() vlan 3 is not a primary
Jun 11 09:57:52:596658:debug:l2:pvlan:1:5953152876545: PVLAN: cu_show_pvlan() vlan 14 is not a primary
Jun 11 09:57:52:596572:debug:l2:pvlan:1:5953152876545: PVLAN: cu_show_pvlan() vlan 13 is not a primary
Jun 11 09:57:52:596414:debug:l2:pvlan:1:5953152876545: PVLAN: cu_show_pvlan() vlan 4 is not a primary
Jun 11 09:57:52:596257:debug:l2:pvlan:1:5953152876545: PVLAN: cu_show_pvlan() vlan 3 is not a primary
Jun 11 09:57:32:812601:debug:l2:pvlan:1:5888728367105: cpssDxChBrgStpEntryGet 1/2/4 vlan 4 stp 7 state 3
Jun 11 09:57:32:812218:debug:l2:pvlan:1:5888728367105: cpssDxChBrgStpEntryGet 1/2/4 vlan 4 stp 7 state 0
Jun 11 09:57:26:691179:debug:l2:pvlan:1:5845778694145: cpssDxChBrgStpEntryGet 1/2/4 vlan 4 stp 7 state 3
Jun 11 09:55:48:310910:debug:l2:pvlan:1:5704044773377: PVLAN: removing vlan 4
Jun 11 09:55:48:117997:debug:l2:pvlan:1:5704044773377: PVLAN: removing vlan 3
Jun 11 09:55:48:022861:debug:l2:pvlan:1:5704044773377: PVLAN: removing vlan 2
Jun 11 09:55:48:005228:debug:l2:pvlan:1:5704044773377: cpssDxChBrgStpEntryGet 1/2/4 vlan 4 stp 5 state 0
Jun 11 09:52:09:764567:debug:l2:pvlan:1:5665390067713: cpssDxChBrgStpEntryGet 1/2/4 vlan 4 stp 5 state 3
Jun 11 09:51:54:060246:debug:l2:pvlan:1:5575195754497: PVLAN: removing vlan 4
Jun 11 09:51:54:030673:debug:l2:pvlan:1:5575195754497: PVLAN: removing vlan 3
Jun 11 09:51:53:945283:debug:l2:pvlan:1:5575195754497: PVLAN: removing vlan 2
Jun 11 09:51:53:943820:debug:l2:pvlan:1:5575195754497: cpssDxChBrgStpEntryGet 1/2/4 vlan 4 stp 5 state 0
Jun 11 09:50:51:322329:debug:l2:pvlan:1:5446346735617: cpssDxChBrgStpEntryGet 1/2/4 vlan 4 stp 5 state 3
Jun 11 09:50:30:972768:debug:l2:pvlan:1:5364742356993: cpssDxChBrgStpEntryGet 1/2/4 vlan 4 stp 6 state 0
Jun 11 09:48:12:178717:debug:l2:pvlan:1:5338972553217: cpssDxChBrgStpEntryGet 1/2/4 vlan 4 stp 6 state 3
Jun 11 09:32:30:671284:debug:l2:pvlan:1:4278115631105: PVLAN: removing vlan 4
Jun 11 09:32:29:682047:debug:l2:pvlan:1:4273820663809: PVLAN: removing vlan 3
Jun 11 09:32:27:284027:debug:l2:pvlan:1:4269525696513: PVLAN: removing vlan 2
Jun 11 09:29:27:640221:debug:l2:pvlan:1:4162151514113: PVLAN: cu_show_pvlan() vlan 4 is not a primary
Jun 11 09:29:27:640074:debug:l2:pvlan:1:4162151514113: PVLAN: cu_show_pvlan() vlan 3 is not a primary
Jun 11 09:24:31:814627:debug:l2:pvlan:1:3947403149313: PVLAN: removing vlan 4
Jun 11 09:24:31:783089:debug:l2:pvlan:1:3947403149313: PVLAN: removing vlan 3
Jun 11 09:24:31:753162:debug:l2:pvlan:1:3947403149313: PVLAN: removing vlan 2
```

debug pvlan egr-trans

Debugs egress translation on secondary VLAN ports.

Syntax

debug pvlan egr-trans

no debug pvlan egr-trans

Modes

Privileged EXEC mode

Usage Guidelines

The **no** form of the command disables debugging of egress translation on secondary VLAN ports.

Examples

The following example debugs egress translation on secondary VLAN ports.

```
device# debug pvlan egr-trans
device# show log debug l2 pvlan all all
Jun 11 10:48:24:653301:debug:l2:pvlan:1:6936700387329: PVLAN: cu_show_pvlan() vlan 14 is not a primary
Jun 11 10:48:24:647723:debug:l2:pvlan:1:6936700387329: PVLAN: cu_show_pvlan() vlan 13 is not a primary
Jun 11 10:48:24:647563:debug:l2:pvlan:1:6936700387329: PVLAN: cu_show_pvlan() vlan 4 is not a primary
Jun 11 10:48:24:647402:debug:l2:pvlan:1:6936700387329: PVLAN: cu_show_pvlan() vlan 3 is not a primary
Jun 11 10:39:51:376523:debug:l2:pvlan:1:6833621172225: cpssDxChBrgStpEntryGet 1/2/4 vlan 14 stp 5 state
3
Jun 11 10:38:04:635720:debug:l2:pvlan:1:6704772153345: PVLAN: removing vlan 14
Jun 11 10:38:04:568381:debug:l2:pvlan:1:6704772153345: PVLAN: removing vlan 13
Jun 11 10:38:04:473738:debug:l2:pvlan:1:6704772153345: PVLAN: removing vlan 12
Jun 11 10:38:04:472285:debug:l2:pvlan:1:6704772153345: cpssDxChBrgStpEntryGet 1/2/4 vlan 14 stp 5 state
0
Jun 11 10:38:00:703442:debug:l2:pvlan:1:6696182218753: PVLAN: removing vlan 4
Jun 11 10:38:00:632858:debug:l2:pvlan:1:6696182218753: PVLAN: removing vlan 3
Jun 11 10:38:00:605732:debug:l2:pvlan:1:6696182218753: PVLAN: removing vlan 2
Jun 11 10:37:54:089673:debug:l2:pvlan:1:6683297316865: PVLAN: cu_show_pvlan() vlan 14 is not a primary
Jun 11 10:37:54:089581:debug:l2:pvlan:1:6683297316865: PVLAN: cu_show_pvlan() vlan 13 is not a primary
Jun 11 10:37:54:089421:debug:l2:pvlan:1:6683297316865: PVLAN: cu_show_pvlan() vlan 4 is not a primary
Jun 11 10:37:54:089303:debug:l2:pvlan:1:6683297316865: PVLAN: cu_show_pvlan() vlan 3 is not a primary
Jun 11 09:58:13:017866:debug:l2:pvlan:1:6000397516801: PVLAN: cu_show_pvlan() vlan 14 is not a primary
Jun 11 09:58:13:017746:debug:l2:pvlan:1:6000397516801: PVLAN: cu_show_pvlan() vlan 13 is not a primary
Jun 11 09:58:13:017040:debug:l2:pvlan:1:6000397516801: PVLAN: cu_show_pvlan() vlan 4 is not a primary
Jun 11 09:58:13:016941:debug:l2:pvlan:1:6000397516801: PVLAN: cu_show_pvlan() vlan 3 is not a primary
Jun 11 09:57:52:596658:debug:l2:pvlan:1:5953152876545: PVLAN: cu_show_pvlan() vlan 14 is not a primary
Jun 11 09:57:52:596572:debug:l2:pvlan:1:5953152876545: PVLAN: cu_show_pvlan() vlan 13 is not a primary
Jun 11 09:57:52:596414:debug:l2:pvlan:1:5953152876545: PVLAN: cu_show_pvlan() vlan 4 is not a primary
Jun 11 09:57:52:596257:debug:l2:pvlan:1:5953152876545: PVLAN: cu_show_pvlan() vlan 3 is not a primary
Jun 11 09:57:32:812601:debug:l2:pvlan:1:5888728367105: cpssDxChBrgStpEntryGet 1/2/4 vlan 4 stp 7 state 3
Jun 11 09:57:32:812218:debug:l2:pvlan:1:5888728367105: cpssDxChBrgStpEntryGet 1/2/4 vlan 4 stp 7 state 0
Jun 11 09:57:26:691179:debug:l2:pvlan:1:5845778694145: cpssDxChBrgStpEntryGet 1/2/4 vlan 4 stp 7 state 3
Jun 11 09:55:48:310910:debug:l2:pvlan:1:5704044773377: PVLAN: removing vlan 4
Jun 11 09:55:48:117997:debug:l2:pvlan:1:5704044773377: PVLAN: removing vlan 3
Jun 11 09:55:48:022861:debug:l2:pvlan:1:5704044773377: PVLAN: removing vlan 2
Jun 11 09:55:48:005228:debug:l2:pvlan:1:5704044773377: cpssDxChBrgStpEntryGet 1/2/4 vlan 4 stp 5 state 0
Jun 11 09:52:09:764567:debug:l2:pvlan:1:5665390067713: cpssDxChBrgStpEntryGet 1/2/4 vlan 4 stp 5 state 3
Jun 11 09:51:54:060246:debug:l2:pvlan:1:5575195754497: PVLAN: removing vlan 4
Jun 11 09:51:54:030673:debug:l2:pvlan:1:5575195754497: PVLAN: removing vlan 3
Jun 11 09:51:53:945283:debug:l2:pvlan:1:5575195754497: PVLAN: removing vlan 2
Jun 11 09:51:53:943820:debug:l2:pvlan:1:5575195754497: cpssDxChBrgStpEntryGet 1/2/4 vlan 4 stp 5 state 0
Jun 11 09:50:51:322329:debug:l2:pvlan:1:5446346735617: cpssDxChBrgStpEntryGet 1/2/4 vlan 4 stp 5 state 3
Jun 11 09:50:30:972768:debug:l2:pvlan:1:5364742356993: cpssDxChBrgStpEntryGet 1/2/4 vlan 4 stp 6 state 0
Jun 11 09:48:12:178717:debug:l2:pvlan:1:5338972553217: cpssDxChBrgStpEntryGet 1/2/4 vlan 4 stp 6 state 3
Jun 11 09:32:30:671284:debug:l2:pvlan:1:4278115631105: PVLAN: removing vlan 4
Jun 11 09:32:29:682047:debug:l2:pvlan:1:4273820663809: PVLAN: removing vlan 3
Jun 11 09:32:27:284027:debug:l2:pvlan:1:4269525696513: PVLAN: removing vlan 2
Jun 11 09:29:27:640221:debug:l2:pvlan:1:4162151514113: PVLAN: cu_show_pvlan() vlan 4 is not a primary
Jun 11 09:29:27:640074:debug:l2:pvlan:1:4162151514113: PVLAN: cu_show_pvlan() vlan 3 is not a primary
Jun 11 09:24:31:814627:debug:l2:pvlan:1:3947403149313: PVLAN: removing vlan 4
Jun 11 09:24:31:783089:debug:l2:pvlan:1:3947403149313: PVLAN: removing vlan 3
Jun 11 09:24:31:753162:debug:l2:pvlan:1:3947403149313: PVLAN: removing vlan 2
```

debug pvlan event

Monitors private VLAN (PVLAN) event.

Syntax

debug pvlan event

no debug pvlan event

Modes

Privileged EXEC mode

Usage Guidelines

The **no** form of the command disables monitoring of PVLAN events.

Examples

The following example monitors PVLAN event.

