

**Part No. 060854-10, Rev. A**  
**January 2023**

# **OmniSwitch 2260, 2360**

## **AOS Release 5.2R2**

### **CLI Reference Guide**

Alcatel-Lucent   
Enterprise

[www.al-enterprise.com](http://www.al-enterprise.com)

**This user guide documents AOS Release 5.2R2  
The functionality described in this guide is subject to change without notice.**

The Alcatel-Lucent name and logo are trademarks of Nokia used under license by ALE. To view other trademarks used by affiliated companies of ALE Holding, visit: [www.al-enterprise.com/en/legal/trademarks-copyright](http://www.al-enterprise.com/en/legal/trademarks-copyright). All other trademarks are the property of their respective owners. The information presented is subject to change without notice. Neither ALE Holding nor any of its affiliates assumes any responsibility for inaccuracies contained herein. © Copyright 2023 ALE International, ALE USA Inc. All rights reserved in all countries..



26801 West Agoura Road  
Calabasas, CA 91301  
(818) 880-3500 FAX (818) 880-3505

**Service & Support Contact Information**

North America: 800-995-2696  
Latin America : 877-919-9526  
EMEA : +800 00200100 (Toll Free) or +1(650)385-2193  
Asia Pacific: +65 6240 8484  
Web: [myportal.al-enterprise.com](http://myportal.al-enterprise.com)  
Email: [ebg\\_global\\_supportcenter@al-enterprise.com](mailto:ebg_global_supportcenter@al-enterprise.com)

# Contents

	<b>About This Guide</b> .....	xxiv
	Supported Platforms .....	xxiv
	Who Should Read this Manual? .....	xxiv
	When Should I Read this Manual? .....	xxiv
	What is in this Manual? .....	xxv
	What is Not in this Manual? .....	xxv
	How is the Information Organized? .....	xxv
	Text Conventions .....	xxvi
	Related Documentation .....	xxvii
	Technical Support .....	xxvii
<b>Chapter 1</b>	<b>Ethernet Port Commands</b> .....	1-1
	interfaces .....	1-3
	interfaces speed .....	1-5
	interfaces duplex .....	1-7
	interfaces alias .....	1-9
	clear interfaces .....	1-10
	interfaces max-frame-size .....	1-11
	interfaces flood-limit .....	1-12
	interfaces flood-limit action .....	1-14
	interfaces ingress-bandwidth .....	1-16
	interfaces pause .....	1-17
	interfaces link-trap .....	1-19
	interfaces ddm .....	1-20
	interfaces ddm-trap .....	1-21
	interfaces eee .....	1-22
	clear violation .....	1-23
	violation recovery-maximum .....	1-25
	violation recovery-time .....	1-27
	violation recovery-trap .....	1-29
	show interfaces .....	1-30
	show interfaces alias .....	1-34
	show interfaces status .....	1-36
	show interfaces capability .....	1-38
	show interfaces accounting .....	1-40
	show interfaces counters .....	1-42
	show interfaces counters errors .....	1-44
	show interfaces flood-rate .....	1-46
	show interfaces traffic .....	1-48
	show interfaces ingress-rate-limit .....	1-50

	show interfaces ddm .....	1-52
	show transceivers .....	1-55
	show violation .....	1-58
	show violation-recovery-configuration .....	1-60
	interfaces tdr .....	1-62
	show interfaces tdr-statistics .....	1-64
<b>Chapter 2</b>	<b>Power over Ethernet (PoE) Commands .....</b>	<b>2-1</b>
	lanpower service .....	2-3
	lanpower port admin-state .....	2-4
	lanpower type .....	2-5
	lanpower power .....	2-6
	lanpower power .....	2-6
	lanpower maxpower .....	2-8
	lanpower priority .....	2-10
	lanpower priority-disconnect .....	2-12
	lanpower power-rule .....	2-14
	lanpower power-policy .....	2-17
	lanpower class-detection .....	2-19
	lanpower capacitor-detection .....	2-20
	lanpower usage-threshold .....	2-21
	lanpower update-from .....	2-22
	lanpower fpoe .....	2-23
	lanpower ppoe .....	2-25
	show lanpower slot .....	2-26
	show lanpower power-rule .....	2-29
	show lanpower power-policy .....	2-31
	show lanpower class-detection .....	2-33
	show lanpower capacitor-detection .....	2-34
	show lanpower priority-disconnect .....	2-35
	show lanpower usage-threshold .....	2-36
	show lanpower update-from .....	2-37
<b>Chapter 3</b>	<b>UDLD Commands .....</b>	<b>3-1</b>
	udld .....	3-2
	udld port .....	3-3
	udld mode .....	3-5
	udld probe-timer .....	3-7
	udld echo-wait-timer .....	3-9
	clear udld statistics port .....	3-11
	show udld configuration .....	3-12
	show udld configuration port .....	3-14
	show udld statistics port .....	3-16
	show udld neighbor port .....	3-18
	show udld status port .....	3-20
<b>Chapter 4</b>	<b>Source Learning Commands .....</b>	<b>4-1</b>
	mac-learning .....	4-2
	mac-learning flush .....	4-4
	mac-learning flush domain all .....	4-6
	mac-learning flush domain vlan .....	4-8
	mac-learning static mac-address .....	4-10

	mac-learning domain vlan static mac-address .....	4-12
	mac-learning multicast mac-address .....	4-14
	mac-learning aging-time .....	4-16
	show mac-learning .....	4-18
	show mac-learning domain all .....	4-21
	show mac-learning domain vlan .....	4-23
	show mac-learning aging-time .....	4-27
	show mac-learning learning-state .....	4-28
<b>Chapter 5</b>	<b>VLAN Management Commands .....</b>	<b>5-1</b>
	vlan .....	5-2
	vlan members untagged .....	5-4
	vlan members tagged .....	5-6
	vlan mtu-ip .....	5-8
	show vlan .....	5-10
	show vlan members .....	5-13
<b>Chapter 6</b>	<b>Loopback Detection Commands .....</b>	<b>6-1</b>
	loopback-detection .....	6-2
	loopback-detection port .....	6-4
	loopback-detection service-access .....	6-6
	loopback-detection transmission-timer .....	6-8
	loopback-detection autorecovery-timer .....	6-9
	show loopback-detection .....	6-10
	show loopback-detection port .....	6-12
	show loopback-detection linkagg .....	6-15
	show loopback-detection statistics port .....	6-17
	clear loopback-detection statistics port .....	6-19
<b>Chapter 7</b>	<b>Distributed Spanning Tree Commands .....</b>	<b>7-1</b>
	spantree mode .....	7-3
	spantree protocol .....	7-5
	spantree vlan admin-state .....	7-7
	spantree mst region name .....	7-8
	spantree mst region revision-level .....	7-10
	spantree mst region max-hops .....	7-11
	spantree msti .....	7-13
	spantree msti vlan .....	7-15
	spantree priority .....	7-17
	spantree hello-time .....	7-20
	spantree max-age .....	7-22
	spantree forward-delay .....	7-24
	spantree bpdu-switching .....	7-26
	spantree path-cost-mode .....	7-28
	spantree auto-vlan-containment .....	7-30
	spantree cist .....	7-32
	spantree vlan .....	7-34
	spantree cist path-cost .....	7-36
	spantree msti path-cost .....	7-38
	spantree vlan path-cost .....	7-40
	spantree cist mode .....	7-42
	spantree vlan mode .....	7-44

spantree cist connection .....	7-46
spantree vlan connection .....	7-48
spantree cist admin-edge .....	7-50
spantree vlan admin-edge .....	7-52
spantree cist auto-edge .....	7-54
spantree vlan auto-edge .....	7-56
spantree cist restricted-role .....	7-58
spantree vlan restricted-role .....	7-60
spantree cist restricted-tcn .....	7-62
spantree vlan restricted-tcn .....	7-64
spantree cist txholdcount .....	7-66
spantree vlan txholdcount .....	7-67
show spantree .....	7-68
show spantree cist .....	7-71
show spantree msti .....	7-75
show spantree vlan .....	7-80
show spantree ports .....	7-84
show spantree cist ports .....	7-88
show spantree msti ports .....	7-92
show spantree vlan ports .....	7-97
show spantree mode .....	7-104
show spantree mst .....	7-106
show spantree msti vlan-map .....	7-108
show spantree cist vlan-map .....	7-110
show spantree map-msti .....	7-112

<b>Chapter 8</b>	<b>Link Aggregation Commands .....</b>	<b>8-1</b>
	linkagg static agg size .....	8-3
	linkagg static agg name .....	8-5
	linkagg static agg wait-to-restore-time .....	8-7
	linkagg static agg admin-state .....	8-9
	linkagg static port agg .....	8-10
	linkagg lacp agg size .....	8-12
	linkagg lacp agg name .....	8-15
	linkagg lacp agg wait-to-restore-time .....	8-16
	linkagg lacp agg admin-state .....	8-18
	linkagg lacp agg actor admin-key .....	8-20
	linkagg lacp agg actor system-priority .....	8-21
	linkagg lacp agg actor system-id .....	8-23
	linkagg lacp agg partner system-id .....	8-25
	linkagg lacp agg partner system-priority .....	8-27
	linkagg lacp agg partner admin-key .....	8-29
	linkagg lacp port actor admin-key .....	8-31
	linkagg lacp port actor admin-state .....	8-34
	linkagg lacp port actor system-id .....	8-36
	linkagg lacp port actor system-priority .....	8-38
	linkagg lacp agg partner admin-state .....	8-40
	linkagg lacp port partner admin system-id .....	8-43
	linkagg lacp port partner admin-key .....	8-45
	linkagg lacp port partner admin system-priority .....	8-47
	linkagg lacp port actor port priority .....	8-49
	linkagg lacp port partner admin-port .....	8-51

	linkagg lacp port partner admin port-priority .....	8-52
	show linkagg .....	8-54
	show linkagg port .....	8-59
	show linkagg accounting .....	8-65
	show linkagg counters .....	8-67
	show linkagg traffic .....	8-69
	clear linkagg-statistics .....	8-70
<b>Chapter 9</b>	<b>Virtual Chassis Commands</b> .....	9-1
	virtual-chassis configured-chassis-id .....	9-2
	virtual-chassis chassis-group .....	9-4
	virtual-chassis configured-chassis-priority .....	9-6
	virtual-chassis configured-control-vlan .....	9-8
	virtual-chassis configured-hello-interval .....	9-10
	virtual-chassis vf-link create .....	9-12
	virtual-chassis vf-link member-port .....	9-14
	virtual-chassis vf-link default-vlan .....	9-16
	virtual-chassis hello-interval .....	9-18
	virtual-chassis shutdown .....	9-20
	virtual-chassis vf-link-mode .....	9-21
	virtual-chassis auto-vf-link-port .....	9-22
	vc-takeover .....	9-23
	show virtual-chassis topology .....	9-24
	show virtual-chassis consistency .....	9-29
	show virtual-chassis vf-link .....	9-32
	show virtual-chassis auto-vf-link-port .....	9-34
	show virtual-chassis chassis-reset-list .....	9-35
	show virtual-chassis slot-reset-list .....	9-37
	show virtual-chassis neighbors .....	9-39
	show configuration vcm-snapshot chassis-id .....	9-41
<b>Chapter 10</b>	<b>Ethernet Ring Protection Commands</b> .....	10-1
	erp-ring .....	10-2
	erp-ring rpl-node .....	10-5
	erp-ring wait-to-restore .....	10-7
	erp-ring enable .....	10-8
	erp-ring guard-timer .....	10-9
	erp-ring sub-ring .....	10-10
	erp-ring virtual-channel .....	10-13
	erp-ring revertive .....	10-15
	erp-ring clear .....	10-17
	erp-ring ethoam-event .....	10-18
	clear erp statistics .....	10-20
	show erp .....	10-22
	show erp statistics .....	10-25
<b>Chapter 11</b>	<b>MVRP Commands</b> .....	11-1
	mvrp .....	11-2
	mvrp port .....	11-3
	mvrp linkagg .....	11-5
	mvrp maximum-vlan .....	11-7
	mvrp registration .....	11-8

mvrp applicant .....	11-10
mvrp timer join .....	11-12
mvrp timer leave .....	11-14
mvrp timer leaveall .....	11-16
mvrp timer periodic-timer .....	11-18
mvrp periodic-transmission .....	11-20
mvrp restrict-vlan-registration .....	11-22
mvrp restrict-vlan-advertisement .....	11-24
mvrp static-vlan-restrict .....	11-26
show mvrp configuration .....	11-28
show mvrp port .....	11-29
show mvrp linkagg .....	11-32
show mvrp timer .....	11-34
show mvrp statistics .....	11-37
show mvrp last-pdu-origin .....	11-41
show mvrp vlan-restrictions .....	11-43
mvrp clear-statistics .....	11-45

## Chapter 12

<b>802.1AB Commands .....</b>	<b>12-1</b>
lldp nearest-edge mode .....	12-3
lldp transmit interval .....	12-4
lldp transmit hold-multiplier .....	12-5
lldp reinit delay .....	12-6
lldp notification interval .....	12-7
lldp lldpdu .....	12-8
lldp notification .....	12-10
lldp network-policy .....	12-12
lldp med network-policy .....	12-14
lldp tlv management .....	12-16
lldp tlv dot1 .....	12-18
lldp tlv dot3 .....	12-20
lldp tlv med .....	12-22
lldp tlv proprietary .....	12-24
lldp tlv application .....	12-26
lldp tlv application priority .....	12-28
show lldp system-statistics .....	12-30
show lldp statistics .....	12-32
show lldp local-system .....	12-34
show lldp local-port .....	12-36
show lldp local-management-address .....	12-39
show lldp config .....	12-41
show lldp network-policy .....	12-44
show lldp med network-policy .....	12-46
show lldp remote-system .....	12-48
show lldp remote-system med .....	12-50
show lldp remote-system application-tlv .....	12-53
show lldp agent-destination-address .....	12-55
lldp trust-agent .....	12-57
lldp trust-agent violation-action .....	12-59
show lldp trusted remote-agent .....	12-61
show lldp trust-agent .....	12-63



---

**Chapter 13**

<b>IP Commands</b> .....	13-1
ip interface .....	13-4
ip interface rtr-port .....	13-7
ip interface dhcp-client .....	13-9
ip static-route .....	13-12
ip route-pref .....	13-14
ip default-ttl .....	13-16
ping .....	13-17
traceroute .....	13-19
ip directed-broadcast .....	13-21
ip directed-broadcast trusted-source-ip .....	13-22
ip directed-broadcast clear .....	13-25
show ip directed-broadcast .....	13-27
ip service .....	13-29
ip service port .....	13-31
ip service source-ip .....	13-33
arp .....	13-35
clear arp-cache .....	13-37
ip dos arp-poison restricted-address .....	13-38
arp filter .....	13-39
clear arp filter .....	13-41
icmp type .....	13-42
icmp unreachable .....	13-44
icmp echo .....	13-46
icmp timestamp .....	13-48
icmp addr-mask .....	13-50
icmp messages .....	13-52
ip dos scan close-port-penalty .....	13-53
ip dos scan tcp open-port-penalty .....	13-54
ip dos scan udp open-port-penalty .....	13-55
ip dos scan threshold .....	13-56
ip dos trap .....	13-58
ip dos scan decay .....	13-59
ip dos type .....	13-60
ip tcp half-open-timeout .....	13-62
show ip traffic .....	13-63
show ip interface .....	13-66
show ip emp-interfaces .....	13-72
show ip routes .....	13-74
show ip route-pref .....	13-76
show ip router database .....	13-77
show ip emp-routes .....	13-80
show ip config .....	13-82
show ip protocols .....	13-83
show ip service .....	13-85
show ip service source-ip .....	13-87
show ip dos arp-poison .....	13-89
show arp .....	13-90
show arp filter .....	13-92
show icmp control .....	13-94
show icmp statistics .....	13-96
show tcp statistics .....	13-98

show tcp ports .....	13-100
show ip tcp half-open-timeout .....	13-102
show udp statistics .....	13-103
show udp ports .....	13-104
show ip dos config .....	13-105
show ip dos statistics .....	13-107

## Chapter 14

<b>DHCP Relay Commands .....</b>	<b>14-1</b>
ip dhcp relay admin-state .....	14-3
ip dhcp relay destination .....	14-5
ip dhcp relay per-interface-mode .....	14-6
ip dhcp relay interface destination .....	14-8
ip dhcp relay interface admin-state .....	14-10
ip dhcp relay forward-delay .....	14-11
ip dhcp relay maximum-hops .....	14-13
ip dhcp relay insert-agent-information .....	14-15
ip dhcp relay insert-agent-information policy .....	14-17
ip dhcp relay insert-agent-information format .....	14-19
ip dhcp relay pxe-support .....	14-22
show ip dhcp relay interface .....	14-23
show ip dhcp relay statistics .....	14-26
ip dhcp relay clear statistics .....	14-28
show ip dhcp relay insert-agent-information error-count .....	14-30
ip dhcp relay clear insert-agent-information error-count .....	14-32
show ip dhcp relay counters .....	14-34
dhcp-snooping admin-state .....	14-35
dhcp-snooping mac-address-verification .....	14-36
dhcp-snooping option-82-data-insertion .....	14-38
dhcp-snooping bypass option-82-check .....	14-39
dhcp-snooping option-82 format .....	14-40
dhcp-snooping option-82 policy .....	14-43
dhcp-snooping vlan .....	14-44
dhcp-snooping port .....	14-46
dhcp-snooping linkagg .....	14-48
dhcp-snooping ip-source-filter admin-state .....	14-50
dhcp-snooping ip-source-filter .....	14-51
dhcp-snooping binding admin-state .....	14-53
dhcp-snooping binding timeout .....	14-54
dhcp-snooping binding action .....	14-55
dhcp-snooping binding persistency .....	14-57
dhcp-snooping binding .....	14-58
show dhcp-snooping .....	14-60
show dhcp-snooping ip-source-filter .....	14-63
show dhcp-snooping vlan .....	14-65
show dhcp-snooping port .....	14-67
dhcp-snooping clear violation-counters .....	14-69
show dhcp-snooping counters .....	14-71
dhcp-snooping clear counters .....	14-73
show dhcp-snooping isf-statistics .....	14-74
dhcp-snooping clear isf-statistics .....	14-76
show dhcp-snooping binding .....	14-77
dhcpv6-snooping vlan admin-state .....	14-80

dhcpv6-snooping global admin-state .....	14-82
dhcpv6-snooping binding .....	14-84
dhcpv6-snooping binding timeout .....	14-86
dhcpv6-snooping binding action .....	14-87
dhcpv6-snooping binding persistency .....	14-88
dhcpv6-snooping ipv6-source-filter .....	14-90
ipv6 dhcp guard .....	14-92
ipv6 dhcp guard trusted .....	14-94
show dhcpv6-snooping .....	14-96
show dhcpv6-snooping interfaces .....	14-98
show dhcpv6-snooping binding .....	14-99
show dhcpv6-snooping ipv6-source-filter .....	14-101
show ipv6 dhcp guard .....	14-103

## Chapter 15

<b>IP Multicast Switching Commands .....</b>	<b>15-1</b>
ip multicast admin-state .....	15-3
ip multicast flood-unknown .....	15-5
ip multicast version .....	15-7
ip multicast port max-group .....	15-9
ip multicast max-group .....	15-11
ip multicast static-neighbor .....	15-13
ip multicast static-querier .....	15-15
ip multicast static-group .....	15-17
ip multicast query-interval .....	15-19
ip multicast last-member-query-interval .....	15-21
ip multicast query-response-interval .....	15-23
ip multicast unsolicited-report-interval .....	15-25
ip multicast router-timeout .....	15-27
ip multicast source-timeout .....	15-29
ip multicast querying .....	15-31
ip multicast robustness .....	15-33
ip multicast spoofing .....	15-35
ip multicast spoofing static-source-ip .....	15-37
ip multicast zapping .....	15-39
ip multicast querier-forwarding .....	15-41
ip multicast proxying .....	15-43
ip multicast helper-address .....	15-45
ip multicast zero-based-query .....	15-47
ip multicast forward-mode .....	15-49
ip multicast update-delay-interval .....	15-51
ip multicast display-interface-names .....	15-53
ip multicast inherit-default-vrf-config .....	15-56
ip multicast profile .....	15-58
ip multicast apply-profile .....	15-61
ipv6 multicast admin-state .....	15-63
ipv6 multicast flood-unknown .....	15-65
ipv6 multicast version .....	15-67
ipv6 multicast port max-group .....	15-69
ipv6 multicast max-group .....	15-71
ipv6 multicast static-neighbor .....	15-73
ipv6 multicast static-querier .....	15-75
ipv6 multicast static-group .....	15-77

ipv6 multicast query-interval .....	15-79
ipv6 multicast last-member-query-interval .....	15-81
ipv6 multicast query-response-interval .....	15-83
ipv6 multicast unsolicited-report-interval .....	15-85
ipv6 multicast router-timeout .....	15-87
ipv6 multicast source-timeout .....	15-89
ipv6 multicast querying .....	15-91
ipv6 multicast robustness .....	15-93
ipv6 multicast spoofing .....	15-95
ipv6 multicast spoofing static-source-ip .....	15-97
ipv6 multicast zapping .....	15-99
ipv6 multicast querier-forwarding .....	15-101
ipv6 multicast proxying .....	15-103
ipv6 multicast helper-address .....	15-105
ipv6 multicast zero-based-query .....	15-107
ipv6 multicast forward-mode .....	15-109
ipv6 multicast update-delay-interval .....	15-111
ipv6 multicast display-interface-names .....	15-113
ipv6 multicast inherit-default-vrf-config .....	15-115
ipv6 multicast profile .....	15-117
ipv6 multicast apply-profile .....	15-121
show ip multicast .....	15-123
show ip multicast port .....	15-127
show ip multicast forward .....	15-129
show ip multicast neighbor .....	15-132
show ip multicast querier .....	15-135
show ip multicast group .....	15-138
show ip multicast source .....	15-141
show ip multicast tunnel .....	15-144
show ip multicast bridge .....	15-146
show ip multicast bridge-forward .....	15-148
show ip multicast profile .....	15-150
show ipv6 multicast .....	15-152
show ipv6 multicast port .....	15-156
show ipv6 multicast forward .....	15-158
show ipv6 multicast neighbor .....	15-161
show ipv6 multicast querier .....	15-163
show ipv6 multicast group .....	15-165
show ipv6 multicast source .....	15-168
show ipv6 multicast tunnel .....	15-171
show ipv6 multicast bridge .....	15-173
show ipv6 multicast bridge-forward .....	15-175
show ipv6 multicast profile .....	15-177

## Chapter 16

<b>QoS Commands</b> .....	16-1
qos .....	16-3
qos trust-ports .....	16-5
qos forward log .....	16-7
qos log console .....	16-8
qos log lines .....	16-9
qos log level .....	16-10
qos phones .....	16-11

qos user-port .....	16-13
qos dei .....	16-16
debug qos .....	16-18
debug qos internal .....	16-20
clear qos log .....	16-22
qos apply .....	16-23
qos revert .....	16-24
qos flush .....	16-25
qos reset .....	16-26
qos stats reset .....	16-27
qos port reset .....	16-28
qos port .....	16-29
qos port trusted .....	16-31
qos port default 802.1p .....	16-33
qos port default dscp .....	16-35
qos port default classification .....	16-37
qos port dei .....	16-39
qos qsi qsp .....	16-41
qos qsi stats .....	16-43
show qos port .....	16-45
show qos log .....	16-47
show qos config .....	16-49
show qos statistics .....	16-51
show qos qsp .....	16-54
show qos qsi .....	16-59
show qos qsi summary .....	16-63
show qos qsi stats .....	16-65
clear qos qsi stats .....	16-68

## Chapter 17

<b>QoS Policy Commands .....</b>	<b>17-1</b>
policy rule .....	17-4
iec message-type priority .....	17-8
iec message-type flush .....	17-10
iec show .....	17-11
policy validity-period .....	17-12
policy list .....	17-15
policy list rules .....	17-17
policy network group .....	17-20
policy service group .....	17-22
policy mac group .....	17-24
policy port group .....	17-26
policy map group .....	17-29
policy service .....	17-31
policy service protocol .....	17-34
policy service source tcp-port .....	17-36
policy service destination tcp-port .....	17-38
policy service source udp-port .....	17-40
policy service destination udp-port .....	17-42
policy condition .....	17-44
policy condition source ip .....	17-47
policy condition source ipv6 .....	17-49
policy condition destination ip .....	17-51

---

policy condition destination ipv6 .....	17-53
policy condition multicast ip .....	17-55
policy condition source network group .....	17-57
policy condition destination network group .....	17-59
policy condition multicast network group .....	17-61
policy condition source ip-port .....	17-63
policy condition destination ip-port .....	17-65
policy condition source tcp-port .....	17-67
policy condition destination tcp-port .....	17-69
policy condition source udp-port .....	17-71
policy condition destination udp-port .....	17-73
policy condition ethertype .....	17-75
policy condition established .....	17-77
policy condition tcpflags .....	17-79
policy condition service .....	17-81
policy condition service group .....	17-82
policy condition icmp type .....	17-84
policy condition icmp code .....	17-86
policy condition ip-protocol .....	17-88
policy condition ipv6 .....	17-90
policy condition flow-label .....	17-92
policy condition tos .....	17-94
policy condition dscp .....	17-96
policy condition source mac .....	17-98
policy condition destination mac .....	17-100
policy condition source mac group .....	17-102
policy condition destination mac group .....	17-104
policy condition source vlan .....	17-106
policy condition inner source-vlan .....	17-107
policy condition destination vlan .....	17-109
policy condition 802.1p .....	17-111
policy condition inner 802.1p .....	17-112
policy condition source port .....	17-114
policy condition destination port .....	17-116
policy condition source port group .....	17-118
policy condition destination port group .....	17-120
policy condition vrf .....	17-122
policy condition fragments .....	17-124
policy condition app-mon-application-group .....	17-125
policy condition app-mon-application-name .....	17-127
policy condition appfp-group .....	17-129
policy condition vxlan .....	17-131
policy condition vxlan inner source mac .....	17-134
policy condition vxlan inner source mac-group .....	17-136
policy condition vxlan inner source ip .....	17-138
policy condition vxlan inner source ipv6 .....	17-140
policy condition vxlan inner ip-protocol .....	17-142
policy condition vxlan inner l4-port .....	17-143
policy condition vxlan vxlan-port .....	17-145
policy action .....	17-147
policy action disposition .....	17-149
policy action shared .....	17-151

policy action priority .....	17-153
policy action maximum bandwidth .....	17-155
policy action maximum depth .....	17-157
policy action cir .....	17-159
policy action cpu priority .....	17-162
policy action tos .....	17-163
policy action 802.1p .....	17-165
policy action dscp .....	17-167
policy action map .....	17-169
policy action permanent gateway-ip .....	17-171
policy action permanent gateway-ipv6 .....	17-173
policy action port-disable .....	17-175
policy action redirect port .....	17-177
policy action redirect linkagg .....	17-179
policy action no-cache .....	17-181
policy action mirror .....	17-182
show policy network group .....	17-184
show policy service .....	17-186
show policy service group .....	17-188
show policy mac group .....	17-190
show policy port group .....	17-192
show policy map group .....	17-194
show policy action .....	17-196
show policy condition .....	17-198
show active policy rule .....	17-201
show policy rule .....	17-203
show policy validity period .....	17-205
show active policy list .....	17-207
show policy list .....	17-209
show policy ipv4-summary .....	17-211
show policy ipv6-summary .....	17-213

<b>Chapter 18</b>	<b>Policy Server Commands</b> .....	18-1
	policy server load .....	18-2
	policy server flush .....	18-3
	policy server .....	18-4
	show policy server .....	18-6
	show policy server long .....	18-8
	show policy server statistics .....	18-10
	show policy server rules .....	18-12
	show policy server events .....	18-14

<b>Chapter 19</b>	<b>AAA Commands</b> .....	19-1
	aaa radius-server .....	19-4
	aaa radius-server health-check .....	19-7
	aaa test-radius-server .....	19-9
	aaa tacacs+-server .....	19-11
	aaa ldap-server .....	19-14
	aaa authentication .....	19-17
	aaa console admin-only .....	19-19
	aaa authentication default .....	19-20
	aaa accounting session .....	19-22

---

aaa accounting command .....	19-24
aaa device-authentication .....	19-26
aaa accounting .....	19-28
aaa accounting radius calling-station-id .....	19-30
aaa 802.1x re-authentication .....	19-32
aaa interim-interval .....	19-34
aaa session-timeout .....	19-36
aaa session console .....	19-38
aaa inactivity-logout .....	19-40
aaa radius nas-port-id .....	19-42
aaa radius nas-identifier .....	19-43
aaa radius nas-ip-address .....	19-44
aaa radius mac-format .....	19-46
aaa profile .....	19-48
user .....	19-52
password .....	19-56
user password-size min .....	19-58
user password-expiration .....	19-59
user password-policy cannot-contain-username .....	19-61
user password-policy min-uppercase .....	19-62
user password-policy min-lowercase .....	19-63
user password-policy min-digit .....	19-64
user password-policy min-nonalpha .....	19-65
user password-history .....	19-66
user password-min-age .....	19-67
user lockout-window .....	19-68
user lockout-threshold .....	19-70
user lockout-duration .....	19-72
user lockout unlock .....	19-74
show aaa server .....	19-75
show aaa server statistics .....	19-79
aaa radius-server clear-statistics .....	19-83
show aaa authentication .....	19-84
show aaa device-authentication .....	19-86
show aaa accounting .....	19-88
show aaa config .....	19-90
show aaa radius config .....	19-93
show aaa radius health-check-config .....	19-95
show aaa profile .....	19-97
show aaa session console config .....	19-100
show user .....	19-101
show user password-policy .....	19-104
show user lockout-setting .....	19-106
show aaa priv hexa .....	19-108
aaa switch-access ip-lockout-threshold .....	19-111
aaa switch-access banned-ip release .....	19-113
aaa switch-access priv-mask .....	19-114
aaa switch-access management-stations admin-state .....	19-116
show aaa switch-access ip-lockout-threshold .....	19-117
show aaa switch-access banned-ip .....	19-118
show aaa switch-access priv-mask .....	19-119
aaa certificate update-ca-certificate .....	19-121



aaa certificate update-crl .....	19-122
aaa certificate generate-rsa-key key-file .....	19-123
aaa certificate generate-self-signed .....	19-124
aaa certificate view .....	19-126
aaa certificate verify ca-certificate .....	19-129
aaa certificate delete .....	19-130
aaa certificate generate-csr .....	19-131

## Chapter 20

<b>Access Guardian Commands .....</b>	<b>20-1</b>
unp auth-server-down .....	20-4
unp auth-server-down-timeout .....	20-6
unp redirect pause-timer .....	20-8
unp redirect proxy-server-port .....	20-10
unp redirect server .....	20-11
unp redirect allowed-name .....	20-13
unp 802.1x-pass-through .....	20-15
unp ipv6-drop .....	20-17
unp ap-mode .....	20-18
unp user flush .....	20-20
unp profile .....	20-22
unp profile captive-portal-authentication .....	20-24
unp profile captive-portal-profile .....	20-26
unp profile maximum-ingress-bandwidth .....	20-28
unp profile maximum-egress-bandwidth .....	20-30
unp profile maximum-ingress-depth .....	20-32
unp profile maximum-egress-depth .....	20-34
unp profile map vlan .....	20-36
unp port-type .....	20-38
unp redirect port-bounce .....	20-40
unp 802.1x-authentication .....	20-42
unp 802.1x-authentication pass-alternate .....	20-44
unp 802.1x-authentication tx-period .....	20-46
unp 802.1x-authentication supp-timeout .....	20-48
unp 802.1x-authentication max-req .....	20-50
unp 802.1x-authentication bypass-8021x .....	20-52
unp 802.1x-authentication failure-policy .....	20-54
unp mac-authentication .....	20-56
unp mac-authentication pass-alternate .....	20-58
unp mac-authentication allow-eap .....	20-60
unp classification .....	20-62
unp default-profile .....	20-64
unp aaa-profile .....	20-66
unp port port-template .....	20-68
unp direction .....	20-70
unp admin-state .....	20-72
unp vlan .....	20-74
unp port ap-mode .....	20-76
unp port-template .....	20-78
unp classification lldp med-endpoint .....	20-82
captive-portal mode .....	20-84
captive-portal name .....	20-86
captive-portal ip-address .....	20-88

	captive-portal success-redirect-url .....	20-90
	captive-portal proxy-server-port .....	20-91
	captive-portal retry-count .....	20-92
	captive-portal authentication-pass .....	20-93
	captive-portal authentication-pass domain .....	20-95
	captive-portal-profile .....	20-97
	captive-portal customization .....	20-100
	show captive-portal configuration .....	20-102
	show captive-portal profile-names .....	20-106
	show unip profile .....	20-109
	show unip profile map .....	20-112
	show unip global configuration .....	20-114
	show unip classification lldp-rule .....	20-118
	show unip port .....	20-120
	show unip port config .....	20-124
	show unip port bandwidth .....	20-128
	show unip port 802.1x statistics .....	20-131
	show unip port configured-vlans .....	20-133
	show unip port-template .....	20-135
	show unip user .....	20-140
	show unip user status .....	20-144
	show unip user details .....	20-147
<b>Chapter 21</b>	<b>Learned Port Security Commands .....</b>	<b>21-1</b>
	port-security .....	21-2
	port-security learning-window .....	21-4
	port-security convert-to-static .....	21-8
	port-security mac .....	21-10
	port-security maximum .....	21-12
	port-security learn-trap-threshold .....	21-14
	port-security port max-filtering .....	21-16
	port-security mac-range .....	21-18
	port-security port violation .....	21-21
	show port-security .....	21-23
	show port-security mac-range .....	21-26
	show port-security brief .....	21-28
	show port-security learning-window .....	21-30
<b>Chapter 22</b>	<b>Port Mapping Commands .....</b>	<b>22-1</b>
	port-mapping user-port network-port .....	22-2
	port-mapping .....	22-4
	port-mapping unidirectional bidirectional .....	22-6
	port-mapping unknown-unicast-flooding .....	22-8
	port-mapping dynamic-proxy-arp .....	22-10
	show port-mapping status .....	22-12
	show port-mapping .....	22-14
	show ip dynamic-proxy-arp .....	22-16
<b>Chapter 23</b>	<b>Port Mirroring and Monitoring Commands .....</b>	<b>23-1</b>
	port-mirroring source destination .....	23-2
	port-mirroring .....	23-5
	port-monitoring source .....	23-7

	port-monitoring .....	23-10
	show port-mirroring status .....	23-11
	show port-monitoring status .....	23-13
	show port-monitoring file .....	23-15
<b>Chapter 24</b>	<b>sFlow Commands .....</b>	<b>24-1</b>
	sflow agent .....	24-3
	sflow receiver .....	24-4
	sflow sampler .....	24-6
	sflow poller .....	24-8
	show sflow agent .....	24-10
	show sflow receiver .....	24-12
	show sflow sampler .....	24-14
	show sflow poller .....	24-16
<b>Chapter 25</b>	<b>RMON Commands .....</b>	<b>25-1</b>
	rmon probes .....	25-2
	show rmon probes .....	25-4
	show rmon events .....	25-7
<b>Chapter 26</b>	<b>Switch Logging Commands .....</b>	<b>26-1</b>
	swlog .....	26-2
	swlog syslog-facility-id .....	26-4
	swlog appid .....	26-6
	swlog output .....	26-9
	swlog output flash-file-size .....	26-12
	swlog advanced .....	26-13
	swlog size-trap-threshold .....	26-14
	swlog clear .....	26-15
	show log swlog .....	26-16
	show swlog .....	26-18
	swlog console level .....	26-21
	show log events .....	26-23
	show log events output .....	26-25
<b>Chapter 27</b>	<b>Health Monitoring Commands .....</b>	<b>27-1</b>
	health threshold .....	27-2
	health interval .....	27-4
	show health configuration .....	27-5
	show health .....	27-7
	show health all .....	27-9
<b>Chapter 28</b>	<b>CMM Commands .....</b>	<b>28-1</b>
	reload secondary .....	28-2
	reload all .....	28-4
	reload from .....	28-6
	reload chassis-id .....	28-8
	copy certified .....	28-10
	write memory .....	28-11
	copy running certified .....	28-12
	modify running-directory .....	28-14
	show running-directory .....	28-15

show reload .....	28-17
show microcode .....	28-19
usb .....	28-21
usb backup admin-state .....	28-23
usb auto-copy .....	28-25
mount .....	28-27
umount .....	28-28
show usb statistics .....	28-29
auto-config-abort .....	28-31
image integrity check .....	28-32
image integrity get-key .....	28-34

**Chapter 29 Chassis Management and Monitoring Commands** ..... 29-1

system contact .....	29-3
system name .....	29-4
system location .....	29-5
system date .....	29-6
system time .....	29-7
system timezone .....	29-8
system daylight-savings-time .....	29-10
update uboot .....	29-11
update fpga-cpld .....	29-12
show system .....	29-13
show hardware-info .....	29-15
show chassis .....	29-17
show cmm .....	29-19
show slot .....	29-21
show module .....	29-23
show module long .....	29-25
show module status .....	29-27
show powersupply .....	29-29
show fan .....	29-31
show temperature .....	29-33
show me .....	29-35
show tcam utilization .....	29-36
show tcam utilization detail .....	29-38
show tcam app-groups .....	29-41
show pmd-files .....	29-43
show tech-support .....	29-44
show mac-range .....	29-46

**Chapter 30 Network Time Protocol Commands** ..... 30-1

ntp server .....	30-2
ntp client .....	30-5
ntp broadcast-client .....	30-6
ntp broadcast-delay .....	30-7
ntp key .....	30-8
ntp key load .....	30-10
ntp authenticate .....	30-11
ntp interface .....	30-12
ntp max-associations .....	30-13
ntp broadcast .....	30-14

ntp peer .....	30-16
ntp vrf-name .....	30-18
show ntp status .....	30-19
show ntp client .....	30-21
show ntp client server-list .....	30-23
show ntp server client-list .....	30-25
show ntp server status .....	30-27
show ntp keys .....	30-30
show ntp peers .....	30-32
show ntp server disabled-interfaces .....	30-34

<b>Chapter 31</b>	<b>Session Management Commands</b> .....	31-1
	session login-attempt .....	31-3
	session login-timeout .....	31-4
	session banner .....	31-5
	session timeout .....	31-7
	session prompt .....	31-8
	session xon-xoff .....	31-9
	show prefix .....	31-10
	user profile save .....	31-11
	user profile reset .....	31-12
	history .....	31-13
	! .....	31-14
	command-log .....	31-16
	kill .....	31-17
	exit .....	31-18
	whoami .....	31-19
	who .....	31-21
	show session config .....	31-23
	show session xon-xoff .....	31-25
	more .....	31-26
	telnet .....	31-27
	ssh .....	31-29
	ssh login-grace-time .....	31-31
	ssh enforce-pubkey-auth .....	31-32
	ssh strong-ciphers .....	31-33
	ssh strong-hmacs .....	31-34
	installsshkey .....	31-35
	revokesshkey .....	31-36
	show command-log .....	31-37
	show command-log status .....	31-39
	show telnet .....	31-40
	show ssh .....	31-41

<b>Chapter 32</b>	<b>File Management Commands</b> .....	32-1
	cd .....	32-2
	pwd .....	32-3
	mkdir .....	32-4
	rmdir .....	32-6
	ls .....	32-8
	rm .....	32-10
	cp .....	32-12

---

scp .....	32-14	
mv .....	32-16	
chmod .....	32-18	
freespace .....	32-19	
fsck .....	32-20	
newfs .....	32-22	
vi .....	32-23	
tty .....	32-25	
show tty .....	32-27	
tftp .....	32-28	
sftp .....	32-29	
ftp .....	32-31	
show ftp .....	32-33	
<b>Chapter 33</b>	<b>Web Management Commands</b> .....	33-1
	webview server .....	33-2
	webview access .....	33-3
	webview force-ssl .....	33-4
	webview http-port .....	33-5
	webview https-port .....	33-6
	webview ssl-strong-ciphers .....	33-7
	webview wlan cluster-virtual-ip precedence .....	33-8
	webview wlan cluster-virtual-ip .....	33-10
	show webview wlan config .....	33-11
	show webview .....	33-13
<b>Chapter 34</b>	<b>Configuration File Manager Commands</b> .....	34-1
	configuration apply .....	34-2
	configuration error-file-limit .....	34-4
	show configuration status .....	34-6
	configuration cancel .....	34-8
	configuration syntax-check .....	34-9
	configuration snapshot .....	34-11
	show configuration snapshot .....	34-13
	write terminal .....	34-15
<b>Chapter 35</b>	<b>SNMP Commands</b> .....	35-1
	snmp station .....	35-3
	show snmp station .....	35-6
	snmp snmp-engineid-type .....	35-8
	show snmp snmp-engineid .....	35-10
	snmp community-map .....	35-11
	snmp community-map mode .....	35-13
	show snmp community-map .....	35-14
	snmp security .....	35-16
	snmp security tsm .....	35-19
	snmp tsm-map .....	35-20
	show snmp tsm-map .....	35-21
	show snmp security .....	35-22
	show snmp statistics .....	35-24
	show snmp mib-family .....	35-26
	snmp-trap absorption .....	35-28

---

	snmp-trap to-webview .....	35-29
	snmp-trap replay-ip .....	35-30
	snmp-trap filter-ip .....	35-32
	snmp authentication-trap .....	35-34
	show snmp-trap replay-ip .....	35-35
	show snmp-trap filter-ip .....	35-37
	show snmp authentication-trap .....	35-39
	show snmp-trap config .....	35-40
<b>Chapter 36</b>	<b>OmniVista Cirrus Commands .....</b>	<b>64-1</b>
	cloud-agent admin-state .....	64-2
	cloud-agent discovery-interval .....	64-4
	cloud-agent remove-inconsistent-certificate .....	64-6
	show cloud-agent status .....	64-7
	show cloud-agent vpn status .....	64-9
<b>Chapter 37</b>	<b>DNS Commands .....</b>	<b>65-1</b>
	ip domain-lookup .....	65-2
	ip name-server .....	65-3
	ipv6 name-server .....	65-5
	ip domain-name .....	65-7
	show dns .....	65-8
<b>Appendix A</b>	<b>Software License and Copyright Statements .....</b>	<b>A-1</b>
	Alcatel-Lucent License Agreement .....	A-1
	ALE USA, Inc. SOFTWARE LICENSE AGREEMENT .....	A-1
	Third Party Licenses and Notices .....	A-4
	<b>CLI Quick Reference</b>	
	<b>Index .....</b>	<b>Index-1</b>

# About This Guide

This *OmniSwitch AOS Release 8 CLI Reference Guide* is a comprehensive resource to all Command Line Interface (CLI) commands available on the OmniSwitch.

## Supported Platforms

The information in this guide applies only to the following products:

- OmniSwitch 2260
- OmniSwitch 2360

## Who Should Read this Manual?

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

## When Should I Read this Manual?

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



---

## What is in this Manual?

This reference guide includes information on every CLI command available in the switch. Command reference information is included for base software commands as well as commands associated with optional software packages, if applicable:

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

## What is Not in this Manual?

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

## How is the Information Organized?

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

---

# Text Conventions

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

<b>bold text</b>	Indicates basic command and keyword syntax. Example: <b>show snmp station</b>
<i>italicized text</i>	Indicates user-specific information such as IP addresses, slot numbers, passwords, names, etc. Example: <b>no snmp station</b> <i>ip_address</i>  Italicized text that is not enclosed with straight brackets ([ ]) indicates required information.
[ ] (Straight Brackets)	Indicates optional parameters for a given command. Example: <b>show aaa server</b> [ <i>server_name</i> ] Here, you can enter either of the following options: <b>show aaa server</b>  <b>show aaa server</b> <i>server_name</i> (where <i>server_name</i> is the user-specified server name, e.g., <b>show aaa server myserver1</b> )  Note that this example includes <i>italicized text</i> . The optional parameter in this case is a user-specified server name.
{ } (Curly Braces)	Indicates that the user must choose between one or more parameters. Example: <b>port mirroring</b> { <b>enable</b>   <b>disable</b> } Here, you must choose one of the following: <b>port mirroring enable</b> or <b>port mirroring disable</b>
(Vertical Pipes)	Used to separate parameter choices within a command string. For example, the command string <b>show health threshold</b> [ <b>rx</b>   <b>txrx</b>   <b>memory</b>   <b>cpu</b> ] separates the choices <b>rx</b> , <b>txrx</b> , <b>memory</b> , and <b>cpu</b> . Examples: <b>show health threshold rx</b> <b>show health threshold txrx</b> <b>show health threshold memory</b> <b>show health threshold cpu</b>
“ ” (Quotation Marks)	Used to enclose text strings that contain spaces. The quotation marks are required input on the command line. Example: <b>vlan 2</b> “ <b>new test vlan</b> ”

---

## Related Documentation

The following are the titles and descriptions of all the related OmniSwitch user manuals:

- *OmniSwitch 2x60 Hardware Users Guides*

Describes the hardware and software procedures for getting an OmniSwitch up and running as well as complete technical specifications and procedures for all OmniSwitch chassis, power supplies, fans, and Network Interface (NI) modules.

- *OmniSwitch AOS Release 8 CLI Reference Guide*

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

- *OmniSwitch AOS Release 8 Switch Management Guide*

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

- Technical Tips, Field Notices

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

- *Release Notes*

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

## Technical Support

An Alcatel-Lucent Enterprise service agreement brings your company the assurance of 7x24 no-excuses technical support. You'll also receive regular software updates to maintain and maximize your Alcatel-Lucent Enterprise product's features and functionality and on-site hardware replacement through our global network of highly qualified service delivery partners.

With 24-hour access to Alcatel-Lucent Enterprise's Service and Support web page, you'll be able to view and update any case (open or closed) that you have reported to Alcatel-Lucent Enterprise's technical support, open a new case or access helpful release notes, technical bulletins, and manuals.

Access additional information on Alcatel-Lucent Enterprise's Service Programs:

Web: [myportal.al-enterprise.com](http://myportal.al-enterprise.com)

Phone: 1-800-995-2696

Email: [ebg\\_global\\_supportcenter@al-enterprise.com](mailto:ebg_global_supportcenter@al-enterprise.com)

# 1 Ethernet Port Commands

The Ethernet port software is responsible for configuring and monitoring Ethernet ports. This includes:

- Performing hardware diagnostics, loading software, and initializing hardware.
- Notifying other software modules in the system when Ethernet links become active or inactive.
- Configuring basic line parameters for Ethernet ports.
- Gathering basic line statistics for Ethernet ports and passing this information to the user interface and configuration manager.

MIB information for the Ethernet Port commands is as follows:

*Filename:* ALCATEL-IND1-PORT-MIB.mib

*Module:* alcatelIND1PortMIB

*Filename:* EtherLike-MIB.mib

*Module:* etherMIB

A summary of the available commands is listed here.

---

<b>Interfaces commands</b>	<b>interfaces</b> <b>interfaces speed</b> <b>interfaces duplex</b> <b>interfaces alias</b> <b>clear interfaces</b> <b>interfaces max-frame-size</b> <b>interfaces flood-limit</b> <b>interfaces flood-limit action</b> <b>interfaces ingress-bandwidth</b> <b>interfaces pause</b> <b>interfaces link-trap</b> <b>interfaces ddm</b> <b>interfaces ddm-trap</b> <b>interfaces eee</b> <b>clear violation</b> <b>show interfaces</b> <b>show interfaces alias</b> <b>show interfaces status</b> <b>show interfaces capability</b> <b>show interfaces accounting</b> <b>show interfaces counters</b> <b>show interfaces counters errors</b> <b>show interfaces flood-rate</b> <b>show interfaces traffic</b> <b>show interfaces ingress-rate-limit</b> <b>show interfaces ddm</b> <b>show transceivers</b> <b>show violation</b>
<b>Interface violation commands</b>	<b>violation recovery-maximum</b> <b>violation recovery-time</b> <b>violation recovery-trap</b> <b>show violation</b> <b>show violation-recovery-configuration</b> <b>clear violation</b>
<b>Time Domain Reflectometry (TDR) commands</b>	<b>interfaces tdr</b> <b>show interfaces tdr-statistics</b>

---

## interfaces

Enables or disables auto negotiation or administrative status on a single port, a range of ports, or an entire Network Interface (NI).

**interfaces** {slot *chassis/slot*| port *chassis/slot/port*[-*port2*]} {**admin-state** | **autoneg** | **epp**} {**enable** | **disable**}

---

### Syntax Definitions

<i>chassis</i>	The chassis identifier.
<i>slot</i>	The slot number for a specific module.
<i>port</i> [- <i>port2</i> ]	The port number. Use a hyphen to specify a range of ports.
<b>admin-state</b> { <b>enable</b>   <b>disable</b> }	Enables or disables administrative state.
<b>autoneg</b> { <b>enable</b>   <b>disable</b> }	Enables or disables auto negotiation.
<b>epp</b> { <b>enable</b>   <b>disable</b> }	<i>Enhanced Port Performance (EPP) is not supported.</i>

### Defaults

parameter	default
<b>enable</b>   <b>disable</b>	enable

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- If auto negotiation is disabled, auto MDIX, flow control, auto speed, and auto duplex are not accepted.
- Autonegotiation cannot be disabled on 10GBase-T ports.
- The 2.5G capable ports will advertise either 2.5G or 1G when auto-negotiation is enabled depending on the port's configured speed. The default is 2.5G.
- Autonegotiation is disabled for 10G port types and optical transceivers. It is enabled for 25G, and 100G direct-attached cables.

### Examples

```
-> interfaces port 1/3/1 autoneg disable
-> interfaces slot 1/3 autoneg disable
-> interfaces port 1/3/1-4 autoneg disable
```

### Release History

Release 5.1; command introduced.

**Related Commands**

<a href="#">interfaces speed</a>	Configures interface speed.
<a href="#">interfaces duplex</a>	Enables or disables flow (pause).
<a href="#">show interfaces alias</a>	Displays interface line settings.
<a href="#">show interfaces</a>	Displays auto negotiation, speed, duplex, and crossover settings.

**MIB Objects**

```
esmConfTable  
  esmPortCfgrAutoNegotiation
```

---

## interfaces speed

Configures interface line speed.

```
interfaces {slot chassis/slot | port chassis/slot/port [-port2]} speed {10 | 100 | 1000 | 2500 | 10000 | 40000 | 100000 | 2000 | 4000 | 8000 | auto | max {100 | 1000 | 4000 | 8000}}
```

---

### Syntax Definitions

<i>chassis</i>	The chassis identifier.
<i>slot</i>	The slot number for a specific module.
<i>port</i> [- <i>port2</i> ]	The port number. Use a hyphen to specify a range of ports.
<b>auto</b>	The switch automatically sets the line speed to match the attached device (auto-sensing).
<b>10</b>	Sets the interface to 10 Mbps.
<b>100</b>	Sets the interface to 100 Mbps.
<b>1000</b>	Sets the interface to 1000 Mbps (1 Gigabit).
<b>2500</b>	<i>This parameter is not supported.</i>
<b>10000</b>	<i>This parameter is not supported.</i>
<b>40000</b>	<i>This parameter is not supported.</i>
<b>100000</b>	<i>This parameter is not supported.</i>
<b>2000</b>	<i>This parameter is not supported.</i>
<b>4000</b>	<i>This parameter is not supported.</i>
<b>8000</b>	<i>This parameter is not supported.</i>
<b>max 100</b>	Sets the maximum speed to 100 Mbps.
<b>max 1000</b>	Sets the maximum speed to 1000 Mbps (1 Gigabit).
<b>max 4000</b>	<i>This parameter is not supported.</i>
<b>max 8000</b>	<i>This parameter is not supported.</i>

### Defaults

parameter	default
auto	enable

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

The changing of a port's speed, when changing between 100M/1G and 2.5G or vice-versa, is applied in port pairs. Meaning, changing the speed of one port of a pair will cause the other port's speed to change as well. The port pairs are 17/18, 19/20, 21/22, 23/24. This does not apply when changing the speed between 100M and 1G.



## Examples

```
-> interfaces slot 1/3 speed auto
-> interfaces port 1/3/1 speed 100
-> interfaces port 1/3/2-8 speed 1000
```

## Release History

Release 5.1; command introduced.

## Related Commands

### [show interfaces](#)

Displays auto negotiation, speed, duplex, and crossover settings.

## MIB Objects

```
esmConfTable
  esmPortCfgSpeed
```

---

## interfaces duplex

Configures duplex mode. In full duplex mode, the interface transmits and receives data simultaneously. In half duplex mode, the interface can transmit *or* receive data at a given time. Auto duplex setting causes the switch to advertise all available duplex modes (half/full/both) for the port during autonegotiation.

```
interfaces {slot chassis/slot| port chassis/slot/port[-port2]} duplex {full | half | auto}
```

---

### Syntax Definitions

<i>chassis</i>	The chassis identifier.
<i>slot</i>	The slot number for a specific module.
<i>port[-port2]</i>	The port number. Use a hyphen to specify a range of ports.
<b>full</b>	Sets interface to full duplex mode.
<b>half</b>	Sets interface to half duplex mode.
<b>auto</b>	Switch automatically sets both the duplex mode settings to auto-negotiation.

### Defaults

---

parameter	default
<b>full   half   auto</b>	<b>full</b>

---

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- You can only configure one slot at a time. Repeat the command to configure additional slots.
- Half duplex mode is not supported on Gigabit modules if a port is detected as Gigabit (1000 Mbps).
- Gigabit and 10 Gigabit fiber ports only support full duplex.

### Examples

```
-> interfaces port 1/3/1 duplex auto
-> interfaces slot 1/3 duplex half
-> interfaces port 1/3/1-4 auto
```

### Release History

Release 5.1; command introduced.

## Related Commands

### [interfaces](#)

Configures interface line speed. Set to **auto** to set speed and duplex mode to auto-sensing.

### [show interfaces](#)

Displays auto negotiation, speed, duplex, and crossover settings.

## MIB Objects

esmConfTable

esmPortAutoDuplexMode

---

## interfaces alias

Configures a description (alias) for a single port.

**interfaces port** *chassis/slot/port* **alias** *description*

---

### Syntax Definitions

<i>chassis</i>	The chassis identifier.
<i>slot</i>	The slot number for a specific module.
<i>port[-port2]</i>	The port number.
<i>description</i>	A description for the port, which can be up to 64 characters long. Description tags with spaces must be enclosed within quotes (e.g., "IP Phone").

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- You can only configure one port at time. You cannot configure an alias for multiple ports.
- To remove an alias use a description consisting of two quotes without any spaces (e.g., "").

### Examples

```
-> interfaces port 1/3/1 alias "switch port"  
-> interfaces port 1/2/2 alias "IP Phone"  
-> interfaces port 1/3/1 alias ""
```

### Release History

Release 5.1; command introduced.

### Related Commands

[show interfaces alias](#) Displays port status (up or down) and any aliases for a port.

### MIB Objects

```
ifXTable  
  ifAlias
```

---

## clear interfaces

Resets all Layer 2 statistics counters or Time Domain Reflectometry (TDR) statistics counters.

**clear interfaces** {*slot chassis/slot* | **port** *chassis/slot/port[-port2]*} {**l2-statistics** [**cli**] | **tdr-statistics**}

---

### Syntax Definitions

<i>chassis</i>	The chassis identifier when running in virtual chassis mode.
<i>slot</i>	The slot number for a specific module.
<i>port[-port2]</i>	The port number. Use a hyphen to specify a range of ports.
<b>cli</b>	Clears the CLI statistics only.

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- There is no global clear statistics command for TDR. The highest level granularity supported for clearing statistics is per *chassis/slot*.

### Examples

```
-> clear interfaces port 1/1/20 l2-statistics
-> clear interfaces port 1/1/30 l2-statistics cli
-> clear interfaces port 1/1/40 tdr-statistics
```

### Release History

Release 5.1; command introduced.

### Related Commands

<a href="#">show interfaces counters</a>	Displays general interface information, including when statistics were last cleared.
<a href="#">show interfaces tdr-statistics</a>	Displays the results of the last TDR test performed on a port.

### MIB Objects

```
alCetherStatsTable
  alCetherClearStats
esmTdrPortTable
  esmTdrPortClearResults
```

---

## interfaces max-frame-size

Configures the maximum frame size for Gigabit Ethernet interfaces.

```
interfaces {slot chassis/slot | port chassis/slot/port[-port2]} max-frame-size bytes
```

---

### Syntax Definitions

<i>chassis</i>	The chassis identifier.
<i>slot</i>	The slot number for a specific module.
<i>port[-port2]</i>	The port number. Use a hyphen to specify a range of ports.
<i>bytes</i>	Maximum frame size, in bytes. Valid range is 1518–9216.

### Defaults

---

parameter	default
<i>bytes</i> (Gigabit Ethernet Packets)	9216
<i>bytes</i> (Ethernet Packets)	1553

---

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

N/A

### Examples

```
-> interfaces port 1/3/1 max-frame-size 1518  
-> interfaces slot 1/3 max-frame-size 1518
```

### Release History

Release 5.1; command introduced.

### Related Commands

[show interfaces](#) Displays auto negotiation, speed, duplex, and crossover settings.

### MIB Objects

esmConfTable  
esmPortCfgMaxFrameSize

---

## interfaces flood-limit

Configures the flood rate settings on a single port, a range of ports, or an entire Network Interface (NI).

```
interfaces {slot chassis/slot| port chassis/slot/port[-port2]} flood-limit {bcast | mcast | uucast | all} rate
{pps pps_num| mbps mbps_num | cap% cap_num | enable | disable | default} [low-threshold low_num]
```

---

### Syntax Definitions

<i>chassis</i>	The chassis identifier.
<i>slot</i>	The slot number for a specific module.
<i>port[-port2]</i>	The port number. Use a hyphen to specify a range of ports.
<b>bcast</b>	Specifies broadcast flood limit.
<b>mcast</b>	Specifies multicast flood limit.
<b>uucast</b>	Specifies unicast flood limit.
<b>all</b>	Specifies flood limit for all types of traffic.
<i>pps_num</i>	Packets per second.
<i>mbps_num</i>	Megabits per second.
<i>cap_num</i>	Percentage of port's capacity.
<b>enable</b>	Enables flood rate limits.
<b>disable</b>	Disables flood rate limits.
<b>default</b>	Sets default flood rate limits
<i>low_num</i>	Specifies the low threshold value, which must be lower than the high threshold value set for the <i>pps_num</i> , <i>mbps_num</i> , or <i>cap_num</i> value.

### Defaults

parameter	default
<b>enable   disable</b>	enable

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- The packets-per-second (**pps**) setting is based on a 512 byte frame size. When configuring the threshold value as a percentage (**cap%**) or in megabits-per-second (**mbps**), only approximate limits can be achieved because values are always estimated based on the packet-per-second size (512 bytes).
- The **low-threshold** parameter is set to help with the auto-recovery of a port that was shutdown because of a STORM violated state. The shutdown action is configured through the **interfaces flood-limit action** command.

## Examples

```
-> interfaces slot 1/2 flood-limit all rate cap% 50
-> interfaces slot 1/3 flood-limit bcast rate mbps 100
-> interfaces port 1/1/1 flood-limit bcast rate mbps 60 low-threshold 40
-> interfaces port 1/1/5 flood-limit mcast rate pps 2000 low-threshold 1000
```

## Release History

Release 5.1; command introduced.

## Related Commands

[show interfaces flood-rate](#)      Displays interface flood rate settings.

## MIB Objects

```
esmConfigTable
  esmPortCfgFlow
dot3PauseTable
  dot3PauseAdminMode
```

---



## interfaces flood-limit action

Configures the action on a single port, a range of ports, when the port reaches the storm violated state.

```
interfaces {slot chassis/slot| port chassis/slot/port[-port2]} flood-limit {bcast | mcast | uucast | all}  
action {shutdown | trap | default}
```

---

### Syntax Definitions

<i>chassis</i>	The chassis identifier.
<i>slot</i>	Slot number to configure.
<i>port</i>	Port number of the interface to configure.
<i>port2</i>	Last port number in a range of ports to configure.
<b>bcast</b>	Broadcast flood limit.
<b>mcast</b>	Multicast flood limit.
<b>uucast</b>	Unicast flood limit.
<b>all</b>	Flood limit for all types of traffic.
<b>shutdown</b>	When the high threshold is violated, port is put into a blocked state.
<b>trap</b>	When the high threshold is crossed, trap is sent with the violation reason.
<b>default</b>	When traffic reaches the high threshold, packets above that rate will be dropped.

### Defaults

N/A

### Platforms Supported

Not supported in this release.

### Usage Guidelines

- When high threshold is violated, and the port needs to be put in blocked state, set the action as “**shutdown**”.
- Use the **low-threshold** parameter of the **interfaces flood-limit** command to assist with auto-recovery of a port that was shutdown.
- When high threshold is crossed, and a trap has to be sent with violation reason, set the action as “**trap**”.
- When traffic reaches high threshold, and the packets above that rate needs to be dropped, set the action as “**default**”.
- For the parameter **flood-limit uucast**, only “**default**” action is supported.

### Examples

```
-> interfaces port 1/1/1 flood-limit bcast action shutdown  
-> interfaces port 1/1/4 flood-limit uucast action trap
```

```
-> interfaces port 1/1/11 flood-limit all action shutdown
-> interfaces port 1/1/14 flood mcast action default
```

## Release History

Release 5.1; command not supported.

## Related Commands

<a href="#">interfaces flood-limit</a>	Configures the high and low threshold values for flood rate limiting.
<a href="#">show interfaces flood-rate</a>	Displays interface flood rate settings.

## MIB Objects

```
esmConfigTable
  esmPortBcastThresholdAction
  esmPortMcastThresholdAction
  esmPortUucastThresholdAction
```

---

## interfaces ingress-bandwidth

Configures the ingress bandwidth settings on a single port, a range of ports, or an entire Network Interface (NI).

```
interfaces {slot chassis/slot| port chassis/slot/port[-port2]} ingress-bandwidth {mbps| enable | disable}
```

---

### Syntax Definitions

<i>chassis</i>	The chassis identifier.
<i>slot</i>	The slot number for a specific module.
<i>port[-port2]</i>	The port number. Use a hyphen to specify a range of ports.
<b>mbps</b>	Specifies the ingress bandwidth in mbps.
<b>enable</b>	Enables ingress bandwidth limiting.
<b>disable</b>	Disables ingress bandwidth limiting.

### Defaults

---

parameter	default
<b>enable   disable</b>	disable

---

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

N/A

### Examples

```
-> interfaces slot 1/3 ingress-bandwidth enable
-> interfaces slot 1/3 ingress-bandwidth mbps 30
```

### Release History

Release 5.1; command introduced.

### Related Commands

[show interfaces ingress-rate-limit](#) Displays the ingress-rate-limit set for each interface port.

### MIB Objects

```
esmConfTable
  esmPortIngressRateLimitEnable
```

---

## interfaces pause

Configures whether or not the switch will transmit and/or honor flow control PAUSE frames on the specified interface. PAUSE frames are used to temporarily pause the flow of traffic between two connected devices to help prevent packet loss when traffic congestion occurs between switches.

```
interfaces {slot chassis/slot| port chassis/slot/port[-port2]} pause {tx | rx | tx-and-rx | disable}
```

---

### Syntax Definitions

<i>chassis</i>	The chassis identifier.
<i>slot</i>	The slot number for a specific module.
<i>port[-port2]</i>	The port number. Use a hyphen to specify a range of ports.
<b>tx</b>	Allows interface to transmit PAUSE frames to peer switches.
<b>rx</b>	Allows interface to honor PAUSE frames from peer switches and temporarily stop sending traffic to the peer.
<b>tx-and-rx</b>	Allows the interface to transmit and honor PAUSE frames to/from peer switches.
<b>disable</b>	Disables flow control on the interface.

### Defaults

By default, flow control is disabled on all switch interfaces.

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- Flow control is only supported on interfaces configured to run in full-duplex mode; half-duplex mode is not supported. In addition, flow control is not supported across a virtual fabric link (VFL).
- If both autonegotiation and flow control are enabled on the same local interface, autonegotiation calculates operational flow control settings for that interface. Note that the operational settings override the configured settings as long as autonegotiation and flow control are both enabled for the interface.
- If autonegotiation is disabled, the configured flow control settings are applied to the local interface.

### Examples

```
-> interfaces port 1/2/4 pause rx
-> interfaces port 1/1/11 pause tx
-> interfaces port 1/2/1 pause tx-and-rx
-> interfaces port 1/2/1-6 disable
```

### Release History

Release 5.1; command introduced.

**Related Commands****show interfaces status**

Displays interface line settings.

**MIB Objects**

esmConfTable

esmPortCfgPause

---

## interfaces link-trap

Enables trap link messages. If enabled, a trap is generated whenever the port changes state.

```
interfaces [slot chassis/slot | port chassis/slot/port [-port2]] link-trap {enable | disable}
```

---

### Syntax Definitions

<i>chassis</i>	The chassis identifier.
<i>slot</i>	The slot number for a specific module.
<i>port[-port2]</i>	The port number. Use a hyphen to specify a range of ports.
<b>enable</b>	Port link up/down traps are displayed on the NMS.
<b>disable</b>	Port link up/down traps are not displayed on the NMS.

### Defaults

---

parameter	default
<b>enable   disable</b>	<b>enable</b>

---

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

N/A

### Examples

```
-> interfaces port 1/2/1 link-trap enable
-> interfaces slot 1/3 link-trap enable
-> interfaces port 1/1/1-6 link-trap enable
```

### Release History

Release 5.1; command introduced.

### Related Commands

[show interfaces status](#) Displays interface line settings.

### MIB Objects

```
esmConfigTable
  esmPortSlot
  esmPortIF
```

---

## interfaces ddm

Configures the Digital Diagnostics Monitoring (DDM) administrative status.

```
interfaces ddm {enable | disable}
```

---

### Syntax Definitions

<b>enable</b>	Enables DDM functionality.
<b>disable</b>	Disables DDM functionality.

### Defaults

---

parameter	default
ddm	disable

---

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- DDM capability will vary based on the transceiver manufacturer.
- DDM status must be enabled in order to enable traps; traps are enabled separately.

### Examples

```
-> interfaces ddm enable  
-> interfaces ddm disable
```

### Release History

Release 5.1; command introduced.

### Related Commands

[show interfaces ddm](#) Displays the interface DDM status.

### MIB Objects

```
ddmConfiguration  
  ddmConfig
```

---

## interfaces ddm-trap

Configures the Digital Diagnostics Monitoring (DDM) administrative status or trap capability.

```
interfaces ddm-trap {enable | disable}
```

---

### Syntax Definitions

<b>enable</b>	Enables DDM trap functionality.
<b>disable</b>	Disables DDM trap functionality.

### Defaults

---

parameter	default
ddm-trap	disable

---

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

DDM status must be enabled in order to enable traps; traps are enabled separately.

### Examples

```
-> interfaces ddm-trap enable  
-> interfaces ddm-trap disable
```

### Release History

Release 5.1; command introduced.

### Related Commands

[show interfaces ddm](#) Displays the interface DDM status.

### MIB Objects

```
ddmConfiguration  
  ddmTrapConfig  
  ddmNotificationType
```

---



## interfaces eee

Enables or disabled Energy Efficient Ethernet.

```
interfaces {slot chassis/slot| port chassis/slot/port[-port2]} eee {enable | disable}
```

---

### Syntax Definitions

<i>chassis</i>	The chassis identifier.
<i>slot</i>	The slot number for a specific module.
<i>port[-port2]</i>	The port number. Use a hyphen to specify a range of ports.
<b>enable</b>	Enables EEE functionality.
<b>disable</b>	Disables EEE functionality.

### Defaults

---

parameter	default
<b>enable   disable</b>	<b>disable</b>

---

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- EEE is only supported on copper ports.
- Enabling EEE will start advertising EEE capability to peer ports. Disabling EEE will stop advertising EEE capability to peer ports.

### Examples

```
-> interfaces port 1/1/1 eee enable
-> interfaces slot 1/1 eee disable
```

### Release History

Release 5.1; command introduced.

### Related Commands

[show interfaces](#) Displays the administrative, operational, violation, and recovery status and configuration for the specified port.

### MIB Objects

N/A

---

## clear violation

Clears all the MAC address violation logs for a particular port and session. After the violations are cleared, the specific port resumes normal operation. This includes applying an existing application configuration.

```
clear violation {port chassis/slot/port[-port2] | linkagg agg_id[-agg_id2]}
```

---

### Syntax Definitions

<i>chassis</i>	The chassis identifier when running in virtual chassis mode.
<i>slot</i>	The slot number for a specific module.
<i>port[-port2]</i>	The port number. Use a hyphen to specify a range of ports.
<i>agg_id[-agg_id2]</i>	Enter a link aggregate ID number. Use a hyphen to specify a range of link aggregate IDs.

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- When a violation is set on a physical port that is part of a link aggregate, the violation is set for the whole link aggregate. All ports on that link aggregate are brought down. When this command is applied to a link aggregate ID, all member ports of the link aggregate are activated.
- When this command is applied, all MAC addresses known to the port are cleared from the MAC address table for the switch.

### Examples

```
-> clear violation port 1/10
-> clear violation port 2/1-5
-> clear violation linkagg 5
-> clear violation linkagg 10-20
```

### Release History

Release 5.1; command introduced.

## Related Commands

### [show violation](#)

Displays the address violations that occur on ports with LPS restrictions.

## MIB Objects

portViolationTable  
portViolationClearPort

---

## violation recovery-maximum

Configures the maximum number of recovery attempts allowed before the port is permanently shut down. This value is configurable on a global basis (applies to all ports on all modules) and on a per-slot or per-port basis.

**violation recovery-maximum** {infinite | *max\_attempts*}

**violation** [*slot chassis/slot* | **port** *chassis/slot/port[-port2]*] **recovery-maximum** {infinite | default | *max\_attempts*}

---

### Syntax Definitions

<i>chassis</i>	The chassis identifier.
<i>slot</i>	The slot number for a specific module.
<i>port[-port2]</i>	The port number. Use a hyphen to specify a range of ports.
<b>infinite</b>	Sets the recovery attempt to infinite auto recovery.
<b>default</b>	Sets the number of recovery attempts to the global value for the specified ports. This parameter is only available when a slot, port, or range of ports is specified with this command.
<i>max_attempts</i>	The maximum number of recovery attempts. Valid range is 0-50.

### Defaults

By default, this command configures the global maximum number of recovery attempts. The global value applies to all ports on all modules in the switch.

parameter	default
<i>max_attempts</i>	10

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- Set the maximum number of recovery attempts value to 0 to disable this recovery mechanism.
- Enter a slot number to configure the number of recovery attempts for all interfaces on a specific slot.
- Enter a slot and port number or a range of ports to configure the number of recovery attempts for a specific interface or a range of interfaces.
- When this command is used to configure the number of recovery attempts for all ports on a slot or for a specific port or range of ports, the value specified overrides the global maximum number of attempts configured for the switch.
- When configuring the number of recovery attempts for a specific slot, port, or range of ports, use the **default** parameter to reset this value to the global maximum number of attempts.

- The number of recovery attempts increments whenever a port recovers using automatic recovery timer mechanism. When the number of recovery attempts exceeds the configured threshold, the port is permanently shut down.
- Once an interface is permanently shut down, only the **clear violation** command can be used to recover the interface.
- The recovery mechanism tracks the number of recoveries within a fixed time window (FTW). The  $FTW = 2 * \text{maximum recovery number} * \text{recovery timer}$ . For example, if the maximum number of recovery attempts is set to 4 and the recovery timer is set to 5, the FTW is 40 seconds ( $2 * 4 * 5=40$ ).

## Examples

```
-> violation recovery-maximum 25
-> violation slot 1/2 recovery-maximum 10
-> violation port 1/2/3 recovery-maximum 20
-> violation port 1/2/4-9 recovery-maximum 50
-> violation port 1/2/4-9 recovery-maximum default
-> violation port 1/2/3 recovery-maximum 0
-> violation recovery-maximum infinite
-> violation recovery-maximum 0
```

## Release History

Release 5.1; command introduced.

## Related Commands

### [violation recovery-time](#)

Configures the time interval after which the port is automatically re-activated if the port was shut down for any violation.

### [show interfaces](#)

Displays the administrative, operational, violation, and recovery status and configuration for the specified port.

### [show violation-recovery-configuration](#)

Displays the globally configured recovery time, SNMP recovery trap status, and maximum recovery attempts.

## MIB Objects

```
alaPortViolationRecoveryTable
  alaPortViolationRecoveryMaximum
```

---

## violation recovery-time

Configures the time interval after which the port is automatically re-activated if the port was shutdown for any violation. This value is configurable on a global basis (applies to all ports on all modules) and on a per-slot or per-port basis.

**violation recovery-time** *seconds*

**violation** [*slot chassis/slot* | **port** *chassis/slot/port[-port2]*] **recovery-time** {*seconds* | **default**}

---

### Syntax Definitions

<i>chassis</i>	The chassis identifier.
<i>slot</i>	The slot number for a specific module.
<i>port[-port2]</i>	The port number. Use a hyphen to specify a range of port.
<i>seconds</i>	The number of seconds after which a port is reactivated. The valid range is 30-600 seconds.
<b>default</b>	Sets the recovery time to the global value for the specified ports. This parameter is only available when a slot, port, or range of ports is specified with this command.

### Defaults

- By default, this command configures the global recovery time. The global value applies to all ports on all modules in the switch.
- By default, the violation recovery time is set to 300 seconds.

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- When the recovery timer expires, the interface is operationally re-enabled and the violation on the interface is cleared.
- The violation recovery time value does not apply to interfaces that are in a permanent shutdown state. A port in this state is only recoverable using the **clear violation** command.
- The interface violation recovery mechanism is not supported on link aggregates, but is supported on the link aggregate member ports.
- Enter a slot number to configure the recovery time for all interfaces on a specific slot.
- Enter a slot and port number or a range of ports to configure the recovery time for a specific interface or a range of interfaces.
- When this command is used to configure the recovery time for all ports on a slot or for a specific port or range of ports, the value specified overrides the global maximum recovery time configured for the switch.

- When configuring the time for a specific slot, port, or range of ports, use the **default** parameter to reset this value to the global maximum number of attempts.

## Examples

```
-> violation recovery-time 600
-> violation slot 1/2 recovery-time 100
-> violation port 1/2/3 recovery-time 200
-> violation port 1/2/4-9 recovery-time 500
-> violation port 1/2/4-9 recovery-time default
```

## Release History

Release 5.1; command introduced.

## Related Commands

### [violation recovery-maximum](#)

Configures the maximum number of recovery attempts before a port is permanently shut down.

### [show violation](#)

Displays the violation and recovery status for the specified port.

### [show violation-recovery-configuration](#)

Displays the globally configured recovery time, SNMP recovery trap enable/disable status and maximum recovery attempts.

## MIB Objects

```
alaPortViolationRecoveryTable
  alaPortViolationRecoveryTime
```

---

## violation recovery-trap

Enables or disables the sending of a violation recovery trap when any port is re-enabled after the violation recovery time has expired.

**violation recovery-trap {enable | disable}**

---

### Syntax Definitions

<b>enable</b>	Enables the ports to send violation recovery traps.
<b>disable</b>	Disables the ports from sending violation recovery traps.

### Defaults

By default, sending of a violation recovery trap is disabled.

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

This is a global command that is applied to all ports on all modules.

### Examples

```
-> violation recovery-trap enable
-> violation recovery-trap disable
```

### Release History

Release 5.1; command introduced.

### Related Commands

<a href="#">violation recovery-time</a>	Configures the time interval to automatically re-enable the ports that were shutdown due to a violation.
<a href="#">show violation-recovery-configuration</a>	Displays the globally configured recovery time, SNMP recovery trap status, and maximum recovery attempts.

### MIB Objects

```
esmViolationRecovery
  esmViolationRecoveryTrap
```

---



## show interfaces

Displays general interface information (for example, hardware, MAC address, input errors, and output errors).

**show interfaces** [*slot chassis/slot* | **port** *chassis/slot/port[-port2]*]

---

### Syntax Definitions

<i>chassis</i>	The chassis identifier.
<i>slot</i>	Slot number to display information about all ports on a specific slot.
<i>port[-port2]</i>	The port number of a specific interface to display. Use a hyphen to specify a range of ports.

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

N/A

### Examples

```
-> show interfaces port 1/1/2
Chassis/Slot/Port 1/1/2 :
  Operational Status      : up,
  Last Time Link Changed : Mon Jan  5 17:09:30 2019,
  Number of Status Change: 1,
  Port-Down/Violation Reason: None,
  Type                   : Ethernet,
  SFP/XFP                : GBIC_SX,
  Interface Type         : Fiber,
  EPP                    : Disabled,
  Link-Quality           : N/A
  MAC address            : 00:d0:95:b2:39:85,
  BandWidth (Megabits)   : 1000,           Duplex           : Full,
  Autonegotiation        : 1 [ 100-F 100-F 100-H 10-F 10-H ],
  Long Accept            : Enable,           Runt Accept      : Disable,
  Long Frame Size(Bytes) : 9216,           Runt Size(Bytes) : 64,
  Inter Frame Gap(Bytes) : 12,
  loopback mode         : N/A,
  Rx                    :
  Bytes Received        :                7967624, Unicast Frames :                0,
  Broadcast Frames     :                124186, M-cast Frames   :                290,
  UnderSize Frames     :                0, OverSize Frames :                0,
  Lost Frames          :                0, Error Frames    :                0,
  CRC Error Frames     :                0, Alignments Err  :                0,
  Tx                   :
  Bytes Xmitted        :                255804426, Unicast Frames :                24992,
```

```

Broadcast Frames:          3178399, M-cast Frames :          465789,
UnderSize Frames:         0, OverSize Frames:         0,
Lost Frames :             0, Collided Frames:         0,

```

**output definitions**


---

<b>Slot/Port</b>	Interface slot and port.
<b>Operational Status</b>	Interface status: <b>up</b> - port is operationally up. <b>down</b> - port is operationally down <b>dormant</b> - SFP/SFP+ transceiver is inserted into a port configured for Fibre Channel or Fibre Channel transceiver is inserted into a port configured for Ethernet and the link has become active.
<b>Last Time Link Changed</b>	The last time the configuration for this interface was changed.
<b>Number of Status Change</b>	The total number of times that the configuration of this interface has changed.
<b>Port-Down/Violation Reason</b>	This is displayed if the port is down. If the port is down due to software reasons or violations the reason is displayed. If it is down due to physical fault, "None" is displayed. The reason displayed applies only to the physical port, for a link aggregate use the <b>show violation</b> command.
<b>Type</b>	Interface type (Ethernet/Fast Ethernet/Gigabit Ethernet).
<b>SFP/XFP</b>	The type of transceiver detected.
<b>Interface Type</b>	The type of interface for this port. (Copper, Fiber, Combo-Copper, Combo-Fiber)
<b>EPP</b>	Enhanced Port Performance. <i>Not supported in this release.</i>
<b>Link-Quality</b>	The link quality of the connection: <b>GOOD</b> - The port will connect with no problems and transfer data with no errors. <b>FAIR</b> - The port may have intermittent problems connecting and maintaining its connection to a remote port and/or intermittent CRC's could occur. <b>POOR</b> - The port will have problems connecting and maintaining a connection with remote port. If the ports connect, it's likely CRC errors will occur. <b>N/A</b> - The port link quality is either very poor or the port type does not support the Link Quality capability.
<b>MAC address</b>	Interface MAC address.
<b>WWPN</b>	OmniSwitch 64-bit World Wide Port Name (WWPN) for each Fibre Channel port.
<b>Bandwidth</b>	Bandwidth (in megabits).
<b>Duplex</b>	Duplex mode (Half/Full/Auto).
<b>Autonegotiation</b>	The auto negotiation settings for this interface.
<b>Long Accept</b>	Long Frames status (enable/disable).
<b>Runt Accept</b>	Runt Frames status (enable/disable).
<b>Long Frame Size</b>	Long Frame Size (in Bytes).
<b>Runt Size</b>	Runt Frame Size (in Bytes).

*output definitions (continued)*


---

<b>Inter Frame Gap</b>	Inter-packet gap (in Bytes). <i>Not supported in this release.</i>
<b>loopback mode</b>	The loopback mode for the port (N/A or <b>SPB-VPN</b> ). Ports are configured to run in the loopback mode to support L3 VPN inline routing for an IP over Shortest Path Bridging (SPB) configuration.
<b>Bytes Received</b>	Number of Bytes received.
<b>Rx Unicast Frames</b>	Number of unicast frames received.
<b>Rx Broadcast Frames</b>	Number of broadcast frames received.
<b>Rx M-cast Frames</b>	Number of multicast frames received.
<b>Rx Undersize Frames</b>	Number of undersized frames received.
<b>Rx Oversize Frames</b>	Number of oversized frames received.
<b>Rx Lost Frames</b>	Number of Lost Frames received.
<b>Rx Error Frames</b>	Number of error frames received.
<b>Rx CRC Error Frames</b>	Number of CRC error frames received. Only applies to frames that are less than or equal to Max/Long Frame Size. Frames larger than Long Frame Size are counted as OverSizeFrames.
<b>Rx Alignments Err</b>	Number of Alignments Error frames received.
<b>Bytes Xmitted</b>	Number of Bytes transmitted.
<b>Tx Unicast Frames</b>	Number of unicast frames transmitted.
<b>Tx Broadcast Frames</b>	Number of broadcast frames transmitted.
<b>Tx M-cast Frames</b>	Number of multicast frames r transmitted.
<b>Tx Undersize Frames</b>	Number of undersized frames transmitted.
<b>Tx Oversize Frames</b>	Number of oversized frames transmitted.
<b>Tx Lost Frames</b>	Number of Lost Frames transmitted.
<b>Tx Collided Frames</b>	Number of collision frames received or transmitted.
<b>Tx Error Frames</b>	Number of error frames transmitted.

---

**Release History**

Release 5.1; command introduced.

## Related Commands

<a href="#">show interfaces accounting</a>	Displays interface accounting information (e.g., packets received/transmitted).
<a href="#">show interfaces counters</a>	Displays interface counter information (e.g., unicast packets received/transmitted).
<a href="#">show interfaces status</a>	Displays the interface line settings (e.g., speed and mode).
<a href="#">show interfaces traffic</a>	Displays interface traffic statistics (input/output bytes and packets).

## MIB Objects

```
ifTable
  ifOperStatus
  ifType
  ifPhysAddress
  ifSpeed
  ifInDiscards
  IfOutDiscards
esmConfTable
  esmPortSlot
  esmPortIF
  esmPortCfgrLongEnable
  esmPortCfgrRuntEnable
  esmPortCfgrMaxFrameSize
  esmPortCfgrRuntSize
  esmPortDownReason
  esmPortInterfaceType
alaPortXTable
  alaPortXLoopbackStatus
ifXTable
  ifHCInOctets
  ifHCInUcastPkts
  ifHCInBroadcastPkts
  ifHCInMulticastPkts
  IfHCOutOctets
  IfHCOutUcastPkts
  IfHCOutBroadcastPkts
  IfHCOutMulticastPkts
alcetherStatsTable
  alcetherStatsRxUndersizePkts
  alcetherStatsCRCAlignErrors
  alcetherStatsTxUndersizePkts
  alcetherStatsTxOversizePkts
  alcetherStatsTxCollisions
dot3StatsTable
  dot3StatsFrameTooLong
  dot3StatsFCSErrors
  dot3StatsLateCollisions
```

---

## show interfaces alias

Displays interface line settings (e.g., speed and mode).

**show interfaces [slot chassis/slot | port chassis/slot[port[-port2]] alias**

---

### Syntax Definitions

<i>chassis</i>	The chassis identifier.
<i>slot</i>	Slot number to display information about all ports on a specific slot.
<i>port[-port2]</i>	The port number of a specific interface to display. Use a hyphen to specify a range of ports.

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

If no slot/port numbers are entered, line settings for all slots/ports on the switch are displayed.

### Examples

```
-> show interfaces port 1/1/2 alias
Legends:WTS - Wait to shutdown
# - WTS Timer is Running & port is in wait-to-shutdown state
Chas/
Slot/   Admin   Link   WTR   WTS   Alias
Port   Status  Status (sec) (msec)
-----+-----+-----+-----+-----+-----
1/1/2  disable  down   5     #10  ""
```

#### *output definitions*

---

<b>Chas/Slot/Port</b>	Interface chassis/slot/port number.
<b>Admin Status</b>	The administrative status of the port.
<b>Link Status</b>	The link status of the port. Autonegotiation status (Enable/Disable).
<b>WTS (msec)</b>	The wait-to-shutdown configuration time.
<b>WTR (sec)</b>	The wait-to-restore configuration time.
<b>Alias</b>	The configured alias for the port.

---

### Release History

Release 5.1; command introduced.

**Related Commands**[interfaces alias](#)

Configures the port alias.

**MIB Objects**

```
ifXTable  
  ifAlias
```

---

## show interfaces status

Displays interface line settings (for example, speed and mode).

**show interfaces [slot chassis/slot | port chassis/slot[port[-port2]] status**

---

### Syntax Definitions

<i>chassis</i>	The chassis identifier.
<i>slot</i>	Slot number to display information about all ports on a specific slot.
<i>port[-port2]</i>	The port number of a specific interface to display. Use a hyphen to specify a range of ports.

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

If no slot/port numbers are entered, line settings for all slots/ports on the switch are displayed.

### Examples

```
-> show interfaces status
Chas/          DETECTED-VALUES          CONFIGURED-VALUES
Slot/  Admin  Auto  Speed  Duplex  Pause  FEC  Speed  Duplex  Pause  FEC  Link
Port   Status Nego (Mbps)                               (Mbps)  Cfg  Trap  EEE
-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----
1/1/1A  en    en    -      -      -      -    40000  Full   -      AUTO  en  dis
1/1/1B  en    dis   -      -      -      -    10000  Full   -      AUTO  en  dis
1/1/1C  en    dis   -      -      -      -    10000  Full   -      AUTO  en  dis
1/1/1D  en    dis   -      -      -      -    10000  Full   -      AUTO  en  dis
1/1/2A  en    en    -      -      -      -    40000  Full   -      AUTO  en  dis
1/1/2B  en    dis   -      -      -      -    10000  Full   -      AUTO  en  dis
1/1/2C  en    dis   -      -      -      -    10000  Full   -      AUTO  en  dis
1/1/2D  en    dis   -      -      -      -    10000  Full   -      AUTO  en  dis
1/3/1   en    dis   -      -      -      -    10000  Full   -      AUTO  en  dis
1/3/2   en    dis   -      -      -      -    10000  Full   -      AUTO  en  dis
1/3/3   en    dis   -      -      -      -    10000  Full   -      AUTO  en  dis
1/3/4   en    dis   -      -      -      -    10000  Full   -      AUTO  en  dis
1/3/5   en    dis   -      -      -      -    10000  Full   -      AUTO  en  dis

-> show interfaces port 1/3/1 status
Chas/          DETECTED-VALUES          CONFIGURED-VALUES
Slot/  Admin  Auto  Speed  Duplex  Pause  FEC  Speed  Duplex  Pause  FEC  Link
Port   Status Nego (Mbps)                               (Mbps)  Cfg  Trap  EEE
-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----
1/3/1   en    dis   -      -      -      -    10000  Full   -      AUTO  en  dis
```

*output definitions*


---

<b>Chas/Slot/Port</b>	Interface chassis/slot/port number.
<b>Admin Status</b>	The administrative status of the port. Configured through the <a href="#">interfaces</a> command.
<b>AutoNego</b>	Autonegotiation status (Enable/Disable). Configured through the <a href="#">interfaces</a> command.
<b>Detected Speed</b>	Detected line speed in Mbps.
<b>Detected Duplex</b>	Detected line duplex (Half duplex/Full duplex/Auto).
<b>Detected Pause</b>	Detected pause control configuration.
<b>FEC Det</b>	The detected FEC settings (DIS, FC, RS).
<b>Configured Speed</b>	Configured line speed (10/100/Auto/1000/10000 Mbps). Configured through the <a href="#">interfaces speed</a> command.
<b>Configured Duplex</b>	Configured line duplex (Half duplex/Full duplex/Auto). Configured through the <a href="#">interfaces duplex</a> command.
<b>FEC Cfg</b>	The configured FEC settings (Disable, Auto, FC, RS).
<b>Configured Pause</b>	Detected pause control configuration. Configured through the <a href="#">interfaces pause</a> command.
<b>Link Trap</b>	Link Trap status. Configured through the <a href="#">interfaces link-trap</a> command.
<b>EEE</b>	Energy Efficient Ethernet configuration (dis/ena).

---

**Release History**

Release 5.1; command introduced.

**Related Commands**

<a href="#">interfaces</a>	Configures interface line speed, sets speed, and duplex mode to auto-sensing.
<a href="#">interfaces duplex</a>	Configures interface duplex mode.

**MIB Objects**

```
esmConfTable
  esmPortSlot
  esmPortIF
  esmPortAutoSpeed
  esmPortAutoDuplexMode
  esmPortCfgAutoNegotiation
  esmPortCfgSpeed
  esmPortCfgDuplexMode
  esmPortCfgPause
  esmPortLinkUpDownTrapEnable
```

---



## show interfaces capability

Displays default auto negotiation, speed, duplex, flow, and cross-over settings for a single port, a range of ports, or all ports on a Network Interface (NI) module.

**show interfaces [slot chassis/slot | port chassis/slot[port[-port2]] capability**

---

### Syntax Definitions

<i>chassis</i>	The chassis identifier when running in virtual chassis mode.
<i>slot</i>	Slot number to display information about all ports on a specific slot.
<i>port[-port2]</i>	The port number of a specific interface to display. Use a hyphen to specify a range of ports.

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

Displays defaults settings in two rows of data for each port. The first row of data, identified by the label **CAP**, displays the valid user-defined configuration settings available for the port. The second row, identified by the label **DEF**, displays the default settings for the port.

### Examples

-> show interfaces capability

Ch/Slot/Port	AutoNeg	Pause	Crossover	Speed	Duplex	Macsec Supported
1/1/1	CAP EN/DIS	Tx/Rx/Tx&Rx/DIS	MDI/X/Auto	10/100/1G	Full/Half	NO
1/1/1	DEF EN	DIS	Auto	Auto	Auto	
1/1/2	CAP EN/DIS	Tx/Rx/Tx&Rx/DIS	MDI/X/Auto	10/100/1G	Full/Half	NO
1/1/2	DEF EN	DIS	Auto	Auto	Auto	
1/1/3	CAP EN/DIS	Tx/Rx/Tx&Rx/DIS	MDI/X/Auto	10/100/1G	Full/Half	NO
1/1/3	DEF EN	DIS	Auto	Auto	Auto	
1/1/25	CAP DIS	Tx/Rx/Tx&Rx/DIS	-	10G	Full	YES
1/1/25	DEF DIS	DIS	-	10G	Full	
1/1/26	CAP DIS	Tx/Rx/Tx&Rx/DIS	-	10G	Full	YES
1/1/26	DEF DIS	DIS	-	10G	Full	

-> show interfaces port 1/1/1 capability

Ch/Slot/Port	AutoNeg	Pause	Crossover	Speed	Duplex	Macsec Supported
1/1/1	CAP EN/DIS	Tx/Rx/Tx&Rx/DIS	MDI/X/Auto	10/100/1G	Full/Half	NO
1/1/1	DEF EN	DIS	Auto	Auto	Auto	

*output definitions*


---

<b>Cha/Slot/Port</b>	The chassis/slot/port identifier.
<b>AutoNeg</b>	In the row labeled <b>CAP</b> , the field displays the valid auto negotiation configurations for the port. In the row label <b>DEF</b> , the field displays the default auto negotiation settings for the port. The possible values are <b>EN</b> (enabled) or <b>DIS</b> (disabled).
<b>Pause</b>	In the row labeled <b>CAP</b> , the field displays the valid pause configurations for the port. In the row label <b>DEF</b> , the field displays the default pause settings for the port.
<b>Crossover</b>	In the row labeled <b>CAP</b> , the field displays the valid cross over configurations for the port. In the row label <b>DEF</b> , the field displays the default cross over settings for the port. The possible values are <b>Auto</b> , <b>MDI/X/Auto</b> (MDI/MDIX/Auto), or -- (not configurable and/or not applicable).
<b>Speed</b>	In the row labeled <b>CAP</b> , the field displays the valid line speed configurations for the port. In the row label <b>DEF</b> , the field displays the default line speed settings for the port. The possible values are <b>10/100</b> , <b>100</b> , <b>1G</b> , <b>10/100/1G</b> , <b>10G</b> , or <b>Auto</b> .
<b>Duplex</b>	In the row labeled <b>CAP</b> , the field displays the valid duplex configurations for the port. In the row label <b>DEF</b> , the field displays the default duplex settings for the port. The possible values are <b>Full</b> , <b>Full/Half</b> , or <b>Auto</b> .
<b>Macsec Supported</b>	The status of MACsec on the interface.

---

**Release History**

Release 5.1; command introduced.

**Related Commands**

<a href="#">interfaces</a>	Enables and disables auto negotiation.
<a href="#">interfaces</a>	Configures interface speed.
<a href="#">interfaces duplex</a>	Configures duplex settings.
<a href="#">show interfaces alias</a>	Displays interface line settings.

**MIB Objects**

```
esmConfTable
  esmPortCfgAutoNegotiation
  esmPortCfgFlow
  esmPortCfgSpeed
  esmPortAutoDuplexMode
```

---

## show interfaces accounting

Displays interface accounting information (e.g., packets received/transmitted and deferred frames received).

**show interfaces** [*slot chassis/slot* | **port** *chassis/slot/port[-port2]*] **accounting**

---

### Syntax Definitions

<i>chassis</i>	The chassis identifier.
<i>slot</i>	Slot number to display information about all ports on a specific slot.
<i>slot/port[-port2]</i>	The port number of a specific interface to display. Use a hyphen to specify a range of ports.

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

If no slot/port numbers are entered, accounting information for all slots/ports on the switch is displayed.

### Examples

```
-> show interfaces accounting
1/4/38:
  Rx Undersize           =                0, Tx Undersize   =                0,
  Rx Oversize            =                0, Tx Oversize   =                0,
  Rx Jabber              =                0,
  Rx/Tx 64 Octets       =            361616757,
  Rx/Tx 65 ~ 127 Octets =            20510941,
  Rx/Tx 128 ~ 255 Octets =            377413,
  Rx/Tx 256 ~ 511 Octets =            45391,
  Rx/Tx 512 ~ 1023 Octets =             2319,
  Rx/Tx 1024 ~ MAX Octets =            63555,
```

### output definitions

---

<b>Rx Undersize</b>	Number of undersized packets received.
<b>Tx Undersize</b>	Number of undersized packets transmitted.
<b>Rx Oversize</b>	Number of oversized packets received.
<b>Tx Oversize</b>	Number of oversized packets transmitted.
<b>Rx Jabber</b>	Number of Jabber packets received (longer than 1518 octets).
<b>Rx/Tx Octets</b>	Number of packets received and transmitted in each listed octet range.

---

## Release History

Release 5.1; command introduced.

## Related Commands

### [interfaces ddm](#)

Displays general interface information (e.g., hardware, MAC address, and input/output errors).

### [show interfaces counters](#)

Displays interface counter information (e.g., unicast packets received/transmitted).

## MIB Objects

esmConfTable

  esmPortSlot

  esmPortIF

dot3StatsTable

  dot3StatsFrameTooLong

  dot3StatsDeferredTransmissions

alcetherStatsTable

  alcetherStatRxsUndersizePkts

  alcetherStatTxUndersizePkts

  alcetherStatsTxOversizePkts

  alcetherStatsPkts64Octets

  alcetherStatsPkts65to127Octets

  alcetherStatsPkts128to255Octets

  alcetherStatsPkts256to511Octets

  alcetherStatsPkts512to1023Octets

  alcetherStatsPkts1024to1518Octets

  gigaEtherStatsPkts1519to4095Octets

  gigaEtherStatsPkts4096to9215Octets

  alcetherStatsRxJabber

---

## show interfaces counters

Displays interface counters information (e.g., unicast, broadcast, and multi-cast packets received/transmitted).

**show interfaces [slot chassis/slot | port chassis/slot[port[-port2]] counters**

---

### Syntax Definitions

<i>chassis</i>	The chassis identifier.
<i>slot</i>	Slot number to display information about all ports on a specific slot.
<i>port[-port2]</i>	The port number of a specific interface to display. Use a hyphen to specify a range of ports.

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

If no slot/port numbers are entered, counter information for all slots/ports on the switch is displayed.

### Examples

```
-> show interfaces port 1/3/1 counters
1/3/1 ,
InOctets      = 54367578586897979,  OutOctets      = 5.78E19,
InUcastPkts   = 55654265276,        OutUcastPkts   = 5.78E20,
InMcastPkts   = 58767867868768777,  OutMcastPkts   = 5465758756856,
InBcastPkts   = 576567567567567576,  OutBcastPkts   = 786876,
InPauseFrames = 567798768768767,    OutPauseFrames = 786876,
```

#### *output definitions*

---

<b>InOctets</b>	Number of octets received.
<b>OutOctets</b>	Number of octets transmitted.
<b>InUcastPkts</b>	Number of unicast packets received.
<b>OutUcastPkts</b>	Number of unicast packets transmitted.
<b>InMcastPkts</b>	Number of multicast packets received.
<b>OutMcastPkts</b>	Number of unicast packets transmitted.
<b>InBcastPkts</b>	Number of broadcast packets received.
<b>OutBcastPkts</b>	Number of unicast packets transmitted.
<b>InPauseFrames</b>	Number of MAC control frames received.
<b>OutPauseFrames</b>	Number of MAC control frames transmitted.

---

## Release History

Release 5.1; command introduced.

## Related Commands

[show interfaces counters errors](#) Displays interface error frame information (e.g., CRC errors, transit errors, and receive errors).

## MIB Objects

esmConfTable

    esmPortSlot

    esmPortIF

ifXTable

    IfHCInOctets

    IfHCOctets

    IfHCInUcastPkts

    IfHCOUcastPkts

    IfHCInMulticastPkts

    IfHCOmulticastPkts

    IfHCInBroadcastPkts

    IfHCObroadcastPkts

dot3PauseTable

    dot3InPauseFrame

    dot3OutPauseFrame

---

## show interfaces counters errors

Displays interface error frame information (e.g., CRC errors, transit errors, and receive errors).

**show interfaces [slot chassis/slot | port chassis/slot/port[-port2]] counters errors**

---

### Syntax Definitions

<i>chassis</i>	The chassis identifier.
<i>slot</i>	Slot number to display information about all ports on a specific slot.
<i>port[-port2]</i>	The port number of a specific interface to display. Use a hyphen to specify a range of ports.

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

If no slot/port numbers are entered, counter error information for all slots/ports on the switch is displayed.

### Examples

```
-> show interfaces port 1/2/1 counters errors
1/2/1 ,
  Alignments Errors = 6.45E13,   FCS Errors = 7.65E12
  IfInErrors        = 6435346,   IfOutErrors = 5543,
  Undersize pkts    = 867568,   Oversize pkts = 5.98E8
```

### output definitions

---

<b>Chas/Slot/Port</b>	Interface chassis, slot, and port number.
<b>Alignments Errors</b>	Number of Alignments errors.
<b>FCS Errors</b>	Number of Frame Check Sequence errors.
<b>IfInErrors</b>	Number of received error frames.
<b>IfOutErrors</b>	Number of transmitted error frames.
<b>Undersize pkts</b>	Number of undersized packets.
<b>Oversize pkts</b>	Number of oversized packets (more than 1518 octets).

---

### Release History

Release 5.1; command introduced.

## Related Commands

### [show interfaces counters](#)

Displays interface counters information (e.g., unicast, broadcast, and multi-cast packets received/transmitted).