```
device# debug pvlan event
device# show log debug l2 pvlan all all
Jun 11 10:48:24:653301:debug:l2:pvlan:1:6936700387329: PVLAN: cu_show_pvlan() vlan 14 is not a primary
Jun 11 10:48:24:647723:debug:l2:pvlan:1:6936700387329: PVLAN: cu_show_pvlan() vlan 13 is not a primary
Jun 11 10:48:24:647563:debug:l2:pvlan:1:6936700387329: PVLAN: cu_show_pvlan() vlan 4 is not a primary
Jun 11 10:48:24:647402:debug:l2:pvlan:1:6936700387329: PVLAN: cu_show_pvlan() vlan 3 is not a primary
Jun 11 10:39:51:376523:debug:l2:pvlan:1:6833621172225: cpssDxChBrgStpEntryGet 1/2/4 vlan 14 stp 5 state
3
Jun 11 10:38:04:635720:debug:l2:pvlan:1:6704772153345: PVLAN: removing vlan 14
Jun 11 10:38:04:568381:debug:l2:pvlan:1:6704772153345: PVLAN: removing vlan 13
Jun 11 10:38:04:473738:debug:l2:pvlan:1:6704772153345: PVLAN: removing vlan 12
Jun 11 10:38:04:472285:debug:l2:pvlan:1:6704772153345: cpssDxChBrgStpEntryGet 1/2/4 vlan 14 stp 5 state
0
Jun 11 10:38:00:703442:debug:l2:pvlan:1:6696182218753: PVLAN: removing vlan 4
Jun 11 10:38:00:632858:debug:l2:pvlan:1:6696182218753: PVLAN: removing vlan 3
Jun 11 10:38:00:605732:debug:l2:pvlan:1:6696182218753: PVLAN: removing vlan 2
Jun 11 10:37:54:089673:debug:l2:pvlan:1:6683297316865: PVLAN: cu_show_pvlan() vlan 14 is not a primary
Jun 11 10:37:54:089581:debug:l2:pvlan:1:6683297316865: PVLAN: cu_show_pvlan() vlan 13 is not a primary
Jun 11 10:37:54:089421:debug:l2:pvlan:1:6683297316865: PVLAN: cu_show_pvlan() vlan 4 is not a primary
Jun 11 10:37:54:089303:debug:l2:pvlan:1:6683297316865: PVLAN: cu_show_pvlan() vlan 3 is not a primary
Jun 11 09:58:13:017866:debug:l2:pvlan:1:6000397516801: PVLAN: cu_show_pvlan() vlan 14 is not a primary
Jun 11 09:58:13:017746:debug:l2:pvlan:1:6000397516801: PVLAN: cu_show_pvlan() vlan 13 is not a primary
Jun 11 09:58:13:017040:debug:l2:pvlan:1:6000397516801: PVLAN: cu_show_pvlan() vlan 4 is not a primary
Jun 11 09:58:13:016941:debug:l2:pvlan:1:6000397516801: PVLAN: cu_show_pvlan() vlan 3 is not a primary
Jun 11 09:57:52:596658:debug:l2:pvlan:1:5953152876545: PVLAN: cu_show_pvlan() vlan 14 is not a primary
Jun 11 09:57:52:596572:debug:l2:pvlan:1:5953152876545: PVLAN: cu_show_pvlan() vlan 13 is not a primary
Jun 11 09:57:52:596414:debug:l2:pvlan:1:5953152876545: PVLAN: cu_show_pvlan() vlan 4 is not a primary
Jun 11 09:57:52:596257:debug:l2:pvlan:1:5953152876545: PVLAN: cu_show_pvlan() vlan 3 is not a primary
Jun 11 09:57:32:812601:debug:l2:pvlan:1:5888728367105: cpssDxChBrgStpEntryGet 1/2/4 vlan 4 stp 7 state 3
Jun 11 09:57:32:812218:debug:l2:pvlan:1:5888728367105: cpssDxChBrgStpEntryGet 1/2/4 vlan 4 stp 7 state 0
Jun 11 09:57:26:691179:debug:l2:pvlan:1:5845778694145: cpssDxChBrgStpEntryGet 1/2/4 vlan 4 stp 7 state 3
Jun 11 09:55:48:310910:debug:l2:pvlan:1:5704044773377: PVLAN: removing vlan 4
Jun 11 09:55:48:117997:debug:l2:pvlan:1:5704044773377: PVLAN: removing vlan 3
Jun 11 09:55:48:022861:debug:l2:pvlan:1:5704044773377: PVLAN: removing vlan 2
Jun 11 09:55:48:005228:debug:l2:pvlan:1:5704044773377: cpssDxChBrgStpEntryGet 1/2/4 vlan 4 stp 5 state 0
Jun 11 09:52:09:764567:debug:l2:pvlan:1:5665390067713: cpssDxChBrgStpEntryGet 1/2/4 vlan 4 stp 5 state 3
Jun 11 09:51:54:060246:debug:l2:pvlan:1:5575195754497: PVLAN: removing vlan 4
Jun 11 09:51:54:030673:debug:l2:pvlan:1:5575195754497: PVLAN: removing vlan 3
Jun 11 09:51:53:945283:debug:l2:pvlan:1:5575195754497: PVLAN: removing vlan 2
Jun 11 09:51:53:943820:debug:l2:pvlan:1:5575195754497: cpssDxChBrgStpEntryGet 1/2/4 vlan 4 stp 5 state 0
Jun 11 09:50:51:322329:debug:l2:pvlan:1:5446346735617: cpssDxChBrgStpEntryGet 1/2/4 vlan 4 stp 5 state 3
Jun 11 09:50:30:972768:debug:l2:pvlan:1:5364742356993: cpssDxChBrgStpEntryGet 1/2/4 vlan 4 stp 6 state 0
Jun 11 09:48:12:178717:debug:l2:pvlan:1:5338972553217: cpssDxChBrgStpEntryGet 1/2/4 vlan 4 stp 6 state 3
Jun 11 09:32:30:671284:debug:l2:pvlan:1:4278115631105: PVLAN: removing vlan 4
Jun 11 09:32:29:682047:debug:l2:pvlan:1:4273820663809: PVLAN: removing vlan 3
Jun 11 09:32:27:284027:debug:l2:pvlan:1:4269525696513: PVLAN: removing vlan 2
Jun 11 09:29:27:640221:debug:l2:pvlan:1:4162151514113: PVLAN: cu_show_pvlan() vlan 4 is not a primary
Jun 11 09:29:27:640074:debug:l2:pvlan:1:4162151514113: PVLAN: cu_show_pvlan() vlan 3 is not a primary
Jun 11 09:24:31:814627:debug:l2:pvlan:1:3947403149313: PVLAN: removing vlan 4
Jun 11 09:24:31:783089:debug:l2:pvlan:1:3947403149313: PVLAN: removing vlan 3
Jun 11 09:24:31:753162:debug:l2:pvlan:1:3947403149313: PVLAN: removing vlan 2
```

debug pvlan vlan

Debugs specific private VLAN (PVLAN).

Syntax

debug pvlan vlan *vlan_id*

no debug pvlan vlan *vlan_id*

Parameters

vlan_id

Specifies the VLAN ID.

Modes

Privileged EXEC mode

Usage Guidelines

The **no** form of the command disables the debugging of a specific VLAN.

Examples

The following example debugs a specific private VLAN.

```
device# debug pvlan vlan 100
device# show log debug l2 pvlan all all
Jun 11 10:48:24:653301:debug:l2:pvlan:1:6936700387329: PVLAN: cu_show_pvlan() vlan 14 is not a primary
Jun 11 10:48:24:647723:debug:l2:pvlan:1:6936700387329: PVLAN: cu_show_pvlan() vlan 13 is not a primary
Jun 11 10:48:24:647563:debug:l2:pvlan:1:6936700387329: PVLAN: cu_show_pvlan() vlan 4 is not a primary
Jun 11 10:48:24:647402:debug:l2:pvlan:1:6936700387329: PVLAN: cu_show_pvlan() vlan 3 is not a primary
Jun 11 10:39:51:376523:debug:l2:pvlan:1:6833621172225: cpssDxChBrgStpEntryGet 1/2/4 vlan 14 stp 5 state
3
Jun 11 10:38:04:635720:debug:l2:pvlan:1:6704772153345: PVLAN: removing vlan 14
Jun 11 10:38:04:568381:debug:l2:pvlan:1:6704772153345: PVLAN: removing vlan 13
Jun 11 10:38:04:473738:debug:l2:pvlan:1:6704772153345: PVLAN: removing vlan 12
Jun 11 10:38:04:472285:debug:l2:pvlan:1:6704772153345: cpssDxChBrgStpEntryGet 1/2/4 vlan 14 stp 5 state
0
Jun 11 10:38:00:703442:debug:l2:pvlan:1:6696182218753: PVLAN: removing vlan 4
Jun 11 10:38:00:632858:debug:l2:pvlan:1:6696182218753: PVLAN: removing vlan 3
Jun 11 10:38:00:605732:debug:l2:pvlan:1:6696182218753: PVLAN: removing vlan 2
Jun 11 10:37:54:089673:debug:l2:pvlan:1:6683297316865: PVLAN: cu_show_pvlan() vlan 14 is not a primary
Jun 11 10:37:54:089581:debug:l2:pvlan:1:6683297316865: PVLAN: cu_show_pvlan() vlan 13 is not a primary
Jun 11 10:37:54:089421:debug:l2:pvlan:1:6683297316865: PVLAN: cu_show_pvlan() vlan 4 is not a primary
Jun 11 10:37:54:089303:debug:l2:pvlan:1:6683297316865: PVLAN: cu_show_pvlan() vlan 3 is not a primary
Jun 11 09:58:13:017866:debug:l2:pvlan:1:6000397516801: PVLAN: cu_show_pvlan() vlan 14 is not a primary
Jun 11 09:58:13:017746:debug:l2:pvlan:1:6000397516801: PVLAN: cu_show_pvlan() vlan 13 is not a primary
Jun 11 09:58:13:017040:debug:l2:pvlan:1:6000397516801: PVLAN: cu_show_pvlan() vlan 4 is not a primary
Jun 11 09:58:13:016941:debug:l2:pvlan:1:6000397516801: PVLAN: cu_show_pvlan() vlan 3 is not a primary
Jun 11 09:57:52:596658:debug:l2:pvlan:1:5953152876545: PVLAN: cu_show_pvlan() vlan 14 is not a primary
Jun 11 09:57:52:596572:debug:l2:pvlan:1:5953152876545: PVLAN: cu_show_pvlan() vlan 13 is not a primary
Jun 11 09:57:52:596414:debug:l2:pvlan:1:5953152876545: PVLAN: cu_show_pvlan() vlan 4 is not a primary
Jun 11 09:57:52:596257:debug:l2:pvlan:1:5953152876545: PVLAN: cu_show_pvlan() vlan 3 is not a primary
Jun 11 09:57:32:812601:debug:l2:pvlan:1:5888728367105: cpssDxChBrgStpEntryGet 1/2/4 vlan 4 stp 7 state 3
Jun 11 09:57:32:812218:debug:l2:pvlan:1:5888728367105: cpssDxChBrgStpEntryGet 1/2/4 vlan 4 stp 7 state 0
Jun 11 09:57:26:691179:debug:l2:pvlan:1:5845778694145: cpssDxChBrgStpEntryGet 1/2/4 vlan 4 stp 7 state 3
Jun 11 09:55:48:310910:debug:l2:pvlan:1:5704044773377: PVLAN: removing vlan 4
Jun 11 09:55:48:117997:debug:l2:pvlan:1:5704044773377: PVLAN: removing vlan 3
Jun 11 09:55:48:022861:debug:l2:pvlan:1:5704044773377: PVLAN: removing vlan 2
Jun 11 09:55:48:005228:debug:l2:pvlan:1:5704044773377: cpssDxChBrgStpEntryGet 1/2/4 vlan 4 stp 5 state 0
Jun 11 09:52:09:764567:debug:l2:pvlan:1:5665390067713: cpssDxChBrgStpEntryGet 1/2/4 vlan 4 stp 5 state 3
Jun 11 09:51:54:060246:debug:l2:pvlan:1:5575195754497: PVLAN: removing vlan 4
Jun 11 09:51:54:030673:debug:l2:pvlan:1:5575195754497: PVLAN: removing vlan 3
Jun 11 09:51:53:945283:debug:l2:pvlan:1:5575195754497: PVLAN: removing vlan 2
Jun 11 09:51:53:943820:debug:l2:pvlan:1:5575195754497: cpssDxChBrgStpEntryGet 1/2/4 vlan 4 stp 5 state 0
Jun 11 09:50:51:322329:debug:l2:pvlan:1:5446346735617: cpssDxChBrgStpEntryGet 1/2/4 vlan 4 stp 5 state 3
Jun 11 09:50:30:972768:debug:l2:pvlan:1:5364742356993: cpssDxChBrgStpEntryGet 1/2/4 vlan 4 stp 6 state 0
Jun 11 09:48:12:178717:debug:l2:pvlan:1:5338972553217: cpssDxChBrgStpEntryGet 1/2/4 vlan 4 stp 6 state 3
Jun 11 09:32:30:671284:debug:l2:pvlan:1:4278115631105: PVLAN: removing vlan 4
Jun 11 09:32:29:682047:debug:l2:pvlan:1:4273820663809: PVLAN: removing vlan 3
Jun 11 09:32:27:284027:debug:l2:pvlan:1:4269525696513: PVLAN: removing vlan 2
Jun 11 09:29:27:640221:debug:l2:pvlan:1:4162151514113: PVLAN: cu_show_pvlan() vlan 4 is not a primary
Jun 11 09:29:27:640074:debug:l2:pvlan:1:4162151514113: PVLAN: cu_show_pvlan() vlan 3 is not a primary
Jun 11 09:24:31:814627:debug:l2:pvlan:1:3947403149313: PVLAN: removing vlan 4
Jun 11 09:24:31:783089:debug:l2:pvlan:1:3947403149313: PVLAN: removing vlan 3
Jun 11 09:24:31:753162:debug:l2:pvlan:1:3947403149313: PVLAN: removing vlan 2
```

Debug Commands Q - Z

restconf platform-debug-level

Enables debugging for the RESTCONF Service Module.

Syntax

restconf platform-debug-level { **critical** | **debug** | **error** | **info** }

no restconf platform-debug-level { **critical** | **debug** | **error** | **info** }

Command Default

The RESTCONF platform debug level is set to info.

Parameters

critical

Sets the RESTCONF platform debug level to critical.

debug

Sets the RESTCONF platform debug level to debug.

error

Sets the RESTCONF platform debug level to error.

info

Sets the RESTCONF platform debug level to info.

Modes

Configuration mode

Examples

The following example sets the RESTCONF platform debug level to error.

```
device# configure terminal
device(config)# restconf platform-debug-level error
```

History

Release version	Command history
09.0.00	This command was introduced.

restconf protocol-debug-level

Enables RESTCONF management interface.

Syntax

restconf platform-debug-level { **debug** | **debug2** | **debug3** | **debug4** | **error** | **info** | **warn** }

Command Default

The RESTCONF protocol debug level is set to info.

Parameters

debug
Sets the RESTCONF protocol debug level to debug.

debug2
Sets the RESTCONF protocol debug level to debug2 (caution).

debug3
Sets the RESTCONF protocol debug level to debug3 (caution).

debug4
Sets the RESTCONF protocol debug level to debug4 (caution).

error
Sets the RESTCONF protocol debug level to error.

info
Sets the RESTCONF protocol debug level to info.

warn
Sets the RESTCONF protocol debug level to warn.

Modes

Configuration mode

Examples

The following example sets the RESTCONF protocol debug level to warn.

```
device# configure terminal
device(config)# restconf protocol-debug-level warn
```

History

Release version	Command history
09.0.00	This command was introduced.

debug rate-limiting

Enables port-based rate limiting debugging.

Syntax

debug rate-limiting { **pi** | **pd** } **show** [*unit/slot/port* | *number*]

no debug rate-limiting { **pi** | **pd** } **show** [*unit/slot/port* | *number*]

Parameters

pi

Specifies platform independent rate-limiting.

pd

Specifies platform dependent rate-limiting.

show *unit/slot/port*

Displays platform dependent or independent rate-limiting configurations on specific ports.

Modes

Privileged EXEC mode

Examples

The following example displays platform dependent rate-limiting configurations on interface ethernet 1/1/1.

```
device#debug rate-liming pd show 1/1/1
PBRL PD configuration for port 1/1/1 devport 2
Ingress rate limit: 1024 burst: 442
```

The following example displays platform independent rate-limiting configurations on interface ethernet 1/1/2.

```
device#debug rate-liming pi show 1/1/2
Ingress Rate-limiting config for 1/1/2:
    Rate 2000       (kbps) burst_size 100
```

debug rip database

Displays Routing Information Protocol (RIP) database events.

Syntax

debug rip database

no debug rip database

Modes

Privileged EXEC mode

Examples

```
device# debug rip database
device(config-vif-11)# RIP(default-vrf): (v2) process response packet
header: type:RESPONSE PACKET, version:2
RIP(default-vrf): refresh 10.1.2.0/24 metric 3 from 10.5.5.2 ve 11
RIP(default-vrf): existing route metric 2 from 10.4.4.1 ve 12
RIP(default-vrf): refresh 10.24.2.0/24 metric 4 from 10.5.5.2 ve 11
RIP(default-vrf): existing route metric 4 from 10.5.5.2 ve 11
RIP(default-vrf): (v2) process response packet
header: type:RESPONSE PACKET, version:2
RIP(default-vrf): refresh 10.24.2.0/24 metric 4 from 10.4.4.2 ve 12
RIP(default-vrf): existing route metric 4 from 10.5.5.2 ve 11
```

debug rip events

Displays RIP events.

Syntax

debug rip events

no debug rip events

Modes

Privileged EXEC mode

Global configuration mode

Examples

```
device# debug rip events
device(config-vif-11)# RIPng: update timer expired
clear ipv routeRIPng: triggered update
RIPng: garbage prefix 2001:DB8::/64 timer 1, metric 0, tag 0
from :: on interface NULL
RIPng: garbage prefix 2001:DB8::/64 timer 1, metric 0, tag 0
from :: on interface NULL
RIPng: Adding local connected route 2001:DB8::1/64 on interface v11
RIPng: Adding local connected route 2001:DB8::1/64 on interface v12
RIPng: update timer expired
RIPng: Redistribute add route 2001:DB8::/64, type CONNECTED (1/0)
RIPng: Redistribute add route 2001:DB8::/64, type CONNECTED (1/0)
```

debug sflow

Enables sFlow debugging.

Syntax

debug sflow { **jetcore** | masteripc | **problems** | **ptrace** | **slaveipc** }

no debug sflow { **jetcore** | **masteripc** | **problems** | **ptrace** | **slaveipc** }

Parameters

jetcore
Displays information about sFlow registers for debugging.

masteripc
Enables debugging on master received and sent sflow IPC messages.

problems
Enables debugging of the internal sFlow.

ptrace
Enables debugging of messages on sflow samplings.

slaveipc
Enables debugging on slave received and sent sflow IPC messages.

Modes

Privileged EXEC mode

Usage Guidelines

The **show logging debug security sflow all** command does not display the debug logs in the output in 09.0.00 release.

sFlow is a system for observing traffic flow patterns and quantities within and among a set of RUCKUS devices.

The no form of the command disables sFlow debugging.

Examples

```
device# debug sflow problems
sflow: problem debugging is on
```

debug span all_802_1d_events

Monitors information about all the events, timers, and packets on a specific VLAN.

Syntax

debug span all_802_1d_events *decimal*

no debug span all_802_1d_events *decimal*

Parameters

variable

Specifies the number of the VLAN.

Modes

Privileged EXEC mode

Examples

```
device# debug span all_802_1d_events vlan 201
STP  Enabling All events Debugging for VLAN 201
device#STP[898211]: Received Config BPDU - VLAN 201 -port 54/1/21
port_state_selection(T=898211,vlan=201) -->
STP:port_state_selection PORT transitions to DESIGNATED_FORWARD state , port 1/1/1(0) VLAN 201
STP:port_state_selection PORT transitions to DESIGNATED_FORWARD state , port 2/1/1(256) VLAN 201
STP:port_state_selection PORT transitions to DESIGNATED_FORWARD state , port 3/1/1(512) VLAN 201
STP:port_state_selection PORT transitions to DESIGNATED_FORWARD state , port 51/1/1(12800) VLAN 201
STP:port_state_selection PORT 51/1/21 vlan 201 transitions to BLOCKING
STP:port_state_selection PORT transitions to DESIGNATED_FORWARD state , port 52/1/1(13056) VLAN 201
STP:port_state_selection PORT 52/1/21 vlan 201 transitions to BLOCKING
STP:port_state_selection PORT transitions to DESIGNATED_FORWARD state , port 53/1/1(13312) VLAN 201
STP:port_state_selection PORT 53/1/21 vlan 201 transitions to BLOCKING
STP:port_state_selection PORT transitions to DESIGNATED_FORWARD state , port 54/1/1(13568) VLAN 201
port_state_selection root port 54/1/21
STP[898211]: Received Config BPDU - VLAN 201 -port 51/1/21 port_state_selection(T=898211,vlan=201) -->
STP:port_state_selection PORT transitions to DESIGNATED_FORWARD state , port 1/1/1(0) VLAN 201
STP:port_state_selection PORT transitions to DESIGNATED_FORWARD state , port 2/1/1(256) VLAN 201
STP:port_state_selection PORT transitions to DESIGNATED_FORWARD state , port 3/1/1(512) VLAN 201
STP:port_state_selection PORT transitions to DESIGNATED_FORWARD state , port 51/1/1(12800) VLAN 201
STP:port_state_selection PORT 51/1/21 vlan 201 transitions to BLOCKING
STP:port_state_selection PORT transitions to DESIGNATED_FORWARD state , port 52/1/1(13056) VLAN 201
STP:port_state_selection PORT 52/1/21 vlan 201 transitions to BLOCKING
STP:port_state_selection PORT transitions to DESIGNATED_FORWARD state , port 53/1/1(13312) VLAN 201
STP:port_state_selection PORT 53/1/21 vlan 201 transitions to BLOCKING
STP:port_state_selection PORT transitions to DESIGNATED_FORWARD state , port 54/1/1(13568) VLAN 201
port_state_selection root port 54/1/21
```

debug span config

Monitors information about STP Bridge Protocol Data Unit (BPDU) configuration on a specific VLAN.

Syntax

debug span config vlan *decimal*]

no debug span config vlan *decimal*]

Parameters

decimal

Specifies the number of the VLAN.

Modes

Privileged EXEC mode

Examples

If the configuration of VLAN 2 on the RUCKUS ICX is enabled, output similar to the following is displayed.

```
device# debug span config vlan 2
STP Enabling packets Debugging for VLAN 2

device# STP: Transmitting Config BPDU - VLAN 2 - Port 1/1/5
0000 00 00 00 80000012f2dbfd80 00000004
8000002438154580 08 05 0100 1400 0200 0f00
STP: Transmitting Config BPDU - VLAN 2 - Port 1/1/6
0000 00 00 00 80000012f2dbfd80 00000004
8000002438154580 08 06 0100 1400 0200 0f00
STP: Transmitting Config BPDU - VLAN 2 - Port 1/1/5
0000 00 00 00 80000012f2dbfd80 00000004
8000002438154580 08 05 0100 1400 0200 0f00
STP: Transmitting Config BPDU - VLAN 2 - Port 1/1/6
0000 00 00 00 80000012f2dbfd80 00000004
8000002438154580 08 06 0100 1400 0200 0f00
STP: Transmitting Config BPDU - VLAN 2 - Port 1/1/5
0000 00 00 00 80000012f2dbfd80 00000004
8000002438154580 08 05 0100 1400 0200 0f00
STP: Transmitting Config BPDU - VLAN 2 - Port 1/1/6
0000 00 00 00 80000012f2dbfd80 00000004
8000002438154580 08 06 0100 1400 0200 0f00
```

If the configuration of VLAN 2 on the RUCKUS ICX is disabled, output similar to the following is displayed.

```
device# no debug span config vlan 2
STP : Disabling Packets Debugging for VLAN 2
```

debug span timers

Displays information about the specific STP timer events.

Syntax

debug span timers vlan *decimal*

no debug span timers vlan *decimal*

Parameters

decimal

Specifies the number of the VLAN.

Modes

Privileged EXEC mode

Examples

If the STP timer event on VLAN 2 of the RUCKUS FastIron device is enabled, output similar to the following is displayed.

```
device# debug span timers vlan 2
STP Enabling Timer Debugging for VLAN 2
Sample output:
STP: Timer Alert - Forward Delay Timer expired On port 1/1/6(5) , VLAN 2
STP: Timer Alert - Forward Delay Timer expired On port 1/1/1(0) , VLAN 2
STP: Timer Alert - Forward Delay Timer expired On port 1/1/6(5) , VLAN 2
STP: Timer Alert - Message Age Timer expired On port 1/1/1(0) , VLAN 2
STP: Timer Alert - Message Age Timer expired On port 1/1/2(1) , VLAN 2
STP: Timer Alert - Forward Delay Timer expired On port 1/1/2(1) , VLAN 2
STP: Timer Alert - Forward Delay Timer expired On port 1/1/2(1) , VLAN 2
```

If the STP timer event on VLAN 2 of the RUCKUS FastIron device is disabled, output similar to the following is displayed.