## MIB Objects

```
esmConfTable
  esmPortSlot
  esmPortIF
ifTable
  ifInErrors
  ifOutErrors
alcetherStatsTable
  alcetherStatsRxUndersizePkts
dot3StatsTable
  dot3StatsAlignmentErrors
  dot3StatsFCSErrors
  dot3StatsFrameTooLong
```

---



## show interfaces flood-rate

Displays interface peak flood rate settings.

**show interfaces** [*slot chassis/slot* | **port** *chassis/slot/port[-port2]*] **flood-rate**

---

### Syntax Definitions

<i>chassis</i>	The chassis identifier.
<i>slot</i>	Slot number to display information about all ports on a specific slot.
<i>port[-port2]</i>	The port number of a specific interface to display. Use a hyphen to specify a range of ports.

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

N/A

### Examples

```
-> show interfaces flood-rate
Chas/
Slot/  Bcast    Bcast    Bcast    Ucast    Ucast    Ucast    Mcast    Mcast    Mcast
Port  Value     Type     Status   Value     Type     Status   Value     Type     Status
-----+-----+-----+-----+-----+-----+-----+-----+-----+-----
1/1/1      496  mbps  enable      496  mbps  enable      496  mbps  disable
1/1/2      496  mbps  enable      496  mbps  enable      496  mbps  disable
1/1/3      496  mbps  enable      496  mbps  enable      496  mbps  disable
1/1/4      496  mbps  enable      496  mbps  enable      496  mbps  disable
1/1/5      496  mbps  enable      496  mbps  enable      496  mbps  disable
```

#### *output definitions*

---

<b>Slot/Port</b>	Interface slot and port numbers.
<b>Value</b>	The value set based on the type of flood limiting.
<b>Type</b>	The type of flood limiting: mbps, pps, or %
<b>Status</b>	Status of the type of flood-limiting: enabled or disabled.

---

### Release History

Release 5.1; command introduced.

## Related Commands

### [interfaces flood-limit](#)

Configures the peak flood rate for an interface.

## MIB Objects

```
esmConfTable
  esmPortSlot
  esmPortIF
  esmPortMaxFloodRate
  esmPortFloodMcastEnable
```

---

## show interfaces traffic

Displays interface traffic statistics.

**show interfaces [slot chassis/slot | port chassis/slot/port[-port2]] traffic**

---

### Syntax Definitions

<i>chassis</i>	The chassis identifier when running in virtual chassis mode.
<i>slot</i>	Slot number to display information about all ports on a specific slot.
<i>port[-port2]</i>	The port number of a specific interface to display. Use a hyphen to specify a range of ports.

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

If no slot/port numbers are entered, traffic settings for all slots/ports on the switch are displayed.

### Examples

```
-> show interfaces traffic
Ch/Slot/Port   Input packets   Input bytes   Output packets   Output bytes
-----+-----+-----+-----+-----
1/1/2          322             20624         5125             347216
1/3/2          322             20620         5133             347764
```

#### *output definitions*

---

<b>Ch/Slot/Port</b>	Interface chassis, slot, and port numbers.
<b>Input packets</b>	Input packets detected.
<b>Input bytes</b>	Input bytes detected.
<b>Output packets</b>	Output packets detected.
<b>Output bytes</b>	Output bytes detected.

---

### Release History

Release 5.1; command introduced.

## Related Commands

### [interfaces ddm](#)

Displays general interface information (e.g., hardware, MAC address, and input/output errors).

### [show interfaces counters](#)

Displays interface counter information (e.g., unicast packets received/transmitted).

## MIB Objects

esmConfTable

  esmPortSlot

  esmPortIF

ifXTable

  ifHCInOctets

  ifHCInUcastPkts

  ifHCInMulticastPkts

  ifHCInBroadcastPkts

  ifHCOctets

  ifHCOUcastPkts

  ifHCOMulticastPkts

  ifHCOBroadcastPkts

---

## show interfaces ingress-rate-limit

Displays the ingress-rate-limit set for each interface port.

**show interfaces** [*slot chassis/slot*] **port** *chassis/slot/port*[-*port1*]] **ingress-rate-limit**

---

### Syntax Definitions

<i>chassis</i>	The chassis identifier.
<i>slot</i>	Slot number to display information about all ports on a specific slot.
<i>port</i> [- <i>port2</i> ]	The port number of a specific interface to display. Use a hyphen to specify a range of ports.

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

If the slot number is not specified, then the switch back pressure feature must be enabled or disabled on an entire chassis.

### Examples

```
-> show interfaces port 1/1/1-4 ingress-rate-limit
Chas/
Slot/ Rate Limit Burst Size Status
Port   (Mbps)      (MB)
-----+-----+-----+-----
1/1/1   496           19  disable
1/1/2   496           19  disable
1/1/3   496           19  disable
1/1/4   496           19  disable
```

#### *output definitions*

---

<b>Chas/Slot/Port</b>	Interface chassis, slot, and port numbers.
<b>Rate Limit (Mbps)</b>	Rate limit in Megabits.
<b>Burst Size (MB)</b>	Burst size in Megabytes.
<b>Status</b>	Status of rate limiting.

---

### Release History

Release 5.1; command introduced.

## Related Commands

[interfaces ingress-bandwidth](#) Configures the ingress-rate-limit.

## MIB Objects

```
esmConfTable  
  esmPortSlot  
  esmPortIF
```

---

## show interfaces ddm

Displays the Digital Diagnostics Monitoring (DDM) information for the specified transceivers.

**show interfaces** [*slot chassis/slot*] **port** *chassis/slot/port[-port1]* **ddm** [**w-low** | **w-high** | **status** | **a-low** | **a-high** | **actual**]

---

### Syntax Definitions

<i>chassis</i>	The chassis identifier.
<i>slot</i>	Display all the transceivers on the specified slot.
<i>port[-port2]</i>	The port number of a specific interface to display. Use a hyphen to specify a range of ports.
<b>w-low</b>	Display the transceivers Warning Low value.
<b>w-high</b>	Display the transceivers Warning High value.
<b>status</b>	Display the administrative status of DDM.
<b>a-low</b>	Display the transceivers Alarm Low value.
<b>a-high</b>	Display the transceivers Alarm High value.
<b>actual</b>	The real-time values indicated by the transceiver. Values displayed in parentheses indicate the Warning or Alarm value that has been reached.

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

If the threshold values of the transceiver are '0' then NS (Not Supported) will be displayed in the DDM output display.

### Examples

```
-> show interfaces ddm w-low
Chas/
Slot/Port   Temp (C)   Voltage (V)   Tx Bias (mA)   Output (dBm)   Input (dBm)
-----+-----+-----+-----+-----+-----
1/1         48         5.15         50             2.50           2.50
1/2         47         5.35         49             2.43           2.43
1/3         NA         NA           NA             NA             NA

-> show interfaces ddm a-high
Chas/
Slot/Port   Temp (C)   Voltage (V)   Tx Bias (mA)   Output (dBm)   Input (dBm)
-----+-----+-----+-----+-----+-----
1/1/1       50         5.75         75             3.22           3.22
1/1/2       50         5.95         65             3.22           3.22
```

```

1/1/3      NA              NA              NA              NA              NA
-> show interfaces port 1/1/1 ddm
Chas/
Slot/      Thres-      Temp      Voltage      Tx Bias      Output      Input
Port       hold        (C)       (V)          (mA)         (dBm)       (dBm)
-----+-----+-----+-----+-----+-----+-----
1/1/1      Actual      50        1.95 (WL)   75           4.92 (AH)   3.22
           Alarm High  120       5.75        100          4.91        4.91
           Warning High 90        3.00        90           4.77        4.77
           Warning Low  10        2.00        60           0.00        0.00
           Alarm Low   -5        1.75        20           -3.01       -10

-> show interfaces ddm status
DDM Status      : enable
DDM Trap Status : disable

```

### output definitions

<b>Chas/Slot/Port</b>	Interface chassis, slot, and port numbers.
<b>Temp C</b>	The transceiver temperature, in degrees centigrade.
<b>Voltage (V)</b>	The transceiver supply voltage, in volts.
<b>Tx Bias (mA)</b>	The transceiver transmit bias current, in milliamps.
<b>Output (dBm)</b>	The transceiver output power, in decibels.
<b>Input (dBm)</b>	The transceiver received optical power, in decibels.
<b>N/A</b>	Indicates the transceiver does support DDM.
<b>N/S</b>	Indicates the transceiver does not support the DDM attribute.
<b>Actual</b>	The real-time values indicated by the transceiver. Values displayed in parentheses indicate the Warning or Alarm value that has been reached.
<b>Alarm High (AH)</b>	Indicates the value at which the transceiver's functionality may be affected.
<b>Warning High (WH)</b>	Indicates the transceiver is approaching the High Alarm value.
<b>Warning Low (WL)</b>	Indicates the transceiver is approaching the Low Alarm value.
<b>Alarm Low (AL)</b>	Indicates the value at which the transceiver's functionality may be affected.
<b>DDM Status</b>	The administrative status of DDM.
<b>DDM Trap Status</b>	The administrative status of DDM traps.

### Release History

Release 5.1; command introduced.

### Related Commands

[interfaces ddm](#)

Configures the DDM administrative status or trap capability.



**MIB Objects**

## ddmNotifications

- ddmTemperature
- ddmTempLowWarning
- ddmTempLowAlarm
- ddmTempHiWarning
- ddmTempHiAlarm
- ddmSupplyVoltage
- ddmSupplyVoltageLowWarning
- ddmSupplyVoltageLowAlarm
- ddmSupplyVoltageHiWarning
- ddmSupplyVoltageHiAlarm
- ddmTxBiasCurrent
- ddmTxBiasCurrentLowWarning
- ddmTxBiasCurrentLowAlarm
- ddmTxBiasCurrentHiWarning
- ddmTxBiasCurrentHiAlarm
- ddmTxOutputPower
- ddmTxOutputPowerLowWarning
- ddmTxOutputPowerLowAlarm
- ddmTxOutputPowerHiWarning
- ddmTxOutputPowerHiAlarm
- ddmRxOpticalPower
- ddmRxOpticalPowerLowWarning
- ddmRxOpticalPowerLowAlarm
- ddmRxOpticalPowerHiWarning
- ddmRxOpticalPowerHiAlarm

---

## show transceivers

Displays transceiver manufacturer and status information.

**show transceivers** [*slot chassis/slot* [**transceiver** *transceiver\_num*]]

---

### Syntax Definitions

<i>chassis</i>	The chassis identifier.
<i>slot</i>	Display all the ports on the specified slot.
<i>transceiver_num</i>	The number of the transceiver to display.

### Defaults

By default, information is displayed for all transceivers.

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- Specify a chassis/slot number to display transceiver information for a specific module.
- Specify a transceiver model number to display information for a specific transceiver.

### Examples

```
-> show transceivers
Chassis ID 1
Slot 1 Transceiver 53
  ALU Model Name:      QSFP-xxG-C1M      ,
  ALU Model Number:   120387-90    ,
  Hardware Revision:   A          ,
  Serial Number:      404820066  ,
  Manufacture Date:   Feb 17 2014,
  Laser Wave Length:  N/A,
  Admin Status:       POWER ON,
  Operational Status: UP

Chassis ID 2
Slot 1 Transceiver 30
  ALU Model Name:      QSFP-xxG-C1M      ,
  ALU Model Number:   120387-90    ,
  Hardware Revision:   A          ,
  Serial Number:      404820066  ,
  Manufacture Date:   Feb 17 2014,
  Laser Wave Length:  N/A,
  Admin Status:       POWER ON,
  Operational Status: UP

Slot 1 Transceiver 39
  Manufacturer Name:   PICOLIGHT      ,
  Part Number:        PL-XPL-00-S13-00,
```

```

Hardware Revision:          ,
Serial Number:             P100Q1F      ,
Manufacture Date:         Jul  2 2002,
Laser Wave Length:       N/A,
Admin Status:             POWER ON,
Operational Status:      UP

-> show transceivers slot 2/1
Slot 1 Transceiver 30
  ALU Model Name:         QSFP-xxG-C1M  ,
  ALU Model Number:      120387-90    ,
  Hardware Revision:     A ,
  Serial Number:         404820066    ,
  Manufacture Date:     Feb 17 2014,
  Laser Wave Length:    N/A,
  Admin Status:         POWER ON,
  Operational Status:   UP

Slot 1 Transceiver 39
  Manufacturer Name:     PICOLIGHT     ,
  Part Number:          PL-XPL-00-S13-00,
  Hardware Revision:     ,
  Serial Number:         P100Q1F      ,
  Manufacture Date:     Jul  2 2002,
  Laser Wave Length:    N/A,
  Admin Status:         POWER ON,
  Operational Status:   UP

-> show transceivers slot 2/1 transceiver 39
Slot 1 Transceiver 39
  Manufacturer Name:     PICOLIGHT     ,
  Part Number:          PL-XPL-00-S13-00,
  Hardware Revision:     ,
  Serial Number:         P100Q1F      ,
  Manufacture Date:     Jul  2 2002,
  Laser Wave Length:    N/A,
  Admin Status:         POWER ON,
  Operational Status:   UP

```

### *output definitions*

---

<b>Manufacturer Name</b>	The name of the transceiver's manufacturer.
<b>Part Number</b>	The part number of the transceiver.
<b>Hardware Revision</b>	The hardware revision of the transceiver.
<b>Serial Number</b>	The serial number of the transceiver.
<b>Manufacture Date</b>	The manufacture date of the transceiver.
<b>Laser Wave Length</b>	The laser wavelength of the transceiver.
<b>Admin Status</b>	The administrative status of the transceiver.
<b>Operational Status</b>	The operational status of the transceiver.

---

### **Release History**

Release 5.1; command introduced.

**Related Commands**[show interfaces ddm](#)

Displays the DDM administrative status or trap capability.

**MIB Objects**N/A

---

## show violation

Displays the violation conditions that exist on specific ports or link aggregates.

**show violation** [**port** *chassis/slot/port*[-*port2*] | **linkagg** *agg\_id*[-*agg\_id2*]]

---

### Syntax Definitions

<i>chassis</i>	The chassis identifier.
<i>slot</i>	The slot number for a specific module.
<i>port</i> [- <i>port2</i> ]	The port number of a specific interface to display. Use a hyphen to specify a range of ports.
<i>agg_id</i> [- <i>agg_id2</i> ]	Enter a link aggregate ID number. Use a hyphen to specify a range of link aggregate IDs.

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

NA

### Examples

In the following example, the **admin down** action for link aggregate 2 indicates that a port violation has occurred on one of the ports related to the link aggregate group with ID 2.

```
-> show violation
* = Link Agg ID
LAG ID/
Port      Source      Action      Reason      WTR      Recovery Time      Recovery Max/Remain
-----+-----+-----+-----+-----+-----+-----
  1/1/1    src lrn     simulated down  lps shutdown  0         300         10/5
  1/1/1    src lrn     simulated down  lps restrict  0         300         10/10
*0/2      qos        admin down     policy        0         300         10/10
```

### output definitions\

---

<b>Port</b>	The slot and port numbers or link aggregate IDs on which violations occurred.
<b>Source</b>	Specifies the source application that detected the violation.
<b>Action</b>	Specifies the action that is taken when the violation is detected on the port. There are two types of actions: <b>admin down</b> - deactivates the physical port. <b>simulated down</b> - the port is put in blocking state.
<b>Reason</b>	Specifies the reason for the violation.

*output definitions\*

---

<b>WTR</b>	The wait-to-restore timer value. Specifies the number of seconds the switch waits before notifying other applications that the link is up.
<b>Recovery Time</b>	The amount of time after which the port is automatically re-activated if the port was shutdown. Configured through the <b>violation recovery-time</b> command.
<b>Recovery Max/Remain</b>	The maximum number of recovery attempts allowed and the number of attempts remaining. Configured through the <b>violation recovery-maximum</b> command.

---

**Release History**

Release 5.1; command introduced.

**Related Commands****clear violation**

Clears all the MAC address violation logs for a particular port and session. After the violations are cleared, the specific port resumes normal operation.

**MIB Objects**

```
portViolationTable
  portViolationSource
  portViolationEntry
  portViolationTrap
  portViolationSource
  portViolationReason
  portViolationAction
  portViolationTimer
  portViolationTimerAction
```

---

## show violation-recovery-configuration

Displays the global violation recovery configuration details (recovery trap, recovery maximum, and recovery time).

**show violation-recovery-configuration** {slot *chassis/slot* | port *chassis/slot/port*[-*port2*]}

---

### Syntax Definitions

*chassis*                      The chassis identifier.

*slot*                              The slot number for a specific module.

*port*[-*port2*]                  The port number. Use a hyphen to specify a range of ports.

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

NA

### Examples

```
-> show violation-recovery-configuration
Global Violation Trap      : enable
Global Recovery Maximum   : 20
Global Recovery Time      : 200
```

Port	Recovery Max	Recovery Time
1/1/1	10	300
1/1/2	10	300

```
-> show violation-recovery-configuration port 3/1/1-2
Global Recovery Trap      : enable
Global Recovery Maximum   : 20
Global Recovery Time      : 200
```

Port	Recovery Max	Recovery Time
3/1/1	10	300
3/1/2	10	300

### *output definitions*

---

<b>Global Violation Trap</b>	Displays the global status of the violation trap recovery.
<b>Global Recovery Maximum</b>	Displays the global value set for the maximum violation recovery.
<b>Global Recovery Time</b>	Displays the global value set for the recovery time.

---

*output definitions*

---

<b>Port</b>	Displays the chassis, slot and port numbers or link aggregate IDs on which address violations occurred.
<b>Recovery Max</b>	Displays the maximum number of retry configured.
<b>Recovery Time</b>	Displays the duration taken for recovery.

---

**Release History**

Release 5.1; command introduced.

**Related Commands**

<b>clear violation</b>	Clears all the MAC address violation logs for a particular port and session. After the violations are cleared, the specific port resumes normal operation.
<b>violation recovery-maximum</b>	Configures the maximum number of recovery attempts allowed before the port is permanently shut down.
<b>violation recovery-time</b>	Configures the time interval after which the port is automatically re-activated if the port was shutdown for any violation.
<b>violation recovery-trap</b>	Enables or disables the sending of a violation recovery trap when any port is re-enabled after the violation recovery time has expired.

**MIB Objects**

```
portViolationTable  
  alaPvrGlobalTrapEnable  
  alaPvrGlobalRetryTime  
  alaPvrGlobalRecoveryMax  
  alaPvrRetryTime  
  alaPvrRecoveryMax
```

---



## interfaces tdr

Initiates a Time Domain Reflectometry (TDR) cable diagnostics test on the specified port. The TDR feature sends a signal down a cable to determine the distance to a break or other discontinuity in the cable path. The length of time it takes for the signal to reach the break and return is used to estimate the distance to the discontinuity.

**interfaces port *chassis/slot/port* tdr enable**

---

### Syntax Definitions

<i>chassis</i>	The chassis identifier.
<i>slot</i>	The slot number for a specific module.
<i>port</i>	The port number.

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- TDR is an on-demand, out-of-service test. The test is not automatically triggered; data and protocol traffic is interrupted.
- Only one TDR test can be run at any given time.
- TDR is not supported on link aggregate ports, fiber ports, or stacking ports.
- TDR results are automatically cleared when a new test is started on the port or when the module for the port is reset.

### Examples

```
-> interfaces port 1/1/1 tdr enable
```

### Release History

Release 5.1; command introduced.

**Related Commands****clear interfaces**

Clears the statistics of the last test performed on the port

**show interfaces tdr-statistics**

Displays the results of the last TDR test performed on a port.

**MIB Objects**

esmTdrPortTable

esmTdrPortTest

---

## show interfaces tdr-statistics

Displays the results of the last TDR test performed on a port.

**show interfaces [slot chassis/slot | port chassis/slot/port[-port2]] tdr-statistics**

---

### Syntax Definitions

<i>chassis</i>	The chassis identifier.
<i>slot</i>	The slot number for a specific module.
<i>port[-port2]</i>	The port number. Use a hyphen to specify a range of ports.

### Defaults

By default, TDR statistics are shown for all ports on all modules

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- Enter a slot number to display information for all interfaces on a specific slot.
- Enter a slot and port number or a range of port numbers to display information for a specific interface or range of interfaces.

### Examples

```
-> show interfaces port 1/1/3 tdr-statistics
Ch/
Slot/  No of Fuzzy Pair1 Pair1 Pair2 Pair2 Pair3 Pair3 Pair4 Pair4  Test
Port  Pairs Len  State Len  State Len  State Len  State Len  Results
-----+-----+-----+-----+-----+-----+-----+-----+-----
1/1/1    4   10   Open  0    Open  0    Open  0    Open  0    Success
```

Pair Length Accuracy may vary +/- Fuzzy Length

Legend: Pair 1 - Orange and White  
 Pair 2 - Green and White  
 Pair 3 - Blue and White  
 Pair 4 - Brown and White

### output definitions

---

<b>Ch/Slot/Port</b>	The interface chassis, slot, and port number.
<b>No of pairs</b>	The number of pairs in the cable for which the test results are valid.
<b>Fuzzy Length</b>	The error in the estimated length of the cable.

*output definitions (continued)*


---

<b>Cable State</b>	State of a cable as returned by the TDR test. The state of the cable wire. (a) <b>OK</b> - Wire is working properly (b) <b>Open</b> - Wire is broken (c) <b>Short</b> - Pairs of wire are in contact with each other (d) <b>Crosstalk</b> - Signal transmitted on one pair of wire creates an undesired effect in another wire. (e) <b>Unknown</b> - Cable diagnostic test unable to find the state of a cable.
<b>Pair1 State</b>	The state of the Pair 1 cable wire ( <b>OK, Open, Short, Crosstalk, or Unknown</b> )
<b>Pair1 Length</b>	The length of the Pair 1 cable at which the fault is detected, if the pair is faulty. Else, specifies the complete length of the cable.
<b>Pair2 State</b>	The state of the Pair 2 cable wire ( <b>OK, Open, Short, Crosstalk, or Unknown</b> )
<b>Pair2 Length</b>	The length of the Pair 2 cable at which the fault is detected, if the pair is faulty. Else, specifies the complete length of the cable.
<b>Pair3 State</b>	The state of the Pair 3 cable wire ( <b>OK, Open, Short, Crosstalk, or Unknown</b> )
<b>Pair3 Length</b>	The length of the Pair 3 cable at which the fault is detected, if the pair is faulty. Else, specifies the complete length of the cable.
<b>Pair4 State</b>	The state of the Pair 4 cable wire ( <b>OK, Open, Short, Crosstalk, or Unknown</b> )
<b>Pair4 Length</b>	The length of the Pair 4 cable at which the fault is detected, if the pair is faulty. Else, specifies the complete length of the cable.
<b>Test Result</b>	The status of the TDR test performed, success or fail.
<b>Legend</b>	Eight-conductor data cable contains 4 pairs of twisted Pair Copper Cable wires. Each pair consists of a solid (or predominantly) colored wire and a white wire with a strip of the same color. The pairs are twisted together.

---

**Release History**

Release 5.1; command introduced.

**Related Commands**

<a href="#">interfaces tdr</a>	Initiates the cable diagnostics on a port.
<a href="#">clear interfaces</a>	Clears the statistics of the last test performed on the port.

**MIB Objects**

```
esmTdrPortTable
  esmTdrPortCableState
  esmTdrPortValidPairs
  esmTdrPortPair1State
  esmTdrPortPair1Length
  esmTdrPortPair2State
  esmTdrPortPair2Length
  esmTdrPortPair3State
  esmTdrPortPair3Length
  esmTdrPortPair4State
  esmTdrPortPair4Length
  esmTdrPortFuzzLength
```

---



# 2 Power over Ethernet (PoE) Commands

The Power over Ethernet (PoE) feature is supported on OmniSwitch PoE-capable switches. Refer to the *OmniSwitch Hardware Users Guide* for further details.

---

**Note on Terminology.** There are several general terms used to describe this feature. The terms *Power over Ethernet (PoE)*, *Power over LAN (PoL)*, *Power on LAN (PoL)*, and *Inline Power* are synonymous terms used to describe the powering of attached devices via Ethernet ports. For consistency, this chapter and the *OmniSwitch AOS Release 8 CLI Reference Guide* refer to the feature as *Power over Ethernet (PoE)*.

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

- *PD* refers to any attached device that uses a PoE data cable as its only source of power. Examples include access points such as IP telephones, Ethernet hubs, wireless LAN stations, etc.
- *PSE* refers to the actual hardware source of the electrical current for PoE (e.g., OmniSwitch PoE-capable switches).

---

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

MIB information for the PoE commands is as follows:

*Filename:* ALCATEL-IND1-INLINE-POWER-MIB.mib  
*Module:* alcatelIND1INLINEPOWERMIB

*Filename:* POWER-ETHERNET-MIB.mib  
*Module:* powerEthernetMIB

A summary of the available commands is listed here:

---

**lanpower service**  
**lanpower port admin-state**  
**lanpower type**  
**lanpower power**  
**lanpower maxpower**  
**lanpower priority**  
**lanpower priority-disconnect**  
**lanpower power-rule**  
**lanpower power-policy**  
**lanpower class-detection**  
**lanpower capacitor-detection**  
**lanpower usage-threshold**  
**lanpower update-from**  
**lanpower fpoe**  
**lanpower ppoe**  
**show lanpower slot**  
**show lanpower power-rule**  
**show lanpower power-policy**  
**show lanpower class-detection**  
**show lanpower capacitor-detection**  
**show lanpower priority-disconnect**  
**show lanpower usage-threshold**  
**show lanpower update-from**

---

## lanpower service

Activates or stops PoE service on all ports in a specified slot.

```
lanpower {chassis chassis | slot chassis/slot } service {start | stop}
```

---

### Syntax Definitions

<i>chassis</i>	The chassis on which the PoE power is being turned on or off.
<i>chassis/slot</i>	The slot on which the PoE power is being turned on or off.
<b>start</b>	Activates PoE on all ports in the specified slot.
<b>stop</b>	Turns off PoE on all ports in the specified slot.

### Defaults

Power over Ethernet is globally enabled by default.

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

N/A

### Examples

```
-> lanpower slot 2/1 service start  
-> lanpower chassis 1 service stop
```

### Release History

Release 5.1; command introduced.

### Related Commands

<a href="#">lanpower port admin-state</a>	Activates or stops PoE service on an individual port.
<a href="#">lanpower update-from</a>	Displays the PoE status and related statistics for all ports in a specified slot.

### MIB Objects

```
alaPethMainPseTable  
  alaPethMainPseAdminStatus
```

---



## lanpower port admin-state

Activates or stops PoE service on an individual port.

```
lanpower port chassis/slot/port admin-state {enable | disable}
```

---

### Syntax Definitions

<i>chassis/slot/port</i>	The individual port on which the PoE power is being turned on or off.
<b>enable</b>	Activates PoE on the specified port.
<b>stop</b>	Turns off PoE on the specified port.

### Defaults

Power over Ethernet is globally enabled by default.

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

N/A

### Examples

```
-> lanpower port 2/1/1 admin-state enable  
-> lanpower port 1/1/12 admin-state disable
```

### Release History

Release 5.1; command introduced.

### Related Commands

<a href="#">lanpower service</a>	Activates or stops PoE service on all ports in a specified slot.
<a href="#">show lanpower slot</a>	Displays the PoE status and related statistics for all ports in a specified slot.

### MIB Objects

```
pethPsePortTable  
  pethPsePortAdminEnable
```

---

## lanpower type

Assigns a user-defined port type to a specific port (when *chassis/slot/port* values are entered) or across all ports in a chassis or slot.

**lanpower** {*chassis chassis* | *slot chassis/slot* | *port chassis/slot/port*} **type** *string*

---

### Syntax Definitions

<i>chassis</i>	The chassis on which a port type is being defined.
<i>chassis/slot</i>	The slot on which a port type is being defined.
<i>chassis/slot/port</i>	The specific port on which a port type is being defined.
<i>string</i>	A user-defined text string of up to nine (9) characters. This text string will be listed in the “Type” column in the <a href="#">show lanpower slot</a> command output.

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

N/A

### Examples

```
-> lanpower slot 1/1 type test
-> lanpower port 1/1/23 type PDs
-> lanpower chassis 1 type test
```

### Release History

Release 5.1; command introduced.

### Related Commands

[lanpower update-from](#) Displays the PoE status and related statistics for all ports in a specified slot.

### MIB Objects

pethPsePortTable  
pethPsePortType

---

## lanpower power

Specifies the amount of power, in milliwatts, provided for a specific port (when *chassis/slot/port* values are entered) or across all ports in a chassis or slot.

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

---

### Syntax Definitions

<i>chassis</i>	The chassis on which the port power is being defined.
<i>chassis/slot</i>	The slot on which the port power is being defined.
<i>chassis/slot/port</i>	The specific port on which the port power is being defined.
<i>milliwatts</i>	The maximum amount of power for a specified port or slot. Refer to default and range information below.

### Defaults

Refer to the *OmniSwitch Hardware Users Guide* for default power settings.

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- Using this command does not immediately allocate the power to the slot or port. Any unused power is still available and remains a part of the overall PoE budget.
- To globally specify the amount of inline power available to all ports in a slot, refer to the [lanpower maxpower](#) command on page 2-8.
- Be sure that the value specified complies with specific power requirements for all attached PDs.
- Note that the power value for the [lanpower power](#) command is specified in milliwatts (mW); the related command, [lanpower maxpower](#), is specified in watts (W).

### Examples

```
-> lanpower slot 3/1 power 3200
-> lanpower port 1/1/24 power 25000
-> lanpower chassis 1 power 3000
```

### Release History

Release 5.1; command introduced.

## Related Commands

[lanpower maxpower](#)

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

[lanpower update-from](#)

Displays the PoE status and related statistics for all ports in a specified slot.

## MIB Objects

alaPethPsePortTable

    alaPethPsePortPowerMaximum

---

## lanpower maxpower

Specifies the maximum amount of power, in watts, assigned to a specified slot.

**lanpower** {*chassis chassis* | *slot chassis/slot*} **maxpower** *watts*

---

### Syntax Definitions

<i>chassis</i>	The chassis containing PoE ports on which the maximum amount of inline power allowed is being configured.
<i>chassis/slot</i>	The slot containing PoE ports on which the maximum amount of inline power allowed is being configured.
<i>watts</i>	The maximum amount of inline power, in watts, available to all PoE ports in the corresponding slot. Refer to the <i>OmniSwitch Hardware Users Guide</i> for additional PoE specifications.

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- To specify the maximum amount of inline power available to a single port, refer to the [lanpower power](#).
- Note that the power value for the [lanpower maxpower](#) command is specified in watts (W); the related command, [lanpower power](#), is specified in milliwatts (mW).

### Examples

```
-> lanpower slot 3/1 maxpower 400
-> lanpower chassis 1 maxpower 400
```

### Release History

Release 5.1; command introduced.

## Related Commands

### [lanpower power](#)

Specifies the amount of power, in milliwatts, provided for a specific port (when *chassis/slot/port* values are entered) or across all ports in a slot (if only *slot/port* values are entered).

### [lanpower update-from](#)

Displays the PoE status and related statistics for all ports in a specified slot.

## MIB Objects

alaPethMainPseTable

alaPethMainPseMaxPower

---

## lanpower priority

Specifies PoE power priority level to a port (when *chassis/slot/port* values are entered) or across all ports in a slot (if only *slot/port* values are entered). Levels include critical, high, and low.

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

---

### Syntax Definitions

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

### Defaults

parameter	default
low   high   critical	low

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

N/A

### Examples

```
-> lanpower slot 2/1 priority low
-> lanpower port 1/1/6 priority critical
-> lanpower chassis 1 priority low
```

### Release History

Release 5.1; command introduced.

**Related Commands****lanpower priority-disconnect**

Enables or disables the priority disconnect function on all ports in a specified slot.

**lanpower update-from**

Displays the PoE status and related statistics for all ports in a specified slot.

**MIB Objects**

pethPsePortTable

pethPsePortPowerPriority

---



## lanpower priority-disconnect

Enables or disables the priority disconnect function on all ports in a specified slot. Priority disconnect is used by the system software in determining whether an incoming PD will be granted or denied power when there are too few watts remaining in the PoE power budget for an additional device.

**lanpower {chassis *chassis* | slot *chassis/slot*} priority-disconnect {enable | disable}**

---

### Syntax Definitions

<i>chassis</i>	The chassis on which the priority disconnect function is being enabled or disabled.
<i>chassis/slot</i>	The particular slot on which the priority disconnect function is being enabled or disabled.
<b>enable</b>	Enables priority disconnect on a specified port. When this function is enabled <i>and</i> a power budget deficit occurs in which there is inadequate power for an incoming device, the system software uses priority disconnect rules to determine whether an incoming device will be granted or denied power.
<b>disable</b>	Disables priority disconnect on a specified port. When priority disconnect is disabled and there is inadequate power in the budget for an additional device, power will be denied to <i>any</i> incoming PD, regardless of its priority status.

### Defaults

parameter	default
enable   disable	enable

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

N/A

### Examples

```
-> lanpower slot 2/1 priority-disconnect enable
-> lanpower chassis 1 priority-disconnect disable
```

### Release History

Release 5.1; command introduced.

## Related Commands

### lanpower priority

Specifies PoE power priority level to a port (when *chassis/slot/port* values are entered) or across all ports in a slot (if only *slot/port* values are entered).

### lanpower update-from

Displays the PoE status and related statistics for all ports in a specified slot.

### show lanpower priority-disconnect

Displays current priority disconnect status for a specified slot.

## MIB Objects

alaPethMainPseTable

alaPethMainPsePriorityDisconnect

---

## lanpower power-rule

Specifies user-defined power rules that can be assigned to PoE ports.

```
lanpower power-rule rule-name [admin-state {enable | disable}] [power {on | off}] [at {minutes mm | time hh:mm}] [days {all | day [day...]} | date [date...}] [months {all | month}] [timezone {local-server | utc | originator-server}]
```

```
no lanpower power-rule rule-name [admin-state {enable | disable}] [power {on | off}] [at {minutes mm | time hh:mm}] [days {all | day [day...]} | date [date...}] [months {all | month}] [timezone {local-server | utc | originator-server}]
```

---

### Syntax Definitions

<i>rule-name</i>	A user-defined name (up to 128 characters) for the power rule being configured.
<b>admin-state</b>	Specifies the admin-state for the power rule.
<b>enable</b>	Enables the power rule.
<b>disable</b>	Disables the power rule.
<b>power</b>	Specifies the power status ( <b>on</b> or <b>off</b> ) for devices connected to ports within the power rule.
<b>on</b>	Powers on devices on ports for which the rule is assigned.
<b>off</b>	Powers off devices on ports for which the rule is assigned.
<b>at</b>	Activates a power rule timer. Power rules are triggered on a specified date or day of the week or at a particular time, or after a specified amount of time has elapsed.
<b>minutes</b>	Sets a timer. Power rules will take effect when a specified number of minutes have elapsed.
<i>mm</i>	The number of minutes that will elapse before the power rules take effect.
<b>time</b>	Sets a timer. Power rules will take effect at a specified time of day.
<i>hh:mm</i>	The time of day that the power rule will take effect.
<b>days</b>	Specifies that the power rule will take effect on a particular day of the week.
<b>all</b>	Specifies that the power rule will take effect on all days of the week (Monday through Sunday).
<i>day</i>	Specifies a particular day of the month or week the power rule will take effect. When entering a day of the month, enter one or more numbers from <b>1</b> to <b>31</b> . When entering a day of the week, use three-digit abbreviations (e.g., <b>mon</b> , <b>tue</b> , <b>wed</b> , <b>thu</b> , <b>fri</b> , <b>sat</b> and <b>sun</b> ). Any combination of days may be entered in any order. Refer to command line examples for more information.
<b>month</b>	Specifies that the power rule will take effect during a particular month.
<b>all</b>	Specifies that the power rule will take effect during all months of the year (January through December).

<i>month</i>	Specifies a particular month of the year the power rule will take effect. When entering a month, use three-digit abbreviations (e.g., <b>jan</b> , <b>feb</b> , <b>mar</b> , <b>apr</b> , <b>may</b> , <b>jun</b> , <b>jul</b> , <b>aug</b> , <b>sep</b> , <b>oct</b> , <b>nov</b> and <b>dec</b> ). Any combination of months may be entered in any order. Refer to command line examples for more information.
<b>timezone</b>	Sets a timezone in which timer-based power rules will take effect.
<b>local-server</b>	Time as specified by a local server.
<b>utc</b>	Specifies that timer-based rules fall under Universal Time Coordinated (UTC) time.
<b>originator-server</b>	Time as specified via the network.

## Defaults

N/A

## Platforms Supported

OmniSwitch 2260, 2360

## Usage Guidelines

Before a power rule can take effect, the rule must first be assigned to particular slots or ports via the [lanpower power-policy](#) command.

## Examples

```
->lanpower power-rule RuleTest2 admin-state enable power on at minutes 10 days fri
thu tue months all timezone utc
-> lanpower power-rule new power on at time 18:30 days all months all timezone utc
->lanpower power-rule OutgoingPDs power off at time 6:00 days 1 2 3 6 9 12 31
months all timezone utc
-> lanpower power-rule NewRule admin-state enable power off at minutes 4 days all
months all timezone utc
```

## Release History

Release 5.1; command introduced.

## Related Commands

<a href="#">lanpower power-policy</a>	Allows users to bind existing power rules to particular slots or ports.
<a href="#">show lanpower power-rule</a>	Displays current PoE power rule settings.
<a href="#">show lanpower power-policy</a>	Displays existing power policies assigned to a slot, port or rule.

**MIB Objects**

alaPethPowerRuleTable

- alaPethPowerRuleAdminStatus
- alaPethPowerRulePowerStatus
- alaPethPowerRuleAtMinute
- alaPethPowerRuleAtTime
- alaPethPowerRuleDaysOfMonth
- alaPethPowerRuleDaysOfWeek
- alaPethPowerRuleMonths
- alaPethPowerRuleTimezone
- alaPethPowerRuleRowStatus

---

## lanpower power-policy

Allows users to bind existing power rules to particular slots or ports.

**lanpower** [*slot chassis/slot* | *port chassis/slot/port-port*] **power-policy** *policy-name* [**power-rule** *rule-name*]

**no lanpower** *power-policy name*

---

### Syntax Definitions

<i>chassis/slot</i>	The slot on which the power policy (with its associated power rule) is being assigned. This syntax is used the first time the <b>lanpower power-policy</b> command is entered, where a policy is being assigned to a particular slot. See Usage Guidelines below for more information.
<i>chassis/slot/port-port</i>	The specific slot on which the power policy (with its associated power rule) is being assigned. Port values may be entered as a single port or range of ports. This syntax is used the first time the <b>lanpower power-policy</b> command is entered, where a policy is being assigned to a particular slot. See Usage Guidelines below for more information.
<i>policy-name</i>	A user-defined name (up to 128 characters) for the power policy being configured (or assigned to an existing power rule).
<i>rule-name</i>	This syntax is used the second time the <b>lanpower power-policy</b> command is entered, where a policy is being assigned to an existing power rule. See Usage Guidelines below for more information.

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- One or more power rules must be created before using the **lanpower power-policy** command. For information on creating power rules, see the [lanpower power-rule command on page 2-14](#).
- Using the **lanpower power-policy** command is a two-step process. First, use the command to assign the policy to specific slots or ports. For example:

```
-> lanpower slot 1/1 power-policy NewPolicy
-> lanpower port 1/1/23 power-policy NewPolicy
-> lanpower port 1/1/1-12 power-policy NewPolicy
```

Next, run the command again to assign the policy (with its associated slots or ports) to an existing power rule. For example:

```
-> lanpower power-policy NewPolicy power-rule NewRule
```

- When assigning a policy to a slot or port, be sure to use the syntax, “**slot**” or “**port**”, before the *chassis/slot* or *chassis/slot/port* values in the command line. Refer to the examples below for more information.

## Examples

```
-> lanpower slot 1/1 power-policy NewPolicy
-> lanpower port 1/1/23 power-policy NewPolicy
-> lanpower power-policy NewPolicy power-rule NewRule
-> no lanpower power-policy NewPolicy
```

## Release History

Release 5.1; command introduced.

## Related Commands

### [lanpower power-rule](#)

Specifies user-defined power rules that can be assigned to PoE ports.

### [show lanpower power-rule](#)

Displays current PoE power rule settings.

### [show lanpower power-policy](#)

Displays existing power policies assigned to a slot, port or rule.

## MIB Objects

```
alaPethPowerPolicyTable
  alaPethPowerPolicyRowStatus
alaPethPowerPortTable
  alaPethPowerPortPolicyName
  alaPethPowerPortRowStatus
```

---

## lanpower class-detection

Enables or disables class detection of attached devices. When class detection is enabled, attached devices will automatically be limited to their class power, regardless of port power configuration.

**lanpower** {*chassis chassis* | *slot chassis/slot*} **class-detection** {**enable** | **disable**}

---

### Syntax Definitions

<i>chassis</i>	The chassis on which class detection is being enabled or disabled.
<i>chassis/slot</i>	The particular slot on which class detection is being enabled or disabled.
<b>enable</b>	Enables class detection on the specified slot.
<b>disable</b>	Disables class detection on the specified slot.

### Defaults

---

parameter	default
<b>enable</b>   <b>disable</b>	disable

---

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- Enabling class detection will reset all PoE ports on the chassis.

### Examples

```
-> lanpower slot 1/1 class-detection enable
-> lanpower chassis 1 class-detection disable
```

### Release History

Release 5.1; command introduced.

### Related Commands

[show lanpower class-detection](#) Displays class detection status on a specified slot.

### MIB Objects

```
alaPethMainPseTable
  alaPethMainPseClassDetection
```

---



## lanpower capacitor-detection

Enables or disables the capacitor detection method.

```
lanpower {chassis chassis | slot chassis/slot} capacitor-detection {enable | disable}
```

---

### Syntax Definitions

<i>chassis</i>	The chassis on which class detection is being enabled or disabled.
<i>chassis/slot</i>	The particular slot on which class detection is being enabled or disabled.
<b>enable</b>	Enables the capacitor detection method on the specified slot.
<b>disable</b>	Disables the capacitor detection method on the specified slot.

### Defaults

---

parameter	default
<b>enable   disable</b>	disable

---

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

The capacitor detection method should only be enabled if there are legacy IP phones attached to the corresponding slot—this feature is *not* compatible with IEEE specifications. Please contact your Alcatel-Lucent Enterprise sales engineer or Customer Support representative to find out which Alcatel-Lucent Enterprise IP phones models need capacitive detection enabled.

### Examples

```
-> lanpower slot 3/1 capacitor-detection enable  
-> lanpower chassis 1 capacitor-detection disable
```

### Release History

Release 5.1; command introduced.

### Related Commands

[show lanpower capacitor-detection](#) Displays capacitor detection status on a specified slot.

### MIB Objects

```
alaPethMainPseTable  
  alaPethMainPseCapacitorDetect
```

---

## lanpower usage-threshold

Tells the switch to watch for a user-defined, slot-wide threshold for PoE power usage, in percent. When the usage threshold is reached or exceeded, a notification is sent to the user.

**lanpower** {*chassis chassis* | *slot chassis/slot*} **usage-threshold** *num*

---

### Syntax Definitions

<i>chassis</i>	The chassis for which usage threshold monitoring is being set.
<i>chassis/slot</i>	The slot for which usage threshold monitoring is being set.
<i>num</i>	The percentage of allowed usage from attached PoE devices before a notification is sent to the user.

### Defaults

---

parameter	default
<i>num</i>	99

---

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

The **lanpower slot usage-threshold** does not affect the amount of PoE power allocated to a particular slot. The command is a monitoring method that tells the switch to send a “specified usage exceeded” notification (i.e., trap) only when a specified percentage has been reached.

### Examples

```
-> lanpower slot 1/1 usage-threshold 50
-> lanpower chassis 1 usage-threshold 99
```

### Release History

Release 5.1; command introduced.d.

### Related Commands

[show lanpower usage-threshold](#) Displays current usage threshold, in percent.

### MIB Objects

pethMainPseTable  
pethMainPseUsageThreshold

---

## lanpower update-from

This command is used to update the PoE microcontroller firmware.

**lanpower slot** {*chassis/slot* | **all**} **update-from** *filename*

---

### Syntax Definitions

<i>chassis/slot</i>	The slot to be updated.
<b>all</b>	Update all the chassis in a virtual chassis.
<i>filename</i>	The file name of the PoE firmware.

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- The binary file must be placed in the */flash* directory of the Master.
- Once started, console messages will be displayed during the update procedure which may take up to 10 minutes.
- The lanpower service must be disabled during the update and minimal load should be placed on the switch. The update process must be allowed to finish prior to unplugging or configuring the units.

### Examples

```
-> lanpower slot 1/1 update-from poe_binary_version.bin
```

### Release History

Release 5.1; command introduced.

### Related Commands

[show lanpower update-from](#) Displays current PoE firmware update status.

### MIB Objects

N/A

---

## lanpower fpoe

Enables fast PoE functionality.

```
lanpower {slot chassis/slot} fpoe {enable | disable}
```

---

### Syntax Definitions

*chassis/slot*                      The slot on which to enable or disable fast PoE.

### Defaults

parameter	default
enable   disable	disable

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- Fast PoE can be used to provide PoE power within a few seconds after powering on the chassis.
- Factory default switches that don't have any PoE configuration must have an initial PoE configuration completed.
- The PoE configuration cannot be modified until the switch is up and the PoE module is completely initialized.
- LLDP-based PoE devices will not function as expected until the switch has completed its bootup and the switch is in a state to respond to LLDP requests.
- When Fast PoE is enabled the vcboot.cfg should not be deleted or manually edited.
- If Fast PoE is disabled all PDs will reset due to the PoE controller having to be reconfigured.
- FPGA/CPLD upgrade may be required. Refer to the release notes.

### Examples

```
-> lanpower slot 1/1 fpoe enable
```

### Release History

Release 5.1; command introduced.

## Related Commands

[show lanpower slot](#)

Displays the PoE status and related statistics for all ports in a specified slot.

## MIB Objects

alaPethMainPseTable

alaPethMainPseFastPoE

---

## lanpower ppoe

Enables perpetual PoE functionality.

```
lanpower {slot chassis/slot} ppoe {enable | disable}
```

---

### Syntax Definitions

*chassis/slot*                      The slot on which to enable or disable perpetual PoE.

### Defaults

parameter	default
enable   disable	disable

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- This feature allows the switch to provide uninterrupted power to connected power device (PD) even when the switch is rebooting.
- When Perpetual PoE is enabled the vcboot.cfg should not be deleted or manually edited.
- FPGA/CPLD upgrade may be required. Refer to the release notes.

### Examples

```
-> lanpower slot 1/1 ppoe enable
```

### Release History

Release 5.1; command introduced.

### Related Commands

[show lanpower slot](#)                      Displays the PoE status and related statistics for all ports in a specified slot.

### MIB Objects

alaPethMainPseTable  
  alaPethMainPsePerpetualPoE

---

## show lanpower slot

Displays the PoE status and related statistics for all ports in a specified slot.

**show lanpower slot** *chassis/slot*

---

### Syntax Definitions

*chassis*                      The virtual chassis ID for which current inline power status and related statistics are to be displayed.

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

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

N/A

### Examples

```
-> show lanpower slot 1/1
```

Port	Maximum(mW)	Actual Used(mW)	Status	Priority	On/Off	Class	Type
1	60000	0	Powered Off	Low	OFF	.	.
2	60000	0	Powered Off	Low	OFF	.	.
3	60000	0	Powered Off	Low	OFF	.	.
4	60000	0	Powered Off	Low	OFF	.	.
5	30000	0	Powered Off	Low	OFF	.	.
6	30000	0	Powered Off	Low	OFF	.	.
7	30000	0	Powered Off	Low	OFF	.	.
8	30000	0	Powered Off	Low	OFF	.	.
9	30000	0	Powered Off	Low	OFF	.	.
10	30000	0	Powered Off	Low	OFF	.	.
...							
45	30000	0	Powered Off	Low	OFF	.	.
46	30000	0	Powered Off	Low	OFF	.	.
47	30000	0	Powered Off	Low	OFF	.	.
48	30000	0	Powered Off	Low	OFF	.	.

```
ChassisId 1 Slot 1 Max Watts 780
0 Watts Total Power Budget Used
750 Watts Total Power Budget Available
1 Power Supplies Available
BPS power: Not Available
```

*output definitions*


---

<b>Port</b>	A PoE port for which current status and related statistics are being displayed.
<b>Maximum (mW)</b>	The current maximum amount of power available to the corresponding PoE port, in milliwatts. For more information on this parameter, including default values and changing the settings, refer to the <a href="#">lanpower power</a> command.
<b>Actual Used (mW)</b>	The actual amount of power being used by an attached device (if applicable), in milliwatts. If no device is attached to the corresponding port, this row displays a value of 0.
<b>Status</b>	Displays the port's current operational status. Options include <b>Powered On</b> , <b>Powered Off</b> , <b>Searching</b> , <b>Fault</b> , <b>Deny</b> and <b>Test</b> . <b>Powered On</b> indicates that PoE power activation is complete and the attached device is receiving power. <b>Powered Off</b> indicates that no PoE device is attached and/or the port is not receiving PoE power. <b>Searching</b> indicates that PoE activation has started and a powered device PD has been detected, but activation or class detection is incomplete. <b>Fault</b> indicates that PoE activation or class detection has failed. <b>Deny</b> indicates that PoE power management has denied power to the port due to priority disconnect or over subscription. <b>Test</b> indicates that the port has been forced on and will remain on until it is forced off by RTP functions.
<b>Priority</b>	The current priority level for the corresponding PoE port. Options include <b>Critical</b> , <b>High</b> , and <b>Low</b> . <b>Critical</b> should be reserved for ports that have mission-critical devices attached, and therefore require top (i.e., critical) priority. In the event of a power management issue, inline power to critical ports is maintained as long as possible. <b>High</b> indicates ports that have important, but not mission-critical, devices attached. If other ports in the chassis have been configured as critical, inline power to high-priority ports is given second priority. <b>Low</b> priority is for ports that have low-priority devices attached. In the event of a power management issue, inline power to low-priority ports is interrupted first (i.e., before critical and high-priority ports).  The default value is Low. Priority levels can be changed using the <a href="#">lanpower priority</a> command.
<b>On/Off</b>	Displays whether a port has been manually turned on or off by the user. <b>ON</b> indicates that the port has been turned on by the user via the <a href="#">lanpower service</a> command. <b>OFF</b> is the default value and can also indicate that the port has been turned off by the user via the <a href="#">lanpower service</a> command.
<b>Class</b>	PoE class detected on the attached Powered Device. See the <a href="#">lanpower class-detection</a> command on page 2-19 for more information.
<b>Type</b>	A user-defined name port type (i.e., text string) for the port. See the <a href="#">lanpower type</a> command on page 2-5 for more information.
<b>Max Watts</b>	The maximum watts available to the corresponding slot. The maximum watts value for a slot can be changed using the <a href="#">lanpower maxpower</a> command.
<b>Actual Power Consumed</b>	The amount of power being used by attached PoE devices.



---

**output definitions (continued)**

---

<b>Actual Power Budget Remaining</b>	The amount of power budget remaining for PoE. If the total power budget remaining is exceeded, a power error will occur and the switch's chassis management software will begin shutting down power to PoE ports according to their priority levels.
<b>Total Power Budget Available</b>	The total amount of power budget available for PoE.
<b>Power Supplies Available</b>	The number of power supplies currently installed and operating in the switch.
*	An asterisk indicates a 4-pair PoE port is operating in 2-pair mode.

---

**Release History**

Release 5.1; command introduced.

**Related Commands**

N/A

**MIB Objects**

```
alaPethPsePortPowerActual  
alaPethPsePortPowerMaximum  
alaPethPsePortPowerStatus  
pethPsePortPowerPriority  
pethPsePortAdminEnable  
pethPsePortPowerClassifications
```

---

## show lanpower power-rule

Displays current PoE power rule settings.

**show lanpower power-rule** [*name*]

---

### Syntax Definitions

*name*                                      The name of an existing power rule.

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

Entering the **show lanpower power-rule** command without the *name* string provides top-level information for all existing power rules. To view detailed information for a particular rule (e.g., timer and timezone settings, etc.), specify the *name* string in the command line.

### Examples

```
-> show lanpower power-rule
Power-Rule                                      Admin-state      Power
-----+-----+-----
test                                              Disabled          Off
```

```
-> show lanpower power-rule test
          Power-Rule                                      :      test
          Admin-state                                     :      Disabled
          Power                                            :      Off
          At HH:MM                                        :      00:00
          Day-of-Week                                    :      All
          Month-of-Year                                  :      All
          Timezone                                        :      Local
```

#### *output definitions*

---

<b>Power-Rule</b>	The name(s) of existing PoE power rule(s).
<b>Admin-state</b>	The port PoE status assigned to the rule. Refer to <a href="#">page 2-14</a> for more information.
<b>Power</b>	The PoE power status assigned to the rule. Refer to <a href="#">page 2-14</a> for more information.
<b>At HH:MM</b>	The time of day the power rule takes effect. Refer to <a href="#">page 2-14</a> for more information.

*output definitions (continued)*

---

<b>Day-of-Week</b>	The day of the week the power rule takes effect. Refer to <a href="#">page 2-15</a> for more information.
<b>Month-of-Year</b>	The month of year the power rule takes effect. Refer to <a href="#">page 2-15</a> for more information.
<b>Timezone</b>	The timezone under which the power rule takes effect. Options include <b>local-server</b> , <b>originator-server</b> and <b>utc</b> . Refer to <a href="#">page 2-15</a> for more information.

---

**Release History**

Release 5.1; command introduced.

**Related Commands**

[lanpower power-rule](#) Specifies user-defined power rules that can be assigned to PoE ports.

**MIB Objects**

N/A

---

## show lanpower power-policy

Displays existing power policies assigned to a slot, port or rule.

**show lanpower power-policy** [*policy-name* **slot** | *policy-name* **power-rule** | *policy-name* **port**]

---

### Syntax Definitions

*policy-name* The text string for an existing power policy.

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

Entering the **show lanpower power-policy** command without the *policy-name* string provides top-level information for all existing policies, including associated power rules (if any). To view detailed information for a particular policy, specify the *policy-name* string in the command line, along with the policy's associated slot, port or rule. See Examples below for additional information.

### Examples

```
-> show lanpower power-policy
Power-Policy name           Power-rules
-----+-----
Mar25                        RuleTest2

-> show lanpower power-policy Mar25 power-rule
Power-Policy name           : Mar25
Power-rules                  : RuleTest2
```

#### *output definitions*

---

<b>Power-Policy name</b>	The names of existing PoE power policies.
<b>Power-rules</b>	The power rules associated with the existing power policies.

---

### Release History

Release 5.1; command introduced.

**Related Commands**[lanpower power-policy](#)

Allows users to bind existing power rules to particular slots or ports.

**MIB Objects**

N/A

---

## show lanpower class-detection

Displays class detection status on a specified slot.

**show lanpower {chassis *chassis* | slot *chassis/slot* } class-detection**

---

### Syntax Definitions

*chassis*                                    The chassis for which class detection is being displayed.  
*chassis/slot*                              The slot for which class detection is being displayed.

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- Enabling class detection will reset all PoE ports on the chassis.

### Examples

```
-> show lanpower slot 1/1 class-detection  
Class Detection disabled on ChassisId 1 Slot 1
```

### Release History

Release 5.1; command introduced.

### Related Commands

[lanpower class-detection](#)                                    Enables or disables class detection of attached devices.

### MIB Objects

N/A

---

## show lanpower capacitor-detection

Displays capacitor detection status on a specified slot.

**show lanpower {chassis *chassis* | slot *chassis/slot* } capacitor-detection**

---

### Syntax Definitions

*chassis*                                    The chassis for which capacitor detection is being displayed.  
*chassis/slot*                              The slot for which capacitor detection is being displayed.

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

N/A

### Examples

```
-> show lanpower slot 1/1 capacitor-detection  
Capacitor Detection disabled on ChassisId 1 Slot 1
```

### Release History

Release 5.1; command introduced.

### Related Commands

[lanpower capacitor-detection](#)                    Enables or disables the capacitor detection method.

### MIB Objects

N/A

---

## show lanpower priority-disconnect

Displays current priority disconnect status for a specified slot.

**show lanpower {chassis *chassis* | slot *chassis/slot* } priority-disconnect**

---

### Syntax Definitions

<i>chassis</i>	The chassis on which priority disconnect status is being displayed.
<i>chassis/slot</i>	The particular slot on which priority disconnect status is being displayed.

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

N/A

### Examples

```
-> show lanpower slot 1/1 priority-disconnect
Chas/Slot priority-disconnect
-----+-----
  1/1      enable
```

### Release History

Release 5.1; command introduced.

### Related Commands

<a href="#">lanpower priority-disconnect</a>	Enables or disables the priority disconnect function on all ports in a specified slot.
--	--

### MIB Objects

N/A

---



## show lanpower usage-threshold

Displays current usage threshold, in percent.

```
show lanpower {chassis chassis | slot chassis/slot } usage-threshold]
```

---

### Syntax Definitions

<i>chassis</i>	The chassis on which priority disconnect status is being displayed.
<i>chassis/slot</i>	The particular slot on which priority disconnect status is being displayed.

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

N/A

### Examples

```
-> show lanpower slot 1/1 usage-threshold
Usage Threshold 99% on ChassisId 1 Slot 1
```

### Release History

Release 5.1; command introduced.

### Related Commands

[lanpower usage-threshold](#) Sets a slot-wide threshold for PoE power usage, in percent.

### MIB Objects

N/A

---

## show lanpower update-from

Displays the PoE firmware update status.

**show lanpower slot {*chassis/slot* | all} update-from**

---

### Syntax Definitions

<i>chassis/slot</i>	Display the update status for a slot.
<b>all</b>	Display the update status for all chassis.

### Defaults

N/A

### Platforms Supported

Not supported in this release.

### Usage Guidelines

This command can be used to display the update progress from a remote session such as Telnet or SSH.

### Examples

```
-> show lanpower slot all update-from
Tue Apr  8 16:48:16 : lpCmm LanCmm info message:
+++ Reprogramming Sequence Started  0 chassisId 1 slot 1
+++ Reprogramming Sequence Started  0 chassisId 2 slot 1

Tue Apr  8 16:48:19 : lpCmm LanCmm info message:
+++ Controller Memory Sequence Begining 0 chassisId 1 slot 1
+++ Controller Memory Sequence Begining 0 chassisId 2 slot 1

Tue Apr  8 16:48:33 : lpCmm LanCmm info message:
+++ Controller Memory Please Wait... 0 chassisId 1 slot 1
+++ Controller Memory Please Wait... 0 chassisId 2 slot 1

Tue Apr  8 16:52:22 : lpCmm LanCmm info message:
+++ Reprogram Pass 0 chassisId 1 slot 1
+++ Reprogram Pass 0 chassisId 2 slot 1
```

### Release History

Release 5.1; command introduced.

**Related Commands**[lanpower update-from](#)

This command is used to update the PoE microcontroller firmware.

**MIB Objects**

N/A

---

# 3 UDLD Commands

This chapter describes the CLI commands used to configure the UDLD (UniDirectional Link Detection) protocol. UDLD operates at Layer 2 in conjunction with IEEE 802.3 Layer 1 fault detection mechanism. It is a protocol used for detecting and disabling unidirectional Ethernet fiber or copper connections to avoid interface malfunctions, Spanning Tree loops, media faults, and so on. It operates in two main modes normal and aggressive.

The two basic mechanisms that UDLD follows are:

- Advertises port identity and learns about its neighbors. This information is maintained in a cache table.
- It sends continuous echo messages when fast notifications are required.

MIB information for the UDLD commands is as follows:

*Filename:* ALCATEL-IND1-UDLD-MIB.mib  
*Module:* alcatelIND1UDLDMIB

A summary of available commands is listed here:

---

**udld**  
**udld port**  
**udld mode**  
**udld probe-timer**  
**udld echo-wait-timer**  
**clear udld statistics port**  
**show udld configuration**  
**show udld configuration port**  
**show udld statistics port**  
**show udld neighbor port**  
**show udld status port**

---

Configuration procedures for UDLD are explained in “Configuring UDLD,” *OmniSwitch AOS Release 8 Network Configuration Guide*.

## udld

Globally enables or disables UDLD protocol on the switch.

**udld {enable | disable}**

---

### Syntax Definitions

<b>enable</b>	Globally enables UDLD on the switch.
<b>disable</b>	Globally disables UDLD on the switch.

### Defaults

---

parameter	default
enable   disable	disable

---

### Platforms Supported

OmniSwitch 2360

### Usage Guidelines

- Auto-negotiation should be disabled on both ends of the link for UDLD to operate properly.
- The port shutdown by this command can be reset by using the **interfaces admin** command.

### Examples

```
-> udld enable  
-> udld disable
```

### Release History

Release 5.1.R2; command introduced.

### Related Commands

<a href="#">udld port</a>	Enables or disables UDLD status on a specific port or a range of ports.
<a href="#">show udld configuration</a>	Displays the global status of UDLD configuration.
<a href="#">show udld configuration port</a>	Displays the configuration information for all UDLD ports or for a particular UDLD port on the switch.

### MIB Objects

```
alaUdldGlobalStatus  
  alaUdldGlobalConfigUdldStatus
```

---

## udld port

Enables or disables UDLD status on a specific port or a range of ports.

```
udld port chassis/slot/port[-port2] {enable | disable}
```

---

### Syntax Definitions

<i>chassis</i>	The chassis identifier.
<i>slot/port[-port2]</i>	The slot and port number.
<b>enable</b>	Enables UDLD status on a port.
<b>disable</b>	Disables UDLD status on a port.

### Defaults

---

parameter	default
<b>enable   disable</b>	<b>disable</b>

---

### Platforms Supported

OmniSwitch 2360

### Usage Guidelines

- Auto-negotiation should be disabled on both ends of the link for UDLD to operate properly.
- The UDLD protocol must be enabled before using this command.
- The UDLD protocol is supported on link aggregate member ports.

### Examples

```
-> udld port 1/1/3 enable
-> udld port 1/1/6-10 enable
-> udld port 1/2/4 disable
```

### Release History

Release 5.1.R2; command introduced.

## Related Commands

<b>udld</b>	Globally enables or disables UDLD protocol on the switch.
<b>show udld configuration port</b>	Displays the configuration information for all UDLD ports or for a particular UDLD port on the switch.

## MIB Objects

alaUdldPortConfigTable  
    alaUdldPortConfigUdldStatus

---

## udld mode

Configures the UDLD operational mode on a specific port, a range of ports, or all ports.

```
udld [port [chassis/slot/port[-port2]] mode {normal | aggressive}
```

---

### Syntax Definitions

<i>chassis</i>	The chassis identifier.
<i>slot/port</i> [- <i>port2</i> ]	The slot and port number.
<b>normal</b>	Specifies UDLD operation in the normal mode.
<b>aggressive</b>	Specifies UDLD operation in the aggressive mode.

### Defaults

---

parameter	default
<b>normal   aggressive</b>	<b>normal</b>

---

### Platforms Supported

OmniSwitch 2360

### Usage Guidelines

- The UDLD protocol must be enabled before using this command.
- In case of faulty cable connection, the port which is configured in normal mode of operation is considered to be in the shutdown state.

### Examples

```
-> udld mode aggressive
-> udld mode normal
-> udld port 1/1/3 mode aggressive
-> udld port 1/2/4 mode normal
-> udld port 1/2/9-18 mode aggressive
```

### Release History

Release 5.1.R2; command introduced.



## Related Commands

<b>udld</b>	Globally enables or disables UDLD protocol on the switch.
<b>show udld configuration port</b>	Displays the configuration information for all UDLD ports or for a particular UDLD port on the switch.

## MIB Objects

alaUdldPortConfigTable  
  alaUdldPortConfigUdldMode

---

## udld probe-timer

Configures the probe-message advertisement timer on a specific port, a range of ports, or all ports. Probe messages are transmitted periodically after this timer expires.

**udld** [**port** [*chassis/slot/port*[-*port2*]]] **probe-timer** *seconds*

**no udld** [**port** [*chassis/slot/port*[-*port2*]]] **probe-timer**

---

### Syntax Definitions

<i>chassis</i>	The chassis identifier.
<i>slot/port</i> [- <i>port2</i> ]	The slot and port number.
<i>seconds</i>	The probe-message transmission interval, in seconds.

### Defaults

---

parameter	default
<i>seconds</i>	15

---

### Platforms Supported

OmniSwitch 2360

### Usage Guidelines

- Use the **no** form of this command to reset the probe-message timer to the default value. Note that it is not necessary to specify the probe-message interval to reset it.
- The UDLD protocol must be enabled before using this command.
- Configure probe-advertisement timer with values varying in a range of 12-18 seconds for better convergence time and to avoid burst of probe advertisements.

### Examples

```
-> udld probe-timer 20
-> udld port 1/1/3 probe-timer 16
-> udld port 1/1/8-21 probe-timer 18
-> no udld probe-timer
-> no udld port 1/1/3 probe-timer
```

### Release History

Release 5.1.R2; command introduced.

## Related Commands

<b>udld</b>	Globally enables or disables UDLD protocol on the switch.
<b>show udld configuration port</b>	Displays the configuration information for all UDLD ports or for a particular UDLD port on the switch.

## MIB Objects

alaUdldPortConfigTable  
alaUdldPortConfigUdldProbeIntervalTimer

---

## udld echo-wait-timer

Configures the echo based detection timer on a specific port, a range of ports, or all the ports. This is known as link detection period.

**udld** [**port** [*chassis/slot/port[-port2]*]] **echo-wait-timer** *seconds*

**no udld** [**port** [*chassis/slot/port[-port2]*]] **echo-wait-timer**

---

### Syntax Definitions

<i>chassis</i>	The chassis identifier.
<i>slot/port[-port2]</i>	The slot and port number.
<i>seconds</i>	The echo based detection period, in seconds.

### Defaults

---

parameter	default
<i>seconds</i>	8

---

### Platforms Supported

OmniSwitch 2360

### Usage Guidelines

- Use the **no** form of this command to reset the echo based detection timer to the default value. Note that it is not necessary to specify the echo based timer to reset it.
- The UDLD protocol must be enabled before using this command.
- An echo message is expected in reply from the neighbor within this time duration, otherwise, the port is considered as faulty.

### Examples

```
-> udld echo-wait-timer 9
-> udld port 1/1/5 echo-wait-timer 12
-> udld port 1/1/7-16 echo-wait-timer 12
-> no udld echo-wait-timer
-> no udld port 1/1/3 echo-wait-timer
```

### Release History

Release 5.1.R2; command introduced.

## Related Commands

<b>udld</b>	Globally enables or disables UDLD protocol on the switch.
<b>show udld configuration port</b>	Displays the configuration information for all UDLD ports or for a particular UDLD port on the switch.

## MIB Objects

alaUdldPortConfigTable  
alaUdldPortConfigUdldDetectionPeriodTimer

---

## clear udd statistics port

Clears the UDLD statistics for a specific port or for all the ports.

**clear udd statistics** [*port chassis/slot/port*]

---

### Syntax Definitions

<i>chassis</i>	The chassis identifier.
<i>slot/port</i>	The slot and port number.

### Defaults

N/A

### Platforms Supported

OmniSwitch 2360

### Usage Guidelines

If the slot/port option is not specified, UDLD statistics for the switch is cleared.

### Examples

```
-> clear udd statistics port 1/1/4  
-> clear udd statistics
```

### Release History

Release 5.1.R2; command introduced.

### Related Commands

<a href="#">udld</a>	Globally enables or disables UDLD protocol on the switch.
<a href="#">show udd statistics port</a>	Displays the UDLD statistics for a specific port.

### MIB Objects

alaUddGlobalClearStats

---

## show udld configuration

Displays the global status of UDLD configuration.

**show udld configuration**

---

### Syntax Definitions

N/A

### Defaults

N/A

### Platforms Supported

OmniSwitch 2360

### Usage Guidelines

N/A

### Examples

```
-> show udld configuration
```

```
Global UDLD Status           : disabled,  
Global UDLD Mode             : normal,  
Global UDLD Probe Timer (Sec) : 15,  
Global UDLD Echo-Wait Timer (Sec) : 8  
Global UDLD Status : Disabled
```

### *output definitions*

---

<b>Global UDLD Status</b>	Indicates the UDLD status on the switch. Options include <b>enabled</b> or <b>disabled</b> .
<b>Global UDLD Mode</b>	Indicates the UDLD mode on the switch. Options include <b>normal</b> or <b>aggressive</b> .
<b>Global UDLD Probe Timer (Sec)</b>	A probe-message is expected after this time period.
<b>Global UDLD Echo-Wait Timer (Sec)</b>	The detection of neighbor is expected with in this time period.
<b>Global UDLD Status</b>	Indicates the UDLD status on the switch. Options include <b>enabled</b> or <b>disabled</b> .

---

### Release History

Release 5.1.R2; command introduced.

## Related Commands

<b>udld</b>	Globally enables or disables UDLD protocol on the switch.
<b>show udd configuration port</b>	Displays the configuration information for all UDLD ports or for a particular UDLD port on the switch.

## MIB Objects

alaUddGlobalStatus  
alaUddGlobalConfigUddStatus

---



## show udd configuration port

Displays the configuration information for all UDLD ports or for a particular UDLD port on the switch.

**show udd configuration port** [*chassis/slot/port*]

---

### Syntax Definitions

*chassis*                                    The chassis identifier.  
*slot/port*                                    The slot and port number.

### Defaults

By default, a list of all UDLD ports is displayed.

### Platforms Supported

OmniSwitch 2360

### Usage Guidelines

N/A

### Examples

```
-> show udd configuration port
Slot/Port      Admin State   Oper Mode     Probe-Timer   Echo-Wait-Timer
-----+-----+-----+-----+-----
1/1/1          disabled     normal        15            10
1/1/2          disabled     normal        45            10
1/1/17         disabled     normal        33            8
1/1/18         disabled     normal        33            8
1/1/19         disabled     normal        33            8
1/1/20         disabled     aggressive    55            8
1/1/21         disabled     aggressive    55            8
1/1/22         disabled     aggressive    55            8
1/1/41         disabled     aggressive    77            8
1/1/42         enabled      aggressive    77            8
1/1/43         enabled      aggressive    77            8
1/1/44         enabled      aggressive    77            8
1/1/45         enabled      aggressive    77            8

-> show udd configuration port 1/1/1
Global UDLD Status      : enabled,
Port UDLD Status        : enabled,
Port UDLD State         : bidirectional,
UDLD Op-Mode            : aggressive,
Probe Timer (Sec)       : 77,
Echo-Wait Timer (sec)   : 8
```

*output definitions*


---

<b>Slot/Port</b>	Slot number for the module and physical port number on that module.
<b>UDLD-State</b>	Indicates the state of interface determined by UDLD operation, which can be <b>notapplicable</b> , <b>shutdown</b> , <b>undetermined</b> or <b>bidirectional</b> .
<b>Oper-Mode</b>	Indicates the operational mode of UDLD protocol. Options include <b>normal</b> or <b>aggressive</b> .
<b>Global UDLD Status</b>	Indicates the UDLD status on the switch. Options include <b>enabled</b> or <b>disabled</b> .
<b>Port UDLD Status</b>	Indicates the UDLD status on a port. Options include <b>enable</b> or <b>disable</b> .
<b>Probe Timer</b>	A probe-message is expected after this time period.
<b>Echo-Wait Timer</b>	The detection of neighbor is expected with in this time period.

---

**Release History**

Release 5.1.R2; command introduced.

**Related Commands**

<a href="#">udld mode</a>	Configures the operational mode of UDLD on a specific port, a range of ports, or all the ports.
<a href="#">udld probe-timer</a>	Configures the probe-message advertisement timer on a specific port, a range of ports, or all the ports.
<a href="#">udld echo-wait-timer</a>	Configures the echo based detection timer on a specific port, a range of ports, or all the ports.

**MIB Objects**

```

alaUdldGlobalStatus
  alaUdldGlobalConfigUdldStatus
alaUdldPortConfigTable
  alaUdldPortConfigUdldOperationalStatus
  alaUdldPortConfigUdldMode
  alaUdldPortConfigUdldStatus
  alaUdldPortConfigUdldProbeintervalTimer
  alaUdldPortConfigUdldDetectionPeriodTimer
alaUdldPortNeighborStatsTable
  alaUdldNeighborName

```

---

## show udd statistics port

Displays the UDLD statistics for a specific port.

**show udd statistics port** *chassis/slot/port*

---

### Syntax Definitions

*chassis*                                    The chassis identifier.  
*slot/port*                                    The slot and port number.

### Defaults

N/A

### Platforms Supported

OmniSwitch 2360

### Usage Guidelines

N/A

### Examples

```
-> show udd statistics port 1/1/42
```

```
UDLD Port Statistics
  Hello Packet Send      :8,
  Echo Packet Send       :8,
  Flush Packet Recvd     :0
UDLD Neighbor Statistics
  Neighbor ID   Hello Pkts Recv   Echo Pkts Recv
-----+-----+-----
      1           8             15
      2           8             15
      3           8             21
      4           8             14
      5           8             15
      6           8             20
```

#### *output definitions*

---

<b>Hello Packet Send</b>	The number of hello messages sent by a port.
<b>Echo Packet Send</b>	The number of echo messages sent by a port.
<b>Flush Packet Recvd</b>	The number of UDLD-Flush message received by a port.
<b>Neighbor ID</b>	The name of the neighbor.
<b>Hello Pkts Recv</b>	The number of hello messages received from the neighbor.
<b>Echo Pkts Recv</b>	The number of echo messages received from the neighbor.

---

## Release History

Release 5.1.R2; command introduced.

## Related Commands

### [udld probe-timer](#)

Configures the probe-message advertisement timer on a specific port, a range of ports, or all the ports.

### [udld echo-wait-timer](#)

Configures the echo based detection timer on a specific port, a range of ports, or all the ports.

## MIB Objects

alaUddPortNeighborStatsTable

```
alaUddNeighborName  
alaUddNumHelloSent  
alaUddNumHelloRcvd  
alaUddNumEchoSent  
alaUddNumEchoRcvd  
alaUddNumFlushRcvd
```

---

## show udd neighbor port

Displays the UDLD neighbor ports.

**show udd neighbor port** *chassis/slot/port*

---

### Syntax Definitions

*chassis*                                    The chassis identifier.  
*slot/port*                                    The slot and port number.

### Defaults

N/A

### Platforms Supported

OmniSwitch 2360

### Usage Guidelines

N/A

### Examples

-> show udd neighbor port 1/1/42

Neighbor ID	Device Id	Port Id
1	00:d0:95:ea:b2:48	00:d0:95:ea:b2:78
2	00:d0:95:ea:b2:48	00:d0:95:ea:b2:79
3	00:d0:95:ea:b2:48	00:d0:95:ea:b2:74
4	00:d0:95:ea:b2:48	00:d0:95:ea:b2:75
5	00:d0:95:ea:b2:48	00:d0:95:ea:b2:76
6	00:d0:95:ea:b2:48	00:d0:95:ea:b2:77

### *output definitions*

---

<b>Neighbor ID</b>	The name of the neighbor.
<b>Device ID</b>	The device ID.
<b>Port ID</b>	The port ID.

---

### Release History

Release 5.1.R2; command introduced.

## Related Commands

### **udld echo-wait-timer**

Configures the echo based detection timer on a specific port, a range of ports, or all the ports. This is known as link detection period.

### **show udd statistics port**

Displays the UDLD statistics for a specific port.

## MIB Objects

alaUddPortNeighborStatsTable

alaUddNeighborName

---

## show udd status port

Displays the UDLD status for all ports or for a specific port.

**show udd status port** [*chassis/slot/port*]

---

### Syntax Definitions

*chassis*                                      The chassis identifier.  
*slot/port*                                    The slot and port number.

### Defaults

By default, a list of all UDLD ports is displayed.

### Platforms Supported

OmniSwitch 2360

### Usage Guidelines

N/A

### Examples

```
-> show udd status port
  Slot/Port      Admin State      Operational State
-----+-----+-----
  1/1/1          disabled         not applicable
  1/1/2          disabled         not applicable
  1/1/3          disabled         not applicable
  1/1/21         disabled         not applicable
  1/1/40         disabled         not applicable
  1/1/41         disabled         not applicable
  1/1/42         enabled          bidirectional
  1/1/43         enabled          bidirectional
  1/1/44         enabled          bidirectional
  1/1/45         enabled          bidirectional
  1/1/46         enabled          bidirectional
  1/1/47         enabled          bidirectional
  1/1/48         enabled          bidirectional
```

```
-> show udd status port 1/1/44
Admin State      : enabled,
Operational State : bidirectional
```

*output definitions*

---

<b>Slot/Port</b>	Slot number for the module and physical port number on that module.
<b>Admin State</b>	Indicates whether UDLD is administratively <b>enabled</b> or <b>disabled</b> .
<b>Operational State</b>	Indicates the state of interface determined by UDLD operation, which can be <b>notapplicable</b> , <b>shutdown</b> , <b>undetermined</b> or <b>bidirectional</b> .

---

**Release History**

Release 5.1.R2; command introduced.

**Related Commands**

<a href="#">udld port</a>	Enables or disables UDLD status on a specific port or a range of ports.
<a href="#">show udld configuration port</a>	Displays the configuration information for all UDLD ports or for a particular UDLD port on the switch.

**MIB Objects**

```
alaUdldGlobalStatus  
alaUdldPortConfigTable  
    alaUdldPortConfigUdldOperationalStatus
```

---





# 4 Source Learning Commands

The Source Learning capability of OmniSwitch is responsible for creating, updating, and deleting source and destination MAC Address entries in the MAC Address Table. This chapter includes descriptions of Source Learning commands used to create or delete static MAC addresses, define the aging time value for static and dynamically learned MAC addresses, and display MAC Address Table entries and statistics.

MIB information for Source Learning commands is as follows:

*Filename:* ALCATEL-IND1-MAC-ADDRESS-MIB.mib

*Module:* alcatelIND1MacAddressMIB

A summary of the available commands is listed here:

---

- mac-learning**
- mac-learning flush**
- mac-learning flush domain all**
- mac-learning flush domain vlan**
- mac-learning static mac-address**
- mac-learning domain vlan static mac-address**
- mac-learning multicast mac-address**
- mac-learning aging-time**
- show mac-learning**
- show mac-learning domain all**
- show mac-learning domain vlan**
- show mac-learning aging-time**
- show mac-learning learning-state**

---

## mac-learning

Configures the status of source MAC address learning on a VLAN, a single port, a range of ports, or on a link aggregate of ports.

```
mac-learning {vlan vlan[-vlan2] | port chassis/slot/port[-port2] | linkagg agg_id} {enable | disable}
```

---

### Syntax Definitions

<i>vlan</i> [- <i>vlan2</i> ]	The VLAN ID number. Use a hyphen to specify a range of VLAN IDs.
<i>chassis</i>	The chassis identifier.
<i>slot/port</i> [- <i>port2</i> ]	The slot and port number (3/1). Use a hyphen to specify a range of ports (3/1-8).
<i>agg_id</i>	The link aggregate ID number.
<b>enable</b>	Enables source learning.
<b>disable</b>	Disables source learning.

### Defaults

By default, source learning is enabled on all ports.

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- Configuring source learning is not supported on Learned Port Security (LPS) and Universal Network Profile (UNP) ports, as well as individual ports that are members of a link aggregate.
- When port-based source learning is configured for a link aggregate ID, it affects all the ports that are members of the link aggregate.
- When source learning is disabled on a port or link aggregate, dynamic learning of MAC addresses is stopped.
- Static MAC addresses associated with a port or link aggregate are *not* cleared when source learning is disabled. Also, new static MAC address configurations are allowed on ports or link aggregates on which source learning is disabled.
- Disabling source learning on a port or link aggregate is useful on a ring configuration, where switch A does not have to learn MAC addresses from switch B, or for a Transparent LAN Service, where service provider does not require the MAC addresses of the customer network.

## Examples

```
-> mac-learning port 1/1/2 enable
-> mac-learning linkagg 10 disable
-> mac-learning vlan 10 disable
```

## Release History

Release 5.1; command introduced.

## Related Commands

**show mac-learning learning-state** Displays the source learning status of a port or link aggregate on the switch.

## MIB Objects

```
s1MacLearningVlanControlTable
  s1MacLearningVlanControlStatus
s1MacLearningControlTable
  s1MacLearningControlStatus
```

---

## mac-learning flush

Clears the specified MAC addresses from the Source Learning MAC Address Table on the local switch.

```
mac-learning flush {dynamic | static | multicast} [mac-address mac_address]
```

---

### Syntax Definitions

<b>dynamic</b>	Clears dynamically learned MAC addresses.
<b>static</b>	Removes static MAC addresses.
<b>multicast</b>	Removes static multicast MAC addresses.
<i>mac_address</i>	Enter the MAC Address to clear from the MAC Address Table (for example, 00:00:39:59:f1:0c).

### Defaults

---

parameter	default
mac-address	all MAC addresses

---

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- This command flushes dynamically learned addresses from the MAC Address Table.
- Static unicast and static multicast addresses are removed. This command replaces the **no** form of the **mac-learning** command that was used in previous releases.

### Examples

```
-> mac-learning flush dynamic
-> mac-learning flush dynamic mac-address 00:00:39:59:f1:0c
-> mac-learning flush static
-> mac-learning flush static mac-address 00:00:39:59:f1:0d
-> mac-learning flush multicast
-> mac-learning flush multicast mac-address 01:25:9a:5c:2f:10
```

### Release History

Release 5.1; command introduced.

## Related Commands

### [show mac-learning](#)

Displays Source Learning MAC Address Table information for the local switch.

## MIB Objects

```
alaSlMacAddressGlobalTable  
  slMacAddressGblManagement  
  slMacAddressGblRowStatus
```

---

## mac-learning flush domain all

Clears the specified MAC addresses from the Source Learning MAC Address Table for all learning domains on the local switch.

**mac-learning flush domain all {dynamic | static}**

---

### Syntax Definitions

<b>dynamic</b>	Clears dynamically learned MAC addresses from all of the domains.
<b>static</b>	Removes static MAC addresses from all of the domains.

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- This command flushes dynamically learned addresses from the MAC Address Table that were learned or statically configured for all domains.
- Static unicast and static multicast addresses are removed.
- The **mac-learning flush** command replaces the **no** form of the **mac-learning** command that was used in previous releases.

### Examples

```
-> mac-learning flush domain all dynamic  
-> mac-learning flush domain all static
```

### Release History

Release 5.1; command introduced.

## Related Commands

<b>mac-learning flush</b>	Clears the MAC Address Table for the local switch.
<b>mac-learning flush domain vlan</b>	Clears MAC addresses from the VLAN learning domain.
<b>show mac-learning</b>	Displays Source Learning MAC Address Table information for the local switch.

## MIB Objects

```
alaSlMacAddressGlobalTable  
  slMacAddressGblManagement  
  slMacAddressGblRowStatus
```

---



## mac-learning flush domain vlan

Clears the specified MAC addresses from the Source Learning MAC Address Table for the VLAN learning domain on the local switch.

**mac-learning flush domain vlan** {vlan *vlan\_id*} {port *chassis/slot/port* | linkagg *agg\_id*} | {dynamic | static | static-multicast} [mac-address *mac\_address*]

---

### Syntax Definitions

<i>vlan_id</i>	VLAN ID number.
<i>chassis</i>	The chassis identifier.
<i>slot/port</i>	The slot and port number (3/1).
<i>agg_id</i>	Enter a link aggregate ID number.
<b>dynamic</b>	Clears dynamically learned MAC addresses from the VLAN domain.
<b>static</b>	Removes static MAC addresses from the VLAN domain.
<b>static-multicast</b>	Removes static multicast MAC addresses from the VLAN domain.
<i>mac_address</i>	Enter a specific MAC Address to clear from the MAC Address Table (for example, 00:00:39:59:f1:0c) for the specified domain.

### Defaults

parameter	default
mac-address	all MAC addresses

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- This command flushes dynamically learned addresses from the MAC Address Table that were learned or statically configured for the VLAN domain.
- Static unicast and static multicast addresses are removed.
- The **static-multicast** parameter is *not* available for use with the following **mac-learning flush** commands:
  - **mac-learning flush domain all**
  - **mac-learning flush domain spb**
  - **mac-learning flush domain vxlan**
  - **mac-learning flush domain l2gre**
  - **mac-learning flush domain local**
- The **mac-learning flush** command replaces the **no** form of the **mac-learning** command that was used in previous releases.

## Examples

```
-> mac-learning flush domain vlan vlan 20 port 1/2 dynamic
-> mac-learning flush domain vlan static
-> mac-learning flush domain vlan linkagg 10 static
```

## Release History

Release 5.1; command introduced.

## Related Commands

<a href="#">mac-learning flush</a>	Clears the MAC Address Table for the local switch.
<a href="#">mac-learning flush domain spb</a>	Clears MAC addresses from the SPB learning domain.
<a href="#">mac-learning flush domain vxlan</a>	Clears MAC addresses from the VXLAN learning domain.
<a href="#">mac-learning flush domain l2gre</a>	Clears MAC addresses from the L2 GRE tunnel learning domain.
<a href="#">show mac-learning</a>	Displays Source Learning MAC Address Table information for the local switch.

## MIB Objects

```
alaSlMacAddressGlobalTable
  slMacAddressGblManagement
  slMacAddressGblRowStatus
```

---

## mac-learning static mac-address

Configures a static destination unicast MAC address. The configured MAC address is assigned to a fixed switch port or link aggregate ID and VLAN. If the destination of the data packets received on the VLAN ports is the configured MAC address, then they are forwarded to the specific MAC address port.

**mac-learning** {vlan *vlan\_id* {port *chassis/slot/port* | linkagg *agg\_id*}} **static mac-address** *mac\_address* [**bridging** | **filtering**]

**mac-learning flush** [vlan *vlan\_id* [port *chassis/slot/port* | linkagg *agg\_id*]] **static** [**mac-address** *mac\_address*]

---

### Syntax Definitions

<i>vlan_id</i>	VLAN ID number.
<i>chassis</i>	The chassis identifier.
<i>slot/port</i>	The slot and port number (3/1) that is assigned to the static MAC address.
<i>agg_id</i>	Enter a link aggregate ID number. See <a href="#">Chapter 8, “Link Aggregation Commands.”</a>
<i>mac_address</i>	Enter a destination MAC Address (for example, 00:00:39:59:f1:0c).
<b>bridging</b>	Specifies that all packets to or from this MAC address are bridged.
<b>filtering</b>	Specifies that all packets to or from this MAC address are filtered or dropped.

### Defaults

parameter	default
<b>bridging</b>   <b>filtering</b>	bridging

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- Use the **mac-learning flush** command to remove a static MAC address from the Source Learning MAC Address Table. Note that If no parameters are specified with this command, then all static addresses are removed.
- Enter a port number or link aggregate ID that is already associated with the specified VLAN ID. Only traffic from other ports associated with the same VLAN is directed to the static MAC address port.
- Select the **filtering** parameter to set up a denial of service to block potential hostile attacks. Traffic sent to or from a filtered MAC address is dropped. Select the **bridging** parameter for regular traffic flow to or from the MAC address.
- The destination MAC addresses are maintained in the Source Learning MAC address table.

- If a packet received on a port associated with the same VLAN contains a source address that matches a static MAC address, then the packet is discarded.

## Examples

```
-> mac-learning vlan 10 port 1/10 static mac-address 00:00:39:59:f1:0c bridging
-> mac-learning vlan 20 linkagg 5 static mac-address 00:00:9a:55:e0:01 filtering
-> mac-learning flush vlan 500 static
-> mac-learning flush vlan 10 port 1/10 static mac-address 00:00:39:59:f1:0c
-> mac-learning flush vlan 20 linkagg 5 static
-> mac-learning flush static
```

## Release History

Release 5.1; command introduced.

## Related Commands

<a href="#">vlan members untagged</a>	Assigns ports and link aggregates to a VLAN.
<a href="#">mac-learning multicast mac-address</a>	Configures a static multicast MAC address and assigns the address to one or more egress ports or link aggregates.
<a href="#">show mac-learning</a>	Displays Source Learning MAC Address Table information.

## MIB Objects

```
alaSlMacAddressGlobalTable
  slOriginId
  slServiceId
  slMacAddressGbl
  slMacAddressGblManagement
  slMacAddressGblDisposition
```

---

## mac-learning domain vlan static mac-address

Configures a static destination unicast MAC address in the VLAN source learning domain. The configured MAC address is assigned to a fixed switch port or link aggregate ID and VLAN. If the destination of the data packets received on the VLAN ports is the configured static MAC address, then they are forwarded to the specific MAC address port.

**mac-learning domain vlan** *vlan\_id* {**port** *chassis/slot/port* | **linkagg** *agg\_id*} **static mac-address** *mac\_address* [**bridging** | **filtering**]

**mac-learning flush domain vlan** [**vlan** *vlan\_id* [**port** *chassis/slot/port* | **linkagg** *agg\_id*]] **static** [**mac-address** *mac\_address*]

---

### Syntax Definitions

<i>vlan_id</i>	VLAN ID number.
<i>chassis</i>	The chassis identifier.
<i>slot/port</i>	The slot and port number (3/1) that is assigned to the static MAC address.
<i>agg_id</i>	Enter a link aggregate ID number. See <a href="#">Chapter 8, “Link Aggregation Commands.”</a>
<i>mac_address</i>	Enter a destination MAC Address (for example, 00:00:39:59:f1:0c).
<b>bridging</b>	Specifies that all packets to or from this MAC address are bridged.
<b>filtering</b>	Specifies that all packets to or from this MAC address are filtered or dropped.

### Defaults

parameter	default
<b>bridging</b>   <b>filtering</b>	bridging

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- Use the **mac-learning flush** command to remove a static MAC address from the Source Learning MAC Address Table. Note that If no parameters are specified with this command, then all static addresses are removed.
- Enter a port number or link aggregate ID that is already associated with the specified VLAN ID. Only traffic from other ports associated with the same VLAN is directed to the static MAC address port.
- Select the **filtering** parameter to set up a denial of service to block potential hostile attacks. Traffic sent to or from a filtered MAC address is dropped. Select the **bridging** parameter for regular traffic flow to or from the MAC address.
- The destination MAC addresses are maintained in the Source Learning MAC address table.

- If a packet received on a port associated with the same VLAN contains a source address that matches a static MAC address, then the packet is discarded.

## Examples

```
-> mac-learning domain vlan vlan 10 port 1/1/10 static mac-address
00:00:39:59:f1:0c bridging
-> mac-learning domain vlan vlan 20 linkagg 5 static mac-address 00:00:9a:55:e0:01
filtering
-> mac-learning flush domain vlan vlan 500 static
-> mac-learning flush domain vlan vlan 10 port 1/1/10 static mac-address
00:00:39:59:f1:0c
-> mac-learning flush domain vlan vlan 20 linkagg 5 static
-> mac-learning flush domain vlan static
```

## Release History

Release 5.1; command introduced.

## Related Commands

<a href="#">vlan members untagged</a>	Assigns ports and link aggregates to a VLAN.
<a href="#">mac-learning flush domain vlan</a>	Clears MAC addresses from the VLAN source learning domain.
<a href="#">show mac-learning</a>	Displays Source Learning MAC Address Table information.

## MIB Objects

```
alaSlMacAddressGlobalTable
  slMacDomain
  slOriginId
  slServiceId
  slMacAddressGbl
  slMacAddressGblManagement
  slMacAddressGblDisposition
  slMacAddressGblRowStatus
```

---

## mac-learning multicast mac-address

Configures a static multicast MAC address and assigns the address to one or more egress ports. Packets received on ports associated with the specified VLAN that contain a destination MAC address that matches the static multicast address are forwarded to the specified egress ports. Static multicast MAC addresses are maintained in the Source Learning MAC address table.

**mac-learning** {vlan *vlan\_id* {port *chassis/slot/port* | linkagg *agg\_id* }} **multicast mac-address** *multicast\_address* [**group** *group\_id*]

**mac-learning flush** [vlan *vlan\_id* [port *chassis/slot/port* | linkagg *agg\_id* ]] **multicast** [**mac-address** *multicast\_address*]

---

### Syntax Definitions

<i>vlan_id</i>	VLAN ID number.
<i>chassis</i>	The chassis identifier.
<i>slot/port</i>	The egress slot and port number (3/1) that is assigned to the static multicast MAC address.
<i>agg_id</i>	Enter a link aggregate ID number. See <a href="#">Chapter 8, “Link Aggregation Commands.”</a>
<i>multicast_address</i>	Enter the destination multicast MAC Address to add to the MAC Address Table (for example, 01:00:39:59:f1:0c).
<i>group_id</i>	<i>This keyword cannot be user defined.</i>

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- Use the **mac-learning flush** command to remove a static multicast MAC address from the Source Learning MAC Address Table. Note that If no parameters are specified with this command, then all static multicast addresses are removed.
- Note that a MAC address is considered a multicast MAC address if the least significant bit of the most significant octet of the address is enabled. For example, MAC addresses with a prefix of 01, 03, 05, 13, and so on, are multicast MAC addresses.
- If a multicast prefix value is not present, then the address is treated as a regular MAC address and not allowed when using the **mac-learning vlan multicast mac-address** command. Also note that multicast addresses within the following ranges are not supported:

01:00:5E:00:00:00 to 01:00:5E:7F:FF:FF  
 01:80:C2:XX.XX.XX  
 33:33:XX:XX:XX:XX

- The configured (static) multicast MAC address is assigned to a fixed switch port or link aggregate ID and VLAN.
- In addition to configuring the same static multicast address for multiple ports within a given VLAN, it is also possible to use the same multicast address across multiple VLANs.
- Enter a port number or link aggregate ID that is already associated with the specified VLAN ID. Only traffic from other ports associated with the same VLAN is directed to the static MAC address port.
- If the **configuration snapshot** or **write memory** command is entered after a static multicast MAC address is configured, the resulting ASCII file or **boot.cfg** file includes the “**group group\_id**” as the additional syntax for the **mac-learning static-multicast** command. The “**group group\_id**” indicates the number of the multicast group that the switch has assigned to the multicast MAC address for the given VLAN association. Each multicast address – VLAN association is treated as a unique instance and assigned a group number specific to that instance.
- Note that if the port assigned to a multicast MAC address is down or administratively disabled when the **configuration snapshot** or **write memory** command is used, the multicast MAC address is not saved to the resulting ASCII file or **boot.cfg** file.

## Examples

```
-> mac-learning vlan 1500 port 1/10 multicast mac-address 01:25:9a:5c:2f:10
-> mac-learning vlan 355 port 4/2-10 multicast mac-address 01:25:9a:5c:2f:11
-> mac-learning vlan 455 linkagg 10 multicast mac-address 01:25:9a:5c:2f:12
-> mac-learning flush vlan 500 multicast
-> mac-learning flush vlan 1500 port 1/10 multicast mac-address 01:25:9a:5c:2f:10
-> mac-learning flush vlan 455 linkagg 10 multicast mac-address 01:25:9a:5c:2f:12
-> mac-learning flush multicast
```

## Release History

Release 5.1; command introduced.

## Related Commands

<a href="#">vlan members untagged</a>	Assigns ports and link aggregates to a VLAN.
<a href="#">mac-learning static mac-address</a>	Configures a static MAC address and assigns the address to a port or link aggregate.
<a href="#">show mac-learning</a>	Displays Source Learning MAC Address Table information.

## MIB Objects

```
alaSlMacAddressGlobalTable
  slOriginId
  slServiceId
  slMacAddressGbl
  slMacAddressGblManagement
  slMacAddressGblDisposition
```



## mac-learning aging-time

Configures aging time, in seconds, for static and dynamically learned MAC addresses. When a MAC address has aged beyond the aging-time value, the MAC address is discarded.

**mac-learning aging-time** {*seconds* | **default**}

**no mac-learning aging-time**

---

### Syntax Definitions

*seconds* Aging time value (in seconds). Do not use commas in value.

**default** The aging time is set to the default value of 300 seconds.

### Defaults

By default, the aging time is set to 300 seconds.

### Platforms Supported

Not supported in this release.

### Usage Guidelines

- Use the **default** parameter to set the aging-time back to the default value of 300 seconds.
- The aging time value is a global value that applies to all VLANs. Configuring this value on a per VLAN basis is not supported.
- Note that an inactive MAC address can take up to twice as long as the aging time value specified to be removed from the MAC address table. For example, if an aging time of 60 seconds is specified, the MAC address ages out any time between 60 and 120 seconds of inactivity.
- When a new MAC aging time is set, the aging process could take up to 3 aging cycles to age out the inactive macs. This only applies to the first time the aging time is set. Subsequent aging processes can take up to twice as long as the aging time value as described above.
- The MAC address table aging time is also used as the timeout value for the Address Resolution Protocol (ARP) table. This timeout value determines how long the switch retains dynamically learned ARP table entries.

### Examples

```
-> mac-learning aging-time 1200
-> mac-learning aging-time default
```

### Release History

Release 5.1; command introduced.

## Related Commands

[show mac-learning](#)

Displays Source Learning MAC Address Table information.

[show mac-learning aging-time](#)

Displays the current aging time value for the Source Learning MAC Address Table.

## MIB Objects

slMacAddressAgingTable

slMacAgingValue

---

## show mac-learning

Displays Source Learning MAC Address Table information for the switch.

```
show mac-learning [summary | dynamic | static | multicast | bmac] [port chassis/slot/port] [linkagg  
agg_id] [mac-address mac_address] [remote [mac-address mac_address]]
```

---

### Syntax Definitions

<b>summary</b>	Displays a summary of all the MAC address information.
<b>dynamic</b>	Displays only dynamically learned MAC addresses.
<b>static</b>	Displays only static MAC addresses with a permanent status.
<b>multicast</b>	Displays only multicast MAC addresses.
<b>bmac</b>	Displays only backbone MAC addresses (BMACs). A BMAC is the bridge MAC address of a Shortest Path Bridging (SPB) switch. <i>Not supported in this release.</i>
<i>chassis</i>	The chassis identifier.
<i>slot/port</i>	The slot and port number (3/1).
<i>agg_id</i>	The link aggregate ID number.
<i>mac_address</i>	A MAC Address (for example, 00:00:39:59:f1:0c).

### Defaults

By default, information is displayed for all MAC addresses contained in the table.

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- If a static MAC address is configured on a port link that is down or disabled, an asterisk appears to the right of the MAC address in the **show mac-learning** command display. The asterisk indicates that this is an invalid MAC address. When the port link comes up, however, the MAC address is then considered valid and the asterisk no longer appears next to the address in the display.
- If there is a duplicate static MAC address occurrence, a “&” will appear to the right of the address in the **show mac-learning** command display.