```
device# no debug span timers vlan 2
STP Disabling Timer Debugging for VLAN 2
```

debug stacking

Enables debugging of stacking.

Syntax

debug stacking [**bcm-api** *num* | **bootup** { **id** *num* | **role** *num* } | **bpdu-rx** | **control-stack** *num* | **disable-task** | **download** *num* | **dy-sync** { **id** *num* | **level** *num* } | **err-disable-sync-level** *num* | **error** | **file** *num* | **hitless** *num*]

debug stacking [**key-sync** | **loop-detection-sync-level** *num* | **mgmt-port-enable** | **mgmt20** | **module** *num* | **mrp-sync-level** *num* | **poe-chassis** | **port-dev** *unit/slot/port* **port_cmd** *unit/slot/port* | **premium-license level** *num* | **qos** | **show** | **ss_auth** *num* | **time** | **topology** | **trunk** *num* | **trunk-ping**]

Parameters

bcm-api *num*
: Displays messages related to RPC layer for BCM API.

bootup
: Debugs bootup details with role and unit ID of the stack units.

id *num*
: Specifies the unit ID.

role *num*
: Specifies the role of the stack unit.

bpdu-rx
: Debugs STP BPDU received packets.

control-stack *num*
: Displays trace of dsa, device map, and controller election results.

disable-task
: Specifies disable task sending Interprocessor Communications (IPC).

download *num*
: Debugs download details in a stack.

dy-sync
: Monitors dy-sync table.

id *num*
: Monitors dy-sync table type.

level *num*
: Monitors dy-sync by specifying the level.

error
: Debug messages upon error or warning.

file *num*
: Monitors file operations.

hitless *num*
: Debugs hitless stacking.

loop-detection-sync-level *num*
Debugs loop-detection synchronization details.

module *num*
Debugs module related details.

mrp-sync-level *num*
Debugs MRP synchronization details.

poe-chassis
Monitors POE and chassis related details.

port-dev *unit/slot/port*
Monitors port to dev details.

premium-license level *num*
Enables stack premium license debugging.

qos
Monitors QoS related details.

time
Debugs CPU time and other related debugging.

topology *num*
Monitors stack topology change.

trunk *num*
Enables stack trunk debugging.

Modes

Privileged EXEC mode

Usage Guidelines

no

Examples

The following example activates stack debugging.

```
device# debug stacking
```

debug stacking ipc

Generates debugging information related to Interprocessor Communications (IPC) and remote console sessions.

Syntax

debug stacking ipc[**drop** *num* | **level** *num* | **mail-level** *num* | **pattern** *hex* | **port** *unit/slot/port* | **recv_port** *unit/slot/port* | **rel-ipc-level** *num* | **rel-ipc-target** *unit-id channel-id* | **source** *num* | **target** *unit-id* | **track-rx** *num* | **track-tx** *num* | **type** *num*]

no debug stacking ipc[**drop** *num* | **level** *num* | **mail-level** *num* | **pattern** *hex* | **port** *unit/slot/port* | **recv_port** *unit/slot/port* | **rel-ipc-level** *num* | **rel-ipc-target** *unit-id channel-id* | **source** *num* | **target** *unit-id* | **track-rx** *num* | **track-tx** *num* | **type** *num*]

Parameters

drop *num*
Debugging details of the received message types that are being dropped.

level *num*
Specifies IPC debugging level.

mail-level *num*
Debugging messages related to reliable-mail messages and unreliable-mail messages.

pattern *hex*
Debugs the received packets that contain the specified pattern.

rel-ipc-level *num*
Specifies the debugging level of reliable IPC messages.

rel-ipc-target *unit-id channel-id*
Debugs the IPC target unit ID and channel for reliable messages.

source *num*
Debugs the source address of the IPC packets.

target *unit-id*
Debugs the target of the IPC packets.

track-tx *num*
Debugs the transmitted packets.

track-rx *num*
Debugs the received packets.

type *num*
Debugs IPC types.

Modes

Privileged EXEC mode

Usage Guidelines

no

Examples

The following example activates the debugging of Interprocessor Communications (IPC) and remote console sessions.

```
device# debug stacking ipc
```

debug stacking probe-election

Generates debugging information related to topology discovery, election, path calculation, and so on.

Syntax

debug stacking probe-election[**election** *num* | **id-assignment** *num* | **level** *num* | **link** *hex* | **proc** *src-mac-addr* | **shortest-path** num | **state-change** *hex*]

no debug stacking probe-election[**election** *num* | **id-assignment** *num* | **level** *num* | **link** *hex* | **proc** *src-mac-addr* | **shortest-path** *num* | **state-change** *hex*]

Parameters

election *num*
Monitors election and ID assignment.

id-assignment *num*
Monitors ID assignment.

level *num*
Debugging stack topology discovery.

link *hex*
Displays stack trace of link deletion.

proc *src-mac-addr*
Specifies the debugging level of reliable IPC messages.

shortest-path *num*
Monitors shortest-path calculation.

state-change *hex*
Debugs state change details.

Modes

Privileged EXEC mode

Usage Guidelines

no

Examples

The following example activates the debugging of election.

```
device# debug stacking probe-election election
```

debug stacking zero-ipc

Generates stack zero-touch Interprocessor Communications (IPC) debug information.

Syntax

debug stacking zero-ipc[**general** | **level** | **mail** | **type**]

no debug stacking zero-ipc[**general** | **level** | **mail** | **type**]

Parameters

general
Displays some general stack zero-touch IPC debug information.

level
Specifies the stack zero-touch IPC debug level.

mail
Displays the debug related to reliable-mail messages and unreliable-mail messages.

type
Displays debugging information related to each type of send and receive messages.

Modes

Privileged EXEC mode

Usage Guidelines

no

Examples

The following example activates the debugging of zero-touch IPC debug information..

```
device# debug stacking zero-ipc
```

debug stacking zero-touch

Generates stack zero-touch provisioning debug information.

Syntax

debug stacking zero-touch[**cb-mac** *mac-address* | **general** | **ioe** | **probe** | **touch**]

no debug stacking zero-touch[**cb-mac** *mac-address* | **general** | **ioe** | **probe** | **touch**]

Parameters

cb-mac *mac-address*
: Displays CB MAC addresses used in Interprocessor Communications (IPC) over Ethernet.

general
: Displays some general stack zero-touch provisioning debug information.

ioe
: Displays the Interprocessor Communications (IPC) over Ethernet. debugging information.

probe
: Displays debugging information related to probe messages between new units.

touch
: Displays interactive-setup and zero-touch provisioning debug information.

Modes

Privileged EXEC mode

Usage Guidelines

no

Examples

The following example activates the debugging of interactive-setup and zero-touch provisioning debug information..

```
device# debug stacking zero-touch 1
```

debug system campram

Traces Content Addressable Memory (CAM) or Parallel Random Access Machine (PRAM) operations.

Syntax

debug system campram

no debug system campram

Modes

Privileged EXEC mode

Examples

```
device# debug system campram
cam/pram: Trace debugging is on
```

debug system mem-leak

Enables memory leak detection for a specific process from bootup.

Syntax

debug system mem-leak

Modes

Privileged EXEC mode

Examples

The following example turns on memory leak tracking for poed process.

```
device# debug system mem-leak
```

History

Release version	Command history
09.0.00	This command was introduced.

debug system optics

Activates optical monitor debugging.

Syntax

debug system optics

no debug system optics

Modes

Privileged EXEC mode

Usage Guidelines

Examples

```
device# debug system optics
optics: Trace debugging is on
```

debug trunk

Enables trunk debugging.

Syntax

debug trunk { **ctrl** | **event** | **functioncallback** }

no debug trunk { **ctrl** | **event** | **functioncallback** }

Parameters

ctrl

Displays trunk control debug information.

event

Displays trunk event debug information.

functioncallback

Displays trunk function callback debug information.

Modes

Privileged EXEC mode

Usage Guidelines

The **no** form of the command disables trunk debugging.

Examples

The following example enables trunk debugging.

```
device#debug trunk ctrl
device#debug trunk event
device#debug trunk functioncallback
Jul 06 08:44:26:406809:debug:l2:lag:1:700724543489: sw_cu_lag_generic_port_add_validation(lag=2,mask=
1/1/20,add,static,force_delete=0)(T=7364366,task=l2config) (I)
Jul 06 08:44:26:407030:debug:l2:lag:1:700724543489: sw_cu_lag_generic_port_add_validation(lag=2,mask=
1/1/20,add,static,force_delete=0)(T=7364366,task=l2config) find cb@0x97825af8 (lag_primary_port=lg2,
lag_num_ports=0, deployed=0)
Jul 06 08:44:26:407232:info:l2:lag:1:700724543489: sw_lag_config_ports_add_validation(lag_id=2) L3
function callname: L3_trunk_validation_callback
Jul 06 08:44:26:407316:info:l2:lag:1:700724543489: sw_lag_config_ports_add_validation(lag_id=2) L4
function callname: uac_common_trunk_validation_callback
Jul 06 08:44:26:407597:info:l2:lag:1:700724543489: sw_lag_config_ports_add_validation(lag_id=2) L4
function callname: qos_xCP_common_trunk_validation_callback
Jul 06 08:44:26:416707:debug:l2:lag:1:700724543489: sw_cu_lag_generic_port_add_validation(lag=2,mask=
lg2,add,static,force_delete=1)(T=7364366,task=l2config) (I)
Jul 06 08:44:26:416943:debug:l2:lag:1:700724543489: sw_cu_lag_generic_port_add_validation(lag=2,mask=
lg2,add,static,force_delete=1)(T=7364366,task=l2config) find cb@0x97825af8 (lag_primary_port=lg2,
lag_num_ports=0, deployed=0)
Jul 06 08:44:26:417122:info:l2:lag:1:700724543489: sw_lag_config_ports_add_validation(lag_id=2) L3
function callname: L3_trunk_validation_callback
Jul 06 08:44:26:417199:info:l2:lag:1:700724543489: sw_lag_config_ports_add_validation(lag_id=2) L4
function callname: uac_common_trunk_validation_callback
Jul 06 08:44:26:417278:info:l2:lag:1:700724543489: sw_lag_config_ports_add_validation(lag_id=2) L4
function callname: qos_xCP_common_trunk_validation_callback
Jul 06 08:44:26:425804:debug:l2:lag:1:700724543489: cu_lag_create_trunk(lag=test1,lag_id=2,dep)
(T=7364366,task=l2config) >>
Jul 06 08:44:26:425877:debug:l2:lag:1:700724543489: cu_lag_create_trunk(lag=test1,lag_id=2,dep)
(T=7364366,task=l2config) current lag_mac=0000.0000.0000 -> lagctrl_refresh_active_lag_mac
Jul 06 08:44:26:425951:debug:l2:lag:1:700724543489:
>>> lagctrl_lag_deploy(lag=2,deploy,dynamic)(T=7364366,task=l2config) (I) pri=lg2
(port_group_id=512,port_trunk_id=2,config_trunk_id=3073,trunk_state=0,trunk_primary=lg2), #_port=1,
Port List:
Jul 06 08:44:26:426016:debug:l2:lag:1:700724543489: (lg2)
Jul 06 08:44:26:426077:debug:l2:lag:1:700724543489:
Jul 06 08:44:26:426140:debug:l2:lag:1:700724543489: lagctrl_lag_deploy(lag=2,deploy,dynamic)
(T=7364366,task=l2config) (I) -> sw_trunk_precreate_event()
Jul 06 08:44:26:426727:debug:l2:lag:1:700724543489: EVENT_ID_TRUNK_PRECREATE LAG id: 2
Jul 06 08:44:26:426820:debug:l2:lag:1:700724543489: EVENT_ID_TRUNK_PRECREATE Module: L2 function
callname: sw_cu_rstp_trunk_update_callback trunk id: 2
Jul 06 08:44:26:427098:debug:l2:lag:1:700724543489: EVENT_ID_TRUNK_PRECREATE Module: L2 function
callname: sw_cu_spanningTree_trunk_update_callback trunk id: 2
Jul 06 08:44:26:427179:debug:l2:lag:1:700724543489: EVENT_ID_TRUNK_PRECREATE Module: L2 function
callname: sw_cu_vsrp_trunk_update_callback trunk id: 2
Jul 06 08:44:26:427247:debug:l2:lag:1:700724543489: EVENT_ID_TRUNK_PRECREATE Module: L2 function
callname: sw_cu_mrp_trunk_update_callback trunk id: 2
Jul 06 08:44:26:427315:debug:l2:lag:1:700724543489: EVENT_ID_TRUNK_PRECREATE Module: L2 function
callname: sw_cu_vlan_vport_trunk_update_callback trunk id: 2
Jul 06 08:44:26:427494:debug:l2:lag:1:700724543489: lagctrl_lag_deploy(lag=2,deploy,dynamic)
(T=7364366,task=l2config) (I) done, pri=lg2
(port_group_id=512,port_trunk_id=2,config_trunk_id=3073,trunk_state=0,trunk_primary=lg2)
Jul 06 08:44:26:429522:debug:l2:lag:1:700724543489: EVENT_ID_TRUNK_CREATE LAG id: 2
Jul 06 08:44:26:434731:debug:l2:lag:1:700724543489: cu_lag_create_trunk(lag_id=2) deploy done, HW Trunk
Id 2
Jul 06 08:44:26:434809:debug:l2:lag:1:700724543489: cu_lag_create_trunk(lag_id=2)(T=7364367) deploy
done&
Jul 06 08:44:26:435537:debug:l2:lag:1:700724543489: sw_cu_lag_generic_port_add_validation(lag=2,mask=
1/1/20,add,static,force_delete=1)(T=7364367,task=l2config) (I)
Jul 06 08:44:26:435733:debug:l2:lag:1:700724543489: sw_cu_lag_generic_port_add_validation(lag=2,mask=
1/1/20,add,static,force_delete=1)(T=7364367,task=l2config) find cb@0x97825af8 (lag_primary_port=lg2,
lag_num_ports=1, deployed=1)
Jul 06 08:44:26:435920:info:l2:lag:1:700724543489: sw_lag_config_ports_add_validation(lag_id=2) L3
function callname: L3_trunk_validation_callback
Jul 06 08:44:26:436002:info:l2:lag:1:700724543489: sw_lag_config_ports_add_validation(lag_id=2) L4
function callname: uac_common_trunk_validation_callback
Jul 06 08:44:26:436214:info:l2:lag:1:700724543489: sw_lag_config_ports_add_validation(lag_id=2) L4
function callname: qos_xCP_common_trunk_validation_callback
```

```
Jul 06 08:44:26:444255:debug:l2:lag:1:700724543489:
lagctrl_add_ports_to_deployed_lag(T=7364367,lag_id=2,num_of_ports=1,ports={1/1/20,1/1/1,1/1/1,1/1/1,...}
) -> TrunkPreCreateCallbackTable -> (2,sw_cu_rstp_trunk_update_callback)
Jul 06 08:44:26:444574:debug:l2:lag:1:700724543489:
lagctrl_add_ports_to_deployed_lag(T=7364367,lag_id=2,num_of_ports=1,ports={1/1/20,1/1/1,1/1/1,1/1/1,...}
) -> TrunkPreCreateCallbackTable -> (2,sw_cu_spanningTree_trunk_update_callback)
Jul 06 08:44:26:444668:debug:l2:lag:1:700724543489:
lagctrl_add_ports_to_deployed_lag(T=7364367,lag_id=2,num_of_ports=1,ports={1/1/20,1/1/1,1/1/1,1/1/1,...}
) -> TrunkPreCreateCallbackTable -> (2,sw_cu_vsrp_trunk_update_callback)
Jul 06 08:44:26:444743:debug:l2:lag:1:700724543489:
lagctrl_add_ports_to_deployed_lag(T=7364367,lag_id=2,num_of_ports=1,ports={1/1/20,1/1/1,1/1/1,1/1/1,...}
) -> TrunkPreCreateCallbackTable -> (2,sw_cu_mrp_trunk_update_callback)
Jul 06 08:44:26:444828:debug:l2:lag:1:700724543489:
lagctrl_add_ports_to_deployed_lag(T=7364367,lag_id=2,num_of_ports=1,ports={1/1/20,1/1/1,1/1/1,1/1/1,...}
) -> TrunkPreCreateCallbackTable -> (2,sw_cu_vlan_vport_trunk_update_callback)
Jul 06 08:44:26:449384:err:l2:lag:1:700724543489: EVENT_ID_TRUNK_MEMBER_ADD Module: L2 function
callname: sw_cu_set_trunk_link_deb_callback trunk id: 2
Jul 06 08:44:26:449471:err:l2:lag:1:700724543489: EVENT_ID_TRUNK_MEMBER_ADD Module: L4 function
callname: sw_cu_bum_limit_trunk_update_callback trunk id: 2
Jul 06 08:44:26:449542:err:l2:lag:1:700724543489: EVENT_ID_TRUNK_MEMBER_ADD Module: L4 function
callname: sw_cu_dhcpsnoop_trunk_update_callback trunk id: 2
Jul 06 08:44:26:449879:err:l2:lag:1:700724543489: EVENT_ID_TRUNK_MEMBER_ADD Module: L4 function
callname: sw_cu_dhcpv6snoop_trunk_update_callback trunk id: 2
Jul 06 08:44:26:450171:err:l2:lag:1:700724543489: EVENT_ID_TRUNK_MEMBER_ADD Module: L4 function
callname: sw_cu_raguard_trunk_update_callback trunk id: 2
Jul 06 08:44:26:450252:err:l2:lag:1:700724543489: EVENT_ID_TRUNK_MEMBER_ADD Module: L4 function
callname: sw_cu_ratelimit_trunk_update_callback trunk id: 2
Jul 06 08:44:26:450319:err:l2:lag:1:700724543489: EVENT_ID_TRUNK_MEMBER_ADD Module: L1 function
callname: sw_pp_mirror_trunk_event_callback trunk id: 2
Jul 06 08:44:26:450391:err:l2:lag:1:700724543489: EVENT_ID_TRUNK_MEMBER_ADD Module: L4 function
callname: sw_cu_webAuth_trunk_update_callback trunk id: 2
Jul 06 08:44:26:450458:err:l2:lag:1:700724543489: EVENT_ID_TRUNK_MEMBER_ADD Module: L2 function
callname: sw_cu_mct_trunk_update_callback trunk id: 2
Jul 06 08:44:26:450522:err:l2:lag:1:700724543489: EVENT_ID_TRUNK_MEMBER_ADD Module: L4 function
callname: sw_cu_sflow_trunk_update_callback trunk id: 2
Jul 06 08:44:26:450605:err:l2:lag:1:700724543489: EVENT_ID_TRUNK_MEMBER_ADD Module: L3 function
callname: L3_trunk_event_callback trunk id: 2
Jul 06 08:44:26:455974:err:l2:lag:1:700724543489: EVENT_ID_TRUNK_MEMBER_ADD Module: L2 function
callname: sw_cu_static_mac_trunk_update_callback trunk id: 2
Jul 06 08:44:26:456092:err:l2:lag:1:700724543489: EVENT_ID_TRUNK_MEMBER_ADD Module: L2 function
callname: sw_cu_igmp_snoop_trunk_deploy_callback trunk id: 2
Jul 06 08:44:26:456168:err:l2:lag:1:700724543489: EVENT_ID_TRUNK_MEMBER_ADD Module: L2 function
callname: sw_cu_mld_snoop_trunk_deploy_callback trunk id: 2
Jul 06 08:44:26:456233:err:l2:lag:1:700724543489: EVENT_ID_TRUNK_MEMBER_ADD Module: L2 function
callname: sw_cu_set_trunk_packet_inerror_callback trunk id: 2
Jul 06 08:44:26:456300:err:l2:lag:1:700724543489: EVENT_ID_TRUNK_MEMBER_ADD Module: L2 function
callname: erlbTrunkMemberUpdateCallback trunk id: 2
Jul 06 08:44:26:456364:err:l2:lag:1:700724543489: EVENT_ID_TRUNK_MEMBER_ADD Module: L2 function
callname: sw_cu_protected_port_trunk_callback trunk id: 2
Jul 06 08:44:26:456431:err:l2:lag:1:700724543489: EVENT_ID_TRUNK_MEMBER_ADD Module: L2 function
callname: qinq_trunk_event_callback trunk id: 2
Jul 06 08:44:26:456495:err:l2:lag:1:700724543489: EVENT_ID_TRUNK_MEMBER_ADD Module: L2 function
callname: vlan_mapping_trunk_event_callback trunk id: 2
Jul 06 08:44:26:456558:err:l2:lag:1:700724543489: EVENT_ID_TRUNK_MEMBER_ADD Module: L2 function
callname: sw_cu_rspan_trunk_callback trunk id: 2
Jul 06 08:44:26:456623:err:l2:lag:1:700724543489: EVENT_ID_TRUNK_MEMBER_ADD Module: L2 function
callname: flexlink_trunk_member_add_delete_callback trunk id: 2
Jul 06 08:45:02:880189:debug:l2:lag:1:726494347265: EVENT_ID_TRUNK_MEMBER_DELETE Module: L2 function
callname: sw_cu_protected_port_trunk_callback trunk id: 2
Jul 06 08:45:02:880278:debug:l2:lag:1:726494347265: EVENT_ID_TRUNK_MEMBER_DELETE Module: L2 function
callname: qinq_trunk_event_callback trunk id: 2
Jul 06 08:45:02:880349:debug:l2:lag:1:726494347265: EVENT_ID_TRUNK_MEMBER_DELETE Module: L2 function
callname: vlan_mapping_trunk_event_callback trunk id: 2
Jul 06 08:45:02:880416:debug:l2:lag:1:726494347265: EVENT_ID_TRUNK_MEMBER_DELETE Module: L1 function
callname: sw_pp_mirror_trunk_event_callback trunk id: 2
Jul 06 08:45:02:880482:debug:l2:lag:1:726494347265: EVENT_ID_TRUNK_MEMBER_DELETE Module: L2 function
callname: sw_cu_rspan_trunk_callback trunk id: 2
Jul 06 08:45:02:880549:debug:l2:lag:1:726494347265: EVENT_ID_TRUNK_MEMBER_DELETE Module: L2 function
callname: flexlink_trunk_member_add_delete_callback trunk id: 2
Jul 06 08:45:02:888214:debug:l2:lag:1:726494347265: cu_lag_create_trunk(lag=test1,lag_id=2,undep)
(T=7364731,task=l2config) >>
Jul 06 08:45:02:888328:debug:l2:lag:1:726494347265:
```