## Examples

```
-> show mac-learning summary
```

```
Mac Address Table Summary:
```

Domain	Static	Static-Multicast	Bmac	Dynamic
VLAN	0	0	12	12

```
Total MAC Address In Use = 34
```

```
-> show mac-learning
```

```
Legend: Mac Address: * = address not valid,
```

```
Mac Address: & = duplicate static address,
```

Domain	Vlan	Mac Address	Type	Operation	Interface
VLAN	10	e8:e7:32:11:d4:78	dynamic	bridging	1/1/14
VLAN	52	e8:e7:32:42:e0:4d	dynamic	bridging	1/5/3
VLAN	60	e8:e7:32:40:10:7e	dynamic	bridging	1/5/14
VLAN	60	e8:e7:32:00:24:a5	dynamic	bridging	0/1
VLAN	60	e8:e7:32:00:24:b3	dynamic	bridging	0/1
VLAN	60	e8:e7:32:6c:5c:de	dynamic	bridging	0/92
VLAN	100	e8:e7:32:42:e0:4d	dynamic	bridging	0/98
VLAN	108	e8:e7:32:42:d8:6d	dynamic	bridging	0/16
VLAN	208	e8:e7:32:42:e0:dd	dynamic	bridging	0/15
VLAN	1000	e8:e7:32:00:27:e1	dynamic	bridging	1/1/14
VLAN	1000	e8:e7:32:00:27:ee	dynamic	bridging	1/1/14
VLAN	1000	e8:e7:32:40:10:7e	dynamic	bridging	1/1/14
VLAN	4000	e8:e7:32:00:27:e1	bmac	bridging	1/5/14
VLAN	4000	e8:e7:32:40:10:7e	bmac	bridging	1/5/14
VLAN	4000	e8:e7:32:00:24:a5	bmac	bridging	0/1
VLAN	4000	e8:e7:32:6c:5c:de	bmac	bridging	0/91
VLAN	4051	e8:e7:32:00:27:e1	bmac	bridging	1/5/14
VLAN	4051	e8:e7:32:40:10:7e	bmac	bridging	1/5/14
VLAN	4051	e8:e7:32:00:24:a5	bmac	bridging	0/1
VLAN	4051	e8:e7:32:6c:5c:de	bmac	bridging	0/91
VLAN	4052	e8:e7:32:00:27:e1	bmac	bridging	1/5/14
VLAN	4052	e8:e7:32:40:10:7e	bmac	bridging	1/5/14
VLAN	4052	e8:e7:32:00:24:a5	bmac	bridging	0/1
VLAN	4052	e8:e7:32:6c:5c:de	bmac	bridging	0/91

```
Total number of Valid MAC addresses above = 34
```

### output definitions

<b>Domain</b>	The domain in which the MAC address was learned or statically configured
<b>Vlan</b>	This field contains one of the following values depending on the domain type associated with the MAC address: <ul style="list-style-type: none"> <li>The VLAN ID number.</li> </ul>
<b>Mac Address</b>	MAC address that is currently learned or statically assigned.
<b>Type</b>	MAC address management status ( <b>dynamic</b> , <b>static</b> ).

**output definitions**

---

<b>Operation</b>	The disposition of the MAC address ( <b>bridging, filtering</b> ).
<b>Interface</b>	The slot/port number that is associated with the static or dynamically learned MAC address. If the interface is a link aggregate ID, zero is displayed as the slot number (for example, 0/29).

---

**Release History**

Release 5.1; command introduced.

**Related Commands**

**show mac-learning domain vlan** Displays MAC Address Table information for the VLAN source learning domain.

**show mac-learning aging-time** Displays the current aging time value for the Source Learning MAC Address Table.

**MIB Objects**

```
alaSlMacAddressGlobalTable
  slMacDomain
  slLocaleType
  slOriginId
  slServiceId
  slSubId
  slMacAddressGbl
  slMacAddressGblManagement
  slMacAddressGblDisposition
  slMacAddressGblRowStatus
  slMacAddressGblGroupField
```

---

## show mac-learning domain all

Displays MAC Address Table information for all source learning domains.

**show mac-learning domain all [summary]**

---

### Syntax Definitions

**summary** Displays a summary count of the MAC addresses known to the MAC address table for the specified domain.

### Defaults

By default, all MAC address entries learned are displayed.

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- If a static MAC address is configured on a port link that is down or disabled, an asterisk appears to the right of the MAC address in the command display. The asterisk indicates that this is an invalid MAC address. When the port link comes up, however, the MAC address is then considered valid and the asterisk no longer appears next to the address in the display.
- If there is a duplicate static MAC address occurrence, an “&” symbol will appear to the right of the address in the command display.

### Examples

```
-> show mac-learning domain all summary
Mac Address Table Summary:
```

Domain	Static	Static-Multicast	Bmac	Dynamic
VLAN	0	0	0	12

```
Total MAC Address In Use = 16
```

```
-> show mac-learning domain all
Legend: Mac Address: * = address not valid,
```

```
Mac Address: & = duplicate static address,
```

Domain	Vlan	Mac Address	Type	Operation	Interface
VLAN	1	e8:e7:32:e4:0d:95	dynamic	bridging	1/1/29B
VLAN	1	e8:e7:32:e4:0d:96	dynamic	bridging	1/1/29C
VLAN	1	e8:e7:32:e4:0d:97	dynamic	bridging	1/1/29D
VLAN	1	e8:e7:32:40:0b:9e	dynamic	bridging	0/24
VLAN	46	e8:e7:32:36:1e:f6	dynamic	bridging	0/24
VLAN	46	e8:e7:32:40:0b:9e	dynamic	bridging	0/24
VLAN	71	00:0e:1e:06:87:88	dynamic	bridging	1/1/20B

VLAN	71	00:c0:dd:10:2c:c0	dynamic	bridging	1/1/20B
VLAN	1024	00:e0:b1:e7:17:a5	dynamic	bridging	0/25
VLAN	1024	e8:e7:32:26:b6:0e	dynamic	bridging	0/25
VLAN	1026	00:e0:b1:db:c3:f1	dynamic	bridging	0/24
VLAN	1026	e8:e7:32:40:0b:9e	dynamic	bridging	0/24

Total number of Valid MAC addresses above = 16

### output definitions

<b>Domain</b>	The domain in which the MAC address was learned or statically configured ( <b>VLAN</b> ).
<b>Vlan/ServId/[ISId/vnID]</b>	This field contains one of the following values depending on the domain type associated with the MAC address: <ul style="list-style-type: none"> <li>The VLAN ID number.</li> </ul>
<b>Mac Address</b>	MAC address that is currently learned or statically assigned.
<b>Type</b>	MAC address management status ( <b>dynamic, static</b> ).
<b>Operation</b>	The disposition of the MAC address ( <b>bridging, filtering</b> ).
<b>Interface</b>	The slot/port number that is associated with the static or dynamically learned MAC address. If the interface is a link aggregate ID, zero is displayed as the slot number (for example, 0/29).

### Release History

Release 5.1; command introduced.

### Related Commands

- [show mac-learning](#) Displays Source Learning MAC Address Table information for the switch.
- [show mac-learning domain vlan](#) Displays MAC Address Table information for the VLAN source learning domain.
- [show mac-learning aging-time](#) Displays the current aging time value for the Source Learning MAC Address Table.

### MIB Objects

```
alaSlMacAddressGlobalTable
  slMacDomain
  slOriginId
  slMacAddressGbl
  slMacAddressGblManagement
  slMacAddressGblDisposition
  slMacAddressGblRowStatus
  slMacAddressGblGroupField
```

## show mac-learning domain vlan

Displays MAC Address Table information for the VLAN source learning domain.

```
show mac-learning domain vlan [vlan vlan_id] [port chassis/slot/port | linkagg agg_id] [dynamic | static | static-multicast | bmac] [mac-address mac_address] [summary]
```

---

### Syntax Definitions

<i>vlan_id</i>	VLAN ID number.
<i>chassis</i>	The chassis identifier.
<i>slot/port</i>	The slot and port number (3/1) that is assigned to the static MAC address.
<i>agg_id</i>	A link aggregate ID number.
<b>dynamic</b>	Displays dynamically learned MAC addresses.
<b>static</b>	Displays static MAC addresses with a permanent status.
<b>static-multicast</b>	Displays static multicast MAC addresses. This parameter applies only to the VLAN domain.
<b>bmac</b>	Displays backbone MAC addresses (BMACs). A BMAC is the bridge MAC address of a SPB switch. This parameter applies only to the VLAN domain.
<i>mac_address</i>	A MAC Address (for example, 00:00:39:59:f1:0c).
<b>summary</b>	Displays a summary count of the MAC addresses known to the MAC address table for the specified domain.

### Defaults

By default, all MAC address entries learned for the VLAN domain are displayed.

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- If a static MAC address is configured on a port link that is down or disabled, an asterisk appears to the right of the MAC address in the command display. The asterisk indicates that this is an invalid MAC address. When the port link comes up, however, the MAC address is then considered valid and the asterisk no longer appears next to the address in the display.
- If there is a duplicate static MAC address occurrence, an “&” symbol will appear to the right of the address in the command display.



## Examples

-> show mac-learning domain vlan summary

Mac Address Table Summary:

Domain	Static	Static-Multicast	Bmac	Dynamic
VLAN	0	0	12	17

Total MAC Address In Use = 29

-> show mac-learning domain vlan

Legend: Mac Address: \* = address not valid,

Mac Address: & = duplicate static address,

Domain	Vlan/SrvId/[ISId/vnID]	Mac Address	Type	Operation	Interface
VLAN	71	00:0e:1e:06:87:88	dynamic	bridging	1/1/20B
VLAN	71	00:c0:dd:10:2c:c0	dynamic	bridging	1/1/20B
VLAN	1	e8:e7:32:e4:0d:95	dynamic	bridging	1/1/29B
VLAN	1	e8:e7:32:e4:0d:96	dynamic	bridging	1/1/29C
VLAN	1	e8:e7:32:e4:0d:97	dynamic	bridging	1/1/29D
VLAN	1	00:00:c9:e3:a1:5f	dynamic	bridging	0/24
VLAN	1	e8:e7:32:40:0b:9e	dynamic	bridging	0/24
VLAN	46	e8:e7:32:36:1e:f6	dynamic	bridging	0/24
VLAN	46	e8:e7:32:40:0b:9e	dynamic	bridging	0/24
VLAN	312	00:00:5e:00:01:d4	dynamic	bridging	0/24
VLAN	312	00:e0:b1:db:c3:f1	dynamic	bridging	0/24
VLAN	312	e8:e7:32:26:b6:0e	dynamic	bridging	0/24
VLAN	312	e8:e7:32:40:0b:9e	dynamic	bridging	0/24
VLAN	313	00:00:5e:00:01:d5	dynamic	bridging	0/24
VLAN	313	00:e0:b1:db:c3:f1	dynamic	bridging	0/24
VLAN	313	e8:e7:32:26:b6:0e	dynamic	bridging	0/24
VLAN	313	e8:e7:32:40:0b:9e	dynamic	bridging	0/24

Total number of Valid MAC addresses above = 17

-> show mac-learning domain vlan vlan 312

Legend: Mac Address: \* = address not valid,

Mac Address: & = duplicate static address,

Domain	Vlan/SrvId/[ISId/vnID]	Mac Address	Type	Operation	Interface
VLAN	312	00:00:5e:00:01:d4	dynamic	bridging	0/24
VLAN	312	00:e0:b1:db:c3:f1	dynamic	bridging	0/24
VLAN	312	e8:e7:32:26:b6:0e	dynamic	bridging	0/24
VLAN	312	e8:e7:32:40:0b:9e	dynamic	bridging	0/24

Total number of Valid MAC addresses above = 4

```
-> show mac-learning domain vlan port 1/1/20
```

```
Legend: Mac Address: * = address not valid,
```

```
Mac Address: & = duplicate static address,
```

Domain	Vlan/SrvId/[ISId/vnID]	Mac Address	Type	Operation	Interface
VLAN	71	00:0e:1e:06:87:88	dynamic	bridging	1/1/20
VLAN	71	00:c0:dd:10:2c:c0	dynamic	bridging	1/1/20

```
Total number of Valid MAC addresses above = 2
```

```
-> show mac-learning domain vlan bmac
```

```
Legend: Mac Address: * = address not valid,
```

```
Mac Address: & = duplicate static address,
```

Domain	Vlan/SrvId/[ISId/vnID]	Mac Address	Type	Operation	Interface
VLAN	4000	e8:e7:32:00:27:e1	bmac	bridging	1/5/14
VLAN	4000	e8:e7:32:40:10:7e	bmac	bridging	1/5/14
VLAN	4000	e8:e7:32:00:24:a5	bmac	bridging	0/1
VLAN	4000	e8:e7:32:6c:5c:de	bmac	bridging	0/91
VLAN	4051	e8:e7:32:00:27:e1	bmac	bridging	1/5/14
VLAN	4051	e8:e7:32:40:10:7e	bmac	bridging	1/5/14
VLAN	4051	e8:e7:32:00:24:a5	bmac	bridging	0/1
VLAN	4051	e8:e7:32:6c:5c:de	bmac	bridging	0/91
VLAN	4052	e8:e7:32:00:27:e1	bmac	bridging	1/5/14
VLAN	4052	e8:e7:32:40:10:7e	bmac	bridging	1/5/14
VLAN	4052	e8:e7:32:00:24:a5	bmac	bridging	0/1
VLAN	4052	e8:e7:32:6c:5c:de	bmac	bridging	0/91

```
Total number of Valid MAC addresses above = 12
```

### output definitions

<b>Domain</b>	The domain in which the MAC address was learned or statically configured.
<b>Vlan/ServId/[ISId/vnID]</b>	The VLAN ID number associated with the MAC address.
<b>Mac Address</b>	MAC address that is currently learned or statically assigned.
<b>Type</b>	MAC address management status ( <b>dynamic</b> , <b>static</b> , <b>bmac</b> ).
<b>Operation</b>	The disposition of the MAC address ( <b>bridging</b> , <b>filtering</b> , <b>servicing</b> ).
<b>Interface</b>	The slot/port number that is associated with the static or dynamically learned MAC address. If the interface is a link aggregate ID, zero is displayed as the slot number (for example, 0/29).

### Release History

Release 5.1; command introduced.

## Related Commands

- show mac-learning** Displays Source Learning MAC Address Table information for the switch.
- show mac-learning aging-time** Displays the current aging time value for the Source Learning MAC Address Table.

## MIB Objects

```
alaSlMacAddressGlobalTable
  slMacDomain
  slOriginId
  slMacAddressGbl
  slMacAddressGblManagement
  slMacAddressGblDisposition
  slMacAddressGblRowStatus
  slMacAddressGblGroupField
```

---

## show mac-learning aging-time

Displays the current aging time value for the Source Learning MAC Address Table.

```
show mac-learning aging-time
```

---

### Syntax Definitions

N/A

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

Note that the aging time is the same for all VLANs because it is not configurable on a per-VLAN basis. The aging time value on this platform is a global parameter that applies to all VLANs.

### Examples

```
-> show mac-learning aging-time  
Mac Address Aging Time (seconds) = 300
```

### Release History

Release 5.1; command introduced.

### Related Commands

[show mac-learning](#) Displays Source Learning MAC Address Table information.

### MIB Objects

```
slMacAddressAgingTable  
slMacAgingValue
```

---

## show mac-learning learning-state

Displays the source learning status of a VLAN, port, or link aggregate.

```
show mac-learning learning-state [vlan vlan[-vlan2] | port chassis/slot/port | linkagg agg_id]
```

---

### Syntax Definitions

<i>vlan</i>	The VLAN ID number.
<i>-vlan2</i>	The last VLAN ID in a range of VLAN IDs.
<i>chassis</i>	The chassis identifier.
<i>slot/port</i>	The slot number for the module and the physical port number on that module (for example, 3/1 specifies port 1 on slot 3).
<i>agg_id</i>	Specifies the link aggregate identifier.

### Defaults

By default, the source learning status for all switch ports and link aggregates is displayed.

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- Use the **port** or **linkagg** keywords along with the port ID and link aggregate ID to display the source learning status for a specific port or link aggregate ID.
- Use the **vlan** keyword along with the VLAN ID or a range of VLAN IDs to display the source learning status for the specified VLAN or range of VLANs.
- Output display for a range of port IDs is supported with this command. However, output display for a range of link aggregate IDs is not supported.
- When the source learning status is configured for a link aggregate ID, it affects all the ports that are members of the link aggregate. However, the source learning status cannot be configured on individual ports which are members of the link aggregate.

### Example

```
-> show mac-learning learning-state
```

```
port  source-learning
-----+-----
1/1    disabled
1/2    enabled
1/3    disabled
```

```
-> show mac-learning learning-state port 1/2
```

```
port source-learning
-----+-----
1/2    enabled
```

```
-> show mac-learning learning-state linkagg 10
```

```
port source-learning
-----+-----
0/10   disabled
```

### *output definitions*

<b>port</b>	The slot/port number for a switch port or a link aggregate ID number. If the interface is a link aggregate ID, zero is displayed as the slot number (for example, 0/29).
<b>source-learning</b>	The source learning status of the port or link aggregate ( <b>enabled</b> or <b>disabled</b> ). Configured through the <b>mac-learning</b> command.

```
-> show mac-learning learning-state vlan 1-5
```

```
      Vlan      Learning State
-----+-----
        1      Enabled
        5      Enabled
```

### *output definitions*

<b>Vlan</b>	The VLAN ID numbers of the VLANs that are active.
<b>Learning State</b>	The MAC learning state of the VLANs.

## Release History

Release 5.1; command introduced.

## Related Commands

**mac-learning** Configures the status of source MAC address learning on a single port, a range of ports or on a link aggregate of ports.

## MIB Objects

```
s1MacAddressTable
  s1MacLearningControlTable
  s1MacLearningControlEntry
  s1MacLearningControlStatus
```



# 5 VLAN Management Commands

VLAN management software handles VLAN configuration and the reporting of VLAN configuration changes to other switch tasks. A VLAN defines a broadcast domain that contains physical ports and can span across multiple switches. All switches contain a default VLAN 1. Physical switch ports are initially assigned to VLAN 1 until they are statically or dynamically assigned to other VLANs.

This chapter includes descriptions of VLAN management commands used to create, modify or remove VLANs. These commands allow you to enable or disable Spanning Tree Protocol (STP), add or remove virtual router interfaces, statically assign physical switch ports to a default VLAN, and display VLAN configuration information.

MIB information is as follows:

*Filename:* ALCATEL-IND1-VLAN-MGR-MIB.mib  
*Module:* alcatelIND1VLANManagerMIB

A summary of the available commands is listed here:

---

<b>VLAN Management Commands</b>	<b>vlan</b> <b>vlan members untagged</b> <b>vlan members tagged</b> <b>vlan mtu-ip</b> <b>show vlan</b> <b>show vlan members</b>
-------------------------------------	---

---



## vlan

Creates a new VLAN with the specified VLAN ID (VID) and an optional description.

**vlan** *vlan\_id* [**admin-state** {**enable** | **disable**}] [**name** *description*]

**no vlan** *vlan\_id*

---

### Syntax Definitions

<i>vlan_id</i>	A numeric value that uniquely identifies an individual VLAN. This value becomes the VLAN ID for the new VLAN.
<b>enable</b>	Enable VLAN administrative status.
<b>disable</b>	Disable VLAN administrative status.
<i>description</i>	An alphanumeric string. Optional name description for the VLAN ID.

### Defaults

parameter	default
<b>enable</b>   <b>disable</b>	<b>enable</b>

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- Use the **no** form of this command to delete a VLAN from the configuration.
- All VLAN ports and routers are detached before the VLAN is removed. If the VLAN deleted is a default VLAN on the port, the port returns to default VLAN 1.
- If the VLAN deleted is not a default VLAN, then the ports are directly detached from the VLAN.
- A VLAN is not operationally active until at least one of the member ports of the VLAN is active and can forward traffic.
- Note that specifying multiple VLAN IDs and/or a range of VLAN IDs on the same command line is allowed. Use a hyphen to indicate a contiguous range of VLAN ID entries (for example, **vlan 10-15**).
- When a VLAN is administratively disabled, static port assignments are retained but traffic is not forwarded from these ports.
- The description can be any alphanumeric string. Enclose the description in double quotes if it contains more than one word with space in between.

## Examples

```
-> vlan 200 name "Corporate VLAN"  
-> vlan 720 admin-state disable  
-> no vlan 1020
```

## Release History

Release 5.1; command introduced.

## Related Commands

<a href="#">vlan members untagged</a>	Statically assigns ports to a VLAN.
<a href="#">show vlan</a>	Displays a list of existing VLANs.
<a href="#">show vlan members</a>	Displays VLAN port assignments.

## MIB Objects

```
vlanTable  
  vlanNumber  
  vlanDescription  
  vlanAdmStatus  
  vlanOperStatus  
  vlanStatus
```

---

## vlan members untagged

Configures a new default VLAN for a single port or an aggregate of ports. The VLAN specified with this command is referred to as the *configured default VLAN* for the port.

```
vlan vlan_id[-vlan_id] members {port chassis/slot/port[-port1] | linkagg agg_id[-agg_id]} untagged
```

```
no vlan vlan_id[-vlan_id] members {port chassis/slot/port[-port1] | linkagg agg_id[-agg_id]}
```

---

### Syntax Definitions

<i>chassis</i>	The chassis identifier.
<i>vlan_id</i>	An existing VLAN ID number of the VLAN to assign as the default VLAN configured for the port.
<i>slot/port</i> [- <i>port1</i> ]	The slot number for the module and the physical port number (for example, 3/1 specifies port 1 on slot 3) or a range of physical port numbers on that module (for example, 3/1-16).
<i>agg_id</i> [- <i>agg_id</i> ]	The link aggregate ID number or range of IDs to be assigned to the specified VLAN.

### Defaults

VLAN 1 is the default VLAN for all ports.

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- Use the **no** form of this command to remove a port or link aggregate from its configured default VLAN and restore VLAN 1 as the default VLAN.
- The VLAN ID and link aggregate ID specified with this command must already exist in the switch configuration.
- This command configures the port or link aggregate to send and receive untagged packets for the specified VLAN ID, which becomes the default VLAN of the port.
- Every switch port or link aggregate has only one configured default VLAN. The 802.1Q tagged ports, however, can have additional VLAN assignments, which are often referred to as *secondary* VLANs.

### Examples

```
-> vlan 20 members port 4/1-24 tagged
-> vlan 20 members linkagg 2-4 untagged
-> no vlan 1-4 members port 4/1-24
-> no vlan 20 members linkagg 2-4
```

### Release History

Release 5.1; command introduced.

## Related Commands

<a href="#">vlan</a>	Creates a VLAN.
<a href="#">vlan members tagged</a>	Configures a port to accept 802.1q-tagged packets for a specific VLAN.
<a href="#">show vlan</a>	Displays list of existing VLANs.
<a href="#">show vlan members</a>	Displays VLAN port assignments.

## MIB Objects

```
vpaTable  
  vpaVlanNumber  
  vpaIfIndex  
  vpaType  
  vpaState  
  vpaStatus
```

---

## vlan members tagged

Configures a port or link aggregate ID to send and receive 802.1q-tagged packets with the specified VLAN ID.

**vlan** *vlan\_id*[-*vlan\_id*] **members** {**port** *chassis/slot/port*[-*port*] | **linkagg** *agg\_id*[-*agg\_id*]} **tagged**

**no vlan** *vlan\_id*[-*vlan\_id*] **members** {**port** *chassis/slot/port*[-*port*] | **linkagg** *agg\_id*[-*agg\_id*]}

---

### Syntax Definitions

<i>vlan_id</i>	The VLAN ID number for a pre-configured VLAN that will handle the 802.1Q-tagged traffic for this port. Use a hyphen to specify a range of VLAN IDs (for example, <b>vlan 10-15</b> ). The valid range is 1–4094.
<i>chassis</i>	The chassis identifier.
<i>slot/port</i> [- <i>port</i> ]	The slot and port number (3/1). Use a hyphen to specify a range of ports (3/1-10).
<i>agg_id</i> [- <i>agg_id</i> ]	A link aggregate ID number. Use a hyphen to specify a range of link aggregate IDs.

### Defaults

By default, all ports are untagged (they only carry untagged traffic for the default VLAN to which the port belongs).

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- Use the **no** form of this command to delete 802.1Q tagging on a port or an aggregate of ports.
- The VLAN ID and link aggregate ID specified with this command must already exist in the switch configuration.
- A port or link aggregate cannot be tagged with its own default VLAN ID.

### Examples

```
-> vlan 100 members port 3/1 tagged
-> vlan 100 members port 4/1-10 tagged
-> vlan 100 members linkagg 10 tagged
-> vlan 100 members linkagg 1-4 tagged
-> no vlan 100 members port 3/1
```

### Release History

Release 5.1; command introduced.

## Related Commands

<a href="#">vlan</a>	Creates a VLAN.
<a href="#">vlan members untagged</a>	Configures the default VLAN for the specified port or link aggregate.
<a href="#">show vlan members</a>	Displays VLAN port assignments.

## MIB Objects

```
qPortVlanTable
  qPortVlanSlot
  qPortVlanPort
  qPortVlanStatus
  qPortVlanTagValue
  qPortVlanDescription
  qAggregateVlanTagValue
  qAggregateVlanAggregateId
  qAggregateVlanStatus
  qAggregateVlanDescription
```

---

## vlan mtu-ip

Configures the maximum transmission unit (MTU) packet size allowed for all ports associated with a VLAN. This value is configured on a per VLAN basis, so all IP interfaces assigned to the VLAN apply the same MTU value to packets sent on VLAN ports.

```
vlan vlan_id mtu-ip size
```

---

### Syntax Definitions

<i>vlan_id</i>	An existing VLAN ID number of the VLAN to assign as the default VLAN configured for the port.
<i>size</i>	Packet size value specified in bytes.

### Defaults

By default, the MTU size is set to 1500 bytes (the standard Ethernet MTU size).

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- The MTU size applies to traffic sent on all switch ports that are associated with the specified VLAN regardless of the port speed (for example, 10/100 Ethernet, Gigabit Ethernet). Therefore, assign only ports that are capable of handling the MTU size restriction to the VLAN. If the VLAN MTU size is greater than 1500, do not assign 10/100 Ethernet ports to the VLAN.
- By default, packets that exceed the MTU size are dropped. To enable MTU discovery and fragmentation, use the **icmp type** command to enable the “frag needed but DF bit set” control (for example, **icmp type 3 code 4 enable**).
- The maximum MTU size value for a VLAN is 9198.

### Examples

```
-> vlan 200 mtu-ip 1280  
-> vlan 1503 mtu-ip 9198
```

### Release History

Release 5.1; command introduced.

**Related Commands**

<a href="#">vlan</a>	Creates a VLAN.
<a href="#">vlan members tagged</a>	Configures a port to accept 802.1q-tagged packets for a specific VLAN.
<a href="#">show vlan</a>	Displays list of existing VLANs.

**MIB objects**

```
vlanTable  
  vlanMtu
```

---



## show vlan

Displays a list of VLANs configured on the switch.

```
show vlan [vlan_id]
```

---

### Syntax Definitions

*vlan\_id* VLAN ID number.

### Defaults

By default, a list of all VLANs is displayed.

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- Specify a VLAN ID with this command to display information about a specific VLAN.
- Note that specifying a range of VLAN IDs is also allowed. Use a hyphen to indicate a contiguous range (for example, **show vlan 10-15**). Note that only one VLAN entry - a single VLAN ID or a range of VLAN IDs is allowed with this command. Multiple entries are not accepted.

### Examples

```
-> show vlan
```

```

vlan  type  admin  oper  ip    mtu   name
-----+-----+-----+-----+-----+-----+-----
1      std     Ena    Dis   Dis   1500  Finance IP
10     unpd    Ena    Dis   Dis   1500  UNP-DYN-VLAN
11     std     Ena    Dis   Dis   1500  VLAN 11
400    spb     Ena    Dis   Dis   1524  VLAN 500
500    fcoe    Ena    Dis   Dis   1500  VLAN 500
600    pvlan-p Ena    Dis   Dis   1500  PVLAN 600
601    pvlan-c Ena    Dis   Dis   1500  PVLAN 601
602    pvlan-i Ena    Dis   Dis   1500  PVLAN 602

```

### output definitions

---

<b>vlan</b>	The numerical VLAN ID. Use the <b>vlan</b> command to create or remove VLANs.
<b>type</b>	The type of VLAN ( <b>mtp</b> , <b>vcm</b> , <b>std</b> , <b>unpd</b> , <b>spb</b> , <b>fcoe</b> , <b>pvlan-p</b> , <b>pvlan-c</b> , <b>pvlan-i</b> ). This field also displays the VLANs created through other applications, such as Shortest Path Bridging (SPB), VLAN Stacking, Fibre Channel over Ethernet (FCoE), and Private VLANs (PVLAN).
<b>admin</b>	VLAN administrative status: <b>Ena</b> specifies that VLAN functions are enabled; <b>Dis</b> specifies that VLAN functions are disabled. Use the <b>vlan</b> command to change the VLAN administrative status.

*output definitions (continued)*


---

<b>oper</b>	VLAN operational status: <b>Ena</b> (enabled) or <b>Dis</b> (disabled). The operational status remains disabled until an active port is assigned to the VLAN. When the operational status is enabled, then VLAN properties (for example router interfaces, Spanning Tree) are applied to ports and traffic flow. A VLAN must have an enabled administrative status before it can become operationally enabled.
<b>ip</b>	IP router interface status: <b>Ena</b> (IP interface exists for the VLAN) or <b>Dis</b> (no IP router interface exists for the VLAN). Use the <b>ip interface</b> command to define an IP router interface for a VLAN.
<b>mtu</b>	Maximum Transmission Unit: Size of largest data packet that the VLAN port can transmit. Configured through the <b>vlan mtu-ip</b> command.
<b>name</b>	The user-defined text description for the VLAN. By default, the VLAN ID is displayed if the VLAN description is not specified. Configured through the <b>vlan</b> command.

---

```
-> show vlan 600
Name                : PVLAN 600,
Type                : PVLAN Primary vlan,
Administrative State : enabled,
Operational State   : disabled,
IP Router Port      : disabled,
IP MTU              : 1500
```

*output definitions*


---

<b>Name</b>	The user-defined text description for the VLAN. By default, the VLAN ID is displayed if the VLAN description is not specified.
<b>Type</b>	The type of VLAN (such as <b>Static VLAN</b> , <b>MTP VLAN</b> , <b>VCM IPC</b> , <b>VIP VLAN</b> , <b>UNP Dynamic VLAN</b> , <b>Backbone VLAN</b> , <b>Fibre Channel over Ethernet VLAN</b> , <b>PVLAN Primary vlan</b> )
<b>Administrative State</b>	VLAN administrative status: <b>enabled</b> VLAN functions are enabled; <b>disabled</b> specifies that VLAN functions are disabled. Use the <b>vlan</b> command to change the VLAN administrative status.
<b>Operational State</b>	VLAN operational status: <b>enabled</b> or <b>disabled</b> . The operational status remains disabled until an active port is assigned to the VLAN. When the operational status is enabled, then VLAN properties (for example router interfaces, Spanning Tree) are applied to ports and traffic flow.
<b>IP Router Port</b>	IP router port status: <b>enabled</b> (IP interface exists for the VLAN) or <b>disabled</b> (no IP router interface exists for the VLAN). Use the <b>ip interface</b> command to define an IP router interface for a VLAN.
<b>IP MTU</b>	Maximum Transmission Unit: Size of largest data packet that the VLAN port can transmit.

---

**Release History**

Release 5.1; command introduced.

## Related Commands

[show vlan members](#)

Displays VLAN port assignments.

## MIB Objects

vlanTable

  vlanNumber

  vlanDescription

  vlanAdmStatus

  vlanOperStatus

  vlanRouterStatus

  vlanType

  vlanMtu

  vlanMacTunneling

---

## show vlan members

Displays VLAN-port associations (VPAs) for all VLANs, a specific VLAN, or for a specific port.

**show vlan** [*vlan\_id*[-*vlan\_id*]] **members** [**port** *chassis/slot/port*[-*port*]] [**linkagg** *agg\_id*[-*agg\_id*]]

---

### Syntax Definitions

<i>vlan_id</i>	VLAN ID number. Use a hyphen to specify a range of VLAN IDs (for example, <b>vlan 10-15</b> ).
<i>chassis</i>	The chassis identifier.
<i>slot/port</i> [- <i>port</i> ]	The slot and port number (3/1) of a specific interface to display. Use a hyphen to specify a range of ports (3/1-8).
<i>agg_id</i> [- <i>agg_id</i> ]	Enter a link aggregate ID number. Use a hyphen to specify a range of link aggregate IDs.

### Defaults

If no parameters are specified with this command, a list of all VLANs and their assigned ports is displayed by default.

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- If the *vlan\_id* is specified without a *slot/port* or *agg\_id*, then all port assignments for that VLAN are displayed.
- If the *slot/port* or *agg\_id* is specified without a *vlan\_id*, then all VLAN assignments for that port are displayed.
- If both the *vlan\_id* and *slot/port* or *agg\_id* are specified, then information only for that VLAN and slot/port or link aggregate ID is displayed.
- Note that specifying a range of VLAN IDs is also allowed. Use a hyphen to indicate a contiguous range (for example, **show vlan 10-15 port**). Note that only one VLAN entry - a single VLAN ID or a range of VLAN IDs is allowed with this command. Multiple entries are not accepted.
- The following types of VPAs may appear in the “type” field based on the switch configuration:

VPA Type	Description
<b>default</b>	Statically configured default VLAN assignment for the port.
<b>qtagged</b>	Statically configured 802.1Q tagged secondary VLAN assignment for the port.
<b>dynamic</b>	VPA created dynamically as learned by MVRP.
<b>mirror</b>	Port is mirroring the VLAN assignment of another port created according to rules/policies.

VPA Type	Description
<b>mirrored</b>	VPA created dynamically for remote port mirroring.
<b>spb</b>	Port is associated with a Shortest Path Bridging (SPB) Backbone VLAN (BVLAN). When a port is configured as an SPB interface, the port is dynamically assigned to all BVLANS in the switch configuration.
<b>UNP Untagged</b>	Untagged VPA created dynamically for UNP.
<b>UNP QTagged</b>	802.1Q tagged VPA created dynamically for UNP.

## Examples

```
-> show vlan members
vlan  port      type      status
+-----+-----+-----+-----+
  1    1/1      default   inactive
  2    1/2      default   blocking
      11/4     qtagged   forwarding
  3    1/2      qtagged   blocking
      11/4     default   forwarding
      2/5      dynamic   forwarding
```

```
-> show vlan 10 members
port  type      status
+-----+-----+-----+
 1/1  default   forwarding
 1/2  qtagged   forwarding
```

```
-> show vlan members port 3/2
vlan  type      status
+-----+-----+-----+
  1    default   forwarding
  2    qtagged   forwarding
  5    dynamic   blocking
  3    qtagged   blocking
```

```
-> show vlan 1-11 members port 1/3
type      : default,
status     : inactive,
vlan admin : enabled,
vlan oper  : disabled,
```

### output definitions

<b>vlan</b>	Numerical VLAN ID. Identifies the VLAN assignment of the port.
<b>port</b>	The slot number for the module and the physical port number on that module (for example 3/1 specifies port 1 on slot 3).
<b>type</b>	The type of VPA: <b>default</b> (configured default VLAN assignment for the port), <b>qtagged</b> (802.1Q-tagged secondary VLAN assignment for the port), <b>mirror</b> (port is mirroring the VLAN assignment of another port), <b>dynamic</b> (dynamically configured VLAN assignment for the port).

*output definitions*


---

<b>status</b>	The VPA status: <b>inactive</b> (port is not active), <b>forwarding</b> (traffic is forwarding on this VPA), <b>blocking</b> (traffic is not forwarding on this VPA)
<b>vlan admin</b>	VLAN administrative status: <b>enabled</b> enables VLAN functions to operate; <b>disabled</b> disables VLAN functions without deleting the VLAN. Use the <b>vlan</b> command to change the VLAN administrative status.
<b>vlan oper</b>	VLAN operational status: <b>enabled</b> or <b>disabled</b> . The operational status remains disabled until an active port is assigned to the VLAN. When the operational status is enabled, then VLAN properties (for example router interfaces, Spanning Tree) are applied to ports and traffic flow. A VLAN must have an enabled administrative status before it can become operationally enabled.

---

**Release History**

Release 5.1; command introduced.

**Related Commands**

<b>show vlan</b>	Displays list of VLANs configured on the switch.
<b>show ip interface</b>	Displays IP router information.

**MIB Objects**

```

vlanMgrVpa
vpaTable
    vpaVlanNumber
    vpaIfIndex
    vpaType
    vpaState
    vpaStatus
vlanMgrVlan
vlanTable
    vlanAdmStatus
    vlanOperStatus

```

---



# 6 Loopback Detection Commands

Loopback Detection (LBD) automatically detects the loop and shutdown the port involved in the loop. This prevents forwarding loops on ports that have forwarded network traffic which has looped back to the originating switch. LBD detects and prevents Layer 2 forwarding loops on a port either in the absence of other loop detection mechanisms such as STP/RSTP/MSTP, or when these mechanisms cannot detect it (for example, a client's equipment may drop BPDUs, or the STP protocol may be restricted to the network edge). On a linkagg port, if one port of linkagg is getting shutdown due to LBD, then all the ports of linkagg will go to shutdown state.

Loopback Detection is enabled system wide and on a per-port basis. Once a loop is discovered, the port from which the loop originated is placed into an “Inactive” state and when the two ports of a switch is connected to each other through a hub, either the ports will be shutdown or it will be in normal state.

A provider network with a set of multiple switches interconnected together can be logically viewed as a large single switch. The large single switch provides service access points to customers' networks. Configuration faults in customer networks can result in loops spanning both provider and customer networks. This can result in broadcast storms. In order to protect provider's network from broadcast storms, loops that involve SAP ports need to be detected and broken.

The LBD can detect and break loops created on the service-access interface.

For a service-access interface, LBD can be enabled for a specific port or linkagg. LBD for service-access points allows shutting down only the specific interface of the link involved in the loop.

When loopback occurs, a trap is sent and the event is logged. The port which is shutdown due to LBD is automatically recovered if autorecovery-timer is set or the port can manually be enabled again when the problem is resolved.

MIB information for the Loopback Detection commands is as follows:

*Filename:* ALCATEL-IND1-LBD-MIB  
*Module:* alcatelIND1LBDMIB

A summary of available commands is listed here:

---

**loopback-detection**  
**loopback-detection port**  
**loopback-detection service-access**  
**loopback-detection transmission-timer**  
**loopback-detection autorecovery-timer**  
**show loopback-detection**  
**show loopback-detection port**  
**show loopback-detection linkagg**  
**show loopback-detection statistics port**  
**clear loopback-detection statistics port**

---



## loopback-detection

Enables or disables Loopback Detection (LBD) or remote origin LBD globally on the switch.

```
loopback-detection [remote-origin] {enable | disable}
```

---

### Syntax Definitions

<b>enable</b>	Enables LBD on the switch.
<b>disable</b>	Disables LBD on the switch.

### Defaults

---

parameter	default
enable   disable	disable

---

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- LBD can be enabled globally and per port without any dependency but loopback-detection will be operational only if LBD is enabled globally and also on the specific port.
- LBD can be configured for a port and the configuration can be applied and retained, whether or not LBD is enabled globally. However, LBD functionality on a port is available only when LBD is enabled globally on the switch.
- Enabling the **remote-origin** LBD option allows the switch to process the LBD frames originated from a remote system. The port from which the LBD frames originated will be shut down.

### Examples

```
-> loopback-detection enable
-> loopback-detection disable
-> loopback-detection remote-origin enable
-> loopback-detection remote-origin disable
```

### Release History

Release 5.1.R2; command introduced.

**Related Commands**

<b>loopback-detection port</b>	Enables or disables LBD on a specific port.
<b>show loopback-detection</b>	Displays LBD configuration information.

**MIB Objects**

```
alaLbdGlobalConfigStatus  
alaLbdGlobalRemoteConfigStatus
```

---

## loopback-detection port

Enables or disables LBD or remote-origin LBD on a specific bridge port.

**loopback-detection port** *chassis/slot/port[-port2]* [**remote-origin**] {**enable** | **disable**}

---

### Syntax Definitions

<i>chassis</i>	The chassis identifier.
<i>slot/port[-port2]</i>	The slot and port number (3/1). Use a hyphen to specify a range of ports (3/1-8).
<b>enable</b>	Enables LBD on the specified port.
<b>disable</b>	Disables LBD on the specified port.

### Defaults

---

<b>parameter</b>	<b>default</b>
<b>enable</b>   <b>disable</b>	disable

---

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- Loopback Detection must be enabled globally to enable LBD functionality on a specific port.
- For per-port remote origin LBD to work, both LBD and remote origin LBD must be enabled globally.
- LBD can be configured for a port and the configuration can be applied and retained, whether or not LBD is enabled globally. However, LBD functionality on a port is available only when LBD is enabled globally on the switch.
- When a LBD port joins a link aggregate, the LBD configuration on the joined port is removed.

### Examples

```
-> loopback-detection port 1/1/1 enable
-> loopback-detection port 1/1/1-8 enable
-> loopback-detection port 1/1/2 remote-origin enable
-> loopback-detection port 1/1/3-5 remote-origin enable
-> loopback-detection port 1/1/2 remote-origin disable
-> loopback-detection port 1/1/3-5 remote-origin disable
```

### Release History

Release 5.1.R2; command introduced.

## Related Commands

- loopback-detection** Enables or disables LBD globally on the switch.
- show loopback-detection** Displays LBD configuration information.
- show loopback-detection port** Displays LBD port configuration information.

## MIB Objects

```
alaLbdPortConfigTable
  alaLbdPortConfigEntry
  alaLbdPortConfigIndex
  alaLbdPortConfigLbdAdminStatus
  alaLbdPortConfigLbdOperStatus
  alaLbdPortRemoteConfigAdminStatus
```

---

## loopback-detection service-access

Enables or disables LBD on a specific service access port or link aggregate or on a range of ports or link aggregates. When enabled, LBD can detect and break loops created on a service access interface.

**loopback-detection service-access** {port *chassis/slot/port*[-*port2*] | linkagg *agg\_id*[-*agg\_id2*]} {enable | disable}

---

### Syntax Definitions

<i>chassis</i>	The chassis identifier.
<i>slot/port</i> [- <i>port2</i> ]	The slot and port number (3/1). Use a hyphen to specify a range of ports (3/1-8).
<i>agg_id</i> [- <i>agg_id2</i> ]	The link aggregate ID number. Use a hyphen to specify a range of IDs (10-20).
<b>enable</b>	Enables LBD on the specified port or linkagg.
<b>disable</b>	Disables LBD on the specified port or linkagg.

### Defaults

parameter	default
<b>enable   disable</b>	disable

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- Before configuring LBD using the **service-access** option, the port or linkagg must be configured for service access. Use the **service access** command to configure the port or linkagg for service access.
- The **service-access** option allows shutting down only the specific interface of the link involved in the loop.
- The linkagg must be formed by ports with same path cost.
- LBD is applicable on a linkagg only if the linkagg is configured as a service access interface.
- LBD cannot be configured on a linkagg that has member ports running LBD configuration and vice versa.
- When a linkagg is in violation or shutdown state, the member ports cannot be deleted from the linkagg.

## Examples

```
-> loopback-detection service-access port 1/1/1 enable
-> loopback-detection service-access port 1/1/1-8 enable
-> loopback-detection service-access linkagg 1 enable
```

## Release History

Release 5.1.R2; command introduced.

## Related Commands

<a href="#">loopback-detection</a>	Enables or disables LBD globally on the switch.
<a href="#">show loopback-detection</a>	Displays LBD configuration information.
<a href="#">show loopback-detection port</a>	Displays LBD port configuration information.
<a href="#">show loopback-detection linkagg</a>	Displays LBD configuration information for a service access link aggregate.

## MIB Objects

```
alaLdbPortConfigTable
  alaLdbPortConfigLdbAdminStatus
  alaLdbUserPortConfigLdbInterfaceType
```

---

## loopback-detection transmission-timer

Configures the LBD transmission timer on the switch. The transmission time is the time period between the consecutive LBD packet transmissions.

**loopback-detection transmission-timer** *seconds*

---

### Syntax Definitions

*seconds*                      The time period in seconds between LBD packet transmissions. The valid range is from 5 to 600 seconds.

### Defaults

parameter	default
<i>seconds</i>	30

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- If the timer value is not configured, the default value of 30 seconds is assigned to the transmission period.
- The timer can be modified at any time. However, the new timer value will come into effect only after the timer is restarted.

### Examples

```
-> loopback-detection transmission-timer 200
```

### Release History

Release 5.1.R2; command introduced.

### Related Commands

- |   |   |
|---|---|
| <a href="#">loopback-detection</a>      | Enables or disables LBD globally on the switch. |
| <a href="#">show loopback-detection</a> | Displays LBD configuration information.         |

### MIB Objects

alaLbdGLobalConfigTransmissionTimer

---

## loopback-detection autorecovery-timer

Configures the LBD autorecovery timer on the switch. The autorecovery time is the time period in which the switch is recovered from the shutdown state.

**loopback-detection autorecovery-timer** *seconds*

---

### Syntax Definitions

*seconds* The time period in seconds in which the switch is recovered from the shutdown state. The valid range is from 30 to 86400 seconds.

### Defaults

parameter	default
<i>seconds</i>	300

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- If the timer value is not configured, the default value of 300 seconds is assigned to the autorecovery period.
- The timer can be modified at any time. However, the new timer value will come into effect only after the timer is restarted.

### Examples

```
-> loopback-detection autorecovery-timer 200
```

### Release History

Release 5.1.R2; command introduced.

### Related Commands

- [loopback-detection](#) Enables or disables LBD globally on the switch.
- [show loopback-detection](#) Displays LBD configuration information.

### MIB Objects

alaLbdGlobalConfigAutorecoveryTimer

---



## show loopback-detection

Displays the global LBD configuration information for the switch.

**show loopback-detection**

---

### Syntax Definitions

N/A

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

To view information for a specific port or service access link aggregate, use the [show loopback-detection port](#) or [show loopback-detection linkagg](#) command.

### Examples

```
-> show loopback-detection
Global LBD Status           : enabled,
Global Remote-origin LBD Status : disabled,
Global LBD Transmission Timer : 30 sec,
Global LBD Auto-recovery Timer : 300 sec,
```

#### *output definitions*

---

<b>Global LBD Status</b>	The current status of LBD of the switch ( <b>enabled</b> or <b>disabled</b> ).
<b>Global Remote-origin LBD Status</b>	The current status of remote-origin LBD of the switch ( <b>enabled</b> or <b>disabled</b> ).
<b>Global LBD Transmission Timer</b>	Displays the time interval in seconds between LBD packet transmissions.
<b>Global LBD Auto-recovery Timer</b>	Displays the time in which the switch recovered from the shutdown state.

---

### Release History

Release 5.1.R2; command introduced.

## Related Commands

<b>loopback-detection</b>	Enables or disables LBD globally on the switch.
<b>show loopback-detection port</b>	Displays LBD configuration information for bridge and service access ports on the switch.
<b>show loopback-detection linkagg</b>	Displays LBD configuration information for a service access link aggregate.
<b>show violation</b>	Displays the administrative status, link status, violations, recovery time, maximum recovery attempts and the value of the wait-to-restore timer for the specified port or ports.

## MIB Objects

```
alaLbdGlobalConfigStatus  
alaLbdGlobalRemoteConfigStatus  
alaLbdGlobalConfigTransmissionTimer  
alaLbdGlobalConfigAutorecoveryTimer
```

---

## show loopback-detection port

Displays the LBD configuration information for the specified bridge or service access port.

**show loopback-detection port** [*chassis/slot/port*]

---

### Syntax Definitions

*chassis*                                      The chassis identifier.  
*slot/port*                                      The slot and port number (3/1).

### Defaults

By default, the LBD configuration for all ports is displayed.

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

The command can be used only on an LBD enabled port.

- Use the [loopback-detection port](#) command to enable LBD on a bridge port.
- Use the [loopback-detection service-access](#) command to enable LBD on a service access port or link aggregate.

### Examples

```
-> show loopback-detection port
Slot/Port  Admin State Remote-origin Status OperState      Time-to-recovery (sec)
-----+-----+-----+-----+-----+-----
1/1/1      enabled   enabled   Remote ShutDown  -
1/1/2      enabled   -         Normal           -
```

#### *output definitions*

---

<b>Slot/Port</b>	The slot/port number of the LBD port.
<b>Admin State</b>	The administrative state of the port ( <b>enabled</b> or <b>disabled</b> ).
<b>Remote-origin Status</b>	The remote-origin LBD status of the port ( <b>enabled</b> or <b>disabled</b> ). This field does not apply to LBD service access ports.
<b>OperState</b>	The operational state of the port ( <b>Normal</b> or <b>Inactive</b> ).
<b>Time-to-recovery (sec)</b>	The amount of time to recovery during an LBD shutdown.

---

```

-> show loopback-detection port 1/1/1
Global LBD Status           : enabled,
Global Remote-origin LBD Status : enabled,
Global LBD Transmission Timer : 30 sec,
Global LBD Auto-recovery Timer : 300 sec,
Port LBD Status             : enabled,
Port Remote-origin LBD Status : enabled,
Port LBD State               : Remote ShutDown,
Remote Src Mac               : E8:E7:32:9A:5A:4E,
Remote BridgeId              : E8:E7:32:9A:5A:3F,
Port LBD Type                 : normal-edge,

-> show loopback-detection port 1/1/2
Global LBD Status           : enabled,
Global Remote-origin LBD Status : disabled,
Global LBD Transmission Timer : 30 sec,
Global LBD Auto-recovery Timer : 300 sec,
Port LBD Status             : enabled,
Port Remote-origin LBD Status : -,
Port LBD State               : Inactive,
Port LBD Type                 : service-edge,

```

### *output definitions*

---

<b>Global LBD Status</b>	The current status of LBD of the switch ( <b>enabled</b> or <b>disabled</b> ).
<b>Global Remote-origin LBD Status</b>	The current status of remote-origin LBD on the switch ( <b>enabled</b> or <b>disabled</b> ).
<b>Global LBD Transmission Timer</b>	Displays the time interval in seconds between LBD packet transmissions.
<b>Global LBD Auto-recovery Timer</b>	Displays the time interval in seconds in which the switch is recovered from the shut down state.
<b>Port LBD Status</b>	Displays the administrative status of the port.
<b>Port Remote-origin LBD Status</b>	Displays the remote-origin LBD status of the port ( <b>enabled</b> or <b>disabled</b> ). This field does not apply to LBD service access ports.
<b>Port LBD State</b>	Displays the current operational state of the port.
<b>Remote Src Mac</b>	Displays the MAC address of the remote system. The Remote Src Mac is displayed only if remote-origin LBD is enabled on the system.
<b>Remote BridgeId</b>	Displays the bridge ID of the remote system. The Remote BridgeId is displayed only if remote-origin LBD is enabled on the system.
<b>Port LBD Type</b>	Displays the type of the interface—whether a normal edge interface or a service access interface.

---

### **Release History**

Release 5.1.R2; command introduced.

## Related Commands

<b>loopback-detection</b>	Enables or disables LBD globally on the switch.
<b>loopback-detection port</b>	Enables or disables LBD for a bridge port
<b>loopback-detection service-access</b>	Enables or disables LBD for a service access port or link aggregate.
<b>show loopback-detection linkagg</b>	Displays LBD configuration information for a service access link aggregate.
<b>show loopback-detection statistics port</b>	Displays LBD statistics information for a specific port.

## MIB Objects

```
alaLbdGlobalConfigStatus
alaLbdGlobalRemoteConfigStatus
alaLbdGlobalConfigTransmissionTimer
alaLbdGlobalConfigAutorecoveryTimer
alaLbdPortConfigTable
alaLbdPortConfigLbdAdminStatus
alaLbdPortConfigLbdOperStatus
alaLbdPortConfigServiceAccessType
alaLbdPortRemoteConfigAdminStatus
alaLbdPortRemoteSrcMacAddr
alaLbdPortRemoteBridgeID
alaLbdPortTimeToRecovery
```

---

## show loopback-detection linkagg

Displays the LBD configuration information for the specified link aggregate ID.

```
show loopback-detection linkagg agg_id
```

---

### Syntax Definitions

*agg\_id* The link aggregate ID number.

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

The command can be used only on an LBD enabled link aggregate. Use the [loopback-detection service-access](#) command to enable LBD on a service access link aggregate.

### Examples

```
-> show loopback-detection linkagg 10
Global LBD Status                : enabled,
Global Remote-origin LBD Status  : disabled,
Global LBD Transmission Timer    : 30 sec,
Global LBD Auto-recovery Timer   : 300 sec,
Linkagg LBD Status               : disabled,
Linkagg LBD State               : Inactive,
Linkagg LBD Type                 : service-access
```

#### *output definitions*

---

<b>Global LBD Status</b>	The current LBD status for the switch ( <b>enabled</b> or <b>disabled</b> ).
<b>Global Remote-origin LBD Status</b>	The current status of remote-origin LBD on the switch ( <b>enabled</b> or <b>disabled</b> ). This field does not apply to LBD link aggregates.
<b>Global LBD Transmission Timer</b>	Displays the time interval in seconds between LBD packet transmissions.
<b>Global LBD Auto-recovery Timer</b>	Displays the time interval in seconds in which the switch is recovered from the shut down state.
<b>Linkagg LBD Status</b>	Displays the administrative status of the link aggregate.
<b>Linkagg LBD State</b>	Displays the current operational state of the link aggregate.
<b>Linkagg LBD Type</b>	Displays the type of the interface—whether a normal edge interface or a service access interface. LBD supported on service access link aggregates.

---

## Release History

Release 5.1.R2; command introduced.

## Related Commands

<a href="#">loopback-detection</a>	Enables or disables LBD globally on the switch.
<a href="#">loopback-detection service-access</a>	Enables or disables LBD for a service access port or link aggregate.
<a href="#">show loopback-detection statistics port</a>	Displays LBD statistics information for a specific port.

## MIB Objects

```
alaLbdGlobalConfigStatus
alaLbdGlobalRemoteConfigStatus
alaLbdGlobalConfigTransmissionTimer
alaLbdGlobalConfigAutorecoveryTimer
alaLbdPortConfigTable
alaLbdPortConfigLbdAdminStatus
alaLbdPortConfigLbdOperStatus
alaLbdPortConfigServiceAccessType
```

---

## show loopback-detection statistics port

Displays LBD statistics information for a specific port on the switch.

**show loopback-detection statistics port** *chassis/slot/port*

---

### Syntax Definitions

*chassis*                                    The chassis identifier.  
*slot/port*                                   The slot and port number (3/1).

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

The link aggregate ID is not displayed if the link aggregate is operationally down.

### Examples

```
-> show loopback-detection statistics port 1/1/1
LBD Port Statistics
LBD Packet Send                            : 1,
Invalid LBD Packet Received              : 0,
Member of Link Aggregation               : -
```

```
-> show loopback-detection statistics port 1/1/3
LBD Port Statistics
LBD Packet Send                            : 1,
Invalid LBD Packet Received              : 0,
Member of Aggregation                     : 2
```

### *output definitions*

---

<b>LBD Packet Send</b>	The number of LBD packet sent from the port.
<b>Invalid LBD Packet Received</b>	The number of invalid LBD packets received on the port.
<b>Member of Aggregation</b>	The linkagg ID in which the port is a member.

---

### Release History

Release 5.1.R2; command introduced.



## Related Commands

- loopback-detection** Enables or disables LBD globally on the switch.
- show loopback-detection port** Displays LBD configuration information for a specific port.

## MIB Objects

```
alaLbdPortStatsTable  
  alaLbdPortStatsIfIndex  
  alaLbdPortNumLbdInvalidRcvd  
  alaLbdPortLbdSent  
  alaLbdPortLinkAgg
```

---

## clear loopback-detection statistics port

Clears statistics of all LBD ports or a specific port.

**clear loopback-detection statistics port** [*chassis/slot/port*]

---

### Syntax Definitions

<i>chassis</i>	The chassis identifier.
<i>slot/port</i>	The slot and port number (3/1).

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

N/A

### Examples

```
-> clear loopback-detection statistics port 1/1/2
```

### Release History

Release 5.1.R2; command introduced.

### Related Commands

<a href="#">loopback-detection</a>	Enables or disables LBD globally on the switch.
<a href="#">show loopback-detection port</a>	Displays LBD configuration information for a specific port.

### MIB Objects

```
alaLbdPortStatsTable  
  alaLbdPortStatsClear
```

---



# 7 Distributed Spanning Tree Commands

The Spanning Tree Algorithm and Protocol (STP) is a self-configuring algorithm that maintains a loop-free topology while providing data path redundancy and network scalability. Based on the IEEE 802.1D standard, the OmniSwitch STP implementation distributes the Spanning Tree load between the primary management module and the network interface modules. This functionality improves network robustness by providing a Spanning Tree that continues to respond to BPDUs and port link up and down states in the event of a fail over to a backup management module or switch.

In addition to a distributed architecture, this implementation also provides the following Spanning Tree features:

- Automatic configuration of a physical topology into a single Spanning Tree to ensure that there is only one data path between any two switches.
- Fault tolerance within the network topology. The Spanning Tree is reconfigured in the event of a data path or bridge failure or when a new switch is added to the topology.
- Support for four Spanning Tree protocols: 802.1D (STP), 802.1W (RSTP), and 802.1Q 2005 (MSTP).
- A *flat* Spanning Tree operating mode. If STP or RSTP is used, this mode applies a single STP instance across all VLANs. If MSTP is used, this mode applies a single STP instance to each Multiple Spanning Tree Instance (MSTI), which identifies a set of VLANs.
- A *per-VLAN* Spanning Tree operating mode that applies a single STP instance for each defined VLAN on the switch.
- An STP topology that includes 802.1Q tagged ports and link aggregate logical ports in the calculation of the physical topology.

MIB information for Distributed Spanning Tree commands is as follows:

*Filename:* ALCATEL-IND1-VLAN-STP-MIB.mib  
*Module:* alcatelIND1VLANSTPMIB

A summary of the available commands is listed here:

---

<b>Bridge commands</b>	<code>spantree mode</code> <code>spantree protocol</code> <code>spantree priority</code> <code>spantree hello-time</code> <code>spantree max-age</code> <code>spantree forward-delay</code> <code>spantree bpdu-switching</code> <code>spantree path-cost-mode</code> <code>spantree vlan admin-state</code> <code>spantree auto-vlan-containment</code> <code>show spantree</code> <code>show spantree cist</code> <code>show spantree msti</code> <code>show spantree vlan</code> <code>show spantree mode</code>
<b>Port commands</b>	<code>spantree cist</code> <code>spantree vlan</code> <code>spantree priority</code> <code>spantree cist path-cost</code> <code>spantree msti path-cost</code> <code>spantree vlan path-cost</code> <code>spantree cist mode</code> <code>spantree vlan mode</code> <code>spantree cist connection</code> <code>spantree vlan connection</code> <code>spantree cist admin-edge</code> <code>spantree vlan admin-edge</code> <code>spantree cist auto-edge</code> <code>spantree vlan auto-edge</code> <code>spantree cist restricted-role</code> <code>spantree vlan restricted-role</code> <code>spantree cist restricted-tcn</code> <code>spantree vlan restricted-tcn</code> <code>spantree cist txholdcount</code> <code>spantree vlan txholdcount</code> <code>show spantree ports</code> <code>show spantree cist ports</code> <code>show spantree msti ports</code> <code>show spantree vlan ports</code>
<b>MST region commands</b>	<code>spantree mst region name</code> <code>spantree mst region revision-level</code> <code>spantree mst region max-hops</code> <code>show spantree mst</code>
<b>MST instance commands</b>	<code>spantree msti</code> <code>spantree msti vlan</code> <code>show spantree msti vlan-map</code> <code>show spantree cist vlan-map</code> <code>show spantree map-msti</code>

---

## spantree mode

Selects the flat Spanning Tree or per-VLAN Spanning Tree operating mode for the switch. These modes are exclusive; however, it is not necessary to reboot the switch when the STP modes are changed.

**spantree mode** {flat | per-vlan}

---

### Syntax Definitions

<b>flat</b>	One Spanning Tree instance per switch.
<b>per-vlan</b>	One Spanning Tree instance for each VLAN configured on a switch.

### Defaults

By default, the Spanning Tree mode for the switch is set to per-VLAN.

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- The Multiple Spanning Tree Protocol (MSTP), as defined in the IEEE 802.1Q 2005 standard, is only supported on switches operating in the flat Spanning Tree mode.
- If standard STP or RSTP is used when the switch is running in the flat mode, a single STP instance is applied across all VLANs. For example, if a port belonging to VLAN 10 and a port belonging to VLAN 20 connect to the same switch together, then STP blocks one of these ports.
- If MSTP is used when the switch is running in the flat mode, a single STP instance is applied to each Multiple Spanning Tree Instance (MSTI). Each MSTI represents a set of VLANs.
- Flat Spanning Tree mode supports fixed (untagged) and 802.1Q tagged ports in each VLAN. However, Bridge Protocol Data Units (BPDUs) are always untagged.
- If the per-VLAN mode is selected, a single Spanning Tree instance is enabled for each VLAN configured on the switch. For example, if there are five VLANs configured on the switch, then there are five separate Spanning Tree instances. In essence, a VLAN is a virtual bridge that has its own bridge ID and configurable STP parameters, such as protocol, priority, hello time, max-age, and forward delay.
- When operating in per-VLAN mode, 802.1Q tagged ports participate in an 802.1Q Spanning Tree instance that allows the Spanning Tree to extend across tagged VLANs. As a result, a tagged port can participate in more than one Spanning Tree instance; one for each VLAN that the port carries.
- If a VLAN contains both fixed and tagged ports and the switch is operating in per-VLAN Spanning Tree mode, then a hybrid of the two Spanning Tree instances (single and 802.1Q) is applied. If a VLAN appears as a tag on a port, then the BPDU for that VLAN are also tagged. However, if a VLAN appears as the configured default VLAN for the port, then BPDU are not tagged and the single Spanning Tree instance applies.
- Regardless of which mode the switch is running in, it is possible to administratively disable the Spanning Tree status for an individual VLAN (see [Chapter 5, “VLAN Management Commands”](#)).

---

**Note.** Active ports associated with such a VLAN are excluded from any Spanning Tree calculations and remain in a forwarding state.

---

## Examples

```
-> spantree mode flat
-> spantree mode per-vlan
```

## Release History

Release 5.1; command introduced.

## Related Commands

<a href="#">spantree protocol</a>	Selects the Spanning Tree protocol for the specified instance.
<a href="#">spantree bpdu-switching</a>	Enables the switching of Spanning Tree BPDU on a VLAN that has Spanning Tree disabled.
<a href="#">show spantree</a>	Displays VLAN Spanning Tree parameter values.

## MIB Objects

```
vStpTable
  vStpNumber
  vStpMode
```

---

## spantree protocol

Configures the Spanning Tree protocol for the flat mode Common and Internal Spanning Tree (CIST) instance or for an individual VLAN instance.

```
spantree [cist | vlan vlan_id] protocol {stp | rstp | mstp}
```

---

### Syntax Definitions

<b>cist</b>	The CIST instance (also known as MSTI 0). This parameter is configurable in both modes (flat or per-VLAN).
<i>vlan_id</i>	An existing VLAN ID number. This parameter is configurable in both modes (flat or per-VLAN).
<b>stp</b>	IEEE 802.1D standard Spanning Tree Algorithm and Protocol.
<b>rstp</b>	IEEE 802.1W Rapid Spanning Tree Protocol.
<b>mstp</b>	IEEE 802.1Q 2005 Multiple Spanning Tree Protocol. This protocol is not supported on a per-VLAN basis.

### Defaults

By default, the Spanning Tree protocol is set to RSTP.

parameter	default
<b>cist   vlan <i>vlan_id</i></b>	<b>cist</b>

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- If the optional **cist** or **vlan** parameter is not specified with this command, the protocol is set for the CIST instance by default. This is true regardless of which mode (flat or per-VLAN) is active.

---

**Note.** Selecting MSTP is only an option for the flat mode CIST instance and is required to configure Multiple Spanning Tree Instances (MSTI).

---

- MSTP is only active when the switch is operating in the flat Spanning Tree mode. STP and RSTP are active when the switch is operating in either the flat or per-VLAN Spanning Tree mode.
- Deleting all existing MSTIs is required before changing the protocol from MSTP to STP or RSTP.

---

**Note.** When the protocol is changed to/from MSTP, the bridge priority and port path cost values for the flat mode CIST instance are reset to their default values. However, if the path cost mode was set to 32-bit prior to the protocol change, the path cost is *not* reset to the default value. See the [spantree path-cost-mode](#) command page for more information.

---



## Examples

```
-> spantree protocol mstp
-> spantree cist protocol mstp
-> spantree vlan 5 protocol rstp
```

## Release History

Release 5.1; command introduced.

## Related Commands

<a href="#">spantree mode</a>	Selects the Spanning Tree operating mode (flat or per-VLAN) for the switch.
<a href="#">show spantree</a>	Displays the Spanning Tree instance configuration.

## MIB Objects

```
vStpInsTable
  vStpInsNumber
  vStpInsMode
  vStpInsProtocolSpecification
```

---

## spantree vlan admin-state

Enables or disables the Spanning Tree status for a VLAN.

```
spantree vlan vlan_id [-vlan_id2] admin-state {enable | disable}
```

---

### Syntax Definitions

<i>vlan_id</i> [- <i>vlan_id2</i> ]	An existing VLAN ID number. Use a hyphen to specify a range of VLANs (10-15).
<b>enable</b>	Enables Spanning Tree for the specified VLAN.
<b>disable</b>	Disables Spanning Tree for the specified VLAN.

### Defaults

By default, the Spanning tree status is enabled for a VLAN instance.

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

VLAN Spanning Tree instances are only active when the switch is running in the per-VLAN mode. However, configuring the VLAN Spanning Tree status is allowed in both modes (per-VLAN and flat).

### Examples

```
-> spantree vlan 850-900 admin-state enable
-> spantree vlan 720-750 admin-state disable
-> spantree vlan 500 admin-state disable
```

### Release History

Release 5.1; command introduced.

### Related Commands

<a href="#">vlan</a>	Creates a VLAN.
<a href="#">show vlan</a>	Displays a list of existing VLANs.
<a href="#">show vlan members</a>	Displays VLAN port assignments.

### MIB Objects

```
vlanTable
  vlanNumber
  vlanAdmStatus
  vlanOperStatus
  vlanStatus
```

---

## spantree mst region name

Defines the name for a Multiple Spanning Tree (MST) region. One of three attributes (name, revision level, and a VLAN to MST instance association table) that defines an MST region as required by the IEEE 802.1Q 2005 standard. Switches that share the same attribute values are all considered part of the same MST region. Currently each switch can belong to one MST region at a time.

**spantree mst region name** *name*

**no spantree mst region name**

---

### Syntax Definitions

*name* An alphanumeric string. Use quotes around string if the name contains multiple words with spaces between them (for example, "ALE Marketing").

### Defaults

By default, the MST region name is left blank.

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- Use the **no** form of this command to remove the MST region name.

---

**Note.** It is not necessary to specify the region name to remove it.

---

- To change the existing region, use this command with a string value that is different than the existing region name.
- Specifying an MST region name is allowed regardless of which Spanning Tree operating mode or protocol is currently active on the switch. However, MST configuration values, such as region name, only apply when the switch is operating in the flat Spanning Tree mode and using MSTP.

### Examples

```
-> spantree mst region name SalesRegion
-> spantree mst region name "ALE Marketing"
-> no spantree mst region name
```

### Release History

Release 5.1; command introduced.

## Related Commands

<b>spantree mst region revision-level</b>	Defines the revision level for an MST region.
<b>spantree mst region max-hops</b>	Defines the maximum number of hops for the MST region.
<b>spantree msti</b>	Defines a MSTI number that identifies an association between a range of VLANs and a Spanning Tree instance.
<b>spantree msti vlan</b>	Defines an association between a range of VLANs and a single MSTI.

## MIB Objects

vStpMstRegionTable  
    vStpMstRegionNumber  
    vStpMstRegionConfigName

---

## spantree mst region revision-level

Defines the revision level for a Multiple Spanning Tree (MST) region. One of three attributes (name, revision level, and a VLAN to MST instance association table) that defines an MST region as required by the IEEE 802.1Q 2005 standard. Switches that share the same attribute values are all considered part of the same MST region. Currently each switch can belong to one MST region at a time.

**spantree mst region revision-level** *rev\_level*

---

### Syntax Definitions

*rev\_level*                                A numeric value that identifies the MST region revision level for the switch.

### Defaults

By default, the MST revision level is set to zero.

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

An MST region revision level can be assigned to the MST region regardless of which Spanning Tree operating mode or protocol is currently active on the switch. However, MST configuration values, such as revision level, only apply when the switch is operating in the flat Spanning Tree mode, using the MSTP.

### Examples

```
-> spantree mst region revision-level 1000
-> spantree mst region revision-level 2000
```

### Release History

Release 5.1; command introduced.

### Related Commands

<a href="#">spantree mst region name</a>	Defines the name for an MST region.
<a href="#">spantree mst region max-hops</a>	Defines the maximum number of hops for the MST region.
<a href="#">spantree msti</a>	Defines a MSTI number that identifies an association between a range of VLANs and a Spanning Tree instance.
<a href="#">spantree msti vlan</a>	Defines an association between a range of VLANs and a single MSTI.

### MIB Objects

```
vStpMstRegionTable
  vStpMstRegionNumber
  vStpMstRegionConfigRevisionLevel
```

---

## spantree mst region max-hops

Configures the maximum number of hops that are authorized to receive Multiple Spanning Tree (MST) regional information. Use this command to assign the maximum number of hops a BPDU is allowed to traverse, before it is discarded and related information is aged out.

**spantree mst region max-hops** *max\_hops*

---

### Syntax Definitions

*max\_hops* A numeric value that designates the maximum number of hops.

### Defaults

By default, the maximum number of hops is set to 20.

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- The value configured with this command is a regional value that applies to all instances and is used to determine the size of the region.
- The maximum hop count value is the initial value of the “remaining hops” parameter in the MST BPDU that originates from the bridge that is serving as the root bridge for the region. Each bridge that in turn receives the MST BPDU decrements the “remaining hops” count value by one and passes the new value along to the next bridge. When the count reaches 0, the BPDU is discarded.
- Specifying an MST maximum hop count is allowed regardless of which Spanning Tree operating mode or protocol is currently active on the switch. However, MST configuration values only apply when the switch is operating in the flat Spanning Tree mode and using the MSTP.

### Examples

```
-> spantree mst region max-hops 40
```

### Release History

Release 5.1; command introduced.

## Related Commands

<b>spantree mst region name</b>	Defines the name for an MST region.
<b>spantree mst region revision-level</b>	Defines the revision level for an MST region.
<b>spantree msti</b>	Defines a MSTI number that identifies an association between a range of VLANs and a Spanning Tree instance.
<b>spantree msti vlan</b>	Defines an association between a range of VLANs and a single MSTI.

## MIB Objects

```
vStpMstRegionTable  
  vStpMstRegionNumber  
  vStpMstRegionMaxHops
```

---

## spantree msti

Defines a Multiple Spanning Tree Instance (MSTI) number. This number identifies an association between a range of VLANs and a single Spanning Tree instance. In addition, it is possible to assign an optional name to the MSTI for further identification.

**spantree msti** *msti\_id* [**name** *name*]

**no spantree msti** *msti\_id* [**name**]

---

### Syntax Definitions

<i>msti_id</i>	A numeric MSTI ID number. A range of VLANs is associated to an MSTI ID number.
<i>name</i>	An alphanumeric string. Use quotes around string if the name contains multiple words with spaces between them (for example, "ALE Marketing").

### Defaults

By default, a flat mode Common and Internal Spanning Tree (CIST) instance always exists. The MSTI ID number for this instance is 0.

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- Use the **no** form of this command to remove the MSTI from the switch configuration.
- Use the **no** form of this command along with the **name** parameter to remove the optional MSTI name from the specified instance. The instance itself is not removed; only the name.
- There is always one CIST per switch. Initially all VLANs are associated with the CIST instance.
- Creating an MSTI is allowed when the switch is operating in either the per-VLAN or flat Spanning Tree mode, as long as MSTP is the selected flat mode protocol. The MSTI configuration, however, is not active unless the switch is running in the flat mode.

### Examples

```
-> spantree msti 10
-> spantree msti 20 name BldgOneST10
-> no spantree msti 20 name
-> no spantree msti 10
```

### Release History

Release 5.1; command introduced.



## Related Commands

<b>spantree mst region name</b>	Defines the name for an MST region.
<b>spantree mst region revision-level</b>	Defines the revision level for an MST region.
<b>spantree mst region max-hops</b>	Defines the maximum number of hops for the MST region.
<b>spantree msti vlan</b>	Defines an association between a range of VLANs and a single MSTI.

## MIB Objects

```
vStpMstInstanceTable  
  vStpMstInstanceNumber  
  vStpMstInstanceName  
  vStpMstInstanceVlanBitmapAddition  
  vStpMstInstanceVlanBitmapDeletion  
  vStpMstInstanceVlanBitmapState
```

---

## spantree msti vlan

Defines an association between a range of VLANs and a single Multiple Spanning Tree Instance (MSTI). The MSTI-to-VLAN mapping created with this command is one of three attributes (name, revision level, and a VLAN to MST instance association table) that defines an MST region as required by the IEEE 802.1Q 2005 standard. Switches that share the same attribute values are all considered part of the same MST region. Currently each switch can belong to one MST region at a time.

```
spantree msti msti_id vlan vlan_id[-vlan_id2]
```

```
no spantree msti msti_id vlan vlan_id[-vlan_id2]
```

---

### Syntax Definitions

<i>msti_id</i>	A numeric MSTI identification number. A range of VLANs are associated to an MSTI ID number.
<i>vlan_id</i> [- <i>vlan_id2</i> ]	A VLAN ID number. Use a hyphen to specify a range of VLAN IDs (for example, <b>vlan 10-15</b> ).

### Defaults

By default, all VLANs are associated with the flat mode Common and Internal Spanning Tree (CIST) instance, which is also known as MSTI 0.

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- Use the **no** form of this command to remove a VLAN or a range of VLANs from the specified MSTI association.
- Note that the VLAN ID specified with this command does not have to already exist in the switch configuration. This command maps VLAN IDs to MSTIs, but does not create VLANs.
- A VLAN is associated with only one MSTI at a time, but it is possible to move a VLAN from one MSTI to another. In addition, it is also possible to assign only one VLAN to an MSTI; a range of VLANs is not required.
- To associate multiple VLANs in a single command, use a hyphen to specify a range of VLAN IDs and a space to separate multiple VLAN IDs and/or ranges (for example 100-115 122 135 200-210).
- Configuring an MSTI-to-VLAN mapping is allowed when the switch is operating in either the per-VLAN or flat Spanning Tree mode, as long as MSTP is the selected flat mode protocol. The MSTI configuration, however, is not active unless the switch is running in the flat mode.

### Examples

```
-> spantree msti 10 vlan 100-115
-> spantree msti 20 vlan 122
-> no spantree msti 10 vlan 100-115
```

## Release History

Release 5.1; command introduced.

## Related Commands

<b>spantree mst region name</b>	Defines the name for an MST region.
<b>spantree mst region revision-level</b>	Defines the revision level for an MST region.
<b>spantree mst region max-hops</b>	Defines the maximum number of hops for the MST region.
<b>spantree msti</b>	Defines a MSTI number that identifies an association between a range of VLANs and a Spanning Tree instance.

## MIB Objects

```
vStpMstVlanAssignmentTable  
  vStpMstVlanAssignmentVlanNumber  
  vStpMstVlanAssignmentEntry  
  vStpMstVlanAssignmentMstiNumber
```

---

## spantree priority

Configures the bridge priority value for the Common and Internal Spanning Tree (CIST) instance, a Multiple Spanning Tree Instance (MSTI), or a VLAN instance. This command is also used to configure the priority value for a port or link aggregate associated with the CIST, an MSTI, or a VLAN.

```
spantree [cist | msti msti_id | vlan vlan_id] [port chassis/slot/port[-port2] | linkagg agg_id[-agg_id2]]
```

**priority** *priority*

---

### Syntax Definitions

<b>cist</b>	The CIST instance (also known as MSTI 0). This parameter is configurable in both modes (flat or per-VLAN).
<i>msti_id</i>	An existing MSTI ID number. If MSTI 0 is specified, the priority applies to the CIST instance. This parameter is configurable in both modes (flat or per-VLAN) but only if the flat mode protocol is set to MSTP.
<i>vlan_id</i>	An existing VLAN ID number. This parameter is configurable in both modes (flat or per-VLAN).
<i>chassis</i>	The chassis identifier.
<i>slot/port[-port2]</i>	The slot number and port number of the physical port. Use a hyphen to specify a range of ports (4/1-8).
<i>agg_id[-agg_id2]</i>	The link aggregate ID number. Use a hyphen to specify a range of IDs (10-20).
<i>priority</i>	A bridge or port priority value. The valid range for the bridge priority is 0–65535. The valid range for the port priority is 0–15. If MSTP is the active flat mode protocol, enter a value that is a multiple of 4096 (for example, 4096, 8192, 12288).

### Defaults

- By default, the bridge priority value is set to 32768 for the CIST, an MSTI, and a VLAN instance.
- By default, the port or link aggregate priority value is set to 7.

parameter	default
<b>cist   msti <i>msti_id</i>   vlan <i>vlan_id</i></b>	<b>cist</b>

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- The bridge priority is used to determine which bridge the Spanning Tree algorithm designates as the root bridge. The port priority value is used to determine the most favorable port when a bridge has multiple ports with the same path cost to the root bridge.

- The lower the bridge or port priority number assigned, the higher the priority that is associated with the bridge or port.
- If none of the optional instance parameters (**cist**, **msti**, or **vlan**) or **port** and **linkagg** parameters are specified with this command, the bridge priority is configured for the CIST instance by default. This is true regardless of which mode (flat or per-VLAN) is active for the switch.
- Although the **cist**, **msti**, and **vlan** parameters are configurable in both the flat and per-VLAN mode, the specified priority values are not applied unless the supporting mode (flat for CIST/MSTI or per-VLAN for a VLAN instance) is active.
- To configure the bridge priority with this command, specify the instance (**cist**, **msti**, or **vlan**) and the priority value; do not specify a port number or link aggregate ID.
- The bridge priority value for an MSTI is calculated by adding the configured priority value to the Spanning Tree instance number. For example, if the priority value of MSTI 10 equals 32768 (the default), then the Spanning Tree priority value advertised for this instance is 32770 (32768 + 10).
- When the protocol is changed to/from MSTP, the bridge priority for the flat mode CIST instance is reset to the default value.
- The bridge priority specifies the priority value for the first two octets of the Bridge ID (eight octets long). The remaining six octets of the Bridge ID contain a dedicated bridge MAC address. In regards to the priority for an MSTI, only the four most significant bits are used.
- To configure the port priority with this command, specify the instance (**cist**, **msti**, or **vlan**), a port number or link aggregate ID that is associated with that instance, and the priority value.
- The port priority value configured with this command is only applied to the specified instance. As a result, a single port can have different priority values for each instance. For example, in flat mode, port 1/24 can have a priority value of 7 for MSTI 2 and a priority value of 5 for MSTI 3.
- The port priority specifies the value of the priority field contained in the first byte of the port ID. The second byte contains the physical switch port number.

## Examples

The following command examples set the bridge priority for the specified instance:

```
-> spantree priority 8192
-> spantree cist priority 8192
-> spantree vlan 2 priority 32679
-> spantree msti 1 priority 2500
ERROR: Valid bridge priority values are multiples of 4096: 0, 4096,
      8192, 12288, 16384 ... 61440
-> spantree msti 1 priority 8192
```

The following command examples set the port priority for the specified instance:

```
-> spantree port 1/10 priority 10
-> spantree cist port 1/10 priority 10
-> spantree cist linkagg 10 priority 1
-> spantree vlan 200 port 2/1 priority 15
-> spantree vlan 2 linkagg 5 priority 2
-> spantree msti 2 port 1/24 priority 5
-> spantree msti 3 linkagg 6-8 priority 10
```

## Release History

Release 5.1; command introduced.

## Related Commands

<a href="#">spantree mode</a>	Selects the Spanning Tree operating mode (flat or per-VLAN) for the switch.
<a href="#">show spantree</a>	Displays the Spanning Tree instance configuration.
<a href="#">show spantree ports</a>	Displays the Spanning Tree port configuration.

## MIB Objects

```
vStpInsTable
  vStpInsNumber
  vStpInsMode
  vStpInsPriority
  vStpInsBridgeAddress
```

---

## spantree hello-time

Configures the Spanning Tree hello time value for the flat mode Common and Internal Spanning Tree (CIST) instance or for a per-VLAN mode VLAN instance. This value specifies the amount of time, in seconds, between each transmission of a BPDU on any port that is the Spanning Tree root or is attempting to become the Spanning Tree root.

```
spantree [cist | vlan vlan_id] hello-time seconds
```

---

### Syntax Definitions

<b>cist</b>	The CIST instance (also known as MSTI 0). This parameter is configurable in both modes (flat or per-VLAN).
<i>vlan_id</i>	An existing VLAN ID number. This parameter is configurable in both modes (flat or per-VLAN).
<i>seconds</i>	Specifies the Hello time value in seconds. The valid range is 1–10.

### Defaults

By default, the bridge hello time value is set to 2 seconds.

<b>parameter</b>	<b>default</b>
<b>cist</b>   <b>vlan</b> <i>vlan_id</i>	<b>cist</b>

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- Lowering the Hello Time interval improves the robustness of the Spanning Tree Algorithm. Increasing the Hello Time interval lowers the overhead of the Spanning Tree Algorithm.
- If the optional **cist** or **vlan** parameter is not specified with this command, the hello time is configured for the CIST instance by default. This is true regardless of which mode (flat or per-VLAN) is active for the switch.
- Although the **cist** and **vlan** parameters are configurable in both the flat and per-VLAN mode, the specified hello time value is not applied unless the supporting mode (flat for CIST or per-VLAN for a VLAN instance) is active.
- Note that for Multiple Spanning Tree Instances (MSTI), the hello time value is inherited from the CIST instance and is not a configurable parameter.

### Examples

```
-> spantree hello-time 5
-> spantree cist hello-time 5
-> spantree vlan 10 hello-time 3
```

## Release History

Release 5.1; command introduced.

## Related Commands

<a href="#">spantree mode</a>	Selects the Spanning Tree operating mode (flat or per-VLAN) for the switch.
<a href="#">show spantree</a>	Displays the Spanning Tree instance configuration.

## MIB Objects

```
vStpInsTable
  vStpInsNumber
  vStpInsMode
  vStpInsBridgeHelloTime
```

---



## spantree max-age

Configures the bridge maximum age time value for the flat mode Common and Internal Spanning Tree (CIST) instance or for a per-VLAN mode VLAN instance. This value is the amount of time, in seconds, that the Spanning Tree Protocol information learned from the network on any port is retained. This information is discarded when it ages beyond the maximum age value.

```
spantree [cist | vlan vlan_id] max-age seconds
```

---

### Syntax Definitions

<b>cist</b>	The CIST instance (also known as MSTI 0). This parameter is configurable in both modes (flat or per-VLAN).
<i>vlan_id</i>	An existing VLAN ID number. This parameter is configurable in both modes (flat or per-VLAN).
<i>seconds</i>	Max-age time in seconds. The valid range is 6–40.

### Defaults

By default, the bridge maximum age time value is set to 20 seconds.

<b>parameter</b>	<b>default</b>
<b>cist</b>   <b>vlan</b> <i>vlan_id</i>	<b>cist</b>

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- A low maximum age time causes the Spanning Tree Algorithm to reconfigure more often.
- If the optional **cist** or **vlan** parameter is not specified with this command, the maximum age time is configured for the CIST instance by default. This is true regardless of which mode (flat or per-VLAN) is active for the switch.
- Although the **cist** and **vlan** parameters are configurable in both the flat and per-VLAN mode, the specified maximum age time value is not applied unless the supporting mode (flat for CIST or per-VLAN for a VLAN instance) is active.
- Note that for Multiple Spanning Tree Instances (MSTI), the maximum age time value is inherited from the CIST instance and is not a configurable parameter.

### Examples

```
-> spantree max-age 10  
-> spantree cist max-age 10  
-> spantree vlan 10 max-age 30
```

## Release History

Release 5.1; command introduced.

## Related Commands

<a href="#">spantree mode</a>	Selects the Spanning Tree operating mode (flat or per-VLAN) for the switch.
<a href="#">show spantree</a>	Displays the Spanning Tree instance configuration.

## MIB Objects

vStpInsTable  
    vStpInsNumber  
    vStpInsBridgeMaxAge

---

## spantree forward-delay

Configures the bridge forward delay time for the flat mode Common and Internal Spanning Tree (CIST) instance or for a per-VLAN mode VLAN instance. This value is the amount of time, in seconds, that determines how fast a port changes its Spanning Tree state until it reaches a forwarding state. The forward delay time specifies how long a port stays in the listening and learning states, which precede the forwarding state.

**spantree** [**cist** | **vlan** *vlan\_id*] **forward-delay** *seconds*

---

### Syntax Definitions

<b>cist</b>	The CIST instance (also known as MSTI 0). This parameter is configurable in both modes (flat or per-VLAN).
<i>vlan_id</i>	An existing VLAN ID number. This parameter is configurable in both modes (flat or per-VLAN).
<i>seconds</i>	Forward delay time, in seconds. The valid range is 4–30.

### Defaults

By default, the bridge forward delay time value is set to 15 seconds.

parameter	default
<b>cist</b>   <b>vlan</b> <i>vlan_id</i>	<b>cist</b>

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- A low forward delay time can cause temporary loops in the network, because data may get forwarded before the reconfiguration message has reached all nodes on the network.
- The forward delay time is also used to age out all dynamic MAC address entries in the forwarding table (MAC address table) when a topology change occurs.
- If the optional **cist** or **vlan** parameter is not specified with this command, the forward delay time is configured for the CIST instance by default. This is true regardless of which mode (flat or per-VLAN) is active for the switch.
- Although the **cist** and **vlan** parameters are configurable in both the flat and per-VLAN mode, the specified forward delay time value is not applied unless the supporting mode (flat for CIST or per-VLAN for a VLAN instance) is active.
- Note that for Multiple Spanning Tree Instances (MSTI), the forward delay time is inherited from the CIST instance and is not a configurable parameter.

## Examples

```
-> spantree forward-delay 30
-> spantree cist forward-delay 30
-> spantree vlan 5 forward-delay 10
```

## Release History

Release 5.1; command introduced.

## Related Commands

<a href="#">spantree mode</a>	Selects the Spanning Tree operating mode (flat or per-VLAN) for the switch.
<a href="#">show spantree</a>	Displays the Spanning Tree instance configuration.

## MIB Objects

```
vStpInsTable
  vStpInsNumber
  vStpInsMode
  vStpInsBridgeForwardDelay
```

---

## spantree bpdu-switching

Enables or disables the switching of Spanning Tree BPDU for VLAN and CIST instances if the switch is running in the per-VLAN mode.

```
spantree {vlan vlan_id | cist} bpdu-switching {enable | disable}
```

---

### Syntax Definitions

<i>vlan_id</i>	An existing VLAN ID number.
<b>enable</b>	Enables BPDU switching for the specified instance.
<b>disable</b>	Disables BPDU switching for the specified instance.

### Defaults

By default, BPDU switching is disabled for VLAN or CIST instance.

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- Specifying the BPDU switching status for a VLAN does not depend on the current VLAN Spanning Tree status. For example, setting the BPDU switching status to enabled is allowed on a VLAN that also has Spanning Tree enabled.
- Use the **vlan** parameter along with the *vlan\_id* to enable or disable BPDU switching for a particular VLAN.
- Use the **cist** parameter to enable or disable BPDU switching for the CIST instance.

### Examples

```
-> spantree mode flat
-> spantree bpdu-switching enable
-> spantree bpdu-switching disable
-> spantree cist bpdu-switching enable
-> spantree cist bpdu-switching disable

-> spantree mode per-vlan
-> spantree vlan 10 bpdu-switching enable
-> spantree vlan 10 bpdu-switching disable
```

### Release History

Release 5.1; command introduced.

**Related Commands****vlan members untagged**

Enables or disables Spanning Tree instance for the specified VLAN.

**show spantree**

Displays VLAN Spanning Tree parameter values.

**MIB Objects**

vStpInsTable

vStpInsBpduSwitching

---

## spantree path-cost-mode

Configures the automatic selection of a 16-bit path cost for STP/RSTP ports and a 32-bit path cost for MSTP ports or sets all path costs to use a 32-bit value.

**spantree path-cost-mode {auto | 32bit}**

---

### Syntax Definitions

<b>auto</b>	The port path cost value is automatically set depending on which protocol is active on the switch (32-bit for MSTP, 16-bit for STP/RSTP).
<b>32bit</b>	Specifies that a 32-bit value is used for the port path cost value regardless of which protocol is active on the switch.

### Defaults

By default, the path cost mode is set to **auto**.

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- All path cost values, except those for MSTIs, are reset to the default path cost value when this mode is changed.
- When connecting a switch running in the 32-bit path cost mode to a switch running in the 16-bit mode, the 32-bit switch has a higher path cost value and thus an inferior path cost to the 16-bit switch. To avoid this, use the **spantree path-cost-mode** command to change the 32-bit switch to a 16-bit switch.
- Note that when the protocol is changed to/from MSTP, the bridge priority and port path cost values for the flat mode CIST instance are reset to their default values. The exception to this is if the path cost mode is set to 32-bit prior to the protocol change, the path cost is not reset to its default value

### Examples

```
-> spantree path-cost-mode 32bit  
-> spantree path-cost-mode auto
```

### Release History

Release 5.1; command introduced.

### Related Commands

[spantree protocol](#) Configures the protocol for the flat mode CIST instance or a per-VLAN mode VLAN instance.

**MIB Objects**

vStpBridge

vStpPathCostMode

---



## spantree auto-vlan-containment

Enables or disables Auto VLAN Containment (AVC). When enabled, AVC prevents a port that has no VLANs mapped to an Multiple Spanning Tree Instance (MSTI) from becoming the root port for that instance. Such ports are automatically assigned an infinite path cost value to make them an inferior choice for root port.

```
spantree [msti msti_id] auto-vlan-containment {enable | disable}
```

---

### Syntax Definitions

<i>msti_id</i>	An existing MSTI ID number. A range of VLANs are associated to an MSTI ID number.
<b>enable</b>	Enables automatic VLAN containment.
<b>disable</b>	Disables automatic VLAN containment.

### Defaults

By default, automatic VLAN containment is disabled.

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- The AVC feature is not active for any MSTI until it is globally enabled. To globally enable this feature, use the **spantree auto-vlan-containment** command but do not specify an *msti\_id*.
- When AVC is globally enabled, it is active for all MSTIs. To disable AVC for a single instance, specify the *msti\_id* for the instance and use the **disable** form of this command.
- Use the **enable** form of this command and specify an *msti\_id* to enable AVC for an instance that was previously disabled.
- An administratively set port path cost takes precedence and prevents AVC configuration of the path cost. However, if the port path cost is administratively set to zero, then the path cost is reset to the default value.
- Note that when AVC is disabled, a port assigned to a VLAN that is not mapped to a specific instance, can become the root port for that instance and cause a loss of connectivity between other VLANs.
- AVC does not have any effect on root bridges.

### Examples

```
-> spantree auto-vlan-containment enable
-> spantree auto-vlan-containment disable
-> spantree msti 1 auto-vlan-containment disable
-> spantree msti 1 auto-vlan-containment enable
```

## Release History

Release 5.1; command introduced.

## Related Commands

### [show spantree msti ports](#)

Displays Spanning Tree port information for a flat mode Multiple Spanning Tree Instance (MSTI).

## MIB Objects

vStpInsTable

    vStpInsAutoVlanContainment

vStpBridge

    vStpBridgeAutoVlanContainment

---

## spantree cist

Enables or disables the Spanning Tree status on a port or a link aggregate of ports for the flat mode Common and Internal Spanning Tree (CIST) instance.

```
spantree cist {port chassis/slot/port[-port2] | linkagg agg_id[-agg_id2]} {enable | disable}
```

---

### Syntax Definitions

<i>chassis</i>	The chassis identifier.
<i>slot/port[-port2]</i>	The slot number and port number of the physical port. Use a hyphen to specify a range of ports (4/1-8).
<i>agg_id[-agg_id2]</i>	The link aggregate ID number. Use a hyphen to specify a range of IDs (10-20).
<b>enable</b>	Enables Spanning Tree on the specified port for the CIST instance.
<b>disable</b>	Disables Spanning Tree on the specified port for the CIST instance.

### Defaults

By default, the Spanning Tree status is enabled on eligible ports.

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- This command only applies to the CIST instance regardless of which Spanning Tree operating mode (flat or per-VLAN) or protocol is active for the switch.
- If the switch is running in per-VLAN mode when this command is used, the Spanning Tree status configured for the port is not active for the CIST instance until the operating mode for the switch is changed to the flat mode.
- When the Spanning Tree status is disabled on a port, the port is set to a forwarding state for the specified instance.
- Physical ports that are reserved for link aggregation do not participate in the Spanning Tree Algorithm. Instead, the algorithm is applied to the aggregate logical link (virtual port) that represents a collection of physical ports.

### Examples

```
-> spantree cist port 4/1 enable
-> spantree cist port 4/2-5 disable
-> spantree cist linkagg 16 disable
-> spantree cist linkagg 22-26 enable
```

### Release History

Release 5.1; command introduced.

## Related Commands

### **spantree mode**

Selects the Spanning Tree operating mode (flat or per-VLAN) for the switch.

### **spantree vlan**

Configures the Spanning Tree status on a port or a link aggregate of ports for a VLAN instance.

## MIB Objects

vStpInsPortTable

    vStpInsPortNumber

    vStpInsPortEnable

---

## spantree vlan

Enables or disables the Spanning Tree status on a port or a link aggregate of ports for the specified VLAN instance.

```
spantree vlan vlan_id [-vlan2] {port chassis/slot/port[-port2] | linkagg agg_id[-agg_id2]} {enable | disable}
```

---

### Syntax Definitions

<i>vlan_id</i>	An existing VLAN ID number.
<i>chassis</i>	The chassis identifier.
<i>slot/port</i> [- <i>port2</i> ]	The slot number and port number of the physical port. Use a hyphen to specify a range of ports (4/1-8).
<i>agg_id</i> [- <i>agg_id2</i> ]	The link aggregate ID number. Use a hyphen to specify a range of IDs (10-20).
<b>enable</b>	Enables Spanning Tree on the specified port for the specified instance.
<b>disable</b>	Disables Spanning Tree on the specified port for the specified instance.

### Defaults

By default, the Spanning Tree status is enabled on eligible ports.

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- This command only applies to the specified VLAN instance regardless of which Spanning Tree operating mode (flat or per-VLAN) is active for the switch.
- If the switch is running in the flat mode when this command is used, the Spanning Tree status configured for the port is not active for the specified VLAN instance until the operating mode for the switch is changed to the per-VLAN mode.
- When the Spanning Tree status is disabled on a port, the port is set to a forwarding state for the specified instance.
- If STP is disabled on a VLAN in the per-VLAN mode, the port Spanning Tree status is ignored and all active ports associated with the VLAN are put in a forwarding state and not included in the Spanning Tree Algorithm. Note that when this occurs, ports will *not* bridge BPDU unless the BPDU switching status for the VLAN is enabled.
- Physical ports that are reserved for link aggregation do not participate in the Spanning Tree Algorithm. Instead, the algorithm is applied to the aggregate logical link (virtual port) that represents a collection of physical ports.

### Examples

```
-> spantree vlan 2 port 4/1 enable  
-> spantree vlan 2 port 4/2-5 disable
```

```
-> spantree vlan 3 linkagg 16 disable  
-> spantree vlan 3 linkagg 22-25 disable
```

## Release History

Release 5.1; command introduced.

## Related Commands

<a href="#">spantree mode</a>	Selects the Spanning Tree operating mode (flat or per-VLAN) for the switch.
<a href="#">spantree cist</a>	Configures the Spanning Tree status on a port or an aggregate of ports for the CIST instance when the switch is operating in either the per-VLAN or flat mode.
<a href="#">spantree vlan admin-state</a>	Enables or disables Spanning Tree instance for the specified VLAN.
<a href="#">spantree bpdu-switching</a>	Enables or disables the switching of Spanning Tree BPDU for all VLAN instances if the switch is running in the per-VLAN mode.

## MIB Objects

```
vStpInsPortTable  
  vStpInsPortNumber  
  vStpInsPortEnable
```

---

## spantree cist path-cost

Configures the Spanning Tree path cost value for a port or a link aggregate of ports for the flat mode Common and Internal Spanning Tree (CIST) instance. This value is the contribution of this port to the path cost towards the Spanning Tree root bridge that includes this port. Path cost is a measure of the distance of the listed port from the root bridge in the number of hops.

```
spantree cist {port chassis/slot/port[-port2] | linkagg agg_id[-agg_id2]} path-cost path_cost
```

---

### Syntax Definitions

<i>chassis</i>	The chassis identifier.
<i>slot/port[-port2]</i>	The slot number and port number of the physical port. Use a hyphen to specify a range of ports (4/1-8).
<i>agg_id[-agg_id2]</i>	The link aggregate ID number. Use a hyphen to specify a range of IDs (10-20).
<i>path_cost</i>	Path cost value. The valid range is 0 - 65535 for 16-bit, 0–200000000 for 32-bit.

### Defaults

By default, the path cost is set to zero.

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- This command only applies to the port path cost value for the CIST instance regardless of which operating mode (flat or per-VLAN) or protocol is active for the switch.
- If the switch is running in per-VLAN mode when this command is used, the specified path cost value is not active for the CIST instance until the operating mode for the switch is changed to the flat mode.
- Note that when the Spanning Tree protocol is changed to/from MSTP, the bridge priority and port path cost values for the flat mode CIST instance are reset to their default values.
- Use the [spantree path-cost-mode](#) command to automatically select the path cost value based on the active Spanning Tree protocol (16-bit for STP and RSTP, 32-bit for MSTP) or to use a 32-bit path cost value regardless of which protocol is active.
- If the *path\_cost* is set to zero, there are recommended 16-bit and 32-bit values which are used by default depending on the link speed.

### Examples

```
-> spantree cist port 4/1 path-cost 19
-> spantree cist port 4/2-5 path-cost 19
-> spantree cist linkagg 16 path-cost 12000
-> spantree cist linkagg 17-20 path-cost 12000
```

## Release History

Release 5.1; command introduced.

## Related Commands

<a href="#">spantree mode</a>	Selects the Spanning Tree operating mode (flat or per-VLAN) for the switch.
<a href="#">spantree path-cost-mode</a>	Selects a 32-bit or automatic path cost mode for the switch.
<a href="#">spantree msti path-cost</a>	Configures the Spanning Tree path cost value for a port or a link aggregate of ports for an MSTI.
<a href="#">spantree vlan path-cost</a>	Configures the Spanning Tree path cost value for a port or a link aggregate of ports for a VLAN instance.

## MIB Objects

```
vStpInsPortTable
  vStpInsPortNumber
  vStpInsPortPathCost
```

---



## spantree msti path-cost

Configures the Spanning Tree path cost value for a port or a link aggregate of ports for the specified flat mode Multiple Spanning Tree Instance (MSTI). This value is the contribution of this port to the path cost towards the Spanning Tree root bridge that includes this port. Path cost is a measure of the distance of the listed port from the root bridge in the number of hops.

```
spantree msti msti_id {port chassis/slot/port[-port2] | linkagg agg_id[-agg_id2]} path-cost path_cost
```

---

### Syntax Definitions

<i>msti_id</i>	An existing MSTI ID number. If MSTI 0 is specified, the priority applies to the CIST instance.
<i>chassis</i>	The chassis identifier.
<i>slot/port[-port2]</i>	The slot number and port number of the physical port. Use a hyphen to specify a range of ports (4/1-8).
<i>agg_id[-agg_id2]</i>	The link aggregate ID number. Use a hyphen to specify a range of IDs (10-20).
<i>path_cost</i>	Path cost value. The valid range is 0 - 65535 for 16-bit, 0–200000000 for 32-bit.

### Defaults

By default, the path cost is set to zero.

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- This command only applies to the specified MSTI regardless of which operating mode (flat or per-VLAN) is active for the switch. However, if MSTP is not the selected flat mode protocol, the path cost value for any MSTI is not configurable.
- Note that if zero is entered for the *msti\_id* value, the specified path cost value is applied to the CIST instance.
- Note that when the Spanning Tree protocol is changed to/from MSTP, the bridge priority and port path cost values for the flat mode CIST instance are reset to their default values.
- The path cost value configured with this command is only applied to the specified instance. As a result, a single port can have a different path cost for each instance. For example, in flat mode, port 1/24 can have a path cost of 20000 for MSTI 2 and a path cost of 35000 for MSTI 3.
- If the switch is running in per-VLAN mode when this command is used, the specified path cost value is not active for the specified MSTI until the operating mode for the switch is changed to the flat mode.
- When MSTP is the active protocol on the switch, only a 32-bit path cost value is used. Using a 16-bit path cost value is not an option.