```
>>> lagctrl_lag_deploy(lag=2,un-deploy,dynamic)(T=7364731,task=l2config) (I) pri=lg2
(port_group_id=2,port_trunk_id=2,config_trunk_id=3073,trunk_state=1,trunk_primary=lg2), #_port=1, Port
List:
Jul 06 08:45:02:888397:debug:l2:lag:1:726494347265: (lg2)
Jul 06 08:45:02:888459:debug:l2:lag:1:726494347265:
Jul 06 08:45:02:888524:debug:l2:lag:1:726494347265: lagctrl_lag_deploy(lag=2,un-deploy,dynamic)
(T=7364731,task=l2config) (I) -> sw_trunk_predelete_event()
Jul 06 08:45:02:889573:debug:l2:lag:1:726494347265: EVENT_ID_TRUNK_PREDELETE LAG id: 2
Jul 06 08:45:02:889670:debug:l2:lag:1:726494347265: EVENT_ID_TRUNK_PREDELETE Module: L2 function
callname: sw_cu_rstp_trunk_update_callback trunk id: 2
Jul 06 08:45:02:889954:debug:l2:lag:1:726494347265: EVENT_ID_TRUNK_PREDELETE Module: L2 function
callname: sw_cu_spanningTree_trunk_update_callback trunk id: 2
Jul 06 08:45:02:890035:debug:l2:lag:1:726494347265: EVENT_ID_TRUNK_PREDELETE Module: L2 function
callname: sw_cu_vsrp_trunk_update_callback trunk id: 2
Jul 06 08:45:02:890101:debug:l2:lag:1:726494347265: EVENT_ID_TRUNK_PREDELETE Module: L2 function
callname: sw_cu_mrp_trunk_update_callback trunk id: 2
Jul 06 08:45:02:890170:debug:l2:lag:1:726494347265: EVENT_ID_TRUNK_PREDELETE Module: L2 function
callname: sw_cu_vlan_vport_trunk_update_callback trunk id: 2
Jul 06 08:45:02:890342:debug:l2:lag:1:726494347265: EVENT_ID_TRUNK_PREDELETE Module: L2 function
callname: sw_cu_protected_port_trunk_callback trunk id: 2
Jul 06 08:45:02:890420:debug:l2:lag:1:726494347265: EVENT_ID_TRUNK_PREDELETE Module: L2 function
callname: sw_cu_rspan_trunk_callback trunk id: 2
Jul 06 08:45:02:890496:debug:l2:lag:1:726494347265: lagctrl_lag_deploy(lag=2,un-deploy,dynamic)
(T=7364731,task=l2config) (I) done, pri=lg2
(port_group_id=2,port_trunk_id=2,config_trunk_id=3073,trunk_state=1,trunk_primary=lg2)
Jul 06 08:45:02:892130:debug:l2:lag:1:726494347265: EVENT_ID_TRUNK_Delete Module: L2 function callname:
sw_cu_vlan_vport_trunk_update_callback trunk id: 2
Jul 06 08:45:02:892597:debug:l2:lag:1:726494347265: EVENT_ID_TRUNK_Delete Module: L2 function callname:
sw_cu_vsrp_trunk_update_callback trunk id: 2
Jul 06 08:45:02:892683:debug:l2:lag:1:726494347265: EVENT_ID_TRUNK_Delete Module: L2 function callname:
sw_cu_spanningTree_trunk_update_callback trunk id: 2
Jul 06 08:45:02:892871:debug:l2:lag:1:726494347265: EVENT_ID_TRUNK_Delete Module: L2 function callname:
sw_cu_rstp_trunk_update_callback trunk id: 2
Jul 06 08:45:02:893127:debug:l2:lag:1:726494347265: EVENT_ID_TRUNK_Delete Module: L2 function callname:
sw_cu_mrp_trunk_update_callback trunk id: 2
Jul 06 08:45:02:893201:debug:l2:lag:1:726494347265: EVENT_ID_TRUNK_Delete Module: L2 function callname:
sw_cu_mstp_trunk_update_callback trunk id: 2
Jul 06 08:45:02:893872:debug:l2:lag:1:726494347265: EVENT_ID_TRUNK_Delete Module: L2 function callname:
sw_cu_mac_trunk_update_callback trunk id: 2
Jul 06 08:45:02:893961:debug:l2:lag:1:726494347265: EVENT_ID_TRUNK_Delete Module: L2 function callname:
sw_cu_pms_trunk_update_callback trunk id: 2
Jul 06 08:45:02:894045:debug:l2:lag:1:726494347265: EVENT_ID_TRUNK_Delete Module: L4 function callname:
sw_cu_bum_limit_trunk_update_callback trunk id: 2
Jul 06 08:45:02:894114:debug:l2:lag:1:726494347265: EVENT_ID_TRUNK_Delete Module: L3 function callname:
L3_trunk_event_callback trunk id: 2
Jul 06 08:45:02:894263:debug:l2:lag:1:726494347265: EVENT_ID_TRUNK_Delete Module: L4 function callname:
sw_cu_dhcpsnoop_trunk_update_callback trunk id: 2
Jul 06 08:45:02:894883:debug:l2:lag:1:726494347265: EVENT_ID_TRUNK_Delete Module: L4 function callname:
sw_cu_dhcpv6snoop_trunk_update_callback trunk id: 2
Jul 06 08:45:02:895205:debug:l2:lag:1:726494347265: EVENT_ID_TRUNK_Delete Module: L4 function callname:
sw_cu_arp_inspec_trunk_update_callback trunk id: 2
Jul 06 08:45:02:895294:debug:l2:lag:1:726494347265: EVENT_ID_TRUNK_Delete Module: L4 function callname:
sw_cu_sourceguard_validation_callback trunk id: 2
Jul 06 08:45:02:895619:debug:l2:lag:1:726494347265: EVENT_ID_TRUNK_Delete Module: L4 function callname:
sw_cu_webAuth_trunk_update_callback trunk id: 2
Jul 06 08:45:02:895694:debug:l2:lag:1:726494347265: EVENT_ID_TRUNK_Delete Module: L4 function callname:
sw_cu_raguard_trunk_update_callback trunk id: 2
Jul 06 08:45:02:895760:debug:l2:lag:1:726494347265: EVENT_ID_TRUNK_Delete Module: L4 function callname:
sw_cu_ratelimit_trunk_update_callback trunk id: 2
Jul 06 08:45:02:895826:debug:l2:lag:1:726494347265: EVENT_ID_TRUNK_Delete Module: L4 function callname:
sw_cu_sflow_trunk_update_callback trunk id: 2
Jul 06 08:45:02:896324:debug:l2:lag:1:726494347265: EVENT_ID_TRUNK_Delete Module: L2 function callname:
sw_cu_static_mac_trunk_update_callback trunk id: 2
Jul 06 08:45:02:896405:debug:l2:lag:1:726494347265: EVENT_ID_TRUNK_Delete Module: L2 function callname:
sw_cu_igmp_snoop_trunk_deploy_callback trunk id: 2
Jul 06 08:45:02:896473:debug:l2:lag:1:726494347265: EVENT_ID_TRUNK_Delete Module: L2 function callname:
sw_cu_gvrp_trunk_event_callback trunk id: 2
Jul 06 08:45:02:896538:debug:l2:lag:1:726494347265: EVENT_ID_TRUNK_Delete Module: L2 function callname:
sw_cu_protected_port_trunk_callback trunk id: 2
Jul 06 08:45:02:896604:debug:l2:lag:1:726494347265: EVENT_ID_TRUNK_Delete Module: L2 function callname:
sw_cu_rspan_trunk_callback trunk id: 2
Jul 06 08:45:02:896677:debug:l2:lag:1:726494347265: cu_lag_create_trunk(lag_id=2) undeploy done, HW
```

```
Trunk Id 0
Jul 06 08:45:02:896741:debug:l2:lag:1:726494347265: cu_lag_create_trunk(lag_id=2)(T=7364731) undeploy
done&
Jul 06 08:45:02:897228:debug:l2:lag:1:726494347265: sw_cu_lag_generic_port_add_validation(lag=2,mask=
lg2,remove,static,force_delete=1)(T=7364731,task=l2config) (I)
Jul 06 08:45:02:897418:debug:l2:lag:1:726494347265: sw_cu_lag_generic_port_add_validation(lag=2,mask=
lg2,remove,static,force_delete=1)(T=7364731,task=l2config) find cb@0x97825af8 (lag_primary_port=lg2,
lag_num_ports=1, deployed=0)
Jul 06 08:45:02:892022:err:l2:lag:1:726494347265: EVENT_ID_TRUNK_DELETE LAG id: 2
```

debug web events

Enables web events debugging.

Syntax

debug web events

no debug web events

Modes

Privileged EXEC mode

Examples

```
device# debug web events
web: Events debugging is on
```

debug webauth timers

Enables debugging of web authentication timers.

Syntax

debug webauth timers

no debug webauth timers

Modes

Privileged EXEC mode

Examples

```
device# debug webauth timers
webauth: Timers debugging is on
```

debug webauth events

Enables debugging of web authentication events.

Syntax

debug webauth events

no debug webauth events

Modes

Privileged EXEC mode

Usage Guidelines

Examples

```
device# debug webauth events
webauth: Events debugging is on
```

show debug

Displays all the enabled debug functions.

Syntax

show debug

Modes

User EXEC mode

Examples

The following example shows that ACL log and IPv6 debugging are enabled, with the console as the output destination.

```
device# show debug
Debug message destination: Console
Enabling ACL log
IPv6 Routing:
ipv6: icmp debugging is on
```

show log debug management restconf all

Displays LogMgr debug logs for RESTCONF..

Syntax

show log debug management restconf all all

Parameters

all

Specifies all units..

Modes

User EXEC mode

Examples

The following example shows LogMgr debug logs for RESTCONF.

```
device> show log debug management restconf all all
...

Apr 06 08:05:00:054372:err:management:restconf:1:4294968064:
Config Sync :
oper : merge,
xpath : /openconfig-acl:acl,
xvalue : <acl><interfaces><interface><id></id><config><id></id></config><interface-
ref><config><interface></interface></config></interface-ref><ingress-acl-sets><ingress-acl-set><set-
name>mac1</set-name><type>ACL_L2</type><config><set-name>mac1</set-name><type>ACL_L2</type></config></
ingress-acl-set></ingress-acl-sets></interface></interfaces></acl>
Apr 06 08:05:00:052220:err:management:restconf:1:4294968064:
Edit failed with error: 310 'required value instance not found'

Apr 06 08:05:00:052176:err:management:restconf:1:4294968064:
Config Sync :
oper : merge,
xpath : /openconfig-acl:acl,
xvalue : <acl><interfaces><interface><id></id><config><id></id></config><interface-
ref><config><interface></interface></config></interface-ref><ingress-acl-sets><ingress-acl-set><set-
name>scale23</set-name><type>ACL_IPV6</type><config><set-name>scale23</set-name><type>ACL_IPV6</type></
config></ingress-acl-set></ingress-acl-sets></interface></interfaces></acl>
Apr 06 08:05:00:049967:err:management:restconf:1:4294968064:
Edit failed with error: 310 'required value instance not found'

Apr 06 08:05:00:049922:err:management:restconf:1:4294968064:
Config Sync :
oper : merge,
xpath : /openconfig-acl:acl,
xvalue : <acl><interfaces><interface><id></id><config><id></id></config><interface-
ref><config><interface></interface></config></interface-ref><ingress-acl-sets><ingress-acl-set><set-
name>tcp1</set-name><type>ACL_IPV4</type><config><set-name>tcp1</set-name><type>ACL_IPV4</type></
config></ingress-acl-set></ingress-acl-sets></interface></interfaces></acl>
Apr 06 08:05:00:048079:err:management:restconf:1:4294968064:
Edit failed with error: 310 'required value instance not found'
```

History

Release version	Command history
09.0.00	This command was introduced.

show tech-support

Displays the output of several show commands at once. The output from this command varies depending on the router configuration.

Syntax

show tech-support [**acl** | **cluster** | **cpu** | **license** | **l2** | **l3** | **memory** | **multicast** | **packet-loss** | **stack**]

no show tech-support [**acl** | **cluster** | **cpu** | **license** | **l2** | **l3** | **memory** | **multicast** | **packet-loss** | **stack**]

Parameters

acl
: Generates system and debugging information specific to ACL configurations and counters.

cluster
: Generates system and debugging information specific to cluster configurations.

cpu
: Generates CPU-related information.

license
: Generates license-related information.

l2
: Generates system and debugging information specific to Layer 2 configurations.

l3
: Generates system and debugging information specific to Layer 3 configurations.

memory
: Generates memory-related information of the device.

multicast
: Generates system and debugging information specific to Layer 2 and Layer 3 multicast configurations.

packet-loss
: Generates packet statistics-related debugging information.

stack
: Generates system and debugging information specific to stacking configurations.

Modes

Privileged EXEC mode

Usage Guidelines

The **show tech-support** command is useful when collecting a large amount of information about the RUCKUS FastIron devices for troubleshooting purposes. The output of this command can be used by technical support representatives when a problem is reported.

The default output of the **show tech-support** command includes the following information:

- Header for all the show commands

- Running configuration
- Image version
- Port status
- Port counters
- Static and dynamic log buffers
- dm statistics
- Boot, monitor, and system
- Registers information
- Possible stack trace
- Active stack (if applicable)
- Last packet (Application Data)
- Possible data structure
- MCT cluster details
- License details
- Stacking information
- Dot1x
- DHCP snooping
- SSH
- System Health

The format of the **show tech-support** command output is modified to include a header and a footer by default for each of the **show tech-support** commands which gets called from the CLI to automatically parse the output for easier lookup.

The header contains the following information:

- BEGIN - Indicates a sub-command that will begin execution next.
- CONTEXT - Indicates in which context and session the sub-commands are executed.

  If more than one telnet session and console session for a device is accessed, then **show tech-support** command displays CONTEXT as Console#0 for console session and telnet#1 and telnet#2 and so on for telnet sessions.
- TIME STAMP - A time stamp, with millisecond granularity, helps to determine the time difference between separate runs of the same command.

  If NTP or local clock is not set in a device, then header displays Epoch time in the TIMESTAMP field. Epoch time is a universal time which starts from Jan 1, 1970. Therefore, for Linux platforms, the Epoch time format is 00:00:00.000 GMT+00 Thu Jan 01 1970. For non-Linux platforms, the Epoch time format is Jan 01 00:00:00.000.
- HW/SW INFO - Indicates the hardware and software version information of the device.

The footer contains the following information:

- TIME STAMP - A time stamp, with millisecond granularity, helps to determine the time difference between separate runs of the same command.

  If NTP or local clock is not set in a device, then header displays Epoch time in the TIMESTAMP field. Epoch time is a universal time which starts from Jan 1, 1970. Therefore, for Linux platforms, the Epoch time format is 00:00:00.000 GMT+00 Thu Jan 01 1970. For non-Linux platforms, the Epoch time format is Jan 01 00:00:00.000.
- END - Indicates the sub-command which has completed execution.
- TIME TAKEN - Indicates the total time taken in nanoseconds for the command execution.

Examples

The following example shows the truncated output of the **show tech-support** command.

```
device# show tech-support
================================================================================
BEGIN : show tech-support
CONTEXT : TELNET#1 : show tech-support
TIME STAMP : 01:47:54.763 Pacific Wed Dec 09 2015
HW/SW INFO : ICX7250-24/SPR08040b1
================================================================================
================================================================================
BEGIN : show running-config
CONTEXT : TELNET#1 : CONFIG
TIME STAMP : 01:47:54.763 Pacific Wed Dec 09 2015
HW/SW INFO : ICX7250-24/SPR08040b1
================================================================================
Current configuration:
!
ver 08.0.40b1T213
!
stack unit 1
  module 1 icx7250-24-port-management-module
  module 2 icx7250-sfp-plus-8port-80g-module
  priority 200
  default-ports 1/2/5 1/2/7
  stack-trunk 1/2/5 to 1/2/6
  stack-trunk 1/2/7 to 1/2/8
  stack-port 1/2/5 1/2/7
...
================================================================================
TIME STAMP : 01:47:55.061 Pacific Wed Dec 09 2015
END : show running-config
TIME TAKEN : 148914220 ticks (148914220 nsec)
================================================================================
================================================================================
BEGIN : show version
CONTEXT : TELNET#1 : HW INFO
TIME STAMP : 01:47:55.061 Pacific Wed Dec 09 2015
HW/SW INFO : ICX7250-24/SPR08040b1
================================================================================
  Copyright (c) 1996-2015 RUCKUS Wireless, Inc. All rights reserved.
    UNIT 1: compiled on Dec  3 2015 at 16:12:49 labeled as SPR08040b1
      (22418510 bytes) from Primary spr08040b1.bin
        SW: Version 08.0.40b1T213
      Compressed Boot-Monitor Image size = 786944, Version:10.1.06T215 (spz10106b002)
       Compiled on Thu Sep 10 06:30:24 2015
    UNIT 2: compiled on Dec  3 2015 at 16:12:49 labeled as SPR08040b1
      (22418510 bytes) from Primary spr08040b1.bin
        SW: Version 08.0.40b1T213
      Compressed Boot-Monitor Image size = 786944, Version:10.1.06T215 (spz10106b002)

  HW: Stackable ICX7250-24
==============================================================================
UNIT 1: SL 1: ICX7250-24 24-port Management Module
      Serial  #:DUN3245K00N
      License: ICX7250_L3_SOFT_PACKAGE   (LID: fwpIHJKmFFp)
      License Compliance: ICX7250-PREM-LIC-SW is Non-Compliant
      P-ASIC  0: type B344, rev 01  Chip BCM56344_A0
==============================================================================
UNIT 1: SL 2: ICX7250-SFP-Plus 8-port 80G Module
==============================================================================
UNIT 2: SL 1: ICX7250-24 24-port Management Module
      Serial  #:DUN3245K01W
      License: ICX7250_L3_SOFT_PACKAGE   (LID: fwpIHJKmFGy)
      License Compliance: ICX7250-PREM-LIC-SW is Non-Compliant
==============================================================================
UNIT 2: SL 2: ICX7250-SFP-Plus 8-port 80G Module
==============================================================================
 1000 MHz ARM processor ARMv7 88 MHz bus
 8192 KB boot flash memory
```

```
 2048 MB code flash memory
 2048 MB DRAM
STACKID 1  system uptime is 1 day(s) 10 hour(s) 41 minute(s) 57 second(s)
STACKID 2  system uptime is 1 day(s) 10 hour(s) 41 minute(s) 53 second(s)
The system started at 15:14:06 Pacific Mon Dec 07 2015

 The system : started=warm start   reloaded=by "reload"
My stack unit ID = 1, bootup role = active
*** NOT FOR PRODUCTION ***

==============================================================================
TIME STAMP : 01:47:55.065 Pacific Wed Dec 09 2015
END : show version
TIME TAKEN : 2038801 ticks (2038801 nsec)
==============================================================================
==============================================================================
BEGIN : show interfaces brief
CONTEXT : TELNET#1 : PORT STATUS
TIME STAMP : 01:47:55.938 Pacific Wed Dec 09 2015
HW/SW INFO : ICX7250-24/SPR08040b1
==============================================================================

Interface Information for all the ports :
Port       Link    State   Dupl Speed Trunk Tag Pvid Pri MAC             Name
1/1/1      Down    None    None None  None  No  4010 0   cc4e.24b4.88b0
1/1/2      Disable None    None None  None  No  4010 0   cc4e.24b4.88b1
1/1/3      Up      Forward Full 1G    None  Yes N/A  0   cc4e.24b4.88b2
1/1/4      Disable None    None None  None  No  4010 0   cc4e.24b4.88b3
1/1/5      Disable None    None None  None  No  4010 0   cc4e.24b4.88b4
==============================================================================
TIME STAMP : 01:47:55.962 Pacific Wed Dec 09 2015
END : show interfaces brief
TIME TAKEN : 12071127 ticks (12071127 nsec)
==============================================================================
==============================================================================
BEGIN : show statistics ethernet
CONTEXT : TELNET#1 : PACKET COUNTERS
TIME STAMP : 01:47:55.986 Pacific Wed Dec 09 2015
HW/SW INFO : ICX7250-24/SPR08040b1
==============================================================================
Statistics Information for each port :
Port       Link    State   Dupl Speed Trunk Tag Pvid Pri MAC             Name
1/1/3      Up      Forward Full 1G    None  Yes N/A  0   cc4e.24b4.88b2

 Port 1/1/3 Counters:
         InOctets          52710812588           OutOctets          31386393616
           InPkts            623806726             OutPkts            365249013
  InBroadcastPkts                    0    OutBroadcastPkts                    0
  InMulticastPkts            623211850    OutMulticastPkts            365249013
    InUnicastPkts                    0      OutUnicastPkts                    0
        InBadPkts                    0
      InFragments                    0
       InDiscards                    0          OutErrors                    0
              CRC                    0         Collisions                    0
          InErrors                   0      LateCollisions                   0
      InGiantPkts                    0
      InShortPkts                    0
         InJabber                    0         OutDiscards           3242924084
   InFlowCtrlPkts                    0     OutFlowCtrlPkts                    0
     InBitsPerSec                 2872       OutBitsPerSec                  160
     InPktsPerSec                    5       OutPktsPerSec                    0
    InUtilization                0.00%      OutUtilization                 0.00%
==============================================================================
TIME STAMP : 01:47:56.413 Pacific Wed Dec 09 2015
END : show statistics ethernet
TIME TAKEN : 213778306 ticks (213778306 nsec)
==============================================================================
==============================================================================
BEGIN : show logging
CONTEXT : TELNET#1 : STATIC/DYNAMIC LOG
TIME STAMP : 01:47:55.089 Pacific Wed Dec 09 2015
HW/SW INFO : ICX7250-24/SPR08040b1
```

```
================================================================================
Syslog logging: enabled ( 0 messages dropped, 1 flushes, 540 overruns)
    Buffer logging: level ACDMEINW, 1000 messages logged
    level code: A=alert C=critical D=debugging M=emergency E=error
                I=informational N=notification W=warning

Static Log Buffer:
Dec  7 23:06:21:I:System: Stack unit 1   PS 1, Internal Power supply  is up
Dec  2 18:27:47:A:System: Stack unit 1   PS 2, Standby Power supply  is down
Dec  7 15:06:44:I:System: Stack unit 2   PS 1, Internal Power supply  is up
Dec  7 15:06:44:A:System: Stack unit 2   PS 2, Standby Power supply  is down

Dynamic Log Buffer (1000 lines):
Dec  9 01:46:02:W:IGMP: [ Port 1/2/4 ] v1570. Query version mismatch. Received query version 2 from
157.0.0.151; Port version 3.
Dec  9 01:43:55:W:IGMP: [ Port 1/2/4 ] v1570. Query version mismatch. Received query version 2 from
157.0.0.151; Port version 3.
...
(output truncated)
```

You can disable the display of the header and footer for **show tech-support** commands by using the **supportsave info disable** command. If disabled, you can enable the display of the header and footer for **show tech-support** commands by using the **supportsave info enable** command.

The following sample output of the **show tech-support license** command shows the header and footer displayed.

```
device# supportsave info enable
device# show tech-support license
================================================================================
BEGIN : show license
CONTEXT : CONSOLE#0 : LICENSE
TIME STAMP : 01:30:20.093 Pacific Wed Dec 09 2015
HW/SW INFO : ICX7650-48C/SWR08040q078
================================================================================
License Information
===================
License record empty
================================================================================
TIME STAMP : 01:30:20.093 Pacific Wed Dec 09 2015
END : show license
TIME TAKEN : 1459 ticks (61278 nsec)
================================================================================
```

supportsave

Use the supportsave utility for collecting logs from the driver, internal libraries, and firmware. The collected logs are shared with the technical support personnel for investigating issues seen on the device.

Syntax

supportsave{**all**|**custom**|**infra**|**l2**|**l3**| **os**|**platform** |**system**}{ *tftp_server_ IPtftp_ server's_ relative_ path_name*[*user_tag*]|**display**| **unit-id***unit-number*}

supportsavecore{ *tftp_server_ IPtftp_ server's_ relative_ path_name*[*user_tag*]| **unit-id***unit-number*}

supportsavecancel

Parameters

all
Collects all supportsave related log files.

core
Collects core logs from all devices.

custom
Executes all commands present in the default and custom commands list and sends the output to the specified TFTP server address.

infra
Collects stacking related information.

l2
Collects Layer 2 related information.

l3
Collects Layer 3 related information.

os
Collects operating system (OS) related information.

platform
Collects platform related information.

system
Collects all general commands information.

tftp_server_ IP
Specifies the IP address of the TFTP server.

tftp_ server's_ relative_ path_name
Specifies the file path name of TFTP server relative to TFTP server's default directory to dump supportsave logs. To specify the default directory itself, use '/'.

user_tag
Specifies the user tag to be added in the supportsave collected file name. Maximum of 10 characters are allowed.

display
Displays the supportsave information (except the non-textual output like core files) in the console window.

unit-id*unit-number*

Collects data from a specific stack unit and the active unit and sends to the TFTP server. If the specified unit-id and the active unit are same, only the active unit data is collected.

cancel

Cancels supportsave.

Modes

Privileged EXEC mode

Usage Guidelines

The **supportsave** command has the following advantages over the **show tech-support** command:

- Allows you to add additional commands to collect more data.
- Allows to transfer the collected data to an external server such as Trivial File Transfer Protocol (TFTP) server.

TFTP is disabled by default, if FIPS is enabled. Enable TFTP manually for uploading supportsave data. It is a prerequisite to have the TFTP server with a write permission and the server must be accessible from the device.

Use the **fips policy allow tftp-access** command in configuration mode to enable TFTP access while the FIPS is enabled.

Limitations and prerequisites

The following are the limitations and pre-requisites of the supportsave utility:

- Parallel execution of the **supportsave** command from two different sessions is not allowed.
- Parallel execution of the **supportsave** command and the copy tftp/scp commands is not allowed.
- It is recommended that you do not run any CLIs when supportsave operation is in progress.
- Only IPv4 address is supported for the TFTP destination.
- Only up to 32 commands can be added to the custom command list.
- Commands are not expanded while adding a command to the custom commands list.
- Commands added to the custom command list must be privileged EXEC mode MP commands.
- It is recommended that you do not add any filters with the commands.
- The **supportsave** command cannot be added to the custom commands list. Also, the commands which change the CLI mode (exit, quit, end) and commands which restart the router (switchover, reload, reload-yes) must not be added.
- Modifying the custom commands list using the **supportsave add-cmd** or **supportsave del-cmd** commands is not allowed while the supportsave data collection is in progress.
- Time taken by the **supportsave** command depends on the commands present in the list.
- The **supportsave** command does not support collecting crash logs from standby units in a mixed stack.
- The filename length including tag string must be less than 32 characters.
- The **supportsave custom** command denies commands other than show commands, dm commands, and fips show command.
- Few **show** output commands are restricted to display only the first page in the console. This restriction is not applicable for sending the **supportsave** command output through file transfer.
- **Display** option is available for modules like l2, l3, platform, system, infra, custom and all. Non-textual output like core files are not displayed in the console.

Examples

When the **display** option is enabled, some of the **show** commands are restricted to display only the first page. However, the *tftp_server_IP* option, transfers the complete command output to the TFTP server.

> **NOTE**
> RUCKUS recommends to use **all** option to collect complete logs.

To collect all **supportsave** related logs, enter the **supportsave all** command as shown in the following example.