- If the *path\_cost* is set to zero, there are recommended 16-bit and 32-bit values which are used by default depending on the link speed. Refer to the “**Configuring Spanning Tree Parameters**” chapter for a list of values.

## Examples

```
-> spantree msti 0 port 4/1 path-cost 35000
-> spantree msti 0 port 1/20-24 path-cost 12000
-> spantree msti 2 linkagg 10 path-cost 20000
-> spantree msti 2 linkagg 10-12 path-cost 65000
```

## Release History

Release 5.1; command introduced.

## Related Commands

<a href="#">spantree mode</a>	Selects the Spanning Tree operating mode (flat or per-VLAN) for the switch.
<a href="#">spantree cist path-cost</a>	Configures the Spanning Tree path cost value for a port or a link aggregate of ports for the CIST instance.
<a href="#">spantree vlan path-cost</a>	Configures the Spanning Tree path cost value for a port or a link aggregate of ports for a VLAN instance.

## MIB Objects

```
vStpInsPortTable
  vStpInsPortNumber
  vStpInsPortPathCost
```

---

## spantree vlan path-cost

Configures the Spanning Tree path cost value for a port or a link aggregate of ports for the specified VLAN instance. This value is the contribution of this port to the path cost towards the Spanning Tree root bridge that includes this port. Path cost is a measure of the distance of the listed port from the root bridge in the number of hops.

```
spantree vlan vlan_id {port chassis/slot/port[-port2] | linkagg agg_id [-agg_id2]} path-cost path_cost
```

---

### Syntax Definitions

<i>vlan_id</i>	An existing VLAN ID number.
<i>chassis</i>	The chassis identifier.
<i>slot/port[-port2]</i>	The slot number and port number of the physical port. Use a hyphen to specify a range of ports (4/1-8).
<i>agg_id</i> [- <i>agg_id2</i> ]	The link aggregate ID number. Use a hyphen to specify a range of IDs (10-20).
<i>path_cost</i>	Path cost value. The valid range is 0 - 65535 for 16-bit, 0-200000000 for 32-bit.

### Defaults

By default, the path cost is set to zero.

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- This command only applies to the specified VLAN instance regardless of which operating mode (flat or per-VLAN) is active for the switch.
- If the switch is running in the flat mode when this command is used, the specified path cost for the port is not active for the specified VLAN instance until the operating mode for the switch is changed to the per-VLAN mode.
- Note that when the Spanning Tree protocol is changed to/from MSTP, the bridge priority and port path cost values for the flat mode CIST instance are reset to their default values.
- Use the [spantree path-cost-mode](#) command to automatically select the path cost value based on the active Spanning Tree protocol (16-bit for STP and RSTP, 32-bit for MSTP) or to use a 32-bit path cost value regardless of which protocol is active.
- If the *path\_cost* is set to zero, there are recommended 16-bit and 32-bit values which are used by default depending on the link speed. Refer to the “[Configuring Spanning Tree Parameters](#)” chapter for a list of values.

### Examples

```
-> spantree vlan 200 port 4/1 path-cost 4  
-> spantree vlan 200 port 4/2-5 path-cost 4
```

```
-> spantree vlan 300 linkagg 16 path-cost 200000  
-> spantree vlan 500 linkagg 24-28 path-cost 20000
```

## Release History

Release 5.1; command introduced.

## Related Commands

<a href="#">spantree mode</a>	Selects the Spanning Tree operating mode (flat or per-VLAN) for the switch.
<a href="#">spantree cist path-cost</a>	Configures the Spanning Tree path cost value for a port or a link aggregate of ports for the CIST instance.
<a href="#">spantree msti path-cost</a>	Configures the Spanning Tree path cost value for a port or a link aggregate of ports for an MSTI.

## MIB Objects

```
vStpInsPortTable  
  vStpInsPortNumber  
  vStpInsPortPathCost
```

---

## spantree cist mode

Configures manual mode (forwarding or blocking) or dynamic mode to manage the state of a port or a link aggregate of ports for the flat mode Common and Internal Spanning Tree (CIST) instance. Dynamic mode defers the management of the port state to the Spanning Tree algorithm.

```
spantree cist {port chassis/slot/port[-port2] | linkagg agg_id[-agg_id2]} mode {forwarding | dynamic | blocking}
```

---

### Syntax Definitions

<i>chassis</i>	The chassis identifier when running in virtual chassis mode.
<i>slot/port[-port2]</i>	The slot number and port number of the physical port. Use a hyphen to specify a range of ports (4/1-8).
<i>agg_id[-agg_id2]</i>	The link aggregate ID number. Use a hyphen to specify a range of IDs (10-20).
<b>forwarding</b>	Sets the port state to forwarding.
<b>dynamic</b>	Port state is determined by the Spanning Tree algorithm.
<b>blocking</b>	Sets the port state to blocking.

### Defaults

By default, the port Spanning Tree mode is set to dynamic.

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- This command only applies to the port Spanning Tree mode for the CIST instance regardless of which operating mode (flat or per-VLAN) is active for the switch.
- If the switch is running in per-VLAN mode when this command is used, the specified port mode is not active for the CIST instance until the operating mode for the switch is changed to the flat mode.
- Ports manually configured to operate in a forwarding or blocking state do not participate in the Spanning Tree algorithm.
- When port state is manually set to forwarding or blocking, the port remains in that state until it is changed using this command.

### Examples

```
-> spantree cist port 4/1 mode forwarding
-> spantree cist port 4/2-5 mode forwarding
-> spantree cist linkagg 10 mode blocking
-> spantree cist linkagg 15-20 mode forwarding
```

## Release History

Release 5.1; command introduced.

## Related Commands

### [spantree mode](#)

Selects the Spanning Tree operating mode (flat or per-VLAN) for the switch.

### [spantree vlan mode](#)

Configures the Spanning Tree mode for a port or a link aggregate of ports for the specified VLAN instance.

## MIB Objects

vStpInsPortTable

    vStpInsPortNumber

    vStpInsPortManualMode

---

## spantree vlan mode

Configures Manual mode (forwarding or blocking) or Dynamic mode to manage the state of a port or a link aggregate of ports for the specified VLAN instance. Dynamic mode defers the management of the port state to the Spanning Tree algorithm.

**spantree vlan** *vlan\_id* {**port** *chassis/slot/port[-port2]* | **linkagg** *agg\_id [-agg\_id2]*} **mode** {**dynamic** | **blocking** | **forwarding**}

---

### Syntax Definitions

<i>vlan_id</i>	An existing VLAN ID number.
<i>chassis</i>	The chassis identifier when running in virtual chassis mode.
<i>slot/port[-port2]</i>	The slot number and port number of the physical port. Use a hyphen to specify a range of ports (4/1-8).
<i>agg_id[-agg_id2]</i>	The link aggregate ID number. Use a hyphen to specify a range of IDs (10-20).
<b>dynamic</b>	Port state is determined by the Spanning Tree algorithm.
<b>blocking</b>	Sets the port state to blocking.
<b>forwarding</b>	Sets the port state to forwarding.

### Defaults

By default, the port Spanning Tree mode is set to dynamic.

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- This command only applies to the specified VLAN instance regardless of which operating mode (flat or per-VLAN) is active for the switch.
- If the switch is running in the flat mode when this command is used, the specified mode for the port is not active for the specified VLAN instance until the operating mode for the switch is changed to the per-VLAN mode.
- Ports manually configured to operate in a forwarding or blocking state do not participate in the Spanning Tree algorithm.
- When port state is manually set to forwarding or blocking, the port remains in that state until it is changed using this command.

### Examples

```
-> spantree vlan 255 port 4/1-4 mode forwarding
-> spantree vlan 355 port 1/24 mode dynamic
-> spantree vlan 450 linkagg 1 mode dynamic
-> spantree vlan 450 linkagg 1-5 mode dynamic
```

## Release History

Release 5.1; command introduced.

## Related Commands

### **spantree mode**

Selects the Spanning Tree operating mode (flat or per-VLAN) for the switch.

### **spantree cist mode**

Configures the Spanning Tree mode for a port or a link aggregate of ports for the CIST instance.

## MIB Objects

vStpInsPortTable

    vStpInsPortNumber

    vStpInsPortManualMode

---



## spantree cist connection

Configures the connection type for a port or a link aggregate of ports for the flat mode Common and Internal Spanning Tree (CIST).

```
spantree cist {port chassis/slot/port [-port2] | linkagg agg_id [-agg_id2]} connection {noptp | ptp | autoptp}
```

---

### Syntax Definitions

<i>chassis</i>	The chassis identifier.
<i>slot/port[-port2]</i>	The slot number and port number of the physical port. Use a hyphen to specify a range of ports (4/1-8).
<i>agg_id[-agg_id2]</i>	The link aggregate ID number. Use a hyphen to specify a range of IDs (10-20).
<b>noptp</b>	Defines port connection type as no point to point link.
<b>ptp</b>	Defines port connection type as point to point link.
<b>autoptp</b>	Specifies that switch software automatically defines connection type as point-to-point or no point-to-point.

### Defaults

By default, the link connection type is set to auto point-to-point.

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- This command only applies to the port connection type for the CIST instance regardless of which operating mode (flat or per-VLAN) is active for the switch.
- If the switch is running in per-VLAN mode when this command is used, the specified port connection type is not active for the CIST instance until the operating mode for the switch is changed to the flat mode.
- A port is considered connected to a point-to-point LAN segment if the port belongs to a link aggregate of ports or if autonegotiation determines the port must run in full duplex mode or if full duplex mode was administratively set. Otherwise, the port is considered connected to a no point-to-point LAN segment.
- Rapid transition of a designated port to forwarding can only occur if the port connection type is defined as a point-to-point or an edge port. Rapid transition of an alternate port role to a root port role is not affected by the port connection type definition.

### Examples

```
-> spantree cist port 7/24 connection noptp  
-> spantree cist port 7/25-28 connection ptp
```

```
-> spantree cist linkagg 5-10 connection autoptp
-> spantree cist linkagg 5-10 connection autoptp
```

## Release History

Release 5.1; command introduced.

## Related Commands

<a href="#">spantree mode</a>	Selects the Spanning Tree operating mode (flat or per-VLAN) for the switch.
<a href="#">spantree cist admin-edge</a>	Configures the administrative edge port status for a port or aggregate of ports for the CIST instance.
<a href="#">spantree cist auto-edge</a>	Configures whether or not Spanning Tree automatically determines the operational edge status of a port or an aggregate of ports for the flat mode CIST instance.

## MIB Objects

```
vStpInsPortTable
  vStpInsPortNumber
  vStpInsPortAdminConnectionType
  vStpInsPortOperConnectionType
```

---

## spantree vlan connection

Configures the connection type for a port or a link aggregate of ports for a VLAN instance.

```
spantree vlan vlan_id {port chassis/slot/port [-port2] | linkagg agg_id [-agg_id2]} connection {noptp | ptp | autoptp}
```

---

### Syntax Definitions

<i>vlan_id</i>	An existing VLAN ID number.
<i>chassis</i>	The chassis identifier.
<i>slot/port</i> [- <i>port2</i> ]	The slot number and port number of the physical port. Use a hyphen to specify a range of ports (4/1-8).
<i>agg_id</i> [- <i>agg_id2</i> ]	The link aggregate ID number. Use a hyphen to specify a range of IDs (10-20).
<b>noptp</b>	Defines port connection type as no point to point link.
<b>ptp</b>	Defines port connection type as point to point link.
<b>autoptp</b>	Specifies that switch software automatically defines connection type as point-to-point or no point-to-point.

### Defaults

By default, the link connection type is set to auto point-to-point.

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- This command only applies to the specified VLAN instance regardless of which operating mode (flat or per-VLAN) is active for the switch.
- If the switch is running in the flat mode when this command is used, the specified connection type for the port is not active for the specified VLAN instance until the operating mode for the switch is changed to the per-VLAN mode.
- A port is considered connected to a point-to-point LAN segment if the port belongs to a link aggregate of ports or if autonegotiation determines the port must run in full duplex mode or if full duplex mode was administratively set. Otherwise, the port is considered connected to a no point-to-point LAN segment.
- Rapid transition of a designated port to forwarding can only occur if the port connection type is defined as a point to point or an edge port. Rapid transition of an alternate port role to a root port role is not affected by the port connection type definition.

## Examples

```
-> spantree vlan 255 port 7/24 connection noptp
-> spantree vlan 255 port 7/25-27 connection ptp
-> spantree vlan 255 linkagg 3 connection autoptp
-> spantree vlan 255 linkagg 3-7 connection autoptp
```

## Release History

Release 5.1; command introduced.

## Related Commands

### [spantree mode](#)

Selects the Spanning Tree operating mode (flat or per-VLAN) for the switch

### [spantree cist admin-edge](#)

Configures the administrative edge port status for a port or aggregate of ports for the CIST instance.

### [spantree cist auto-edge](#)

Configures whether or not Spanning Tree automatically determines the operational edge status of a port or an aggregate of ports for the flat mode CIST instance.

## MIB Objects

```
vStpInsPortTable
  vStpInsPortNumber
  vStpInsPortAdminConnectionType
  vStpInsPortOperConnectionType
```

---

## spantree cist admin-edge

Configures the administrative edge port status for a port or a link aggregate of ports for the flat mode Common and Internal Spanning Tree (CIST).

```
spantree cist {port chassis/slot/port[-port2] | linkagg agg_id[-agg_id2]} admin-edge {enable | disable}
```

---

### Syntax Definitions

<i>chassis</i>	The chassis identifier.
<i>slot/port[-port2]</i>	The slot number and port number of the physical port. Use a hyphen to specify a range of ports (4/1-8).
<i>agg_id[-agg_id2]</i>	The link aggregate ID number. Use a hyphen to specify a range of IDs (10-20).
<b>enable</b>	Enables the administrative edge port status for the specified port-CIST instance.
<b>disable</b>	Disables the administrative edge port status for the specified port-CIST instance.

### Defaults

By default, the administrative edge port status is disabled (off).

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- This command only applies to the port connection type for the CIST instance regardless of which operating mode (flat or per-VLAN) is active on the switch.
- If the switch is running in the per-VLAN mode when this command is used, the specified edge port status is not active for the CIST instance until the switch is configured to run in the flat Spanning Tree mode.
- The administrative edge port status is used to determine if a port is an edge or non-edge port when automatic edge port configuration (**auto-edge**) is disabled for the port. However, if **auto-edge** is enabled for the port, then the administrative status is overridden.
- Rapid transition of a designated port to forwarding can only occur if the port connection type is defined as a point to point or an edge port. Rapid transition of an alternate port role to a root port role is not affected by the port connection type definition.
- Configure ports that connect to a host (PC, workstation, server, and so on) as edge ports to avoid unnecessary topology changes when these ports go active. This also prevents the flushing of learned MAC addresses on these ports if a topology change occurs as a result of another non-edge port going active. If an edge port receives a BPDU, it operationally reverts back to a no point-to-point connection type.

## Examples

```
-> spantree cist linkagg 15 admin-edge enable
-> spantree cist linkagg 4-10 admin-edge enable
-> spantree cist port 8/25 admin-edge disable
-> spantree cist port 2/2-5 admin-edge enable
```

## Release History

Release 5.1; command introduced.

## Related Commands

<a href="#">spantree mode</a>	Selects the Spanning Tree operating mode (flat or per-VLAN) for the switch
<a href="#">spantree vlan admin-edge</a>	Configures the administrative edge port status for a port or a link aggregate of ports for a specific VLAN instance.
<a href="#">spantree cist auto-edge</a>	Configures whether or not Spanning Tree automatically determines the operational edge status of a port or a link aggregate of ports for the flat mode CIST instance.
<a href="#">spantree vlan auto-edge</a>	Configures whether or not Spanning Tree determines the operational edge port status for a port or a link aggregate of ports for the specified per-VLAN mode VLAN instance.

## MIB Objects

```
vStpInsPortTable
  vStpInsPortNumber
  vStpInsPortAdminEdge
```

---

## spantree vlan admin-edge

Configures the administrative edge port status for a port or a link aggregate of ports for a VLAN instance.

```
spantree vlan vlan_id {port chassis/slot/port[-port2] | linkagg agg_id[-agg_id2]} admin-edge {enable | disable}
```

---

### Syntax Definitions

<i>vlan_id</i>	An existing VLAN ID number.
<i>chassis</i>	The chassis identifier.
<i>slot/port[-port2]</i>	The slot number and port number of the physical port. Use a hyphen to specify a range of ports (4/1-8).
<i>agg_id[-agg_id2]</i>	The link aggregate ID number. Use a hyphen to specify a range of IDs (10-20).
<b>enable</b>	Enables the administrative edge port status for the specified port-VLAN instance.
<b>disable</b>	Disables the administrative edge port status for the specified port-VLAN instance.

### Defaults

By default, the administrative edge port status is disabled (off).

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- This command only applies to the specified VLAN instance regardless of which operating mode (flat or per-VLAN) is active for the switch.
- If the switch is running in the flat mode when this command is used, the specified edge port status for the port is not active for the VLAN instance until the switch is configured to run in the per-VLAN Spanning Tree mode.
- The administrative edge port status is used to determine if a port is an edge or non-edge port when automatic edge port configuration (**auto-edge**) is disabled for the port. However, if **auto-edge** is enabled for the port, then the administrative status is overridden.
- Rapid transition of a designated port to forwarding can only occur if the port connection type is defined as point to point or an edge port. Rapid transition of an alternate port role to a root port role is not affected by the port connection type definition.
- Configure ports that connect to a host (PC, workstation, server, and so on.) as edge ports to avoid unnecessary topology changes when these ports go active. This also prevents the flushing of learned MAC addresses on these ports if a topology change occurs as a result of another non-edge port going active. If an edge port receives a BPDU, it operationally reverts back to a no point to point connection type.

## Examples

```
-> spantree vlan 4 linkagg 15 admin-edge enable
-> spantree vlan 5 linkagg 12-14 admin-edge enable
-> spantree vlan 255 port 8/23 admin-edge disable
-> spantree vlan 3 port 2/2-5 admin-edge enable
```

## Release History

Release 5.1; command introduced.

## Related Commands

<a href="#">spantree mode</a>	Selects the Spanning Tree operating mode (flat or per-VLAN) for the switch
<a href="#">spantree cist admin-edge</a>	Configures the administrative edge port status for a port or aggregate of ports for the CIST instance.
<a href="#">spantree cist auto-edge</a>	Configures whether or not Spanning Tree automatically determines the operational edge status of a port or aggregate of ports for the flat mode CIST instance.
<a href="#">spantree vlan auto-edge</a>	Configures whether or not Spanning Tree determines the operational edge port status for a port or aggregate of ports for the specified per-VLAN mode VLAN instance.

## MIB Objects

```
vStpInsPortTable
  vStpInsPortNumber
  vStpInsPortAdminEdge
```

---



## spantree cist auto-edge

Configures whether or not Spanning Tree automatically determines the operational edge port status of a port or a link aggregate of ports for the flat mode Common and Internal Spanning Tree (CIST).

```
spantree cist {port chassis/slot/port[-port2] | linkagg agg_id [-agg_id2]} auto-edge {enable | disable}
```

---

### Syntax Definitions

<i>chassis</i>	The chassis identifier.
<i>slot/port[-port2]</i>	The slot number and port number of the physical port. Use a hyphen to specify a range of ports (4/1-8).
<i>agg_id[-agg_id2]</i>	The link aggregate ID number. Use a hyphen to specify a range of IDs (10-20).
<b>enable</b>	Spanning Tree automatically determines edge port status.
<b>disable</b>	Spanning Tree does not automatically determine edge port status.

### Defaults

By default, automatic edge port status configuration is enabled.

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- This command only applies to the CIST instance regardless of which operating mode (flat or per-VLAN) is active for the switch.
- If the switch is running in the per-VLAN mode when this command is used, the specified edge port status for the port is not active for the CIST instance until the switch is running in the flat Spanning Tree mode.
- The administrative edge port status is used to determine if a port is an edge or non-edge port when automatic edge port configuration (**auto-edge**) is disabled for the port. However, if **auto-edge** is enabled for the port, then the administrative status is overridden.
- Rapid transition of a designated port to forwarding can only occur if the connection type of the port is defined as point to point or an edge port. Rapid transition of an alternate port role to a root port role is not affected by the port connection type definition.
- Configure ports that connect to a host (PC, workstation, server, and so on.) as edge ports to avoid unnecessary topology changes when these ports go active. This also prevents the flushing of learned MAC addresses on these ports if a topology change occurs as a result of another non-edge port going active. If an edge port receives a BPDU, it operationally reverts back to a no point to point connection type.

## Examples

```
-> spantree cist linkagg 15 auto-edge enable
-> spantree cist linkagg 10-12 auto-edge disable
-> spantree cist port 8/23 auto-edge disable
-> spantree cist port 2/2-5 auto-edge enable
```

## Release History

Release 5.1; command introduced.

## Related Commands

<a href="#">spantree mode</a>	Selects the Spanning Tree operating mode (flat or per-VLAN) for the switch
<a href="#">spantree vlan auto-edge</a>	Configures whether or not Spanning Tree determines the operational edge port status for a port or aggregate of ports for the specified per-VLAN mode VLAN instance.
<a href="#">spantree cist admin-edge</a>	Configures the administrative edge port status for a port or aggregate of ports for the CIST instance.
<a href="#">spantree vlan admin-edge</a>	Configures the administrative edge port status for a port or aggregate of ports for a specific VLAN instance.

## MIB Objects

```
vStpInsPortTable
  vStpInsPortNumber
  vStpInsPortAutoEdge
```

---

## spantree vlan auto-edge

Configures whether or not Spanning Tree determines the operational edge port status for a port or a link aggregate of ports for the specified per-VLAN mode VLAN instance.

```
spantree vlan vlan_id {port chassis/slot/port[-port2] | linkagg agg_id [-agg_id2]} auto-edge {enable | disable}
```

---

### Syntax Definitions

<i>vlan_id</i>	An existing VLAN ID number.
<i>chassis</i>	The chassis identifier when running in virtual chassis mode.
<i>slot/port[-port2]</i>	The slot number and port number of the physical port. Use a hyphen to specify a range of ports (4/1-8).
<i>agg_id</i> [- <i>agg_id2</i> ]	The link aggregate ID number. Use a hyphen to specify a range of IDs (10-20).
<b>enable</b>	Spanning Tree automatically determines edge port status.
<b>disable</b>	Spanning Tree does not automatically determine edge port status.

### Defaults

By default, automatic edge port status configuration is enabled (on).

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- This command only applies to the specified VLAN instance regardless of which operating mode (flat or per-VLAN) is active for the switch.
- If the switch is running in the flat mode when this command is used, the specified edge port status for the port is not active for the VLAN instance until the switch is running in the per-VLAN Spanning Tree mode.
- The administrative edge port status is used to determine if a port is an edge or non-edge port when automatic edge port configuration (**auto-edge**) is disabled for the port. However, if **auto-edge** is enabled for the port, then the administrative status is overridden.
- Rapid transition of a designated port to forwarding can only occur if the connection type of the port is defined as point to point or an edge port. Rapid transition of an alternate port role to a root port role is not affected by the port connection type definition.
- Configure ports that connect to a host (PC, workstation, server, and so on.) as edge ports to avoid unnecessary topology changes when these ports go active. This also prevent the flushing of learned MAC addresses on these ports if a topology change occurs as a result of another non-edge port going active. If an edge port receives a BPDU, it operationally reverts back to a no point to point connection type.

## Examples

```
-> spantree vlan 255 port 8/23 auto-edge disable
-> spantree vlan 4 port 2/2-10 auto-edge enable
-> spantree vlan 100 linkagg 10 auto-edge disable
-> spantree vlan 200 linkagg 1-5 auto-edge enable
```

## Release History

Release 5.1; command introduced.

## Related Commands

<a href="#">spantree mode</a>	Selects the Spanning Tree operating mode (flat or per-VLAN) for the switch.
<a href="#">spantree cist auto-edge</a>	Configures whether or not Spanning Tree automatically determines the operational edge status of a port or aggregate of ports for the flat mode CIST instance.
<a href="#">spantree cist admin-edge</a>	Configures the administrative edge port status for a port or aggregate of ports for the CIST instance.
<a href="#">spantree vlan admin-edge</a>	Configures the administrative edge port status for a port or aggregate of ports for a specific VLAN instance.

## MIB Objects

```
vStpInsPortTable
  vStpInsPortNumber
  vStpInsPortAutoEdge
```

---

## spantree cist restricted-role

Configures the restricted role status for a port or a link aggregate of ports. Enabling this parameter blocks the port from becoming the Root Port, even if it is the most likely candidate for root. Once a root port is selected, the restricted port is selected as an Alternate Port.

```
spantree cist {port chassis/slot/port[-port2] | linkagg agg_id[-agg_id2]} restricted-role {enable | disable}
```

---

### Syntax Definitions

<i>chassis</i>	The chassis identifier.
<i>slot/port[-port2]</i>	The slot number and port number of the physical port. Use a hyphen to specify a range of ports (4/1-8).
<i>agg_id[-agg_id2]</i>	The link aggregate ID number. Use a hyphen to specify a range of IDs (10-20).
<b>enable</b>	Enables the restricted role status for the specified port.
<b>disable</b>	Disables the restricted role status for the specified port.

### Defaults

By default, the restricted role status for the port is disabled.

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- When running in flat mode, this is a per-port setting and is applicable to any CIST or MSTI instances configured on that port.
- Enabling the restricted role status is used by network administrators to prevent bridges external to the core region of the network from influencing the Spanning Tree topology.
- Note that enabling the restricted role status for a port may impact connectivity within the network.

### Examples

```
-> spantree cist linkagg 15-20 restricted-role enable
-> spantree cist port 8/23 restricted-role disable
-> spantree cist port 8/24-27 restricted-role disable
-> spantree cist linkagg 10 restricted-role disable
```

### Release History

Release 5.1; command introduced.

## Related Commands

### **spantree mode**

Selects the Spanning Tree operating mode (flat or per-VLAN) for the switch.

### **spantree vlan restricted-role**

Configures the restricted role status for a port or aggregate of ports for the per-VLAN mode VLAN instance.

## MIB Objects

vStpInsPortTable

    vStpInsPortNumber

    vStpInsPortRestrictedRole

---

## spantree vlan restricted-role

Configures the restricted role status for a port or a link aggregate of ports for the specified VLAN instance. Enabling this parameter blocks the port from becoming the Root Port, even if it is the most likely candidate for root. Once a Root Port is selected, the restricted port is selected as an Alternate Port.

```
spantree vlan vlan_id {port chassis/slot/port[-port2] | linkagg agg_id[-agg_id2]} restricted-role {enable | disable}
```

---

### Syntax Definitions

<i>vlan_id</i>	An existing VLAN ID number.
<i>chassis</i>	The chassis identifier.
<i>slot/port[-port2]</i>	The slot number and port number of the physical port. Use a hyphen to specify a range of ports (4/1-8).
<i>agg_id[-agg_id2]</i>	The link aggregate ID number. Use a hyphen to specify a range of IDs (10-20).
<b>enable</b>	Enables the restricted role status for the specified port-VLAN instance.
<b>disable</b>	Disables the restricted role status for the specified port-VLAN instance.

### Defaults

By default, the restricted role status for the port is disabled.

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- Enabling the restricted role status is used by network administrators to prevent bridges external to the core region of the network from influencing the Spanning Tree topology.
- Note that enabling the restricted role status for a port may impact connectivity within the network.
- This command only applies to the VLAN instance specified by the VLAN ID regardless of which operating mode (flat or per-VLAN) is active for the switch.
- If the switch is running in the flat mode when this command is used, the specified restricted role status for the port is not active for the VLAN instance until the switch is running in the per-VLAN Spanning Tree mode.

### Examples

```
-> spantree vlan 3 linkagg 15 restricted-role enable
-> spantree vlan 255 port 8/23 restricted-role enable
-> spantree vlan 255 port 8/24-27 restricted-role enable
-> spantree vlan 255 linkagg 11-15 restricted-role enable
```

## Release History

Release 5.1; command introduced.

## Related Commands

### **spantree mode**

Selects the Spanning Tree operating mode (flat or per-VLAN) for the switch.

### **spantree cist restricted-role**

Configures the restricted role status for a port or aggregate of ports for the flat mode CIST instance.

## MIB Objects

vStpInsPortTable

    vStpInsPortNumber

    vStpInsPortRestrictedRole

---



## spantree cist restricted-tcn

Configures the restricted TCN status for a port or a link aggregate of ports for the flat mode Common and Internal Spanning Tree (CIST). When this parameter is enabled, the port does not propagate topology changes and notifications to/from other ports.

```
spantree cist {port chassis/slot/port[-port2] | linkagg agg_id[-agg_id2]} restricted-tcn {enable | disable}
```

---

### Syntax Definitions

<i>chassis</i>	The chassis identifier.
<i>slot/port[-port2]</i>	The slot number and port number of the physical port. Use a hyphen to specify a range of ports (4/1-8).
<i>agg_id[-agg_id2]</i>	The link aggregate ID number. Use a hyphen to specify a range of IDs (10-20).
<b>enable</b>	Enables the restricted TCN status for the specified port-CIST instance.
<b>disable</b>	Disables the restricted TCN status for the specified port-CIST instance.

### Defaults

By default, the restricted TCN status for the port is disabled.

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- Enabling the restricted TCN status is used by network administrators to prevent bridges external to the core region of the network from causing unnecessary MAC address flushing in that region.
- Note that enabling the restricted TCN status for a port may impact Spanning Tree connectivity.
- This command only applies to the CIST instance regardless of which operating mode (flat or per-VLAN) is active for the switch.
- If the switch is running in the per-VLAN mode when this command is used, the specified restricted TCN status for the port is not active for the CIST instance until the switch is running in the flat Spanning Tree mode.

### Examples

```
-> spantree cist linkagg 15 restricted-tcn enable
-> spantree cist port 8/23 restricted-tcn disable
-> spantree cist port 2/2-4 restricted-tcn enable
-> spantree cist linkagg 10-14 restricted-tcn disable
```

### Release History

Release 5.1; command introduced.

## Related Commands

### **spantree mode**

Selects the Spanning Tree operating mode (flat or per-VLAN) for the switch.

### **spantree vlan restricted-tcn**

Configures the restricted TCN status for a port or aggregate of ports for the specified per-VLAN mode VLAN instance.

## MIB Objects

vStpInsPortTable

    vStpInsPortNumber

    vStpInsPortRestrictedTcn

---

## spantree vlan restricted-tcn

Configures the restricted TCN status for a port or a link aggregate of ports for the specified VLAN instance. When this parameter is enabled, the port does not propagate topology changes and notifications to/from other ports.

```
spantree vlan vlan_id {port chassis/slot/port [-port2] | linkagg agg_id [-agg_id2]} restricted-tcn  
{enable | disable}
```

---

### Syntax Definitions

<i>vlan_id</i>	An existing VLAN ID number.
<i>chassis</i>	The chassis identifier.
<i>slot/port</i> [- <i>port2</i> ]	The slot number and port number of the physical port. Use a hyphen to specify a range of ports (4/1-8).
<i>agg_id</i> [- <i>agg_id2</i> ]	The link aggregate ID number. Use a hyphen to specify a range of IDs (10-20).
<b>enable</b>	Enables the restricted TCN status for the specified port-VLAN instance.
<b>disable</b>	Disables the restricted TCN status for the specified port-VLAN instance.

### Defaults

By default, the restricted TCN is set to disable.

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- Enabling the restricted TCN status is used by network administrators to prevent bridges external to the core region of the network from causing unnecessary MAC address flushing in that region.
- Note that enabling the restricted TCN status for a port may impact Spanning Tree connectivity.
- This command only applies to the specified VLAN instance regardless of which operating mode (flat or per-VLAN) is active for the switch.
- If the switch is running in the flat mode when this command is used, the specified restricted TCN status for the port is not active for the VLAN instance until the switch is running in the per-VLAN Spanning Tree mode.

### Examples

```
-> spantree vlan 2 linkagg 15 restricted-tcn enable  
-> spantree vlan 2 linkagg 16-20 restricted-tcn enable  
-> spantree vlan 255 port 8/23 restricted-tcn disable  
-> spantree vlan 255 port 8/24-27 restricted-tcn disable
```

## Release History

Release 5.1; command introduced.

## Related Commands

### [spantree mode](#)

Selects the Spanning Tree operating mode (flat or per-VLAN) for the switch.

### [spantree cist restricted-tcn](#)

Configures the restricted TCN status for a port or aggregate of ports for the flat mode Common and Internal Spanning Tree (CIST).

## MIB Objects

vStpInsPortTable

    vStpInsPortNumber

    vStpInsPortRestrictedTcn

---

## spantree cist txholdcount

This command is used to rate limit the transmission of BPDU through a given port for the flat mode Common and Internal Spanning Tree (CIST) instance.

**spantree cist txholdcount** *value*

---

### Syntax Definitions

*value* A numeric value that controls the transmission of BPDU through the port. The valid range is 1–10.

### Defaults

By default, the **txholdcount** value is set to 3.

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- This command only applies to the CIST instance regardless of which operating mode (flat or per-VLAN) is active for the switch.
- If the switch is running in the per-VLAN mode when this command is used, the specified **txholdcount** status for the port is not active for the CIST instance until the switch is running in the flat Spanning Tree mode.

### Examples

```
-> spantree cist txholdcount 5
```

### Release History

Release 5.1; command introduced.

### Related Commands

<a href="#">spantree mode</a>	Selects the Spanning Tree operating mode (flat or per-VLAN) for the switch.
<a href="#">spantree vlan txholdcount</a>	Configures the BPDU transmission rate limit for the specified VLAN instance.

### MIB Objects

vStpInsTable  
vStpInsBridgeTxHoldCount

---

## spantree vlan txholdcount

This command is used to rate limit the transmission of BPDU through a given port for the VLAN instance.

```
spantree vlan vlan_id txholdcount {value}
```

---

### Syntax Definitions

<i>vlan_id</i>	An existing VLAN ID number.
<i>value</i>	A numeric value that controls the transmission of BPDU through the port. The valid range is 1–10.

### Defaults

By default, the **txholdcount** value is set to 3.

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- This command only applies to the specified VLAN instance regardless of which operating mode (flat or per-VLAN) is active for the switch.
- If the switch is running in the flat mode when this command is used, the specified **txholdcount** status for the port is not active for the VLAN instance until the switch is running in the per-VLAN Spanning Tree mode.

### Examples

```
-> spantree vlan 3 txholdcount 6
```

### Release History

Release 5.1; command introduced.

### Related Commands

<a href="#">spantree mode</a>	Selects the Spanning Tree operating mode (flat or per-VLAN) for the switch.
<a href="#">spantree cist txholdcount</a>	Configures the BPDU transmission rate limit for the CIST instance.

### MIB Objects

```
vStpInsTable  
  vStpInsBridgeTxHoldCount
```

---

## show spantree

Displays Spanning Tree bridge information for the flat mode Common and Internal Spanning Tree (CIST) instance or the per-VLAN mode VLAN instances.

**show spantree**

---

### Syntax Definitions

N/A

### Defaults

NA

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- If the switch is operating in the per-VLAN mode, this command displays a list of VLAN instances.
- If the switch is operating in the flat mode and the protocol is STP or RSTP, this command displays the single flat mode instance.
- If the switch is operating in the flat mode and the protocol is set to MSTP, this command displays a list of MSTIs, including MSTI 0 (also known as the CIST).

### Examples

```
-> spantree mode flat
-> spantree protocol rstp
-> show spantree
```

```
Spanning Tree Path Cost Mode : 32 BIT
Bridge STP Status Protocol Priority(Prio:SysID)
-----+-----+-----+-----
      1      ON      RSTP  32768 (0x8000:0x0000)
```

### output definitions

---

<b>Spanning Tree Path Cost Mode</b>	The Spanning Tree path cost mode for the switch ( <b>32 BIT</b> or <b>AUTO</b> ) Configured through the <a href="#">spantree path-cost-mode</a> command.
<b>Bridge</b>	The CIST instance, referred to as bridge 1 when either STP (802.1D) or RSTP (802.1W) is the active protocol.
<b>STP Status</b>	The Spanning Tree state for the CIST instance ( <b>ON</b> or <b>OFF</b> ).
<b>Protocol</b>	The Spanning Tree protocol applied to the instance ( <b>STP</b> or <b>RSTP</b> ). Configured through the <a href="#">spantree protocol</a> command.
<b>Priority</b>	The Spanning Tree bridge priority for the instance. The lower the number, the higher the priority. Configured through the <a href="#">spantree priority</a> command.

---

```

-> spantree mode flat
-> spantree protocol mstp

-> show spantree
Spanning Tree Path Cost Mode : AUTO
Msti STP Status Protocol Priority (Prio:SysID)
-----+-----+-----+-----+-----
  0      ON      MSTP   32768 (0x8000:0x0000)
  2      ON      MSTP   32770 (0x8000:0x0002)
  3      ON      MSTP   32771 (0x8000:0x0003)

```

**output definitions**

<b>Spanning Tree Path Cost Mode</b>	The Spanning Tree path cost mode for the switch ( <b>32 BIT</b> or <b>AUTO</b> ). Configured through the <b>spantree path-cost-mode</b> command.
<b>Msti</b>	The Multiple Spanning Tree Instance (MSTI) instance number. Configured through the <b>spantree msti</b> command. Note that MSTI 0 also represents the CIST instance that is always present on the switch.
<b>STP Status</b>	The Spanning Tree state for the MSTI ( <b>ON</b> or <b>OFF</b> ).
<b>Protocol</b>	The Spanning Tree protocol applied to this instance. Configured through the <b>spantree protocol</b> command.
<b>Priority</b>	The Spanning Tree bridge priority for the instance. The lower the number, the higher the priority. Configured through the <b>spantree priority</b> command.

```

-> spantree mode per-vlan
-> show spantree
Spanning Tree Path Cost Mode : AUTO
Vlan STP Status Protocol Priority
-----+-----+-----+-----+-----
  1      ON      RSTP   32768 (0x8000)
 200     ON      RSTP   32768 (0x8000)
 500     OFF     RSTP   32768 (0x8000)
4094     OFF     RSTP   32768 (0x8000)

```

**output definitions**

<b>Spanning Tree Path Cost Mode</b>	The Spanning Tree path cost mode for the switch ( <b>32 BIT</b> or <b>AUTO</b> ). Configured through the <b>spantree path-cost-mode</b> command.
<b>Vlan</b>	The VLAN ID associated with the VLAN Spanning Tree instance. Configured through the <b>vlan</b> commands
<b>STP Status</b>	The Spanning Tree state for the instance ( <b>ON</b> or <b>OFF</b> ). Configured through the <b>spantree vlan admin-state</b> command.
<b>Protocol</b>	The Spanning Tree protocol applied to this instance ( <b>STP</b> or <b>RSTP</b> ). Configured through the <b>spantree protocol</b> command.
<b>Priority</b>	The Spanning Tree bridge priority for the instance. The lower the number, the higher the priority. Configured through the <b>spantree priority</b> command.

**Release History**

Release 5.1; command introduced.



## Related Commands

<b>show spantree cist</b>	Displays the Spanning Tree bridge configuration for the CIST instance regardless of which mode (per-VLAN or flat) is active on the switch.
<b>show spantree msti</b>	Displays the Spanning Tree bridge configuration for an MSTI regardless of which mode (per-VLAN or flat) is active on the switch.
<b>show spantree vlan</b>	Displays the Spanning Tree bridge configuration for a VLAN instance regardless of which mode (per-VLAN or flat) is active on the switch.

## MIB Objects

```
vStpInsTable
  vStpInsNumber
  vStpInsProtocolSpecification
  vStpInsMode
  vStpInsPriority
  vStpInsBridgeAddress
  vStpInsDesignatedRoot
  vStpInsRootCost
  vStpInsRootPortNumber
  vStpInsNextBestRootCost
  vStpInsNextBestRootPortNumber
  vStpInsBridgeTxHoldCount
  vStpInsTopChanges
  vStpInsTimeSinceTopologyChange
  vStpInsMaxAge
  vStpInsForwardDelay
  vStpInsHelloTime
```

---

## show spantree cist

Displays the Spanning Tree bridge configuration for the flat mode Common and Internal Spanning Tree (CIST) instance.

**show spantree cist**

---

### Syntax Definitions

N/A

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guideline

This command displays Spanning Tree bridge information for the flat mode CIST instance regardless of which mode (per-VLAN or flat) is active on the switch. Note that minimal information is displayed when this command is used in the per-VLAN mode, as the CIST is not active in this mode. See the second example below.

### Examples

```
-> spantree mode flat
-> show spantree cist
Spanning Tree Parameters for Cist
Spanning Tree Status :                ON,
Protocol              :                IEEE Multiple STP,
mode                  :                FLAT (Single STP),
Auto-Vlan-Containment:                Enabled ,
Priority              :                32768 (0x8000),
Bridge ID             :                8000-2c:fa:a2:24:87:51,
CST Designated Root  :                8000-00:e0:b1:cf:26:3d,
Cost to CST Root     :                2000,
Designated Root      :                8000-2c:fa:a2:24:87:51,
Cost to Root Bridge  :                0,
Root Port            :                1/1/46,
TxHoldCount          :                3,
Topology Changes     :                10,
Topology age         :                00:01:10,
Last TC Rcvd Port    :                1/1/46,
Last TC Rcvd Bridge  :                8000-00:e0:b1:cf:26:3d,
  Current Parameters (seconds)
    Max Age           =                20,
    Forward Delay     =                15,
    Hello Time        =                2
  Parameters system uses when attempting to become root
    System Max Age    =                20,
    System Forward Delay =            15,
```

```

System Hello Time      =      2

-> spantree mode per-vlan
-> show spantree cist
Per Vlan Spanning Tree is enforced !! (Per VLAN mode)
INACTIVE Spanning Tree Parameters for Cist
Spanning Tree Status :      ON,
Protocol              :      IEEE Multiple STP,
Priority               :      32768 (0x8000),
TxHoldCount           :      5,
System Max Age (seconds) =      10,
System Forward Delay (seconds) =      10,
System Hello Time (seconds) =      5

```

### output definitions

<b>Spanning Tree Status</b>	The Spanning Tree state for the instance ( <b>ON</b> or <b>OFF</b> ).
<b>Protocol</b>	The Spanning Tree protocol applied to the CIST ( <b>STP</b> , <b>RSTP</b> , or <b>MSTP</b> ). Configured through the <b>spantree protocol</b> command.
<b>Mode</b>	The Spanning Tree operating mode for the switch ( <b>per-vlan</b> or <b>flat</b> ). Configured through the <b>spantree mode</b> command.
<b>Auto-Vlan-Containment</b>	The auto VLAN containment status for the instance ( <b>Enabled</b> or <b>Disabled</b> ). AVC prevents a port that has no VLANs mapped to a Multiple Spanning Tree Instance (MSTI) from becoming the root port for that instance. Configured through the <b>spantree auto-vlan-containment</b> command.
<b>Priority</b>	The Spanning Tree bridge priority for the instance. The lower the number, the higher the priority. Configured through the <b>spantree priority</b> command.
<b>Bridge ID</b>	The bridge identifier for this Spanning Tree instance. Consists of the bridge priority value (in hex) concatenated with the dedicated bridge MAC address.
<b>CST Designated Root</b>	The bridge identifier for the root of the flat mode CIST instance. This field only appears when MSTP is active on the switch.
<b>Cost to CST Root</b>	The cost of the path to the root of the flat mode CIST instance. This field only appears when MSTP is active on the switch.
<b>Designated Root</b>	The bridge identifier for the root of the Spanning Tree for this instance.
<b>Cost to Root Bridge</b>	The cost of the path to the root for this Spanning Tree instance.
<b>Root Port</b>	The port that offers the lowest cost path from this bridge to the root bridge for this Spanning Tree instance.
<b>Tx Hold Count</b>	The count to limit the transmission of BPDU through the port.
<b>Topology Changes</b>	The number of topology changes detected by this Spanning Tree instance since the management entity was last reset or initialized.
<b>Topology age</b>	The amount of time (in hundredths of seconds) since the last topology change was detected by this Spanning Tree instance ( <b>hh:mm:ss</b> or <b>dd days and hh:mm:ss</b> ).
<b>Last TC Rcvd Port</b>	The port that received the TC Flag Set in RSTP or MSTP protocol BPDU. Default value is None.

*output definitions (continued)*


---

<b>Last TC Rcvd Bridge</b>	The adjacent designated bridge ID received from TC Flag Set in RSTP or MSTP BPDU along with Last TC Rcvd Port. This information is provided only for active RSTP and MSTP topologies. Default value is None.
<b>Max Age</b>	The amount of time (in seconds) that Spanning Tree Protocol information is retained before it is discarded. Configured through the <b>spantree max-age</b> command.
<b>Forward Delay</b>	The amount of time (in seconds) that a port remains in the Listening state and then the Learning state until it reaches the forwarding state. This is also the amount of time used to age out all dynamic entries in the Forwarding Database when a topology change occurs. Configured through the <b>spantree forward-delay</b> command.
<b>Hello Time</b>	The amount of time (in seconds) between the transmission of Configuration BPDUs on any port that is the Spanning Tree root or is attempting to become the Spanning Tree root. Configured through the <b>spantree hello-time</b> command.
<b>System Max Age</b>	The Max Age value for the root bridge.
<b>System Forward Delay</b>	The Forward Delay value for the root bridge.
<b>System Hello Time</b>	The Hello Time value for the root bridge.
<b>BPDU Switching Enabled</b>	The status of BPDU switching for the instance. This field only appears when BPDU switching is enabled. Configured through the <b>spantree bpdu-switching</b> command.

---

**Release History**

Release 5.1; command introduced.

**Related Commands**

<b>show spantree</b>	Displays the Spanning Tree bridge configuration for the flat mode CIST instance or a per-VLAN mode VLAN instance, depending on which mode is active for the switch.
<b>show spantree msti</b>	Displays the Spanning Tree bridge configuration for an MSTI regardless of which mode (per-VLAN or flat) is active on the switch.
<b>show spantree vlan</b>	Displays the Spanning Tree bridge configuration for a VLAN instance regardless of which mode (per-VLAN or flat) is active on the switch.

**MIB Objects**

```
vStpInsTable
  vStpInsNumber
  vStpInsMode
  vStpInsProtocolSpecification
  vStpInsPriority
  vStpInsBridgeAddress
  vStpInsTimeSinceTopologyChange
  vStpInsTopChanges
  vStpInsDesignatedRoot
  vStpInsRootCost
  vStpInsRootPortNumber
  vStpInsNextBestRootCost
  vStpInsNextBestRootPortNumber
  vStpInsMaxAge
  vStpInsHelloTime
  vStpInsBridgeTxHoldCount
  vStpInsForwardDelay
  vStpInsBridgeMaxAge
  vStpInsBridgeHelloTime
  vStpInsBridgeForwardDelay
  vStpInsCistRegionalRootId
  vStpInsCistPathCost
```

---

## show spantree msti

Displays Spanning Tree bridge information for a Multiple Spanning Tree Instance (MSTI).

```
show spantree msti [msti_id]
```

---

### Syntax Definitions

*msti\_id* An existing MSTI ID number.

### Defaults

By default, displays information for all MSTIs.

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- If an *msti\_id* number is *not* specified, this command displays the Spanning Tree status, protocol, and priority values for all MSTIs.
- This command displays Spanning Tree bridge information for an MSTI regardless of which mode (per-VLAN or flat) is active for the switch.
- Note that minimal information is displayed when this command is used in the per-VLAN mode, as MSTIs are not active in this mode. In addition, this command fails if MSTP is not the selected flat mode protocol.
- Note that MSTI 0 also represents the CIST instance that is always present on the switch. To view the CIST instance using this command, specify zero (0) for the *msti\_id* number.

### Examples

```
-> spantree mode flat
-> spantree protocol mstp
-> show spantree msti
  Spanning Tree Path Cost Mode : AUTO
  Msti STP Status Protocol Priority (Prio:SysID)
  -----+-----+-----+-----+-----
    0      ON      MSTP    32768 (0x8000:0x0000)
    1      ON      MSTP    32769 (0x8000:0x0001)

-> show spantree msti 0
Spanning Tree Parameters for Cist
  Spanning Tree Status : ON,
  Protocol : IEEE Multiple STP,
  mode : FLAT (Single STP),
  Auto-Vlan-Containment: Enabled ,
  Priority : 8192 (0x2000),
  Bridge ID : 2000-e8:e7:32:8c:20:09,
  CST Designated Root : 2000-e8:e7:32:8c:20:09,
  Cost to CST Root : 0,
  Designated Root : 2000-e8:e7:32:8c:20:09,
```

```

Cost to Root Bridge : 0,
Root Port : None,
TxHoldCount : 3,
Topology Changes : 203,
Topology age : 00:00:48,
Last TC Rcvd Port : 2/1/2,
Last TC Rcvd Bridge : 3000-e8:e7:32:b9:24:13,
Current Parameters (seconds)
  Max Age = 20,
  Forward Delay = 15,
  Hello Time = 2
Parameters system uses when attempting to become root
  System Max Age = 20,
  System Forward Delay = 15,
  System Hello Time = 2

```

-> spantree mode per-vlan

-> show spantree msti

```

Spanning Tree Path Cost Mode : AUTO
** Inactive flat mode instances: **
Msti STP Status Protocol Priority (Prio:SysID)
-----+-----+-----+-----+-----+
  0      ON      MSTP   32768 (0x8000:0x0000)
  1      ON      MSTP   32769 (0x8000:0x0001)

```

-> show spantree msti 0

Per Vlan Spanning Tree is enforced !! (Per VLAN mode)

```

INACTIVE Spanning Tree Parameters for Cist
Spanning Tree Status : ON,
Protocol : IEEE Multiple STP,
Priority : 32768 (0x8000),
TxHoldCount : 3,
System Max Age (seconds) = 20,
System Forward Delay (seconds) = 15,
System Hello Time (seconds) = 2

```

-> show spantree msti 1

Per Vlan Spanning Tree is enforced !! (Per VLAN mode)

```

INACTIVE Spanning Tree Parameters for Cist 1
Spanning Tree Status : ON,
Protocol : IEEE Multiple STP,
Priority : 32769 (0x8001),
TxHoldCount : 3,
System Max Age (seconds) = 20,
System Forward Delay (seconds) = 15,
System Hello Time (seconds) = 2

```

### *output definitions*

<b>Spanning Tree Path Cost Mode</b>	The Spanning Tree path cost mode for the switch ( <b>32 BIT</b> or <b>AUTO</b> ) Configured through the <b>spantree path-cost-mode</b> command.
<b>Msti</b>	The Multiple Spanning Tree Instance (MSTI) number. MSTI 0 represents the CIST. Configured through the <b>spantree msti</b> command.
<b>STP Status</b>	The Spanning Tree state for the instance ( <b>ON</b> or <b>OFF</b> ).

*output definitions (continued)*


---

<b>Protocol</b>	The Spanning Tree protocol applied to the instance ( <b>STP</b> , <b>RSTP</b> , or <b>MSTP</b> ). This value is not configurable for an MSTI. Configured through the <b>spantree protocol</b> command.
<b>Priority</b>	The Spanning Tree bridge priority for the instance. The lower the number, the higher the priority. Configured through the <b>spantree priority</b> command.
<b>Spanning Tree Status Mode</b>	The Spanning Tree state for the instance ( <b>ON</b> or <b>OFF</b> ).
<b>Auto-Vlan-Containment</b>	The auto VLAN containment status for the instance ( <b>Enabled</b> or <b>Disabled</b> ). AVC prevents a port that has no VLANs mapped to a Multiple Spanning Tree Instance (MSTI) from becoming the root port for that instance. Configured through the <b>spantree auto-vlan-containment</b> command.
<b>Bridge ID</b>	The bridge identifier for this Spanning Tree instance. Consists of the bridge priority value (in hex) concatenated with the dedicated bridge MAC address.
<b>CST Designated Root</b>	The bridge identifier for the root of the flat mode CIST instance. This field only appears when MSTP is active on the switch.
<b>Cost to CST Root</b>	The cost of the path to the root for the flat mode CIST instance. This field only appears when MSTP is active on the switch.
<b>Designated Root Cost to Root Bridge</b>	The bridge identifier for the root of the Spanning Tree for this instance.
<b>Root Port</b>	The cost of the path to the root for this Spanning Tree instance.
<b>TxHoldCount</b>	The port that offers the lowest cost path from this bridge to the root bridge for this Spanning Tree instance.
<b>Topology Changes</b>	The count to limit the transmission of BPDU through the port.
<b>Topology age</b>	The number of topology changes detected by this Spanning Tree instance since the management entity was last reset or initialized.
<b>Last TC Rcvd Port</b>	The amount of time (in hundredths of seconds) since the last topology change was detected by this Spanning Tree instance ( <b>hh:mm:ss</b> or <b>dd days and hh:mm:ss</b> ).
<b>Last TC Rcvd Bridge</b>	The port that received the TC Flag Set in RSTP or MSTP protocol BPDU. Default value is None.
<b>Max Age</b>	The adjacent designated bridge ID received from TC Flag Set in RSTP or MSTP BPDU along with Last TC Rcvd Port. This information is provided only for active RSTP and MSTP topologies. Default value is None.
<b>Forward Delay</b>	The amount of time (in seconds) that Spanning Tree Protocol information is retained before it is discarded. MSTIs inherit this value from the CIST instance.
	The amount of time (in seconds) that a port remains in the Listening state and then the Learning state until it reaches the forwarding state. This is also the amount of time used to age out all dynamic entries in the Forwarding Database when a topology change occurs. MSTIs inherit this value from the CIST instance.



---

*output definitions (continued)*

---

<b>Hello Time</b>	The amount of time (in seconds) between the transmission of Configuration BPDUs on any port that is the Spanning Tree root or is attempting to become the Spanning Tree root. MSTIs inherit this value from the CIST instance.
<b>System Max Age</b>	The Max Age value for the root bridge.
<b>System Forward Delay</b>	The Forward Delay value for the root bridge.
<b>System Hello Time</b>	The Hello Time value for the root bridge.
<b>BPDU Switching Enabled</b>	The status of BPDU switching for the instance. This field only appears when BPDU switching is enabled. Configured through the <a href="#">spantree bpduswitching</a> command.

---

**Release History**

Release 5.1; command introduced.

**Related Commands**

<a href="#">show spantree</a>	Displays the Spanning Tree bridge configuration for the flat mode CIST instance or a per-VLAN mode VLAN instance, depending on which mode is active for the switch.
<a href="#">show spantree cist</a>	Displays the Spanning Tree bridge configuration for the CIST instance regardless of which mode (per-VLAN or flat) is active on the switch.
<a href="#">show spantree vlan</a>	Displays the Spanning Tree bridge configuration for a VLAN instance regardless of which mode (per-VLAN or flat) is active on the switch.

**MIB Objects**

```
vStpInsTable
  vStpInsNumber
  vStpInsMode
  vStpInsProtocolSpecification
  vStpInsPriority
  vStpInsBridgeAddress
  vStpInsTimeSinceTopologyChange
  vStpInsTopChanges
  vStpInsDesignatedRoot
  vStpInsRootCost
  vStpInsRootPortNumber
  vStpInsNextBestRootCost
  vStpInsNextBestRootPortNumber
  vStpInsMaxAge
  vStpInsHelloTime
  vStpInsBridgeTxHoldCount
  vStpInsForwardDelay
  vStpInsBridgeMaxAge
  vStpInsBridgeHelloTime
  vStpInsBridgeForwardDelay
  vStpInsCistRegionalRootId
  vStpInsCistPathCost
  vStpInsMstiNumber
```

---

## show spantree vlan

Displays Spanning Tree bridge information for a per-VLAN mode VLAN instance.

```
show spantree vlan [vlan_id]
```

---

### Syntax Definitions

*vlan\_id* An existing VLAN ID number.

### Defaults

By default, displays information for all VLAN instances.

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- If a *vlan\_id* number is *not* specified, this command displays the Spanning Tree status, protocol, and priority values for all VLAN instances.
- Specify a *vlan\_id* number with this command to display Spanning Tree bridge information for a specific VLAN instance.
- This command displays Spanning Tree bridge information for a VLAN instance regardless of which mode (per-VLAN or flat) is active on the switch. Note that minimal information is displayed when this command is used in the flat mode, as VLAN instances are not active in this mode.

### Examples

```
-> spantree mode per-vlan
-> show spantree vlan
Spanning Tree Path Cost Mode : AUTO
Vlan STP Status Protocol Priority
-----+-----+-----+-----
   1      ON      RSTP   32768 (0x8000)
  200     ON      RSTP   32768 (0x8000)
   500    OFF     RSTP   32768 (0x8000)
 4094    OFF     RSTP   32768 (0x8000)

-> show spantree vlan 200
Spanning Tree Parameters for Vlan 200
Spanning Tree Status : ON,
Protocol              : IEEE Rapid STP,
mode                  : Per VLAN (1 STP per Vlan),
Priority               : 100 (0x0064),
Bridge ID              : 0064-e8:e7:32:8c:20:09,
Designated Root       : 0064-e8:e7:32:8c:20:09,
Cost to Root Bridge   : 0,
Root Port              : None,
TxHoldCount           : 3,
Topology Changes      : 6,
Topology age          : 00:00:04,
```

```

Last TC Rcvd Port      :          2/1/2,
Last TC Rcvd Bridge   :   012C-e8:e7:32:b9:24:13,
  Current Parameters (seconds)
    Max Age             =    20,
    Forward Delay       =    15,
    Hello Time          =     2
  Parameters system uses when attempting to become root
    System Max Age      =    20,
    System Forward Delay =    15,
    System Hello Time   =     2

-> spantree mode flat
-> show spantree vlan 200
Single/Multiple Spanning Tree is enforced !! (flat mode)
INACTIVE Spanning Tree Parameters for Vlan 200
  Spanning Tree Status :          ON,
  Protocol              :          IEEE Rapid STP,
  Priority               :   32768 (0x8000),
  TxHoldCount           :           3,
  System Max Age (seconds) =    20,
  System Forward Delay (seconds) =    15,
  System Hello Time (seconds) =     2

```

### *output definitions*

<b>Spanning Tree Path Cost Mode</b>	The Spanning Tree path cost mode for the switch ( <b>32 BIT</b> or <b>AUTO</b> ). Configured through the <b>spantree path-cost-mode</b> command.
<b>Vlan</b>	The VLAN ID associated with the VLAN Spanning Tree instance. Configured through the <b>vlan</b> commands
<b>STP Status</b>	The Spanning Tree state for the instance ( <b>ON</b> or <b>OFF</b> ).
<b>Protocol</b>	The Spanning Tree protocol applied to the VLAN instance ( <b>STP</b> or <b>RSTP</b> ). Note that MSTP is not supported for a VLAN instance. Configured through the <b>spantree protocol</b> command.
<b>Priority</b>	The Spanning Tree bridge priority for the instance. The lower the number, the higher the priority. Configured through the <b>spantree priority</b> command.
<b>Spanning Tree Status Mode</b>	The Spanning Tree state for the instance ( <b>ON</b> or <b>OFF</b> ). The Spanning Tree operating mode for the switch ( <b>per-vlan</b> or <b>flat</b> ). Configured through the <b>spantree mode</b> command.
<b>Bridge ID</b>	The bridge identifier for this Spanning Tree instance. Consists of the bridge priority value (in hex) concatenated with the dedicated bridge MAC address.
<b>Designated Root</b>	The bridge identifier for the root of the Spanning Tree for this instance.
<b>Cost to Root Bridge</b>	The cost of the path to the root for this Spanning Tree instance.
<b>Root Port</b>	The port that offers the lowest cost path from this bridge to the root bridge for this Spanning Tree instance.
<b>Tx Hold Count</b>	The count to limit the transmission of BPDU through the port.
<b>Topology Changes</b>	The number of topology changes detected by this Spanning Tree instance since the management entity was last reset or initialized.

*output definitions (continued)*


---

<b>Topology age</b>	The amount of time (in hundredths of seconds) since the last topology change was detected by this Spanning Tree instance ( <b>hh:mm:ss</b> or <b>dd days and hh:mm:ss</b> ).
<b>Last TC Rcvd Port</b>	The port that received the TC Flag Set in RSTP or MSTP protocol BPDU. Default value is None.
<b>Last TC Rcvd Bridge</b>	The adjacent designated bridge ID received from TC Flag Set in RSTP or MSTP BPDU along with Last TC Rcvd Port. This information is provided only for active RSTP and MSTP topologies. Default value is None.
<b>Max Age</b>	The amount of time (in seconds) that Spanning Tree Protocol information is retained before it is discarded. Configured through the <a href="#">spantree max-age</a> command.
<b>Forward Delay</b>	The amount of time (in seconds) that a port remains in the Listening state and then the Learning state until it reaches the forwarding state. This is also the amount of time used to age out all dynamic entries in the Forwarding Database when a topology change occurs. Configured through the <a href="#">spantree forward-delay</a> command.
<b>Hello Time</b>	The amount of time (in seconds) between the transmission of Configuration BPDUs on any port that is the Spanning Tree root or is attempting to become the Spanning Tree root. Configured through the <a href="#">spantree hello-time</a> command.
<b>System Max Age</b>	The Max Age value for the root bridge.
<b>System Forward Delay</b>	The Forward Delay value for the root bridge.
<b>System Hello Time</b>	The Hello Time value for the root bridge.
<b>BPDU Switching Enabled</b>	The status of BPDU switching for the instance. This field only appears when BPDU switching is enabled. Configured through the <a href="#">spantree bpdu-switching</a> command.

---

**Release History**

Release 5.1; command introduced.

**Related Commands**

<a href="#">show spantree</a>	Displays the Spanning Tree bridge configuration for the flat mode CIST instance or a per-VLAN mode VLAN instance, depending on which mode is active for the switch.
<a href="#">show spantree cist</a>	Displays the Spanning Tree bridge configuration for the CIST instance regardless of which mode (per-VLAN or flat) is active on the switch.
<a href="#">show spantree msti</a>	Displays the Spanning Tree bridge information for an MSTI when the switch is operating in the per-VLAN or flat Spanning Tree mode.

**MIB Objects**

```
vStpInsTable
  vStpInsNumber
  vStpInsMode
  vStpInsProtocolSpecification
  vStpInsPriority
  vStpInsBridgeAddress
  vStpInsTimeSinceTopologyChange
  vStpInsTopChanges
  vStpInsDesignatedRoot
  vStpInsRootCost
  vStpInsRootPortNumber
  vStpInsNextBestRootCost
  vStpInsNextBestRootPortNumber
  vStpInsMaxAge
  vStpInsHelloTime
  vStpInsBridgeTxHoldCount
  vStpInsForwardDelay
  vStpInsBridgeMaxAge
  vStpInsBridgeHelloTime
  vStpInsBridgeForwardDelay
```

---

## show spantree ports

Displays Spanning Tree port information.

**show spantree ports [forwarding | blocking | active | configured]**

---

### Syntax Definitions

<b>forwarding</b>	Displays Spanning Tree operational port parameters for ports that are forwarding for the specified instance.
<b>blocking</b>	Displays Spanning Tree operational port parameters for ports that are blocked for the specified instance.
<b>active</b>	Displays a list of active ports associated with the specified instance.
<b>configured</b>	Displays Spanning Tree administrative port parameters for all ports associated with the specified instance.

### Defaults

parameter	default
<b>forwarding   blocking   active   configured</b>	all ports

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- If the switch is operating in the per-VLAN mode, this command displays port information for the VLAN instances.
- If the switch is operating in the flat mode and the protocol is STP or RSTP, this command displays port information for the single flat mode instance.
- If the switch is operating in the flat mode and the protocol is set to MSTP, this command displays port information for the MSTIs, including MSTI 0 (also known as the CIST).

### Examples

```
-> spantree mode flat
-> spantree protocol rstp
-> show spantree ports
```

Brdge	Port	Oper	Status	Path Cost	Role	Note
1	1/1/1		DIS	0	DIS	
1	1/1/2		DIS	0	DIS	
1	1/1/3		DIS	0	DIS	
1	1/1/4		DIS	0	DIS	
1	1/1/5		DIS	0	DIS	
1	1/1/6		DIS	0	DIS	
1	1/1/7		DIS	0	DIS	

```

1 1/1/8 DIS 0 DIS
1 1/1/9 DIS 0 DIS
1 1/1/10 DIS 0 DIS
1 1/1/11 DIS 0 DIS
1 1/1/12 DIS 0 DIS
1 1/1/13 DIS 0 DIS
1 1/1/14 DIS 0 DIS
1 1/1/15 DIS 0 DIS
1 1/1/16 DIS 0 DIS
1 1/1/17 DIS 0 DIS
1 1/1/18 DIS 0 DIS
1 1/1/19 DIS 0 DIS
1 1/1/20 DIS 0 DIS
1 1/1/21 DIS 0 DIS
1 1/1/22 DIS 0 DIS
1 1/1/23 FORW 4 DESG
1 1/1/24 FORW 4 ROOT
1 1/1/25 DIS 0 DIS
1 1/1/26 DIS 0 DIS
1 1/1/27 DIS 0 DIS
1 1/1/28 DIS 0 DIS
1 0/10 DIS 0 DIS

```

-> spantree protocol mstp

WARNING: Changing to MSTP(802.1s) resets flat bridge priority and path

WARNING: Changing to MSTP(802.1s) resets flat bridge priority and path

-> show spantree ports

Msti	Port	Oper Status	Path Cost	Role	Note
0	1/1/1	DIS	0	DIS	
0	1/1/2	DIS	0	DIS	
0	1/1/3	DIS	0	DIS	
0	1/1/4	DIS	0	DIS	
0	1/1/5	DIS	0	DIS	
0	1/1/6	DIS	0	DIS	
0	1/1/7	DIS	0	DIS	
0	1/1/8	DIS	0	DIS	
0	1/1/9	DIS	0	DIS	
0	1/1/10	DIS	0	DIS	
0	1/1/11	DIS	0	DIS	
0	1/1/12	DIS	0	DIS	
0	1/1/13	DIS	0	DIS	
0	1/1/14	DIS	0	DIS	
0	1/1/15	DIS	0	DIS	
0	1/1/16	DIS	0	DIS	
0	1/1/17	DIS	0	DIS	
0	1/1/18	DIS	0	DIS	
0	1/1/19	DIS	0	DIS	
0	1/1/20	DIS	0	DIS	
0	1/1/21	DIS	0	DIS	
0	1/1/22	DIS	0	DIS	
0	1/1/23	FORW	20000	DESG	
0	1/1/24	FORW	20000	ROOT	
0	1/1/25	DIS	0	DIS	
0	1/1/26	DIS	0	DIS	
0	1/1/27	DIS	0	DIS	
0	1/1/28	DIS	0	DIS	
0	0/10	DIS	0	DIS	



```

-> spantree mode per-vlan
-> show spantree ports
  Vlan  Port   Oper Status  Path Cost  Role  Note
-----+-----+-----+-----+-----+-----
    1   1/1/1     DIS           0     DIS
    1   1/1/2     DIS           0     DIS
    1   1/1/3     DIS           0     DIS
    1   1/1/4     DIS           0     DIS
    1   1/1/5     DIS           0     DIS
    1   1/1/6     DIS           0     DIS
    1   1/1/7     DIS           0     DIS
    1   1/1/8     DIS           0     DIS
    1   1/1/9     DIS           0     DIS
    1   1/1/10    DIS           0     DIS
    1   1/1/11    DIS           0     DIS
    1   1/1/12    DIS           0     DIS
    1   1/1/13    DIS           0     DIS
    1   1/1/14    DIS           0     DIS
    1   1/1/15    DIS           0     DIS
    1   1/1/16    DIS           0     DIS
    1   1/1/17    DIS           0     DIS
    1   1/1/18    DIS           0     DIS
    1   1/1/19    DIS           0     DIS
    1   1/1/20    DIS           0     DIS
    1   1/1/21    DIS           0     DIS
    1   1/1/22    DIS           0     DIS
    1   1/1/23    FORW          4     DESG
    1   1/1/24    FORW          4     ROOT
    1   1/1/25    DIS           0     DIS
    1   1/1/26    DIS           0     DIS
    1     0/10    DIS           0     DIS

```

```

-> show spantree ports forwarding
  Vlan  Port   Oper Status  Path Cost  Role  Note
-----+-----+-----+-----+-----+-----
    1   1/1/23    FORW          4     DESG
    1   1/1/24    FORW          4     ROOT

```

### *output definitions*

#### **Bridge, Msti, or Vlan**

The CIST instance, referred to as bridge 1, when either STP (802.1D) or RSTP (802.1W) is the active protocol in the flat mode. The MSTI number when MSTP is the active protocol in the flat mode. The VLAN ID number when STP or RSTP is the active protocol in the per-VLAN mode.

#### **Port**

The slot number for the module and the physical port number or a logical port. If the slot number is 0, then the port number refers to a link aggregate logical port number (for example, 0/31).

#### **Oper Status**

The port operational state as defined by application of the Spanning Tree Protocol. Possible port operational states include: disabled, blocking, learning, and forwarding.

*output definitions (continued)*


---

<b>Path Cost</b>	The contribution of this port to the path cost towards the Spanning Tree root bridge that includes this port. Path cost is a measure of the distance of the listed port from the root bridge in the number of hops. Configured through the <a href="#">spantree msti path-cost</a> or <a href="#">spantree vlan path-cost</a> command.
<b>Role</b>	The role of the port for this Spanning Tree instance. Possible port roles are: <b>root</b> , <b>designated</b> , <b>alternate</b> , and <b>backup</b> .
<b>Note</b>	Displays a note if the port has entered the error violation state (ERR); then the port role of the port instance in that row becomes insignificant.

---

**Release History**

Release 5.1; command introduced.

**Related Commands**

<a href="#">show spantree cist ports</a>	Displays Spanning Tree port information for the flat mode CIST instance when the switch is operating in the per-VLAN or flat Spanning Tree mode.
<a href="#">show spantree msti ports</a>	Displays Spanning Tree port information for an MSTI when the switch is operating in the per-VLAN or flat Spanning Tree mode.
<a href="#">show spantree vlan ports</a>	Displays Spanning Tree port information for VLAN instances when the switch is operating in the per-VLAN or flat Spanning Tree mode.

**MIB Objects**

```
vStpInsPortTable
  vStpInsPortNumber
  vStpInsPortPriority
  vStpInsPortEnable
  vStpInsPortState
  vStpInsPortManualMode
  vStpInsPortPathCost
  vStpInsPortDesignatedCost
  vStpInsPortRole
  vStpInsPortAdminConnectionType
  vStpInsPortOperConnectionType
  vStpInsPortAdminEdge
  vStpInsPortAutoEdge
  vStpInsPortRestrictedRole
  vStpInsPortRestrictedTcn
  vStpInsPortPrimaryPortNumber
  vStpInsPortDesignatedRoot
  vStpInsPortDesignatedBridge
```

---

## show spantree cist ports

Displays Spanning Tree port information for the flat mode Common and Internal Spanning Tree (CIST) instance.

**show spantree cist ports** [**forwarding** | **blocking** | **active** | **configured**]

---

### Syntax Definitions

<b>forwarding</b>	Displays Spanning Tree operational port parameters for ports that are forwarding for the CIST instance.
<b>blocking</b>	Displays Spanning Tree operational port parameters for ports that are blocked for the CIST instance.
<b>active</b>	Displays a list of active ports associated with the CIST instance.
<b>configured</b>	Displays Spanning Tree administrative port parameters for the CIST instance.

### Defaults

parameter	default
<b>forwarding</b>   <b>blocking</b>   <b>active</b>   <b>configured</b>	all ports

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- This command displays Spanning Tree port information for the flat mode CIST instance regardless of which mode (per-VLAN or flat) is active for the switch.
- Note that minimal information is displayed when this command is used in the per-VLAN mode, as the CIST is not active in this mode.

### Examples

```
-> show spantree cist ports
Spanning Tree Port Summary for Cist
      Oper Path  Desig      Prim. Op Op
Port  St  Cost   Cost   Role Port Cnx Edg  Desig Bridge ID      Note
-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----
  1/1  FORW 200000    52 ROOT  1/1  PTP  EDG  8000-00:30:f1:5b:37:73
  1/2  DIS    0         0 DIS  1/2  NS   No   0000-00:00:00:00:00:00
  1/3  DIS    0         0 DIS  1/3  NS   EDG  0000-00:00:00:00:00:00
  1/4  DIS    0         0 DIS  1/4  NS   No   0000-00:00:00:00:00:00
  1/5  DIS    0         0 DIS  1/5  NS   EDG  0000-00:00:00:00:00:00
  1/6  DIS    0         0 DIS  1/6  NS   EDG  0000-00:00:00:00:00:00
  1/7  DIS    0         0 DIS  1/7  NS   EDG  0000-00:00:00:00:00:00
  1/8  DIS    0         0 DIS  1/8  NS   No   0000-00:00:00:00:00:00
```

```
-> show spantree cist ports active
Spanning Tree Port Summary for Cist
      Oper Path  Desig      Prim. Op Op
Port  St  Cost   Cost   Role Port  Cnx Edg  Desig Bridge ID      Note
-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----
1/1  FORW 200000      52 ROOT  1/1  PTP  EDG  8000-00:30:f1:5b:37:73
```

```
-> show spantree cist ports
Per Vlan Spanning Tree is enforced !! (Per VLAN mode)
INACTIVE Spanning Tree Parameters for Cist
      Oper Path  Desig      Prim. Op Op
Port  St  Cost   Cost   Role Port  Cnx Edg  Desig Bridge ID      Note
-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----
1/1  DIS      0      0 DIS  1/1  NS  NO  0000-00:00:00:00:00:00
1/2  DIS      0      0 DIS  1/2  NS  NO  0000-00:00:00:00:00:00
1/3  DIS      0      0 DIS  1/3  NS  NO  0000-00:00:00:00:00:00
1/4  DIS      0      0 DIS  1/4  NS  NO  0000-00:00:00:00:00:00
1/5  DIS      0      0 DIS  1/5  NS  NO  0000-00:00:00:00:00:00
```

### output definitions

<b>Port</b>	The slot number for the module and the physical port number or a logical port. If the slot number is 0, then the port number refers to a link aggregate logical port number (for example, 0/31).
<b>Oper St</b>	The port operational state as defined by application of the Spanning Tree Protocol. Possible port operational states include: disabled, blocking, listening, learning, and forwarding.
<b>Path Cost</b>	The contribution of this port to the path cost towards the Spanning Tree root bridge that includes this port. Path cost is a measure of the distance of the listed port from the root bridge in the number of hops. Configured through the <a href="#">spantree vlan path-cost</a> command.
<b>Desig Cost</b>	The path cost of the Designated Port of the segment connected to this port. If this is the root bridge or the Spanning Tree status of the port is administratively disabled, this value is 0.
<b>Role</b>	The role of the port for this Spanning Tree instance. Possible port roles are: <b>root</b> , <b>designated</b> , <b>alternate</b> , and <b>backup</b> .
<b>Prim. Port</b>	The slot number for the module and the physical port number on that module for the primary port associated with this Spanning Tree instance. This information is only available if the port role is backup.
<b>Op Cnx</b>	Operational connection type: <b>PTP</b> , <b>NPT</b> , or <b>NS</b> (nonsignificant). Shows the current operational state of the port connection type. See the <a href="#">spantree vlan connection</a> command for more information.
<b>Op Edg</b>	Operational connection type: <b>EDG</b> . Shows the current operational state of the port connection type. See the <a href="#">spantree vlan connection</a> command for more information.
<b>Desig Bridge ID</b>	The bridge identifier for the designated bridge for this port segment.
<b>Note</b>	Displays a note if the port has entered the error violation state (ERR); then the port role of the port instance in that row becomes insignificant.

```
-> show spantree cist ports configured
Spanning Tree Port Admin Configuration for Vlan 0
Port      Port Pri  Adm St.  Man. Mode  Config Cost  Adm Cnx  Adm Edg  Aut Edg  Rstr Tcn  Rstr Root  Role/ Guard
-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+
1/1       7    ENA    No         0    AUT    No    Yes    No    No    No
1/2       7    ENA    No         0    NPT    No    Yes    No    No    No
1/3       7    ENA    No         0    NPT    No    Yes    No    No    No
1/4       7    ENA    No         0    NPT    No    Yes    No    No    No
1/5       7    ENA    No         0    NPT    No    Yes    No    No    No
```

### output definitions

<b>Port</b>	The slot number for the module and the physical port number or a logical port. If the slot number is 0, then the port number refers to a link aggregate logical port number (for example, 0/31).
<b>Port Pri</b>	The Spanning Tree priority for the port. The lower the number, the higher the priority.
<b>Adm St</b>	The Spanning Tree administrative status of the port: <b>enabled</b> or <b>disabled</b> .
<b>Man. Mode</b>	The manual mode setting for the port: <b>yes</b> indicates that the blocking or forwarding state of the port was manually set and the port does not participate in the Spanning Tree Algorithm; <b>no</b> indicates that the Spanning Tree Algorithm is managing the port state. Configured through the <a href="#">spantree vlan path-cost</a> command.
<b>Config Cost</b>	The configured path cost value for this port. Configured through the <a href="#">spantree vlan path-cost</a> command.
<b>Adm Cnx</b>	The administrative connection type: <b>PTP</b> , <b>NPT</b> , or <b>AUT</b> . Configured through the <a href="#">spantree vlan connection</a> command.
<b>Adm Edg</b>	The edge port administrative status: <b>yes</b> indicates that the port is an admin edge port; <b>no</b> indicates that the port is not an admin edge port. Configured through the <a href="#">spantree vlan connection</a> command.
<b>Aut Edg</b>	The edge port automatic status: <b>yes</b> indicates that the port is an automatic edge port; <b>no</b> indicates that the port is not an automatic edge port. Configured through the <a href="#">spantree cist auto-edge</a> or <a href="#">spantree vlan auto-edge</a> command.
<b>Rstr Tcn</b>	The restricted TCN capability: <b>yes</b> indicates that the port supports the restricted TCN capability; <b>no</b> indicates that the port does not support the restricted TCN capability. Configured through the <a href="#">spantree cist restricted-tcn</a> or <a href="#">spantree vlan restricted-tcn</a> command.
<b>Rstr Role</b>	The restricted role port status: <b>yes</b> indicates that the port is a restricted role port; <b>no</b> indicates that the port is not a restricted role port. Configured through the <a href="#">spantree cist restricted-role</a> or <a href="#">spantree vlan restricted-role</a> command.

### Release History

Release 5.1; command introduced.

## Related Commands

### [show spantree ports](#)

Implicit command for displaying Spanning Tree port information for the flat mode CIST instance or a per-VLAN mode VLAN instance.

### [show spantree msti ports](#)

Displays Spanning Tree port information for an MSTI when the switch is operating in the per-VLAN or flat Spanning Tree mode.

## MIB Objects

vStpInsPortTable

- vStpInsPortNumber
- vStpInsPortPriority
- vStpInsPortState
- vStpInsPortEnable
- vStpInsPortPathCost
- vStpInsPortDesignatedCost
- vStpInsPortDesignatedBridge
- vStpInsPortAdminEdge
- vStpInsPortAutoEdge
- vStpInsPortRestrictedRole
- vStpInsPortRestrictedTcn
- vStpInsPortManualMode
- vStpInsPortRole
- vStpInsPrimaryPortNumber
- vStpInsPortAdminConnectionType
- vStpInsPortOperConnectionType

---

## show spantree msti ports

Displays Spanning Tree port information for a flat mode Multiple Spanning Tree Instance (MSTI).

**show spantree msti** [*msti\_id*] **ports** [**forwarding** | **blocking** | **active** | **configured**]

---

### Syntax Definitions

<i>msti_id</i>	An existing MSTI ID number.
<b>forwarding</b>	Displays Spanning Tree operational port parameters for ports that are forwarding for the MSTI instance.
<b>blocking</b>	Displays Spanning Tree operational port parameters for ports that are blocked for the MSTI instance.
<b>active</b>	Displays a list of active ports associated with the MSTI instance.
<b>configured</b>	Displays Spanning Tree administrative port parameters for the MSTI instance.

### Defaults

parameter	default
<i>msti_id</i>	all MSTIs
<b>forwarding</b>   <b>blocking</b>   <b>active</b>   <b>configured</b>	all ports

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- If an *msti\_id* number is *not* specified, this command displays the Spanning Tree port operational status, path cost, and role values for all associated MSTIs.
- This command displays Spanning Tree port information for an MSTI regardless of which mode (per-VLAN or flat) is active on the switch.
- Note that minimal information is displayed when this command is used in the per-VLAN mode, as MSTIs are not active in this mode. In addition, if MSTP is not the selected flat mode protocol, this command fails.
- The **configured** keyword is only available when an instance number is specified with this command. In addition, this keyword cannot be used in combination with either the **forwarding** or **blocking** keywords.
- Note that MSTI 0 also represents the CIST instance that is always present on the switch. To view the CIST instance using this command, specify zero (0) for the *msti\_id* number.

## Examples

```
-> show spantree msti ports
```

Msti	Port	Oper Status	Path Cost	Role	Note
0	1/1/1	DIS		0	DIS
0	1/1/2	DIS		0	DIS
0	1/1/3	DIS		0	DIS
0	1/1/4	DIS		0	DIS
0	1/1/5	DIS		0	DIS
0	1/1/6	DIS		0	DIS
0	1/1/7	DIS		0	DIS
0	1/1/8	DIS		0	DIS
0	1/1/9	DIS		0	DIS
0	1/1/10	DIS		0	DIS
0	1/1/11	DIS		0	DIS
0	1/1/12	DIS		0	DIS
0	1/1/13	DIS		0	DIS
0	1/1/14	DIS		0	DIS
0	1/1/15	DIS		0	DIS
0	1/1/16	DIS		0	DIS
0	1/1/17	DIS		0	DIS
0	1/1/18	DIS		0	DIS
0	1/1/19	DIS		0	DIS
0	1/1/20	DIS		0	DIS
0	1/1/21	DIS		0	DIS
0	1/1/22	DIS		0	DIS
0	1/1/23	FORW	20000		ROOT
0	1/1/24	DIS		0	DIS
0	1/1/25	DIS		0	DIS
0	1/1/26	DIS		0	DIS
0	1/1/27	DIS		0	DIS
0	1/1/28	DIS		0	DIS

```
-> show spantree msti ports forwarding
```

Msti	Port	Oper Status	Path Cost	Role	Note
0	1/1/23	FORW	20000		ROOT

### output definitions

<b>Msti</b>	The Multiple Spanning Tree Instance (MSTI) number. MSTI 0 represents the CIST. Configured through the <a href="#">spantree msti</a> command.
<b>Port</b>	The slot number for the module and the physical port number or a logical port. If the slot number is 0, then the port number refers to a link aggregate logical port number (for example, 0/31).
<b>Oper Status</b>	The port operational state as defined by application of the Spanning Tree Protocol. Possible port operational states include: disabled, blocking, listening, learning, and forwarding.
<b>Path Cost</b>	The contribution of this port to the path cost towards the Spanning Tree root bridge that includes this port. Path cost is a measure of the distance of the listed port from the root bridge in the number of hops. Configured through the <a href="#">spantree msti path-cost</a> command.



*output definitions (continued)*

<b>Role</b>	The role of the port for this Spanning Tree instance. Possible port roles are: <b>root</b> , <b>designated</b> , <b>alternate</b> , <b>master</b> , and <b>backup</b> .
<b>Note</b>	Displays a note if the port has entered the error violation state (ERR); then the port role of the port instance in that row becomes insignificant.

```
-> show spantree msti 0 ports
```

```
Per Vlan Spanning Tree is enforced !! (Per VLAN mode)
```

```
INACTIVE Spanning Tree Parameters for Cist
```

Port	Oper St	Path Cost	Desig Cost	Role	Prim. Port	Op Cnx	Op Edg	Desig Bridge ID	Note
1/1	DIS	0	0	DIS	1/1	NS	NO	0000-00:00:00:00:00:00	
1/2	DIS	0	0	DIS	1/2	NS	NO	0000-00:00:00:00:00:00	
1/3	DIS	0	0	DIS	1/3	NS	NO	0000-00:00:00:00:00:00	
1/4	DIS	0	0	DIS	1/4	NS	NO	0000-00:00:00:00:00:00	
1/5	DIS	0	0	DIS	1/5	NS	NO	0000-00:00:00:00:00:00	
1/6	DIS	0	0	DIS	1/6	NS	NO	0000-00:00:00:00:00:00	
1/7	DIS	0	0	DIS	1/7	NS	NO	0000-00:00:00:00:00:00	

*output definitions*

<b>Port</b>	The slot number for the module and the physical port number or a logical port. If the slot number is 0, then the port number refers to a link aggregate logical port number (for example, 0/31).
<b>Oper St</b>	The port operational state as defined by application of the Spanning Tree Protocol. Possible port operational states include: disabled, blocking, listening, learning, and forwarding.
<b>Path Cost</b>	The contribution of this port to the path cost towards the Spanning Tree root bridge that includes this port. Path cost is a measure of the distance of the listed port from the root bridge in the number of hops. Configured through the <a href="#">spantree msti path-cost</a> command.
<b>Desig Cost</b>	The path cost of the Designated Port of the segment connected to this port. If this is the root bridge or the Spanning Tree status of the port is administratively disabled, this value is 0.
<b>Role</b>	The role of the port for this Spanning Tree instance. Possible port roles are: <b>root</b> , <b>designated</b> , <b>alternate</b> , <b>master</b> , and <b>backup</b> .
<b>Prim. Port</b>	The slot number for the module and the physical port number on that module for the primary port associated with this Spanning Tree instance. This information is only available if the port role is backup.
<b>Op Cnx</b>	Operational connection type: <b>PTP</b> , <b>NPT</b> , or <b>NS</b> (nonsignificant). Shows the current operational state of the port connection type. See the <a href="#">spantree vlan connection</a> command for more information.
<b>Op Edg</b>	Operational connection type: <b>EDG</b> . Shows the current operational state of the port connection type. See the <a href="#">spantree vlan connection</a> command for more information.
<b>Desig Bridge ID</b>	The bridge identifier for the designated bridge for this port segment.
<b>Note</b>	Displays a note if the port has entered the error violation state (ERR); then the port role of the port instance in that row becomes insignificant.

```
-> show spantree msti 0 ports configured
Spanning Tree Port Admin Configuration for Vlan 0
Port      Port  Adm Man. Config  Adm  Adm  Aut  Rstr  Rstr Role/
-----+-----+-----+-----+-----+-----+-----+-----+-----+
1/1       7  ENA No           0  AUT  No  Yes  No   No
1/2       7  ENA No           0  NPT  No  Yes  No   No
1/3       7  ENA No           0  NPT  No  Yes  No   No
1/4       7  ENA No           0  NPT  No  Yes  No   No
1/5       7  ENA No           0  NPT  No  Yes  No   No
```

```
-> spantree mode flat
-> show spantree msti 1 ports configured
Spanning Tree Port Admin Configuration for Msti 1
Port      Port  Adm Man. Config  Adm  Adm  Aut  Rstr  Rstr Role/
-----+-----+-----+-----+-----+-----+-----+-----+
1/1       7  ENA No           0  AUT  No  Yes  No   No   DIS
1/2       7  ENA No           0  AUT  No  Yes  No   No   DIS
1/3       7  ENA No           0  AUT  No  Yes  No   No   DIS
1/4       7  ENA No           0  AUT  No  Yes  No   No   DIS
1/5       7  ENA No           0  AUT  No  Yes  No   No   DIS
1/6       7  ENA No           0  AUT  No  Yes  No   No   DIS
1/7       7  ENA No           0  AUT  No  Yes  No   No   DIS
1/8       7  ENA No           0  AUT  No  Yes  No   No   DIS
1/9       7  ENA No           0  AUT  No  Yes  No   No   DIS
1/10      7  ENA No           0  AUT  No  Yes  No   No   DIS
1/11      7  ENA No           0  AUT  No  Yes  No   No   DIS
1/12      7  ENA No           0  AUT  No  Yes  No   No   DIS
```

### output definitions

<b>Port</b>	The slot number for the module and the physical port number or a logical port. If the slot number is 0, then the port number refers to a link aggregate logical port number (for example, 0/31).
<b>Port Pri</b>	The Spanning Tree priority for the port. It is a numeric value and the lower the number, the higher the priority. Configured through the <a href="#">spantree priority</a> command.
<b>Adm St</b>	The Spanning Tree administrative status of the port: <b>enabled</b> - ENA or <b>disabled</b> - DIS.
<b>Man. Mode</b>	The manual mode setting for the port: <b>yes</b> indicates that the blocking or forwarding state of the port was manually set and the port does not participate in the Spanning Tree Algorithm; <b>no</b> indicates that the Spanning Tree Algorithm is managing the port state. Configured through the <a href="#">spantree vlan path-cost</a> command.
<b>Config Cost</b>	The configured path cost value for this port. Configured through the <a href="#">spantree msti path-cost</a> command.
<b>Adm Cnx</b>	The administrative connection type: <b>PTP</b> , <b>NPT</b> , or <b>AUT</b> . Configured through the <a href="#">spantree vlan connection</a> command.
<b>Adm Edg</b>	The edge port administrative status: <b>yes</b> indicates that the port is an admin edge port; <b>no</b> indicates that the port is not an admin edge port. Configured through the <a href="#">spantree vlan connection</a> command.

*output definitions (continued)*


---

<b>Aut Edg</b>	The edge port automatic status: <b>yes</b> indicates that the port is an automatic edge port; <b>no</b> indicates that the port is not an automatic edge port. Configured through the <b>spantree cist auto-edge</b> or <b>spantree vlan auto-edge</b> command.
<b>Rstr Tcn</b>	The restricted TCN capability: <b>yes</b> indicates that the port supports the restricted TCN capability; <b>no</b> indicates that the port does not support the restricted TCN capability. Configured through the <b>spantree cist restricted-tcn</b> or <b>spantree vlan restricted-tcn</b> command.
<b>Rstr Role/Root Guard</b>	The restricted role port status: <b>yes</b> indicates that the port is a restricted role port; <b>no</b> indicates that the port is not a restricted role port. Configured through the <b>spantree cist restricted-role</b> or <b>spantree vlan restricted-role</b> command.

---

**Release History**

Release 5.1; command introduced.

**Related Commands**

<b>show spantree ports</b>	Displays Spanning Tree port information for the flat mode CIST instance or a per-VLAN mode VLAN instance.
<b>show spantree cist ports</b>	Displays Spanning Tree port information for a CIST instance when the switch is operating in the per-VLAN or flat Spanning Tree mode.
<b>show spantree vlan ports</b>	Displays Spanning Tree port information for a VLAN when the switch is operating in the per-VLAN or flat Spanning Tree mode.

**MIB Objects**

```
vStpInsPortTable
  vStpInsPortNumber
  vStpInsPortPriority
  vStpInsPortState
  vStpInsPortEnable
  vStpInsPortPathCost
  vStpInsPortDesignatedCost
  vStpInsPortDesignatedBridge
  vStpInsPortAdminEdge
  vStpInsPortAutoEdge
  vStpInsPortRestrictedRole
  vStpInsPortRestrictedTcn
  vStpInsPortManualMode
  vStpInsPortRole
  vStpInsPrimaryPortNumber
  vStpInsPortAdminConnectionType
  vStpInsPortOperConnectionType
```

---

## show spantree vlan ports

Displays Spanning Tree port information for a VLAN instance.

**show spantree vlan** [*vlan\_id*[-*vlan\_id2*]] **ports** [**forwarding** | **blocking** | **active** | **configured**]

---

### Syntax Definitions

<i>vlan_id</i> [- <i>vlan_id2</i> ]	An existing VLAN ID number. Use a hyphen to specify a range of VLAN IDs (for example, <b>vlan 10-15</b> ).
<b>forwarding</b>	Displays Spanning Tree operational port parameters for ports that are forwarding for the VLAN instance.
<b>blocking</b>	Displays Spanning Tree operational port parameters for ports that are blocked for the VLAN instance.
<b>active</b>	Displays a list of active ports associated with the VLAN instance.
<b>configured</b>	Displays Spanning Tree administrative port parameters for the VLAN instance.

### Defaults

parameter	default
<i>vlan_id</i>	all VLAN instances
<b>forwarding</b>   <b>blocking</b>   <b>active</b>   <b>configured</b>	all ports

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- If a *vlan\_id* number is *not* specified, this command displays the Spanning Tree port operational status, path cost, and role values for all VLAN instances.
- Specifying a range of VLAN IDs is also allowed. Use a hyphen to indicate a contiguous range (e.g., **show spantree vlan 10-15 ports**). Note that only one VLAN entry—a single VLAN ID or a range of VLAN IDs—is allowed with this command. Multiple entries are not accepted.
- This command displays Spanning Tree port information for a VLAN instance regardless of which mode (per-VLAN or flat) is active for the switch.
- Note that minimal information is displayed when this command is used in the flat mode, as VLAN instances are not active in this mode.
- The **configured** keyword is only available when a VLAN ID is specified with this command. In addition, this keyword cannot be used in combination with either the **forwarding** or **blocking** keywords.

## Examples

```
-> show spantree vlan ports
```

Vlan	Port	Oper Status	Path Cost	Role	Note
1	1/1/1	DIS	0	DIS	
1	1/1/2	DIS	0	DIS	
1	1/1/3	DIS	0	DIS	
1	1/1/4	DIS	0	DIS	
1	1/1/5	DIS	0	DIS	
1	1/1/6	DIS	0	DIS	
1	1/1/7	DIS	0	DIS	
1	1/1/8	DIS	0	DIS	
1	1/1/9	DIS	0	DIS	
1	1/1/10	DIS	0	DIS	
1	1/1/11	DIS	0	DIS	
1	1/1/12	DIS	0	DIS	
1	1/1/13	DIS	0	DIS	
1	1/1/14	DIS	0	DIS	
1	1/1/15	DIS	0	DIS	
1	1/1/16	DIS	0	DIS	
1	1/1/17	DIS	0	DIS	
1	1/1/18	DIS	0	DIS	
1	1/1/19	DIS	0	DIS	
1	1/1/20	DIS	0	DIS	
1	1/1/21	DIS	0	DIS	
1	1/1/22	DIS	0	DIS	
1	1/1/23	FORW	4	DESG	
1	1/1/24	FORW	4	ROOT	
1	1/1/25	DIS	0	DIS	
1	1/1/26	DIS	0	DIS	
1	0/10	DIS	0	DIS	

### output definitions

<b>Vlan</b>	The VLAN ID associated with the VLAN Spanning Tree instance. Configured through the <b>vlan</b> commands
<b>Port</b>	The slot number for the module and the physical port number or a logical port. If the slot number is 0, then the port number refers to a link aggregate logical port number (e.g., 0/31).
<b>Oper Status</b>	The port operational state as defined by application of the Spanning Tree Protocol. Possible port operational states include: disabled, blocking, listening, learning, and forwarding.
<b>Path Cost</b>	The contribution of this port to the path cost towards the Spanning Tree root bridge that includes this port. Path cost is a measure of the distance of the listed port from the root bridge in the number of hops. Configured through the <b>spantree vlan path-cost</b> command.
<b>Role</b>	The role of the port for this Spanning Tree instance. Possible port roles are: <b>root</b> , <b>designated</b> , <b>alternate</b> , <b>master</b> , and <b>backup</b> .
<b>Note</b>	Displays a note if the port has entered the error violation state (ERR); then the port role of the port instance in that row becomes insignificant.

-> show spantree vlan 1 ports

Spanning Tree Port Admin Configuration for Vlan 1

Port	Pri	Adm St.	Man. Mode	Config Cost	Adm Cnx	Adm Edg	Aut Edg	Rstr Tcn	Rstr Root	Role/ Guard
1/1/1	7	ENA	No	0	AUT	No	Yes	No	No	No
1/1/2	7	ENA	No	0	AUT	No	Yes	No	No	No
1/1/3	7	ENA	No	0	AUT	No	Yes	No	No	No
1/1/4	7	ENA	No	0	AUT	No	Yes	No	No	No
1/1/5	7	ENA	No	0	AUT	No	Yes	No	No	No
1/1/6	7	ENA	No	0	AUT	No	Yes	No	No	No
1/1/7	7	ENA	No	0	AUT	No	Yes	No	No	No
1/1/8	7	ENA	No	0	AUT	No	Yes	No	No	No
1/1/9	7	ENA	No	0	AUT	No	Yes	No	No	No
1/1/10	7	ENA	No	0	AUT	No	Yes	No	No	No
1/1/11	7	ENA	No	0	AUT	No	Yes	No	No	No
1/1/12	7	ENA	No	0	AUT	No	Yes	No	No	No
1/1/13	7	ENA	No	0	AUT	No	Yes	No	No	No
1/1/14	7	ENA	No	0	AUT	No	Yes	No	No	No
1/1/15	7	ENA	No	0	AUT	No	Yes	No	No	No
1/1/16	7	ENA	No	0	AUT	No	Yes	No	No	No
1/1/17	7	ENA	No	0	AUT	No	Yes	No	No	No
1/1/18	7	ENA	No	0	AUT	No	Yes	No	No	No
1/1/19	7	ENA	No	0	AUT	No	Yes	No	No	No
1/1/20	7	ENA	No	0	AUT	No	Yes	No	No	No
1/1/21	7	ENA	No	0	AUT	No	Yes	No	No	No
1/1/22	7	ENA	No	0	AUT	No	Yes	No	No	No
1/1/23	7	ENA	No	0	AUT	No	Yes	No	No	No
1/1/24	7	ENA	No	0	AUT	No	Yes	No	No	No
1/1/25	7	ENA	No	0	AUT	No	Yes	No	No	No
1/1/26	7	ENA	No	0	AUT	No	Yes	No	No	No
0/10	7	ENA	No	0	AUT	No	Yes	No	No	No

-> show spantree vlan 1 ports active

Spanning Tree Port Summary for Vlan 1

Port	Oper St	Path Cost	Desig Cost	Prim. Role	Op Port	Op Cnx	Op Edg	Desig Bridge ID	Note
1/1/23	FORW	4	8	DESG	1/1/23	PTP	NO	8000-94:24:e1:55:85:29	
1/1/24	FORW	4	4	ROOT	1/1/24	PTP	NO	8000-00:d0:95:ec:78:30	

-> show spantree vlan 10-13 ports

Spanning Tree Port Summary for Vlan 10

Port	Oper St	Path Cost	Desig Cost	Prim. Role	Op Port	Op Cnx	Op Edg	Desig Bridge ID	Note
1/1/10	DIS	0	0	DIS	1/1/10	NS	NO	0000-00:00:00:00:00:00	

Spanning Tree Port Summary for Vlan 11

Port	Oper St	Path Cost	Desig Cost	Prim. Role	Op Port	Op Cnx	Op Edg	Desig Bridge ID	Note
1/1/14	DIS	0	0	DIS	1/1/14	NS	NO	0000-00:00:00:00:00:00	
1/1/15	DIS	0	0	DIS	1/1/15	NS	NO	0000-00:00:00:00:00:00	

Spanning Tree Port Summary for Vlan 12

Port	Oper St	Path Cost	Desig Cost	Prim. Role	Op Port	Op Cnx	Op Edg	Desig Bridge ID	Note
1/1/20	DIS	0	0	DIS	1/1/20	NS	NO	0000-00:00:00:00:00:00	
1/1/21	DIS	0	0	DIS	1/1/21	NS	NO	0000-00:00:00:00:00:00	

```
Spanning Tree Port Summary for Vlan 13
```

Port	Oper St	Path Cost	Desig Cost	Role	Prim. Port	Op Cnx	Op Edg	Desig Bridge ID	Note
1/1/26	DIS	0	0	DIS	1/1/26	NS	NO	0000-00:00:00:00:00:00	

**output definitions**

<b>Port</b>	The slot number for the module and the physical port number or a logical port. If the slot number is 0, then the port number refers to a link aggregate logical port number (e.g., 0/31).
<b>Oper St</b>	The port operational state as defined by application of the Spanning Tree Protocol. Possible port operational states include: disabled, blocking, listening, learning, and forwarding.
<b>Path Cost</b>	The contribution of this port to the path cost towards the Spanning Tree root bridge that includes this port. Path cost is a measure of the distance of the listed port from the root bridge in the number of hops. Configured through the <a href="#">spantree vlan path-cost</a> command.
<b>Desig Cost</b>	The path cost of the Designated Port of the segment connected to this port. If this is the root bridge or the Spanning Tree status of the port is administratively disabled, this value is 0.
<b>Role</b>	The role of the port for this Spanning Tree instance. Possible port roles are: <b>root</b> , <b>designated</b> , <b>alternate</b> , <b>master</b> , and <b>backup</b> .
<b>Prim. Port</b>	The slot number for the module and the physical port number on that module for the primary port associated with this Spanning Tree instance. This information is only available if the port role is backup.
<b>Op Cnx</b>	Operational connection type: <b>PTP</b> , <b>NPT</b> , or <b>NS</b> (nonsignificant). Shows the current operational state of the port's connection type. See the <a href="#">spantree vlan connection</a> command for more information.
<b>Op Edg</b>	Operational connection type: <b>EDG</b> . Shows the current operational state of the port's connection type. See the <a href="#">spantree vlan connection</a> command for more information.
<b>Desig Bridge ID</b>	The bridge identifier for the designated bridge for this port's segment.
<b>Note</b>	Displays a note if the port has entered the error violation state (ERR); then the port role of the port instance in that row becomes insignificant.

```
-> show spantree vlan 1 ports configured
```

```
Spanning Tree Port Admin Configuration for Vlan 1
```

Port	Port Pri	Adm St.	Man. Mode	Config Cost	Adm Cnx	Adm Edg	Aut Edg	Rstr Tcn	Rstr Root	Role/Guard
1/1/1	7	ENA	No	0	AUT	No	Yes	No	No	No
1/1/2	7	ENA	No	0	AUT	No	Yes	No	No	No
1/1/3	7	ENA	No	0	AUT	No	Yes	No	No	No
1/1/4	7	ENA	No	0	AUT	No	Yes	No	No	No
1/1/5	7	ENA	No	0	AUT	No	Yes	No	No	No
1/1/6	7	ENA	No	0	AUT	No	Yes	No	No	No
1/1/7	7	ENA	No	0	AUT	No	Yes	No	No	No
1/1/8	7	ENA	No	0	AUT	No	Yes	No	No	No
1/1/9	7	ENA	No	0	AUT	No	Yes	No	No	No
1/1/10	7	ENA	No	0	AUT	No	Yes	No	No	No
1/1/11	7	ENA	No	0	AUT	No	Yes	No	No	No

```

1/1/12    7  ENA  No      0  AUT  No  Yes  No    No
1/1/13    7  ENA  No      0  AUT  No  Yes  No    No
1/1/14    7  ENA  No      0  AUT  No  Yes  No    No
1/1/15    7  ENA  No      0  AUT  No  Yes  No    No
1/1/16    7  ENA  No      0  AUT  No  Yes  No    No
1/1/17    7  ENA  No      0  AUT  No  Yes  No    No
1/1/18    7  ENA  No      0  AUT  No  Yes  No    No
1/1/19    7  ENA  No      0  AUT  No  Yes  No    No
1/1/20    7  ENA  No      0  AUT  No  Yes  No    No
1/1/21    7  ENA  No      0  AUT  No  Yes  No    No
1/1/22    7  ENA  No      0  AUT  No  Yes  No    No
1/1/23    7  ENA  No      0  AUT  No  Yes  No    No
1/1/24    7  ENA  No      0  AUT  No  Yes  No    No
1/1/25    7  ENA  No      0  AUT  No  Yes  No    No
1/1/26    7  ENA  No      0  AUT  No  Yes  No    No
0/10     7  ENA  No      0  AUT  No  Yes  No    No

```

-> show spantree vlan 10-13 ports configured

Spanning Tree Port Admin Configuration for Vlan 10

Port	Pri	Adm St.	Man. Mode	Config Cost	Adm Cnx	Adm Edg	Aut Edg	Rstr Tcn	Rstr Root	Role/ Guard
1/1/10	7	ENA	No	0	AUT	No	Yes	No	No	No

Spanning Tree Port Admin Configuration for Vlan 11

Port	Pri	Adm St.	Man. Mode	Config Cost	Adm Cnx	Adm Edg	Aut Edg	Rstr Tcn	Rstr Root	Role/ Guard
1/1/14	7	ENA	No	0	AUT	No	Yes	No	No	No
1/1/15	7	ENA	No	0	AUT	No	Yes	No	No	No

Spanning Tree Port Admin Configuration for Vlan 12

Port	Pri	Adm St.	Man. Mode	Config Cost	Adm Cnx	Adm Edg	Aut Edg	Rstr Tcn	Rstr Root	Role/ Guard
1/1/20	7	ENA	No	0	AUT	No	Yes	No	No	No
1/1/21	7	ENA	No	0	AUT	No	Yes	No	No	No

Spanning Tree Port Admin Configuration for Vlan 13

Port	Pri	Adm St.	Man. Mode	Config Cost	Adm Cnx	Adm Edg	Aut Edg	Rstr Tcn	Rstr Root	Role/ Guard
1/1/26	7	ENA	No	0	AUT	No	Yes	No	No	No

### output definitions

<b>Port</b>	The slot number for the module and the physical port number or a logical port. If the slot number is 0, then the port number refers to a link aggregate logical port number (e.g., 0/31).
<b>Port Pri</b>	The Spanning Tree priority for the port (0–15). The lower the number, the higher the priority. Configured through the <a href="#">spantree priority</a> command.
<b>Adm St</b>	The Spanning Tree administrative status of the port: <b>enabled</b> or <b>disabled</b> . Configured through the <a href="#">spantree vlan</a> command to enable or disable Spanning Tree on a port.
<b>Man. Mode</b>	The manual mode setting for the port: <b>yes</b> indicates that the blocking or forwarding state of the port was manually set and the port does not participate in the Spanning Tree Algorithm; <b>no</b> indicates that the Spanning Tree Algorithm is managing the port state. Configured through the <a href="#">spantree vlan mode</a> command.



*output definitions (continued)*


---

<b>Config Cost</b>	The configured path cost value for this port. Configured through the <b>spantree vlan path-cost</b> command.
<b>Adm Cnx</b>	The administrative connection type: <b>PTP</b> , <b>NPT</b> , or <b>AUT</b> . Configured through the <b>spantree vlan path-cost</b> command.
<b>Adm Edg</b>	The edge port administrative status: <b>yes</b> indicates that the port is an admin edge port; <b>no</b> indicates that the port is not an admin edge port. Configured through the <b>spantree vlan connection</b> command.
<b>Aut Edg</b>	The edge port automatic status: <b>yes</b> indicates that the port is an automatic edge port; <b>no</b> indicates that the port is not an automatic edge port. Configured through the <b>spantree cist auto-edge</b> or <b>spantree vlan auto-edge</b> command.
<b>Rstr Tcn</b>	The restricted TCN capability: <b>yes</b> indicates that the port supports the restricted TCN capability; <b>no</b> indicates that the port does not support the restricted TCN capability. Configured through the <b>spantree cist restricted-tcn</b> or <b>spantree vlan restricted-tcn</b> command.
<b>Rstr Role/Root Guard</b>	The restricted status of the port: <b>Yes</b> indicates that the port is restricted from becoming the root; <b>No</b> indicates that the port is not restricted from becoming the root. Configured through the <b>spantree cist restricted-role</b> or <b>spantree vlan restricted-role</b> command.

---

**Release History**

Release 5.1; command introduced.

**Related Commands**

<b>show spantree ports</b>	Displays Spanning Tree port information for the flat mode CIST instance or a per-VLAN mode VLAN instance.
<b>show spantree cist ports</b>	Displays Spanning Tree port information for a CIST instance when the switch is operating in the per-VLAN or flat Spanning Tree mode.
<b>show spantree msti ports</b>	Displays Spanning Tree port information for an MSTI when the switch is operating in the per-VLAN or flat Spanning Tree mode.

**MIB Objects**

```
vStpInsPortTable
  vStpInsPortNumber
  vStpInsPortPriority
  vStpInsPortState
  vStpInsPortEnable
  vStpInsPortPathCost
  vStpInsPortDesignatedCost
  vStpInsPortDesignatedBridge
  vStpInsPortAdminConnectionType
  vStpInsPortOperConnectionType
  vStpInsPortAdminEdge
  vStpInsPortAutoEdge
  vStpInsPortRestrictedRole
  vStpInsPortRestrictedTcn
```

```
vStpInsPortManualMode  
vStpInsPortRole  
vStpInsPrimaryPortNumber  
vStpInsPortAdminConnectionType  
vStpInsPortOperConnectionType
```

---

## show spantree mode

Displays the current global Spanning Tree mode parameter values for the switch.

**show spantree mode**

---

### Syntax Definition

N/A

### Defaults

NA

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

The global parameters for spanning tree can be activated or configured using the related commands.

### Examples

```
-> show spantree mode
Spanning Tree Global Parameters
  Current Running Mode      : Per VLAN,
  Current Protocol         : N/A (Per VLAN),
  Path Cost Mode           : 32 BIT,
  Auto Vlan Containment    : N/A
  Cisco PVST+ mode         : Disabled
  Vlan Consistency check   : Disabled
```

#### *output definitions*

---

<b>Current Running Mode</b>	The spantree mode active on the switch. ( <b>Flat</b> or <b>Per VLAN</b> )
<b>Current Protocol</b>	The spantree protocol active on the switch.
<b>Path Cost Mode</b>	The path cost mode value configured on the switch. ( <b>AUTO</b> or <b>32 BIT</b> )
<b>Auto Vlan Containment</b>	The Auto VLAN containment mode configured on the switch ( <b>Enabled</b> or <b>Disabled</b> ).
<b>Cisco PVST+ mode</b>	<i>Not supported in this release.</i>
<b>Vlan Consistency check</b>	Specifies if VLAN consistency check is <b>Enabled</b> or <b>Disabled</b> on the switch.

---

## Related Commands

<b>spantree mode</b>	Assigns a flat Spanning Tree or per-VLAN Spanning Tree operating mode for the switch.
<b>spantree protocol</b>	Configures the Spanning Tree protocol for the flat mode Common and Internal Spanning Tree (CIST) instance or for an individual VLAN instance if the switch is running in the per-VLAN mode.
<b>spantree path-cost-mode</b>	Configures the automatic selection of a 16-bit path cost for STP/RSTP ports and a 32-bit path cost for MSTP ports or sets all path costs to use a 32-bit value.
<b>spantree auto-vlan-containment</b>	Enables or disables Auto VLAN Containment (AVC).

## Release History

Release 5.1; command introduced.

## MIB Objects

```
vStpTable
  vStpMode
vStpInsTable
  vStpInsProtocolSpecification
vStpBridge
  vStpPathCostMode
vStpMstRegionTable
  vStpBridgeModePVST
vStpBridge
  vStpBridgeAutoVlanContainment
```

---

## show spantree mst

Displays the Multiple Spanning Tree (MST) information for a MST region or the specified port or link aggregate on the switch.

```
show spantree mst {region | port chassis/slot/port | linkagg agg_id}
```

---

### Syntax Definitions

<i>chassis</i>	The chassis identifier.
<i>slot/port[-port2]</i>	The slot number and port number of the physical port.
<i>agg_id[-agg_id2]</i>	The link aggregate ID number.

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- Three MST region attributes (configuration name, revision level, and configuration digest) define an MST region as required by the IEEE 802.1Q 2005 standard. Switches that share the same values for these attributes are all considered part of the same region. Currently each switch can belong to one MST region at a time.
- This command is available when the switch is operating in either the per-VLAN or flat Spanning Tree mode.
- Specify the port number or link aggregate ID along with the **port** or **linkagg** keyword to get information related to the specified port or link aggregate.

### Examples

```
-> show spantree mst region
```

```
Configuration Name   = Region 1
Revision Level       = 0
Configuration Digest = 0xac36177f 50283cd4 b83821d8 ab26de62
Revision Max hops    = 20
Cist Instance Number = 0
```

```
-> show spantree mst port 1/2
```

MST	Role	State	Pth	Cst	Edge	Boundary	Op	Cnx	Vlans
0	DIS	DIS		0	NO	YES	NS		1
12	DIS	DIS		0	NO	YES	NS		

```
-> show spantree mst linkagg 4
```

```
MST  Role  State Pth Cst  Edge Boundary Op Cnx Vlans
-----+-----+-----+-----+-----+-----+-----+-----+-----+-----
  0  DESG   FORW    6000  NO    NO    NS    1
  1  DESG   FORW    0    NO    NO    NS
  2  DESG   FORW    0    NO    NO    NS
```

### output definitions

<b>Configuration Name</b>	An alphanumeric string that identifies the name of the MST region. Use the <b>spantree mst region name</b> command to define this value.
<b>Revision Level</b>	A numeric value that identifies the MST region revision level for the switch.
<b>Configuration Digest</b>	An MST region identifier consisting of a 16 octet hex value (as per the IEEE 802.1Q 2005 standard) that represents all defined MSTIs and their associated VLAN ranges. Use the <b>spantree msti</b> and <b>spantree msti vlan</b> commands to define VLAN to MSTI associations.
<b>Revision Max hops</b>	The number of maximum hops authorized for region information. Configured through the <b>spantree mst region max-hops</b> command.
<b>Cist Instance Number</b>	The number of the CIST instance, which is currently zero as there is only one region per switch. Therefore, only one CIST exists per switch. Note that this instance is also known as the flat mode instance and is known as bridge 1 when using STP or RSTP.

### Release History

Release 5.1; command introduced.

### Related Commands

<b>show spantree msti vlan-map</b>	Displays the range of VLANs associated to the specified MSTI.
<b>show spantree cist vlan-map</b>	Displays the range of VLANs associated to the CIST instance.
<b>show spantree map-msti</b>	Displays the MSTI that is associated to the specified VLAN

### MIB Objects

```
vStpMstRegionTable
  vStpMstRegionNumber
  vStpMstRegionConfigDigest
  vStpMstRegionConfigName
  vStpMstRegionConfigRevisionLevel
  vStpMstRegionCistInstanceNumber
  vStpMstRegionMaxHops
```

## show spantree msti vlan-map

Displays the range of VLANs associated with the specified Multiple Spanning Tree Instance (MSTI).

```
show spantree msti [msti_id] vlan-map
```

---

### Syntax Definitions

*msti\_id* An existing MSTI ID number.

### Defaults

By default, the VLAN to MSTI mapping is displayed for all MSTIs.

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- If an *msti\_id* is not specified, then the VLAN to MSTI mapping for all defined MSTIs is displayed.
- This command is available when the switch is operating in either the per-VLAN or flat Spanning Tree mode.
- Initially all VLANs are associated with the flat mode CIST instance.

### Examples

```
-> show spantree msti vlan-map
```

```
Cist
Name          :
VLAN list     : 1-9,14-4094
```

```
Msti 1
Name          :
VLAN list     : 10-11
```

```
Msti 2
Name          :
VLAN list     : 12-13
```

```
-> show spantree msti 2 vlan-map
```

```
Msti 2
Name          : MS1,
VLAN list     : 12-13
```

### output definitions

---

<b>Cist Instance</b>	Identifies MSTI VLAN mapping information for the CIST instance.
<b>Msti</b>	The MSTI ID number that identifies an association between a Spanning Tree instance and a range of VLANs.

*output definitions (continued)*

---

<b>Name</b>	An alphanumeric value that identifies an MSTI name. Use the <a href="#">spantree msti</a> command to define an MSTI name.
<b>VLAN list</b>	The range of VLAN IDs that are associated with this MSTI.

---

**Release History**

Release 5.1; command introduced.

**Related Commands**

<a href="#">show spantree mst</a>	Displays the MST region information for the switch.
<a href="#">show spantree cist vlan-map</a>	Displays the range of VLANs associated to the CIST instance.
<a href="#">show spantree map-msti</a>	Displays the MSTI that is associated to the specified VLAN

**MIB Objects**

vStpMstInstanceTable  
  vStpMstInstanceNumber  
  vStpMstInstanceName  
  vStpMstInstanceVlanBitmapState

---



## show spantree cist vlan-map

Displays the range of VLANs associated with the flat mode Common and Internal Spanning Tree (CIST) instance.

**show spantree cist vlan-map**

---

### Syntax Definitions

N/A

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

This command is available when the switch is operating in either the per-VLAN or flat Spanning Tree mode.

### Examples

```
-> show spantree cist vlan-map
```

```
Cist
Name           : CIST1,
VLAN list      : 1-9,14-4094
```

### *output definitions*

---

<b>Name</b>	An alphanumeric value that identifies the name of the CIST. Use the <b>spantree msti</b> command to define a name for this instance.
<b>VLAN list</b>	The range of VLAN IDs that are associated with the CIST instance.

---

### Release History

Release 5.1; command introduced.

### Related Commands

- show spantree mst** Displays the MST region information for the switch.
- show spantree msti vlan-map** Displays the range of VLANs associated to the specified MSTI.
- show spantree map-msti** Displays the MSTI that is associated to the specified VLAN

**MIB Objects**

```
vStpMstInstanceTable  
  vStpMstInstanceNumber  
  vStpMstInstanceName  
  vStpMstInstanceVlanBitmapState
```

---

## show spantree map-msti

Displays the Multiple Spanning Tree Instance (MSTI) that is associated to the specified VLAN.

```
show spantree [vlan vlan_id] map-msti
```

---

### Syntax Definitions

*vlan\_id* An existing VLAN ID number.

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- This command is available when the switch is operating in either the per-VLAN or flat Spanning Tree mode.
- Initially all VLANs are associated with the flat mode CIST instance.

### Examples

```
-> show spantree map-msti

Vlan   Msti/Cist(0)
-----+-----
   200     1
```

### Release History

Release 5.1; command introduced.

### Related Commands

- |   |   |
|---|---|
| <a href="#">show spantree mst</a>           | Displays the MST region information for the switch.           |
| <a href="#">show spantree msti vlan-map</a> | Displays the range of VLANs associated to the specified MSTI. |
| <a href="#">show spantree cist vlan-map</a> | Displays the range of VLANs associated to the CIST instance.  |

### MIB Objects

```
vStpMstVlanAssignmentTable
  vStpMstVlanAssignmentVlanNumber
  vStpMstVlanAssignmentMstiNumber
```

---

# 8 Link Aggregation Commands

Link aggregation combines multiple physical links between two switches into one logical link. The aggregate group operates within Spanning Tree as one virtual port and can provide more bandwidth than a single link. It also provides redundancy. If one physical link in the aggregate group goes down, link integrity is maintained.

There are two types of aggregate groups: static and dynamic. Static aggregate groups are manually configured on the switch with static links. Dynamic groups are set up on the switch but they aggregate links as necessary according to the Link Aggregation Control Protocol (LACP).

The dynamic aggregation software is compatible only with the following IEEE standard:

802.3ad — Aggregation of Multiple Link Segments

MIB information for the link aggregation commands is as follows:

*Filename:* ALCATEL-IND1-LAG-MIB.mib

*Module:* alcatelIND1LAGMIB

A summary of available commands is listed here:

---

<b>Static link aggregates</b>	<code>linkagg static agg size</code> <code>linkagg static agg name</code> <code>linkagg static agg wait-to-restore-time</code> <code>linkagg static agg admin-state</code> <code>linkagg static port agg</code>
<b>Dynamic link aggregates</b>	<code>linkagg lacp agg size</code> <code>linkagg lacp agg name</code> <code>linkagg lacp agg wait-to-restore-time</code> <code>linkagg lacp agg admin-state</code> <code>linkagg lacp agg actor admin-key</code> <code>linkagg lacp agg actor system-priority</code> <code>linkagg lacp agg actor system-id</code> <code>linkagg lacp agg partner system-id</code> <code>linkagg lacp agg partner system-priority</code> <code>linkagg lacp agg partner admin-key</code> <code>linkagg lacp port actor admin-key</code> <code>linkagg lacp port actor admin-state</code> <code>linkagg lacp port actor system-id</code> <code>linkagg lacp port actor system-priority</code> <code>linkagg lacp agg partner admin-state</code> <code>linkagg lacp port partner admin system-id</code> <code>linkagg lacp port partner admin-key</code> <code>linkagg lacp port partner admin system-priority</code> <code>linkagg lacp port actor port priority</code> <code>linkagg lacp port partner admin-port</code> <code>linkagg lacp port partner admin port-priority</code>
<b>Static and dynamic</b>	<code>show linkagg</code> <code>show linkagg port</code> <code>show linkagg accounting</code> <code>show linkagg counters</code> <code>show linkagg traffic</code> <code>clear linkagg-statistics</code>

---

## linkagg static agg size

Creates a static aggregate group between two switches. A static aggregate group contains static links.

**linkagg static agg** *agg\_id[-agg\_id2]* **size** *size* [**name** *name*] [**admin-state** {**enable** | **disable**}] [**multi-chassis active**] [**hash** {**source-mac** | **destination-mac** | **source-and-destination-mac** | **source-ip** | **destination-ip** | **source-and-destination-ip** | **tunnel-protocol**}]

**no linkagg static agg** *agg\_id[-agg\_id2]*

---

### Syntax Definitions

<i>agg_id[-agg_id2]</i>	The link aggregate ID number corresponding to the static aggregate group. Use a hyphen to specify a range of IDs (10-20).
<i>size</i>	The maximum number of links allowed in the aggregate group.
<i>name</i>	The name of the static aggregate group. Can be any alphanumeric string. A group name with spaces must be contained within quotes (for example, "Static Group 1").
<b>enable</b>	Specifies that the static aggregate group is active and is able to aggregate links.
<b>disable</b>	Specifies that the static aggregate group is inactive and not able to aggregate links.
<b>multi-chassis active</b>	<i>This parameter is not supported.</i>
<b>source-mac</b>	<i>This parameter is not supported.</i>
<b>destination-mac</b>	Selects the destination MAC address hashing option.
<b>source-and-destination-mac</b>	Selects the source MAC address and destination MAC address hashing option.
<b>source-ip</b>	<i>This parameter is not supported.</i>
<b>destination-ip</b>	Selects the destination IP hashing option.
<b>source-and-destination-ip</b>	Selects the source IP and destination IP hashing option.
<b>tunnel-protocol</b>	<i>This parameter is not supported.</i>

### Defaults

parameter	default
<b>enable</b>   <b>disable</b>	enable
<i>hash_option</i>	<b>source-and-destination-IP</b> (Layer 3 traffic) <b>source-and-destination-mac</b> (Layer 2 traffic)

### Platforms Supported

OmniSwitch 2260, 2360

## Usage Guidelines

- Use the **no** form of this command to remove a static aggregate group or a range of static aggregate groups from the configuration.
- Link aggregation cannot be configured on an AppMon enabled port.
- If the static aggregate has any attached ports, delete the attached ports with the **no** form of the **linkagg static port agg** command then remove the static link aggregate ID. Delete the attached ports using the **no linkagg static port** command.
- Specify the **hash** parameter option when the link aggregate is first created. The hashing algorithm options apply to unicast traffic and are not modifiable once the aggregate is created. If different options are required:
  - Disassociate all ports currently associated with the aggregate.
  - Delete the aggregate from the switch configuration.
  - Create the aggregate again with the new hashing options.
- It is not necessary to administratively down the linkagg ports before changing the hashing algorithm, but doing so is recommended to avoid any loss of traffic.
- The hashing algorithm does not take into consideration the speed of the ports to distribute the traffic. In other words, the same number of flows is distributed evenly on each port without consideration of the line speed.
- Aggregate load balancing is performed at the ingress side.
- Per-aggregate hashing is local to the switch, so each side of the aggregation can use different configurations for the hashing algorithms.
- Use the **linkagg lacp agg size** command to create a dynamic aggregation (LACP) group.

## Examples

```
-> linkagg static agg 3-10 size 8
-> linkagg static agg 4 size 2 admin-state disable
-> linkagg static agg 4 size 2 hash source-and-destination-ip
```

## Release History

Release 5.1; command introduced.

## Related Commands

**show linkagg** Displays information about static and dynamic (LACP) link aggregate groups.

## MIB Objects

```
alclnkaggAggTable
  alclnkaggAggNumber
  alclnkaggAggSize
  alclnkaggAggLacpType
  alclnkaggAggName
  alclnkaggAggAdminState
  alclnkaggAggPortSelectionHash
```

## linkagg static agg name

Configures a name for an existing static aggregate group.

**linkagg static agg** *agg\_id*[-*agg\_id2*] **name** *name*

**no linkagg static agg** *agg\_id*[-*agg\_id2*] **name**

---

### Syntax Definitions

*agg\_id*[-*agg\_id2*]

The link aggregate ID number corresponding to the static aggregate group. Use a hyphen to specify a range of IDs (10-20).

*name*

The name of the static aggregation group, can be an alphanumeric string. A group name with spaces must be contained within quotes (for example, "Static Group 1")

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- Use the **no** form of this command to remove a name from a static aggregate or from a range of static aggregates.
- You must assign names to static link aggregate IDs individually.
- To specify a range of link aggregates, use hyphen between the first and last link aggregate IDs of the range. A range of link aggregate IDs can be used only with the **no** form of this command.

### Examples

```
-> linkagg static agg 2 name accounting
-> no linkagg static agg 2-10 name
```

### Release History

Release 5.1; command introduced.



## Related Commands

[linkagg static agg size](#)

Creates a static aggregate group.

[show linkagg](#)

Displays information about static and dynamic (LACP) aggregate groups.

## MIB Objects

alclnkaggAggTable

alclnkaggAggNumber

alclnkaggAggName

---

## linkagg static agg wait-to-restore-time

Configures the number of minutes to wait before bringing up a link aggregate that is attached to other link aggregates.

```
linkagg static agg agg_id[-agg_id2] wait-to-restore-time wtr_minutes
```

```
no linkagg static agg agg_id[-agg_id2] wait-to-restore-time
```

---

### Syntax Definitions

*agg\_id*[-*agg\_id2*]

The link aggregate ID number corresponding to the static aggregate group. Use a hyphen to specify a range of IDs (10-20).

*wtr\_minutes*

The number of minutes the switch waits to bring a link aggregate up. The range is 0–12 minutes.

### Defaults

By default, the wait-to-restore timer is set to 0 (disabled).

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- Use the **no** form of this command to disable the wait-to-restore timer for the specified link aggregate or aggregates.
- If a link aggregate is not attached to other links, this timer value is ignored and the aggregate is immediately brought up.

### Examples

```
-> linkagg static agg 2 wait-to-restore-time 10
-> linkagg static agg 2 wait-to-restore-time 0
-> linkagg static agg 4 wait-to-restore-time 5
-> no linkagg static agg 4 wait-to-restore-time
```

### Release History

Release 5.1; command introduced.

## Related Commands

[linkagg static agg size](#)

Creates a static aggregate group.

[show linkagg](#)

Displays information about static and dynamic (LACP) aggregate groups.

## MIB Objects

alclnkaggAggTable

alclnkaggAggNumber

alclnkaggAggWTRTimer

---

## linkagg static agg admin-state

Enables or disables the administrative state of a static link aggregation group.

```
linkagg static agg agg_id[-agg_id2] admin-state {enable | disable}
```

---

### Syntax Definitions

<i>agg_id</i> [- <i>agg_id2</i> ]	The link aggregate ID number corresponding to the static aggregate group. Use a hyphen to specify a range of IDs (10-20).
<b>enable</b>	Specifies that the static aggregate group is active and is able to aggregate links.
<b>disable</b>	Specifies that the static aggregate group is inactive and not able to aggregate links.

### Defaults

---

parameter	default
<b>enable   disable</b>	enable

---

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

When the administrative state is set to **disable**, the static aggregate group is disabled.

### Examples

```
-> linkagg static agg 2 admin-state disable
```

### Release History

Release 5.1; command introduced.

### Related Commands

<a href="#">linkagg static agg size</a>	Creates a static aggregate group.
<a href="#">show linkagg</a>	Displays information about static and dynamic (LACP) aggregate groups.

### MIB Objects

```
alclnkaggAggTable  
  alclnkaggAggNumber  
  alclnkaggAggAdminState
```

---

## linkagg static port agg

Configures a slot and port for a static aggregate group.

**linkagg static port** *chassis/slot/port[-port2]* **agg** *agg\_id*

**no linkagg static port** *chassis/slot/port[-port2]*

---

### Syntax Definitions

<i>chassis</i>	The chassis identifier.
<i>slot/port[-port2]</i>	The slot number for this aggregate and the port that the switch initially uses as the Spanning Tree virtual port for this aggregate. Use a hyphen to specify a range of ports (2/1-5).
<i>agg_id</i>	The ID number corresponding to the static aggregate group.

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- Use the **no** form of this command to remove one or more ports from a static aggregate group.
- A port can belong to only one aggregate group.
- Ports that belong to the same static aggregate group need not be configured sequentially and can be on any Network Interface (NI).
- To specify a range of link aggregates, use hyphen between the first and last link aggregate IDs of the range. A range of link aggregate IDs can be used only with the **no** form of this command.

### Examples

```
-> linkagg static port 2/1-5 agg 4  
-> no linkagg static port 2/1-5
```

### Release History

Release 5.1; command introduced.

## Related Commands

**linkagg static agg size**

Creates a static aggregate group.

**show linkagg port**

Displays information about link aggregation ports.

## MIB Objects

alclnkaggAggPortTable

alclnkaggAggPortGlobalPortNumber

alclnkaggAggPortLacpType

alclnkaggAggPortSelectedAggNumber

---

## linkagg lacp agg size

Creates a dynamic aggregate group that uses the Link Aggregation Control Protocol (LACP) to establish and maintain link aggregation. The **size** parameter is required to create the link aggregate group.

**linkagg lacp agg** *agg\_id*[-*agg\_id2*] **size** *size*

[**name** *name*]

[**admin-state** {**enable** | **disable**}]

[**actor admin-key** *actor\_admin\_key*]

[**actor system-priority** *actor\_system\_priority*]

[**actor system-id** *actor\_system\_id*]

[**partner system-id** *partner\_system\_id*]

[**partner system-priority** *partner\_system\_priority*]

[**partner admin-key** *partner\_admin\_key*]

[**multi-chassis active**]

[**hash** {**source-mac** | **destination-mac** | **source-and-destination-mac** | **source-ip** | **destination-ip** | **source-and-destination-ip** | **tunnel-protocol**}]

**no linkagg lacp agg** *agg\_id*[-*agg\_id2*] **size** *size*

---

### Syntax Definitions

<i>agg_id</i> [- <i>agg_id2</i> ]	The link aggregate ID number corresponding to the dynamic aggregate group. Use a hyphen to specify a range of IDs (10-20).
<i>size</i>	The maximum number of links that can belong to the aggregate.
<i>name</i>	The name of the dynamic aggregate group. can be an alphanumeric string. A group name with spaces must be contained within quotes (for example, "Dynamic Group 1").
<b>enable</b>	Specifies that the dynamic aggregate group is active and is able to aggregate links.
<b>disable</b>	Specifies that the dynamic aggregate group is inactive and not able to aggregate links.
<i>actor_admin_key</i>	The administrative key value associated with the dynamic aggregate group.
<i>actor_system_priority</i>	The priority of the dynamic aggregate group.
<i>actor_system_id</i>	The MAC address of the dynamic aggregate group on the switch.
<i>partner_system_id</i>	The MAC address of the aggregate group of the remote system which is attached to the aggregate group of the switch.
<i>partner_system_priority</i>	The priority of the remote system to which the aggregation group is attached.
<i>partner_admin_key</i>	The administrative key for the remote partner of the aggregation group.
<b>source-mac</b>	<i>This parameter is not supported.</i>
<b>destination-mac</b>	Selects the destination MAC address hashing option.
<b>source-and-destination-mac</b>	Selects the source MAC address and destination MAC address hashing option.
<b>source-ip</b>	<i>This parameter is not supported.</i>

<b>destination-ip</b>	Selects the destination IP hashing option.
<b>source-and-destination-ip</b>	Selects the source IP and destination IP hashing option.
<b>tunnel-protocol</b>	<i>This parameter is not supported.</i>

## Defaults

parameter	default
<b>enable   disable</b>	enable
<i>hash_option</i>	<b>source-and-destination-ip</b> (Layer 3 traffic) <b>source-and-destination-mac</b> (Layer 2 traffic)

## Platforms Supported

OmniSwitch 2260, 2360

## Usage Guidelines

- Use the **no** form of this command to remove a dynamic aggregate group from the configuration.
- Link aggregation cannot be configured on an AppMon enabled port.
- You must disable the group with the **linkagg lacp agg admin-state** command before you can delete a dynamic link aggregate group.
- Optional parameters for the dynamic aggregate group can be configured when the aggregate is created. The dynamic aggregate group can be modified after the optional parameters are assigned.
- Specify the **hash** parameter option when the link aggregate is first created. The hashing algorithm options apply to unicast traffic and are not modifiable once the aggregate is created. If different options are required:
  - Disassociate all ports currently associated with the aggregate.
  - Delete the aggregate from the switch configuration.
  - Create the aggregate again with the new hashing options.
- It is not necessary to administratively down the linkagg ports before changing the hashing algorithm, but doing so is recommended.
- The hashing algorithm does not take into consideration the speed of the ports to distribute the traffic. In other words, the same number of flows is distributed evenly on each port without consideration of the line speed.
- Aggregate load balancing is performed at the ingress side.
- Per-aggregate hashing is local to the switch, so each side of the aggregation can use different configurations for the hashing algorithms.
- Use the **linkagg static agg size** command to create static aggregate groups. See [page 8-3](#) for more information about this command.

## Examples

```
-> linkagg lacp agg 2-5 size 4
-> linkagg lacp agg 3 size 2 admin-state disable actor system-priority 65535
```



```
-> no linkagg lacp agg 2-5 size 4
```

## Release History

Release 5.1; command introduced.

## Related Commands

**show linkagg** Displays information about static and dynamic (LACP) aggregate groups.

## MIB Objects

```
alclnkaggAggTable  
  alclnkaggAggNumber  
  alclnkaggAggSize  
  alclnkaggAggLacpType  
  alclnkaggAggName  
  alclnkaggAggAdminState  
  alclnkaggAggActorAdminKey  
  alclnkaggAggActorSystemPriority  
  alclnkaggAggActorSystemID  
  alclnkaggAggPartnerSystemID  
  alclnkaggAggPartnerSystemPriority  
  alclnkaggAggPartnerAdminKey  
  alclnkaggAggPortSelectionHash
```

---

## linkagg lacp agg name

Configures a name for a dynamic aggregate group.

```
linkagg lacp agg agg_id name name
```

```
no linkagg lacp agg agg_id[-agg_id2] name
```

---

### Syntax Definitions

*agg\_id*[-*agg\_id2*]

The link aggregate ID number corresponding to the dynamic aggregate group. Use a hyphen to specify a range of IDs (10-20).

*name*

The name of the dynamic aggregate group. Can be an alphanumeric string. A group name with spaces must be contained within quotes (for example, "Dynamic Group 1").

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- Use the **no** form of this command to remove a name from a single or a range of dynamic aggregate groups simultaneously.
- Assign names to individual dynamic link aggregate groups separately.

### Examples

```
-> linkagg lacp agg 2 name finance  
-> no linkagg lacp agg 2-5 name
```

### Release History

Release 5.1; command introduced.

### Related Commands

[linkagg lacp agg size](#)

Creates a dynamic aggregate group.

[show linkagg](#)

Displays information about static and dynamic (LACP) aggregate groups.

### MIB Objects

```
alclnkaggAggTable  
    alclnkaggAggNumber  
    alclnkaggAggName
```

## linkagg lacp agg wait-to-restore-time

Configures the number of minutes to wait before bringing up a dynamic link aggregate that is attached to other link aggregates.

```
linkagg lacp agg agg_id[-agg_id2] wait-to-restore-time wtr_minutes
```

```
no linkagg lacp agg agg_id[-agg_id2] wait-to-restore-time
```

---

### Syntax Definitions

<i>agg_id</i> [- <i>agg_id2</i> ]	The link aggregate ID number corresponding to the dynamic aggregate group. Use a hyphen to specify a range of IDs (10-20).
<i>wtr_minutes</i>	The number of minutes the switch waits to bring a link aggregate up. The range is 0–12 minutes.

### Defaults

By default, the wait-to-restore timer is set to 0 (disabled).

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- Use the **no** form of this command to disable the wait-to-restore timer for the specified link aggregate or aggregates.
- If a link aggregate is not attached to other links, this timer value is ignored and the aggregate is immediately brought up.

### Examples

```
-> linkagg lacp agg 2 wait-to-restore-time 10
-> linkagg lacp agg 2 wait-to-restore-time 0
-> linkagg lacp agg 4 wait-to-restore-time 5
-> no linkagg lacp agg 4 wait-to-restore-time
```

### Release History

Release 5.1; command introduced.

## Related Commands

[linkagg lacp agg size](#)

Creates a dynamic aggregate group.

[show linkagg](#)

Displays information about static and dynamic (LACP) aggregate groups.

## MIB Objects

alclnkaggAggTable

alclnkaggAggNumber

alclnkaggAggWTRTimer

---

## linkagg lacp agg admin-state

Configures the administrative state of a dynamic aggregate group or a range of dynamic aggregate groups.

```
linkagg lacp agg agg_id[-agg_id2] admin-state {enable | disable}
```

---

### Syntax Definitions

<i>agg_id</i> [- <i>agg_id2</i> ]	The link aggregate ID number corresponding to the dynamic aggregate group. Use a hyphen to specify a range of IDs (10-20).
<b>enable</b>	Specifies that the dynamic aggregate group is active and is able to aggregate links.
<b>disable</b>	Specifies that the operation of a dynamic aggregate group cannot be performed.

### Defaults

---

parameter	default
<b>enable   disable</b>	enable

---

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- When the administrative state is set to **disable**, the operation of a dynamic aggregation (LACP) group cannot be performed.
- You can also enable or disable the admin-state for a range of link aggregate IDs simultaneously, using this command.

### Examples

```
-> linkagg lacp agg 2 admin-state disable  
-> linkagg lacp agg 2-10 admin-state disable
```

### Release History

Release 5.1; command introduced.

## Related Commands

**linkagg lacp agg size**

Creates a dynamic aggregate group.

**show linkagg**

Displays information about static and dynamic (LACP) aggregate groups.

**show linkagg port**

Displays information about ports associated with a particular aggregate group or all aggregates.

## MIB Objects

alclnkaggAggTable  
  alclnkaggAggNumber  
  alclnkaggAggAdminState

---

## linkagg lacp agg actor admin-key

Configures the administrative key associated with a dynamic aggregate group.

**linkagg lacp agg** *agg\_id*[-*agg\_id2*] **actor admin-key** *actor\_admin\_key*

**no linkagg lacp agg** *agg\_id*[-*agg\_id2*] **actor admin-key**

---

### Syntax Definitions

*agg\_id*[-*agg\_id2*]

The link aggregate ID number corresponding to the dynamic aggregate group. Use a hyphen to specify a range of IDs (10-20).

*actor\_admin\_key*

The administrative key value associated with the dynamic aggregate group.

### Defaults

parameter	default
<i>actor_admin_key</i>	0

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

Use the **no** form of this command to remove an actor admin key from a dynamic aggregate group.

### Examples

```
-> linkagg lacp agg 3-5 actor admin-key 2
-> no linkagg lacp agg 3-5 actor admin-key
```

### Release History

Release 5.1; command introduced.

### Related Commands

[linkagg lacp agg size](#)

Creates a dynamic aggregate group.

[show linkagg](#)

Displays information about static and dynamic (LACP) aggregate groups.

### MIB Objects

alclnkaggAggTable  
 alclnkaggAggNumber  
 alclnkaggAggActorAdminKey

---

## linkagg lacp agg actor system-priority

Configures the priority of the dynamic aggregate group.

```
linkagg lacp agg agg_id[-agg_id2] actor system-priority actor_system_priority
```

```
no linkagg lacp agg agg_id[-agg_id2] actor system-priority
```

---

### Syntax Definitions

*agg\_id*[-*agg\_id2*]

The link aggregate ID number corresponding to the dynamic aggregate group. Use a hyphen to specify a range of IDs (10-20).

*actor\_system\_priority*

The priority of the dynamic aggregate group of the switch in relation to other aggregate groups.

### Defaults

parameter	default
<i>actor_system_priority</i>	0

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- Use the **no** form of this command to return the value to its default.
- Ports with the same system priority value can join the same dynamic aggregate group.
- To assign or remove the actor system-priority for a series of link aggregate IDs, specify the range of link aggregate IDs with the **agg** keyword. Use a hyphen to separate the first and last link aggregate IDs of a range.

### Examples

```
-> lacp linkagg 3 actor system-priority 100  
-> no lacp linkagg 3 actor system-priority
```

### Release History

Release 5.1; command introduced.



## Related Commands

[linkagg lacp agg size](#)

Creates a dynamic aggregate group.

[show linkagg](#)

Displays information about static and dynamic (LACP) aggregate groups.

## MIB Objects

alclnkaggAggTable

alclnkaggAggNumber

alclnkaggAggActorSystemPriority

---

## linkagg lacp agg actor system-id

Configures the MAC address of a dynamic aggregate group on the switch.

```
linkagg lacp agg agg_id[-agg_id2] actor system-id actor_system_id
```

```
no linkagg lacp agg agg_id[-agg_id2] actor system-id
```

---

### Syntax Definitions

*agg\_id*[-*agg\_id2*]

The link aggregate ID number corresponding to the dynamic aggregate group. Use a hyphen to specify a range of IDs (10-20).

*actor\_system\_id*

The MAC address of the dynamic aggregate group on the switch in the hexadecimal format *xx:xx:xx:xx:xx:xx*.

### Defaults

parameter	default
<i>actor_system_id</i>	0

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- Use the **no** form of this command to remove the MAC address assignment (actor system ID) from a dynamic link aggregate or a range of dynamic link aggregates simultaneously.
- You can configure the MAC address for a range of dynamic link aggregate IDs simultaneously. Use a hyphen to separate the first and last link aggregate IDs of a range along with this command.

### Examples

```
-> linkagg lacp agg 2 actor system-id 00:20:da:81:d5:b0  
-> no linkagg lacp agg 3-10 actor system-id  
-> no linkagg lacp agg 11 actor system-id
```

### Release History

Release 5.1; command introduced.

## Related Commands

[linkagg lacp agg size](#)

Creates a dynamic aggregate group.

[show linkagg](#)

Displays information about static and dynamic (LACP) aggregate groups.

## MIB Objects

alclnkaggAggTable

alclnkaggAggNumber

alclnkaggAggActorSystemID

---

## linkagg lacp agg partner system-id

Configures the MAC address of the dynamic aggregate group of the remote system that is attached to the dynamic aggregate group of the local switch.

```
linkagg lacp agg agg_id[-agg_id2] partner system-id partner_system_id
```

```
no linkagg lacp agg agg_id[-agg_id2] partner system-id
```

---

### Syntax Definitions

*agg\_id*[-*agg\_id2*]

The link aggregate ID number corresponding to the dynamic aggregate group. Use a hyphen to specify a range of IDs (10-20).

*partner\_system\_id*

The MAC address of the dynamic aggregate group of the remote switch in the hexadecimal format *xx:xx:xx:xx:xx:xx*.

### Defaults

parameter	default
<i>partner_system_id</i>	0

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- Use the **no** form of this command to remove a partner system ID from a dynamic aggregate group or a range of groups assigned with the same partner system IDs together.
- The *partner\_system\_id* and the *partner\_system\_priority* together specify the priority of the remote system.
- You can configure a partner system ID for a range of dynamic link aggregate IDs simultaneously. Use a hyphen to separate the first and last link aggregate IDs of a range along with this command.

### Examples

```
-> linkagg lacp agg 2 partner system-id 00:20:da4:32:81
-> linkagg lacp agg 2-10 partner system-id 00:20:da4:32:82
-> no linkagg lacp agg 2-10 partner system-id
```

### Release History

Release 5.1; command introduced.

## Related Commands

[linkagg lacp agg size](#)

Creates a dynamic aggregate group.

[show linkagg](#)

Displays information about static and dynamic (LACP) aggregate groups.

## MIB Objects

alclnkaggAggTable

    alclnkaggAggNumber

    alclnkaggAggPartnerSystemID

---

## linkagg lacp agg partner system-priority

Configures the priority of the dynamic aggregate group of the remote system which is attached to the dynamic aggregate group of the local switch.

**linkagg lacp agg** *agg\_id*[-*agg\_id2*] **partner system-priority** *partner\_system\_priority*

**no linkagg lacp agg** *agg\_id*[-*agg\_id2*] **partner system-priority**

---

### Syntax Definitions

*agg\_id*[-*agg\_id2*]

The link aggregate ID number corresponding to the dynamic aggregate group. Use a hyphen to specify a range of IDs (10-20).

*partner\_system\_priority*

The priority of the dynamic aggregate group of the remote system which is attached to the dynamic aggregate group of the local switch.

### Defaults

parameter	default
<i>partner_system_priority</i>	0

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- Use the **no** form of this command to return to the priority value to its default.
- The *partner\_system\_id* and the *partner\_system\_priority* together specify the priority of the remote system.
- You can apply the partner system-priority to a range of link aggregate IDs simultaneously. Use a hyphen to separate the first and last link aggregate IDs of a range after the **agg** keyword.

### Examples

```
-> linkagg lacp agg 3 partner system-priority 65535
-> linkagg lacp agg 3-6 partner system-priority 65535
-> no linkagg lacp agg 3-6 partner system-priority
```

### Release History

Release 5.1; command introduced.

## Related Commands

[linkagg lacp agg size](#)

Creates a dynamic aggregate group.

[show linkagg](#)

Displays information about static and dynamic (LACP) aggregate groups.

## MIB Objects

alclnkaggAggTable

alclnkaggAggNumber

alclnkaggAggPartnerSystemPriority

---

## linkagg lacp agg partner admin-key

Configures the administrative key for the remote partner of the dynamic aggregation group.

```
linkagg lacp agg agg_id[-agg_id2] partner admin-key partner_admin_key
```

```
no linkagg lacp agg agg_id[-agg_id2] partner admin-key
```

---

### Syntax Definitions

*agg\_id*[-*agg\_id2*]

The link aggregate ID number corresponding to the dynamic aggregate group. Use a hyphen to specify a range of IDs (10-20).

*partner\_admin\_key*

The administrative key for the remote partner of the dynamic aggregation group.

### Defaults

parameter	default
<i>partner_admin_key</i>	0

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- Use the **no** form of this command to remove a partner admin-key from a dynamic aggregate group.
- The partner admin-key can be assigned for a range of dynamic link aggregate IDs simultaneously.

### Examples

```
-> linkagg lacp agg 3-5 partner admin-key 3  
-> no linkagg lacp agg 3-10 partner admin-key
```

### Release History

Release 5.1; command introduced.



## Related Commands

[linkagg lacp agg size](#)

Creates a dynamic aggregate group.

[show linkagg](#)

Displays information about static and dynamic (LACP) aggregate groups.

## MIB Objects

alclnkaggAggTable

alclnkaggAggNumber

alclnkaggAggPartnerAdminKey

---

## linkagg lacp port actor admin-key

Configures an actor administrative key for a port, which allows the port to join a dynamic aggregate group.

```
linkagg lacp port chassis/slot/port[-port2] actor admin-key actor_admin_key
  [actor admin-state {[active] [timeout] [aggregate] [synchronize] [collect] [distribute] [default]
  [expire] | none}]
  [actor system id actor_system_id]
  [actor system priority actor_system_priority]
  [partner admin system id partner_admin_system_id]
  [partner admin-key partner_admin_key]
  [partner admin system priority partner_admin_system_priority]
  [partner admin-state {[active] [timeout] [aggregate] [synchronize] [collect] [distribute] [default]
  [expire] | none}]
  [actor port priority actor_port_priority]
  [partner admin port partner_admin_port]
  [partner admin port priority partner_admin_port_priority]
```

```
no linkagg lacp port chassis/slot/port[-port2] [actor admin-state {[active] [timeout] [aggregate]
[synchronize] [collect] [distribute] [default] [expire] | none}]
  [actor system id actor_system_id]
  [actor system priority actor_system_priority]
  [partner admin system id partner_admin_system_id]
  [partner admin-key partner_admin_key]
  [partner admin system priority partner_admin_system_priority]
  [partner admin-state {[active] [timeout] [aggregate] [synchronize] [collect] [distribute] [default]
  [expire] | none}]
  [actor port priority actor_port_priority]
  [partner admin port partner_admin_port]
  [partner admin port priority partner_admin_port_priority]
```

---

### Syntax Definitions

<i>chassis</i>	The chassis identifier.
<i>slot/port[-port2]</i>	The slot number for this aggregate and the port that the switch initially uses as the Spanning Tree virtual port for this aggregate. Use a hyphen to specify a range of ports (2/1-5).
<i>actor_admin_key</i>	The administrative key associated with this dynamic aggregate group.
<b>actor admin-state</b>	See the <a href="#">linkagg lacp port actor admin-state</a> command.
<i>actor_system_id</i>	The MAC address of this dynamic aggregate group on the switch.
<i>actor_system_priority</i>	The priority of the dynamic aggregate group.
<i>partner_admin_system_id</i>	The MAC address of the dynamic aggregate group of the remote switch.
<i>partner_admin_key</i>	The administrative key for the remote partner of the dynamic aggregation group.

<i>partner_admin_system_priority</i>	The priority of the remote system to which the dynamic aggregation group is attached.
<b>partner admin-state</b>	See the <a href="#">linkagg lacp agg partner admin-state</a> command.
<i>actor_port_priority</i>	The priority of the actor port.
<i>partner_admin_port</i>	The administrative state of the partner port.
<i>partner_admin_port_priority</i>	The priority of the partner port.

## Defaults

parameter	default
[active] [timeout]...	active, timeout, aggregate

## Platforms Supported

OmniSwitch 2260, 2360

## Usage Guidelines

- Use the **no** form of this command to remove a slot and port from a dynamic aggregate group.
- A port can belong to only one aggregate group.
- Ports that belong to a dynamic link aggregate must be configured to the same link speed.
- Ports that belong to the same dynamic aggregate group need not be configured sequentially and can be on any Network Interface (NI).

## Examples

```
-> linkagg lacp agg 3/1 actor admin-key 0
-> no linkagg lacp agg 3/1 actor admin-key
```

## Release History

Release 5.1; command introduced.

## Related Commands

<a href="#">linkagg lacp agg size</a>	Creates a dynamic aggregate group.
<a href="#">show linkagg port</a>	Displays information about ports associated with a particular aggregate group or all aggregates.

**MIB Objects**

alclnkaggAggPortTable

alclnkaggAggPortGlobalPortNumber  
alclnkaggAggActorAdminKey  
alclnkaggAggPortLacpType  
alclnkaggAggPortActorAdminState  
alclnkaggAggPortActorSystemID  
alclnkaggAggPortActorSystemPriority  
alclnkaggAggPortPartnerAdminSystemID  
alclnkaggAggPortPartnerAdminKey  
alclnkaggAggPortPartnerAdminSystemPriority  
alclnkaggAggPortPartnerAdminState  
alclnkaggAggPortActorPortPriority  
alclnkaggAggPortPartnerAdminPort  
alclnkaggAggPortPartnerAdminPortPriority

---

## linkagg lacp port actor admin-state

Configures the system administrative state of the slot and port for the dynamic aggregate group on the local switch. The state values correspond to bits in the actor state octet in the LACPDU frame.

**linkagg lacp port** *chassis/slot/port[-port2]* **actor admin-state** {[active] [timeout] [aggregate] [synchronize] [collect] [distribute] [default] [expire] | none}

**no linkagg lacp port** *chassis/slot/port[-port2]* **actor admin-state** {[active] [timeout] [aggregate] [synchronize] [collect] [distribute] [default] [expire] | none}

---

### Syntax Definitions

<i>chassis</i>	The chassis identifier.
<i>slot/port[-port2]</i>	The slot number for this aggregate and the port that the switch initially uses as the Spanning Tree virtual port for this aggregate. Use a hyphen to specify a range of ports (2/1-5).
<b>active</b>	Specifies that bit 0 in the actor state octet is enabled. When this bit is set, the dynamic aggregate group is able to exchange LACPDU frames. By default, this value is set.
<b>timeout</b>	Specifies that bit 1 in the actor state octet is enabled. When this bit is set, a short timeout is used for LACPDU frames. When this bit is disabled, a long timeout is used for LACPDU frames. By default, this value is set.
<b>aggregate</b>	Specifies that bit 2 in the actor state octet is enabled. When this bit is set, the system considers this port to be a potential candidate for aggregation. If this bit is not enabled, the system considers the port to be individual (it can only operate as a single link). By default, this value is set.
<b>synchronize</b>	Specifying that this keyword has no effect because the system always determines its value. When this bit (bit 3) is set by the system, the port is allocated to the correct dynamic aggregation group. If this bit is not set by the system, the port is not allocated to the correct dynamic aggregation group.
<b>collect</b>	Specifying that this keyword has no effect because the system always determines its value. When this bit (bit 4) is set by the system, incoming LACPDU frames are collected from the individual ports that make up the dynamic aggregate group.
<b>distribute</b>	Specifying that this keyword has no effect because the system always determines its value. When this bit (bit 5) is set by the system, distributing outgoing frames on the port is disabled.
<b>default</b>	Specifying that this keyword has no effect because the system always determines its value. When this bit (bit 6) is set by the system, it indicates that the actor is using the defaulted partner information administratively configured for the partner.
<b>expire</b>	Specifying that this keyword has no effect because the system always determines its value. When this bit (bit 7) is set by the system, the actor cannot receive LACPDU frames.
<b>none</b>	Resets all administrative states to their default configurations.

## Defaults

parameter	default
[active] [timeout]....	active, timeout, aggregate
timeout enable	Enabled

## Platforms Supported

OmniSwitch 2260, 2360

## Usage Guidelines

- Use the **no** form of this command to restore the LACPDU bit settings to their default configuration.
- When the actor admin-state is set to **none**, all bit values are restored to their default configurations.
- Enabling the **timeout** parameter configures a 1 second interval (short timeout / fast transmit rate). Disabling the **timeout** parameter configures a 30 second interval (long timeout / slow transmit rate).
- **timeout** option when used sets only the transmit rate. The remote side timeout is 3X the configured transmit rate. For example, if the transmit rate is set to 1 packet per second, the remote side will timeout if it misses 3 packets. In this case, it will timeout in 3 seconds. If the transmit rate is set to 30 packets per second, then the remote side will take 90 seconds to timeout.
- ‘no linkagg lacp port actor admin-state timeout’ disables the **timeout** parameter, which results in a long timeout, that is, 30 second transmission rate.

## Examples

```
-> linkagg lacp port 4/2 actor admin-state synchronize collect distribute
-> no linkagg lacp port 4/2 actor admin-state synchronize collect
-> linkagg lacp port 4/2 actor admin-state none
```

## Release History

Release 5.1; command introduced.

## Related Commands

<a href="#">linkagg lacp agg size</a>	Creates a dynamic aggregate group.
<a href="#">show linkagg port</a>	Displays information about ports associated with a particular aggregate group or all aggregate groups.

## MIB Objects

```
alclnkaggAggPortTable
  alclnkaggAggPortGlobalPortNumber
  alclnkaggAggPortActorAdminState
```

## linkagg lacp port actor system-id

Configures the system ID (i.e., MAC address) for the local port associated with a dynamic aggregate group.

```
linkagg lacp port chassis/slot/port[-port2] actor system-id actor_system_id
```

```
no linkagg lacp port chassis/slot/port[-port2] actor system-id
```

---

### Syntax Definitions

<i>chassis</i>	The chassis identifier.
<i>slot/port[-port2]</i>	The slot number for this aggregate and the port that the switch initially uses as the Spanning Tree virtual port for this aggregate. Use a hyphen to specify a range of ports (2/1-5).
<i>actor_system_id</i>	The MAC address of the dynamic aggregate group on the switch in the hexadecimal format <i>xx:xx:xx:xx:xx:xx</i> .

### Defaults

---

parameter	default
<i>actor_system_id</i>	0

---

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- Use the **no** form of this command to remove the actor system ID from a slot and port or a range of slot and ports associated with a dynamic aggregate group.
- Configure the system ID for a range of local ports simultaneously. Use a hyphen to separate the first and last port IDs of a range after the **port** keyword.

### Examples

```
-> linkagg lacp port 3/1-10 actor system-id 00:20:da:06:ba:d3  
-> no linkagg lacp port 3/1-10 actor system-id
```

### Release History

Release 5.1; command introduced.

## Related Commands

[linkagg lacp agg size](#)

Creates a dynamic aggregate group.

[show linkagg port](#)

Displays information about ports associated with a particular aggregate group or all aggregate groups.

## MIB Objects

alclnkaggAggPortTable

alclnkaggAggPortGlobalPortNumber

alclnkaggAggPortActorSystemID

---



## linkagg lacp port actor system-priority

Configures the system priority of the port on the switch that belongs to the dynamic aggregate group.

**linkagg lacp port** *chassis/slot/port[-port2]* **actor system-priority** *actor\_system\_priority*

**no linkagg lacp port** *chassis/slot/port[-port2]* **actor system-priority**

---

### Syntax Definitions

<i>chassis</i>	The chassis identifier.
<i>slot/port[-port2]</i>	The slot number for this aggregate and the port that the switch initially uses as the Spanning Tree virtual port for this aggregate. Use a hyphen to specify a range of ports (2/1-5).
<i>actor_system_priority</i>	The priority of the dynamic aggregate group.

### Defaults

---

parameter	default
<i>actor_system_priority</i>	0

---

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- Use the **no** form of this command to remove an actor system priority value from a slot and port or a range of slot and ports associated with a dynamic aggregate group.
- Configure the actor system-priority to a range of ports simultaneously. Use a hyphen to separate the first and last port of a range after the **port** keyword.

### Examples

```
-> linkagg lacp port 3/2-10 actor system-priority 65  
-> no linkagg lacp port 3/2-10 actor system-priority
```

### Release History

Release 5.1; command introduced.

## Related Commands

[linkagg lacp agg size](#)

Creates a dynamic aggregate group.

[show linkagg port](#)

Displays information about ports associated with a particular aggregate group or all aggregates.

## MIB Objects

alclnkaggAggPortTable

alclnkaggAggPortGlobalPortNumber

alclnkaggAggPortActorSystemPriority

---

## linkagg lacp agg partner admin-state

Configures the system administrative state of the slot and port for the dynamic aggregate group on the remote switch. The state values correspond to bits in the actor state octet in the LACPDU frame.

**linkagg lacp port** *chassis/slot/port[-port2]* **partner admin-state** {[**active**] [**timeout**] [**aggregate**] [**synchronize**] [**collect**] [**distribute**] [**default**] [**expire**] | **none**}

**no linkagg lacp port** *chassis/slot/port[-port2]* **partner admin-state** {[**active**] [**timeout**] [**aggregate**] [**synchronize**] [**collect**] [**distribute**] [**default**] [**expire**] | **none**}

---

### Syntax Definitions

<i>chassis</i>	The chassis identifier.
<i>slot/port[-port2]</i>	The slot number for this aggregate and the port that the switch initially uses as the Spanning Tree virtual port for this aggregate. Use a hyphen to specify a range of ports (2/1-5).
<b>active</b>	Specifies that bit 0 in the partner state octet is enabled. When this bit is set, the dynamic aggregate group is able to exchange LACPDU frames. By default, this value is set.
<b>timeout</b>	Specifies that bit 1 in the partner state octet is enabled. When this bit is set, a short timeout is used for LACPDU frames. When this bit is disabled, a long timeout is used for LACPDU frames. By default, this value is set.
<b>aggregate</b>	Specifies that bit 2 in the partner state octet is enabled. When this bit is set, the system considers this port to be a potential candidate for aggregation. If this bit is not enabled, the system considers the port to be individual (it can only operate as a single link). By default, this value is set.
<b>synchronize</b>	Specifies that bit 3 in the partner state octet is enabled. When this bit is set, the port is allocated to the correct dynamic aggregation group. If this bit is not enabled, the port is not allocated to the correct aggregation group. By default, this value is disabled.
<b>collect</b>	Specifying this keyword has no effect because the system always determines its value. When this bit (bit 4) is set by the system, incoming LACPDU frames are collected from the individual ports that make up the dynamic aggregate group.
<b>distribute</b>	Specifying that this keyword has no effect because the system always determines its value. When this bit (bit 5) is set by the system, distributing outgoing frames on the port is disabled.
<b>default</b>	Specifying that this keyword has no effect because the system always determines its value. When this bit (bit 6) is set by the system, it indicates that the partner is using the defaulted actor information administratively configured for the actor.
<b>expire</b>	Specifying that this keyword has no effect because the system always determines its value. When this bit (bit 7) is set by the system, the partner cannot receive LACPDU frames.
<b>none</b>	Resets all administrative states to their default configurations.

## Defaults

parameter	default
[active] [timeout] ...	active, timeout, aggregate
timeout enable	Enabled
timeout enable	Enabled

## Platforms Supported

OmniSwitch 2260, 2360

## Usage Guidelines

- Use the **no** form of this command to restore the LACPDU bit settings to their default configuration for a single port or a range of ports.
- When the partner admin-state is set to **none**, all bit values are restored to their default configurations.
- Configure the system administrative state for a range of ports simultaneously. Use a hyphen to separate the first and last port of a range after the **port** keyword.
- Enabling the **timeout** parameter configures a 1 second interval (short timeout / fast transmit rate). Disabling the **timeout** parameter configures a 30 second interval (long timeout / slow transmit rate).
- **timeout** option when used sets only the transmit rate. The remote side timeout is 3X the configured transmit rate. For example, if the transmit rate is set to 1 packet per second, the remote side will timeout if it misses 3 packets. In this case, it will timeout in 3 seconds. If the transmit rate is set to 30 packets per second, then the remote side will take 90 seconds to timeout.
- ‘no linkagg lacp port partner admin-state’ disables the **timeout** parameter, which results in a long timeout, that is, 30 second transmission rate.

## Examples

```
-> lacp port 4/2-10 partner admin-state synchronize collect distribute  
-> no lacp agg 4/2-10 partner admin-state synchronize collect
```

## Release History

Release 5.1; command introduced.

## Related Commands

[linkagg lacp agg size](#)

Creates a dynamic aggregate group.

[show linkagg port](#)

Displays information about ports associated with a particular aggregate group or all aggregate groups.

## MIB Objects

alclnkaggAggPortTable

alclnkaggAggPortGlobalPortNumber

alclnkaggAggPortPartnerAdminState

---

## linkagg lacp port partner admin system-id

Configures the partner administrative system ID for a dynamic aggregate group port.

```
linkagg lacp port chassis/slot/port[-port2] partner admin system-id partner_admin_system_id
```

```
no linkagg lacp port chassis/slot/port[-port2] partner admin system-id
```

---

### Syntax Definitions

<i>chassis</i>	The chassis identifier.
<i>slot/port[-port2]</i>	The slot number for this aggregate and the port that the switch initially uses as the Spanning Tree virtual port for this aggregate. Use a hyphen to specify a range of ports (2/1-5).
<i>partner_admin_system_id</i>	The MAC address of the remote dynamic aggregate group in the hexadecimal format <i>xx:xx:xx:xx:xx:xx</i> .

### Defaults

---

parameter	default
<i>partner_admin_system_id</i>	0

---

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

Use the **no** form of this command to remove a partner administrative system ID from a slot and port or a range of slot and ports associated with a dynamic aggregate group.

### Examples

```
-> linkagg lacp port 3/1-10 partner admin system-id 00:20:da:05:f6:23
```

### Release History

Release 5.1; command introduced.

## Related Commands

[linkagg lacp agg size](#)

Creates a dynamic aggregate group.

[show linkagg port](#)

Displays information about ports associated with a particular aggregate group or all aggregate groups.

## MIB Objects

alclnkaggAggPortTable

alclnkaggAggPortGlobalPortNumber

alclnkaggAggPortPartnerAdminSystemID

---

## linkagg lacp port partner admin-key

Configures the partner administrative key for a dynamic aggregate group port.

```
linkagg lacp port chassis/slot/port[-port2] partner admin-key partner_admin_key
```

```
no linkagg lacp port chassis/slot/port[-port2] partner admin-key
```

---

### Syntax Definitions

<i>chassis</i>	The chassis identifier.
<i>slot/port[-port2]</i>	The slot number for this aggregate and the port that the switch initially uses as the Spanning Tree virtual port for this aggregate. Use a hyphen to specify a range of ports (2/1-5).
<i>partner_admin_key</i>	The administrative key for the remote partner of a dynamic aggregation group.

### Defaults

---

parameter	default
<i>partner_admin_key</i>	0

---

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

Use the **no** form of this command to remove a partner admin key value from a slot and port or a range of slot and ports associated with a dynamic aggregate group.

### Examples

```
-> linkagg lacp port 2/1-5 partner admin-key 0  
-> no linkagg lacp port 2/1-5 partner admin-key
```

### Release History

Release 5.1; command introduced.



## Related Commands

[linkagg lacp agg size](#)

Creates a dynamic aggregate group.

[show linkagg port](#)

Displays information about ports associated with a particular aggregate group or all aggregate groups.

## MIB Objects

alclnkaggAggPortTable

alclnkaggAggPortGlobalPortNumber

alclnkaggAggPortPartnerAdminKey

---

## linkagg lacp port partner admin system-priority

Configures the partner system priority for a dynamic aggregate group port.

```
linkagg lacp port chassis/slot/port[-port2] partner admin system-priority
partner_admin_system_priority
```

```
no linkagg lacp port chassis/slot/port[-port2] partner admin system-priority
```

---

### Syntax Definitions

<i>chassis</i>	The chassis identifier.
<i>slot/port[-port2]</i>	The slot number for this aggregate and the port that the switch initially uses as the Spanning Tree virtual port for this aggregate. Use a hyphen to specify a range of ports (2/1-5).
<i>partner_admin_system_priority</i>	The priority of the dynamic aggregate group of the remote switch to which the aggregation group is attached.

### Defaults

parameter	default
<i>partner_admin_system_priority</i>	0

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

Use the **no** form of this command to remove a *partner\_system\_priority* value from a slot and port or a range of slot and ports associated with a dynamic aggregate group.

### Examples

```
-> linkagg lacp port 2/1-5 partner admin system-priority 65
-> no linkagg lacp port 2/1-5 partner admin system-priority
```

### Release History

Release 5.1; command introduced.

## Related Commands

[linkagg lacp agg size](#)

Creates a dynamic aggregate group.

[show linkagg port](#)

Displays information about ports associated with a particular aggregate group or all aggregate groups.

## MIB Objects

alclnkaggAggPortTable

alclnkaggAggPortGlobalPortNumber

alclnkaggAggPortPartnerAdminSystemPriority

---

## linkagg lacp port actor port priority

Configures the priority for an actor port.

```
linkagg lacp port chassis/slot/port[-port2] actor port-priority actor_port_priority
```

```
no linkagg lacp port chassis/slot/port[-port2] actor port-priority
```

---

### Syntax Definitions

<i>chassis</i>	The chassis identifier.
<i>slot/port[-port2]</i>	The slot number for this aggregate and the port that the switch initially uses as the Spanning Tree virtual port for this aggregate. Use a hyphen to specify a range of ports (2/1-5).
<i>actor_port_priority</i>	The priority of the actor port.

### Defaults

---

parameter	default
<i>actor_port_priority</i>	0

---

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

Use the **no** form of this command to remove an *actor\_port\_priority* value from a slot and port or a range of slot and ports associated with a dynamic aggregate group.

### Examples

```
-> linkagg lacp port 2/1-5 actor port-priority 100  
-> no linkagg lacp port 2/1-5 actor port-priority
```

### Release History

Release 5.1; command introduced.

## Related Commands

[linkagg lacp agg size](#)

Creates a dynamic aggregate group.

[show linkagg port](#)

Displays information about ports associated with a particular aggregate group or all aggregate groups.

## MIB Objects

alclnkaggAggPortTable

alclnkaggAggPortGlobalPortNumber

alclnkaggAggPortActorPortPriority

---

## linkagg lacp port partner admin-port

Configures the administrative status of a partner port.

```
linkagg lacp port chassis/slot/port[-port2] partner admin-port partner_admin_port
```

```
no linkagg lacp port chassis/slot/port[-port2] partner admin-port
```

---

### Syntax Definitions

<i>chassis</i>	The chassis identifier.
<i>slot/port[-port2]</i>	The slot number for this aggregate and the port that the switch initially uses as the Spanning Tree virtual port for this aggregate. Use a hyphen to specify a range of ports (2/1-5).
<i>partner_admin_port</i>	The administrative state of the partner port.

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

Use the **no** form of this command to remove a *partner\_admin\_port* value from a slot and port or a range of slot and ports associated with a dynamic aggregate group.

### Examples

```
-> linkagg lacp port 2/1-5 partner admin-port 255  
-> no linkagg lacp port 2/1-5 partner admin-port
```

### Release History

Release 5.1; command introduced.

### Related Commands

<a href="#">linkagg lacp agg size</a>	Creates a dynamic aggregate group.
<a href="#">show linkagg port</a>	Displays information about ports associated with a particular aggregate group or all aggregate groups.

### MIB Objects

```
alclnkaggAggPortTable  
  alclnkaggAggPortGlobalPortNumber  
  alclnkaggAggPortPartnerAdminPort
```

---

## linkagg lacp port partner admin port-priority

Configures the priority for a partner port.

```
linkagg lacp port chassis/slot/port[-port2] partner admin port-priority partner_admin_port_priority
```

```
no linkagg lacp port chassis/slot/port[-port2] partner admin port-priority
```

---

### Syntax Definitions

<i>chassis</i>	The chassis identifier.
<i>slot/port[-port2]</i>	The slot number for this aggregate and the port that the switch initially uses as the Spanning Tree virtual port for this aggregate. Use a hyphen to specify a range of ports (2/1-5).
<i>partner_admin_port_priority</i>	The priority of the partner port.

### Defaults

parameter	default
<i>partner_admin_port_priority</i>	0

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

Use the **no** form of this command to remove a *partner\_admin\_port\_priority* value from a slot and port or a range of slot and ports associated with a dynamic aggregate group.

### Examples

```
-> linkagg lacp port 2/1-5 partner admin port-priority 100  
-> no linkagg lacp port 2/1-5 partner admin port-priority
```

### Release History

Release 5.1; command introduced.

## Related Commands

[linkagg lacp agg size](#)

Creates a dynamic aggregate group.

[show linkagg port](#)

Displays information about ports associated with a particular aggregate group or all aggregate groups.

## MIB Objects

alclnkaggAggPortTable

alclnkaggAggPortGlobalPortNumber

alclnkaggAggPortPartnerAdminPortPriority

---



## show linkagg

Displays information about static and dynamic (LACP) aggregate groups.

**show linkagg** [**agg** *agg\_id*[-*agg\_id2*]]

---

### Syntax Definitions

*agg\_id*[-*agg\_id2*]      The link aggregate ID number corresponding to the aggregate group. Configured through the **linkagg static agg size** or **linkagg lacp agg size** command. Use a hyphen to specify a range of IDs (10-20).

### Defaults

By default, information for all aggregate groups is displayed.

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- If an aggregate number is specified, only the information about the relevant aggregate group is displayed. The fields included in the display depend on whether the aggregate group is static or dynamic.
- Use the **show linkagg port** command to display information about aggregate group ports.

### Examples

No aggregate group is specified:

```
-> show linkagg
```

Number	Aggregate	SNMP Id	Size	Admin State	Oper State	Att/Sel	Ports
1	Static	40000001	8	ENABLED	UP	2	2
2	Dynamic	40000002	4	ENABLED	DOWN	0	0
3	Dynamic	40000003	8	ENABLED	DOWN	0	2
4	Dynamic	40000004	8	ENABLED	UP	3	3
5	Static	40000005	2	DISABLED	DOWN	0	0

### output definitions

---

<b>Number</b>	The aggregate group number.
<b>Aggregate</b>	The type of aggregate group ( <b>Static</b> , <b>Dynamic</b> ).
<b>SNMP Id</b>	The SNMP ID associated with the aggregate group.
<b>Size</b>	The number of links in this aggregate group.
<b>Admin State</b>	The current administrative state of the aggregate group ( <b>ENABLED</b> or <b>DISABLED</b> ). Configured through the <b>linkagg static agg admin-state</b> command for static aggregate groups and the <b>linkagg lacp agg admin-state</b> command for dynamic aggregate groups.

*output definitions (continued)*


---

<b>Oper State</b>	The current operational state of the aggregate group ( <b>UP</b> or <b>DOWN</b> ).
<b>Att Ports</b>	The number of ports actually attached to this aggregate group.
<b>Sel Ports</b>	The number of ports that could possibly attach to the aggregate group.

---

A static aggregate is specified:

-> show linkagg agg 5

```
Static Aggregate
SNMP Id           : 40000005,
Aggregate Number  : 5,
SNMP Descriptor   : Omnichannel Aggregate Number 5 ref 40000005 size 2,
Name              : AGG5,
Admin State       : ENABLED,
Operational State : DOWN,
Aggregate Size    : 2,
Number of Selected Ports : 0,
Number of Reserved Ports : 0,
Number of Attached Ports : 0,
Primary Port      : NONE
Port Selection Hash : Source Destination Ip,
Wait To Restore Time : 0 Minutes
```

*output definitions*


---

<b>SNMP Id</b>	The SNMP ID associated with this static aggregate group.
<b>Aggregate Number</b>	The group number.
<b>SNMP Descriptor</b>	The standard MIB name for this static aggregate group.
<b>Name</b>	The name of this static aggregate group. Configured through the <a href="#">linkagg static agg name</a> command.
<b>Admin State</b>	The administrative state of this static aggregate group ( <b>ENABLED</b> or <b>DISABLED</b> ). Configured through the <a href="#">linkagg static agg admin-state</a> command.
<b>Operational State</b>	The operational state of this static aggregate group ( <b>UP</b> or <b>DOWN</b> ).
<b>Aggregate Size</b>	The number of links configured for this static aggregate group.
<b>Number of Selected Ports</b>	The number of ports that could possibly attach to this static aggregate group.
<b>Number of Reserved Ports</b>	The total number of ports reserved for use in link aggregation by this static aggregate group. ( <b>Note:</b> This field is not relevant for static aggregate groups.)
<b>Number of Attached Ports</b>	The number of ports actually attached to this static aggregate group.
<b>Primary Port</b>	The port number of the first port to join this static aggregate group. If the first port to join the aggregate is no longer part of the aggregate group, the switch automatically assigns another port in the aggregate group to be the primary port.

*output definitions (continued)*


---

<b>Port Selection Hash</b>	The hashing algorithm used to identify a specific traffic flow to hash.
<b>Wait To Restore Time</b>	The amount of time, in minutes, the switch waits to bring up a link aggregate that is attached to other links. Configured through the <a href="#">linkagg static agg wait-to-restore-time</a> command.

---

A dynamic aggregate group is specified:

```
-> show linkagg agg 1-2
```

```
Dynamic Aggregate
  SNMP Id           : 40000002,
  Aggregate Number  : 2,
  SNMP Descriptor   : Dynamic Aggregate Number 2 ref 40000002 size 4,
  Name              : AGG 2,
  Admin State       : ENABLED,
  Operational State : DOWN,
  Aggregate Size    : 4,
  Number of Selected Ports : 0,
  Number of Reserved Ports : 0,
  Number of Attached Ports : 0,
  Primary Port      : NONE,
  Port Selection Hash : Source Destination Ip,
  Wait To Restore Time : 0 Minutes

LACP
  MACAddress        : [00:1f:cc:00:00:00],
  Actor System Id   : [00:20:da:81:d5:b0],
  Actor System Priority : 50,
  Actor Admin Key   : 120,
  Actor Oper Key    : 0,
  Partner System Id : [00:20:da:81:d5:b1],
  Partner System Priority : 70,
  Partner Admin Key : 220,
  Partner Oper Key  : 0
```

*output definitions*


---

<b>SNMP Id</b>	The SNMP ID associated with this dynamic aggregate group.
<b>Aggregate Number</b>	The group number of this dynamic aggregate group.
<b>SNMP Descriptor</b>	The standard MIB name for this dynamic aggregate group.
<b>Name</b>	The name of this dynamic aggregate group. You can modify this parameter with the <a href="#">linkagg lacp agg name</a> command (see <a href="#">page 8-15</a> ).
<b>Admin State</b>	The administrative state of this dynamic aggregate group, which can be <b>ENABLED</b> or <b>DISABLED</b> . You can modify this parameter with the <a href="#">linkagg lacp agg admin-state</a> command (see <a href="#">page 8-18</a> ).
<b>Operational State</b>	The operational state of this dynamic aggregate group, which can be <b>UP</b> or <b>DOWN</b> .
<b>Aggregate Size</b>	The number of links configured for this dynamic aggregate group.
<b>Number of Selected Ports</b>	The number of ports available to this dynamic aggregate group.
<b>Number of Reserved Ports</b>	The total number of ports reserved for use in link aggregation by this dynamic aggregate group.
<b>Number of Attached Ports</b>	The number of ports actually attached to this dynamic aggregate group.

---

*output definitions (continued)*

---

<b>Primary Port</b>	The port number of the first port to join this dynamic aggregate group. If the first port to join the aggregate group is no longer part of the aggregate group, the switch automatically assigns another port in the aggregate group to be the primary port.
<b>Port Selection Hash</b>	The hashing algorithm used to identify a specific traffic flow to hash.
<b>Wait To Restore Time</b>	The amount of time, in minutes, the switch waits to bring up a link aggregate that is attached to other links. Configured through the <a href="#">linkagg lacp agg wait-to-restore-time</a> command.
<b>MACAddress</b>	The MAC address associated with the primary port.
<b>Actor System Id</b>	The MAC address of this dynamic aggregate group. You can modify this parameter with the <a href="#">linkagg lacp agg actor system-id</a> command (see <a href="#">page 8-23</a> ).
<b>Actor System Priority</b>	The priority of this dynamic aggregate group. You can modify this parameter with the <a href="#">linkagg lacp agg actor system-priority</a> command (see <a href="#">page 8-21</a> ).
<b>Actor Admin Key</b>	The administrative key associated with this dynamic aggregate group. You can modify this parameter with the <a href="#">linkagg lacp agg actor admin-key</a> command (see <a href="#">page 8-20</a> ).
<b>Actor Oper Key</b>	The operational key associated with this dynamic aggregate group.
<b>Partner System Id</b>	The MAC address of the remote dynamic aggregate group. You can modify this parameter with the <a href="#">linkagg lacp agg partner system-id</a> command (see <a href="#">page 8-25</a> ).
<b>Partner System Priority</b>	The priority of the remote system to which this dynamic aggregation group is attached. You can modify this parameter with the <a href="#">linkagg lacp agg partner system-priority</a> command (see <a href="#">page 8-27</a> ).
<b>Partner Admin Key</b>	The administrative key for the remote partner of the dynamic aggregation. You can modify this parameter with the <a href="#">linkagg lacp agg partner admin-key</a> command (see <a href="#">page 8-29</a> ).
<b>Partner Oper Key</b>	The operational key of the remote system to which the dynamic aggregation group is attached.

---

**Release History**

Release 5.1; command introduced.

## Related Commands

<a href="#">linkagg static agg size</a>	Creates a static aggregate group.
<a href="#">linkagg lacp agg size</a>	Creates a dynamic aggregate group.
<a href="#">show linkagg accounting</a>	Displays statistics for packet frames received and transmitted on link aggregate member ports.
<a href="#">show linkagg counters</a>	Displays statistics for the number of packet frames and errors received and transmitted on link aggregate member ports.

## MIB Objects

```
alclnkaggAggTable
  alclnkAggSize
  alclnkaggAggNumber
  alclnkaggAggDescr
  alclnkaggAggName
  alclnkaggAggLacpType
  alclnkaggAggAdminState
  alclnkaggAggOperState
  alclnkaggAggNbrSelectedPorts
  alclnkaggAggNbrAttachedPorts
  alclnkaggPrimaryPortIndex
  alclnkaggAggPortSelectionHash
  alclnkaggAggWTRTimer
  alclnkaggAggMACAddress
  alclnkaggAggActorSystemPriority
  alclnkaggAggActorSystemID
  alclnkaggAggPartnerAdminKey
  alclnkaggAggActorAdminKey
  alclnkaggAggActorOperKey
  alclnkAggLocalRangeOperMin
  alclnkAggLocalRangeOperMax
  alclnkAggLocalRangeConfiguredMin
  alclnkAggLocalRangeConfiguredMax
  alclnkAggPeerRangeOperMin
  alclnkAggPeerRangeOperMax
  alclnkaggAggPartnerSystemID
  alclnkaggAggPartnerSystemPriority
  alclnkaggAggPartnerOperKey
```

---

## show linkagg port

Displays information about link aggregation ports.

**show linkagg** [**agg** *agg\_id*[-*agg\_id2*]] **port** [*chassis/slot/port*]

---

### Syntax Definitions

<i>agg_id</i> [- <i>agg_id2</i> ]	The link aggregate ID number corresponding to the aggregate group. Use a hyphen to specify a range of IDs (10-20).
<i>chassis</i>	The chassis identifier.
<i>slot/port</i>	The slot and port number of the link aggregation port.

### Defaults

By default, all link aggregation ports are displayed.

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- If a particular slot or port is specified, the fields displayed depend upon whether the port belongs to a static aggregate group or a dynamic (LACP) aggregate group.
- If only a link aggregate or a range of link aggregates is specified along with the **agg** keyword, the ports and related information for only the specified link aggregate IDs are displayed.
- If multi-chassis feature is activated on the switch, the **show** command displays the link aggregates as MC-Static and MC-Dynamic as shown in the second example.

### Examples

```
-> show linkagg port
```

```
Slot/Port Aggregate  SNMP Id   Status   Agg  Oper Link Prim
-----+-----+-----+-----+-----+-----+-----+-----
  2/1    Static      2001  ATTACHED    1  UP   UP   YES
```

Multi-chassis active:

```
-> show linkagg port
```

```
Slot/Port Aggregate  SNMP Id   Status   Agg  Oper Link Prim
-----+-----+-----+-----+-----+-----+-----+-----
  2/1    MC-Static    2001  ATTACHED    1  UP   UP   YES
```

```
-> show linkagg agg 1-5 port
Slot/Port  Aggregate  SNMP Id    Status      Agg Oper Link Prim
-----+-----+-----+-----+-----+-----+-----+-----
  1/16  Static      2016      CONFIGURED    1   UP   UP   YES
  1/17  Static      2017      CONFIGURED    2   UP   UP   NO
  3/1   Static      3001      CONFIGURED    3   UP   UP   NO
  3/2   Static      3045      CONFIGURED    4   UP   UP   NO
  3/3   Static      3069      CONFIGURED    5   UP   UP   NO
```

Output fields are defined here:

#### *output definitions*

---

<b>Slot/Port</b>	The slot/port associated with the aggregate group.
<b>Aggregate</b>	The type of aggregate group associated with the port, either <b>Static</b> or <b>Dynamic</b> .
<b>SNMP Id</b>	The SNMP ID associated with the aggregate group.
<b>Status</b>	The current status of the port, which can be <b>CONFIGURED</b> , <b>PENDING</b> , <b>SELECTED</b> , or <b>RESERVED</b> .
<b>Agg</b>	The number of the aggregate groups associated with this port.
<b>Oper</b>	The operational status of the port.
<b>Link</b>	The physical link status of the port.
<b>Prim</b>	Specifies if the port is the primary port of the aggregate. The primary port is the lowest numbered port in a link aggregate.

---

A port that belongs to a static aggregate is specified:

```
-> show linkagg port 4/1
```

```
Static Aggregable Port
SNMP Id           : 4001,
Slot/Port         : 4/1,
Administrative State : ENABLED,
Operational State  : DOWN,
Port State        : CONFIGURED,
Link State        : DOWN,
Selected Agg Number : 2,
Port position in the aggregate: 0,
Primary port      : NONE
```

Output fields are defined here:

#### *output definitions*

---

<b>SNMP Id</b>	The SNMP ID associated with this port.
<b>Slot/Port</b>	The slot and port number.
<b>Administrative State</b>	The current administrative state of this port, which can be <b>ENABLED</b> or <b>DISABLED</b> .
<b>Operational State</b>	The current operational state of the port, which can be <b>UP</b> or <b>DOWN</b> .
<b>Port State</b>	The current operational state of the port, which can be <b>CONFIGURED</b> , <b>PENDING</b> , <b>SELECTED</b> , or <b>RESERVED</b> .

*output definitions (continued)*


---

<b>Link State</b>	The current operational state of the link from this port to its remote partner, which can be <b>UP</b> or <b>DOWN</b> .
<b>Selected Agg Number</b>	The number associated with the static aggregate group to which the port is attached.
<b>Port position in the aggregate</b>	The rank of this port within the static aggregate group.
<b>Primary Port</b>	The port number of the first port to join this static aggregate group. If the first port to join the aggregate is no longer part of the aggregate group, the switch automatically assigns another port in the aggregate group to be the primary port.

---

A port that belongs to a static link aggregate is specified:

```
-> show linkagg agg 1
```

```
Static Aggregate
SNMP Id           : 40000001,
Aggregate Number  : 1,
SNMP Descriptor   : Omnichannel Aggregate Number 1 ref 40000001 size 4,
Name              : ,
Admin State       : ENABLED,
Operational State : DOWN,
Aggregate Size    : 4,
Number of Selected Ports : 0,
Number of Reserved Ports : 0,
Number of Attached Ports : 0,
Primary Port      : NONE
```

A port that belongs to a dynamic aggregate is specified:

```
-> show linkagg port 2/1
```

```
Dynamic Aggregable Port
SNMP Id           : 2001,
Slot/Port         : 2/1,
Administrative State : ENABLED,
Operational State : DOWN,
Port State        : CONFIGURED,
Link State        : DOWN,
Selected Agg Number : NONE,
Primary port      : UNKNOWN,
LACP
Actor System Priority : 10,
Actor System Id      : [00:d0:95:6a:78:3a],
Actor Admin Key      : 8,
Actor Oper Key       : 8,
Partner Admin System Priority : 20,
Partner Oper System Priority : 20,
Partner Admin System Id : [00:00:00:00:00:00],
Partner Oper System Id : [00:00:00:00:00:00],
Partner Admin Key    : 8,
Partner Oper Key     : 0,
Attached Agg Id      : 0,
Actor Port           : 7,
Actor Port Priority  : 15,
Partner Admin Port   : 0,
```



```

Partner Oper Port           : 0,
Partner Admin Port Priority : 0,
Partner Oper Port Priority  : 0,
Actor Admin State          : act1.tim1.aggl.syn0.col0.dis0.def1.exp0
Actor Oper State           : act1.tim1.aggl.syn0.col0.dis0.def1.exp0,
Partner Admin State        : act0.tim0.aggl.syn1.col1.dis1.def1.exp0,
Partner Oper State         : act0.tim0.aggl.syn0.col1.dis1.def1.exp0

```

Output fields are defined here:

### *output definitions*

---

<b>SNMP Id</b>	The SNMP ID associated with this port.
<b>Slot/Port</b>	The slot and port number.
<b>Administrative State</b>	The current administrative state of this port, which can be <b>ENABLED</b> or <b>DISABLED</b> .
<b>Operational State</b>	The current operational state of the port, which can be <b>UP</b> or <b>DOWN</b> .
<b>Port State</b>	The current operational state of the port, which can be <b>CONFIGURED</b> , <b>PENDING</b> , <b>SELECTED</b> , or <b>AGGREGATED</b> .
<b>Link State</b>	The current operational state of the link from this port to its remote partner, which can be <b>UP</b> or <b>DOWN</b> .
<b>Selected Agg Number</b>	The number associated with the dynamic aggregate group to which the port is attached.
<b>Primary Port</b>	The port number of the first port to join this dynamic aggregate group. If the first port to join the aggregate is no longer part of the aggregate group, the switch automatically assigns another port in the aggregate group to be the primary port.
<b>Actor System Priority</b>	The actor system priority of this port. You can modify this parameter with the <a href="#">linkagg lacp port actor system-priority</a> command (see <a href="#">page 8-38</a> ).
<b>Actor System Id</b>	The actor system ID (i.e., MAC address) of this port. You can modify this parameter with the <a href="#">linkagg lacp port actor system-id</a> command (see <a href="#">page 8-36</a> ).
<b>Actor Admin Key</b>	The actor administrative key value for this port. You can modify this parameter with the <a href="#">linkagg lacp port actor admin-key</a> command (see <a href="#">page 8-31</a> ).
<b>Actor Oper Key</b>	The actor operational key associated with this port.
<b>Partner Admin System Priority</b>	The administrative priority of the remote system to which this port is attached. You can modify this parameter with the <a href="#">linkagg lacp port partner admin system-priority</a> command (see <a href="#">page 8-47</a> ).
<b>Partner Oper System Priority</b>	The operational priority of the remote system to which this port is attached.
<b>Partner Admin System Id</b>	The administrative MAC address associated with the system ID of a remote partner. This value is used along with Partner Admin System Priority, Partner Admin Key, and Partner Admin Port Priority to manually configure aggregation. You can modify this parameter with the <a href="#">linkagg lacp port partner admin system-id</a> command (see <a href="#">page 8-43</a> ).
<b>Partner Oper System Id</b>	The MAC address that corresponds to the system ID of the remote partner.

*output definitions (continued)*


---

<b>Partner Admin Key</b>	The administrative value of the key for the remote partner. This value is used along with Partner Admin System Priority, Partner Admin System, Partner Admin Port, and Partner Admin Port Priority to manually configure aggregation. You can modify this parameter with the <a href="#">linkagg lacp port partner admin-key</a> command (see <a href="#">page 8-45</a> ).
<b>Partner Oper Key</b>	The current operational value of the key for the protocol partner.
<b>Attached Agg ID</b>	The ID of the aggregate group that the port has attached itself to. A value of zero indicates that the port is not attached to an aggregate group.
<b>Actor Port</b>	The port number locally assigned to this port.
<b>Actor Port Priority</b>	The actor priority value assigned to the port. You can modify this parameter with the <a href="#">linkagg lacp port actor port priority</a> command (see <a href="#">page 8-49</a> ).
<b>Partner Admin Port</b>	The administrative value of the port number for the protocol partner. This value is used along with Partner Admin System Priority, Partner Admin System ID, Partner Admin Key, and Partner Admin Port Priority to manually configure aggregation. You can modify this parameter with the <a href="#">linkagg lacp port partner admin-port</a> command (see <a href="#">page 8-51</a> ).
<b>Partner Oper Port</b>	The operational port number assigned to the port by the protocol partner of the port.
<b>Partner Admin Port Priority</b>	The administrative port priority of the protocol partner. This value is used along with Partner Admin System Priority, Partner Admin System ID, and Partner Admin Key to manually configure aggregation. You can modify this parameter with the <a href="#">linkagg lacp port partner admin port-priority</a> command (see <a href="#">page 8-52</a> ).
<b>Partner Oper Port Priority</b>	The priority value assigned to the this port by the partner.
<b>Actor Admin State</b>	The administrative state of the port. You can modify this parameter with the <a href="#">linkagg lacp port actor admin-state</a> command (see <a href="#">page 8-34</a> ).
<b>Actor Oper State</b>	The current operational state of the port.
<b>Partner Admin State</b>	The administrative state of the partner port. You can modify this parameter with the <a href="#">linkagg lacp agg partner admin-state</a> command (see <a href="#">page 8-40</a> ).
<b>Partner Oper State</b>	The current operational state of the partner port.

---

**Release History**

Release 5.1; command introduced.

## Related Commands

<a href="#">linkagg static port agg</a>	Configures a slot and port for a static aggregate group.
<a href="#">linkagg lacp port actor admin-key</a>	Configures a slot and port for a dynamic aggregate group.
<a href="#">show linkagg</a>	Displays information about static and dynamic (LACP) aggregate groups.

## MIB Objects

```
alclnkaggAggPortTable
  alclnkaggAggPortActorSystem
  alclnkaggAggPortActorSystemPriority
  alclnkaggAggPortActorSystemID
  alclnkaggAggPortActorAdminKey
  alclnkaggAggPortActorOperKey
  alclnkaggAggPortPartnerAdminSystemPriority
  alclnkaggAggPortPartnerOperSystemPriority
  alclnkaggAggPortPartnerAdminSystemID
  alclnkaggAggPortPartnerOperSystemID
  alclnkaggAggPortPartnerAdminKey
  alclnkaggAggPortPartnerOperKey
  alclnkaggAggPortSelectedAggID
  alclnkaggAggPortAttachedAggID
  alclnkaggAggPortActorPort
  alclnkaggAggPortActorPortPriority
  alclnkaggAggPortPartnerAdminPort
  alclnkaggAggPortPartnerOperPort
  alclnkaggAggPortPartnerAdminPortPriority
  alclnkaggAggPortPartnerOperPortPriority
  alclnkaggAggPortActorAdminState
  alclnkaggAggPortActorOperState
  alclnkaggAggPortPartnerAdminState
  alclnkaggAggPortPartnerOperState
```

---

## show linkagg accounting

Displays statistics collected for packets transmitted and received on link aggregate ports.

**show linkagg accounting**

---

### Syntax Definitions

N/A

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- Statistics are displayed for all link aggregate IDs configured on the switch.
- Statistics are collected for undersized and oversized packets, packets of a certain size, and Jabber frames.

### Examples

```
-> show linkagg accounting
```

```
Link Agg 10
rx undersize packets      = 0
tx undersize packets      = 0
rx oversize packets      = 0
tx oversize packets      = 0
rx packets 64             = 3073753
rx packets 65_127        = 678698
rx packets 128_255       = 21616
rx packets 256_511       = 21062
rx packets 512_1023      = 2
rx packets 1024_1518     = 84
rx packets 1519_4095     = 0
rx packets 4096_9216     = 0
rx jabber frames         = 0
```

### Release History

Release 5.1; command introduced.

## Related Commands

### [show linkagg counters](#)

Displays statistics collected for the type and number of packets transmitted and received on link aggregate ports.

### [show linkagg traffic](#)

Displays the total number of packets and bytes that are received and transmitted on link aggregate ports.

### [clear linkagg-statistics](#)

Clears statistics for all link aggregates or for specific aggregate IDs.

## MIB Objects

InkaggAggIdAccountTable

```
alCRxUndersize  
alCTxUndersize  
alCRxOversize  
alCTxOversize  
alCRxPackets64  
alCRxPackets127  
alCRxPackets255  
alCRxPackets511  
alCRxPackets1023  
alCRxPackets1518  
alCRxPackets4095  
alCRxPackets9216  
alCRxJabberFrames
```

---

## show linkagg counters

Displays statistics collected for the type and number of packet frames transmitted and received on link aggregate ports.

**show linkagg counters [errors]**

---

### Syntax Definitions

**errors** Display the number of errors received on the link aggregate member ports.

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- Statistics are displayed (in bytes or frame count) for all link aggregate IDs configured on the switch.
- Error statistics include the number of alignment, frame check (FCS), received, and transmitted errors.

### Examples

```
-> show linkagg counters
```

```
Link Agg 10
InOctets           = 54367578586897979
OutOctets          = 5.78E19
InUcastPkts       = 55654265276
OutUcastPkts      = 5.78E20
InMcastPkts       = 58767867868768777
OutMcastPkts      = 5465758756856
InBcastPkts       = 576567567567567576
OutBcastPkts      = 786876
InPause frames    = 567798768768767
OutPause frames   = 786876
```

```
-> show linkagg counters errors
```

```
Link Agg 10
Alignments Errors = 6.45E13
FCS Errors        = 7.65E12
IfInErrors        = 6435346
IfOutErrors       = 5543
```

### Release History

Release 5.1; command introduced.

## Related Commands

<a href="#">show linkagg accounting</a>	Displays statistics collected for packets transmitted and received on link aggregate ports.
<a href="#">show linkagg traffic</a>	Displays the total number of packets and bytes that are received and transmitted on link aggregate ports.
<a href="#">clear linkagg-statistics</a>	Clears statistics for all link aggregates or for specific aggregate IDs.

## MIB Objects

```
alclnkaggAggIdCounterTable  
  alcInOctets  
  alcOutOctets  
  alcInUcastPkts  
  alcOutUcastPkts  
  alcInMcastPkts  
  alcOutMcastPkts  
  alcInBcastPkts  
  alcOutBcastPkts  
  alcInPauseFrames  
  alcOutPauseFrames
```

---

## show linkagg traffic

Displays the total number of packets and bytes that are received and transmitted on link aggregate ports.

**show linkagg traffic**

---

### Syntax Definitions

N/A

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

Statistics are displayed for all link aggregate IDs configured on the switch.

### Examples

```
-> show linkagg traffic
      Input      Input      Output      Output
Agg   Packets    Bytes      Packets     Bytes
-----+-----+-----+-----+-----
10    322         20624      5125        347216
20    456         30620      6133        397764
```

### Release History

Release 5.1; command introduced.

### Related Commands

- [show linkagg accounting](#) Displays statistics collected for packets transmitted and received on link aggregate ports.
- [show linkagg counters](#) Displays statistics collected for the type and number of packets transmitted and received on link aggregate ports.
- [clear linkagg-statistics](#) Clears statistics for all link aggregates or for specific aggregate IDs.

### MIB Objects

```
alclnkaggAggIdTrafficTable
  alcInputPackets
  alcInputBytes
  alcOutputPackets
  alcOutputBytes
```

---



## clear linkagg-statistics

Clears statistics for all link aggregates or for a specific aggregate ID or range of IDs.

```
clear linkagg-statistics [agg agg_id[-agg_id2]]
```

---

### Syntax Definitions

*agg\_id*[-*agg\_id2*]                      The link aggregate ID number corresponding to the static aggregate group. Use a hyphen to specify a range of IDs (10-20).

### Defaults

By default, statistics are cleared for all link aggregates.

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

This command sets all statistic counters to zero.

### Examples

```
-> clear linkagg-statistics
-> clear linkagg-statistics agg 10
-> clear linkagg-statistics agg 11-15
```

### Release History

Release 5.1; command introduced.

### Related Commands

- |   |  |
|---|--|
| <a href="#">show linkagg accounting</a> | Displays statistics collected for packets transmitted and received on link aggregate ports.                        |
| <a href="#">show linkagg counters</a>   | Displays statistics collected for the type and number of packets transmitted and received on link aggregate ports. |
| <a href="#">show linkagg traffic</a>    | Displays the total number of packets and bytes that are received and transmitted on link aggregate ports.          |

**MIB Objects**

```
alclnkaggAggPortStatsTable  
  alclnkaggAggPortStatsLACPDUsRx  
  alclnkaggAggPortStatsMarkerPDUsRx  
  alclnkaggAggPortStatsMarkerResponsePDUsRx  
  alclnkaggAggPortStatsUnknownRx  
  alclnkaggAggPortStatsIllegalRx  
  alclnkaggAggPortStatsLACPDUsTx  
  alclnkaggAggPortStatsMarkerPDUsTx  
  alclnkaggAggPortStatsMarkerResponsePDUsTx
```

---



# 9 Virtual Chassis Commands

A Virtual Chassis is a group of switches managed through a single management IP address and that behave as a single bridge or router. It provides both node level and link level redundancy for devices connecting to the aggregation layer via dual-homed standard 802.3ad link aggregation mechanisms. The use of Virtual Chassis provides node level redundancy without the need to use redundancy protocols such as STP and VRRP between the edge and the aggregation/core layer.