```
device# supportsave all 10.37.2.40 fi/prince/supportsave
Supportsave started. This operation may take several minutes.
Press "A" to abort supportsave operation.
ICX7650-48C
device#.**********************.............................................
.........................................................................
Supportsave completed in 10 seconds
```

supportsave

Collects logs from different modules and uploads the logs into a remote SCP or TFTP server.

Syntax

supportsave [**add_cust_cmd** | **all** | **cancel** | **core** | **del_cust_cmd** | **info** | **infra** | **l2** | **l3** | **list_cust_cmd** | **os** | **platform** | **show** | **system**] [**scp** | **tftp**] [*ipv4-address*] [*server-path*] [*optional-tagname*]

Command Default

The supportsave functionality is not active.

Parameters

add_cust_cmd
Adds the given command at the given index in the custom commands list. If there is already a command present at the index passed, the add operation fails.

all
Sends all information to the remote server.

cancel
Cancels the **supportsave** command operation.

core
Sends core information to the remote server.

del_cust_cmd
Deletes the given command at the given index in the custom commands list. If there is already a command present at the index passed, the add operation will fail.

info
Displays information about the **supportsave** command. If info is enabled, then the collected commands contain additional information like BEGIN, CONTEXT, TIME STAMP, HW/SW INFO, and so on.

infra
Sends infrastructure information to the remote server.

l2
Sends Layer 2 information to the remote server.

l3
Sends Layer 3 information to the remote server.

list_cust_cmd
Displays the custom command list.

os
Sends Operating System information to the remote server.

platform
Sends platform information to the remote server.

show
Displays the amount of percentage executed in the currently executing command process.

system
Sends system information to the remote server.

scp
Specifies the remote SCP server.

tftp
Specifies the remote TFTP server.

ipv4-address
Specifies the IP address for the server.

server-path
Specifies the file pathname for the remote server in ASCII text, up to 128 characters. The default is /.

optional-tagname
Appends a text string to the collected file name on the remote server.

NOTE
Not all parameters are supported for 9.0.0, but will be available in an upcoming patch release.

Modes

Privileged EXEC mode

Usage Guidelines

The collected logs are shared with the technical support personnel for investigating issues seen on the device. Once the **supportsave** command is executed, logs are collected and uploaded into the remote server.

Parallel execution of **supportsave** command from two different sessions is not allowed. Parallel execution of **supportsave** command and the **copy tftp** or **copy scp** commands is not allowed.

When upgrading from FastIron 08.0.95c, it is recommended to use this command to clear the core files before the upgrade.

The **supportsave** command supports IPv4.

A maximum of 32 commands can be added to the custom command list. Commands are not expanded while adding a command to the custom commands list. It is recommended not to add any filters with the commands.

Modifying the custom commands list using **supportsave add_cust_cmd** or **supportsave del_cust_cmd** is not allowed while supportsave data collection is in progress.

Time taken by the **supportsave** commands depends on the commands present in the list and the distance of the remote server.

In order to avoid looping, the **supportsave** command cannot be added to the custom command list. Also, the commands which changes the CLI mode (exit, quit) and commands which restart the router (switchover, reload) are not accepted.

The tag string should be 10 characters or less. If more than 10 characters are entered, an error message, "File tag is longer than max(10) chars" appears.

The **supportsave** command uses the outbound SSH session

SCP or TFTP operations are not allowed while **supportsave** is in progress.

Cancelling the **supportsave** command during the file transfer does not cancel the current file transfer. While cancelling the **supportsave** command, you must wait for the current file transfer to complete before executing the **supportsave** command again.

Supportsave is not High Availability (HA) aware.

The **supportsave** command aborts when the remote server is terminated. Additionally, when the data is collected from the remote unit, and if the corresponding unit is powered off, the **supportsave** command is terminated.

Use the **supportsave cancel** command to stop supportsave opertations.

Examples

The following example collects Layer 3 information.

```
device# supportsave l3 scp 10.xx.xx.104
User name:root
Password:Supportsave started. This operation may take several minutes.
Press "Shift-A" to abort supportsave operation.
asethura#####################################################################
Connecting to remote host......

Sending data (8192 bytes per dot)
.

SCP transfer from device completed

Connection Closed

Supportsave completed in 1 seconds
```

The following example adds a custom command to the fifth position in the index.

```
device# supportsave add_cust_cmd index 5 "host-max-num 512"
```

The following example deletes a custom command from the fifth position in the index.

```
device# supportsave del_cust_cmd index 5
```

The following example sends all information to the default remote TFTP server.

```
DUT# supportsave all tftp 10.176.198.2 / CustTagNam
```

History

Release version	Command history
08.0.61	This command was introduced.
09.0.00	The command syntax was modified.

supportsave add_cust_cmd index

Adds a run-time executable command into the custom module at a particular index of 32 characters long (maximum of 32 characters are allowed) during the run time.

Syntax

supportsave add_cust_cmd index *index_number "cli string"*

Parameters

index_number

Specifies the index in the custom commands list where an additional command need to be added. The valid range is from 1 through 32.

cli string

Specifies the commands to be added to the custom commands list.

Modes

Privileged EXEC mode

Examples

```
device# supportsave add_cust_cmd index 1 "show chassis"
```

supportsave del_cust_cmd all

Deletes all the custom module commands.

Syntax

supportsave del_cust_cmd all

Modes

Privileged EXEC mode

supportsave del_cust_cmd index

Deletes a command from the custom module at a particular index during the run time.

Syntax

supportsave del_cust_cmd index *index_number*

Parameters

index_number

Specifies the index in the custom commands list where an additional command need to be removed. The valid range is from 1 through 32.

Modes

Privileged EXEC mode

Examples

```
device# supportsave add_cust_cmd index 1 "show chassis"
```

supportsave info disable

Disables the header to be displayed for all supportsave and show tech-support commands being executed on CLI.

Syntax

supportsave info disable

Modes

Privileged EXEC mode

supportsave info enable

display BEGIN headers.

Syntax

supportsave info enable

Modes

Privileged EXEC mode

Usage Guidelines

By default, the **supportsave** command outputs display BEGIN headers. and **show tech-support** command outputs display both BEGIN and END headers. The commands under show tech command, which is a part of supportsave output, will have both BEGIN and END headers.

You can disable the header display by using the supportsave info disable command. You can use the supportsave info enable command to re-enable the header display. Even if supportsave info enable command is issued, other show commands do not display the headers.

The header format is modified to include the following information:

- BEGIN - Indicates the command that will begin execution next.
- CONTEXT - Indicates in which session the command is executed.

  If Supportsave command is issued in more than one terminal, the respective terminal information is displayed in the CONTEXT field.
- TIME STAMP - A time stamp, with millisecond granularity, helps to determine time difference between separate runs of the same command. If NTP or local clock is not set in a device, then header displays Epoch time in the TIMESTAMP field. Epoch time is a universal time which starts from Jan 1, 1970. Therefore, for Linux platforms, the Epoch time format is 00:00:00.000 GMT+00 Thu Jan 01 1970. For non-Linux platforms, the Epoch time format is Jan 01 00:00:00.000.
- HW/SW INFO - Indicates the hardware and software version information of the device.

Examples

The following sample output of supportsave all display command shows the modified header format.

```
device# supportsave info enable
device# supportsave all display
Supportsave started. This operation may take several minutes.
Press "A" to abort supportsave operation.
================================================================================
BEGIN : show flash
CONTEXT : TELNET#1 : show flash
TIME STAMP : 01:47:24.377 Pacific Wed Dec 09 2015
HW/SW INFO : ICX7250-24/SPR08040b1
================================================================================
Stack unit 1:
  Compressed Pri Code size = 22418510, Version:08.0.40T213 (spr08040b1.bin)
  Compressed Sec Code size = 24128807, Version:08.0.40qT213 (SPR08040q081.bin)
  Compressed Boot-Monitor Image size = 786944, Version:10.1.06T215
  Code Flash Free Space = 1825419264
Stack unit 2:
  Compressed Pri Code size = 22418510, Version:08.0.40T213 (spr08040b1.bin)
  Compressed Sec Code size = 24128807, Version:08.0.40qT213 (SPR08040q081.bin)
  Compressed Boot-Monitor Image size = 786944, Version:10.1.06T215
  Code Flash Free Space = 1766633472
telnet@ACC-SICA-171#
==========END OF A COMMAND==========
104126_000100
==========show module==========
================================================================================
BEGIN : show module
CONTEXT : TELNET#1 : show module
TIME STAMP : 01:47:24.382 Pacific Wed Dec 09 2015
HW/SW INFO : ICX7250-24/SPR08040b1
================================================================================
       Module                                     Status Ports Starting MAC
U1:M1  ICX7250-24 24-port Management Module         OK     24   cc4e.24b4.88b0
U1:M2  ICX7250-SFP-Plus 8-port 80G Module           OK     8    cc4e.24b4.88b0
U2:M1  ICX7250-24 24-port Management Module         OK     24   cc4e.24b4.81f0
U2:M2  ICX7250-SFP-Plus 8-port 80G Module           OK     8    cc4e.24b4.88b0
telnet@ACC-SICA-171#
==========END OF A COMMAND==========
104126_000100
==========show chassis==========
================================================================================
BEGIN : show chassis
CONTEXT : TELNET#1 : show chassis
TIME STAMP : 01:47:24.384 Pacific Wed Dec 09 2015
HW/SW INFO : ICX7250-24/SPR08040b1
================================================================================
The stack unit 1 chassis info:

Power supply 1 (AC - Regular) present, status ok
Power supply 2 not present

Fan ok, speed (auto): [[1]]<->2

Fan controlled temperature: 84.5 deg-C

Fan speed switching temperature thresholds:
Speed 1: NM<----->98       deg-C
Speed 2:       67<----->105 deg-C (shutdown)

Fan 1 Air Flow Direction:  Front to Back
Slot 1 Current Temperature: 84.5 deg-C (Sensor 1)
Slot 2 Current Temperature: NA
Warning level.......: 100.0 deg-C
Shutdown level......: 105.0 deg-C
Boot Prom MAC : cc4e.24b4.88b0
Management MAC: cc4e.24b4.88b0

The stack unit 2 chassis info:
```

```
Power supply 1 (AC - Regular) present, status ok
Power supply 2 not present

Fan ok, speed (auto): [[1]]<->2

Fan controlled temperature: 81.8 deg-C

Fan speed switching temperature thresholds:
Speed 1: NM<----->98       deg-C
Speed 2:       67<----->105 deg-C (shutdown)

Fan 1 Air Flow Direction:Front to Back
Slot 1 Current Temperature: 82.4 deg-C (Sensor 1)
Slot 2 Current Temperature: NA
Warning level.......: 100.0 deg-C
Shutdown level......: 105.0 deg-C
Boot Prom MAC : cc4e.24b4.81f0

==========END OF A COMMAND==========
104126_000100
==========show files==========
================================================================================
BEGIN : show files
CONTEXT : TELNET#1 : show files
TIME STAMP : 01:47:24.429 Pacific Wed Dec 09 2015
HW/SW INFO : ICX7250-24/SPR08040b1
================================================================================
Type       Size   Name
----------------------
F        22418510 primary
F        24128807 secondary
F             256 primary.sig
F            7138 script.log_000347_000000_SPR08040q017_cc4e.24b4.88b0.txt
F           13805 startup-config.backup
F             256 bootrom.sig
F             393 stacking.boot
F           13297 startup-config.old
F           13297 startup-config.txt
F              94 dhcpsnoop_data
F            1576 $$ssh8rsahost.key
F             256 secondary.sig

46597685 bytes 12 File(s) in FI root

     1825419264 bytes free in FI root

telnet@ACC-SICA-171#
==========END OF A COMMAND==========
104126_000100
==========show memory==========
================================================================================
BEGIN : show memory
CONTEXT : TELNET#1 : show memory
TIME STAMP : 01:47:24.444 Pacific Wed Dec 09 2015
HW/SW INFO : ICX7250-24/SPR08040b1
================================================================================
Stack unit 1:
Total DRAM: 2147483648 bytes
  Dynamic memory: 2095140864 bytes total, 1530638336 bytes free, 26% used
Stack unit 2:
Total DRAM: 2147483648 bytes
  Dynamic memory: 2095140864 bytes total, 1547481088 bytes free, 26% used
telnet@ACC-SICA-171#
==========END OF A COMMAND==========
104126_000100
==========show media==========
..
(output truncated)
```

supportsave list_cust_cmd

Displays all commands present in the custom commands list.

Syntax

supportsave list_cust_cmd

Modes

Privileged EXEC mode

supportsave show

Collects and displays debugging information related to stacking configurations.

Syntax

supportsave show [**show** | **cancel**]

Parameters

show

Displays the progress of the log collection that has been executed on a terminal other than the one on which the **supportsave** command is executed.

cancel

Cancels the current log collection that has been executed on a terminal other than the one on which the **supportsave** command is executed.

Modes

Privileged EXEC mode

Examples

The following is the sample output from the **supportsave show** command.

```
device# supportsave show
Supportsave is executing commands: 19% completed
device# supportsave show
Supportsave is executing commands: 34% completed
device# supportsave show
Supportsave is executing commands: 60% completed
device# supportsave show.
Supportsave is executing commands: 100% completed
Supportsave is transporting files...
```

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