MIB information for the Virtual Chassis commands is as follows:

*Filename:* ALCATEL-IND1-VIRTUAL-CHASSIS-MIB.mib  
*Module:* alcatelIND1VirtualChassisMIB

*Filename:* ALCATEL-IND1-VC-SPLIT-PROTECTION-MIB.mib  
*Module:* alaVCSPMIB

A summary of available commands is listed here:

---

<b>Virtual Chassis Commands</b>	<a href="#">virtual-chassis configured-chassis-id</a> <a href="#">virtual-chassis chassis-group</a> <a href="#">virtual-chassis configured-chassis-priority</a> <a href="#">virtual-chassis configured-control-vlan</a> <a href="#">virtual-chassis configured-hello-interval</a> <a href="#">virtual-chassis vf-link create</a> <a href="#">virtual-chassis vf-link member-port</a> <a href="#">virtual-chassis vf-link default-vlan</a> <a href="#">virtual-chassis hello-interval</a> <a href="#">virtual-chassis shutdown</a> <a href="#">virtual-chassis vf-link-mode</a> <a href="#">vc-takeover</a> <a href="#">show virtual-chassis topology</a> <a href="#">show virtual-chassis consistency</a> <a href="#">show virtual-chassis vf-link</a> <a href="#">show virtual-chassis auto-vf-link-port</a> <a href="#">show virtual-chassis chassis-reset-list</a> <a href="#">show virtual-chassis slot-reset-list</a> <a href="#">show virtual-chassis neighbors</a> <a href="#">show configuration vcm-snapshot chassis-id</a>
---------------------------------	---

---

## virtual-chassis configured-chassis-id

Assigns a globally unique chassis identifier to the switch and enables the switch to operate in virtual-chassis mode.

```
virtual-chassis [chassis-id oper_chassis] configured-chassis-id config_chassis
```

```
no virtual-chassis [chassis-id oper_chassis] configured-chassis-id config_chassis
```

---

### Syntax Definitions

*oper\_chassis* The operational/current chassis ID number.

*config\_chassis* The configured/next chassis ID number.

### Defaults

---

parameter	default
<i>oper_chassis</i>	0 (standalone mode; no virtual chassis operation is allowed)

---

### Platforms Supported

OmniSwitch 2360

### Usage Guidelines

- Use the **no** form of this command to change the chassis ID back to “0” (the default). When the chassis ID is set to “0”, the switch operates in standalone mode and all virtual chassis related configuration commands are no longer active for the switch.
- The operational chassis identifier parameter is only optional when the switch is running in standalone mode or at start up time, within the *vcsetup.cfg*, when the switch is coming up in virtual chassis mode. The same restrictions apply to the no form of the command.
- The operational chassis identifier is a mandatory parameter whenever the system is running in virtual chassis mode. This prevents modifying the chassis identifier of all switches at the same time and causing a duplicate chassis identifier.
- Two switches that have the same chassis identifier are not allowed to operate in virtual chassis mode. If a duplicate chassis identifier is detected one of the switches will be in an inconsistent role and its status will be set to Duplicate-Chassis-ID.
- The configured chassis identifier will only take effect after the next reboot of the target chassis.
- Virtual chassis is only supported between two switches of the same type. For example, virtual chassis is not supported between an OmniSwitch 2260 and an OmniSwitch 2360.
- The no form of this command can only be used if there are no VFLs configured on the switch.
- Snapshots produced through the **show configuration vcm-snapshot**, **show configuration snapshot virtual chassis** or **write memory** commands always include the operational chassis identifier.

## Examples

```
-> virtual-chassis configured-chassis-id 1 //Standalone mode
-> virtual-chassis chassis-id 0 configured-chassis-id 1
-> no virtual-chassis chassis-id 0 configured-chassis-id
-> no virtual-chassis configured-chassis-id
```

## Release History

Release 5.1; command introduced.

## Related Commands

<a href="#">vc-takeover</a>	Converts an existing standalone configuration to a virtual chassis configuration.
<a href="#">show virtual-chassis consistency</a>	Displays the system level mandatory consistency parameters of both the local and peer switches.
<a href="#">show virtual-chassis topology</a>	Displays details about the configured and operational parameters related to all switches participating in the virtual chassis topology.

## MIB Objects

```
virtualChassisGlobalTable
  virtualChassisOperChasId
  virtualChassisConfigChassisId
```

---

## virtual-chassis chassis-group

Assigns a globally unique chassis group identifier to a chassis. Each peer switch in a virtual chassis domain must use the same group ID number. The group ID number uniquely identifies switches operating in the same virtual chassis.

**virtual-chassis** [**chassis-id** *oper\_chassis*] **chassis-group** *group*

---

### Syntax Definitions

<i>oper_chassis</i>	The operational/current chassis ID number.
<i>group</i>	Virtual chassis group identifier (0-255), which is used to identify a group of chassis belonging to the same virtual chassis.

### Defaults

---

parameter	default
<i>group</i>	Derived from last byte of Master chassis MAC address

---

### Platforms Supported

OmniSwitch 2360

### Usage Guidelines

- Each virtual chassis domain must use a different group ID number to differentiate the domain within the network environment.
- If no operational chassis identifier is specified or if the value specified is zero, then the value is applied to all switches in the virtual chassis.
- When a set of switches is running in virtual chassis mode the chassis group can only be configured with exactly the same value as the master chassis when the configuration applies to a single and specific switch.
- When a set of switches is running in virtual chassis mode the chassis group can be configured with any value within the valid range as long as the configuration applies to all switches at the same time.
- It is strongly recommended that the same chassis group value is set for all switches that will participate on the same virtual chassis group. Failure to adhere to this recommendation followed by a system reset will prevent the switches whose values are different from joining the same virtual chassis group.
- When determining the chassis group ID the last byte of the Master chassis MAC address is used. For example, if the Master's MAC address is xx:xx:xx:xx:xx:7e, the chassis group will be 126 (equivalent to hex 7e).

### Examples

```
-> virtual-chassis chassis-id 1 chassis-group 10
-> virtual-chassis chassis-id 0 chassis-group 10
-> virtual-chassis chassis-group 10 // All switches
```

## Release History

Release 5.1.R2; command introduced.

## Related Commands

<a href="#">vc-takeover</a>	Converts an existing standalone configuration to a virtual chassis configuration
<a href="#">show virtual-chassis consistency</a>	Displays the system level mandatory consistency parameters of both the local and peer switches.
<a href="#">show virtual-chassis topology</a>	Displays details about the configured and operational parameters related to all switches participating in the virtual chassis topology.

## MIB Objects

```
virtualChassisGlobalTable  
  virtualChassisOperChasID  
  virtualChassisGroup
```

---



## virtual-chassis configured-chassis-priority

Sets the configured chassis priority for a chassis specified by its operational chassis identifier.

**virtual-chassis** [**chassis-id** *oper\_chassis*] **configured-chassis-priority** *priority*

---

### Syntax Definitions

<i>oper_chassis</i>	The operational/current chassis ID number.
<i>priority</i>	Configured chassis priority (0-255) which defines the user preference above all other election criteria, for the target chassis to become the master of the virtual chassis.

### Defaults

N/A

### Platforms Supported

Not supported in this release.

### Usage Guidelines

- The greatest configured-chassis-priority will become the Master chassis. Without setting this value the smallest chassis identifier becomes the key parameter used to determine which switch will become the Master.
- If no operational chassis identifier is specified or if the value specified is zero, then the value is applied to all switches in the virtual chassis.
- The configured chassis priority will only take effect after the next reboot of the target switch.

### Examples

Standalone mode:

```
-> virtual-chassis chassis-priority 50
-> virtual-chassis chassis-id 0 chassis-priority 50
```

All switches:

```
-> virtual-chassis configured-chassis-priority 50
-> virtual-chassis chassis-id 0 configured-chassis-priority 50
```

Chassis 2 only:

```
-> virtual-chassis chassis-id 2 configured-chassis-priority 75 //Chassis 2 only
```

### Release History

Release 5.1; command not supported.

## Related Commands

<a href="#">vc-takeover</a>	Converts an existing standalone configuration to a virtual chassis configuration.
<a href="#">show virtual-chassis consistency</a>	Displays the system level mandatory consistency parameters of both the local and peer switches.
<a href="#">show virtual-chassis topology</a>	Displays details about the configured and operational parameters related to all switches participating in the virtual chassis topology.

## MIB Objects

```
virtualChassisGlobalTable  
  virtualChassisOperChasID  
  virtualChassisConfigPriority
```

---

## virtual-chassis configured-control-vlan

Sets the configured control VLAN for a chassis specified by its operational chassis identifier.

```
virtual-chassis [chassis-id oper_chassis] configured-control-vlan vlan
```

---

### Syntax Definitions

<i>oper_chassis</i>	The operational/current chassis ID number.
<i>vlan</i>	Configured/next virtual chassis control VLAN (2-4094), which is used for all internal control communication between switches over the VFL.

### Defaults

N/A

### Platforms Supported

Not supported in this release.

### Usage Guidelines

- This configured control VLAN will only take effect after the next reboot of the target switch.
- If no operational chassis identifier is specified or if the value specified is zero, then the value is applied to all switches in the virtual chassis.
- When a set of switches in running in virtual chassis mode, the configured control VLAN can only be configured with exactly the same value as the master chassis when the configuration applies to a single and specific switch.
- When a set of switches in running in virtual chassis mode, the configured control VLAN can be configured with any value within the valid range as long as the configuration applies to all switches at the same time.
- It is strongly recommended that the value is for all switches that will participate in the same virtual chassis topology.

### Examples

Standalone mode:

```
-> virtual-chassis configured-control-vlan 10  
-> virtual-chassis chassis-id 0 configured-control-vlan 10
```

All switches:

```
-> virtual-chassis configured-control-vlan 10  
-> virtual-chassis chassis-id 0 configured-control-vlan 10
```

### Release History

Release 5.1; command not supported.

## Related Commands

<a href="#">vc-takeover</a>	Converts an existing standalone configuration to a virtual chassis configuration.
<a href="#">show virtual-chassis consistency</a>	Displays the system level mandatory consistency parameters of both the local and peer switches.
<a href="#">show virtual-chassis topology</a>	Displays details about the configured and operational parameters related to all switches participating in the virtual chassis topology.

## MIB Objects

```
virtualChassisGlobalTable  
  virtualChassisOperChasID  
  virtualChassisConfigControlVlan
```

---

## virtual-chassis configured-hello-interval

Sets the virtual chassis configured hello interval parameter on the switch. Hello packets are sent periodically on the virtual fabric link (VFL) interfaces to establish a relationship and bidirectional communication between virtual chassis switches. The hello interval value determines how often these packets are sent.

```
virtual-chassis [chassis-id oper_chassis] configured-hello-interval hello
```

---

### Syntax Definitions

*oper\_chassis*

The operational/current chassis ID number.

*hello*

Configured/next virtual chassis hello interval in seconds (1-10), which defines how frequently the keep-alives related to the virtual chassis hello protocol are exchanged over the VFL links.

### Defaults

N/A

### Platforms Supported

Not supported in this release.

### Usage Guidelines

- The configured value will only take effect after the next reboot of the target switch.
- If no operational chassis identifier is specified or if the value specified is zero, then the value is applied to all switches in the virtual chassis.
- When a set of switches is running in virtual chassis mode, the configured hello interval can only be configured with exactly the same value as the master chassis when the configuration applies to a single and specific switch.
- When a set of switches is running in virtual chassis mode, the configured hello interval can be configured with any value within the valid range as long as the configuration applies to all switches at the same time.
- The hello timeout is a fixed value and defined as 120 seconds. This is the minimum time interval that a switch will wait without receiving any hello packets from a peer switch before declaring that the adjacency towards that switch was lost.
- It is strongly recommended that the hello interval be the same for all switches that will participate in the same virtual chassis topology.

## Examples

Standalone mode:

```
-> virtual-chassis configured-hello-interval 10
-> virtual-chassis chassis-id 0 configured-hello-interval 10
```

All switches:

```
-> virtual-chassis configured-hello-interval 10
-> virtual-chassis chassis-id 0 configured-hello-interval 10
```

## Release History

Release 5.1; command not supported.

## Related Commands

<a href="#">vc-takeover</a>	Converts an existing standalone configuration to a virtual chassis configuration.
<a href="#">show virtual-chassis consistency</a>	Displays the system level mandatory consistency parameters of both the local and peer switches.
<a href="#">show virtual-chassis topology</a>	Displays details about the configured and operational parameters related to all switches participating in the virtual chassis topology.

## MIB Objects

```
virtualChassisGlobalTable
  virtualChassisOperChasID
  virtualChassisConfigHelloInterval
```

---

## virtual-chassis vf-link create

Configures a virtual fabric link (VFL) between two peer switches. A VFL is required to enable the virtual chassis operation between the two switches.

```
virtual-chassis [chassis-id oper_chassis] vf-link vfl_id create
```

```
no virtual-chassis [chassis-id oper_chassis] vf-link vfl_id
```

---

### Syntax Definitions

<i>oper_chassis</i>	The operational/current chassis ID number.
<i>vfl_id</i>	The VFL link identifier (0).

### Defaults

N/A

### Platforms Supported

Not supported in this release.

### Usage Guidelines

- Although a virtual fabric link can be configured while the switch is running either in standalone or virtual chassis mode, a VFL can only become operational when the chassis operates in virtual chassis mode.
- Use the no form of this command to remove the VFL configuration from the switch.
- Although the switch supports runtime configuration of the VFL and its member ports, configuring the VFL at the same time as the chassis identifier is configured and before rebooting the switch is recommended.
- If no operational chassis identifier is specified or if the value specified is zero, then the value is applied to all switches in the virtual chassis.
- This command is valid only when the VFL mode is set to static.

### Examples

```
-> virtual-chassis vf-link 0 create
-> virtual-chassis chassis-id 0 vf-link 0 create
-> no virtual-chassis vf-link 0
-> no virtual-chassis chassis-id 0 vf-link 0

-> virtual-chassis chassis-id 1 vf-link 0 create
-> virtual-chassis chassis-id 2 vf-link 0 create
-> no virtual-chassis chassis-id 1 vf-link 0
-> no virtual-chassis chassis-id 2 vf-link 0
```

### Release History

Release 5.1; command not supported.

## Related Commands

### [vc-takeover](#)

Converts an existing standalone configuration to a virtual chassis configuration.

### [show virtual-chassis consistency](#)

Displays the system level mandatory consistency parameters of both the local and peer switches.

### [show virtual-chassis vf-link](#)

Displays a summary of the configured and operational parameters related to the virtual fabric link on the switch.

## MIB Objects

```
virtualChassisLinkTable  
  virtualChassisOperChasID  
  virtualChassisLinkID  
  virtualChassisVflRowStatus
```

---



## virtual-chassis vf-link member-port

Adds member ports to a given virtual fabric link (VFL).

```
virtual-chassis [chassis-id oper_chassis] vf-link vfl_id member-port [oper_chassis/]slot/port
```

```
no virtual-chassis [chassis-id oper_chassis] vf-link vfl_id member-port [oper_chassis/]slot/port
```

---

### Syntax Definitions

N/A

### Defaults

N/A

### Platforms Supported

Not supported in this release.

### Usage Guidelines

- Although virtual-fabric link (VFL) member ports can be configured while the switch is running either in standalone or virtual chassis mode, a configured virtual-fabric link (VFL) member port can only become operational when the chassis operates in virtual chassis mode.
- Use the no form of this command to remove a member port from the virtual-fabric link (VFL).
- When a switch is running in virtual chassis mode, a virtual-fabric link member port must be fully specified including *oper\_chassis/slot/port*.
- Although the switch supports runtime configuration of the virtual-fabric link (VFL) and its member ports, configuring the virtual-fabric link (VFL) at the same time as the chassis identifier is configured and before rebooting the switch is recommended.
- If no operational chassis identifier is specified or if the value specified is zero, then the value is applied to all switches in the virtual chassis.
- When a set of switches is running in virtual chassis mode, a virtual-fabric link (VFL) member ports can only be created or removed exactly in one switch at a time. In other words, we are not allowed to create or remove a virtual chassis link member port with a system operating in virtual chassis mode if no operational chassis identifier is provided or if the value zero is specified.
- A maximum of 16 member ports can be added or assigned to each virtual-fabric link (VFL).
- All virtual-fabric link (VFL) member ports must operate at the same speed.
- Only interfaces that operate at 10 Gbps or 40 Gbps can be added or assigned to a virtual-fabric link. (**Note:** 10GBaseT ports cannot be assigned to a VFL).
- Only interfaces operating in full-duplex mode can be added or assigned to a virtual-fabric link.
- It is recommended to configure virtual-fabric link (VFL) member ports across multiple network interface modules (NI) for resilience reasons.

- Virtual-fabric link (VFL) member ports can only be configured on interfaces that are fixed ports, network ports or priority flow control enabled ports. For instance, interfaces configured as Q-tag ports or ERP ports cannot be configured as virtual-fabric link member ports.
- When a switch is running in virtual chassis mode, the interface related to the last active virtual-fabric link member port cannot be administratively disabled.
- When a switch is running in virtual chassis mode, the last active virtual-fabric link member port cannot be deleted using the no form of the present command.
- When a switch is running in virtual chassis mode, the network interface module (NI) that hosts the last active virtual-fabric link member port cannot be administratively reset or powered off.
- This command is valid only when the VFL mode is set to static.

## Examples

```
-> virtual-chassis chassis-id 0 vf-link 1 member-port 0/1/1
-> virtual-chassis chassis-id 0 vf-link 1 member-port 0/2/1
-> virtual-chassis chassis-id 1 vf-link 1 member-port 1/1/1
-> virtual-chassis chassis-id 1 vf-link 1 member-port 1/2/1
-> no virtual-chassis chassis-id 0 vf-link 1 member-port 0/1/1
-> no virtual-chassis chassis-id 0 vf-link 1 member-port 0/2/1
-> no virtual-chassis chassis-id 1 vf-link 1 member-port 1/1/1
-> no virtual-chassis chassis-id 1 vf-link 1 member-port 1/2/1
```

## Release History

Release 5.1; command not supported.

## Related Commands

<a href="#">show virtual-chassis consistency</a>	Displays information about the virtual fabric link on the switch.
<a href="#">show virtual-chassis chassis-reset-list</a>	Displays detailed information about the virtual fabric link member ports on the switch.
<a href="#">show virtual-chassis vf-link</a>	Displays a summary of the configured and operational parameters related to the virtual fabric link on the switch.

## MIB Objects

```
virtualChassisLinkTable
  virtualChassisOperChasID
  virtualChassisLinkId
  virtualChassisVflMemberPortIfindex
  virtualChassisVflMemberPortRowStatus
```

---

## virtual-chassis vf-link default-vlan

Configures the default VLAN for the virtual fabric link (VFL).

```
virtual-chassis [chassis-id oper_chassis] vf-link vfl_id default-vlan vlan
```

```
no virtual-chassis [chassis-id oper_chassis] vf-link vfl_id default-vlan
```

---

### Syntax Definitions

<i>oper_chassis</i>	The operational/current chassis ID number.
<i>vfl_id</i>	The VFL link identifier (0).
<i>vlan</i>	The default VLAN (1-4094) for the specified VFL.

### Defaults

---

parameter	default
<i>vlan</i>	1

---

### Platforms Supported

Not supported in this release.

### Usage Guidelines

- This configured VLAN will become the default untagged VLAN for the VFL.
- Although the switch supports runtime configuration of the virtual-fabric link (VFL) and its member ports, configuring the virtual-fabric link (VFL) at the same time as the chassis identifier is configured and before rebooting the switch is recommended.
- Use the **no** form of this command to set the default VLAN back to 1.
- If no operational chassis identifier is specified or if the value specified is zero, then the value is applied to all switches in the virtual chassis.
- When a set of switches is running in virtual chassis mode, a virtual-fabric link (VFL) default VLAN can only be configured exactly in one switch at a time. In other words, we are not allowed to configure the virtual chassis link default VLAN with a system operating in virtual chassis mode if no operational chassis identifier is provided or if the value zero is specified.
- It is strongly recommended that the user set the same value of default VLAN for all virtual-fabric links on all switches that will participate on the same virtual chassis topology. Failure to adhere to this recommendation may cause end to end connectivity problems in the network.

### Examples

Standalone mode:

```
-> virtual-chassis vf-link 0 default-vlan 5
-> virtual-chassis chassis-id 0 vf-link 0 default-vlan 5
-> no virtual-chassis vf-link 0 default-vlan
-> no virtual-chassis chassis-id 0 vf-link 0 default-vlan
```

Chassis 1:

```
-> virtual-chassis chassis-id 1 vf-link 0 default-vlan 5  
-> no virtual-chassis chassis-id 1 vf-link 0 default-vlan
```

## Release History

Release 5.1; command not supported.

## Related Commands

**show virtual-chassis vf-link** Displays information about the virtual fabric link on the switch.

## MIB Objects

```
virtualChassisLinkTable  
  virtualChassisOperChasID  
  virtualChassisLinkID  
  virtualChassisLinkOperDefaultVlan
```

---

## virtual-chassis hello-interval

Sets the virtual chassis configured hello interval parameter on the chassis. Hello packets are sent periodically on the virtual fabric link (VFL) interfaces to establish a relationship and bidirectional communication between virtual chassis switches. The hello interval value determines how often these packets are sent.

**virtual-chassis** [**chassis-id** *oper\_chassis*] **hello-interval** *hello*

---

### Syntax Definitions

<i>oper_chassis</i>	The operational/current chassis ID number
<i>hello</i>	The operational/current virtual chassis hello interval in seconds (1–2000), which defines how frequently the keep-alives related to the virtual chassis hello protocol are exchanged over the VFL links.

### Defaults

N/A

### Platforms Supported

OmniSwitch 2360

### Usage Guidelines

- If no operational chassis identifier is specified or if the value specified is zero, then the value is applied to all switches in the virtual chassis.
- When a set of switches is running in virtual chassis mode, the configured hello interval can only be configured with exactly the same value as the master chassis when the configuration applies to a single and specific switch.
- When a set of switches is running in virtual chassis mode, the hello interval can be configured with any value within the valid range as long as the configuration applies to all switches at the same time.
- It is strongly recommended that the hello interval be the same for all switches that will participate in the same virtual chassis topology.

### Examples

Standalone mode:

```
-> virtual-chassis hello-interval 10
-> virtual-chassis chassis-id 0 hello-interval 10
```

Virtual chassis mode:

```
-> virtual-chassis hello-interval 10 //All chassis
-> virtual-chassis chassis-id 2 configured-hello-interval 10 //Chassis 2 only
```

### Release History

Release 5.1.R2; command introduced.

## Related Commands

<a href="#">vc-takeover</a>	Converts an existing standalone configuration to a virtual chassis configuration.
<a href="#">show virtual-chassis consistency</a>	Displays the system level mandatory consistency parameters of both the local and peer switches.
<a href="#">show virtual-chassis topology</a>	Displays details about the configured and operational parameters related to all switches participating in the virtual chassis topology.

## MIB Objects

```
virtualChassisGlobalTable  
  virtualChassisOperChasID  
  virtualChassisOperHelloInterval
```

---

## virtual-chassis shutdown

Disables all front-panel port including the user ports and all the VFL member ports on a chassis isolating the chassis from the rest of the virtual chassis topology.

**virtual-chassis shutdown** [**chassis-id** *oper\_chassis*]

---

### Syntax Definitions

*oper\_chassis*                      The operational/current chassis ID number.

### Defaults

N/A

### Platforms Supported

Not supported in this release.

### Usage Guidelines

- This command will disable all front panel ports, including the user ports and all virtual-fabric link (VFL) member ports on the specified switch.
- After running this command remote access to the target switch is only possible through the local EMP port on that switch.
- The target switch must be reloaded to bring its ports back to an operational state.
- This command is only functional when executed through the master chassis of a system operating in virtual chassis mode.
- After the shutdown command is executed, the target switch assumes the role of master and remains isolated from all other switches in the virtual chassis topology.

### Examples

```
-> virtual-chassis shutdown chassis-id 2
```

### Release History

Release 5.1; command not supported.

### Related Commands

[show virtual-chassis consistency](#)                      Displays the system level mandatory consistency parameters of both the local and peer switches.

### MIB Objects

N/A

---

## virtual-chassis vf-link-mode

Configures the Virtual Chassis mode. Virtual Chassis mode determines whether the VFLs are created automatically.

```
virtual-chassis vf-link-mode {auto}
```

---

### Syntax Definitions

N/A

### Defaults

---

parameter	default
vf-link-mode	auto (if no vcsetup.cfg file exists).

---

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- If the chassis boots without a **vcsetup.cfg** file the mode defaults to auto.
- If the chassis boots with a **vcsetup.cfg** file and the 'virtual-chassis vf-link-mode' CLI does not exist, the mode will be set to static. Otherwise, the mode will be set as configured in the **vcsetup.cfg** file.
- Changing the mode is only allowed for all chassis or the local chassis. Specific chassis configuration is not allowed.

### Examples

```
-> virtual-chassis vf-link-mode auto
```

### Release History

Release 5.1; command introduced.

### Related Commands

[show virtual-chassis vf-link](#) Displays a summary of the configured and operational parameters related to the virtual fabric link on the switch.

### MIB Objects

```
virtualChassisGlobalTable  
  virtualChassisOperChasID  
  virtualChassisVflMode
```

---



## virtual-chassis auto-vf-link-port

Configures the port to be an automatic VFL port.

**[no]** `virtual-chassis auto-vf-link-port chassis/slot/port`

---

### Syntax Definitions

*chassis/slot/port*                      The operational chassis ID, slot, and port.

### Defaults

N/A

### Platforms Supported

Not supported in this release.

### Usage Guidelines

- This command is allowed only if VFL mode is auto.
- Refer to the defaults table above for information on which ports are default automatic VFL ports.
- Transceiver does not have to be present for port to be eligible as a default port.

### Examples

```
-> virtual-chassis auto-vf-link-port 1/1/1
-> no virtual-chassis auto-vf-link-port 1/1/1
```

### Release History

Release 5.1; command not supported.

### Related Commands

[show virtual-chassis auto-vf-link-port](#)      Displays a summary of the auto VFL ports.

### MIB Objects

```
virtualChassisAutoVflPortTable
  virtualChassisAutoVflPortIfindex
  virtualChassisAutoVflPortRowStatus
```

---

## vc-takeover

This command causes a reload of the master chassis from the running configuration in a virtual chassis environment.

**vc-takeover**

---

### Syntax Definitions

N/A

### Defaults

N/A

### Platforms Supported

Not supported in this release.

### Usage Guidelines

- For a dual-CMM Master chassis configuration, this command triggers a local CMM takeover on the Master if both the primary and secondary CMMs are up. This will cause the secondary CMM to become the primary CMM and the NIs will remain up. The original Master chassis will remain the Master and the Slave chassis will remain the Slave.
- For a single-CMM Master chassis configuration, this command will reboot the entire Master chassis including the NIs and result in the Slave chassis becoming the Master.

### Examples

```
-> vc-takeover  
WARNING - Working Changes Will Be Lost, Confirm VC takeover (Y/N) :
```

### Release History

Release 5.1; command not supported.

### Related Commands

[reload from](#) Reloads the master or slave chassis from the specified directory.

### MIB Objects

N/A

---

## show virtual-chassis topology

This command is used to provide a detailed status of the virtual chassis topology.

**show virtual-chassis [chassis-id {oper\_chassis}] topology**

---

### Syntax Definitions

*oper\_chassis*                      The operational/current chassis ID number.

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- This command can be executed on any CMM within any switch of the system.
- When no operational chassis identifier is specified the command will show data related to the entire virtual chassis system.
- A chassis ID of 100 or 101 is used to indicate a duplicate chassis ID.

### Examples

```
-> show virtual-chassis topology
```

Legend: Status suffix "+" means an added unit after last saved topology

```
Local Chassis: 1
```

Oper Chas	Role	Status	Config Chas ID	Oper Pri	Group	MAC-Address
1	Master	Running	1	100	0	94:24:e1:55:85:29

```
-> show virtual-chassis chassis-id 1 topology
```

Legend: licenses-info - A: Advanced; B: Data Center;

```
Oper-Chassis-ID           : 1,
Config-Chassis-ID        : 1,
Chassis-Role              : Master,
Previous-Chassis-Role    : Unassigned,
Chassis-Status           : Running,
Chassis-Group            : 0,
Chassis-MAC              : 94:24:e1:55:85:29,
Up-Time                   : 2 days 17 hours 6 minutes and 33 seconds,
Designated-NI            : 1,
Primary-CMM               : CMM-A,
Secondary-CMM            : Not present,
Chassis-Type              : OS2360,
License                   : A,
Hello-Interval           : 15,
```

```

Oper-Chassis-Priority      : 100,
Config-Chassis-Priority   : 100,
Oper-Control-VLAN         : 4094,
Config-Control-VLAN       : 4094,
VFLink-Mode               : Auto,
Split-Detect-Protocol     : VCSP,
Number-Of-Neighbors       : 0,
Number-Of-Direct-Neighbors : 0

```

---

### *output definitions*

---

<b>Oper-Chassis-ID (Chas)</b>	Operational/current virtual chassis chassis identifier.
<b>Config Chas ID</b>	The configured/next chassis identifier for the switch specified by operational chassis identifier.
<b>Chassis-Role (Role)</b>	<p>Chassis Role</p> <p><b>Unassigned:</b> Role undefined as election has not completed yet.</p> <p><b>Master:</b> Chassis is central point of management and control.</p> <p><b>Slave:</b> Chassis is an active or functional participant of the virtual chassis topology, but it is not the main entry point for management and control purposes.</p> <p><b>Inconsis:</b> Chassis is not an active or functional participant of the virtual chassis topology due to some inconsistent parameter, which does not match the match the master chassis' settings.</p> <p><b>Startup-Err:</b> Chassis is in start up error mode because it was unable to come up in virtual chassis mode. When a chassis assumes the Startup-Err role, its chassis status will be equal to either Invalid-Chassis-Id or Invalid-License, which are described later in this section.</p>
<b>Previous-Chassis-Role</b>	Previous chassis role before the last transition.

*output definitions*


---

<b>Chassis-Status (Status)</b>	<p>Chassis Status</p> <p><b>Init:</b> Status undefined as the chassis has not completed its initialization.</p> <p><b>Running:</b> The chassis is fully operational.</p> <p><b>Invalid-Chassis-Id:</b> The chassis is not operational in virtual chassis mode because no valid chassis identifier has been found in the configuration. Typically this means that the vsetup.cfg file is corrupted, empty or contains an invalid (e.g. out of range) chassis ID identifier.</p> <p><b>Invalid-License:</b> The chassis is not operational in virtual chassis mode because no valid advanced license has been found.</p> <p><b>Hello-Down:</b> The chassis is isolated from the rest of the virtual chassis topology participants because hello packets have not been received for a period of time greater than the hello timeout.</p> <p><b>Duplicate-Chassis:</b> This chassis is not fully operational because its operational chassis identifier matches the chassis ID of another chassis within the virtual chassis topology. As a result, a new operational chassis identifier from the range (101-102) will be allocated to this chassis.</p> <p><b>Mis-Image:</b> The chassis is not fully operational because its image versions are not consistent with the master chassis' images. In other words, the image version are not compatible and some of the software components running on this chassis are unable to interface with the software operating in the master chassis.</p> <p><b>Mis-Chassis-Type:</b> The chassis is not fully operational because its chassis type is not consistent with the master chassis' type. Different chassis types cannot be mixed in the same virtual chassis topology.</p> <p><b>Mis-Hello-Interval:</b> The chassis is not fully operational because its operational hello interval is not consistent with the master chassis' operational hello interval.</p> <p><b>Mis-Control-Vlan:</b> The chassis is not fully operational because its operational control VLAN is not consistent with the master chassis' operational control VLAN.</p> <p><b>Mis-Chassis-Group:</b> The chassis is not fully operational because its chassis group does not match the master chassis' chassis group and the chassis is connected directly or indirectly to the master chassis through virtual-fabric links. This chassis is unable to join the active virtual chassis topology whose master chassis is part of.</p> <p><b>Mis-License-Config:</b> The chassis is not fully operational because its license settings do not match the master chassis' license configuration. An exact match is required to allow successful operation within the same virtual chassis topology.</p> <p><b>Split-Topology:</b> The chassis is not fully operational and all of its front panel user ports (excluding the virtual-fabric link member ports) are operationally down because a topology split has occurred. This chassis became isolated from the master chassis after all of its active virtual-fabric member ports went down or the virtual chassis manager hello timeout has expired.</p> <p><b>Running+:</b> Element added after last saved topology.</p> <p><b>Not-Joined:</b> Element missing from last saved topology.</p>
<b>Chassis-Group (Group)</b>	<p>virtual chassis group identifier. Used to identify a group of chassis belonging to the same virtual chassis.</p>

---

*output definitions*


---

<b>Chassis-MAC (MAC-Address)</b>	Chassis MAC address.
<b>Up-Time</b>	Chassis up time.
<b>Designated-NI</b>	Designated network interface module (NI), which is the module responsible for managing the inter-process communication infrastructure responsible for control communication between distinct switches within the virtual chassis topology. Only VFL capable network interface modules can be elected as designated NI. When no VFL capable network interface modules are present on a switch, the designated NI is zero (0).
<b>Primary-CMM</b>	Primary CMM slot.
<b>Secondary-CMM</b>	Secondary CMM slot.
<b>Chassis-Type</b>	The switch chassis type.
<b>License</b>	The licenses installed on the chassis.
<b>Hello-Interval</b>	The hello-interval configured for the chassis.
<b>Oper-Chassis-Priority (Pri)</b>	Operational/current chassis priority, which defines the user preference, above all other election criteria, for a switch to become the master chassis of the virtual chassis topology. The greater this value the more likely a switch is to be elected as the master chassis.
<b>Config-Chassis-Priority</b>	Configured/next chassis priority, which defines the user preference above all other election criteria.
<b>Oper-Control-VLAN</b>	Operational/current virtual chassis control VLAN.
<b>Config-Control-VLAN</b>	Configured/next virtual chassis control VLAN, which will take effect after reset thereby becoming the next operational control VLAN.
<b>VFLink Mode</b>	The VFLink mode of the chassis: <b>Static</b> or <b>Auto</b> . <i>Only Auto is supported in this release</i>
<b>Split-Detect-Protocol</b>	<i>Not supported in this release.</i>
<b>Number-of-Neighbors</b>	Total number of neighbor switches that are part of the active virtual chassis topology for a given chassis group.
<b>Number-of-Direct-Neighbors</b>	Number of directly attached neighbor switches that are part of the active virtual chassis topology for a given chassis group. These are switches directly connected to the local switch through a virtual-fabric link (VFL).

---

**Release History**

Release 5.1; command introduced.

## Related Commands

<b>virtual-chassis configured-chassis-id</b>	Assigns a globally unique chassis identifier to the switch and enables the switch to operate in virtual chassis mode.
<b>virtual-chassis chassis-group</b>	Assigns a globally unique chassis group identifier to a switch. Each peer switch in a virtual chassis domain must use the same group ID number.
<b>virtual-chassis configured-chassis-priority</b>	Sets the configured chassis priority for a switch specified by its operational chassis identifier.
<b>virtual-chassis configured-control-vlan</b>	Sets the configured control VLAN for a switch specified by its operational chassis identifier.
<b>virtual-chassis configured-hello-interval</b>	Configures the virtual chassis hello interval parameter on the switch.

## MIB Objects

```
virtualChassisGlobalTable
  virtualChassisOperChasId
  virtualChassisConfigChassisID
  virtualChassisRole
  virtualChassisPreviousRole
  virtualChassisStatus
  virtualChassisConfigPriority
  virtualChassisOperPriority
  virtualChassisGroup
  virtualChassisMac
  virtualChassisUpTime
  virtualChassisDesigNI
  virtualChassisPriCmm
  virtualChassisSecCmm
  virtualChassisOperControlVlan
  virtualChassisConfigControlVlan
  virtualChassisOperHelloInterval
  virtualChassisConfigHelloInterval
  virtualChassisType
  virtualChassisLicense
  virtualChassisNumOfNeighbor
  virtualChassisNumOfDirectNeighbor
```

---

## show virtual-chassis consistency

This command is used to provide a detailed status of the parameters taken into account to determine the consistency of a group of switches participating in the virtual chassis topology.

**show virtual-chassis [chassis-id *oper\_chassis*] consistency**

---

### Syntax Definitions

*oper\_chassis*                      The operational/current chassis ID number.

### Defaults

N/A

### Platforms Supported

Not supported in this release.

### Usage Guidelines

- This command provides a list of parameters that must be configured consistently on all switches that will participate on the virtual chassis topology to allow correct system operation.
- In order to determine the consistency of a given parameter, the switch will compare the value of such parameters on a given switch with the settings of the master chassis. Therefore consistency is always defined as a comparison with the master chassis.
- The following parameters are considered consistent if they match the settings of the master chassis: chassis type, license, chassis group, operational control VLAN, configured control VLAN, operational hello interval and configured hello interval.
- The configured chassis identifier parameter is considered consistent if it is different than the settings of the master chassis.

### Examples

```
-> show virtual-chassis consistency
```

```
Legend: * - denotes mandatory consistency which will affect chassis status
```

```
      Licenses - A: Advanced; B: Data Center
```

	Config		Config			Oper	Config	
Chas*	Chas ID	Status	Chas Type*	Chas Group*	Hello Interv	Control Vlan*	Control Vlan	License*
1	1	OK	OS2260	0	10	4094	4094	AB
2	2	OK	OS2260	0	10	4094	4094	AB
3	2	NOK	OS2260	0	10	4094	4000	AB
4	2	OK	OS2260	0	10	4094	4094	AB
5	2	OK	OS2260	0	10	4094	4094	AB
6	2	NOK	OS2260	0	10	4094	4094	A



```
-> show virtual-chassis chassis-id 2 consistency
Legend: * - denotes mandatory consistency which will affect chassis status
        Licenses - A: Advanced; B: Data Center
```

Consistency	Given Chassis	Master Chassis	Status
Chassis-ID*	2	1	OK
Config-Chassis-ID	2	1	OK
Chassis-Type*	OS2260	OS2260	OK
License*	A	AB	NOK
Chassis-Group*	0	0	OK
Hello-Interval	10	10	OK
Oper-Control-Vlan*	4094	4094	OK
Config-Control-Vlan	4094	4094	OK

### output definitions

<b>Chassis-ID (Chas)</b>	Operational/current virtual chassis chassis identifier. The operational chassis identifier when a switch operates in standalone mode is zero (0).
<b>Config-Chassis-ID (Conf Chas ID)</b>	The configured/next chassis identifier for the switch specified by operational chassis identifier.
<b>Chassis-Type (Chas Type)</b>	The switch chassis type.
<b>License</b>	The licenses installed on the chassis.
<b>Chassis-Group (Chas Group)</b>	virtual chassis group identifier. Used to identify a group of chassis belonging to the same active virtual chassis topology.
<b>Hello-Interval</b>	Operational/current hello-interval.
<b>Oper-Control-VLAN</b>	Operational/current virtual chassis control VLAN.
<b>Config-Control-VLAN</b>	Configured/next virtual chassis control VLAN, which will take effect after reset thereby becoming the next operational control VLAN.
<b>Status</b>	<p>Defines whether a given switch's parameter is considered consistent with the master chassis' settings. The possible values are:</p> <p><b>OK:</b> The switch is operating in virtual chassis mode and the given switch's parameter value is consistent with the settings of the master chassis.</p> <p><b>NOK:</b> The switch is operating in virtual chassis mode and the given switch's parameter value is inconsistent with the settings of the master chassis.</p> <p><b>N/A:</b> The switch is operating in virtual chassis mode, but the virtual chassis topology has not converged and therefore a master chassis is not yet known.</p> <p><b>Disabled:</b> The switch is operating in standalone mode, in which there can be no virtual chassis master and hence the concept of consistency does not apply.</p>

### Release History

Release 5.1; command not supported.

## Related Commands

<b>virtual-chassis configured-chassis-id</b>	Assigns a globally unique chassis identifier to the switch and enables the switch to operate in virtual chassis mode.
<b>virtual-chassis chassis-group</b>	Assigns a globally unique chassis group identifier to a chassis. Each peer switch in a virtual chassis domain must use the same group ID number.
<b>virtual-chassis configured-chassis-priority</b>	Sets the chassis priority for a chassis specified by its operational chassis identifier.
<b>virtual-chassis configured-control-vlan</b>	Sets the configured control VLAN for a chassis specified by its operational chassis identifier.
<b>virtual-chassis configured-hello-interval</b>	Sets the configured hello interval parameter on the switch.

## MIB Objects

```
virtualChassisGlobalTable
  virtualChassisOperChasId
  virtualChassisConfigChassisID
  virtualChassisType
  virtualChassisLicense
  virtualChassisGroup
  virtualChassisOperControlVlan
  virtualChassisConfigControlVlan
  virtualChassisOperHelloInterval
  virtualChassisConfigHelloInterval
```

---

## show virtual-chassis vf-link

Displays a summary of the configured and operational parameters related to the virtual fabric links on the virtual chassis topology.

**show virtual-chassis** [*chassis-id oper\_chassis*] **vf-link** *vfl\_id* **member-port** [*oper\_chassis/slot/port*]

---

### Syntax Definitions

*oper\_chassis*                      The operational/current chassis ID number.  
*vfl\_id*                                The VFL identifier.  
*oper\_chassis/slot/port*            The operational chassis identifier, slot, and port.

### Defaults

N/A

### Platforms Supported

Not supported in this release.

### Usage Guidelines

This command can be executed on any switch within the virtual chassis topology.

### Examples

```
-> show virtual-chassis vf-link
VFLink mode: static
Chassis/VFLink ID  Oper      Primary Port      Config Port  Active Port  Def Vlan
-----+-----+-----+-----+-----+-----
1/0                Up        1/1/3             2            2            1
2/0                Up        2/1/3             2            2            1

-> show virtual-chassis chassis-id 1 vf-link
Chassis/VFLink ID  Oper      Primary Port      Config Port  Active Port  Def Vlan
-----+-----+-----+-----+-----+-----
1/0                Up        1/1/3             2            2            1

-> show virtual-chassis vf-link member-port
Chassis/VFLink ID  Chassis/Slot/Port  Oper      Is Primary
-----+-----+-----+-----
1/0                1/1/1              Up        No
1/0                1/1/3              Up        Yes
2/0                2/1/1              Up        No
2/0                2/1/3              Up        Yes

-> show virtual-chassis chassis-id 1 vf-link member-port
Chassis/VFLink ID  Chassis/Slot/Port  Oper      Is Primary
-----+-----+-----+-----
1/0                1/1/1              Up        No
1/0                1/1/3              Up        Yes
```

*output definitions*


---

<b>Chassis/VFLink ID</b>	Pair operational/current virtual chassis chassis identifier and virtual-fabric link (VFL) identifier.
<b>Oper</b>	Virtual-fabric link (VFL) operational status. The possible values are <b>Up</b> and <b>Down</b> .
<b>Primary Port</b>	Primary port of the virtual-fabric link (VFL) trunk, which is the port where non-unicast packets destined a remote chassis are sent out.
<b>Config Port</b>	Number of ports configured to operate as virtual-fabric link (VFL) member ports, i.e. ports that potentially may join a virtual-fabric link (VFL).
<b>Active Port</b>	Number of virtual-fabric link (VFL) member ports that are operational, i.e. the LACP protocol is fully operational for those ports.
<b>Def Vlan</b>	Operational default VLAN on the virtual-fabric link (VFL).
<b>Chassis/Slot/Port</b>	The operational <i>chassis/slot/port</i> tuple identifying a particular virtual-fabric link (VFL) member port.
<b>Is Primary</b>	Indicates is this port is the primary port of the VFL.

---

**Release History**

Release 5.1; command not supported.

**Related Commands**

<a href="#">virtual-chassis configured-chassis-id</a>	Assigns a globally unique chassis identifier to the switch and enables the switch to operate in virtual chassis mode.
<a href="#">virtual-chassis vf-link create</a>	Configures a virtual fabric link (VFL) between two peer switches. A VFL is required to enable the Virtual Chassis operation between the two switches.
<a href="#">virtual-chassis vf-link member-port</a>	Configures member ports for the virtual fabric link (VFL).
<a href="#">virtual-chassis vf-link default-vlan</a>	Configures the default VLAN for the VFL.

**MIB Objects**

```

virtualChassisLinkTable
  virtualChassisOperChasID
  virtualChassisLinkOperDefaultVlan
  virtualChassisLinkLinkOperStatus
  virtualChassisLinkPrimaryPort
  virtualChassisLinkConfigPortNum
  virtualChassisLinkActivePortNum
  virtualChassisLinkId
  virtualChassisVflMemberPortIfindex
  virtualChassisVflMemberPortRowStatus

```

---

## show virtual-chassis auto-vf-link-port

Displays a summary of the auto VFL ports.

**show virtual-chassis** [*chassis-id oper\_chassis*] **auto-vf-link-port** [*chassis/slot/port*]

---

### Syntax Definitions

*oper\_chassis*                      The operational/current chassis ID number.  
*oper\_chassis/slot/port*            The operational chassis identifier, slot, and port.

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

This command can be executed on any switch within the virtual chassis topology.

### Examples

```
-> show virtual-chassis auto-vf-link-port
Chassis/Slot/Port   VFL ID           VFL member status
-----+-----+-----
1/1/1               1/0              Down
1/1/3               1/1              Up
```

#### *output definitions*

---

<b>Chassis/Slot/Port</b>	The chassis/slot/port identifier.
<b>VFL ID</b>	The VFL identifier.
<b>VFL member status</b>	The status of the VFL member port. Up or Down.

---

### Release History

Release 5.1; command introduced.

### Related Commands

[virtual-chassis auto-vf-link-port](#)      Configures the port to be an automatic VFL port.

### MIB Objects

```
virtualChassisLinkTable
  virtualChassisOperChasID
  virtualChassisVflMemberPortRowStatus
```

---

## show virtual-chassis chassis-reset-list

This command displays the list of all chassis that must be reset along with a specified chassis in order to prevent a virtual chassis topology split.

**show virtual-chassis [chassis-id *oper\_chassis*] chassis-reset-list**

---

### Syntax Definitions

*oper\_chassis*                      The operational/current chassis ID number.

### Defaults

N/A

### Platforms Supported

Not supported in this release.

### Usage Guidelines

When no operational chassis identifier is specified the command will show data related to the entire virtual chassis system.

### Examples

```
-> show virtual-chassis chassis-reset-list
Chas  Chassis reset list
-----+-----
1      1
2      2

-> show virtual-chassis chassis-id 1 chassis-reset-list
Chas  Chassis reset list
-----+-----
1      1
```

#### *output definitions*

---

<b>Chas</b>	Operational/current virtual chassis chassis identifier. The operational chassis identifier when a switch operates in standalone mode is zero (0).
<b>Chassis reset list</b>	A list of operational chassis identifiers, which define which switches must be reset, along with the switch given by Chas in order to prevent a split of the virtual chassis topology.

---

### Release History

Release 5.1; command not supported.

## Related Commands

**show virtual-chassis topology** Displays details about the configured and operational parameters related to all switches participating in the virtual chassis topology

## MIB Objects

```
virtualChassisChassisResetListTable  
  virtualChassisOperChasId  
  virtualChassisChassisResetList
```

---

## show virtual-chassis slot-reset-list

For a given chassis and network interface module (NI), this command displays status information specifying whether bringing down or extracting such network interface module (NI) will lead to a virtual chassis topology split.

**show virtual-chassis [chassis-id *oper\_chassis*] slot-reset-list**

---

### Syntax Definitions

*oper\_chassis*                      The operational/current chassis ID number.

### Defaults

N/A

### Platforms Supported

Not supported in this release.

### Usage Guidelines

When no operational chassis identifier is specified the command will show data related to the entire virtual chassis system.

### Examples

```
-> show virtual-chassis slot-reset-list
Chas Slot  Reset status
-----+-----+-----
1     1     Split
2     1     Split

-> show virtual-chassis chassis-id 1 slot-reset-list
Chas Slot  Reset status
-----+-----+-----
1     1     Split
```

### output definitions

---

<b>Chas</b>	Operational/current virtual chassis chassis identifier. The operational chassis identifier when a switch operates in standalone mode is zero (0).
<b>Slot</b>	Slot number identifying a particular network interface module (NI).
<b>Reset Status</b>	For the network interface module (NI) identified by the pair (Chas, Slot), this command displays status information specifying whether bringing down or extracting such network interface module (NI) will lead to a virtual chassis topology split according to the following definitions. <b>Supported:</b> The network interface module can be reset without splitting the virtual chassis topology. <b>Split:</b> Resetting this network interface module will cause a virtual chassis topology split.

---



## Release History

Release 5.1; command not supported.

## Related Commands

[show virtual-chassis topology](#) Displays details about the configured and operational parameters related to all switches participating in the virtual chassis topology

## MIB Objects

```
virtualChassisSlotResetStatusTable  
  virtualChassisOperChasID  
  virtualChassisSlotResetStatus
```

---

## show virtual-chassis neighbors

This command displays a list of which neighbors are connected via which VFL for a virtual chassis.

**show virtual-chassis [chassis-id *oper\_chassis*] neighbors**

---

### Syntax Definitions

*oper\_chassis*                      The operational/current chassis ID number.

### Defaults

N/A

### Platforms Supported

Not supported in this release.

### Usage Guidelines

When no operational chassis identifier is specified the command will show data related to the entire virtual chassis system.

### Examples

```
-> show virtual-chassis neighbors
```

```
Chas VFL VFL VFL VFL VFL
ID   0   1   2   3   4
-----+-----+-----+-----+-----
  1   2   3   4   5   6
  2   1   3   4   5   6
  3   1   2   4   5   6
  4   1   2   3   5   6
  5   1   2   3   4   6
  6   1   2   3   4   5
```

```
-> show virtual-chassis chassis-id 2 neighbors
```

```
Chas VFL VFL VFL VFL VFL
ID   0   1   2   3   4
-----+-----+-----+-----+-----
  2   1   3   4   5   6
```

### *output definitions*

---

<b>Chas ID</b>	Operational/current virtual chassis chassis identifier. The operational chassis identifier when a switch operates in standalone mode is zero (0).
<b>VFL</b>	The VLF identifier connecting to the remote chassis listed in the table.

---

## Release History

Release 5.1; command not supported.

## Related Commands

[show virtual-chassis topology](#) Displays details about the configured and operational parameters related to all switches participating in the virtual chassis topology

## MIB Objects

```
virtualChassisVflTable  
  virtualChassisOperChasID  
  virtualChassisVflId  
  virtualChassisVflDirectNeighborChasId
```

---

## show configuration vcm-snapshot chassis-id

Displays a snapshot of the switch specific virtual chassis configuration for a switch running in virtual chassis mode.

**show configuration vcm-snapshot chassis-id** *oper\_chassis*

---

### Syntax Definitions

*oper\_chassis*                      The operational/current chassis ID number.

### Defaults

N/A

### Platforms Supported

Not supported in this release.

### Usage Guidelines

When a switch operates in standalone mode, this command is not supported. In this case, we must use the **show configuration snapshot virtual chassis** to obtain a snapshot of the switch specific virtual chassis configuration.

### Examples

```
-> show configuration vcm-snapshot chassis-id 1
! Virtual Chassis Manager:
virtual-chassis chassis-id 1 configured-chassis-id 1
virtual-chassis chassis-id 1 vf-link 0 create
virtual-chassis chassis-id 1 vf-link 0 member-port 1/8/1
virtual-chassis chassis-id 1 configured-control-vlan 4091
virtual-chassis chassis-id 1 chassis-group 1

! IP:
ip interface local chassis-id 1 emp address 10.255.76.21 mask 255.255.255.0
```

### Release History

Release 5.1; command not supported.

### Related Commands

[show configuration snapshot](#)      Displays the configured and operational parameters related to the virtual chassis feature on the switch.

### MIB Objects

N/A

---



# 10 Ethernet Ring Protection Commands

Ethernet Ring Protection (ERP) is a protection switching mechanism for Ethernet ring topologies, such as multi-ring and ladder networks. The implementation of ERP on the OmniSwitch is based on ERP Version 2 (ITU-T G.8032/Y.1344 to 2010) using the Ring Automatic Protection Switching (R-APS) protocol to coordinate and prevent network loops within a bridged Ethernet ring.

ERPV2 supports multi-rings and ladder to ladder networks. ERPv2 functionalities allow configuration of Sub-Rings within a Master Ethernet Ring, interconnected nodes and shared links between the rings.

MIB information for Ethernet Ring Protection commands is as follows:

*Filename:* ALCATEL-IND1-ERP-MIB.mib  
*Module:* alcatelIND1ERPMB

A summary of available commands is listed here:

---

**erp-ring**  
**erp-ring rpl-node**  
**erp-ring wait-to-restore**  
**erp-ring enable**  
**erp-ring guard-timer**  
**erp-ring sub-ring**  
**erp-ring virtual-channel**  
**erp-ring revertive**  
**erp-ring clear**  
**erp-ring ethoam-event**  
**clear erp statistics**  
**show erp**  
**show erp statistics**

---

## erp-ring

Creates an Ethernet Ring Protection (ERP) using the specified ports and service VLAN ID. The service VLAN transmits ERP control traffic, such as Ring Automatic Protection Switching (R-APS) messages, through the ring. The specified level number identifies an APS Management Entity Group (MEG) to which the service VLAN belongs.

```
erp-ring ring_id port1 {chassis/slot/port | linkagg agg_id} port2 {chassis/slot/port | linkagg agg_id}
service-vlan vlan_id level level_num [guard-timer guard_timer] [wait-to-restore-timer wtr_timer]
[enable | disable]
```

```
no erp-ring ring_id
```

---

### Syntax Definitions

<i>ring_id</i>	The ERP ring ID number. The valid range is 1 to 2147483647.
<i>chassis</i>	The chassis identifier.
<i>slot/port</i>	The slot number for the module and the physical port number on that module.
<i>agg_id</i>	The link aggregate ID number.
<i>vlan_id</i>	The service VLAN ID number. The valid range is 1 to 4094.
<i>level_num</i>	The MEG level number for the service VLAN. The valid range is 0 to 7.
<i>guard-timer</i>	The guard timer value, in centi seconds, for the ring node.
<i>wtr-timer</i>	The wait-to-restore timer value, in minutes, for the Ring Protection Link (RPL) node.
<b>enable</b>	Administratively enables the ERP ring.
<b>disable</b>	Administratively disables the ERP ring.

### Defaults

parameter	default
<i>guard_timer</i>	50
<i>wtr_timer</i>	5
<b>enable   disable</b>	disable

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- Use the **no** form of this command to remove a ring from the switch configuration. Administratively disable the ring ports before deleting the ring to avoid creating any network loops. Once the ring is deleted, ensure that the same ports are administratively enabled under Spanning Tree control.
- The specified ring identification number must be unique within a switch.

- ERP is not supported on mobile ports, mirroring ports, link aggregate member ports, high availability ports, Multicast VLAN receiver ports (ERP is supported on Multicast VLAN sender ports only), VLAN Stacking user network interface (UNI) ports, or RRSTP ring ports.
- If a port is tagged with the service VLAN ID or the service VLAN is the default VLAN for the port, then the port is not eligible to become an ERP ring port.
- Specify an existing VLAN ID for the service VLAN ID. Use the same VLAN ID and level number for the service VLAN on each switch that participates in the ERP ring.
- If the ERP switch participates in an Ethernet OAM Maintenance Domain (MD), configure the ERP service VLAN to use the same level number that is used for the Ethernet OAM MD.
- Specify a static VLAN ID for the ERP service VLAN; dynamic VLANs are not configurable as service VLANs.
- The service VLAN can belong to only one ERP ring at a time. A maximum of 64 rings are allowed per switch.
- The specified service VLAN ID must not participate in a Spanning Tree instance that is associated with non-ERP VLANs. Ideally, change the Spanning Tree configuration for the VLAN ID prior to using this command.
- An ERP ring port can belong to only one ERP ring at a time.
- Create an ERP type NNI-SVLAN binding before establishing an ERP ring on that SVLAN-NNI binding.

## Examples

```
-> erp-ring 1 port1 1/1 port2 2/4 service-vlan 10 level 2 enable
-> erp-ring 2 port1 linkagg 1 port2 2/10 service-vlan 20 level 2
-> erp-ring 3 port1 linkagg 2 port2 linkagg 4 service-vlan 30 level 7
-> no erp-ring 2
```

## Release History

Release 5.1.R2; command introduced.

## Related Commands

- |                                     |   |
|-------------------------------------|---|
| <a href="#">show erp</a>            | Displays the ERP ring configuration for the switch. |
| <a href="#">show erp statistics</a> | Displays ERP ring statistics.                       |



**MIB Objects**

```
alaErpRingTable
  alaErpRingServiceVid
  alaErpRingMEGLevel
  alaErpRingStatus
  alaErpRingPort1
  alaErpRingPort2
  alaErpRingWaitToRestore
  alaErpRingGuardTimer
  alaErpRingRowStatus
```

---

## erp-ring rpl-node

Configures a switch as a Ring Protection Link (RPL) node. This command also identifies the ERP port as an RPL connection port. The RPL remains blocked to prevent loops within the ERP ring.

```
erp-ring ring_id rpl-node {port chassis/slot/port | linkagg agg_id}
```

```
no erp-ring ring_id rpl-node
```

---

### Syntax Definitions

<i>ring_id</i>	An existing ERP ring ID number. The valid range is 1 to 2147483647.
<i>chassis</i>	The chassis identifier.
<i>slot/port</i>	The slot number for the module and the physical port number on that module.
<i>agg_id</i>	The link aggregate ID number.

### Defaults

NA

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- Use the **no** form of this command to remove the RPL designation for the specified ring.
- The RPL node can be configured only when the ring is disabled. RPL configuration applied to the Ethernet ring while it is enabled is rejected.
- The specified ERP ring ID must exist in the switch configuration.
- This command applies only to ERP ring ports; ports not configured as ERP ring ports are not eligible to become RPL ports.
- Only one of the two ring ports configured for the switch can be designated as an RPL node port.

### Examples

```
-> erp-ring 1 rpl-node port 2/1  
-> erp-ring 2 rpl-node linkagg 2  
-> no erp-ring 2 rpl-node
```

### Release History

Release 5.1.R2; command introduced.

## Related Commands

<a href="#">erp-ring</a>	Configures an ERP ring.
<a href="#">erp-ring wait-to-restore</a>	Configures the wait-to-restore timer value for the Ring Protection Link (RPL) node.
<a href="#">show erp</a>	Displays the ERP ring configuration for the switch.

## MIB Objects

```
alaErpRingPortEntry  
  alaErpRingPortIfIndex  
  alaErpRingPortType
```

---

## erp-ring wait-to-restore

Configures the wait-to-restore timer value for the Ring Protection Link (RPL) switch. This timer determines the number of minutes the RPL switch waits before returning the RPL ports to a blocked state after the ERP ring has recovered from a link failure.

```
erp-ring ring_id wait-to-restore wtr_timer
```

```
no erp-ring ring_id wait-to-restore
```

---

### Syntax Definitions

<i>ring_id</i>	An existing ERP ring ID number. The valid range is 1 to 2147483647.
<i>wtr_timer</i>	The number of minutes to wait before restoring the RPL to a blocked state. The valid range is 1 to 12.

### Defaults

By default, the wait-to-restore timer value is set to 5 minutes.

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- Use the **no** form of this command to set the timer back to the default setting of 5 minutes.
- The specified ERP ring ID must exist in the switch configuration.
- This command applies only on a switch that serves as the RPL node for the ERP ring.

### Examples

```
-> erp-ring 1 wait-to-restore 6  
-> no erp-ring 1 wait-to-restore
```

### Release History

Release 5.1.R2; command introduced.

### Related Commands

<a href="#">erp-ring</a>	Configures an ERP ring.
<a href="#">erp-ring rpl-node</a>	Configures a Ring Protection Link (RPL) port connection.
<a href="#">show erp</a>	Displays the ERP ring configuration for the switch.

### MIB Objects

```
alaErpRingId  
  alaErpRingWaitToRestoreTimer
```

---

## erp-ring enable

Enables or disables an ERP ring identified by the specified ring ID. This command applies to enabling or disabling existing ERP rings.

```
erp-ring ring_id {enable | disable}
```

---

### Syntax Definitions

<i>ring_id</i>	An existing ERP ring ID number. The valid range is 1 to 2147483647.
<b>enable</b>	Enables the specified ring ID.
<b>disable</b>	Disables the specified ring ID.

### Defaults

By default, ERP rings are disabled when they are created.

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- The specified ring ID must exist in the switch configuration.
- Enabling a ring is also allowed at the time the ring is created.

### Examples

```
-> erp-ring 1 enable  
-> erp-ring 1 disable
```

### Release History

Release 5.1.R2; command introduced.

### Related Commands

<a href="#">erp-ring</a>	Configures an ERP ring.
<a href="#">show erp</a>	Displays the ERP ring configuration for the switch.

### MIB Objects

```
alaErpRingId  
alaErpRingStatus
```

---

## erp-ring guard-timer

Configures the guard timer value for the specified ERP ring node. The guard timer is used to prevent ring nodes from receiving outdated Ring Automatic Protection Switching (R-APS) messages. During the amount of time determined by this timer, all received R-APS messages are ignored by the ring protection control process.

```
erp-ring ring_id guard-timer guard_timer
```

```
no erp-ring ring_id guard-timer
```

---

### Syntax Definitions

*ring\_id* An existing ERP ring ID number. The valid range is 1 to 2147483647.  
*guard\_timer* The guard timer value. The valid range is 1–200 centi-secs.

### Defaults

parameter	default
<i>guard_timer</i>	50

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- Use the **no** form of this command to set the timer back to the default value of 50 centi-secs.
- The specified ring ID must exist in the switch configuration.

### Examples

```
-> erp-ring 1 guard-timer 10  
-> no erp-ring 1 guard-timer
```

### Release History

Release 5.1.R2; command introduced.

### Related Commands

[erp-ring](#) Configures an ERP ring.  
[show erp](#) Displays the ERP ring configuration for the switch.

### MIB Objects

```
alaErpRingId  
alaErpRingGuardTimer
```

---

## erp-ring sub-ring

Creates an Ethernet Ring Protection (ERP) sub-ring.

```
erp-ring ring_id sub-ring-port {chassis/slot/port | linkagg agg_id} service-vlan vlan_id level level_num
[guard-timer guard_timer] [wait-to-restore-timer wtr_timer] [enable | disable]
```

---

### Syntax Definitions

<i>ring_id</i>	The ERP ring ID number. The valid range is 1 to 2147483647.
<i>chassis</i>	The chassis identifier.
<i>slot/port</i>	The slot number for the module and the physical port number on that module.
<i>agg_id</i>	The link aggregate ID number.
<i>vlan_id</i>	The service VLAN ID number. The valid range is 1 to 4094.
<i>level_num</i>	The MEG level number for the service VLAN. The valid range is 0 to 7.
<i>guard_timer</i>	The guard timer value, in centi-secs, for the ring node.
<i>wtr_timer</i>	The wait-to-restore timer value, in minutes, for the Ring Protection Link (RPL) node.
<b>enable</b>	Administratively enables the ERP sub-ring.
<b>disable</b>	Administratively disables the ERP sub-ring.

### Defaults

parameter	default
<i>guard_timer</i>	50
<i>wtr_timer</i>	5
<b>enable   disable</b>	disable

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- Use the **no** form of this command to remove a sub-ring from the switch configuration. Administratively disable ring ports before deleting the ring to avoid creating any network loops. Once the ring is deleted, ensure that the same ports are administratively enabled under Spanning Tree control.
- The specified ring identification number must be unique within a switch.
- ERP is not supported on mobile ports, mirroring ports, link aggregate member ports, high availability ports, Multicast VLAN receiver ports (ERP is supported on Multicast VLAN sender ports only), VLAN Stacking user network interface (UNI) ports, or RRSTP ring ports.

- If a port is tagged with the service VLAN ID or the service VLAN is the default VLAN for the port, the port is not eligible to become an ERP ring port.
- Specify an existing VLAN ID for the service VLAN ID. Use the same VLAN ID and level number for the service VLAN on each switch that participates in the ERP ring.
- If the ERP switch participates in an Ethernet OAM Maintenance Domain (MD), configure the ERP service VLAN to use the same level number that is used for the Ethernet OAM MD.
- Specify a static VLAN ID for the ERP service VLAN; dynamic VLANs are not configurable as service VLANs.
- The service VLAN can belong to only one ERP ring at a time. A maximum of four rings are allowed per switch.
- The specified service VLAN ID must not participate in a Spanning Tree instance that is associated with non-ERP VLANs. Ideally, change the Spanning Tree configuration for the VLAN ID prior to using this command.
- An ERP ring port can belong to only one ERP ring at a time.
- An ERP type NNI-SVLAN binding must be created before establishing an ERP ring on that SVLAN-NNI binding.

## Examples

```
-> erp-ring 1 sub-ring-port 1/1 service-vlan 10 level 2 enable
-> erp-ring 2 sub-ring-port linkagg 1 port2 2/10 service-vlan 20 level 2
-> no erp-ring 2
```

## Release History

Release 5.1.R2; command introduced.

## Related Commands

<a href="#">erp-ring</a>	Creates an Ethernet Ring Protection (ERP) ring.
<a href="#">show erp</a>	Displays the ERP ring configuration for the switch.
<a href="#">show erp statistics</a>	Displays ERP ring statistics.



**MIB Objects**

```
alaErpRingTable  
  alaErpRingId  
  alaErpRingServiceVid  
  alaErpRingMEGLevel  
  alaErpRingStatus  
  alaErpRingPort1  
  alaErpRingPort2  
  alaErpRingWaitToRestore  
  alaErpRingGuardTimer  
  alaErpRingRowStatus
```

---

## erp-ring virtual-channel

Enables or disables an Ethernet Ring Protection (ERP) Ring Virtual Channel.

**erp-ring *ring\_id* virtual-channel [enable | disable]**

---

### Syntax Definitions

<i>ring_id</i>	The ERP ring ID number. The valid range is 1 to 2147483647.
<b>enable</b>	Administratively enables the ERP virtual channel. If enabled, Ring Automatic Protection Switching (R-APS) protocol messages are encapsulated and transmitted over a virtual channel configured on the major ring.
<b>disable</b>	Administratively disables the ERP virtual channel. If disabled, R-APS messages are terminated at the interconnection nodes between the rings but not blocked at the Ring Protection Link (RPL) of the sub-ring.

### Defaults

parameter	default
<b>enable   disable</b>	enable

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- The specified ring identification number must be unique within a switch.
- The ring identified by Ring ID must be created before configuring the virtual channel state for ring node.

### Examples

```
-> erp-ring 2 virtual-channel disable  
-> erp-ring 1 virtual-channel enable
```

### Release History

Release 5.1.R2; command introduced.

## Related Commands

<a href="#">erp-ring</a>	Creates an Ethernet Ring Protection (ERP) ring.
<a href="#">erp-ring sub-ring</a>	Creates an Ethernet Ring Protection (ERP) ring sub ring.
<a href="#">show erp</a>	Displays the ERP ring configuration for the switch.
<a href="#">show erp statistics</a>	Displays ERP ring statistics.

## MIB Objects

```
alaErpRingTable  
  alaErpRingId  
  alaErpRingVirtualChannel
```

---

## erp-ring revertive

Enables or Disables revertive mode on the specified node.

```
erp-ring ring_id revertive [enable | disable]
```

---

### Syntax Definitions

<i>ring_id</i>	The ERP ring ID number. The valid range is 1 to 2147483647.
<b>enable</b>	Administratively enables Revertive Mode. Now, if the RPL is unblocked due to a failure within the ring, the RPL automatically reverts to the “Blocked” state when the failed link recovers.
<b>disable</b>	Administratively Disables Revertive Mode. Now, if the RPL is unblocked due to a failure within the ring, the RPL does not automatically revert to “Blocked” state when the failed link recovers.

### Defaults

---

parameter	default
<b>enable   disable</b>	enable

---

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- The specified ring identification number must be unique within a switch.
- The ring identified by the Ring ID must be created using the [erp-ring](#) command, before configuring the revertive mode for ring node.

### Examples

```
-> erp-ring 1 revertive enable  
-> erp-ring 2 revertive disable
```

### Release History

Release 5.1.R2; command introduced.

## Related Commands

<a href="#">erp-ring</a>	Creates an Ethernet Ring Protection (ERP) ring.
<a href="#">erp-ring sub-ring</a>	Creates an Ethernet Ring Protection (ERP) ring sub ring.
<a href="#">erp-ring clear</a>	Clears any pending state (for example, non-revertive restoring).
<a href="#">show erp</a>	Displays the ERP ring configuration for the switch.
<a href="#">show erp statistics</a>	Displays ERP ring statistics.

## MIB Objects

```
alaErpRingTable  
  alaErpRingId  
  alaErpRingRevertive
```

---

## erp-ring clear

Clears any pending state (for example, non-revertive restoring).

**erp-ring *ring\_id* clear**

---

### Syntax Definitions

<i>ring_id</i>	The ERP ring ID number. The valid range is 1 to 2147483647.
<b>clear</b>	Clears any pending state on the ring.

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

The specified ring identification number must be unique within a switch.

### Examples

```
-> erp-ring 1 clear
```

### Release History

Release 5.1.R2; command introduced.

### Related Commands

<a href="#">erp-ring</a>	Creates an Ethernet Ring Protection (ERP) ring.
<a href="#">erp-ring sub-ring</a>	Creates an Ethernet Ring Protection (ERP) ring sub ring.
<a href="#">show erp</a>	Displays the ERP ring configuration for the switch.
<a href="#">show erp statistics</a>	Displays ERP ring statistics.

### MIB Objects

```
alaErpRingTable  
  alaErpRingId  
  alaErpRingClearAction
```

---

## erp-ring ethoam-event

Configures a ring port to accept a “loss of connectivity” event from Ethernet OAM for a remote endpoint.

```
erp-ring ring_id ethoam-event {chassis/slot/port | linkagg agg_id} remote-endpoint mep_id
```

```
no erp-ring ring_id ethoam-event {chassis/slot/port | linkagg agg_id}
```

---

### Syntax Definitions

<i>ring_id</i>	The ERP ring ID number. The valid range is 1 to 2147483647.
<i>chassis</i>	The chassis identifier.
<i>slot/port</i>	The slot number for the module and the physical port number on that module.
<i>agg_id</i>	The link aggregate ID number.
<i>mep_id</i>	The remote endpoint ID.

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

The specified ring identification number must be unique within a switch.

### Examples

```
-> erp-ring 1 ethoam-event 1/1 remote-endpoint 10  
-> erp-ring 1 ethoam-event linkagg 1 remote-endpoint 10
```

### Release History

Release 5.1.R2; command introduced.

### Related Commands

<a href="#">erp-ring</a>	Creates an Ethernet Ring Protection (ERP) ring.
<a href="#">erp-ring sub-ring</a>	Creates an Ethernet Ring Protection (ERP) ring sub ring.
<a href="#">show erp</a>	Displays the ERP ring configuration for the switch.
<a href="#">show erp statistics</a>	Displays ERP ring statistics.

**MIB Objects**

```
alaErpRingTable
  alaErpRingId
  alaErpRingPortIfIndex
  alaErpRingPortEthOAMEvent
  alaErpRingPortRmepId
```

---



## clear erp statistics

Clears ERP statistics for all rings, a specific ring, or a specific ring port.

**clear erp statistics** [**ring** *ring\_id* [**port** *chassis/slot/port* | **linkagg** *agg\_id*]]

---

### Syntax Definitions

<i>ring_id</i>	An existing ERP ring ID number. The valid range is 1 to 2147483647.
<i>chassis</i>	The chassis identifier.
<i>slot/port</i>	The slot number for the module and the physical port number on that module.
<i>agg_id</i>	The link aggregate ID number.

### Defaults

By default, statistics are cleared for all ERP rings in the switch configuration.

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- Enter a ring ID to clear the statistics for a specific ring.
- Enter a ring ID and a ring port number or link aggregate ID to clear the statistics for a specific port or link aggregate.
- The specified ring ID must exist in the switch configuration.
- The specified port must belong to the ring identified by the ring ID.

### Examples

```
-> clear erp statistics
-> clear erp statistics ring 5
-> clear erp statistics ring 5 port 1/2
-> clear erp statistics ring 5 linkagg 10
```

### Release History

Release 5.1.R2; command introduced.

## Related Commands

<a href="#">erp-ring</a>	Configures an ERP ring.
<a href="#">show erp</a>	Displays the ERP ring configuration for the switch.
<a href="#">show erp statistics</a>	Displays ERP ring statistics.

## MIB Objects

```
alaErpClearStats  
alaErpRingTable  
    alaErpRingId  
    alaErpRingClearStats  
alaErpRingPortTable  
    alaErpRingPortIfIndex  
    alaErpRingPortClearStats
```

---

## show erp

Displays the ERP configuration information for all rings, a specific ring, or for a specific ring port.

**show erp** [*ring ring\_id*] [*port chassis/slot/port* | *linkagg agg\_id*]

---

### Syntax Definitions

<i>ring_id</i>	An existing ERP ring ID number. The valid range is 1 to 2147483647.
<i>chassis</i>	The chassis identifier.
<i>slot/port</i>	The slot number for the module and the physical port number on that module.
<i>agg_id</i>	The link aggregate ID number.

### Defaults

By default, configuration information is displayed for all ERP rings in the switch configuration.

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- Enter a ring ID to display the configuration for a specific ring.
- Enter a ring port number or a link aggregate ID to display the configuration for a specific port or link aggregate.
- The specified ring ID must exist in the switch configuration.

### Examples

```
-> show erp
```

```
Legends: *   to Inactive Configuration
          WTR to Wait To Restore
          MEG to Maintenance Entity Group
```

Ring ID	Ring Port1	Ring Port2	Ring Status	Serv VLAN	WTR Timer (min)	Guard Timer (csec)	MEG Level	Ring State	Ring Node
1	1/15	1/1	enabled	4094	3	50	2	idle	rpl
2	6/7	4/1	enabled	4093	1	50	1	idle	rpl
3	4/7	6/1	enabled	4092	1	50	3	idle	rpl
4	4/8	6/23	enabled	4091	5	50	4	idle	non-rpl

```
Total number of rings configured = 4
```

```
-> show erp ring 1
```

```
Legend: *   to Inactive Configuration
```

```
Ring Id           : 1,
Ring Port1       : 1/15,
```

```

Ring Port2           : 1/1,
Ring Status          : enabled,
Service VLAN         : 4094,
WTR Timer (min)      : 3,
Guard Timer (centi-sec) : 50,
MEG Level            : 2,
Ring State           : idle,
Ring Node Type       : rpl,
RPL Port             : 1/1,
Last State Change    : SUN DEC 25 06:50:17 2016 (sysUpTime 00h:01m:31s)

```

**output definitions**


---

<b>Ring ID</b>	The ERP ring ID number.
<b>Ring Ports</b>	The slot and port number of the ring ports.
<b>Ring Status</b>	The ring status ( <b>enabled</b> or <b>disabled</b> ).
<b>Service VLAN</b>	The Service VLAN ID.
<b>WTR Timer</b>	The wait-to-restore timer value in minutes for RPL node.
<b>Guard Timer</b>	The guard timer value in centi-secs for the ring node.
<b>MEG Level</b>	The Service VLAN Management Entity Group (MEG) level.
<b>Ring State</b>	Indicates the state of the ring.
<b>Ring Node Type</b>	Indicates the type of the ring node.
<b>Last State Change</b>	Indicates the time when the last state change occurred.

---

```

-> show erp port 1/15
Legend: * to Inactive Configuration

```

```

Ring-Id : 1
  Ring Port Status   : forwarding,
  Ring Port Type     : non-rpl,
  Ethoam Event       : disabled

```

```

-> show erp port 1/1
Legend: * to Inactive Configuration

```

```

Ring Id : 1
  Ring Port Status   : blocking,
  Rint Port Type     : RPL,
  Ethoam Event       : enabled,
  Rmepid             : 10

```

**output definitions**


---

<b>Ring ID</b>	The ERP ring ID number.
<b>Ring Port Status</b>	The status of the ring port ( <b>blocking</b> or <b>forwarding</b> ).
<b>Ring Port Type</b>	The type of ring port ( <b>RPL</b> or <b>non-RPL</b> ).
<b>Ethoam Event</b>	Indicates whether or not the ring port will accept Ethernet OAM loss of connectivity events ( <b>enabled</b> or <b>disabled</b> ).
<b>Rmepid</b>	The remote Ethernet OAM MEP ID number from which this port accepts loss of connectivity events. This field displays only when the ring port is configured to receive such events.

---

## Release History

Release 5.1.R2; command introduced.

## Related Commands

[show erp statistics](#) Displays ERP ring statistics.

## MIB Objects

```
alaErpRingId
  alaErpRingStatus
  alaErpRingServiceVid
  alaErpRingMEGLevel
  alaErpRingPort1
  alaErpRingPort2
  alaErpRingPortIfIndex
  alaErpRingState
  alaErpRingPortStatus
  alaErpRingPortType
  alaErpRingPortEthOAMEvent
  alaErpRingPortRmepId
  alaErpRingWaitToRestoreTimer
  alaErpRingGuardTimer
  alaErpRingLastStateChange
  alaErpRingTimeToRevert
```

---

## show erp statistics

Displays the ERP statistics for all rings, a specific ring, or a specific ring port.

**show erp statistics** [**ring** *ring\_id* [**port** *chassis/slot/port* | **linkagg** *agg\_id*]]

---

### Syntax Definitions

<i>ring_id</i>	An existing ERP ring ID number. The valid range is 1 to 2147483647.
<i>chassis</i>	The chassis identifier.
<i>slot/port</i>	The slot number for the module and the physical port number on that module.
<i>agg_id</i>	The link aggregate ID number.

### Defaults

By default, statistics are displayed for all ERP rings in the switch configuration.

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- Enter a ring ID to display the statistics for a specific ring.
- Enter a ring ID and a ring port number or link aggregate ID to display the statistics for a specific port or link aggregate.
- The specified ring ID must exist in the switch configuration.
- The specified port must belong to the ring identified by the ring ID.

### Examples

```
-> show erp statistics
Legends: R-APS  to Ring Automatic Protection Switching
         RPL    to Ring Protection Link
```

```
Ring-Id : 1
  Ring Port : 1/15
    Signal Fail PDUs
      Sent : 3,
      Recv : 0,
      Drop : 0
    No Request PDUs
      Sent : 37,
      Recv : 37,
      Drop : 0
    No Request RPL Block PDUs
      Sent : 4322,
      Recv : 0,
      Drop : 0
```

```
Invalid R-APS PDUs
  Recv : 0

Ring Port : 1/1
  Signal Fail PDUs
    Sent : 6,
    Recv : 0,
    Drop : 0
  No Request PDUs
    Sent : 37,
    Recv : 38,
    Drop : 0
  No Request RPL Block PDUs
    Sent : 4322,
    Recv : 0,
    Drop : 0
  Invalid R-APS PDUs
    Recv : 0

Ring-Id : 2
  Ring Port : 6/7
    Signal Fail PDUs
      Sent : 6,
      Recv : 0,
      Drop : 0
    No Request PDUs
      Sent : 16,
      Recv : 14,
      Drop : 0
    No Request RPL Block PDUs
      Sent : 4347,
      Recv : 0,
      Drop : 4341
    Invalid R-APS PDUs
      Recv : 0

-> show erp statistics ring 3
Legends: R-APS  to Ring Automatic Protection Switching
          RPL   to Ring Protection Link

Ring-Id : 3
  Ring Port : 4/7
    Signal Fail PDUs
      Sent : 6,
      Recv : 0,
      Drop : 0
    No Request PDUs
      Sent : 16,
      Recv : 14,
      Drop : 0
    No Request RPL Block PDUs
      Sent : 4351,
      Recv : 0,
      Drop : 0
    Invalid R-APS PDUs
      Recv : 0

Ring Port : 6/1
```

```

Signal Fail PDUs
  Sent : 6,
  Recv : 0,
  Drop : 0
No Request PDUs
  Sent : 13,
  Recv : 13,
  Drop : 0
No Request RPL Block PDUs
  Sent : 4358,
  Recv : 0,
  Drop : 0
Invalid R-APS PDUs
  Recv : 0

```

```

-> show erp statistics ring 1 port 1/15
Legends: R-APS  to Ring Automatic Protection Switching
          RPL   to Ring Protection Link

```

```

Ring-Id : 1
  Ring Port : 1/15
    Signal Fail PDUs
      Sent : 3,
      Recv : 0,
      Drop : 0
    No Request PDUs
      Sent : 37,
      Recv : 37,
      Drop : 0
    No Request RPL Block PDUs
      Sent : 4338,
      Recv : 0,
      Drop : 0
    Invalid R-APS PDUs
      Recv: 0

```

### *output definitions*

---

<b>Ring ID</b>	The ERP ring ID number.
<b>Ring Port</b>	The slot and port number of the ring port.
<b>R-APS</b>	The type of Ring Automatic Switching Protocol (R-APS) event message ( <b>NR</b> = no request, <b>RB</b> = RPL is blocked, <b>SF</b> = signal failure). APS is the protocol ERP uses to monitor and control ring links.
<b>Send</b>	Total number of R-APS messages sent.
<b>Recv</b>	Total number of R-APS messages received.
<b>Drop</b>	Total number of R-APS messages dropped.

---

### **Release History**

Release 5.1.R2; command introduced.



## Related Commands

<a href="#">show erp</a>	Displays the ERP ring configuration for the switch.
<a href="#">clear erp statistics</a>	Clears ERP ring statistics.

## MIB Objects

```
alaERPClearStats  
alaERPRingClearStats  
alaErpRingPortClearStats  
alaErpRingId  
  alaErpRingPortIfIndex  
  alaErpStatsSignalFailPduTx  
  alaErpStatsSignalFailPduRx  
  alaErpStatsSignalFailPduDrop  
  alaErpStatsNoRequestPduTx  
  alaErpStatsNoRequestPduRx  
  alaErpStatsNoRequestPduDrop  
  alaErpStatsRPLBlockPDUTx  
  alaErpStatsRPLBlockPDURx  
  alaErpStatsRPLBlockPDUDrop  
  alaErpStatsPDUErr
```

---

# 11 MVRP Commands

MVRP (Multiple VLAN Registration Protocol) provides a mechanism for maintaining the contents of Dynamic VLAN Registration Entries for each VLAN, and for propagating the information they contain to other Bridges. MVRP uses MRP (Multiple Registration Protocol) as the underlying mechanism, for the maintenance and propagation of the VLAN information.

MVRP acts as an MRP application, sending and receiving MVRP information encapsulated in an Ethernet frame on a specific MAC address. MVRP allows both end stations and Bridges in a Bridged Local Area Network to issue and revoke declarations relating to membership of VLANs.

*Filename:* ALCATEL-IND1-MVRP-MIB.mib  
*Module:* alcatelIND1MVRPMIB

A summary of the available commands is listed here:

---

**mvrp**  
**mvrp port**  
**mvrp linkagg**  
**mvrp maximum-vlan**  
**mvrp registration**  
**mvrp applicant**  
**mvrp timer join**  
**mvrp timer leave**  
**mvrp timer leaveall**  
**mvrp timer periodic-timer**  
**mvrp periodic-transmission**  
**mvrp restrict-vlan-registration**  
**mvrp restrict-vlan-advertisement**  
**mvrp static-vlan-restrict**  
**show mvrp configuration**  
**show mvrp port**  
**show mvrp linkagg**  
**show mvrp timer**  
**show mvrp statistics**  
**show mvrp last-pdu-origin**  
**show mvrp vlan-restrictions**  
**mvrp clear-statistics**

---

## mvrp

Enables or disables MVRP globally on the switch.

**mvrp {enable | disable}**

---

### Syntax Definitions

<b>enable</b>	Enables MVRP globally on the switch.
<b>disable</b>	Disables MVRP globally on the switch.

### Defaults

By default, MVRP is disabled on the switch.

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- Disabling MVRP globally deletes all the MVRP learned VLANs.
- MVRP is supported only when the switch is operating in the flat Spanning Tree mode and it is not supported in the per-VLAN mode.

### Examples

```
-> mvrp enable  
-> mvrp disable
```

### Release History

Release 5.1.R2; command introduced.

### Related Commands

[show mvrp configuration](#) Displays the global configuration for MVRP.

### MIB Objects

alaMvrpGlobalStatus

---

## mvrp port

Enables or disables MVRP on specific ports on the switch.

```
mvrp port chassis/slot/port[-port2] {enable | disable}
```

---

### Syntax Definitions

<i>chassis</i>	The chassis identifier when running in virtual chassis mode.
<i>slot/port</i>	The slot and port number (3/1). Use a hyphen to specify a range of ports (3/1-8)
<b>enable</b>	Enables MVRP on a port.
<b>disable</b>	Disables MVRP on a port.

### Defaults

By default, MVRP is disabled on all the ports.

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- MVRP can be enabled on switch ports regardless of whether it is globally enabled on the switch. However, for the port to become an active participant in the MVRP operation, MVRP must be enabled globally on the switch.
- When MVRP is globally enabled on the switch and is not enabled on the port, that port is excluded from the MVRP protocol operation.
- MVRP can be enabled only on fixed ports, 802.1 Q ports, aggregate ports, and VLAN Stacking Network ports. Other ports (mirroring ports, aggregable ports, VLAN Stacking User ports) do not support MVRP.

### Examples

```
-> mvrp port 1/2 enable
-> mvrp port 1/2 disable
-> mvrp port 1/1-10 enable
-> mvrp port 1/1-10 disable
```

### Release History

Release 5.1.R2; command introduced.

## Related Commands

### [show mvrp port](#)

Displays the MVRP configurations for all the ports, including timer values, registration and applicant modes.

### [show mvrp statistics](#)

Displays the MVRP statistics for all the ports, aggregates, or specific ports.

## MIB Objects

alaMvrpPortConfigTable  
alaMvrpPortStatus

---

## mvrp linkagg

Enables or disables MVRP on specific aggregates on the switch.

```
mvrp linkagg agg_id[-agg_id2] {enable | disable}
```

---

### Syntax Definitions

<i>agg_id</i> [- <i>agg_id2</i> ]	The link aggregate ID number. Use a hyphen to specify a range of IDs (10-20).
<b>enable</b>	Enables MVRP for the specified link aggregate ID.
<b>disable</b>	Disables MVRP for the specified link aggregate ID.

### Defaults

By default, MVRP is disabled on all the ports.

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- MVRP can be enabled on switch ports regardless of whether it is globally enabled on the switch. However, for the port to become an active participant in the MVRP operation, MVRP must be enabled globally on the switch.
- When MVRP is globally enabled on the switch and is not enabled on the port, that port is excluded from the MVRP protocol operation.
- MVRP can be enabled only on fixed ports, 802.1 Q ports, aggregate ports, and VLAN Stacking Network ports. Other ports (mirroring ports, aggregable ports, mobile ports, VPLS Access ports, VLAN Stacking User ports) do not support MVRP.
- To use the *agg\_id* parameter, the link aggregate group must be created.

### Examples

```
-> mvrp linkagg 10 enable
-> mvrp linkagg 10 disable
-> mvrp linkagg 2-5 enable
-> mvrp linkagg 1-5 disable
```

### Release History

Release 5.1.R2; command introduced.

## Related Commands

### [show mvrp port](#)

Displays the MVRP configurations for all the ports, including timer values, registration and applicant modes.

### [show mvrp statistics](#)

Displays the MVRP statistics for all the ports, aggregates, or specific ports.

## MIB Objects

alaMvrpPortConfigTable  
alaMvrpPortStatus

---

## mvrp maximum-vlan

Configures the maximum number of dynamic VLANs that can be created by MVRP.

```
mvrp maximum-vlan vlan_limit
```

---

### Syntax Definitions

*vlan\_limit* The maximum number of VLANs to be created by MVRP. The valid range is 32–4094.

### Defaults

The default value is 256.

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- This command can be used even when MVRP is not enabled on the switch. However, MVRP must be enabled on the switch for creating dynamic VLANs.
- If the VLAN limit to be set is less than the current number of dynamically learned VLANs, then the new configuration takes effect only after the MVRP is disabled and re-enabled on the switch. The VLANs learned earlier are retained if this operation is not performed.

### Examples

```
-> mvrp maximum-vlan 100
```

### Release History

Release 5.1.R2; command introduced.

### Related Commands

- [show mvrp configuration](#) Displays the global configuration for MVRP.
- [show mvrp vlan-restrictions](#) Displays the list of VLANS learned through MVRP and their details.

### MIB Objects

```
alaMvrpMaxVlanLimit
```

---



## mvrp registration

Configures the MVRP registration mode for specific ports or aggregates.

```
mvrp {port chassis/slot/port[- port2] | linkagg agg_id[-agg_id2]} registration {normal | fixed | forbidden}
```

---

### Syntax Definitions

<i>chassis</i>	The chassis identifier.
<i>slot/port</i>	The slot and port number (3/1). Use a hyphen to specify a range of ports (3/1-8).
<i>agg_id[-agg_id2]</i>	The link aggregate ID number. Use a hyphen to specify a range of IDs (10-20).
<b>normal</b>	Specifies that both registration and de-registration of VLANs are allowed. VLANs can be mapped either dynamically (through MVRP) or statically (through management application) on such a port.
<b>fixed</b>	Specifies that only static mapping of VLANs is allowed on the port but de-registration of previously created dynamic or static VLANs is not allowed.
<b>forbidden</b>	Specifies that dynamic VLAN registration or de-registration is not allowed on the port. Any dynamic VLANs created earlier is de-registered.

### Defaults

parameter	default
normal   fixed   forbidden	normal

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

To use the *agg\_id* parameter, the link aggregate group must be created and enabled.

### Examples

```
-> mvrp port 1/2 registration forbidden
-> mvrp port 1/5 registration normal
-> mvrp linkagg 10 registration fixed
-> mvrp linkagg 20 registration forbidden
-> mvrp port 2/5-10 registration normal
```

### Release History

Release 5.1.R2; command introduced.

## Related Commands

### [show mvrp port](#)

Displays the MVRP configurations for all the ports, including timer values, registration and applicant modes.

### [show mvrp linkagg](#)

Displays the MVRP configurations for all the link aggregates, including timer values, registration and applicant modes.

## MIB Objects

alaMvrpPortConfigTable

alaMvrpPortConfigRegistrarMode

---

## mvrp applicant

Configures the applicant mode of specific ports on the switch. The applicant mode determines whether MVRP PDU exchanges are allowed on a port depending on the Spanning Tree state of the port.

**mvrp {port *chassis/slot/port*[-*port2*] | linkagg *agg\_id*[-*agg\_id2*]} applicant {participant | non-participant | active}**

---

### Syntax Definitions

<i>chassis</i>	The chassis identifier.
<i>slot/port</i>	The slot and port number (3/1). Use a hyphen to specify a range of ports (3/1-8).
<i>agg_id</i> [- <i>agg_id2</i> ]	The link aggregate ID number. Use a hyphen to specify a range of IDs (10-20).
<b>participant</b>	Specifies that MVRP PDU exchanges are only allowed when the port is in the STP forwarding state.
<b>non-participant</b>	Specifies that MVRP PDU's are not sent in this mode and PDU's received are processed and learning happens as expected.
<b>active</b>	Specifies that MVRP PDU exchanges are allowed when the port is in the STP forwarding state or STP blocking state. This is applicable for both advertisement and registration.

### Defaults

parameter	default
participant   non-participant   active	active

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

To use the *agg\_id* parameter, the link aggregate group must be created and enabled.

### Examples

```
-> mvrp port 1/2 applicant active
-> mvrp port 1/3 applicant participant
-> mvrp port 1/4 applicant non-participant
-> mvrp linkagg 10 applicant active
```

```
-> mvrp linkagg 15 applicant participant  
-> mvrp linkagg 20 applicant non-participant
```

## Release History

Release 5.1.R2; command introduced.

## Related Commands

### [show mvrp port](#)

Displays the MVRP configurations for all the ports, including timer values, registration and applicant modes.

### [show mvrp linkagg](#)

Displays the MVRP configurations for all the link aggregates, including timer values, registration and applicant modes.

## MIB Objects

alaMvrpPortConfigtable

    alaMvrpPortConfigApplicantMode

---

## mvrp timer join

Specifies the join time interval between transmit opportunities for the dynamically registering VLANs on the switch.

```
mvrp {port chassis/slot/port[-port2] | linkagg agg_id[-agg_id2]} timer join timer_value
```

---

### Syntax Definitions

<i>chassis</i>	The chassis identifier.
<i>slot/port</i>	The slot and port number (3/1). Use a hyphen to specify a range of ports (3/1-8).
<i>agg_id[-agg_id2]</i>	The link aggregate ID number. Use a hyphen to specify a range of IDs (10-20).
<i>timer_value</i>	Specifies the value of the join timer in milliseconds. The valid range is 250 milliseconds to 1073741773 milliseconds.

### Defaults

parameter	default
<i>timer-value</i>	600 milliseconds

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- Use default timer settings unless there is a compelling reason to change the settings. Modifying timers to inappropriate values can cause an imbalance in the operation of MVRP.
- To use the *agg\_id* parameter, the link aggregate group must be created and enabled.

### Examples

```
-> mvrp port 1/2 timer join 600
-> mvrp port 1/2-12 timer join 600
-> mvrp linkagg 3 timer join 600
-> mvrp linkagg 3-6 timer join 600
```

### Release History

Release 5.1.R2; command introduced.

## Related Commands

[show mvrp timer](#)

Displays the timer values configured for all the ports or a specific port.

[show mvrp port](#)

Displays the MVRP configurations for all the ports, including timer values, registration and applicant modes.

## MIB Objects

alaMvrpPortConfigTable

  alaMvrpPortConfigJoinTimer

  alaMvrpPortConfigLeaveTimer

  alaMvrpPortConfigLeaveAllTimer

  alaMvrpPortConfigPeriodicTimer

---

## mvrp timer leave

Specifies the period of time that the switch has to wait in the Leave state before changing to the unregistered state.

**mvrp** {port *chassis/slot/port*[-*port2*] | linkagg *agg\_id*[-*agg\_id2*]} **timer leave** *timer\_value*

---

### Syntax Definitions

<i>chassis</i>	The chassis identifier.
<i>slot/port</i>	The slot and port number (3/1). Use a hyphen to specify a range of ports (3/1-8).
<i>agg_id</i> [- <i>agg_id2</i> ]	The link aggregate ID number. Use a hyphen to specify a range of IDs (10-20).
<i>timer-value</i>	Specifies the value of the Leave Timer in milliseconds. The valid range is 750 milliseconds to 2147483647 milliseconds.

### Defaults

parameter	default
<i>timer_value</i>	1800 milliseconds

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- Use default timer settings unless there is a compelling reason to change the settings. Modifying timers to inappropriate values can cause an imbalance in the operation of MVRP.
- Leave timer value must be greater than or equal to twice the Join timer value, plus six times the timer resolution (16.66 milliseconds). Leave timer must be at least be greater than twice the join timer plus 100 milliseconds.
- To use the *agg\_id* parameter, the link aggregate group must be created and enabled.

### Examples

```
-> mvrp port 1/2 timer leave 1800
-> mvrp port 1/2-12 timer leave 1800
-> mvrp linkagg 3 timer leave 1800
-> mvrp linkagg 3-6 timer leave 1800
```

### Release History

Release 5.1.R2; command introduced.

## Related Commands

[show mvrp timer](#)

Displays the timer values configured for all the ports or a specific port.

[show mvrp port](#)

Displays the MVRP configurations for all the ports, including timer values, registration and applicant modes.

## MIB Objects

alaMvrpPortConfigTable

alaMvrpPortConfigJoinTimer

alaMvrpPortConfigLeaveTimer

alaMvrpPortConfigLeaveAllTimer

alaMvrpPortConfigPeriodicTime

---



## mvrp timer leaveall

Specifies the frequency with which the LeaveAll messages are communicated.

```
mvrp {port chassis/slot/port[-port2] | linkagg agg_id[-agg_id2]} timer leaveall timer_value
```

---

### Syntax Definitions

<i>chassis</i>	The chassis identifier.
<i>slot/port</i>	The slot and port number (3/1). Use a hyphen to specify a range of ports (3/1-8).
<i>agg_id[-agg_id2]</i>	The link aggregate ID number. Use a hyphen to specify a range of IDs (10-20).
<i>timer_value</i>	Specifies the value of the LeaveAll Timer in milliseconds. The valid range is 750 milliseconds to 2147483647 milliseconds.

### Defaults

---

parameter	default
<i>timer-value</i>	30000 milliseconds

---

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- Use default timer settings unless there is a compelling reason to change the settings. Modifying timers to inappropriate values can cause an imbalance in the operation of MVRP.
- LeaveAll timer value must be greater than or equal to the Leave timer value. It is recommended to have the leaveall timer 15 times greater than the leave timer.
- To use the *agg\_id* parameter, the link aggregate group must be created and enabled.

### Examples

```
-> mvrp port 1/2 timer leaveall 30000
-> mvrp port 1/2-12 timer leaveall 30000
-> mvrp linkagg 3 timer leaveall 30000
-> mvrp linkagg 3-6 timer leaveall 30000
```

### Release History

Release 5.1.R2; command introduced.

## Related Commands

[show mvrp timer](#)

Displays the timer values configured for all the ports or a specific port.

[show mvrp port](#)

Displays the MVRP configurations for all the ports, including timer values, registration and applicant modes.

## MIB Objects

alaMvrpPortConfigTable

alaMvrpPortConfigJoinTimer

alaMvrpPortConfigLeaveTimer

alaMvrpPortConfigLeaveAllTimer

alaMvrpPortConfigPeriodicTimer

---

## mvrp timer periodic-timer

Specifies the MVRP periodic-timer time interval for the dynamically registering VLANs on the switch.

```
mvrp {port chassis/slot/port[- port2] | linkagg agg_id[-agg_id2]} timer periodic-timer timer_value
```

---

### Syntax Definitions

<i>chassis</i>	The chassis identifier.
<i>slot/port</i>	The slot and port number (3/1). Use a hyphen to specify a range of ports (3/1-8).
<i>agg_id[-agg_id2]</i>	The link aggregate ID number. Use a hyphen to specify a range of IDs (10-20).
<i>timer_value</i>	Specifies the value of the Periodic Timer in seconds. The valid range is between 1 to 2147483647 milliseconds.

### Defaults

---

parameter	default
<i>timer-value</i>	<i>1 second</i>

---

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- Use default timer settings unless there is a compelling reason to change the settings. Modifying timers to inappropriate values can cause an imbalance in the operation of MVRP.
- To use the *agg\_id* parameter, the link aggregate group must be created and enabled.

### Examples

```
-> mvrp port 1/2 timer periodic-timer 1
-> mvrp port 1/2 timer periodic-timer 1
-> mvrp linkagg 3 timer periodic-timer 1
-> mvrp linkagg 3-6 timer periodic-timer 1
```

### Release History

Release 5.1.R2; command introduced.

## Related Commands

[show mvrp timer](#)

Displays the timer values configured for all the ports or a specific port.

[show mvrp port](#)

Displays the MVRP configurations for all the ports, including timer values, registration and applicant modes.

## MIB Objects

alaMvrpPortConfigTable

alaMvrpPortConfigJoinTimer

alaMvrpPortConfigLeaveTimer

alaMvrpPortConfigLeaveAllTimer

alaMvrpPortConfigPeriodicTimer

---

## mvrp periodic-transmission

Enables the periodic transmission status on a port or aggregate of ports.

```
mvrp {port chassis/slot/port[-port2] | linkagg agg_id[-agg_id2]} periodic-transmission {enable | disable}
```

---

### Syntax Definitions

<i>chassis</i>	The chassis identifier.
<i>slot/port</i>	The slot and port number (3/1). Use a hyphen to specify a range of ports (3/1-8).
<i>agg_id[-agg_id2]</i>	The link aggregate ID number. Use a hyphen to specify a range of IDs (10-20).
<b>enable</b>	Enables periodic transmission status on a port.
<b>disable</b>	Disables periodic transmission status on a port.

### Defaults

By default, periodic-transmission status is disabled on all the ports.

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

To use the *agg\_id* parameter, the link aggregate group must be created and enabled.

### Examples

```
-> mvrp port 1/2 periodic-transmission enable
-> mvrp port 1/2 periodic-transmission disable
-> mvrp linkagg 10 periodic-transmission enable
-> mvrp linkagg 10 periodic-transmission disable
```

### Release History

Release 5.1.R2; command introduced.

## Related Commands

### [show mvrp port](#)

Displays the MVRP configurations for all the ports, including timer values, registration and applicant modes.

### [show mvrp linkagg](#)

Displays the MVRP configurations for all link aggregates, including timer values, registration and applicant modes.

## MIB Objects

alaMvrpPortConfigTable

alaMvrpPortConfigPeriodicTransmissionStatus

---

## mvrp restrict-vlan-registration

Restricts MVRP processing from dynamically registering the specified VLAN or VLANs on the switch.

```
mvrp {port chassis/slot/port [- port2] | linkagg agg_id[-agg_id2]} restrict-vlan-registration vlan
vlan_list
```

```
no mvrp {port chassis/slot/port [- port2] | linkagg agg_id[-agg_id2]} restrict-vlan-registration vlan
vlan_list
```

---

### Syntax Definitions

<i>chassis</i>	The chassis identifier.
<i>slot/port</i>	The slot and port number (3/1). Use a hyphen to specify a range of ports (3/1-8).
<i>agg_id[-agg_id2]</i>	The link aggregate ID number. Use a hyphen to specify a range of IDs (10-20).
<i>vlan_list</i>	The VLAN ID or the VLAN ID range (for example, 1-10).

### Defaults

By default, MVRP dynamic VLAN registrations are not restricted.

### Platforms Supported

OmniSwitch 2260, 2360:

### Usage Guidelines

- Use the **no** form of this command to allow registration of dynamic VLAN IDs through MVRP processing.
- If the specified VLAN exists on the switch, the VLAN is mapped to the receiving port.
- To use the *agg\_id* parameter, the link aggregate group must be created and enabled.

### Examples

```
-> mvrp port 1/2 restrict-vlan-registration vlan 5
-> no mvrp port 1/2 restrict-vlan-registration vlan 5
-> mvrp linkagg 10 restrict-vlan-registration vlan 6-10
-> no mvrp port 3/1 restrict-vlan-registration vlan 6-10
```

### Release History

Release 5.1.R2; command introduced.

## Related Commands

### [show mvrp port](#)

Displays the MVRP configurations for all the ports, including timer values, registration and applicant modes.

### [show mvrp linkagg](#)

Displays the MVRP configurations for all link aggregates, including timer values, registration and applicant modes.

## MIB Objects

```
alaMvrpPortRestrictVlanConfigTable  
  alaMvrpPortRestrictRowStatus  
  alaMvrpPortRestrictVlanAttributeType  
  alaMvrpPortRestrictVlanID
```

---



## mvrp restrict-vlan-advertisement

Restricts the advertisement of VLANs on a specific port or an aggregate of ports.

```
mvrp {port chassis/slot/port[-port2] | linkagg agg_id[-agg_id2]} restrict-vlan-advertisement vlan
vlan_list
```

```
no mvrp {port chassis/slot/port[-port2] | linkagg agg_id[-agg_id2]} restrict-vlan-advertisement vlan
vlan_list
```

---

### Syntax Definitions

<i>chassis</i>	The chassis identifier.
<i>slot/port</i>	The slot and port number (3/1). Use a hyphen to specify a range of ports (3/1-8).
<i>agg_id[-agg_id2]</i>	The link aggregate ID number. Use a hyphen to specify a range of IDs (10-20).
<i>vlan_list</i>	The list of VLAN IDs or the VLAN ID range (for example, 1-10).

### Defaults

By default, MVRP VLAN advertisement is not restricted.

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- This command affects the MVRP processing only if the applicant mode is set to participant or active.
- Use the **no** form of this command to allow the propagation of VLANs.
- To use the *agg\_id* parameter, the link aggregate group must be created and enabled.

### Examples

```
-> mvrp port 1/2 restrict-vlan-advertisement vlan 5
-> no mvrp port 1/2 restrict-vlan-advertisement vlan 5
-> mvrp linkagg 10 restrict-vlan-advertisement vlan 6-10
-> no mvrp port 1/2 restrict-vlan-advertisement vlan 6-10
-> no mvrp port 1/1-2 restrict-vlan-advertisement vlan 6-10
```

### Release History

Release 5.1.R2; command introduced.

## Related Commands

<b>mvrp applicant</b>	Configures the applicant mode of specific ports on the switch. The applicant mode determines whether MVRP PDU exchanges are allowed on a port depending on the Spanning Tree state of the port.
<b>mvrp timer join</b>	Configures the applicant mode of specific link aggregates on the switch. The applicant mode determines whether MVRP PDU exchanges are allowed on a port depending on the Spanning Tree state of the port.
<b>show mvrp port</b>	Displays the MVRP configurations for all the ports, including timer values, registration and applicant modes.
<b>show mvrp linkagg</b>	Displays the MVRP configurations for all the link aggregates, including timer values, registration and applicant modes.

## MIB Objects

```
alaMvrpPortRestrictVlanConfigTable  
  alaMvrpPortRestrictRowStatus  
  alaMvrpPortRestrictVlanAttributeType  
  alaMvrpPortRestrictVlanID
```

---

## mvrp static-vlan-restrict

Restricts a port from becoming a member of a statically created VLAN or a range of VLANs.

```
mvrp {linkagg agg_id[-agg_id2] | port chassis/slot/port[-port2]} static-vlan-restrict vlan vlan_list
```

```
no mvrp {linkagg agg_id[-agg_id2] | port chassis/slot/port[-port2]} static-vlan-restrict vlan vlan_list
```

---

### Syntax Definitions

<i>chassis</i>	The chassis identifier.
<i>slot/port</i>	The slot and port number (3/1). Use a hyphen to specify a range of ports (3/1-8).
<i>agg_id[-agg_id2]</i>	The link aggregate ID number. Use a hyphen to specify a range of IDs (10-20).
<i>vlan_list</i>	The list of VLAN IDs or the VLAN ID range (for example, 1-10).

### Defaults

By default, ports are assigned to the static VLAN based on MVRP PDU processing.

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- This command applies only to static VLANs and does not apply to dynamic VLANs.
- Use the **no** form of this command to set the specified port and VLAN to the default value.

### Examples

```
-> mvrp port 1/2 static-vlan-restrict vlan 5
-> no mvrp port 1/2 static-vlan-restrict vlan 5
-> mvrp port 1/2 static-vlan-restrict vlan 6-9
-> no mvrp port 1/2 static-vlan-restrict vlan 6-9
-> mvrp linkagg 3 static-vlan-restrict vlan 4-5
-> no mvrp linkagg 3 static-vlan-restrict aggregate vlan 4-5
```

### Release History

Release 5.1.R2; command introduced.

## Related Commands

### **show mvrp port**

Displays the MVRP configurations for all the ports, including timer values, registration and applicant modes.

### **show mvrp linkagg**

Displays the MVRP configurations for all the link aggregates, including timer values, registration and applicant modes.

## MIB Objects

```
alaMvrpPortRestrictVlanConfigTable  
  alaMvrpPortRestrictRowStatus  
  alaMvrpPortRestrictVlanAttributeType  
  alaMvrpPortRestrictVlanID  
  alaMvrpPortConfigRegistrationToStaticVlan  
  alaMvrpPortConfigRegistrationToStaticVlanLearn  
  alaMvrpPortConfigRegistrationToStaticVlanRestrict
```

---

## show mvrp configuration

Displays the global configuration for MVRP.

**show mvrp configuration**

---

### Syntax Definitions

N/A

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

N/A

### Examples

```
-> show mvrp configuration
MVRP Enabled : yes,
Maximum VLAN Limit : 256
```

#### *output definitions*

---

<b>MVRP Enabled</b>	Indicates whether MVRP is globally enabled.
<b>Maximum VLAN Limit</b>	The maximum number of VLANs that can be learned by MVRP in the system.

---

### Release History

Release 5.1.R2; command introduced.

### Related Commands

<b>mvrp</b>	Enables or disables MVRP globally on the switch.
<b>mvrp maximum-vlan</b>	Configures the maximum number of dynamic VLANs that can be created by MVRP.

### MIB Objects

```
alaMvrpGlobalStatus
alaMvrpMaxVlanLimit
```

---

## show mvrp port

Displays the MVRP configurations for all the ports, including timer values, registration and applicant modes.

**show mvrp port** [*chassis/slot/port*[-*port2*]] [**enable** | **disable**]

---

### Syntax Definitions

<i>chassis</i>	The chassis identifier.
<i>slot/port</i>	The slot and port number (3/1). Use a hyphen to specify a range of ports (3/1-8).
<b>enable</b>	To display only the enabled ports.
<b>disable</b>	To display only the disabled ports.

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

N/A

### Examples

-> show mvrp port enable

Port	Join Timer (msec)	Leave Timer (msec)	LeaveAll Timer (msec)	Periodic Timer (sec)	Registration Mode	Applicant Mode	Periodic Tx Status
1/1	600	1800	30000	2	fixed	active	enabled
1/2	600	1800	30000	2	fixed	active	enabled
1/7	600	1800	30000	2	fixed	active	enabled
1/8	600	1800	30000	2	fixed	active	enabled
2/24	600	1800	30000	2	fixed	active	enabled

-> show mvrp port disable

Port	Join Timer (msec)	Leave Timer (msec)	LeaveAll Timer (msec)	Periodic Timer (sec)	Registration Mode	Applicant Mode	Periodic Tx Status
1/9	600	1800	30000	2	fixed	active	enabled
1/10	600	1800	30000	2	fixed	active	enabled
2/1	600	1800	30000	2	fixed	active	enabled
2/2	600	1800	30000	2	fixed	active	enabled

....

```
2/24 600 1800 30000 2 fixed active enabled
```

```
-> show mvrp port
```

```
Port Status   Join   Leave  LeaveAll  Periodic  Registration  Applicant  Periodic
Timer        Timer   Timer   Timer     Timer     Mode          Mode       Tx Status
(msec)      (msec) (msec)  (msec)   (sec)
-----+-----+-----+-----+-----+-----+-----+-----
1/1 disabled  600    1800   30000    2         fixed        participant enabled
1/2 enabled  600    1800   30000    2         fixed        participant enabled
1/3 enabled  600    1800   30000    2         fixed        active      enabled
1/4 enabled  600    1800   30000    2         fixed        active      enabled
2/24 enabled  600    1800   30000    2         fixed        active      enabled
```

```
-> show mvrp port 1/1-3
```

```
Port Status   Join   Leave  LeaveAll  Periodic  Registration  Applicant  Periodic
Timer        Timer   Timer   Timer     Timer     Mode          Mode       Tx Status
(msec)      (msec) (msec)  (msec)   (sec)
-----+-----+-----+-----+-----+-----+-----+-----
1/1 disabled  600    1800   30000    2         fixed        participant enabled
1/2 enabled  600    1800   30000    2         fixed        participant enabled
1/3 enabled  600    1800   30000    2         fixed        participant enabled
```

```
-> show mvrp port 1/1
```

```
MVRP Enabled : no,
Registrar Mode : normal,
Applicant Mode : participant,
Join Timer (msec) : 600,
Leave Timer (msec) : 1800,
LeaveAll Timer (msec) : 30000,
Periodic Timer (sec) : 1,
Periodic Tx Status : enabled
```

```
-> show mvrp port 1/1 enable
```

```
ERROR: MVRP is disabled on port 1/1
```

### *output definitions*

<b>Port</b>	Displays the slot and port number.
<b>Join Timer</b>	Displays the value of Join Timer in milliseconds.
<b>Leave Timer</b>	Displays the value of the Leave Timer in milliseconds.
<b>LeaveAll Timer</b>	Displays the value of the LeaveAll Timer in milliseconds.
<b>Periodic Timer</b>	Displays the value of the Periodic Timer in seconds.
<b>Periodic Tx Status</b>	The transmission status of MVRP, <b>enable</b> or <b>disable</b> .

### **Release History**

Release 5.1.R2; command introduced.

## Related Commands

**mvrp port**

Enables or disables MVRP on specific ports on the switch.

**mvrp**

Configures VLAN dynamic registration mode to MVRP and deletes all static configuration of previous mode along with the dynamic data.

## MIB Objects

alaMvrpPortConfigTable

alaMvrpPortStatus

alaMvrpPortConfigRegistrarMode

alaMvrpPortConfigApplicantMode

alaMvrpPortConfigJoinTimer

alaMvrpPortConfigLeaveTimer

alaMvrpPortConfigLeaveAllTimer

alaMvrpPortConfigPeriodicTimer

alaMvrpPortConfigPeriodicTransmissionStatus

---



## show mvrp linkagg

Displays the MVRP configurations for linkaggs, including timer values, registration and applicant modes.

**show mvrp linkagg** [*agg\_id*[-*agg\_id2*]] [**enabled** | **disabled**]

---

### Syntax Definitions

<i>agg_id</i> [- <i>agg_id2</i> ]	The link aggregate ID number. Use a hyphen to specify a range of IDs (10-20).
<b>enabled</b>	To display only the enabled ports.
<b>disabled</b>	To display only the disabled ports.

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

N/A

### Examples

```
-> show mvrp linkagg 1-3
```

Port	Status	Join Timer (msec)	Leave Timer (msec)	LeaveAll Timer (msec)	Periodic Timer (sec)	Registration Mode	Applicant Mode	Periodic Tx Status
0/1	enabled	600	1800	30000	2	fixed	participant	enabled
0/2	enabled	600	1800	30000	2	fixed	participant	enabled
0/3	enabled	600	1800	30000	2	fixed	participant	enabled

```
-> show mvrp linkagg 1
MVRP Enabled : yes,
Registrar Mode : normal,
Applicant Mode : participant,
Join Timer (msec) : 600,
Leave Timer (msec) : 1800,
LeaveAll Timer (msec): 30000,
Periodic Timer (sec) : 1,
Periodic Tx Status: enabled
```

```
-> show mvrp linkagg 1 disable
ERROR: MVRP is enabled on linkagg 0/1
```

---

**Note.** In the command output shown below, the MVRP status is not displayed as the command is only for enabled ports and link aggregates.

---

```
-> show mvrp linkagg 10 enable
Registrar Mode      : normal,
Applicant Mode     : participant,
Join Timer (msec)  : 600,
Leave Timer (msec)  : 1800,
LeaveAll Timer (msec) : 30000,
Periodic Timer (sec) : 1,
Periodic Tx status  : disabled
```

### *output definitions*

---

<b>Port</b>	Displays the slot/port number.
<b>Join Timer</b>	Displays the value of Join Timer in milliseconds.
<b>Leave Timer</b>	Displays the value of the Leave Timer in milliseconds.
<b>LeaveAll Timer</b>	Displays the value of the LeaveAll Timer in milliseconds.
<b>Periodic Timer</b>	Displays the value of the Periodic Timer in seconds.
<b>Periodic Tx Status</b>	The transmission status of MVRP, <b>enable</b> or <b>disable</b>

---

### **Release History**

Release 5.1.R2; command introduced.

### **Related Commands**

[mvrp port](#) Enables or disables MVRP on specific ports on the switch.

### **MIB Objects**

```
alaMvrpPortConfigTable
  alaMvrpPortStatus
  alaMvrpPortConfigRegistrarMode
  alaMvrpPortConfigApplicantMode
  alaMvrpPortConfigJoinTimer
  alaMvrpPortConfigLeaveTimer
  alaMvrpPortConfigLeaveAllTimer
  alaMvrpPortConfigPeriodicTimer
  alaMvrpPortConfigPeriodicTransmissionStatus
```

---

## show mvrp timer

Displays the timer values configured for all the ports or a specific port.

**show mvrp** [**port** *chassis/slot/port*[- *port2*] | **linkagg** *agg\_id*[-*agg\_id2*]] **timer** {**join** | **leave** | **leaveall** | **periodic-timer**}

---

### Syntax Definitions

<i>chassis</i>	The chassis identifier when running in virtual chassis mode.
<i>slot/port</i>	The slot and port number (3/1). Use a hyphen to specify a range of ports (3/1-8).
<i>agg_id</i> [- <i>agg_id2</i> ]	The link aggregate ID number. Use a hyphen to specify a range of IDs (10-20).
<b>join</b>	To display only the join timer.
<b>leave</b>	To display only the leave timer.
<b>leaveall</b>	To display only the leaveall timer.
<b>periodic-timer</b>	To display only the periodic-timer.

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- Use the **join**, **leave**, **leaveall**, or **periodic-timer** parameter with this command to view the specific timer values configured on all the ports.
- Use the *agg\_id* or *slot/port* parameter with this command to display the timer values configured for a specific port.

### Examples

```
-> show mvrp timer
```

Port	Join Timer (msec)	Leave Timer (msec)	LeaveAll Timer (sec)	Periodic Timer (msec)
1/1	600	1800	30000	2
1/2	600	1800	30000	5
1/3	600	1800	30000	1
1/4	600	1800	30000	1

```
-> show mvrp port 1/21 timer
```

```
Join Timer (msec) : 600,
Leave Timer (msec) : 1800,
LeaveAll Timer (msec) : 30000,
```

```
Periodic-Timer (sec) : 1
-> show mvrp port 1/21 timer join

Join Timer (msec) : 600

-> show mvrp port 1/21 timer leave

Leave Timer (msec) : 1800

-> show mvrp port 1/21 timer leaveall

LeaveAll Timer (msec) : 30000

-> show mvrp port 1/21 timer periodic-timer

Periodic-Timer (sec) : 1

-> show mvrp timer join

Legend : All timer values are in milliseconds
Port      Join Timer
-----+-----
1/1        600
1/2        600
1/3        600

-> show mvrp timer leaveall

Legend : All timer values are in milliseconds
Port      LeaveAll Timer
-----+-----
1/1       1800
1/2       1800
1/3       1800

-> show mvrp timer leaveall

Legend : All timer values are in milliseconds
Port      LeaveAll Timer
-----+-----
1/1       30000
1/2       30000
1/3       30000

-> show mvrp timer periodic-timer

Port      Periodic Timer
-----+-----
1/1        1
1/2        1
1/3        1
```

*output definitions*


---

<b>Port</b>	Displays the slot/port number.
<b>Join Timer</b>	Displays the value of Join Timer in milliseconds.
<b>Leave Timer</b>	Displays the value of the Leave Timer in milliseconds.
<b>LeaveAll Timer</b>	Displays the value of the LeaveAll Timer in milliseconds.
<b>Periodic Timer</b>	Displays the value of the Periodic Timer in seconds.

---

**Release History**

Release 5.1.R2; command introduced.

**Related Commands**

<b>mvrp timer join</b>	Specifies the join time interval between transmit opportunities for the dynamically registering VLANs on the switch.
<b>mvrp timer leave</b>	Specifies the period of time that the switch has to wait in the Leave state before changing to the unregistered state.
<b>mvrp timer leaveall</b>	Specifies the frequency with which the LeaveAll messages are communicated.
<b>mvrp timer periodic-timer</b>	Specifies the MVRP periodic-timer time interval for the dynamically registering VLANs on the switch.
<b>show mvrp port</b>	Displays the MVRP configurations for all the ports, including timer values, registration and applicant modes.

**MIB Objects**

```
alaMvrpPortConfigTable
  alaMvrpPortConfigJoinTimer
  alaMvrpPortConfigLeaveTimer
  alaMvrpPortConfigLeaveAllTimer
  alaMvrpPortConfigPeriodicTimer
```

---

## show mvrp statistics

Displays the MVRP statistics for all the ports, aggregates, or specific ports.

**show mvrp {port chassis/slot/port[- port2] | linkagg agg\_id[-agg\_id2]} statistics**

---

### Syntax Definitions

<i>chassis</i>	The chassis identifier.
<i>slot/port</i>	The slot and port number (3/1). Use a hyphen to specify a range of ports (3/1-8).
<i>agg_id[-agg_id2]</i>	The link aggregate ID number. Use a hyphen to specify a range of IDs (10-20).

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- If no port or link aggregate is specified the MVRP statistics are displayed for all ports.
- Use the *agg\_id* or *slot/port* parameter with this command to display the MVRP statistics for a specific port.

### Examples

```
-> show mvrp port 1/1/1 statistics
Port 1/1/1:
  New Received           : 0,
  Join In Received       : 1526,
  Join Empty Received    : 8290,
  Leave Received         : 0,
  In Received            : 1,
  Empty Received         : 0,
  Leave All Received     : 283,
  New Transmitted        : 826,
  Join In Transmitted    : 1532,
  Join Empty Transmitted : 39,
  Leave Transmitted      : 0,
  In Transmitted         : 0,
  Empty Transmitted      : 296,
  LeaveAll Transmitted   : 23,
  Failed Registrations   : 0,
  Total Mrp PDU Received : 1160,
  Total Mrp PDU Transmitted : 957,
  Total Mrp Msgs Received : 10100,
  Total Mrp Msgs Transmitted : 2693,
  Invalid Msgs Received  : 0
```

-> show mvrp statistics

```
Port 1/1/1:
  New Received           : 0,
  Join In Received       : 1526,
  Join Empty Received    : 8290,
  Leave Received         : 0,
  In Received            : 1,
  Empty Received         : 0,
  Leave All Received     : 283,
  New Transmitted        : 826,
  Join In Transmitted    : 1532,
  Join Empty Transmitted : 39,
  Leave Transmitted      : 0,
  In Transmitted         : 0,
  Empty Transmitted      : 296,
  LeaveAll Transmitted   : 23,
  Failed Registrations   : 0,
  Total Mrp PDU Received : 1160,
  Total Mrp PDU Transmitted : 957,
  Total Mrp Msgs Received : 10100,
  Total Mrp Msgs Transmitted : 2693,
  Invalid Msgs Received  : 0
```

```
Port 1/1/2:
  New Received           : 0,
  Join In Received       : 1526,
  Join Empty Received    : 8290,
  Leave Received         : 0,
  In Received            : 1,
  Empty Received         : 0,
  Leave All Received     : 283,
  New Transmitted        : 826,
  Join In Transmitted    : 1532,
  Join Empty Transmitted : 39,
  Leave Transmitted      : 0,
  In Transmitted         : 0,
  Empty Transmitted      : 296,
  LeaveAll Transmitted   : 23,
  Failed Registrations   : 0,
  Total Mrp PDU Received : 1160,
  Total Mrp PDU Transmitted : 957,
  Total Mrp Msgs Received : 10100,
  Total Mrp Msgs Transmitted : 2693,
  Invalid Msgs Received  : 0
```

### *output definitions*

---

<b>New Received</b>	The number of new MVRP messages received on the switch.
<b>Join In Received</b>	The number of MVRP Join In messages received on the switch
<b>Join Empty Received</b>	The number of MVRP Join Empty messages received on the switch.
<b>Leave In Received</b>	The number of MVRP Leave In messages received on the switch.
<b>In Received</b>	The total MVRP messages received on the switch.
<b>Empty Received</b>	The number of MVRP Empty messages received on the switch.
<b>Leave All Received</b>	The number of MVRP Leave All messages received on the switch.

---

*output definitions (continued)*

---

<b>New Transmitted</b>	The number of new MVRP messages sent by the switch.
<b>Join In Transmitted</b>	The number of MVRP Join In messages sent by the switch.
<b>Join Empty Transmitted</b>	The number of MVRP Join Empty messages sent by the switch.
<b>Leave Transmitted</b>	The number of MVRP Leave messages sent by the switch.
<b>In Transmitted</b>	The number of MVRP In messages sent by the switch.
<b>Empty Transmitted</b>	The number of MVRP empty messages sent by the switch.
<b>LeaveAll Transmitted</b>	The number of Leave All messages sent by the switch.
<b>Failed Registrations</b>	The number of failed registrations.
<b>Total Mrp PDU Received</b>	The number of total MRP PDUs received by the switch.
<b>Total Mrp Msgs Received</b>	The number of total MRP messages received by the switch.
<b>Total Mrp Msgs Transmitted</b>	The number of total MRP messages sent by the switch.
<b>Invalid Msgs Received</b>	The number of invalid messages received by the switch.

---

**Release History**

Release 5.1.R2; command introduced.

**Related Commands**

- show mvrp configuration** Clears MVRP statistics for all ports, an aggregate of ports, or a specific port.
- show mvrp port** Displays the MVRP configurations for all the ports, including timer values, registration and applicant modes.
- show mvrp linkagg** Displays the MVRP configuration for a specific port or an aggregate of ports.



**MIB Objects**

## alaMvrpPortStatsTable

- alaMvrpPortStatsNewReceived
- alaMvrpPortStatsJoinInReceived
- alaMvrpPortStatsJoinEmptyReceived
- alaMvrpPortStatsLeaveReceived
- alaMvrpPortStatsInReceived
- alaMvrpPortStatsEmptyReceived
- alaMvrpPortStatsLeaveAllReceived
- alaMvrpPortStatsNewTransmitted
- alaMvrpPortStatsJoinInTransmitted
- alaMvrpPortStatsJoinEmptyTransmitted
- alaMvrpPortStatsLeaveTransmitted
- alaMvrpPortStatsInTransmitted
- alaMvrpPortStatsEmptyTransmitted
- alaMvrpPortStatsLeaveAllTransmitted
- alaMvrpPortStatsTotalPDUReceived
- alaMvrpPortStatsTotalPDUTransmitted
- alaMvrpPortStatsTotalMsgsReceived
- alaMvrpPortStatsTotalMsgsTransmitted
- alaMvrpPortStatsInvalidMsgsReceived
- alaMvrpPortFailedRegistrations

---

## show mvrp last-pdu-origin

Displays the source MAC address of the last MVRP message received on specific ports or aggregates.

**show mvrp {port chassis/slot/port[- port2] | linkagg agg\_id[-agg\_id2]} last-pdu-origin**

---

### Syntax Definitions

<i>chassis</i>	The chassis identifier.
<i>slot/port</i>	The slot and port number (3/1). Use a hyphen to specify a range of ports (3/1-8).
<i>agg_id[-agg_id2]</i>	The link aggregate ID number. Use a hyphen to specify a range of IDs (10-20).

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

N/A

### Examples

```
-> show mvrp port 1/1-3 last-pdu-origin
```

```
Port      Last PDU Origin
-----+-----
1/1      00:d0:95:ee:f4:64
1/2      00:d0:95:ee:f4:65
1/3      00:d0:95:ee:f4:66
```

```
->show mvrp port 1/21 last-pdu-origin
```

```
Port      Last PDU Origin
-----+-----
1/1      00:d0:95:ee:f4:64
```

#### *output definitions*

---

<b>Port</b>	Displays the slot and port number.
<b>Last PDU origin</b>	The source MAC address of the last PDU message received on the specific port.

---

### Release History

Release 5.1.R2; command introduced.

## Related Commands

### [show mvrp linkagg](#)

Displays the MVRP configuration for a specific port or an aggregate of ports.

### [show mvrp port](#)

Displays the MVRP configurations for all the ports, including timer values, registration and applicant modes.

## MIB Objects

alaMvrpPortStatsTable

alaMvrpPortLastPduOrigin

---

## show mvrp vlan-restrictions

Displays the VLAN MVRP configuration on a specific port or an aggregate of ports.

**show mvrp {port chassis/slot/port[- port2] | linkagg agg\_id[-agg\_id2]} vlan-restrictions**

---

### Syntax Definitions

<i>chassis</i>	The chassis identifier.
<i>slot/port</i>	The slot and port number (3/1). Use a hyphen to specify a range of ports (3/1-8).
<i>agg_id[-agg_id2]</i>	The link aggregate ID number. Use a hyphen to specify a range of IDs (10-20).

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

Use the *agg\_id* or *slot/port* parameter with this command to display the MVRP statistics for a specific port.

### Examples

```
-> show mvrp port 1/21 vlan-restrictions
```

VLAN ID	Static Registration	Restricted Registration	Restricted Applicant
1	LEARN	FALSE	FALSE
2	LEARN	FALSE	FALSE
3	LEARN	FALSE	FALSE
4	LEARN	FALSE	FALSE
5	LEARN	FALSE	FALSE
6	LEARN	FALSE	FALSE
7	LEARN	FALSE	FALSE
11	RESTRICT	FALSE	FALSE
12	RESTRICT	FALSE	FALSE
53	LEARN	TRUE	FALSE
55	LEARN	FALSE	TRUE

---

*output definitions*

---

<b>VLAN ID</b>	The VLAN identification number for a preconfigured VLAN that handles the MVRP traffic for this port.
<b>Static Registration</b>	Indicates if the port is restricted ( <b>RESTRICT</b> ) or not restricted ( <b>LEARN</b> ) from becoming a member of the static VLAN.
<b>Restricted Registration</b>	Indicates if the VLAN is restricted ( <b>TRUE</b> ) or not restricted ( <b>FALSE</b> ) from dynamic registration on the port.
<b>Restricted Applicant</b>	Indicates if the VLAN is restricted for advertisement from the port ( <b>TRUE</b> ) or not ( <b>FALSE</b> ).

---

**Release History**

Release 5.1.R2; command introduced.

**Related Commands**

<a href="#">show mvrp port</a>	Displays the MVRP configurations for all the ports, including timer values, registration and applicant modes.
<a href="#">show mvrp linkagg</a>	Displays the MVRP configuration for a specific port or an aggregate of ports.

**MIB Objects**

alaMvrpPortConfigTable  
alaMvrpPortConfigRestrictedRegistrationBitmap  
alaMvrpPortConfigRestrictedApplicantBitmap  
alaMvrpPortConfigRegistrationToStaticVlan

---

## mvrp clear-statistics

Clears MVRP statistics for all the ports, an aggregate of ports, or a specific port.

**mvrp [port chassis/slot/port[-port2] | linkagg agg\_id[-agg\_id2]] clear-statistics**

---

### Syntax Definitions

<i>chassis</i>	The chassis identifier.
<i>slot/port</i>	The slot and port number (3/1). Use a hyphen to specify a range of ports (3/1-8).
<i>agg_id[-agg_id2]</i>	The link aggregate ID number. Use a hyphen to specify a range of IDs (10-20).

### Defaults

If no ports are specified, the MVRP statistics are deleted for all the ports.

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

Use the *agg\_id* or *slot/port* parameter with this command to clear MVRP statistics for a specific port.

### Examples

```
-> mvrp clear-statistics
-> mvrp port 1/2 clear-statistics
-> mvrp linkagg 10 clear-statistics
```

### Release History

Release 5.1.R2; command introduced.

### Related Commands

[show mvrp statistics](#) Displays the MVRP statistics for all the ports, aggregates, or specific ports.

### MIB Objects

```
alaMvrpGlobalClearStats
  alaMvrpPortStatsTable
  alaMvrpPortStatsClearStats
```

---



# 12 802.1AB Commands

802.1AB is an IEEE standard for exchanging information with neighboring devices and maintaining a database of it. The information is exchanged as an LLDPDU (Link Layer Discovery Protocol Data Unit) in TLV (Time, Length, Value) format. This chapter details configuring and monitoring 802.1AB on a switch.

The OmniSwitch version of 802.1AB complies with the following:

- IEEE 802.1AB-2009 Station and Media Access Control Discovery
- ANSI-TIA 1057-2006 Link Layer Discovery Protocol for Media End Point Devices.

MIB information for the 802.1AB commands is as follows:

*MIB Filename:* LLDP-MIB.mib, LLDP-TC-MIB.mib, LLDP-EXT-DOT1-MIB.mib,  
LLDP-EXT-DOT3-MIB.mib, LLDP-EXT-MED-MIB.mib

*MIB V2 Filenames:* LLDP-V2-MIB.mib, LLDP-V2-TC-MIB.mib, LLDP-EXT-DOT1-V2-MIB.mib,  
LLDP-EXT-DOT3-V2-MIB.mib, LLDP-EXT-MED-MIB.mib

*Filename:* ALCATEL-IND1-LLDP-MED-MIB.mib  
*Module:* alcatelIND1LLDPMEDMIB

*Filename:* ALCATEL-IND1-LLDP-TRUST-MIB.mib  
*Module:* alcatelIND1LLDPTRUSTMIB



A summary of available commands is listed here:

---

- lldp nearest-edge mode**
- lldp transmit interval**
- lldp transmit hold-multiplier**
- lldp reinit delay**
- lldp notification interval**
- lldp lldpdu**
- lldp notification**
- lldp network-policy**
- lldp med network-policy**
- lldp tlv management**
- lldp tlv dot1**
- lldp tlv dot3**
- lldp tlv med**
- lldp tlv proprietary**
- lldp tlv application**
- lldp tlv application priority**
- show lldp system-statistics**
- show lldp statistics**
- show lldp local-system**
- show lldp local-port**
- show lldp local-management-address**
- show lldp config**
- show lldp network-policy**
- show lldp med network-policy**
- show lldp remote-system**
- show lldp remote-system med**
- show lldp remote-system application-tlv**
- show lldp agent-destination-address**
- lldp trust-agent**
- lldp trust-agent violation-action**
- show lldp trusted remote-agent**
- show lldp trust-agent**

---

## lldp nearest-edge mode

Enables or disables the nearest-edge mode for the switch. When enabled, the switch will use the LLDP destination MAC address (01:20:DA:02:01:73) to send LLDPDUs.

**lldp nearest-edge mode {enable | disable}**

---

### Syntax Definitions

<b>enable</b>	Enables the nearest-edge mode.
<b>disable</b>	Disables the nearest-edge mode.

### Defaults

NA

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- The **nearest-edge** MAC address is used in conjunction with the Auto Download Configuration feature to advertise the management VLAN.
- This mode is used to learn the Management VLAN ID from a centralized Remote Configuration management switch.

### Examples

```
-> lldp nearest-edge mode enable
```

### Release History

Release 5.1; command introduced.

### Related Commands

[show lldp local-system](#) Displays local system information.

### MIB Objects

lldpDestMac

---

## lldp transmit interval

Sets the transmit time interval for LLDPDUs.

**lldp transmit interval** *seconds*

---

### Syntax Definitions

*seconds* The transmit interval between LLDPDUs, in seconds. The valid range is 5 - 32768.

### Defaults

parameter	default
<i>seconds</i>	30

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

The LLDP protocol must be enabled before using this command.

### Examples

```
-> lldp transmit interval 40
```

### Release History

Release 5.1; command introduced.

### Related Commands

**lldp transmit hold-multiplier** Sets the transmit hold multiplier value, which is used to calculate the Time To Live TLV.

**show lldp local-system** Displays local system information.

### MIB Objects

lldpConfiguration  
lldpV2MessageTxInterval

---

## lldp transmit hold-multiplier

Sets the transmit hold multiplier value, which is used to calculate the Time To Live TLV.

**lldp transmit hold-multiplier** *num*

---

### Syntax Definitions

*num* The transmit hold multiplier value. The valid range is 2-10.

### Defaults

parameter	default
<i>num</i>	4

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- The LLDP protocol must be enabled before using this command.
- The Time To Live is a multiple of transmit interval and transmit hold multiplier.

### Examples

```
-> lldp transmit hold-multiplier 6
```

### Release History

Release 5.1; command introduced.

### Related Commands

[lldp transmit interval](#) Sets the transmit time interval for LLDPDUs.  
[show lldp local-system](#) Displays local system information.

### MIB Objects

```
lldpConfiguration  
  lldpV2MessageTxHoldMultiplier
```

---

## lldp reinit delay

Sets the time interval that must elapse before the current status of a port is reinitialized after a status change.

**lldp reinit delay** *seconds*

---

### Syntax Definitions

*seconds*                      The number of seconds to reinitialize the ports status after a status change. The valid range is 1-10.

### Defaults

parameter	default
<i>seconds</i>	2

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

The LLDP protocol must be enabled before using this command.

### Examples

```
-> lldp reinit delay 4
```

### Release History

Release 5.1; command introduced.

### Related Commands

<a href="#">lldp transmit interval</a>	Sets the minimum time interval between successive LLDPDUs transmitted.
<a href="#">show lldp local-system</a>	Displays local system information.

### MIB Objects

lldpConfiguration  
  lldpV2ReinitDelay

---

## lldp notification interval

Sets the time interval that must elapse before a notification about the local system MIB change is generated.

**lldp notification interval** *seconds*

---

### Syntax Definitions

*seconds* The minimum number of seconds for generating a notification-event.  
The valid range is 5-3600.

### Defaults

parameter	default
<i>seconds</i>	5

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- The LLDP protocol and notification must be enabled before using this command.
- In a specified interval, it is not possible to generate more than one notification-event.

### Examples

```
-> lldp notification interval 25
```

### Release History

Release 5.1; command introduced.

### Related Commands

- [lldp notification](#) Specifies the switch to control per port notification status about the remote device change.
- [show lldp local-system](#) Displays local system information.

### MIB Objects

```
lldpConfiguration  
  lldpV2NotificationInterval
```

---

## lldp lldpdu

Specifies the switch to control the transmission and the reception of LLDPDUs for a particular chassis, a slot, or a port.

**lldp** [**non-tpmr** | **nearest-customer** | **nearest-bridge** | **all**] {**port** *chassis/slot/port[-port2]* | **slot** *chassis/slot* | **chassis**} **lldpdu** {**tx** | **rx** | **tx-and-rx** | **disable**}

---

### Syntax Definitions

<b>non-tpmr</b>	The non-TPMR agent using destination MAC address 01-80-C2-00-00-03.
<b>nearest-customer</b>	The nearest customer bridge agent using destination MAC address 01-80-C2-00-00-00.
<b>nearest-bridge</b>	The nearest bridge agent using destination MAC address 01-80-C2-00-00-0E.
<b>all</b>	All LLDP agents.
<i>chassis</i>	The chassis identifier.
<i>slot/port[-port2]</i>	The slot and port number (3/1). Use a hyphen to specify a range of ports (3/1-8).
<i>slot</i>	The slot number for a specific module.
<b>chassis</b>	Specifies the whole chassis.
<b>tx</b>	Transmits LLDPDUs.
<b>rx</b>	Receives LLDPDUs.
<b>tx-and-rx</b>	Transmits and receives LLDPDUs.
<b>disable</b>	Disables LLDPDUs transmission and reception.

### Defaults

parameter	default
<b>tx</b>   <b>rx</b>   <b>tx-and-rx</b>   <b>disable</b>	<b>tx-and-rx</b>
<b>non-tpmr</b>   <b>nearest-customer</b>   <b>nearest-bridge</b>	<b>nearest-bridge</b>

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- The port can be set to receive, transmit, or transmit and receive LLDPDUs using this command.
- If this command is applied to a slot or chassis, then the existing configuration related to this command is lost.
- Nearest bridge propagation is constrained to a single physical link, packets are stopped by all types of bridges.

- Non-tpmr propagation is constrained by all bridges other than TPMRs, intended for use within provider bridged networks.
- Nearest customer bridge propagation is constrained by customer bridges, this gives the same coverage as a customer-customer MACSec connection.

## Examples

```
-> lldp port 1/2 lldpdu tx-and-rx
-> lldp slot 3 lldpdu tx
-> lldp chassis lldpdu disable
```

## Release History

Release 5.1; command introduced.

## Related Commands

### **lldp lldpdu**

Specifies the switch to control the transmission and the reception of LLDPDUs for a particular chassis, a slot, or a port.

### **lldp notification**

Specifies the switch to control per port notification status about the remote device change.

## MIB Objects

```
lldpV2PortConfigTable
  lldpV2PortConfigIfIndex
  lldpV2PortConfigDestAddressIndex
  lldpV2PortConfigAdminStatus
```

---



## lldp notification

Specifies the switch to control per port notification status about the remote device change.

**lldp** [**non-tpmr** | **nearest-customer** | **nearest-bridge** | **all**] {**port** *chassis/slot/port*[-*port2*] | **slot** *chassis/slot* | **chassis**} **notification** {**enable** | **disable**}

---

### Syntax Definitions

<b>non-tpmr</b>	The non-TPMR agent using destination MAC address 01-80-C2-00-00-03.
<b>nearest-customer</b>	The nearest customer bridge agent using destination MAC address 01-80-C2-00-00-00.
<b>nearest-bridge</b>	The nearest bridge agent using destination MAC address 01-80-C2-00-00-0E.
<b>all</b>	All LLDP agents.
<i>chassis</i>	The chassis identifier.
<i>slot/port</i> [- <i>port2</i> ]	The slot and port number (3/1). Use a hyphen to specify a range of ports (3/1-8).
<i>slot</i>	The slot number for a specific module.
<b>chassis</b>	Specifies the whole chassis.
<b>enable</b>	Enables the notification of local system MIB changes.
<b>disable</b>	Disables the notification.

### Defaults

parameter	default
<b>enable</b>   <b>disable</b>	<b>disable</b>
<b>non-tpmr</b>   <b>nearest-customer</b>   <b>nearest-bridge</b>	<b>nearest-bridge</b>

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- The LLDPDU administrative status must be in the receive state before using this command.
- If this command is applied to a slot or chassis, then the existing configuration related to this command is lost.
- Nearest bridge propagation is constrained to a single physical link, packets are stopped by all types of bridges.
- Non-tpmr propagation is constrained by all bridges other than TPMRs, intended for use within provider bridged networks.

- Nearest customer bridge propagation is constrained by customer bridges, this gives the same coverage as a customer-customer MACSec connection.

### Examples

```
-> lldp port 1/2 notification enable
-> lldp slot 1 notification disable
```

### Release History

Release 5.1; command introduced.

### Related Commands

**lldp notification interval** Sets the time interval that must elapse before a notification about the local system MIB change is generated.

**lldp lldpdu** Specifies the switch to control the transmission and the reception of LLDPDUs for a particular chassis, a slot, or a port.

### MIB Objects

```
lldpPortConfigTable
  lldpV2PortConfigPortNum
  lldpV2PortConfigDestAddressIndex
  lldpV2PortConfigNotificationEnable
```

---

## lldp network-policy

Configures a local Network Policy on the switch for a specific application type.

**lldp network-policy** *policy\_id* **application** {**voice** | **voice-signaling** | **guest-voice** | **guest-voice-signaling** | **softphone-voice** | **video-conferencing** | **streaming-video** | **video-signaling**} **vlan** {**untagged** | **priority-tag** | *vlan-id*} [**l2-priority** *802.1p\_value*] [**dscp** *dscp\_value*]

**no lldp network-policy** *policy\_id* - [*policy\_id2*]

---

### Syntax Definitions

<i>policy_id</i> - [ <i>policy_id2</i> ]	A network policy identifier (0-31) which is associated to a port. Supported only with the <b>no</b> form of the command
<b>voice</b>	Specifies a voice application type.
<b>voice-signaling</b>	Specifies a voice-signaling application type.
<b>guest-voice</b>	Specifies a guest-voice application type.
<b>guest-voice-signaling</b>	Specifies a guest-voice-signaling application type.
<b>softphone-voice</b>	Specifies a softphone-voice application type.
<b>video-conferencing</b>	Specifies a video-conferencing application type.
<b>streaming-video</b>	Specifies a streaming-video application type.
<b>video-signaling</b>	Specifies a video-signaling application type.
<b>untagged</b>	Specifies that a VLAN port is untagged.
<b>priority-tag</b>	Specifies the internal priority that would be assigned to the VLAN.
<i>vlan_id</i>	VLAN identifier. Valid range is 1–4094.
<i>802.1p_value</i>	The Layer-2 priority value assigned to the VLAN. Valid range is 0–7.
<i>dscp_value</i>	Priority value assigned to the DSCP (Differentiated Service Code Point) header. Valid range is 0–63.

### Defaults

parameter	default
<i>802.1p_value</i> for <b>voice application</b>	<b>5</b>
<i>802.1p_value</i> for <b>other applications</b>	<b>0</b>
<i>dscp_value</i>	<b>0</b>

By default, the VLAN ID is configured in the voice network profile.

### Platforms Supported

OmniSwitch 2260, 2360

## Usage Guidelines

- Use the **no** form of this command to remove the configured network policy from the system.
- When a network policy is deleted, all the associated values and port bindings are also deleted.
- A maximum of 32 network policies can be configured on a single VLAN.
- Once a policy is created, the application type, VLAN ID, 802.1p, and DSCP values can be modified.
- If a network policy ID is bound to a port, it cannot be modified.
- Use a hyphen to specify a range of Policy IDs and a space to separate multiple Policy IDs in the command.
- The range for Policy IDs is supported only with the **no** form of this command.

## Examples

```
-> lldp network-policy 10 application voice vlan 20
-> lldp network-policy 11 application guest-voice-signaling vlan untagged 12-
priority 3
-> lldp network-policy 20 application voice vlan priority-tag dscp 39
-> lldp network-policy 20 application voice-signaling vlan 23 12-priority 2 dscp 43
-> no lldp network-policy 10

-> no lldp network-policy 10-20
```

## Release History

Release 5.1; command introduced.

## Related Commands

- |  |  |
|--|--|
| <a href="#">lldp tlvs med</a>                | Configures whether or not LLDP-MED TLVs are included in transmitted LLDPDUs. |
| <a href="#">show lldp network-policy</a>     | Displays the network policy details for a given policy ID.                   |
| <a href="#">show lldp med network-policy</a> | Displays the network policy configured on a slot or port.                    |

## MIB Objects

```
alaLldpXMedLocMediaPolicyTable
  alaLldpXMedLocMediaPolicyId
  alaLldpXMedLocMediaPolicyAppType
  alaLldpXMedLocMediaPolicyVlanType
  alaLldpXMedLocMediaPolicyVlanID
  alaLldpXMedLocMediaPolicyPriority
  alaLldpXMedLocMediaPolicyDscp
  alaLldpXMedLocMediaPolicyUnknown
  alaLldpXMedLocMediaPolicyTagged
  alaLldpXMedLocMediaPolicyRowStatus
```

---

## lldp med network-policy

Associates an existing network policy per LLDP agent per port, slot, or chassis. Also specifies the LLDP destination MAC address sent in LLDPDUs.

**lldp** [**nearest-bridge** | **nearest-customer** | **non-tpmr** | **all**] {**port** *chassis/slot/port* | **slot** *chassis/slot* | **chassis**} **med network-policy** *policy\_id* - [*policy\_id2*]

**no lldp** {**port** *chassis/slot/port* | **slot** *chassis/slot* | **chassis**} **med network-policy** *policy\_id* - [*policy\_id2*]

---

### Syntax Definition

<b>nearest-bridge</b>	Specifies the destination MAC address as 01:80:C2:00:00:0E.
<b>nearest-customer</b>	Specifies the destination MAC address as 01:80:C2:00:00:00.
<b>non-tpmr</b>	Specifies the destination MAC address as 01:80:C2:00:00:03.
<b>all</b>	Specifies that all three LLDP agents must be supported.
<i>chassis/slot/port</i> [- <i>port2</i> ]	The chassis ID, slot, and port number (3/1/1) for a specific port. Use a hyphen to specify a range of ports (3/1/1-8).
<i>chassis/slot</i>	The chassis ID and slot number for a specific module (3/1).
<b>chassis</b>	Specifies all switch ports.
<i>policy_id</i> - [ <i>policy_id2</i> ]	A network policy identifier (0–31).

### Defaults

NA

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- Use the **no** form of this command to disassociate a network policy from a port.
- The network policy must already be configured in the system before associating it with a port.
- A maximum of 8 network policies can be associated to a port.
- Two or more network policy IDs with the same application type cannot be associated to a port.

### Examples

```
-> lldp chassis med network-policy 22
-> lldp slot 1/1 med network-policy 1-4 5 6
-> lldp por 2/1/3 med network-policy 12
-> no lldp slot 2/3 med network-policy 12
```

### Release History

Release 5.1; command introduced.

## Related Commands

<b>lldp tlv med</b>	Configures whether or not LLDP-MED TLVs are included in transmitted LLDPDUs.
<b>show lldp network-policy</b>	Displays the MED Network Policy details for a given policy ID.
<b>show lldp med network-policy</b>	Displays the network policy configured on a slot or port. If no option is specified, network policies configured on all ports of the chassis are displayed.

## MIB Objects

```
alaLldpXMedLocMediaPolicyPortTable  
  alaLldpXMedLocMediaPolicyPortIfIndex  
  alaLldpXMedLocMediaPolicyId  
  alaLldpXMedLocMediaPolicyPortRowStatus
```

---

## lldp tlv management

Specifies the switch to control per port management TLVs to be incorporated in the LLDPDUs.

**lldp** [**non-tpmr** | **nearest-customer** | **nearest-bridge** | **all**] {**port** *chassis/slot/port*[-*port2*] | **slot** *chassis/slot* | **chassis**} **tlv management** {**port-description** | **system-name** | **system-description** | **system-capabilities** | **management-address**} {**enable** | **disable**}

---

### Syntax Definitions

<b>non-tpmr</b>	The non-TPMR agent using destination MAC address 01-80-C2-00-00-03.
<b>nearest-customer</b>	The nearest customer bridge agent using destination MAC address 01-80-C2-00-00-00.
<b>nearest-bridge</b>	The nearest bridge agent using destination MAC address 01-80-C2-00-00-0E.
<b>all</b>	All LLDP agents.
<i>chassis</i>	The chassis identifier.
<i>slot/port</i> [- <i>port2</i> ]	The slot and port number (3/1). Use a hyphen to specify a range of ports (3/1-8).
<i>slot</i>	The slot number for a specific module.
<b>chassis</b>	Specifies the whole chassis.
<b>port-description</b>	Enables or disables the transmission of port description TLV in LLDPDU.
<b>system-name</b>	Enables or disables the transmission of system name TLV in LLDPDU.
<b>system-description</b>	Enables or disables transmission of system description TLV in LLDPDU.
<b>system-capabilities</b>	Enables or disables transmission of system capabilities TLV in LLDPDU.
<b>management-address</b>	Enables or disables transmission of management address on per port.
<b>enable</b>	Enables management TLV LLDPDU transmission.
<b>disable</b>	Disables management TLV LLDPDU transmission.

### Defaults

parameter	default
<b>enable</b>   <b>disable</b>	<b>disable</b>
<b>non-tpmr</b>   <b>nearest-customer</b>   <b>nearest-bridge</b>	<b>nearest-bridge</b>

### Platforms Supported

OmniSwitch 2260, 2360

## Usage Guidelines

- The LLDPDU must be enabled and set to transmit before using this command.
- If this command is applied to a slot or chassis, then the existing configuration related to this command is lost.
- Nearest bridge propagation is constrained to a single physical link, packets are stopped by all types of bridges.
- Non-tpmr propagation is constrained by all bridges other than TPMRs, intended for use within provider bridged networks.
- Nearest customer bridge propagation is constrained by customer bridges, this gives the same coverage as a customer-customer MACSec connection.

## Examples

```
-> lldp port 1/2 tlv management port-description enable
-> lldp slot 2 tlv management management-address enable
-> lldp slot 3 tlv management system-name disable
-> lldp chassis tlv management system-capabilities enable
```

## Release History

Release 5.1; command introduced.

## Related Commands

<a href="#">lldp lldpdu</a>	Specifies the switch to control the transmission and the reception of LLDPDUs for a particular chassis, a slot, or a port.
<a href="#">show lldp local-system</a>	Displays local system information.
<a href="#">show lldp local-port</a>	Displays per port information.
<a href="#">show lldp remote-system</a>	Displays per local port and information of remote system.

## MIB Objects

```
lldpV2PortConfigTable
  lldpV2LocPortPortNum
  lldpV2PortConfigTLVsTxEnable
lldpV2ConfigManAddrTable
  lldpV2ConfigManAddrPortsTxEnable
```

---



## lldp tlv dot1

Specifies the switch to control per port 802.1 TLVs to be incorporated in the LLDPDUs.

**lldp** [**non-tpmr** | **nearest-customer** | **nearest-bridge** | **all**] {**port** *chassis/slot/port[-port2]* | **slot** *chassis/slot* | **chassis**} **tlv dot1** {**port-vlan** | **vlan-name**} {**enable** | **disable**}

---

### Syntax Definitions

<b>non-tpmr</b>	The non-TPMR agent using destination MAC address 01-80-C2-00-00-03.
<b>nearest-customer</b>	The nearest customer bridge agent using destination MAC address 01-80-C2-00-00-00.
<b>nearest-bridge</b>	The nearest bridge agent using destination MAC address 01-80-C2-00-00-0E.
<b>all</b>	All LLDP agents.
<i>chassis</i>	The chassis identifier.
<i>slot/port[-port2]</i>	The slot and port number (3/1). Use a hyphen to specify a range of ports (3/1-8).
<i>slot</i>	The slot number for a specific module.
<b>chassis</b>	Specifies the whole chassis.
<b>port-vlan</b>	Enables or disables transmission of port VLAN TLV in LLDPDU.
<b>vlan-name</b>	Enables or disables transmission of VLAN name TLV in LLDPDU.
<b>enable</b>	Enables 802.1 TLV LLDPDU transmission.
<b>disable</b>	Disables 802.1 TLV LLDPDU transmission.

### Defaults

parameter	default
<b>enable</b>   <b>disable</b>	<b>disable</b>
<b>non-tpmr</b>   <b>nearest-customer</b>   <b>nearest-bridge</b>	<b>nearest-bridge</b>

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- The LLDPDU must be enabled and set to transmit before using this command.
- If this command is applied to a slot or chassis, then the existing configuration related to this command is lost.
- If one TLV is included then the other TLV is automatically included when you use this command.

- Nearest bridge propagation is constrained to a single physical link, packets are stopped by all types of bridges.
- Non-tpmr propagation is constrained by all bridges other than TPMRs, intended for use within provider bridged networks.
- Nearest customer bridge propagation is constrained by customer bridges, this gives the same coverage as a customer-customer MACSec connection.

## Examples

```
-> lldp port 5/1 tlv dot1 port-vlan enable
-> lldp slot 3 tlv dot1 vlan-name enable
-> lldp slot 3 tlv dot1 vlan-name disable
```

## Release History

Release 5.1; command introduced.

## Related Commands

<a href="#">lldp tlv management</a>	Specifies the switch to control per port management TLVs to be incorporated in the LLDPDUs.
<a href="#">show lldp statistics</a>	Displays per port statistics.
<a href="#">show lldp local-port</a>	Displays per port information.

## MIB Objects

```
lldpV2PortConfigTable
  lldpV2PortConfigPortNum
lldpV2Xdot1ConfigPortVlanTable
  lldpV2Xdot1ConfigPortVlanTxEnable
lldpV2Xdot1ConfigVlanNameTable
  lldpV2Xdot1ConfigVlanNameTxEnable
```

---

## lldp tlv dot3

Specifies the switch to control per port 802.3 TLVs to be incorporated in the LLDPDUs.

**lldp** [**non-tpmr** | **nearest-customer** | **nearest-bridge** | **all**] {**port** *chassis/slot/port* [-*port2*]| **slot** *chassis/slot* | **chassis**} **tlv dot3 mac-phy** {**enable** | **disable**}

---

### Syntax Definitions

<b>non-tpmr</b>	The non-TPMR agent using destination MAC address 01-80-C2-00-00-03.
<b>nearest-customer</b>	The nearest customer bridge agent using destination MAC address 01-80-C2-00-00-00.
<b>nearest-bridge</b>	The nearest bridge agent using destination MAC address 01-80-C2-00-00-0E.
<b>all</b>	All LLDP agents.
<i>chassis</i>	The chassis identifier.
<i>slot/port</i> [- <i>port2</i> ]	The slot and port number (3/1). Use a hyphen to specify a range of ports (3/1-8).
<i>slot</i>	The slot number for a specific module.
<b>chassis</b>	Specifies the whole chassis.
<b>enable</b>	Enables 802.3 TLV LLDPDU transmission.
<b>disable</b>	Disables 802.3 TLV LLDPDU transmission.

### Defaults

parameter	default
<b>enable</b>   <b>disable</b>	<b>disable</b>
<b>non-tpmr</b>   <b>nearest-customer</b>   <b>nearest-bridge</b>	<b>nearest-bridge</b>

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- The LLDPDU must be enabled and set to transmit before using this command.
- If this command is applied to a slot or chassis, then the existing configuration related to this command is lost.
- Nearest bridge propagation is constrained to a single physical link, packets are stopped by all types of bridges.
- Non-tpmr propagation is constrained by all bridges other than TPMRs, intended for use within provider bridged networks.

- Nearest customer bridge propagation is constrained by customer bridges, this gives the same coverage as a customer-customer MACSec connection.

## Examples

```
-> lldp port 2/4 tlv dot3 mac-phy enable
-> lldp slot 2 tlv dot3 mac-phy disable
```

## Release History

Release 5.1; command introduced.

## Related Commands

<a href="#">lldp tlv management</a>	Specifies the switch to control per port management TLVs to be incorporated in the LLDPDUs.
<a href="#">lldp tlv dot1</a>	Specifies the switch to control per port 802.1 TLVs to be incorporated in the LLDPDUs.
<a href="#">show lldp statistics</a>	Displays per port statistics.

## MIB Objects

```
lldpV2PortConfigTable
  lldpV2PortConfigPortNum
lldpV2Xdot3PortConfigTable
  lldpV2Xdot3PortConfigTLVsTxEnable
```

---

## lldp tlv med

Specifies the switch to control per port LLDP-MED (Media Endpoint Device) TLVs to be incorporated in the LLDPDUs.

**lldp** [**non-tpmr** | **nearest-customer** | **nearest-bridge** | **all**] {**port** *chassis/slot/port* [-*port2*] | **slot** *chassis/slot* | **chassis**} **tlv med** {**power** | **capability**} {**enable** | **disable**}

---

### Syntax Definitions

<b>non-tpmr</b>	The non-TPMR agent using destination MAC address 01-80-C2-00-00-03.
<b>nearest-customer</b>	The nearest customer bridge agent using destination MAC address 01-80-C2-00-00-00.
<b>nearest-bridge</b>	The nearest bridge agent using destination MAC address 01-80-C2-00-00-0E.
<b>all</b>	All LLDP agents.
<i>chassis</i>	The chassis identifier.
<i>slot/port</i> [- <i>port2</i> ]	The slot and port number (3/1). Use a hyphen to specify a range of ports (3/1-8).
<i>slot</i>	The slot number for a specific module.
<b>chassis</b>	Specifies the whole chassis.
<b>capability</b>	Enables or disables transmission of LLDP-MED capabilities TLV in LLDPDU.
<b>enable</b>	Enables LLDP-MED TLV LLDPDU transmission.
<b>disable</b>	Disables LLDP-MED TLV LLDPDU transmission.

### Defaults

parameter	default
<b>enable</b>   <b>disable</b>	<b>disable</b>
<b>non-tpmr</b>   <b>nearest-customer</b>   <b>nearest-bridge</b>	<b>nearest-bridge</b>

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- The LLDPDU must be enabled and set to transmit before using this command.
- If this command is applied to a slot or chassis, then the existing configuration related to this command will be lost.
- Nearest bridge propagation is constrained to a single physical link, packets are stopped by all types of bridges.

- Non-tpmr propagation is constrained by all bridges other than TPMRs, intended for use within provider bridged networks.
- Nearest customer bridge propagation is constrained by customer bridges, this gives the same coverage as a customer-customer MACSec connection.

## Examples

```
-> lldp 4/4 tlv med power enable
-> lldp 4/3 tlv med capability enable
-> lldp 4 tlv med power disable
```

## Release History

Release 5.1; command introduced.

## Related Commands

### [lldp tlv management](#)

Specifies the switch to control per port management TLVs to be incorporated in the LLDPDUs.

### [lldp tlv dot1](#)

Specifies the switch to control per port 802.1 TLVs to be incorporated in the LLDPDUs.

### [lldp tlv dot3](#)

Specifies the switch to control per port 802.3 TLVs to be incorporated in the LLDPDUs.

## MIB Objects

```
lldpV2PortConfigTable
  lldpV2PortConfigPortNum
lldpV2XMedPortConfigTable
  lldpV2XMedPortConfigTLVsTxEnable
```

---

## lldp tlv proprietary

Allows the switch to advertise the Access Point location through the proprietary TLVs.

**lldp {port *chassis/slot/port* [-*port2*] | slot *chassis/slot* | chassis} tlv proprietary {enable | disable}**

---

### Syntax Definitions

<i>slot/port</i>	Slot number for the module and physical port number on that module (for example, 3/1 specifies port 1 on slot 3).
<i>slot</i>	The slot number for a specific module.
<b>chassis</b>	All switch ports.
<b>enable</b>	Enables proprietary TLVs to advertise AP location.
<b>disable</b>	Disables proprietary TLVs to advertise AP location.

### Defaults

parameter	default
enable   disable	disable

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- The VLAN information is advertised through 802.1x TLV (i.e, Management VLAN is advertised if the port is a 802.1x port else default VLAN of the port is advertised). The AP location is advertised through proprietary TLV.
- If an AP is detected and authenticated on a 802.1x port, LLDP TLVs are triggered to advertise management VLAN and AP location despite CLI configuration being disabled.
- If an AP is removed from 802.1x port, LLDP receives message from 802.1x port after which LLDP stops advertising of management VLAN and AP location, only if the configuration is disabled explicitly on the port.

### Examples

```
-> lldp port 5/1 tlv proprietary enable
-> lldp port 5/1 tlv proprietary disable
-> lldp slot 2 tlv proprietary enable
-> lldp slot 2 tlv proprietary disable
-> lldp chassis tlv proprietary enable
-> lldp chassis tlv proprietary disable
```

### Release History

Release 5.1; command introduced.

**Related Commands**

<b>lldp tlv management</b>	Specifies the switch to control per port management TLVs to be incorporated in the LLDPDUs.
<b>show lldp statistics</b>	Displays per port statistics.
<b>show lldp local-port</b>	Displays per port information.

**MIB Objects**

```
alaLldpPropConfigTable  
  alaLldpPropAPLocation
```

---



## lldp tlv application

Configures the switch to include the LLDP-DCBx Application Priority TLV in the LLDPDUs for the specified port. This TLV is only configurable for the nearest-bridge LLDP agent.

**lldp** [**non-tpmr** | **nearest-customer** | **nearest-bridge** | **all**] {**port** *chassis/slot/port* [-*port2*] | **slot** *chassis/slot* | **chassis**} **tlv application** {**enable** | **disable**}

---

### Syntax Definitions

<b>non-tpmr</b>	The non-TPMR agent using destination MAC address 01-80-C2-00-00-03.
<b>nearest-customer</b>	The nearest customer bridge agent using destination MAC address 01-80-C2-00-00-00.
<b>nearest-bridge</b>	The nearest bridge agent using destination MAC address 01-80-C2-00-00-0E.
<b>all</b>	All LLDP agents.
<i>chassis</i>	The chassis identifier.
<i>slot/port</i> [- <i>port2</i> ]	The slot and port number (3/1). Use a hyphen to specify a range of ports (3/1-8).
<i>slot</i>	The slot number for a specific module.
<b>chassis</b>	Specifies the whole chassis.
<b>enable</b>	Enables Application Priority TLV LLDPDU transmission.
<b>disable</b>	Disables Application Priority TLV LLDPDU transmission.

### Defaults

parameter	default
<b>enable</b>   <b>disable</b>	<b>disable</b>
<b>non-tpmr</b>   <b>nearest-customer</b>   <b>nearest-bridge</b>	<b>nearest-bridge</b>

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- The LLDPDU must be enabled and set to transmit before using this command.
- If this command is applied to a slot or chassis, then the existing configuration related to this command is lost.
- Nearest bridge propagation is constrained to a single physical link, packets are stopped by all types of bridges.
- Non-tpmr propagation is constrained by all bridges other than TPMRs, intended for use within provider bridged networks.

- Nearest customer bridge propagation is constrained by customer bridges, this gives the same coverage as a customer-customer MACSec connection.

### Examples

```
-> lldp port 2/4 tlv application enable
-> lldp slot 2 tlv application disable
```

### Release History

Release 5.1; command introduced.

### Related Commands

<a href="#">lldp tlv application priority</a>	Configures the LLDP-DCBx Application Priority TLV to advertise an 802.1p priority value for specific protocols on the specified port.
<a href="#">show lldp config</a>	Displays per port statistics.

### MIB Objects

```
lldpXdot1dcbxConfigApplicationPriorityTable
  lldpXdot1dcbxConfigApplicationPriorityTxEnable
```

---

## lldp tlv application priority

Configures the LLDP-DCBx Application Priority TLV to advertise an 802.1p priority value for specific protocols on the specified port.

**lldp** [**non-tpmr** | **nearest-customer** | **nearest-bridge** | **all**] {**port** *chassis/slot/port[-port2]* | **slot** *chassis/slot* | **chassis**} **tlv application** {**fcoe** | **iscsi** | **ethertype** *etype* | **tcp-sctp-port** *protocol* | **udp-dccp-port** *protocol* | **port** *protocol*} **priority** *priority*

---

### Syntax Definitions

<b>non-tpmr</b>	The non-TPMR agent using destination MAC address 01-80-C2-00-00-03.
<b>nearest-customer</b>	The nearest customer bridge agent using destination MAC address 01-80-C2-00-00-00.
<b>nearest-bridge</b>	The nearest bridge agent using destination MAC address 01-80-C2-00-00-0E.
<b>all</b>	All LLDP agents.
<i>chassis</i>	The chassis identifier when running in virtual chassis mode.
<i>slot/port[-port2]</i>	The slot and port number (3/1). Use a hyphen to specify a range of ports (3/1-8).
<i>slot</i>	The slot number for a specific module.
<b>chassis</b>	Specifies the whole chassis.
<b>fcoe</b>	Advertise the specified priority value to use for FCoE traffic.
<b>iscsi</b>	Advertise the specified priority value to use for SCSI traffic.
<i>etype</i>	Advertise the specified priority value to use for this Ethertype.
<i>protocol</i>	Advertise the specified priority value to use for the specified protocol.

### Defaults

parameter	default
<b>enable</b>   <b>disable</b>	<b>disable</b>
<b>non-tpmr</b>   <b>nearest-customer</b>   <b>nearest-bridge</b>	<b>nearest-bridge</b>

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- The LLDPDU must be enabled and set to transmit and receive before using this command.
- The Application Priority TLV must be enabled for transmission.
- If this command is applied to a slot or chassis, then the existing configuration related to this command is lost.

- Nearest bridge propagation is constrained to a single physical link, packets are stopped by all types of bridges.
- Non-tpmr propagation is constrained by all bridges other than TPMRs, intended for use within provider bridged networks.
- Nearest customer bridge propagation is constrained by customer bridges, this gives the same coverage as a customer-customer MACSec connection.

### Examples

```
-> lldp port 1/1/3 tlv application fcoe priority 3
-> lldp port 1/1/3 tlv application tcp-sctp-port 3192 priority 5
```

### Release History

Release 5.1; command introduced.

### Related Commands

<a href="#">lldp tlv application</a>	Enables or disables Application Priority TLV in LLDPDUs.
<a href="#">show lldp config</a>	Displays the LLDP port configuration.

### MIB Objects

```
alaXdot1dcbxAdminApplicationPriorityAppTable
  alaXdot1dcbxAdminApplicationPriorityAEPriority
```

---

## show lldp system-statistics

Displays system-wide statistics.

**show lldp system-statistics**

---

### Syntax Definitions

N/A

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

N/A

### Examples

```
-> show lldp system-statistics
Local LLDP Agent System Statistics:
  Remote Systems Last Change = 0 days 0 hours 3 minutes and 10 seconds,
  Remote Systems MIB Inserts = 2,
  Remote Systems MIB Deletes = 0,
  Remote Systems MIB Drops = 0,
  Remote Systems MIB Age Outs = 0
```

#### *output definitions*

---

<b>Remote Systems Last Change</b>	The last change recorded in the tables associated with the remote system.
<b>Remote Systems MIB Inserts</b>	The total number of complete inserts in the tables associated with the remote system.
<b>Remote Systems MIB Deletes</b>	The total number of complete deletes in tables associated with the remote system.
<b>Remote Systems MIB Drops</b>	The total number of LLDPDUs dropped because of insufficient resources.
<b>Remote Systems MIB Age Outs</b>	The total number of complete age-outs in the tables associated with the remote system.

---

### Release History

Release 5.1; command introduced.

## Related Commands

### lldp notification

Specifies the switch to control per port notification status about the remote device change.

### lldp notification interval

Sets the time interval that must elapse before a notification about the local system MIB change is generated.

## MIB Objects

lldpStatistics

lldpStatsRemTablesLastChangeTime

lldpStatsRemTablesInserts

lldpStatsRemTablesDeletes

lldpStatsRemTablesDrops

lldpStatsRemTablesAgeouts

---

## show lldp statistics

Displays per port statistics.

**show lldp** [**non-tpmr** | **nearest-customer** | **nearest-bridge**] [**port** *chassis/slot/port* [**-port2**] **slot** *chassis/slot*] **statistics**

---

### Syntax Definitions

<b>non-tpmr</b>	The non-TPMR agent using destination MAC address 01-80-C2-00-00-03.
<b>nearest-customer</b>	The nearest customer bridge agent using destination MAC address 01-80-C2-00-00-00.
<b>nearest-bridge</b>	The nearest bridge agent using destination MAC address 01-80-C2-00-00-0E.
<i>chassis</i>	The chassis identifier.
<i>slot/port[-port2]</i>	The slot and port number (3/1). Use a hyphen to specify a range of ports (3/1-8).
<i>slot</i>	The slot number for a specific module.

### Defaults

By default, statistics for all LLDP ports are displayed.

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- If the *slot/port* option is not specified, statistics for the chassis are displayed.
- If the statistics are zero they are not displayed.

### Examples

```
-> show lldp statistics
```

Slot/Port	LLDPDU Tx	LLDPDU TxLenErr	LLDPDU Rx	LLDPDU Errors	LLDPDU Discards	TLV Unknown	TLV Discards	Device Ageouts
1/1	453	0	452	0	0	0	0	0
1/2	452	0	453	0	0	0	0	0
1/5	452	0	473	0	0	476	476	0
1/8	455	0	464	0	0	0	0	0
1/9	456	0	464	0	0	0	0	0
1/10	454	0	464	0	0	0	0	0
1/11	453	0	447	0	0	0	0	0
1/12	453	0	0	0	0	0	0	0
1/13	453	0	0	0	0	0	0	0
1/14	453	0	0	0	0	0	0	0
1/17	453	0	963	0	0	449	449	0
1/18	453	0	0	0	0	0	0	0
2/1	452	0	457	0	0	0	0	0

2/2	452	0	963	0	0	0	0	0
2/3	480	0	459	0	0	0	0	2

**output definitions**


---

<b>Slot/Port</b>	Slot number for the module and physical port number on that module.
<b>LLDPDU Tx</b>	The total number of LLDPDUs transmitted on the port.
<b>LLDPDU Rx</b>	The total number of valid LLDPDUs received on the port.
<b>LLDPDU Errors</b>	The total number of invalid LLDPDUs discarded on the port.
<b>LLDPDU Discards</b>	The total number of LLDPDUs discarded on the port.
<b>TLV Unknown</b>	The total number of unrecognized LLDP TLVs on the port.
<b>TLV Discards</b>	The total number of LLDP TLVs discarded on the port.
<b>Device Ageouts</b>	The total number of complete age-outs on the port.

---

**Release History**

Release 5.1; command introduced.

**Related Commands**

<b>lldp lldpdu</b>	Specifies the switch to control the transmission and the reception of LLDPDUs for a particular chassis, a slot, or a port.
<b>lldp tlv management</b>	Specifies the switch to control per port management TLVs to be incorporated in the LLDPDUs.

**MIB Objects**

```

lldpV2StatsTxPortTable
  lldpV2StatsTxPortNum
  lldpV2StatsTxPortFramesTotal
lldpV2StatsRxPortTable
  lldpV2StatsRxPortNum
  lldpV2StatsRxPortFramesDiscardedTotal
  lldpV2StatsRxPortFramesErrors
  lldpV2StatsRxPortFramesTotal
  lldpV2StatsRxPortTLVsDiscardedTotal
  lldpV2StatsRxPortTLVsUnrecognizedTotal
  lldpV2StatsRxPortAgeoutsTotal

```

---



## show lldp local-system

Displays local system information.

**show lldp local-system**

---

### Syntax Definitions

N/A

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

N/A

### Examples

```
-> show lldp local-system
Local LLDP Agent System Data:
  Chassis ID Subtype      = 4 (MAC Address),
  Chassis ID              = 00:d0:95:e9:c9:2e,
  System Name             = OS2360,
  System Description      = Alcatel-Lucent Enterprise OS2360-48 5.1.11.R02.,
  Capabilites Supported   = Bridge, Router,
  Capabilites Enabled     = Bridge, Router,
  LLDPDU Transmit Interval = 30 seconds,
  TTL Hold Multiplier     = 4,
  LLDPDU Transmit Delay   = 2 seconds,
  Reinitialization Delay  = 2 seconds,
  MIB Notification Interval = 5 seconds
  Management Address Type = 1 (IPv4),
  Management IP Address   = 10.255.11.100,
```

### *output definitions*

---

<b>Chassis ID Subtype</b>	The subtype that describe chassis ID.
<b>Chassis ID</b>	The chassis ID (MAC address).
<b>System Name</b>	The name of the system.
<b>System Description</b>	The description of the system.
<b>Capabilites Supported</b>	The capabilities of the system.
<b>Capabilites Enabled</b>	The enabled capabilities of the system.
<b>LLDPDU Transmit Interval</b>	The LLDPDU transmit interval.
<b>TTL Hold Multiplier</b>	The hold multiplier used to calculate TTL.

*output definitions (continued)*


---

<b>LLDPDU Transmit Delay</b>	The minimum transmit time between successive LLDPDUs.
<b>Reinitialization Delay</b>	The minimum time interval before the reinitialization of local port objects between port status changes.
<b>MIB Notification Interval</b>	The minimum time interval between consecutive notifications of local system MIB change.
<b>Management Address Type</b>	The type of management address used in LLDPDU.
<b>Management IP Address</b>	The management IP address. The loopback0 IP address is configured for the management IP address to be transmitted.

---

**Release History**

Release 5.1; command introduced.

**Related Commands**

<b>lldp reinit delay</b>	Sets the time interval that must elapse before the current status of a port is reinitialized after a status change.
<b>lldp transmit hold-multiplier</b>	Sets the transmit hold multiplier value, which is used to calculate the Time To Live TLV.
<b>lldp transmit interval</b>	Sets the minimum time interval between successive LLDPDUs transmitted.

**MIB Objects**

```

lldpV2LocalSystemData
  lldpV2LocChassisIdSubtype
  lldpV2LocChassisId
  lldpV2LocSysName
  lldpV2LocSysDesc
  lldpV2LocSysCapSupported
  lldpV2LocSysEnabled
lldpV2PortConfigTable
  lldpV2MessageTxInterval
  lldpV2MessageTXHoldMultiplier
  lldpV2TxDelay
  lldpV2ReinitDelay
  lldpV2NotificationInterval
lldpV2LocManAddrTable
  lldpV2LocManAddrSubtype
  lldpV2LocManAddr

```

---

## show lldp local-port

Displays per port information.

**show lldp** [**non-tpmr** | **nearest-customer** | **nearest-bridge**] [**port** *chassis/slot/port* [-*port2*]] **slot** *chassis/slot* **local-port**

---

### Syntax Definitions

<b>non-tpmr</b>	The non-TPMR agent using destination MAC address 01-80-C2-00-00-03.
<b>nearest-customer</b>	The nearest customer bridge agent using destination MAC address 01-80-C2-00-00-00.
<b>nearest-bridge</b>	The nearest bridge agent using destination MAC address 01-80-C2-00-00-0E.
<i>chassis</i>	The chassis identifier.
<i>slot/port[-port2]</i>	The slot and port number (3/1). Use a hyphen to specify a range of ports (3/1-8).
<i>slot</i>	The slot number for a specific module.

### Defaults

By default, a list of all LLDP ports is displayed.

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

N/A

### Examples

```
-> show lldp local-port
Local Port 1/1/1 LLDP Info:
  Port ID                = 1001 (Locally assigned),
  Port Description       = Alcatel-Lucent Enterprise OS2360-P24X GNI 1/1/1,
  Vlan                   = 1,
  AP Location            = sw1,
Local Port 1/1/2 LLDP Info:
  Port ID                = 1002 (Locally assigned),
  Port Description       = Alcatel-Lucent Enterprise OS2360-P24X GNI 1/1/2,
  Vlan                   = 1,
  AP Location            = -,
Local Port 1/1/3 LLDP Info:
  Port ID                = 1003 (Locally assigned),
  Port Description       = Alcatel-Lucent Enterprise OS2360-P24X GNI 1/1/3,
  Vlan                   = 1,
  AP Location            = -,
Local Port 1/1/4 LLDP Info:
  Port ID                = 1004 (Locally assigned),
```

```

    Port Description      = Alcatel-Lucent Enterprise OS2360-P24X GNI 1/1/4,
    Vlan                  = 1,
    AP Location           = -,
Local Port 1/1/5 LLDP Info:
    Port ID               = 1005 (Locally assigned),
    Port Description      = Alcatel-Lucent Enterprise OS2360-P24X GNI 1/1/5,
    Vlan                  = 1,
    AP Location           = -,
Local Port 1/1/6 LLDP Info:
    Port ID               = 1006 (Locally assigned),
    Port Description      = Alcatel-Lucent Enterprise OS2360-P24X GNI 1/1/6,
    Vlan                  = 4095,
    AP Location           = -,
Local Port 1/1/7 LLDP Info:
    Port ID               = 1007 (Locally assigned),
    Port Description      = Alcatel-Lucent Enterprise OS2360-P24X GNI 1/1/7,
    Vlan                  = 1,
    AP Location           = -,
Local Port 1/1/8 LLDP Info:
    Port ID               = 1008 (Locally assigned),
    Port Description      = Alcatel-Lucent Enterprise OS2360-P24X GNI 1/1/8,
    Vlan                  = 1,
    AP Location           = -,
Local Port 1/1/9 LLDP Info:
    Port ID               = 1009 (Locally assigned),
    Port Description      = Alcatel-Lucent Enterprise OS2360-P24X GNI 1/1/9,
    Vlan                  = 4095,
    AP Location           = -,
Local Port 1/1/10 LLDP Info:
    Port ID               = 1010 (Locally assigned),
    Port Description      = Alcatel-Lucent Enterprise OS2360-P24X GNI 1/1/10,
    Vlan                  = 4095,
    AP Location           = -,

```

### *output definitions*

---

<b>Port ID</b>	The port ID (port MAC).
<b>Port Description</b>	The description of the port (which includes the port number and the AOS version).
<b>Vlan</b>	Displays the authenticated VLAN (management VLAN) if AP is connected on a dot1x enabled port, else the default VLAN of the port is displayed.
<b>AP Location</b>	Displays the location to which the AP is connected.

---

### **Release History**

Release 5.1; command introduced.

## Related Commands

<a href="#">lldp tlv management</a>	Specifies the switch to control per port management TLVs to be incorporated in the LLDPDUs.
<a href="#">lldp tlv dot1</a>	Specifies the switch to control per port 802.1 TLVs to be incorporated in the LLDPDUs.
<a href="#">lldp tlv proprietary</a>	Allows the switch to advertise the Access Point location through the proprietary TLVs.

## MIB Objects

```
lldpV2LocPortTable  
  lldpV2LocPortNum  
  lldpV2LocPortIdsubtype  
  lldpV2LocPortId  
  lldpV2LocPortDesc  
  alaLldpPropAPLocation  
  alaLldpPropVlan  
  alaLldpPropLocationDesc
```

---

## show lldp local-management-address

Displays the local management address information.

```
show lldp local-management-address
```

---

### Syntax Definitions

N/A

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

N/A

### Examples

```
-> show lldp local-management-address
Local LLDP Agent Management Address:
  Management Address Type      = 1 (IPv4),
  Management IP Address       = 10.255.11.100
```

#### *output definitions*

---

<b>Management Address Type</b>	The address type used to define the interface number (IPv4 or IPv6).
<b>Management IP Address</b>	The management IP address. The loopback0 IP address is configured for the management IP address to be transmitted.

---

### Release History

Release 5.1; command introduced.

### Related Commands

<a href="#">lldp tlv management</a>	Specifies the switch to control per port management TLVs to be incorporated in the LLDPDUs.
<a href="#">show lldp local-system</a>	Displays local system information.

**MIB Objects**

```
lldpV2LocManAddrTable
  lldpV2LocManAddrLen
  lldpV2LocManAddrIfSubtype
  lldpV2LocManAddrIfId
```

---

## show lldp config

Displays the general LLDP configuration information for LLDP ports.

**show lldp** [**non-tpmr** | **nearest-customer** | **nearest-bridge**] [**port chassis/slot/port [-port2]** | **slot chassis/slot**] **config** [**application-tlv**]

---

### Syntax Definitions

<b>non-tpmr</b>	The non-TPMR agent using destination MAC address 01-80-C2-00-00-03.
<b>nearest-customer</b>	The nearest customer bridge agent using destination MAC address 01-80-C2-00-00-00.
<b>nearest-bridge</b>	The nearest bridge agent using destination MAC address 01-80-C2-00-00-0E.
<i>chassis</i>	The chassis identifier.
<i>slot/port[-port2]</i>	The slot and port number (3/1). Use a hyphen to specify a range of ports (3/1-8).
<i>slot</i>	The slot number for a specific module.
<b>application-tlv</b>	Displays Application Priority TLV parameters.

### Defaults

By default, a list of all LLDP ports with their configuration parameters is displayed.

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

Use the *slot/port* or *slot* parameter to display information for a specific port or for all ports on a specific module.

### Examples

```
-> show lldp config
```

Slot/Port	Admin Status	Notify Trap	Std TLV Mask	Mgmt Address	802.1 TLV	802.3 Mask	MED Mask	Proprietary TLV
1/1	Rx + Tx	Disabled	0x00	Disabled	Disabled	0x00	0x00	Disabled
1/2	Rx + Tx	Disabled	0x00	Disabled	Disabled	0x00	0x00	Disabled
1/3	Rx + Tx	Disabled	0x00	Disabled	Disabled	0x00	0x00	Disabled
1/4	Rx + Tx	Disabled	0x00	Disabled	Disabled	0x00	0x00	Disabled
1/5	Rx + Tx	Disabled	0x00	Disabled	Disabled	0x00	0x00	Disabled
1/6	Rx + Tx	Disabled	0x00	Disabled	Disabled	0x00	0x00	Disabled
1/7	Rx + Tx	Disabled	0x00	Disabled	Disabled	0x00	0x00	Disabled
1/8	Rx + Tx	Disabled	0x00	Disabled	Disabled	0x00	0x00	Disabled
1/9	Rx + Tx	Disabled	0x00	Disabled	Disabled	0x00	0x00	Disabled
1/10	Rx + Tx	Disabled	0x00	Disabled	Disabled	0x00	0x00	Disabled



```
-> show lldp config application-tlv
Slot/
Port   Selector                                Protocol   Priority
-----+-----+-----+-----+
 1/2   Ethertype                                0x8906    3
 1/2   Tcp/Sctp                                  3260      4
 1/20  Tcp/Sctp                                  3190      3
 1/20  Udp/Dccp                                  300       4
 1/20  Tcp/Udp/Sctp/Dccp                        300       4
```

### *output definitions*

---

<b>Slot/Port</b>	The LLDP slot and port number.
<b>Admin Status</b>	Indicates the Administrative status of the LLDP port. The options are: <b>Disabled, Rx, Tx, and Rx+Tx.</b>
<b>Notify Trap</b>	Indicates whether the Notify Trap feature is disabled or enabled on a particular port.
<b>Std TLV Mask</b>	The standard TLV mask set for the port.
<b>Mgmt Address</b>	Indicates whether transmission of the per port IPv4 management address is enabled or disabled.
<b>802.1 TLV</b>	Indicates whether 802.1 TLV status is enabled or disabled on the LLDP port.
<b>802.3 Mask</b>	The standard 802.3 mask set for the port.
<b>MED Mask</b>	The standard MED mask set for the port.
<b>App-Prio TLV</b>	Indicates the Application priority TLV status.
<b>Trust Status</b>	Indicates the Trust Status.
<b>Proprietary TLV</b>	Indicates the proprietary TLV status.

---

### **Release History**

Release 5.1; command introduced.

## Related Commands

<b>lldp lldpdu</b>	Specifies the switch to control the transmission and the reception of LLDPDUs for a particular chassis, a slot, or a port.
<b>lldp notification</b>	Specifies the switch to control per port notification status about the remote device change.
<b>lldp tlv management</b>	Specifies the switch to control per port management TLVs to be incorporated in the LLDPDUs.
<b>lldp tlv dot3</b>	Specifies the switch to control per port 802.3 TLVs to be incorporated in the LLDPDUs.
<b>lldp tlv application</b>	Configures the switch to include the LLDP-DCBx Application Priority TLV in the LLDPDUs for the specified port.
<b>lldp tlv application priority</b>	Configures the LLDP-DCBx Application Priority TLV to advertise an 802.1p priority value for specific protocols on the specified port.

## MIB Objects

```

lldpV2PortConfigTable
  lldpV2PortConfigPortNum
  lldpV2PortConfigAdminStatus
  lldpV2PortConfigNotificationEnable
  lldpV2LocPortPortNum
  lldpV2PortConfigTLVsTxEnable
lldpV2ConfigManAddrTable
  lldpV2ConfigManAddrPortsTxEnable
lldpV2Xdot3PortConfigTable
  lldpV2Xdot3PortConfigTLVsTxEnable
lldpV2Xdot1dcbxConfigApplicationPriorityTable
  lldpV2Xdot1dcbxConfigApplicationPriorityTxEnable
alaXdot1dcbxAdminApplicationPriorityAppTable
  alaXdot1dcbxAdminApplicationPriorityAEPriority

```

---

## show lldp network-policy

Displays the MED Network Policy details for a given policy ID.

**show lldp network-policy** [*policy\_id*]

---

### Syntax Definitions

*policy\_id* Policy identifier for a network policy definition. Valid range is between 0 and 31.

### Defaults

By default, all configured policies are displayed.

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- Network policy must be configured on the system before using this command.
- Enter a policy ID with this command to display information for a specific policy.

### Examples

```
-> show lldp network-policy
Legend: 0 Priority Tagged Vlan
        - Untagged Vlan
```

Network Policy ID	Application Type	Vlan Id	Layer2 Priority	DSCP Value
1	voice	4000	7	33
12	guest-voice	-	-	44
21	streaming-voice	0	4	11
31	guest-voice-signaling	23	2	1

```
-> show lldp network-policy 21
Legend: 0 Priority Tagged Vlan
        - Untagged Vlan
```

Network Policy ID	Application Type	Vlan Id	Layer2 Priority	DSCP Value
21	streaming-voice	0	4	11

### output definitions

---

<b>Network Policy ID</b>	Policy identifier for a network policy definition.
<b>Application Type</b>	Indicates the type of application configured on the port or VLAN.
<b>VLAN ID</b>	The VLAN ID assigned to the port on which the network policy is configured.

***output definitions***

---

<b>Layer2 Priority</b>	Layer 2 priority to be used for the specified application type.
<b>DSCP Value</b>	DSCP value to be used to provide Diffserv node behavior for the specified application type.

---

**Release History**

Release 5.1; command introduced.

**Related Commands**

[lldp network-policy](#) Configures a local network policy on a switch for an application type.

**MIB Objects**

```
alaLldpXMedLocMediaPolicyTable
  alaLldpXMedLocMediaPolicyId
  alaLldpXMedLocMediaPolicyAppType
  alaLldpXMedLocMediaPolicyVlanType
  alaLldpXMedLocMediaPolicyVlanId
  alaLldpXMedLocMediaPolicyPriority
  alaLldpXMedLocMediaPolicyDscp
  alaLldpXMedLocMediaPolicyUnknown
  alaLldpXMedLocMediaPolicyTagged
```

---

## show lldp med network-policy

Displays the network policy configured on a slot or port. If no option is specified, network policies configured on all ports of the chassis are displayed.

**show lldp** [**nearest-bridge** | **nearest-customer** | **non-tpmr** | **all**] [**slot** *chassis/slot*| **port** *chassis/slot/port*]  
**med network-policy**

---

### Syntax Definitions

<b>nearest-bridge</b>	The nearest bridge agent using destination MAC address 01-80-C2-00-00-0E.
<b>nearest-customer</b>	The nearest customer bridge agent using destination MAC address 01-80-C2-00-00-00.
<b>non-tpmr</b>	The non-TPMR agent using destination MAC address 01-80-C2-00-00-03.
<b>all</b>	Specifies that all three LLDP agents must be supported.
<i>chassis/slot</i>	The chassis ID and slot number for a specific module (3/1).
<i>chassis/slot/port</i> [- <i>port2</i> ]	The chassis ID, slot, and port number (3/1/1) for a specific port. Use a hyphen to specify a range of ports (3/1/1-8).

### Defaults

By default, all ports with associated policies are displayed.

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- Network policy must be configured on the system before using this command.
- Enter a slot or slot/port number with this command to display information for a specific slot or port.

### Examples

```
-> show lldp slot 1/1 med network-policy
```

```
chassis/slot/port      Network Policy ID
-----+-----
 1/1/1                 1 3 5 7 21 23 30 31
 1/1/2                 1 2 3 4 7 8 9 10
 .
 .
 .
```

#### *output definitions*

---

<b>Chassis/Slot/Port</b>	Slot number for the module and physical port number on that module.
<b>Network Policy ID</b>	Policy identifier for a network policy definition.

---

## Release History

Release 5.1; command introduced.

## Related Commands

### [lldp tlv med](#)

Configures whether or not LLDP-MED TLVs are included in transmitted LLDPDUs.

### [lldp med network-policy](#)

Configures a local network policy on a switch for an application type.

## MIB Objects

```
alaLldpXMedLocMediaPolicyPortTable  
  alaLldpXMedLocMediaPolicyPortIfIndex  
  alaLldpXMedLocMediaPolicyId
```

---

## show lldp remote-system

Displays per local port and information of remote system.

**show lldp** [**non-tpmr** | **nearest-customer** | **nearest-bridge**] [**port** *chassis/slot/port* [**-port2**] | **slot** *chassis/slot*] **remote-system**

---

### Syntax Definitions

<b>non-tpmr</b>	The non-TPMR agent using destination MAC address 01-80-C2-00-00-03.
<b>nearest-customer</b>	The nearest customer bridge agent using destination MAC address 01-80-C2-00-00-00.
<b>nearest-bridge</b>	The nearest bridge agent using destination MAC address 01-80-C2-00-00-0E.
<i>chassis</i>	The chassis identifier.
<i>slot/port[-port2]</i>	The slot and port number (3/1). Use a hyphen to specify a range of ports (3/1-8).
<i>slot</i>	The slot number for a specific module.

### Defaults

By default, a list of all lldp ports is displayed.

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

N/A

### Examples

```
-> show lldp remote-system
Remote LLDP Agents on Local Slot/Port: 2/47,
  Chassis ID Subtype      = 4 (MAC Address),
  Chassis ID              = 00:d0:95:e9:c9:2e,
  Port ID Subtype        = 7 (Locally assigned),
  Port ID                 = 2048,
  Port Description        = (null),
  System Name             = (null),
  System Description      = (null),
  Capabilities Supported  = none supported,
  Capabilities Enabled    = none enabled,

Remote LLDP Agents on Local Slot/Port: 2/48,
  Chassis ID Subtype      = 4 (MAC Address),
  Chassis ID              = 00:d0:95:e9:c9:2e,
  Port ID Subtype        = 7 (Locally assigned),
  Port ID                 = 2047,
  Port Description        = (null),
```

```

System Name           = (null),
System Description    = (null),
Capabilites Supported = none supported,
Capabilites Enabled   = none enabled,

```

### *output definitions*

---

<b>Remote LLDP Agents on Local Slot/Port</b>	The Slot number to which the remote system entry is associated and the physical port number on that module.
<b>Chassis ID Subtype</b>	The sub type that describes chassis ID.
<b>Chassis ID</b>	The chassis ID (MAC address).
<b>Port ID Subtype</b>	The sub type that describes port ID
<b>Port ID</b>	The port ID (Port MAC).
<b>Port Description</b>	The description of the port (which includes the port number and the AOS version).
<b>System Name</b>	The name of the system.
<b>System Description</b>	The description of the system.
<b>Capabilites Supported</b>	The capabilities of the system.
<b>Capabilites Enabled</b>	The enabled capabilities of the system.

---

## Release History

Release 5.1; command introduced.

## Related Commands

[show lldp local-port](#) Displays per port information.  
[show lldp local-system](#) Displays local system information.

## MIB Objects

```

lldpV2RemTable
  lldpV2RemLocalPortNum
  lldpV2RemChassisIdSubtype
  lldpV2RemChassisId
  lldpV2RemPortIdSubtype
  lldpV2RemPortId
  lldpV2RemPortDesc
  lldpV2RemSysName
  lldpV2RemSysDesc
  lldpV2RemSysCapSupported
  lldpV2RemSysCapEnabled
  lldpV2RemManAddrIfSubtype
  lldpV2RemManAddrIfId

```

---



## show lldp remote-system med

Displays remote system MED information for a single port or all ports on a slot.

**show lldp** [**non-tpmr** | **nearest-customer** | **nearest-bridge**] [**port** *chassis/slot/port* [**-port2**] | **slot** *chassis/slot*] **remote-system med** {**network-policy** | **inventory**}

---

### Syntax Definitions

<b>non-tpmr</b>	The non-TPMR agent using destination MAC address 01-80-C2-00-00-03.
<b>nearest-customer</b>	The nearest customer bridge agent using destination MAC address 01-80-C2-00-00-00.
<b>nearest-bridge</b>	The nearest bridge agent using destination MAC address 01-80-C2-00-00-0E.
<i>chassis</i>	The chassis identifier.
<i>slot/port[-port2]</i>	The slot and port number (3/1). Use a hyphen to specify a range of ports (3/1-8).
<i>slot</i>	The slot number for a specific module.
<b>network-policy</b>	Display network-policy TLVs from remote Endpoint Devices.
<b>inventory</b>	Display inventory management TLVs from remote Endpoint Devices.

### Defaults

By default, a list of all LLDP ports is displayed.

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

Use the *slot/port* or *slot* parameter to display information for a specific port or for all ports on a specific module.

### Examples

```
-> show lldp port 2/47 remote-system med network-policy
Slot/  Remote  Application      Unknown   Tagged   Vlan   Layer2   DSCP
Port   ID       Type             Policy   Flag   Flag   Id       Priority  Value
-----+-----+-----+-----+-----+-----+-----+-----
1/22   1        Voice(01)        Defined   Untag   345    4        34
1/22   2        Guest Voice(4)   Defined   Untag   50     3        46
```

#### output definitions

---

<b>Slot/Port</b>	The Slot number to which the remote system entry is associated and the physical port number on that module.
<b>Remote ID</b>	The Index of the Remote Device.

*output definitions (continued)*


---

<b>Application Type</b>	The Application type of the peer entity. 1. Voice 2. Voice Signaling 3. Guest Voice 4. Guest Voice Signaling 5. Softphone Voice 6. Video Conferencing 7. Streaming Video 8. Video Signaling
<b>Unknown Policy Flag</b>	Whether the network policy for the specified application type is currently defined or unknown.
<b>Tagged Flag</b>	Whether the specified application type is using a <b>tagged</b> or an <b>untagged</b> VLAN.
<b>VLAN ID</b>	The VLAN identifier (VID) for the port.
<b>Layer 2 Priority</b>	Layer 2 priority to be used for the specified application type.
<b>DSCP Value</b>	DSCP value to be used to provide Diffserv node behavior for the specified application type.

---

```
-> show lldp port 2/47 remote-system med inventory
```

```
Remote LLDP Agents on Local Slot/Port 1/22:
```

```
Remote ID 1:
MED Hardware Revision = "1.2.12.3",
MED Firmware Revision = "7.3.2.1",
MED Software Revision = "4.2.1.11",
MED Serial Number      = "32421",
MED Manufacturer Name = "Manufacturer1",
MED Model Name = "Alc32d21",
MED Asset ID = "124421",
Remote ID 2:
MED Hardware Revision = "1.2.12.4",
MED Firmware Revision = "7.3.2.2",
MED Software Revision = "4.2.1.13",
MED Serial Number      = "32424",
MED Manufacturer Name = "Manufacturer2",
MED Model Name = "Alc32d41",
MED Asset ID = "124424",
```

*output definitions*


---

<b>Remote ID</b>	The Index of the Remote Device.
<b>MED Hardware Revision</b>	The Hardware Revision of the endpoint
<b>MED Firmware Revision</b>	The Firmware Revision of the endpoint.
<b>MED Software Revision</b>	The Software Revision of the endpoint.
<b>MED Manufacturer Name</b>	The Manufacturer Name of the endpoint.
<b>MED Model Name</b>	The Model Name of the endpoint.
<b>MED Asset ID</b>	The Asset ID of the endpoint.

---

**Release History**

Release 5.1; command introduced.

## Related Commands

- show lldp local-port** Displays per port information.  
**show lldp local-system** Displays local system information.

## MIB Objects

```
lldpV2XMedRemMediaPolicyTable
  lldpV2XMedRemMediaPolicyAppType
  lldpV2XMedRemMediaPolicyDscp
  lldpV2XMedRemMediaPolicyPriority
  lldpV2XMedRemMediaPolicyTagged
  lldpV2XMedRemMediaPolicyUnknown
  lldpV2XMedRemMediaPolicyVlanID
lldpV2XMedRemInventoryTable
  lldpV2XMedRemAssetID
  lldpV2XMedRemFirmwareRev
  lldpV2XMedRemHardwareRev
  lldpV2XMedRemMfgName
  lldpV2XMedRemModelName
  lldpV2XMedRemSerialNum
  lldpV2XMedRemSoftwareRev
```

---

## show lldp remote-system application-tlv

Displays remote system Application Priority TLV information for a single port or all ports on a slot.

**show lldp** [**non-tpmr** | **nearest-customer** | **nearest-bridge**] [**port** *chassis/slot/port2*[-*port*] | **slot** *chassis/slot*] **remote-system application-tlv**

---

### Syntax Definitions

<b>non-tpmr</b>	The non-TPMR agent using destination MAC address 01-80-C2-00-00-03.
<b>nearest-customer</b>	The nearest customer bridge agent using destination MAC address 01-80-C2-00-00-00.
<b>nearest-bridge</b>	The nearest bridge agent using destination MAC address 01-80-C2-00-00-0E.
<i>chassis</i>	The chassis identifier.
<i>slot/port</i> [- <i>port2</i> ]	The slot and port number (3/1). Use a hyphen to specify a range of ports (3/1-8).
<i>slot</i>	The slot number for a specific module.

### Defaults

By default, a list of all LLDP ports is displayed.

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

Use the *slot/port* or *slot* parameter to display information for a specific port or for all ports on a specific module.

### Examples

```
-> show lldp remote-system application-tlv
```

Slot/ Port	Remote ID	Selector	Protocol	Priority
1/2	1	Ethertype	35078	3 [fcoe]
1/2	1	Tcp/Sctp	3260	4 [iscsi]
1/20	1	Tcp/Sctp	3190	3
1/20	1	Udp/Dccp	300	4
1/20	1	Tcp/Udp/Sctp/Dccp	300	4

#### *output definitions*

---

<b>Slot/Port</b>	The Slot number to which the remote system entry is associated and the physical port number on that module.
<b>Remote ID</b>	The Index of the Remote Device.

*output definitions (continued)*


---

<b>Selector</b>	The protocol selector.
<b>Protocol</b>	The protocol Ethertype or well-known port.
<b>Priority</b>	The 802.1p priority value for the specified protocol to use.

---

**Release History**

Release 5.1; command introduced.

**Related Commands**

<a href="#">lldp tlv application</a>	Configures the switch to include the LLDP-DCBx Application Priority TLV in the LLDPDUs for the specified port.
<a href="#">lldp tlv application priority</a>	Configures the LLDP-DCBx Application Priority TLV to advertise an 802.1p priority value for specific protocols on the specified port.
<a href="#">show lldp config</a>	Displays the general LLDP configuration information for LLDP ports.

**MIB Objects**

```
alaXdot1dcbxAdminApplicationPriorityAppTable
  alaXdot1dcbxAdminApplicationPriorityAESelector
  alaXdot1dcbxAdminApplicationPriorityAEProtocol
  alaXdot1dcbxAdminApplicationPriorityAEPriority
```

---

## show lldp agent-destination-address

Displays the destination address of each agent.

**show lldp agent-destination-address**

---

### Syntax Definitions

N/A

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

N/A

### Examples

```
-> show lldp agent-destination-address
```

```
Lldp          Destination
Agent         Name                MAC address
-----+-----+-----
1             Nearest-Bridge           00-80-C2-00-00-0E
2             Non-TPMR-Bridge Tcp/Sctp 00-80-C2-00-00-03
3             Nearest-Customer-Bridge 00-80-C2-00-00-00
```

#### *output definitions*

---

<b>Lldp Agent</b>	The LLDP agent identifier.
<b>Name</b>	The name of the LLDP agent.
<b>Destination MAC address</b>	The destination MAC address of the LLDP agent.

---

### Release History

Release 5.1; command introduced.

### Related Commands

#### **lldp lldpdu**

Specifies the switch to control the transmission and the reception of LLDPDUs for a particular chassis, slot, or port.

**MIB Objects**

```
lldpV2DestAddressTable  
  lldpV2AddressTableIndex  
  lldpV2DestMacAddress
```

---

## lldp trust-agent

Enables or disables the security mechanism globally (chassis level) or for a slot or a single port. By enabling LLDP security mechanism on a port, LLDP CMM task brings the LLDP status of the port as trusted and monitors the port for any LLDP security violation.

**lldp** {*chassis/slot/port* | *chassis/slot* | **chassis**} **trust-agent** [**admin-state**] {**enable** | **disable**}] [**chassis-id-subtype** {**chassis-component** | **interface-alias** | **port-component** | **mac-address** | **network-address** | **interface-name** | **locally-assigned** | **any**}]

---

### Syntax Definitions

<i>chassis/slot/port</i>	The chassis ID, slot, and port number for the module and the physical port number on that module (for example, 1/2/4 specifies chassis 1, port 4 on slot 2).
<i>chassis/slot</i>	The chassis ID and slot number for the module (for example, 1/2 specifies chassis 1, slot 2).
<b>chassis</b>	Specifies all the ports in the chassis.
<b>enable</b>	Enables LLDP security mechanism.
<b>disable</b>	Disables LLDP security mechanism.
<b>chassis-component</b>	The chassis component is used for validating the remote agent.
<b>interface-alias</b>	The alias configured for the interface is used for validating the remote agent.
<b>port-component</b>	The port component is used for validating the remote agent.
<b>mac-address</b>	The MAC address is used for validating the remote agent.
<b>network-address</b>	The network address is used for validating the remote agent.
<b>interface-name</b>	The interface name is used for validating the remote agent.
<b>locally-assigned</b>	The locally assigned component is used for validating the remote agent, that is the chassis information, which can be locally assigned (the local configuration)
<b>any</b>	The remote agent with any chassis ID sub type is accepted as a trust agent.

### Defaults

‘any’ - If the chassis ID sub type is not configured for validating the remote agent, by default, the first remote agent is accepted as a trust agent considering any of the chassis ID sub types.

### Platforms Supported

OmniSwitch 2260, 2360



## Usage Guidelines

- By enabling security on chassis/slot level, the ports that come under the respective level are monitored for any LLDP security violation.
- If the chassis ID sub type is not configured for validating the remote agent, then the LLDP learns the first remote agent with available chassis ID TLV (Time, Length, Value) received in the PDU.
- After a link up is received on a LLDP security enabled port, LLDP CMM waits for three times the LLDP timer interval (30 seconds). If no LLDP PDU is received after link up that has no remote agent, the port is moved to a violation state.
- If a trusted remote agent already exists, and if no LLDP remote agent is learned even after three times the LLDP timer interval (30 seconds), the port is moved to a violation state. If a new LLDP remote agent is learned after the link toggle, then the port is moved to a violation state.
- If the same chassis ID and port ID already exist in the trusted remote agent database but on a different port, then the port remote agent is learned and the port is moved to a violation state. If a new LLDP remote agent is learned on a port that has a trusted LLDP remote agent, then the port is moved to a violation state.

## Examples

```
-> lldp chassis trust-agent admin-state enable
-> lldp chassis trust-agent chassis-id-subtype chassis-component
```

## Release History

Release 5.1; command introduced.

## Related Commands

<a href="#">lldp trust-agent violation-action</a>	Sets the action to be performed when a violation is detected.
<a href="#">show lldp trusted remote-agent</a>	Displays information on trusted remote-agents.
<a href="#">show lldp trust-agent</a>	Displays information on local LLDP agent or port.

## MIB Objects

```
alaLldpTrustAdminStatus
  alaLldpTrustChassisIdSubType
```

---

## lldp trust-agent violation-action

Sets the action to be performed when a violation is detected.

**lldp** {*chassis/slot/port* | *chassis/slot* | **chassis**} **trust-agent violation-action** {**trap-and-shutdown** | **trap** | **shutdown**}

---

### Syntax Definitions

<i>chassis/slot/port</i>	The chassis ID, slot, and port number for the module and the physical port number on that module (for example, 1/2/4 specifies chassis 1, port 4 on slot 2).
<i>chassis/slot</i>	The chassis ID and slot number for the module (for example, 1/2 specifies chassis 1, slot 2).
<b>chassis</b>	All switch ports.
<b>trap-and-shutdown</b>	Shuts down the port and sends a trap notification when a violation is detected.
<b>trap</b>	Sends a trap notification when a violation is detected.
<b>shutdown</b>	Shuts down the port when a violation is detected.

### Defaults

By default, trust agent violation action is set to 'trap'.

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- If the port is in a shutdown state, clear the violation on the port by using the command “**interfaces chassis/slot[/port[-port2]] clear-violation-all**”
- Clearing the violation on a port does not clear the trusted remote agent existing on that port. To clear the trusted remote agent, disable the LLDP security mechanism on the port.
- If the port is in a shutdown state due to violation and the port link is toggled, only the link goes up. The port still remains in the violation state and the trusted remote agent existing on that port is not cleared.

### Examples

```
-> lldp chassis trust-agent violation-action trap
-> lldp slot 3 trust-agent violation-action shutdown
```

### Release History

Release 5.1; command introduced.

**Related Commands****lldp trust-agent**

Sets the status of trust admin status for a port.

**show lldp trusted remote-agent**

Displays information on trusted remote-agents.

**show lldp trust-agent**

Displays information on local LLDP agent or port.

**MIB Objects**`alaLldpTrustAction`

---

## show lldp trusted remote-agent

Displays information on trusted remote-agents.

**show lldp** [*chassis/slot* | *chassis/slot/port*] **trusted remote-agent**

---

### Syntax Definitions

<i>chassis/slot</i>	The chassis ID and slot number for the module (for example, 1/2 specifies chassis 1, slot 2).
<i>chassis/slot/port</i>	The chassis ID, slot, and port number for the module and the physical port number on that module (for example, 1/2/4 specifies chassis 1, port 4 on slot 2).

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- Use the slot/port or slot parameter to display information for a specific port or for all ports on a specific module.
- LLDP trust agent must be enabled globally on the chassis or individually on a port in order to get the **show lldp trusted remote-agent** command output.

### Examples

```
-> lldp chassis trust-agent enable
-> lldp chassis trust-agent chassis-id-subtype mac-address

-> show lldp trusted remote-agent
```

```
Trusted Remote LLDP Agents on Local Slot/Port: 1/7
  Chassis ID Subtype      = 4 (MAC Address),
  Chassis ID              = 00:e0:b1:7a:e6:3c,
  Port ID Subtype        = 7 (Locally assigned),
  Port ID                 = 1017
```

#### *output definitions*

---

<b>Trusted Remote LLDP Agents on Local Slot/Port</b>	The slot number to which the remote trusted agent is associated and the physical port number on that module.
<b>Chassis ID Subtype</b>	The sub type that describes the chassis ID.
<b>Chassis ID</b>	The chassis ID (MAC address).
<b>Port ID Subtype</b>	The sub type that describes port ID.
<b>Port ID</b>	The port ID (Port MAC).

---

## Release History

Release 5.1; command introduced.

## Related Commands

[lldp trust-agent](#)

Sets the status of trust admin status for a port.

[lldp trust-agent violation-action](#)

Sets the action to be performed when a violation is detected.

[show lldp trust-agent](#)

Displays information on local LLDP agent/port.

## MIB Objects

N/A

---

## show lldp trust-agent

Displays information of the local LLDP agent or port.

**show lldp** [*chassis/slot* | *chassis/slot/port*] **trust-agent**

---

### Syntax Definitions

<i>chassis/slot</i>	The chassis ID and slot number for the module (for example, 1/2 specifies chassis 1, slot 2).
<i>chassis/slot/port</i>	The chassis ID, slot, and port number for the module and the physical port number on that module (for example, 1/2/4 specifies chassis 1, port 4 on slot 2).

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- Use the *slot/port* or *num* (slot number) values to display information for a specific port or for all ports on a specific module.
- LLDP trust agent must be enabled globally on the chassis or individually on a port in order to get the **show lldp trust-agent** command output correctly.
- If LLDP security is disabled this command correctly displays the ‘Admin Status’ as ‘Disabled’; however the other output parameters will display their default values.

### Examples

```
-> lldp chassis trust-agent enable
```

```
-> lldp chassis trust-agent chassis-id-subtype chassis-component
```

```
-> show lldp trust-agent
```

Slot/Port	Admin Status	Violation Action	Violation Status	Chassis Subtype
1/1	Enabled	Trap Only	Trusted	1 (Chassis Component)
1/2	Enabled	Trap Only	Trusted	1 (Chassis Component)
1/3	Enabled	Trap Only	Trusted	1 (Chassis Component)
1/4	Disabled	Shutdown	Violated	1 (Chassis Component)
1/5	Enabled	Shutdown	Trusted	1 (Chassis Component)
1/6	Enabled	Trap-and-Shutdown	Trusted	1 (Chassis Component)
1/7	Disabled	Trap-and-Shutdown	Violated	1 (Chassis Component)
1/8	Enabled	Trap Only	Trusted	1 (Chassis Component)
1/9	Enabled	Trap Only	Trusted	1 (Chassis Component)
1/10	Enabled	Trap Only	Trusted	1 (Chassis Component)

*output definitions*

---

<b>Slot/Port</b>	The LLDP slot and port number.
<b>Admin Status</b>	Indicates the administrative status of the LLDP port, <b>Enabled</b> or <b>Disabled</b>
<b>Violation Action</b>	Indicates the action performed when a violation is detected. The options are - <b>Trap Only</b> , <b>Trap-and-Shutdown</b> , and <b>Shutdown Only</b> .
<b>Violation Status</b>	The violation status of the port, <b>Trusted</b> or <b>Violated</b>
<b>Chassis Subtype</b>	The sub type that describes the chassis ID.

---

**Release History**

Release 5.1; command introduced.

**Related Commands**

<a href="#">lldp trust-agent</a>	Sets the status of trust admin status for a port.
<a href="#">lldp trust-agent violation-action</a>	Sets the action to be performed when a violation is detected.
<a href="#">show lldp trusted remote-agent</a>	Displays information on trusted remote-agents.

**MIB Objects**

N/A

---

# 13 IP Commands

This chapter details Internet Protocol (IP) commands for the switch. IP is a network-layer (Layer 3) protocol that contains addressing information and some control information that enables packets to be forwarded. IP is documented in RFC 791 and is the primary network-layer protocol in the Internet protocol suite. Along with the Transmission Control Protocol (TCP), IP represents the heart of the Internet protocols.

IP is enabled on the switch by default and there are few options that can, or need to be, configured. This chapter provides instructions for basic IP configuration commands. It also includes commands for several Layer 3 and Layer 4 protocols that are associated with IP:

- Address Resolution Protocol (ARP)—Used to match the IP address of a device with its physical (MAC) address.
- Internet Control Message Protocol (ICMP)—Specifies the generation of error messages, test packets, and informational messages related to IP. ICMP supports the **ping** command that is used to determine if hosts are online.
- Transmission Control Protocol (TCP)—A major data transport mechanism that provides reliable, connection-oriented, full-duplex data streams. While the role of TCP is to add reliability to IP, TCP relies upon IP to do the actual delivering of datagrams.
- User Datagram Protocol (UDP)—A secondary transport-layer protocol that uses IP for delivery. UDP is not connection-oriented and does not provide reliable end-to-end delivery of datagrams. But some applications can safely use UDP to send datagrams that do not require the extra overhead added by TCP.

The IP commands also include protection from Denial of Service (DoS) attacks. The goal of this feature is to protect a switch from well-known DoS attacks and to notify the administrator or manager when an attack is underway. Also, notifications can be sent when port scans are being performed.

---

**Note.** If all devices are on the same VLAN or if the IP interfaces are created on multiple VLANs to enable routing of packets, packets can be forwarded using IP.

---



MIB information for the IP commands is as follows:

*Filename:* IP-FORWARD-MIB.mib  
*Module:* ipForward

*Filename:* IP-MIB.mib  
*Module:* ipMIB

*Filename:* ALCATEL-IND1-IP-MIB.mib  
*Module:* alcatelIND1IPMIB

*Filename:* ALCATEL-IND1-IPRM-MIB.mib  
*Module:* alcatelIND1IPRMMIB

A summary of the available commands is listed here:

---

<b>IP</b>	<b>ip interface</b> <b>ip interface rtr-port</b> <b>ip interface dhcp-client</b> <b>ip static-route</b> <b>ip route-pref</b> <b>ip default-ttl</b> <b>ping</b> <b>traceroute</b> <b>ip directed-broadcast</b> <b>ip directed-broadcast trusted-source-ip</b> <b>ip directed-broadcast clear</b> <b>show ip directed-broadcast</b> <b>ip service</b> <b>ip service port</b> <b>ip service source-ip</b> <b>show ip traffic</b> <b>show ip interface</b> <b>show ip emp-interfaces</b> <b>show ip routes</b> <b>show ip route-pref</b> <b>show ip router database</b> <b>show ip emp-routes</b> <b>show ip config</b> <b>show ip protocols</b> <b>show ip service</b> <b>show ip service source-ip</b>
<b>ARP</b>	<b>arp</b> <b>clear arp-cache</b> <b>ip dos arp-poison restricted-address</b> <b>arp filter</b> <b>clear arp filter</b> <b>show arp</b> <b>show ip dos arp-poison</b> <b>show arp filter</b>
<b>ICMP</b>	<b>icmp type</b> <b>icmp unreachable</b> <b>icmp echo</b> <b>icmp timestamp</b> <b>icmp addr-mask</b> <b>icmp messages</b> <b>show icmp control</b> <b>show icmp statistics</b>

---

---

<b>TCP</b>	<b>ip tcp half-open-timeout</b> <b>show tcp statistics</b> <b>show tcp ports</b> <b>show ip tcp half-open-timeout</b>
<b>UDP</b>	<b>show udp statistics</b> <b>show udp ports</b>
<b>Denial of Service (DoS)</b>	<b>ip dos scan close-port-penalty</b> <b>ip dos scan tcp open-port-penalty</b> <b>ip dos scan udp open-port-penalty</b> <b>ip dos scan threshold</b> <b>ip dos trap</b> <b>ip dos scan decay</b> <b>ip dos type</b> <b>show ip dos config</b> <b>show ip dos statistics</b>

---

## ip interface

Configures an IP interface to enable IP routing on a VLAN or allow remote access. Without an IP interface, traffic is bridged within the VLAN or across connections to the same VLAN on other switches.

```
ip interface {if_name | emp | master emp | local chassis-id chassis} [{address | vip-address}
ip_address] [mask subnet_mask] [admin-state [enable | disable]] [vlan vlan_id | service service_id]
[forward | no forward] [local-proxy-arp | no local-proxy-arp] [e2 | snap] [primary | no primary]
```

```
no ip interface if_name
```

---

### Syntax Definitions

<i>if_name</i>	Text string of the interface name. Use quotes around string if description contains multiple words with spaces between them (for example, “ALE Marketing”). This value is case sensitive.
<b>emp</b>	Modifies the shared EMP port IP address.
<b>master emp</b>	Modifies the EMP port IP address of the master chassis when operating in virtual chassis mode.
<b>local chassis-id chassis</b>	Modifies the EMP port IP address of the local chassis.
<b>address ip_address</b>	An IP host address (for example, 10.0.0.1, 171.15.0.20) to specify the IP router network.
<b>vip-address ip_address</b>	An IP host address for a Virtual IP (VIP) VLAN.
<i>subnet_mask</i>	A valid IP address mask (for example, 255.0.0.0, 255.255.0.0) to identify the IP subnet for the interface.
<b>enable</b>	Enables the administrative status for the IP interface.
<b>disable</b>	Disables the administrative status for the IP interface.
<i>vlan_id</i>	An existing VLAN ID number (1–4094).
<i>service_id</i>	<i>This parameter is not supported.</i>
<b>forward</b>	Enables forwarding of IP frames to other subnets.
<b>no forward</b>	Disables forwarding of IP frames. The router interface still receives frames from other hosts on the same subnet.
<b>local-proxy-arp</b>	Enables Local Proxy ARP on the specified interface.
<b>no local-proxy-arp</b>	Disables Local Proxy ARP on the specified interface.
<b>e2</b>	Enter <b>e2</b> or <b>ethernet2</b> to specify Ethernet-II encapsulation.
<b>snap</b>	SNAP encapsulation.
<b>primary</b>	Designates the specified IP interface as the primary interface for the VLAN.
<b>no primary</b>	Removes the configured primary IP interface designation for the VLAN. The first interface bound to the VLAN becomes the primary by default.

## Defaults

parameter	default
<i>ip_address</i>	0.0.0.0
<i>subnet_mask</i>	IP address class
<b>enable   disable</b>	<b>enable</b>
<i>vlan_id</i>	none (unbound)
<b>forward   no forward</b>	<b>forward</b>
<b>local-proxy-arp   no local-proxy-arp</b>	<b>no local-proxy-arp</b>
<b>e2   snap</b>	<b>e2</b>
<b>primary   no primary</b>	First interface bound to a VLAN.

## Platforms Supported

OmniSwitch 2260, 2360

## Usage Guidelines

- Use the **no** form of this command to remove an IP interface.
- IP multinetting is supported on VLANs. As a result, it is possible to configure up to 16 IP interfaces per VLAN. Each interface is configured with a different subnet, thus allowing traffic from each configured subnet to coexist on the same VLAN.
- When local proxy ARP is enabled for any one IP router interface associated with a VLAN, the feature is applied to the entire VLAN. It is not necessary to enable it for each interface. However, if the IP interface that has this feature enabled is moved to another VLAN, Local Proxy ARP is enabled for the new VLAN and must be enabled on another interface for the old VLAN.
- When Local Proxy ARP is enabled, all traffic is routed instead of bridged within the VLAN. ARP requests return the MAC address of the IP router interface. The same MAC address is assigned to each interface configured for a VLAN.
- Local Proxy ARP takes precedence over any switch-wide ARP or Proxy ARP function. It is not necessary to have Proxy ARP configured to use Local Proxy ARP. The two features are independent of each other.
- By default, the first interface bound to a VLAN becomes the primary interface for that VLAN. Use the **primary** keyword with this command to configure a different IP interface as the primary. Note that this option is not supported with interfaces bound to an SPB service, as multinetting is not supported on a service. There is only one IP interface per service allowed.
- To create an IP interface for network management purposes, specify **Loopback0** (case sensitive) as the name of the interface. The Loopback0 interface is not bound to any VLAN, so it always remains operationally active.

## Examples

```
-> ip interface Marketing
-> ip interface "Human Resources" 10.200.12.101 vlan 500 no forward snap
-> ip interface Distribution 11.255.14.102 vlan 500 local-proxy-arp primary
```

-> no ip interface Marketing

## Release History

Release 5.1; command introduced.

## Related Commands

[show ip interface](#) Displays the status and configuration of IP interfaces.

## MIB Objects

```
alaIpInterfaceTable  
  alaIpInterfaceName  
  alaIpInterfaceAddress  
  alaIpInterfaceVipAddress  
  alaIpInterfaceMask  
  alaIpInterfaceAdminState  
  alaIpInterfaceDeviceType  
  alaIpInterfaceVlanID  
  alaIpInterfaceIpForward  
  alaIpInterfaceEncap  
  alaIpInterfaceLocalProxyArp  
  alaIpInterfacePrimCfg  
  alaIpInterfaceOperState  
  alaIpInterfaceOperReason  
  alaIpInterfaceRouterMac  
  alaIpInterfaceBcastAddr  
  alaIpInterfacePrimAct
```

---

## ip interface rtr-port

Configures an IP routed-port interface by associating an IP interface with a port or link aggregate and a VLAN.

```
ip interface if_name address ip_address/mask vlan vlan_id rtr-port {port chassis/slot/port | linkagg agg_id} {tagged | untagged}
```

---

### Syntax Definitions

<i>if_name</i>	A unique name for the IP interface. Use quotes around the string if the name contains multiple words with spaces between them (for example, “ALE Marketing”). This value is case sensitive.
<i>ip_address</i>	IP host address to specify this IP interface.
<i>mask</i>	IP mask to specify this IP interface.
<i>vlan_id</i>	An unused VLAN ID to which this IP interface is associated.
<i>chassis/slot/port</i>	The chassis, slot, and port number (1/1/3) of the physical port to bind to the IP interface.
<i>agg_id</i>	The link aggregate ID to bind to the IP interface.
<b>tagged</b>	Whether the assigned port or link aggregate is tagged for the specified VLAN.
<b>untagged</b>	Whether the assigned port or link aggregate is untagged for the specified VLAN.

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- In a single step, this command creates the specified VLAN, configures an IP interface for the VLAN, and assigns a port or link aggregate (tagged or untagged) to the VLAN.
- Configuring an IPv4 and IPv6 routed-port interface for the same VLAN ID is supported if the following conditions are met:
  - The VLAN ID, port, and the tagged/untagged port status for both interfaces is the same (for example, IPv4 and IPv6 routed interfaces are both bound to VLAN 850 with port 1/1/2 tagged).
- Make sure the specified VLAN ID does not already exist in the switch configuration or is only used as a routed-port VLAN for an IPv4 interface. This VLAN will serve as a routing-only VLAN with a single port or link aggregate (Layer 2 functionality is not supported).
- Make sure the specified port or link aggregate is not already assigned to a VLAN that is *not* a routed-port VLAN. However, the port or link aggregate can be assigned to other routed-port VLANs.

- Attempting to add more ports or link aggregates to the routed-port VLAN or attempting to delete the VLAN is not allowed. The VLAN can only be removed by deleting the associated IPv4 and, if configured, the associated IPv6 interface.
- The same VLAN cannot be used for both a routed-port interface and a non-routed-port interface.
- Once configured, an IP routed-port interface is operationally equivalent to an IP VLAN interface. Routing protocols and other switch features that use IP are configured and operate on an IP routed-port interface in the same manner as on a regular IP interface.

## Examples

```
-> ip interface "rp-vlan30" 10.0.0.1/8 vlan 30 rtr-port port 1/1/1 tagged
-> ip interface "rp-vlan40" 20.0.0.1/8 vlan 40 rtr-port port 1/1/2 untagged
-> ip interface "rp-vlan50" 30.0.0.1/8 vlan 40 rtr-port linkagg 6 tagged
-> ip interface "rp-vlan60" 40.0.0.1/8 vlan 50 rtr-port linkagg 7 untagged

-> vlan 70
-> ip interface rp-vlan70 rtr-port port 1/1/13 untagged vlan 70
ERROR: vlan 70 already present

-> ip interface rpv4-vlan rtr-port port 1/1/11 tagged vlan 300
-> ipv6 interface rpv6-vlan rtr-port port 1/1/11 tagged vlan 300

-> no ipv6 interface rpv6-vlan
-> ipv6 interface rpv6-vlan rtr-port port 1/1/13 untagged vlan 300
ERROR: Configuration conflict with IPv4 routed port interface rpv4-vlan
```

## Release History

Release 5.1; command introduced.

## Related Commands

[show ip interface](#) Displays the status and configuration of IP interfaces.

## MIB Objects

```
alaIpInterfaceTable
  alaIpInterfaceName
  alaIpInterfaceVlanID
  alaIpInterfaceDeviceType
  alaIpInterfacePortIfindex
  alaIpInterfaceTag
```

---

## ip interface dhcp-client

Configures a DHCP client IP interface that is to be assigned an IP address from a DHCP server.

```
ip interface dhcp-client [vlan vlan_id ] [vsi-accept-filter filter-string | server-preference] [release |
renew] [option-60 opt60_string] [admin {enable | disable}] [local-proxy-arp | no local-proxy-arp]
```

```
no ip interface dhcp-client
```

```
ip interface dhcp-client no server-preference
```

---

### Syntax Definitions

<b>dhcp-client</b>	Reserved IP interface name indicating this interface use DHCP to obtain an IP address from a DHCP server.
<i>vlan_id</i>	An existing VLAN ID number (1–4094).
<i>filter-string</i>	String that matches with option-43 filed of the DHCPACK to prefer the desired OXO server. By default the filter-string will be empty string (“”).
<b>server-preference</b>	Enables DHCP server precedence logic. The DHCP server preference logic is mutually exclusive with vsi-accept-filter.
<b>release</b>	Releases the DHCP server assigned IP address.
<b>renew</b>	Renews the DHCP server assigned IP address.
<i>opt60_string</i>	The option-60 field value to be included in DHCP discover/request packets.
<b>enable</b>	Enables the administrative status for the IP interface.
<b>disable</b>	Disables the administrative status for the IP interface.
<b>local-proxy-arp</b>	Enables Local Proxy ARP on the specified interface.
<b>no local-proxy-arp</b>	Disables Local Proxy ARP on the specified interface.

### Defaults

parameter	default
<i>opt60_string</i>	OmniSwitch-xxxx (xxxx = Platform, for example, 2260)
<b>enable   disable</b>	enable
<i>filter-string</i>	(“”).
<b>server-preference</b>	disabled
<b>local-proxy-arp   no local-proxy-arp</b>	<b>no local-proxy-arp</b>

### Platforms Supported

OmniSwitch 2260, 2360



## Usage Guidelines

- Use the **no** form of this command to remove the DHCP-client IP interface.
- Only one DHCP client IP interface can be assigned per switch but it can belong to any VLAN.
- If the system name has not been configured, it will be updated using the option-12 field. If the option-12 string is greater than 19 characters the remaining characters will be truncated.
- The minimum lease time accepted on the DHCP-client interface is 5 minutes.
- The VSI filter-string once configured cannot be deleted. It can be overwritten or modified. It can be configured as empty string (“”).
- The VSI accept filter is case-sensitive. The maximum length of a vsi-accept-filter can be of 64 character length.
- In order to retain the same OXO server which was configured before RCL, the VSI filter must match the hard coded string “alcatel.a4400.0”.
- DHCP client preference to obtain the lease from the highest priority server among the multiple offers received can be enabled using the **server-preference** option.
- Server preference option can also be set without specifying VLAN ID, provided the dhcp-client interface is associated with a VLAN prior to setting the server preference.
- The **server-preference** option is mutually exclusive with **vsi-accept-filter** option.
- Use the **no server-preference** option to remove the server preference.

## Examples

```
-> ip interface dhcp-client vlan 100
-> ip interface dhcp-client admin enable
-> ip interface dhcp-client release
-> ip interface dhcp-client renew
-> ip interface dhcp-client option-60 OmniSwitch
-> no ip interface dhcp-client
-> ip interface dhcp-client vsi-accept-filter "alcatel.a4400.0"
-> ip interface dhcp-client vlan 1 server-preference
-> ip interface dhcp-client server-preference
-> ip interface dhcp-client no server-preference
```

## Release History

Release 5.1; command introduced.

## Related Commands

### [show ip interface](#)

Displays the status and configuration of IP interfaces.

## MIB Objects

```
alaIpInterfaceTable
  alaIpInterfaceDhcpStatus
  alaIpInterfaceDhcpIpRelease
  alaIpInterfaceDhcpIpRenew
  alaIpInterfaceDhcpOption60String
  alaIpInterfaceDhcpVsiAcceptFilterString
  alaIpInterfaceDhcpServerPreference
```

---

## ip static-route

Creates or deletes an IP static route. Static routes are user-defined; they carry a higher priority than routes created by dynamic routing protocols. By default, static routes carry a higher priority than the dynamic routes.

**ip static-route** *ip\_address* [**mask** *mask*] {**gateway** {*gateway\_address* | **null**} [**tag** *num*] [**name** *string*] | **interface** *interface\_name* | **follows** *ip\_address*} [**metric** *metric*]

**no ip static-route** *ip\_address* [**mask** *mask*] [**gateway** {*gateway\_address* | **null**} | **interface** *interface\_name* | **follows** *ip\_address*] [**metric** *metric*]

---

### Syntax Definitions

<i>ip_address</i>	Destination IP address of the static route.
<i>mask</i>	Subnet mask corresponding to the destination IP address.
<b>gateway</b> <i>gateway_address</i>	IP address of the next hop used to reach the destination IP address.
<b>gateway null</b>	Use this option to configure an IPv4 blackhole route.
<b>tag</b> <i>num</i>	Tag to be used for route.
<b>name</b> <i>string</i>	Name to be used for route.
<b>interface</b> <i>interface_name</i>	Interface of the next hop used to reach the destination IP address.
<b>follows</b> <i>ip_address</i>	The recursive static route follows this IP address. The recursive route uses the same gateway (and interface) or nexthop that is used to reach this host address.
<i>metric</i>	Metric or cost (hop count) for the static route. You can set a priority for the static route by assigning a metric value. The lower the metric value, the higher the priority. Valid range is 1–15.

### Defaults

parameter	default
<i>metric</i>	1

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- By default, static routes have a higher priority over dynamic routes; however, it can be changed using the **ip route-pref** command.
- Static routes do not age out of the routing tables; however, they can be deleted. Use the **no** form of this command to delete a static route.
- A static route is active if the interface it is using is “UP”.
- The subnet mask is not required if you want to use the natural subnet mask. By default, the switch imposes a natural mask on the IP address.

- If directly connected, NAT routers interface name can be used instead of gateway IP address, provided the router is enabled for proxy-ARP to handle ARP requests for the route addresses.
- Use the **null** option to configure IPv4 blackhole routes. A blackhole route is used to forward unwanted traffic to a blackhole.
  - Redistribution of blackhole routes is supported. Dynamic routing protocols may advertise these routes, but the gateway associated with the route(s) will be an address on the router advertising them.
  - Blackhole routes are created and installed through static route commands. Dynamic Routing protocols shall not install blackhole IP routes.
  - Blackhole routes shall never be part of ECMP.
  - Blackhole routes cannot be enabled for BFD support.
- Alternatively, the gateway address '0.0.0.0' can be used to create an IPv4 blackhole route.

## Examples

```
-> ip static-route 171.11.1.0/24 gateway 171.11.2.1
-> ip static-route 171.11.1.0/24 interface Int1
-> ip static-route 12.0.0.0/8 interface Int1
-> ip static-route 171.11.1.0/24 follows 192.168.10.1
-> ip static-route 55.0.0.0/8 gateway null
-> ip static-route 55.0.0.0/8 gateway 0.0.0.0
```

## Release History

Release 5.1; command introduced.

## Related Commands

<a href="#">ip route-pref</a>	Configures the route preference of a router.
<a href="#">show ip routes</a>	Displays the IP Forwarding table.
<a href="#">show ip router database</a>	Displays a list of all routes (static and dynamic) that exist in the IP router database.
<a href="#">show ip route-pref</a>	Displays the IPv4 routing preferences of a router.

## MIB Objects

```
alaIprmStaticRoute
  alaIprmStaticRouteDest
  alaIprmStaticRouteMask
  alaIprmStaticRouteNextHop
  alaIprmStaticRouteTag
  alaIprmStaticRouteName
  alaIprmStaticRouteMetric
  alaIprmStaticRouteStatus
  alaIprmStaticRouteType
```

---

## ip route-pref

Configures the route preference of a router.

**ip route-pref static** *value*

---

### Syntax Definitions

**static** Configures the route preference of static routes.  
*value* Route preference value.

### Defaults

parameter	default
<i>static value</i>	2

### Platforms Supported

OmniSwitch 2360

### Usage Guidelines

Route preference of local routes cannot be changed.

## Examples

```
-> ip route pref static 1
```

## Release History

Release 5.1; command introduced.

## Related Commands

**show ip route-pref**                      Displays the configured route-preference of a router.

## MIB Objects

```
alaIprmRtPrefTable  
  alaIprmRtPrefEntryType  
  alaIprmRtPrefEntryValue
```

---

## ip default-ttl

Configures the Time To Live value (TTL) for IP packets. The TTL value is the maximum number of hops an IP packet travels before being discarded.

**ip default-ttl** *hops*

---

### Syntax Definitions

*hops* TTL value, in hops. Valid range is 1–255.

### Defaults

parameter	default
<i>hops</i>	64

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

This value represents the default value inserted into the TTL field of the IP header for datagrams originating from this switch whenever a TTL value is not supplied by the transport layer protocol.

### Examples

```
-> ip default-ttl 30
```

### Release History

Release 5.1; command introduced.

### Related Commands

[show ip config](#) Displays IP configuration parameters.

### MIB Objects

IpDefaultTTL

---

## ping

Tests whether an IP destination can be reached from the local switch. This command sends an ICMP echo request to a destination and then waits for a reply. To ping a destination, enter the **ping** command and enter either the IP address or hostname of the destination. The switch pings the destination using the default frame count, packet size, interval, and timeout parameters (6 frames, 64 bytes, 1 second, and 5 seconds respectively). You can also customize any or all of these parameters as described below.

```
ping {ip_address | hostname} [source-interface ip_interface] [count count] [size packet_size] [interval seconds] [timeout seconds] [data-pattern string] [dont-fragment] [tos tos_val]
```

---

### Syntax Definitions

<i>ip_address</i>	IPv4 address of the system to ping.
<i>hostname</i>	DNS name of the system to ping.
<b>source-interface</b> <i>ip_interface</i>	IP address or interface name to use as the source IP for the ping packets.
<i>count</i>	Number of frames to be transmitted.
<i>packet_size</i>	Size of the data portion of the packet sent for this ping, in bytes. Valid range is 1–65507.
<b>interval</b> <i>seconds</i>	Polling interval. The switch polls the host at time intervals specified in seconds.
<b>timeout</b> <i>seconds</i>	Number of seconds the program waits for a response before timing out.
<b>data-pattern</b> <i>string</i>	The data pattern to be used in the data field of the ping packets.
<b>dont-fragment</b>	Sets the don't-fragment bit in the IP packet.
<b>tos</b> <i>tos_val</i>	Type of Service field in the IP header.

### Defaults

parameter	default
<i>count</i>	6
<i>packet_size</i>	64
<b>interval</b> <i>seconds</i>	1
<b>timeout</b> <i>seconds</i>	5
<b>dont-fragment</b>	0
<b>tos</b> <i>tos_val</i>	0
<b>data-pattern</b> <i>string</i>	Repeating sequence of ASCII characters 0x4 onwards to 0xff

### Platforms Supported

OmniSwitch 2260, 2360



## Usage Guidelines

If you change the default values, they are only applied to the current ping. The next time you use the ping command, the default values are used unless you again enter different values.

## Examples

```
-> ping 10.255.11.242

PING 10.255.11.242: 56 data bytes
64 bytes from 10.255.11.242: icmp_seq=0. time=0. ms
64 bytes from 10.255.11.242: icmp_seq=1. time=0. ms
64 bytes from 10.255.11.242: icmp_seq=2. time=0. ms
64 bytes from 10.255.11.242: icmp_seq=3. time=0. ms
64 bytes from 10.255.11.242: icmp_seq=4. time=0. ms
64 bytes from 10.255.11.242: icmp_seq=5. time=0. ms
----10.255.11.242 PING Statistics----
6 packets transmitted, 6 packets received, 0% packet loss
round-trip (ms) min/avg/max = 0/0/0

-> ping 10.0.0.1 source-interface mgmt
-> ping 10.0.0.1 tos 1
-> ping 10.0.0.1 timeout 10
-> ping 10.0.0.1 interval 10
-> ping 10.0.0.1 dont-fragment
-> ping 10.0.0.1 data-pattern AB
```

## Release History

Release 5.1; command introduced

## Related Commands

### [traceroute](#)

Finds the path taken by an IP packet from the local switch to a specified destination.

## MIB Objects

N/A

---

## traceroute

Finds the path taken by an IP packet from the local switch to a specified destination. This command displays the individual hops to the destination as well as some timing information.

**traceroute** {*ip\_address* | *hostname*} [**max-hop** *max\_hop\_count*] [**min-hop** *min\_hop\_count*] [**source-interface** *ip\_interface*] [**probes** *probe\_count*] [**timeout** *seconds*] [**port** *port\_number\_value*]

---

### Syntax Definitions

<i>ip_address</i>	IPv4 address of the host whose route you want to trace.
<i>hostname</i>	DNS name of the host whose route you want to trace.
<i>max_hop_count</i>	Maximum hop count for the trace. The valid range is 1–255.
<i>min_hop_count</i>	Minimum hop count for the trace. The valid range is 1–30.
<i>ip_interface</i>	Source IP interface to be used in the traceroute packets.
<i>probe_count</i>	The number of packets (retry) sent for each hop-count. The valid range is 1–10000.
<i>seconds</i>	The time to wait for the response of each probe packet.
<i>port_number_value</i>	The destination port number to be used in the probing packets.

### Defaults

parameter	default
<b>max-hop</b> <i>max_hop_count</i>	30
<b>min-hop</b> <i>min_hop_count</i>	1
<b>source-interface</b> <i>ip_interface</i>	Outgoing IP interface as per route lookup
<b>probes</b> <i>probe_count</i>	3
<b>timeout</b> <i>seconds</i>	5
<b>port</b> <i>port_number_value</i>	33334

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

When using this command, you must enter the name of the destination as part of the command line (either the IP address or host name).

## Examples

```
-> traceroute 128.251.17.224

traceroute to 128.251.17.224, 30 hops max, 40 byte packets
 1  10.255.11.254 0 ms  0 ms  0 ms
 2  172.23.0.251 0 ms  16.6667 ms  0 ms
 3  128.251.14.253 0 ms  0 ms  0 ms
 4  128.251.17.224 0 ms  0 ms  0 ms

-> traceroute 128.251.17.224 max-hop 3
traceroute to 128.251.17.224, 3 hops max, 40 byte packets
 1  10.255.11.254 0 ms  0 ms  0 ms
 2  172.23.0.251 16.6667 ms  0 ms  0 ms
 3  128.251.14.253 0 ms  0 ms  0 ms
-> traceroute 10.0.0.1 source-interface mgmt
-> traceroute 10.0.0.1 min-hop 3
-> traceroute 10.0.0.1 probes 3
-> traceroute 10.0.0.1 timeout 10
-> traceroute 10.0.0.1 port-number 1025
```

## Release History

Release 5.1; command introduced

## Related Commands

[show ip routes](#) Displays the IP Forwarding table.

## MIB Objects

N/A

---

## ip directed-broadcast

Enables or disables IP directed broadcasts routed through the switch. An IP directed broadcast is an IP datagram that has all zeros or all 1s in the host portion of the destination address. The packet is sent to the broadcast address of a subnet to which the sender is not directly attached.

**ip directed-broadcast {enable | disable}**

---

### Syntax Definitions

<b>enable</b>	Enables IP directed broadcasts.
<b>disable</b>	Disables IP directed broadcasts.

### Defaults

parameter	default
<b>enable   disable</b>	disable

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- Directed broadcasts are used in denial-of-service attacks. In a DoS attack, a continuous stream of ping requests are sent from a falsified source address to a directed broadcast address. This results in a large stream of replies, which can overload the host of the source address. By default, the switch drops directed broadcasts. Directed broadcasts must not be enabled.

### Examples

```
-> ip directed-broadcast enable
-> ip directed-broadcast disable
```

### Release History

Release 5.1; command introduced

### Related Commands

**show ip directed-broadcast** Displays the status of the directed broadcast configuration and trusted source IP address configuration.

### MIB Objects

alaIpDirectedBroadcast

---

## ip directed-broadcast trusted-source-ip

Specify the source IP address, destination IP address and destination VLAN information to broadcast the packets in controlled manner. The specified information is considered as the trusted information to broadcast the packets received from the defined parameters, and the remaining broadcast packets are dropped.

**ip directed-broadcast trusted-source-ip** *{ip\_address/mask | ip\_address mask subnet\_mask}* [**destination-ip** *{ip\_address/mask | ip\_address destination-mask subnet\_mask}*] | **destination-vlan** *{vlan\_id | vlan\_id[-vlan\_id]}*

**no ip directed-broadcast trusted source-ip** *ip\_address {ip\_address/mask | ip\_address mask subnet\_mask}*

---

### Syntax Definitions

<b>trusted-source-ip</b> <i>ip_address</i>	Source IP address from which the broadcast packets are received.
<b>destination-ip</b> <i>ip_address</i>	Destination address to which the packets must be directed.
<i>subnet_mask</i>	The source mask from which the broadcast packets are received.
<b>destination-mask</b> <i>subnet_mask</i>	The destination mask to which the packets must be directed.
<i>vlan_id</i>	Existing VLAN ID to which the packets are to be directed.

### Defaults

parameter	default
<i>ip_address</i>	0.0.0.0
<i>subnet_mask</i>	IP address class/0.0.0.0
<i>vlan_id</i>	None

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- Use the **no** command to remove the trusted information configured with the source IP address for controlled IP directed broadcast.
- IP directed broadcast must be enabled for the controlled IP directed broadcast to work.
- The trusted information must have the source IP with optional destination IP address or VLAN ID.
- Ensure that the configured address/mask combination (source/destination IP address) configuration is not a subset of an already existing address/mask.
- If the source IP matches, then the packets are broadcasted in the particular destination IP interface or VLAN interfaces. The remaining packets are dropped.
- When the packet received matches with the source IP and if the destination IP or destination VLAN information are not defined by the user, then the packet will be forwarded based on the routing information in the switch.

- If no source IP is provided as trusted, by default, all the packets are forwarded.
- If the destination IP or VLAN is defined by the user, then the destination address of the packet will be matched with the user defined list and routes the packets if the destination IP matches. If the VLAN information is defined, then the packets will be routed if the destination VLAN matches a VLAN in the configured allowed VLAN list. If neither the destination IP or VLAN matches the ones configured, the packet are dropped.
- If the destination IP is not reachable or if the destination subnet is not directly connected, packet will be dropped.
- If the directed broadcast is set to controlled mode and the user does not specify any trusted information, all the broadcast packets will be dropped. This case is equivalent to disabled state of directed-broadcast.
- 32 source IP addresses can be defined, and each source IP address can have 30 destination IP addresses and 30 destination VLAN IDs.
- If IP directed broadcasts is disabled using the command **ip directed-broadcast disable**, which also is the default, all packets with subnet broadcast, will be dropped.

## Examples

```
-> ip directed-broadcast trusted-source-ip 30.0.0.0 mask 255.255.255.0

-> ip directed-broadcast trusted-source-ip 30.0.0.0/24 destination-ip 10.0.0.255/24

-> ip directed-broadcast trusted-source-ip 30.0.0.0 mask 255.255.255.0
destination-vlan 10

-> ip directed-broadcast trusted-source-ip 30.0.0.0/24 destination-vlan 10-15

-> no ip directed-broadcast trusted-source-ip 30.0.0.0/24
-> no ip directed-broadcast trusted-source-ip 30.0.0.0 mask 255.255.255.0
```

## Release History

Release 5.1; command introduced.

## Related Commands

<b>ip directed-broadcast</b>	Enables or disables IP directed broadcasts routed through the switch.
<b>ip directed-broadcast clear</b>	Clears all the trusted information configured.
<b>show ip directed-broadcast</b>	Displays the status of the directed broadcast configuration and trusted source IP address configuration.

## MIB Objects

```
alaIpDirectedBroadcastCtrlSrcTable
  alaIpDirectedBroadcastCtrlSrcAddrType
  alaIpDirectedBroadcastCtrlSrcAddr
  alaIpDirectedBroadcastCtrlSrcMask
```

```
alaIpDirectedBroadcastCtrlDstTable
  alaIpDirectedBroadcastCtrlDstAddrType
  alaIpDirectedBroadcastCtrlDstAddrType
  alaIpDirectedBroadcastCtrlDstMask
alaIpDirectedBroadcastCtrlVlanTable
  alaIpDirectedBroadcastCtrlVlanID
```

---

## ip directed-broadcast clear

Clears all the trusted information configured.

```
ip directed-broadcast clear [trusted-source-ip {ip_address/mask | ip_address mask subnet_mask}]
```

---

### Syntax Definitions

**trusted-source-ip** *ip\_address* Source IP address from which the broadcast packets are received.  
*subnet\_mask* The source mask from which the broadcast packets are received.

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

If the source IP is specified, then the destination and the VLAN information for the source IP specified is cleared. If the command is specified without the source IP address, entire trusted information database is cleared.

### Examples

```
-> ip directed-broadcast clear  
-> ip directed-broadcast clear trusted-source-ip 20.20.20.0 mask 255.255.255.0
```

### Release History

Release 5.1; command introduced.

### Related Commands

**ip directed-broadcast** Enables or disables IP directed broadcasts routed through the switch.

**ip directed-broadcast trusted-source-ip** Specify the source IP address, destination IP address and destination VLAN information to broadcast the packets in controlled manner.



**MIB Objects**

```
alaIpDirectedBroadcastCtrlSrcTable  
  alaIpDirectedBroadcastCtrlSrcAddrType  
  alaIpDirectedBroadcastCtrlSrcAddr  
  alaIpDirectedBroadcastCtrlSrcMask  
  alaIpDirectedBroadcastCtrlSrcClear  
alaIpDirectedBroadcastCtrlGlobalConfig  
  alaIpDirectedBroadcastCtrlClearAll
```

---

## show ip directed-broadcast

Displays the status of the directed broadcast configuration and trusted source IP address configuration.

**show ip directed-broadcast** [**trusted-source-ip** {*ip\_address/mask* | *ip\_address mask subnet\_mask*}]  
**details**

---

### Syntax Definitions

**trusted-source-ip** *ip\_address* Source IP address from which the broadcast packets are received.  
*subnet\_mask* The source mask from which the broadcast packets are received.  
**details** Displays the destination IP address or VLAN information for the specified source IP.

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

Use **details** keyword to view the destination IP addresses or VLANs information for the specified source IP.

### Examples

```
-> show ip directed-broadcast
IP Directed Broadcast is enabled
Source-IP          MASK          Destination-IP  VLAN
-----+-----+-----+-----
100.10.1.0         255.255.255.0  YES             NO
100.10.2.2         255.255.255.255 YES             NO
100.10.3.0         255.255.255.224 YES             NO
100.10.4.0         255.255.255.248 YES             NO
```

```
-> show ip directed-broadcast trusted-source-ip 10.10.10.0 mask 255.255.255.0
details
Source-IP/Mask      = 10.10.10.0/255.255.255.0
Destination-IP/Mask = 20.20.20.0/255.255.255.0,
Vlan                = 10
```

#### *output definitions*

---

<b>Source-IP/Mask</b>	Trusted source IP address and mask configured in a controlled manner.
<b>Destination-IP/Mask</b>	Trusted destination IP address and mask configured in a controlled manner.
<b>Vlan</b>	Trusted VLAN ID configured for directed broadcast in a controlled manner.

---

## Release History

Release 5.1; command introduced.

## Related Commands

### **ip directed-broadcast**

Enables or disables IP directed broadcasts routed through the switch.

### **ip directed-broadcast trusted-source-ip**

Specify the source IP address, destination IP address and destination VLAN information to broadcast the packets in controlled manner.

## MIB Objects

N/A

---

## ip service

Enables (opens) or disables (closes) well-known or user-defined TCP/UDP service ports. Selectively enabling or disabling these types of ports provides an additional method for protecting against unauthorized switch access or Denial of Service (DoS) attacks.

**ip service** {**all** | *service\_name* | **port** *service\_port*} **admin-state** {**enable** | **disable**}

---

### Syntax Definitions

<b>all</b>	Configures access to all TCP/UDP ports.
<i>service_name</i>	The name of the TCP/UDP service to enable or disable. (Refer to the table in the “Usage Guidelines” section for a list of supported service names.)
<i>service_port</i>	A TCP/UDP service port number. Configures access by port number rather than by service name. (Refer to the table in the “Usage Guidelines” section for a list of well-known port numbers.) If a user-defined port number is specified, the valid range is 20000–20999.
<b>enable</b>	Enables access to the service.
<b>disable</b>	Disables access to the service.

### Defaults

All TCP/UDP ports are open by default.

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- This command only applies to TCP/UDP service ports opened by default. It does not affect ports that are opened by applications, such as RIP, BGP, and so on.
- Use the **all** option with this command to configure access to all well-known TCP/UDP service ports.
- To designate which port to enable or disable, specify either the name of a service or the well-known port number associated with that service. Specifying a name and a port number in a single command line is not supported.
- When using service names, it is possible to specify more than one service in a single command line by entering each service name separated by a space. See the “Example” section for more information.
- When specifying a service port number, the **port** keyword is required and that only one port number is allowed in a single command.
- The following table lists the **ip service** command options for specifying TCP/UDP services and also includes the well-known port number associated with each service:

service name	port
<b>ftp</b>	21

---

<b>service name</b>	<b>port</b>
<b>ssh</b>	22
<b>telnet</b>	23
<b>http</b>	80
<b>https</b>	443
<b>ntp</b>	123
<b>snmp</b>	161

---

## Examples

```
-> ip service all admin-state disable
-> ip service ftp admin-state enable
-> ip service port 20000 admin-state enable
```

## Release History

Release 5.1; command introduced

## Related Commands

[ip service port](#)

Configures a user-defined TCP/UDP port for the specified service.

[show ip service](#)

Displays the IP service TCP/UDP port configuration and status.

## MIB Objects

```
alaIpServiceTable
  alaIpServiceType
  alaIpServicePort
  alaIpServiceStatus
alaIpPortServiceTable
  alaIpPortServicePort
  alaIpPortServiceStatus
```

---

## ip service port

Configures a user-defined TCP/UDP service port for the specified service.

```
ip service {service_name} port {default | service_port}
```

---

### Syntax Definitions

<i>service_name</i>	The name of the TCP/UDP service to enable or disable. (Refer to the table in the “Usage Guidelines” section for a list of supported service names.)
<i>service_port</i>	A TCP/UDP service port number (Refer to the table in the “Usage Guidelines” section for a list of supported service names.) Valid range is the default service port number or 20000-20999.
<b>default</b>	Sets the port back to the well-known port for the specified service.

### Defaults

By default, the service uses the well-known TCP/UDP port number for that service.

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- Use the **default** parameter with this command to set the port for the specified service back to the well-known default port for that service. For example, if the FTP port was previously changed to “20000”, then the **ip service ftp port default** command would set the FTP port back to “21”.
- The following table lists the **ip service port** command options for specifying TCP/UDP services and also includes the default well-known port number associated with each service:

service name	port
<b>ftp</b>	21
<b>ssh</b>	22
<b>telnet</b>	23
<b>http</b>	80
<b>https</b>	443

The **ntp** and **snmp** services are not supported with the **ip service port** command.

- Use the **ip service** command to enable or disable the status for a well-known or user-defined TCP/UDP service port.

### Examples

```
-> ip service ftp port 20000
-> ip service ftp port default
-> ip service telnet port 20003
```

```
-> ip service telnet port default
```

## Release History

Release 5.1; command introduced

## Related Commands

[ip service](#)

Enables or disables well-known or user-defined service ports.

[show ip service](#)

Displays the IP service TCP/UDP port configuration and status.

## MIB Objects

```
alaIpServiceTable  
  alaIpServiceType  
  alaIpServicePort  
  alaIpServiceStatus
```

---

## ip service source-ip

Configures a user-defined source IP address as the outgoing IP interface for the IP service.

```
ip service source-ip {Loopback0 | interface_name} [tftp] [telnet] [tacacs] [swlog] [ssh] [snmp] [sflow]
[radius] [ntp] [ldap] [ftp] [dns] [all]
```

```
no ip service source-ip {Loopback0 | interface_name} [tftp] [telnet] [tacacs] [swlog] [ssh] [snmp]
[sflow] [radius] [ntp] [ldap] [ftp] [dns] [all]
```

---

### Syntax Definitions

<b>Loopback0</b>	Uses the Loopback0 interface as the source IP for the IP service.
<i>interface_name</i>	Specifies the name of the interface.
tftp	Configures the source IP address to be used by TFTP.
telnet	Configures the source IP address to be used by TELNET.
tacacs	Configures the source IP address to be used by TACACS.
swlog	Configures the source IP address to be used by SWLOG.
ssh	Configures the source IP address to be used by SSH.
snmp	Configures the source IP address to be used by SNMP.
sflow	This parameter is not supported.
radius	Configures the source IP address to be used by RADIUS.
ntp	Configures the source IP address to be used by NTP.
ldap	Configures the source IP address to be used by the LDAP server.
ftp	Configures the source IP address to be used by FTP.
dns	Configures the source IP address to be used by DNS.
all	Configures the source IP address to be used by all the applications.

### Defaults

By default, the outgoing interface is taken as the source IP address for all the applications.

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- If for a particular application, specific source IP address is configured and the “all” option is also set, the configured source IP address for the application is used as the outgoing interface.
- Use the **no** form of this command to revert to the default behavior..

### Examples

```
-> ip service source-ip loopback0 dns
-> ip service source-ip ipVlan100 ftp
```



## Release History

Release 5.1; command introduced.

## Related Commands

**show ip service source-ip** Displays the IP service TCP/UDP port configuration and status.

## MIB Objects

```
alaIpServiceSourceIPTable  
  AlaIpServiceSourceIPAppIndex  
  alaIpServiceSourceIPName
```

---

## arp

Adds a permanent entry to the ARP table. To forward packets, the switch dynamically builds an ARP Table to match the IP address of a device with its physical (MAC) address. These entries age out of the table when the timeout value is exceeded. This command is used to add a permanent entry to the table. Permanent entries do not age out of the table.

```
arp ip_address mac_address [alias] [arp-name name] [interface interface_name] [port chassis/slot/port] [linkagg agg_id]
```

```
no arp ip_address [alias]
```

---

### Syntax Definitions

<i>ip_address</i>	IP address of the device you are adding to the ARP table.
<i>mac_address</i>	MAC address of the device in hexadecimal format (for example, 00.00.39.59.f1.0c).
<b>alias</b>	Specifies that the switch will act as an alias (or proxy) for this IP address. When the alias option is used, the switch responds to all ARP requests for the specified IP address with its own MAC address.  The proxy feature can also be enabled for an IP interface using the <b>ip interface</b> command. When enabled, ARP requests return the MAC address of the IP router interface and all traffic within the VLAN is routed.
<i>name</i>	The name to assign to this ARP entry.
<i>interface_name</i>	Name of the interface to be used for ARP resolution.
<i>chassis</i>	The chassis identifier.
<i>slot/port</i>	The slot and port number (3/1).
<i>agg_id</i>	The link aggregate ID number.

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- Use the **no** form of this command to delete a permanent ARP entry.
- Configuring a permanent ARP entry with a multicast address is also supported. This is done by specifying a multicast address for the *ip\_address* parameter instead of a unicast address.
- Using the **arp alias** command is not related to proxy ARP as defined in RFC 925. Instead, **arp alias** is similar to the Local Proxy ARP feature, except that it is used to configure the switch as a proxy for only *one* IP address.

- As most hosts support the use of address resolution protocols to determine cache address information (called dynamic address resolution), it is not required to specify permanent ARP cache entries.
- Only the IP address is required when deleting an ARP entry from the table.

## Examples

```
-> arp 171.11.1.1 00:05:02:c0:7f:11
-> arp 171.11.1.1 00:05:02:c0:7f:11 interface int1
```

## Release History

Release 5.1; command was introduced.

## Related Commands

<a href="#">ip interface</a>	Enables or disables the Local Proxy ARP feature for an IP interface. When enabled, all traffic within the VLAN is routed. ARP requests return the MAC address of the IP router interface.
<a href="#">show arp</a>	Displays the ARP table.

## MIB Objects

```
ipNetToMediaTable
  ipNetToMediaIfIndex
  ipNetToMediaNetAddress
  ipNetToMediaPhyAddress
  ipNetToMediaType
alaIpNetToMediaTable
  alaIpNetToMediaPhyAddress
  alaIpNetToMediaProxy
```

---

## clear arp-cache

Deletes all dynamic entries from the ARP table.

**clear arp-cache**

---

### Syntax Definitions

N/A

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- This command only clears dynamic entries. If permanent entries have been added to the table, they must be removed using the **no** form of the [ip service](#) command.
- Dynamic entries remain in the ARP table until they time out. The switch uses the MAC Address table timeout value as the ARP timeout value. Use the [mac-learning aging-time](#) command to set the timeout value.

### Examples

```
-> clear arp-cache
```

### Release History

Release 5.1; command introduced

### Related Commands

<a href="#">ip service</a>	Adds a permanent entry to the ARP table.
<a href="#">show arp</a>	Displays the ARP table.

### MIB Objects

alaIpClearArpCache

---

## ip dos arp-poison restricted-address

Adds or deletes an ARP Poison restricted address.

**ip dos arp-poison restricted-address** *ip\_address*

**no ip dos arp-poison restricted-address** *ip\_address*

---

### Syntax Definitions

*ip\_address*                                 32-bit IP address.

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

Use the **no** form of the command to remove an already configured ARP Poison restricted address.

### Examples

```
-> ip dos arp-poison restricted-address 192.165.1
-> no ip dos arp-poison restricted-address 192.165.1
```

### Release History

Release 5.1; command introduced

### Related Commands

[ip service](#)                                 Adds a permanent entry to the ARP table.

[show arp](#)                                     Displays the ARP table.

### MIB Objects

```
alaDoSArpPoisonTable
  alaDoSArpPoisonIpAddr
  alaDosArpPoisonRowStatus
```

---

## arp filter

Configures an ARP filter that determines if ARP Request packets containing a specific IP address are processed by the switch or discarded.

**arp filter** *ip\_address* [**mask** *ip\_mask*] [*vlan\_id*] [**sender** | **target**] [**allow** | **block**]

**no arp filter** *ip\_address*

---

### Syntax Definitions

<i>ip_address</i>	The IP address to use for filtering ARP packet IP addresses.
<i>ip_mask</i>	An IP mask that identifies which part of the ARP packet IP address is examined for filtering (for example, mask 255.0.0.0 filters on the first octet of the ARP packet IP address).
<i>vlan_id</i>	A VLAN ID that specifies that only ARP packets for a specific VLAN are filtered.
<b>sender</b>	The sender IP address in the ARP packet is used for ARP filtering.
<b>target</b>	The target IP address in the ARP packet is used for ARP filtering.
<b>allow</b>	ARP packets that meet filter criteria are processed.
<b>block</b>	ARP packets that meet filter criteria are discarded.

### Defaults

parameter	default
<i>vlan_id</i>	0 (no VLAN)
<i>ip_mask</i>	255.255.255.255
<b>sender</b>   <b>target</b>	<b>target</b>
<b>allow</b>   <b>block</b>	<b>block</b>

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- Use the **no** form of this command to delete an ARP filter.
- If there are no filters configured for the switch, all ARP Request packets received are processed.
- Up to 200 filters are allowed on each switch.
- If sender or target IP address in an ARP Request packet does not match any filter criteria, the packet is processed by the switch.
- ARP filtering is used in conjunction with the Local Proxy ARP application; however, ARP filtering is available for use on its own and/or with other applications.

## Examples

```
-> arp filter 171.11.1.1
-> arp filter 172.0.0.0 mask 255.0.0.0
-> arp filter 198.0.0.0 mask 255.0.0.0 sender
-> arp filter 198.172.16.1 vlan 200 allow
-> no arp filter 171.11.1.1
```

## Release History

Release 5.1; command introduced

## Related Commands

### [clear arp filter](#)

Clears all ARP filters from the filter database.

### [ip interface](#)

Enables or disables the Local Proxy ARP feature on an IP interface. When enabled, all traffic within the VLAN is routed. ARP requests return the MAC address of the IP router interface.

### [show arp filter](#)

Displays a list of ARP filters configured for the switch.

## MIB Objects

```
alaIpArpFilterTable
  alaIpArpFilterIpAddr
  alaIpArpFilterIpMask
  alaIpArpFilterVlan
  alaIpArpFilterMode
  alaIpArpFilterType
```

---

## clear arp filter

Clears the ARP filter database of all entries.

**clear arp-cache**

---

### Syntax Definitions

N/A

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

This command clears all ARP filters configured on the switch. To remove an individual filter entry, use the **no** form of the [arp filter](#) command.

### Examples

```
-> clear arp filter
```

### Release History

Release 5.1; command introduced

### Related Commands

[arp filter](#) Configures an ARP filter to allow or block the processing of specified ARP Request packets.

[show arp filter](#) Displays a list of ARP filters configured for the switch.

### MIB Objects

alaIpClearArpFilter

---



## icmp type

Enables or disables a specific type of ICMP message, and sets the minimum packet gap. The minimum packet gap is the number of microseconds that must pass between ICMP messages of the same type.

**icmp type** *type* **code** *code* **{{enable | disable} | min-pkt-gap** *gap*

---

### Syntax Definitions

<i>type</i>	The ICMP packet type. This is conjunction with the ICMP code that determines the type of ICMP message being specified.
<i>code</i>	The ICMP code type. This is conjunction with the ICMP type that determines the type of ICMP message being specified.
<b>enable</b>	Enables the specified ICMP message.
<b>disable</b>	Disables the specified ICMP message.
<i>gap</i>	The number of microseconds required between ICMP messages of this type.

### Defaults

parameter	default
<b>enable   disable</b>	disabled
<i>gap</i>	0

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- This command allows the user to enable or disable all types of ICMP messages, and set the minimum packet gap between messages of the specified type.
- Enabling **Host unreachable** and **Network unreachable** messages are not recommended as it can cause the switch instability due to high-CPU conditions depending upon the volume of traffic required by these messages.
- While this command can be used to enable or disable all ICMP message, some of the more common ICMP messages have their own CLI commands, as described in the pages below. The following ICMP messages have specific commands to enable and disable:

ICMP Message	Command
Network unreachable (type 0, code 3)	<a href="#">icmp unreachable</a>
Host unreachable (type 3, code 1)	<a href="#">icmp unreachable</a>
Protocol unreachable (type 3, code 2)	<a href="#">icmp unreachable</a>
Port unreachable (type 3, code 3)	<a href="#">icmp unreachable</a>
Echo reply (type 0, code 0)	<a href="#">icmp echo</a>
Echo request (type 8, code 0)	<a href="#">icmp echo</a>
Timestamp request (type 13, code 0)	<a href="#">icmp timestamp</a>
Timestamp reply (type 14, code 0)	<a href="#">icmp timestamp</a>
Address Mask request (type 17, code 0)	<a href="#">icmp addr-mask</a>
Address Mask reply (type 18, code 0)	<a href="#">icmp addr-mask</a>

## Examples

```
-> icmp type 4 code 0 enabled
-> icmp type 4 code 0 min-pkt-gap 40
-> icmp type 4 code 0 disable
```

## Release History

Release 5.1; command introduced

## Related Commands

[icmp messages](#) Enables or disables all ICMP messages.

[show icmp control](#) Allows the viewing of the ICMP control settings.

## MIB Objects

```
alaIcmpCtrlTable
  alaIcmpCtrlType
alaIcmpCtrlTable
  alaIcmpCtrlCode
  alaIcmpCtrlStatus
  alaIcmpCtrlPktGap
```

## icmp unreachable

Enables or disables ICMP messages pertaining to unreachable destinations, and sets the minimum packet gap. The minimum packet gap is the number of microseconds that must pass between ICMP messages of the same type.

**icmp unreachable** [**net-unreachable** | **host-unreachable** | **protocol-unreachable** | **port-unreachable**]  
 {{enable | disable} | min-pkt-gap *gap*}

---

### Syntax Definitions

<b>net-unreachable</b>	Sets the unreachable network ICMP message.
<b>host-unreachable</b>	Sets the unreachable host ICMP message.
<b>protocol-unreachable</b>	Sets the unreachable protocol ICMP message.
<b>port-unreachable</b>	Sets the unreachable port ICMP message.
<b>enable</b>	Enables the specified ICMP message.
<b>disable</b>	Disables the specified ICMP message.
<i>gap</i>	The number of microseconds required between ICMP messages of this type.

### Defaults

parameter	default
<b>enable</b>   <b>disable</b>	enable
<i>gap</i>	0

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- This command enables ICMP messages relating to unreachable destinations. Unreachable networks, hosts, protocols, and ports can all be specified.
- Enabling **host-unreachable** and **net-unreachable** messages are not recommended as it can cause the switch instability due to high-CPU conditions depending upon the volume of traffic required by these messages.
- The unreachable ICMP messages can also be enabled, disabled, and modified using the [icmp type](#) command. See the [icmp type](#) command information on the type and code for the unreachable ICMP messages.

### Examples

```
-> icmp unreachable net-unreachable enable
-> icmp unreachable host-unreachable enable
-> icmp unreachable protocol-unreachable enable
-> icmp unreachable port-unreachable enable
```

```
-> icmp unreachable port-unreachable min-pkt-gap 50
```

## Release History

Release 5.1; command introduced

## Related Commands

[show icmp control](#) Allows the viewing of the ICMP control settings.

## MIB Objects

```
alaIcmpCtrlTable  
  alaIcmpCtrlType  
alaIcmpCtrlTable  
  alaIcmpCtrlCode  
  alaIcmpCtrlStatus  
  alaIcmpCtrlPktGap
```

---

## icmp echo

Enables or disables ICMP echo messages, and sets the minimum packet gap. The minimum packet gap is the number of microseconds that must pass between ICMP messages of the same type.

```
icmp echo [request | reply] {{enable | disable} | min-pkt-gap gap}
```

---

### Syntax Definitions

<b>request</b>	Specifies the echo request ICMP message.
<b>reply</b>	Specifies the echo reply ICMP message.
<b>enable</b>	Enables the specified ICMP message.
<b>disable</b>	Disables the specified ICMP message.
<i>gap</i>	The number of microseconds required between ICMP messages of this type.

### Defaults

---

parameter	default
<b>enable   disable</b>	<b>enable</b>
<i>gap</i>	0

---

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- This command sets the ICMP echo messages. An echo request is sent to a destination, and must be responded to with an echo reply message that contains the original echo request.
- Using this command without specifying a request or reply enables, disables, or sets the minimum packet gap for both types.
- The echo ICMP messages can also be enabled, disabled, and modified using the [icmp type](#) command. See the [icmp type](#) command information on the type and code for the echo ICMP messages.

### Examples

```
-> icmp echo reply enable
-> icmp echo enable
-> icmp echo request enable
-> icmp echo request min-pkt-gap 50
```

### Release History

Release 5.1; command introduced

## Related Commands

### **show icmp control**

Allows the viewing of the ICMP control settings.

## MIB Objects

```
alaIcmpCtrlTable
  alaIcmpCtrlType
alaIcmpCtrlTable
  alaIcmpCtrlCode
  alaIcmpCtrlStatus
  alaIcmpCtrlPktGap
```

---

## icmp timestamp

Enables or disables ICMP timestamp messages, and sets the minimum packet gap. The minimum packet gap is the number of microseconds that must pass between ICMP messages of the same type.

**icmp timestamp** [**request** | **reply**] {{**enable** | **disable**} | **min-pkt-gap** *gap*}

---

### Syntax Definitions

<b>request</b>	Specifies timestamp request messages.
<b>reply</b>	Specifies timestamp reply messages.
<b>enable</b>	Enables the specified ICMP message.
<b>disable</b>	Disables the specified ICMP message.
<i>gap</i>	The number of microseconds required between ICMP messages of this type.

### Defaults

parameter	default
<b>enable</b>   <b>disable</b>	<b>enable</b>
<i>gap</i>	0

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- The data received (a timestamp) in the message is returned in the reply together with an additional timestamp. The timestamp is 32 bits of milliseconds since midnight UT. The Originate timestamp is the time the sender last touched the message before sending it, the Receive timestamp is the time the echoer first touched it on receipt, and the Transmit timestamp is the time the echoer last touched the message on sending it.
- Using this command without specifying a request or reply enables, disables, or sets the minimum packet gap for both types.
- The timestamp ICMP messages can also be enabled, disabled, and modified using the [icmp type](#) command. See the [icmp type](#) command information on the type and code for the timestamp ICMP messages.

### Examples

```
-> icmp timestamp reply enable
-> icmp timestamp enable
-> icmp timestamp request enable
-> icmp timestamp request min-pkt-gap 50
```

## Release History

Release 5.1; command introduced

## Related Commands

### [show icmp control](#)

Allows the viewing of the ICMP control settings.

## MIB Objects

```
alaIcmpCtrlTable
  alaIcmpCtrlType
alaIcmpCtrlTable
  alaIcmpCtrlCode
  alaIcmpCtrlStatus
  alaIcmpCtrlPktGap
```

---



## icmp addr-mask

Enables or disables ICMP address mask messages, and sets the minimum packet gap. The minimum packet gap is the number of microseconds that must pass between ICMP messages of the same type.

**icmp add-mask** [**request** | **reply**] {{**enable** | **disable**} | **min-pkt-gap** *gap*}

---

### Syntax Definitions

<b>request</b>	Specifies request address mask messages.
<b>reply</b>	Specifies reply address mask messages.
<b>enable</b>	Enables the specified ICMP message.
<b>disable</b>	Disables the specified ICMP message.
<i>gap</i>	The number of microseconds required between ICMP messages of this type.

### Defaults

---

<b>parameter</b>	<b>default</b>
<b>enable</b>   <b>disable</b>	<b>enable</b>
<i>gap</i>	0

---

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- A gateway receiving an address mask request must return it with the address mask field set to the 32-bit mask of the bits identifying the subnet and network, for the subnet on which the request was received.
- Using this command without specifying a request or reply enables, disable, or set the minimum packet gap for both types.
- The address mask ICMP messages can also be enabled, disabled, and modified using the [icmp type](#) command. See the [icmp type](#) command information on the type and code for the address mask ICMP messages.

### Examples

```
-> icmp addr-mask reply enable
-> icmp addr-mask enable
-> icmp addr-mask request enable
-> icmp addr-mask request min-pkt-gap 50
```

### Release History

Release 5.1; command introduced

## Related Commands

### [show icmp control](#)

Allows the viewing of the ICMP control settings.

## MIB Objects

```
alaIcmpCtrlTable
  alaIcmpCtrlType
alaIcmpCtrlTable
  alaIcmpCtrlCode
  alaIcmpCtrlStatus
  alaIcmpCtrlPktGap
```

---

## icmp messages

Enables or disables all Internet Control Message Protocol (ICMP) messages.

`icmp messages {enable | disable}`

---

### Syntax Definitions

<code>enable</code>	Enables ICMP messages.
<code>disable</code>	Disables ICMP messages.

### Defaults

---

parameter	default
<code>enable   disable</code>	<code>enable</code>

---

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

N/A

### Examples

```
-> icmp messages enable
-> icmp messages disable
```

### Release History

Release 5.1; command introduced

### Related Commands

<a href="#">icmp type</a>	Enables or disables a specific type of ICMP message, and sets the minimum packet gap.
<a href="#">show icmp control</a>	Allows the viewing of the ICMP control settings.

### MIB Objects

```
alaIcmpCtrl
  alaIcmpAllMsgStatus
```

---

## ip dos scan close-port-penalty

Assigns a penalty value to be added to the Denial of Service penalty scan value when a TCP or UDP packet is received on a closed port.

**ip dos scan close-port-penalty** *penalty\_value*

---

### Syntax Definitions

*penalty\_value* A penalty value added to the penalty scan value. This value can be any non-negative integer.

### Defaults

parameter	default
<i>penalty_value</i>	10

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

This command creates a point value that is added to the total port scan penalty value when a TCP or UDP packet is received that is destined for a closed port.

### Examples

```
-> ip dos scan close-port-penalty 25
```

### Release History

Release 5.1; command introduced

### Related Commands

[ip dos scan threshold](#) Sets the threshold for the port scan value, at which a DoS attack is recorded.

[ip dos trap](#) Sets whether the switch generates SNMP DoS traps when an attack is detected.

### MIB Objects

alaDoSConfig  
alaDoSPortScanClosePortPenalty

---

## ip dos scan tcp open-port-penalty

Assigns a penalty value to be added to the Denial of Service penalty scan value when a TCP packet is received on an open port.

**ip dos scan tcp open-port-penalty** *penalty\_value*

---

### Syntax Definitions

*penalty\_value* A penalty value added to the penalty scan value. This value can be any non-negative integer.

### Defaults

parameter	default
<i>penalty_value</i>	0

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- This command creates a point value that is added to the total port scan penalty value when a TCP packet is received that is destined for an open port.
- The switch does not distinguish between a legal TCP packet and a port scan packet.

### Examples

```
-> ip dos scan tcp open-port-penalty 10
```

### Release History

Release 5.1; command introduced

### Related Commands

- [ip dos scan threshold](#) Sets the threshold for the port scan value, at which a DoS attack is recorded.
- [ip dos trap](#) Sets whether the switch generates SNMP DoS traps when an attack is detected.

### MIB Objects

alaDoSConfig  
alaDoSPortScanTcpOpenPortPenalty

---

## ip dos scan udp open-port-penalty

Assigns a penalty value to be added to the Denial of Service penalty scan value when a UDP packet is received on an open port.

**ip dos scan udp open-port-penalty** *penalty\_value*

---

### Syntax Definitions

*penalty\_value* A penalty value added to the penalty scan value. This value can be any non-negative integer.

### Defaults

parameter	default
<i>penalty_value</i>	0

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- This command creates a point value that is added to the total port scan penalty value when a UDP packet is received that is destined for an open port.
- The switch does not distinguish between a legal UDP packet and a port scan packet.

### Examples

```
-> ip dos scan udp open-port-penalty 15
```

### Release History

Release 5.1; command introduced

### Related Commands

[ip dos scan threshold](#) Sets the threshold for the port scan value, at which a DoS attack is recorded.

[ip dos trap](#) Sets whether the switch generates SNMP DoS traps when an attack is detected.

### MIB Objects

alaDoSConfig  
alaDoSPortScanUdpOpenPortPenalty

---

## ip dos scan threshold

Sets the threshold for the port scan value, at which a DoS attack is recorded.

**ip dos scan threshold** *threshold\_value*

---

### Syntax Definitions

*threshold\_value*

A numerical value representing the total acceptable penalty before a DoS attack is noted. This value can be any non-negative integer.

### Defaults

parameter	default
<i>threshold_value</i>	1000

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- If the total port scan penalty value exceeds this value, a port scan attack is recorded.
- The penalty value is incremented by recording TCP or UDP packets that are bound for open or closed ports. Such packets are given a penalty value, which are added. The commands for setting the packet penalty value are the [ip dos scan close-port-penalty](#), [ip dos scan tcp open-port-penalty](#), and [ip dos scan udp open-port-penalty](#) commands.

### Examples

```
-> ip dos scan threshold 1200
```

### Release History

Release 5.1; command introduced

## Related Commands

- ip dos scan close-port-penalty** Assigns a penalty value to be added to the Denial of Service penalty scan value when a TCP or UDP packet is received on a closed port.
- ip dos scan tcp open-port-penalty** Assigns a penalty value to be added to the Denial of Service penalty scan value when a TCP packet is received on an open port.
- ip dos scan udp open-port-penalty** Assigns a penalty value to be added to the Denial of Service penalty scan value when a UDP packet is received on an open port.
- show ip dos config** Displays the configuration parameters of the DoS scan for the switch.

## MIB Objects

alaDoSConfig  
    alaDoSPortScanThreshold

---



## ip dos trap

Sets whether or not the switch generates SNMP DoS traps when an attack is detected.

```
ip dos trap {enable | disable}
```

---

### Syntax Definitions

<b>enable</b>	Enables the generation of DoS traps.
<b>disable</b>	Disables the generation of DoS traps.

### Defaults

---

parameter	default
enable   disable	enable

---

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

This command controls whether the switch generates an SNMP trap when a DoS attack is detected. It is assumed a DoS attack has occurred when the port scan penalty threshold is exceeded. This value is set using the [ip dos scan threshold](#) command.

### Examples

```
-> ip dos trap enable
-> ip dos trap disable
```

### Release History

Release 5.1; command introduced

### Related Commands

<a href="#">ip dos scan threshold</a>	Sets the threshold for the port scan value, at which a DoS attack is recorded.
<a href="#">show ip dos config</a>	Displays the configuration parameters of the DoS scan for the switch.

### MIB Objects

```
alaDoSConfig
  alaDoSTrapCnt1
```

---

## ip dos scan decay

Sets the decay speed of the port scan penalty value for the switch when calculating DoS attacks.

**ip dos scan decay** *decay\_value*

---

### Syntax Definitions

*decay\_value*

The decay value amount for reducing the port scan penalty. This value can be any non-negative integer.

### Defaults

parameter	default
<i>decay_value</i>	2

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

The port scan penalty value is reduced every minute by dividing by the amount set in using this command. For example, if the decay value is set to 10, every minute the total port scan penalty value is divided by 10.

### Examples

```
-> ip dos scan decay 10
```

### Release History

Release 5.1; command introduced

### Related Commands

[ip dos scan threshold](#)

Sets the threshold for the port scan value, at which a DoS attack is recorded.

[show ip dos config](#)

Displays the configuration parameters of the DoS scan for the switch.

### MIB Objects

alaDoSConfig

alaDoSPortScanDecay

---

## ip dos type

Enables or disables detection for the specified type of DoS attack.

**ip dos type** {port-scan | ping-of-death | land | loopback-src | invalid-ip | invalid-multicast | unicast-ip-mcast-mac | ping-overload | arp-flood | arp-poison} admin-state {enable | disable}

---

### Syntax Definitions

<b>port-scan</b>	Detects port scans by monitoring TCP or UDP packets sent to open or closed ports.
<b>ping-of-death</b>	Detects the number of ICMP Ping-of-Death attacks (the switch receives ping packets that exceed the largest IP datagram size of 65535 bytes).
<b>land</b>	Detects the number of Land attacks (the switch receives spoofed packets with the SYN flag set on any open port that is listening).
<b>loopback-src</b>	Detects the number of loopback source attacks (the switch receives packets with 127.0.0.0/8 as the IP source address).
<b>invalid-ip</b>	Detects invalid IP packets (the switch receives packets with an invalid source or destination IP address).
<b>invalid-multicast</b>	Detects invalid Multicast packets (the switch receives packets with an invalid multicast address).
<b>unicast-ip-mcast-mac</b>	Detects a unicast IP and multicast MAC mismatch (the switch receives IP packets with multicast/broadcast source mac-address, non-matching destination IP and mac-address).
<b>ping-overload</b>	Detects a ping overload attack (the switch is flooded with a large number of ICMP packets).
<b>arp-flood</b>	Detects ARP flooding (the switch is flooded with a large number of ARP requests).
<b>arp-poison</b>	Detects ARP poisoning (the switch receives replies to an ARP request generated by the switch for a user-specified restricted address).
<b>enable</b>	Enables DoS attack detection.
<b>disable</b>	Disables DoS attack detection.

### Defaults

By default, detection is enabled for all the specified IP DoS attack types, except for ping overload.

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- When detection is enabled for ping overload, the attack is not detected until the number of ICMP packets received exceeds 100 packets-per-second.
- ARP flooding is rate limited to 500 packets-per-second on the switch. As a result, ARP flooding is not detected until the number of ARP requests exceeds 500 packets-per-second.

- When detection is enabled for unicast IP/multicast MAC mismatches (**unicast-ip-mcast-mac**), ping overload attacks (**ping-overload**), or ARP flooding attacks (**arp-flood**), packets are not dropped when the attack is detected.

## Examples

```
-> ip dos type ping-overload admin-state enable
-> ip dos type land admin-state disable
```

## Release History

Release 5.1; command introduced

## Related Commands

- |  |   |
|--|---|
| <a href="#">show ip dos config</a>     | Displays the DoS scan configuration for the switch. |
| <a href="#">show ip dos statistics</a> | Displays statistics for the detected DoS attacks.   |

## MIB Objects

```
alaDoSTable
  alaDoSType
  alaDoSStatus
```

---

## ip tcp half-open-timeout

Configures the timeout periods for dropping half-open TCP connections.

**ip tcp half-open-timeout** *timeout\_value*

---

### Syntax Definitions

*timeout\_value* The timeout value in seconds. Current supported values are 3, 7, 15, 31 and 63.

### Defaults

parameter	default
<i>timeout_value</i>	63 seconds

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

N/A

### Examples

```
-> ip tcp half-open-timeout 7
```

### Release History

Release 5.1; command introduced.

### Related Commands

**show ip tcp half-open-timeout** Displays the timeout value configured for half-open TCP sessions.

### MIB Objects

```
systemServices  
  systemServicesTcpHalfOpenTimeout
```

---

## show ip traffic

Displays IP datagram traffic and errors.

**show ip traffic**

---

### Syntax Definitions

N/A

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- The statistics show the cumulative totals since the last time the switch was powered on or since the last reset of the switch was executed.
- Packets received on a port that is a member of the UserPorts group are dropped if they contain a source IP network address that does not match the IP subnet for the port. This is done to block spoofed IP traffic. If the UserPorts group function is active and spoofed traffic was detected and blocked, the output display of this command includes statistics regarding the spoofed traffic.
- The presence of spoofing event statistics in the output display of this command indicates that an attack was prevented, not that the switch is currently under attack.
- If statistics for spoofed traffic are not displayed, then a spoofing attempt has not occurred since the last time this command was issued.

### Examples

```
-> show ip traffic
```

```
IP statistics
Datagrams received
  Total                = 621883,
  IP header error     = 0,
  Destination IP error = 51752,
  Unknown protocol    = 0,
  Local discards      = 0,
  Delivered to users  = 567330,
  Reassemble needed   = 0,
  Reassembled         = 0,
  Reassemble failed   = 0

Datagrams sent
  Fowarded             = 2801,
  Generated            = 578108,
  Local discards       = 0,
  No route discards    = 9,
```

```

Fragmented          =      2801,
Fragment failed     =          0,
Fragments generated =          0

```

---

**output definitions**


---

<b>Total</b>	Total number of input datagrams received including the datagrams received in the error.
<b>IP header error</b>	Number of IP datagrams discarded due to errors in the IP header (for example, bad checksums, version number mismatch, other format errors, time-to-live exceeded, errors discarded in processing IP options).
<b>Destination IP error</b>	Number of IP datagrams discarded because the IP header destination field contained an invalid address. This count includes invalid addresses (for example, 0.0.0.0) and addresses of unsupported classes (for example, Class E).
<b>Unknown protocol</b>	Number of locally-addressed datagrams received successfully but discarded because of an unknown or unsupported protocol.
<b>Local discards</b>	Number of IP datagrams received that were discarded, even though they had no errors to prevent transmission (for example, lack of buffer space). This does not include any datagrams discarded while awaiting reassembly. This value must be zero.
<b>Delivered to users</b>	Total number of datagrams received that were successfully delivered to IP user protocols (including ICMP).
<b>Reassemble needed</b>	Number of IP fragments received that needed to be reassembled.
<b>Reassembled</b>	Number of IP datagrams received that were successfully reassembled.
<b>Reassemble failed</b>	Number of IP failures detected by the IP reassembly algorithm for all reasons (for example, timed out, error). This is not necessarily a count of discarded IP fragments since some algorithms (notably the algorithm in RFC 815) can lose track of the number of fragments by combining them as they are received.
<b>Fragmented</b>	Number of successfully fragmented IP datagrams.
<b>Fragment failed</b>	Number of packets received and discarded by IP that were not fragmented. This situation can happen if a large packet has the “Don’t Fragment” flag set.
<b>Forwarded</b>	Number of IP datagrams forwarded by the switch.
<b>Generated</b>	Total number of IP datagrams that local IP user protocols (including ICMP) generated in response to requests for transmission. This does not include any datagrams counted as “Forwarded.”
<b>Local discards</b>	Number of output IP datagrams that were discarded, even though they had no errors to prevent transmission (for example, lack of buffer space). This number includes datagrams counted as “Forwarded” if the packets are discarded for these reasons.
<b>No route discards</b>	Number of IP datagrams received and discarded by IP because no route could be found to transmit them to their destination. This includes any packets counted as “Forwarded” if the packets are discarded for these reasons. It also includes any datagrams that a host cannot route because all of its default routers are down.

*output definitions (continued)*

---

<b>Fragments generated</b>	The of IP datagram fragments generated as a result of fragmentation.
<b>Routing entry discards</b>	Number of packets received and discarded by IP even though no problems were encountered to prevent their transmission to their destination (for example, discarded because of lack of buffer space).

---

**Release History**

Release 5.1; command introduced

**Related Commands**

[show icmp statistics](#) Displays ICMP statistics and errors.

**MIB Objects**

N/A

---



## show ip interface

Displays the configuration and status of IP interfaces.

**show ip interface** [*if\_name* | **vlan** *vlan\_id* | **dhcp-client**]

---

### Syntax Definitions

<i>if_name</i>	The name associated with the IP interface.
<i>vlan_id</i>	VLAN ID (displays a list of IP interfaces associated with a VLAN).
<b>dhcp-client</b>	Displays the configuration and status of a DHCP Client interface.

### Defaults

By default, all IP interfaces are displayed.

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- Use the optional **vlan** parameter to display a list of interfaces configured for the specified VLAN.
- Use the optional *if\_name* parameter to display detailed information about an individual interface.
- Use the optional **dhcp-client** parameter to display detailed information about an interface that has been configured to obtain an IP address from a DHCP server.
- In a virtual chassis environment this command does not accurately reflect the status of the EMP IP interface on other chassis when entered on a Slave chassis.

### Examples

```
-> show ip interface
Total 13 interfaces
Flags (D=Directly-bound)
```

Name	IP Address	Subnet Mask	Status	Forward Device	Flags
EMP	172.22.16.115	255.255.255.0	UP	NO EMP	
UNP-RULE	40.1.1.1	255.255.255.0	DOWN	NO vlan 40	
Loopback	127.0.0.1	255.0.0.0	UP	NO Loopback	
if222	30.1.5.1	255.0.0.0	UP	YES vlan 222	
ldap_client1	173.22.16.115	255.255.255.0	UP	YES vlan 173	
ldap_server1	174.22.16.115	255.255.255.0	UP	YES vlan 174	
radius_client3	110.1.1.101	255.255.255.0	UP	YES vlan 30	
vlan-2	0.0.0.0	0.0.0.0	DOWN	NO unbound	
rp-vlan850	37.2.2.1	255.0.0.0	DOWN	NO vlan 850	D
vlan-23	23.23.23.1	255.255.255.0	UP	YES vlan 23	

*output definitions*


---

<b>Name</b>	Interface name. This is the name configured for the interface (for example, Accounting). <b>EMP-CMMA-CHAS1</b> refers to the Ethernet Management Port. <b>Loopback</b> refers to a built-in loopback interface that provides a local host address for the switch.
<b>IP Address</b>	IP address of the interface. Configured through the <b>ip interface</b> command.
<b>Subnet Mask</b>	IP subnet mask for the interface IP address. Configured through the <b>ip interface</b> command.
<b>Status</b>	Interface status: <ul style="list-style-type: none"> <li>• <b>UP</b>—Interface is ready to pass packets.</li> <li>• <b>DOWN</b>—Interface is down.</li> </ul>
<b>Forward</b>	Indicates whether the interface is actively forwarding packets ( <b>YES</b> or <b>NO</b> ).
<b>Device</b>	The type of device bound to the interface: <ul style="list-style-type: none"> <li>• <b>unbound</b>—No device is bound to the interface.</li> <li>• <b>vlan</b>—The VLAN ID that is bound to the interface.</li> <li>• <b>EMP</b>—The Ethernet Management Port is bound to the interface.</li> <li>• <b>Loopback</b>—A loopback interface is configured for testing.</li> </ul> Configured through the <b>ip interface</b> command.
<b>Flags</b>	Indicates if a switch port or link aggregate is directly bound to the interface ( <b>D</b> =Directly-bound). This flag displays for IP routed-port interfaces.

---

```
-> show ip interface vlan-23
```

```
Interface Name = vlan-23
```

```
SNMP Interface Index      = 13600007,
IP Address                 = 23.23.23.1,
Subnet Mask                = 255.0.0.0,
Broadcast Address         = 23.255.255.255,
Device                    = vlan 23,
Encapsulation             = eth2,
Forwarding                = enabled,
Administrative State      = enabled,
Operational State        = up,
Maximum Transfer Unit     = 1500,
ARP Count                 = 1,
Router MAC                = 2c:fa:a2:13:e4:02,
Local Proxy ARP           = disabled,
Primary (config/actual)  = no/yes
```

```
-> show ip interface L3VPN
```

```
Interface Name = L3VPN
```

```
SNMP Interface Index      = 13600003,
IP Address                 = 47.1.1.1,
Subnet Mask                = 255.255.255.0,
Broadcast Address         = 47.1.1.255,
Device                    = Service 1,
Forwarding                = enabled,
Administrative State      = enabled,
Operational State        = up,
Maximum Transfer Unit     = 1500,
Router MAC                = e8:e7:32:1d:4c:88
```

```
-> show ip interface rp-vlan850
```

```

Interface Name = rp-vlan850
  SNMP Interface Index      = 13600004,
  IP Address                = 37.2.2.1,
  Subnet Mask               = 255.0.0.0,
  Broadcast Address         = 37.255.255.255,
  Device                    = vlan 850,
  Encapsulation             = eth2,
  Forwarding                 = disabled,
  Administrative State      = enabled,
  Operational State         = down,
  Operational State Reason  = device-down,
  Maximum Transfer Unit     = 1500,
  ARP Count                 = 0,
  Router MAC                = 00:e0:b1:e7:09:a3,
  Local Proxy ARP           = disabled,
  Primary (config/actual)   = no/no
  Directly bound port       = 1/1/2, tagged

```

```
-> show ip interface dhcp-client
```

```

Interface Name = dhcp-client
  SNMP Interface Index      = 13600010,
  IP Address                = 0.0.0.0,
  Subnet Mask               = 0.0.0.0,
  Broadcast Address         = 0.0.0.0,
  Device                    = vlan 1,
  Encapsulation             = eth2,
  Forwarding                 = disabled,
  Administrative State      = enabled,
  Operational State         = down,
  Operational State Reason  = unbound,
  Maximum Transfer Unit     = 1500,
  ARP Count                 = 0,
  Router MAC                = 2c:fa:a2:7a:a7:db,
  Local Proxy ARP           = disabled,
  Primary (config/actual)   = yes/yes
  Vsi Accept Filter         = ,

```

#### DHCP-CLIENT Parameter Details

```

  Dhcp Prefer Server       = FALSE,
  Client Status            = Discovery,
  Server IP                = N.A.,
  Router Address           = N.A.,
  Lease Time Remaining     = N.A.,
  Option-60                = OmniSwitch-2260,
  HostName                 = OS2260,

```

#### *output definitions*

---

<b>SNMP Interface Index</b>	Interface index.
<b>IP Address</b>	IP address associated with the interface. Configured through the <b>ip interface</b> command.
<b>Subnet Mask</b>	IP subnet mask for the interface. Configured through the <b>ip interface</b> command.
<b>Broadcast Address</b>	Broadcast address for the interface.

*output definitions (continued)*

<b>Device</b>	The type of device bound to the interface: <ul style="list-style-type: none"> <li>• <b>unbound</b>—No device is bound to the interface.</li> <li>• <b>vlan</b>—The VLAN ID that is bound to the interface.</li> <li>• <b>EMP</b>—The Ethernet Management Port is bound to the interface.</li> <li>• <b>Loopback</b>—A loopback interface is configured for testing.</li> </ul> Configured through the <b>ip interface</b> command.
<b>Encapsulation</b>	Displays the IP router encapsulation ( <b>eth2</b> or <b>snap</b> ) that the interface uses when routing packets. Configured through the <b>ip interface</b> command.
<b>Forwarding</b>	Indicates whether IP forwarding is active for the interface ( <b>enabled</b> or <b>disabled</b> ). Configured through the <b>ip interface</b> command.
<b>Administrative State</b>	Administrative state of the IP interface ( <b>enabled</b> or <b>disabled</b> ), which is independent of the state of the underlying device. Configured through the <b>ip interface</b> command.
<b>Operational State</b>	Indicates whether the interface is active ( <b>up</b> or <b>down</b> ).
<b>Operation State Reason</b>	Indicates why the operational state of the interface is down: <ul style="list-style-type: none"> <li>• <b>unbound</b>—No device is bound to the interface.</li> <li>• <b>device-down</b>—Device bound to the interface is down.</li> <li>• <b>admin-down</b>—The admin state of the interface is down.</li> <li>• <b>no-such-device</b>—Device does not exist.</li> <li>• <b>no-router-mac</b>—No MAC address available for the interface.</li> </ul> <b>Operational State Reason</b> field is only included in the display output when the operational state of the interface is <b>down</b> .
<b>Maximum Transfer Unit</b>	The Maximum Transmission Unit size set for the interface. Configured through the <b>vlan mtu-ip</b> command.
<b>Router MAC</b>	Switch MAC address assigned to the interface. Each interface assigned to the same VLAN shares the same switch MAC address.
<b>Local Proxy ARP</b>	Indicates whether Local Proxy ARP is active for the interface ( <b>enabled</b> or <b>disabled</b> ). Configured through the <b>ip interface</b> command.
<b>Primary (config/actual)</b>	Indicates if the interface is the configured and/or actual primary interface for the device (VLAN, EMP, Loopback). If the actual status is set to <b>yes</b> and the config status is set to <b>no</b> , the interface is the default interface for the VLAN. Configured through the <b>ip interface</b> command.
<b>Directly bound port</b>	Displays the physical port or link aggregate that is directly bound to the interface. Configured through the <b>ip interface rtr-port</b> command. This field displays only when the interface is configured as an IP routed port interface.
<b>ARP Count</b>	Displays the number of ARP entries in the NI.
<b>DHCP-Client Parameter Details</b>	(The following parameters are only applicable to the 'dhcp-client' interface. Configured through the <b>ip interface dhcp-client</b> command.)
<b>Dhcp Prefer Server</b>	Indicates if the DHCP server preference option is enabled or disabled.
<b>Client Status</b>	DHCP Client Status ( <b>In-active, Active</b> )
<b>Server IP</b>	The IP address of the DHCP server.
<b>Router Address</b>	The IP address of the DHCP router.
<b>Lease Time Remaining</b>	The lease time remaining for the DHCP client IP address.

*output definitions (continued)*

---

<b>Option-60</b>	The option-60 string that will be included in DHCP discover or request packets.
<b>HostName</b>	The system name of the OmniSwitch.

---

**Release History**

Release 5.1; command introduced

**Related Commands**

<a href="#">ip interface</a>	Configures an IP interface to enable IP routing on a VLAN. Without an IP interface, traffic is bridged within the VLAN or across connections to the same VLAN on other switches.
<a href="#">show ip emp-interfaces</a>	Displays the configuration and status of the Ethernet Management Port (EMP) interface.
<a href="#">show icmp statistics</a>	Displays ICMP statistics and errors.

**MIB Objects**

```
alaIpInterfaceTable  
  alaIpInterfaceName  
  alaIpInterfaceAddress  
  alaIpInterfaceMask  
  alaIpInterfaceAdminState  
  alaIpInterfaceDeviceType  
  alaIpInterfaceVlanID  
  alaIpInterfaceIpForward  
  alaIpInterfaceEncap  
  alaIpInterfaceLocalProxyArp  
  alaIpInterfacePrimCfg  
  alaIpInterfaceOperState  
  alaIpInterfaceOperReason  
  alaIpInterfaceRouterMac  
  alaIpInterfaceBcastAddr  
  alaIpInterfacePrimAct  
  alaIpInterfaceMtu  
  alaIpInterfaceArpCount  
  alaIpInterfacePortIfindex  
  alaIpInterfaceTag
```

---

## show ip emp-interfaces

Displays the configuration and status of the Ethernet Management Port (EMP) interface.

**show ip emp-interfaces**

---

### Syntax Definitions

N/A

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

Use the [show ip emp-routes](#) to display IP routes associated with the EMP interface.

### Examples

```
-> show ip emp-interfaces
Total 1 interfaces
Flags (D=Directly-bound)
```

Name	IP Address	Subnet Mask	Status	Forward	Device	Flags
EMP-CMMA-CHAS1	3.3.3.25	255.0.0.0	DOWN		NO EMP	

---

<b>Name</b>	Interface name. <b>EMP-CMMA-CHAS1</b> refers to the Ethernet Management Port.
<b>IP Address</b>	IP address of the interface. Configured through the <a href="#">ip interface</a> command.
<b>Subnet Mask</b>	IP subnet mask for the interface IP address. Configured through the <a href="#">ip interface</a> command.
<b>Status</b>	Interface status: <ul style="list-style-type: none"> <li><b>UP</b>—Interface is ready to pass packets.</li> <li><b>DOWN</b>—Interface is down.</li> </ul>
<b>Forward</b>	Indicates whether the interface is actively forwarding packets ( <b>YES</b> or <b>NO</b> ).
<b>Device</b>	<b>EMP</b> —The Ethernet Management Port is bound to the interface.
<b>Flags</b>	N/A for EMP interfaces.

---

### Release History

Release 5.1; command introduced.

**Related Commands**[show ip interface](#)

Displays the status and configuration of IP interfaces.

**MIB Objects**N/A

---



## show ip routes

Displays the IP Forwarding table. show ip routes [summary]

---

### Syntax Definitions

**summary** Displays a summary of routing protocols that appear in the IP Forwarding table.

### Defaults

By default, all routes are displayed.

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- The IP Forwarding table includes static routes as well as all routes learned through routing protocols (for example, RIP, OSPF).
- Use the optional **summary** keyword to display a list of routing protocols and the number of routes for each protocol that appear in the IP Forwarding table.
- The imported routes are also displayed under the protocol field as **IMPORT** in the show output.

### Examples

```
-> show ip routes
```

```
+ = Equal cost multipath routes
Total 4 routes
```

Dest Address	Gateway Addr	Age	Protocol
0.0.0.0/0	10.255.11.254	01:50:33	STATIC
10.255.11.0/24	10.255.11.225	01:50:33	LOCAL
127.0.0.1/32	127.0.0.1	01:51:47	LOCAL
212.109.138.0/24	212.109.138.138	00:33:07	LOCAL
12.0.0.0/8	12.0.0.1	00:20:00	IMPORT
55.0.0.0/8	0.0.0.0	00:00:17	STATIC

```
-> show ip route summary
```

Protocol	Route Count
Local	3
Static	2
RIP	0
ISIS	0
OSPF	0
BGP	0
Import	1

```

Other                0
TOTAL =              6

```

### output definitions

---

<b>Dest Addr</b>	Destination IP address/mask length.
<b>Gateway Addr</b>	IP address of the gateway from which this address was learned. Gateway address '0.0.0.0' indicates an IPv4 blackhole route.
<b>Age</b>	Age of the entry. If the entry is less than a day old, it is displayed in <i>hh/mm/ss</i> format. If it is more than a day old, it is displayed in <i>dd/hh</i> format (for example, a route that is 2 days and 12 hours old is displayed as 2d12h).
<b>Protocol</b>	Protocol by which this IP address was learned (for example, RIP). LOCAL indicates a local interface.
<b>Route Count</b>	The number of routes that appear in the IP Forwarding table for each protocol type listed.

---

### Release History

Release 5.1; command introduced.

### Related Commands

<a href="#">ping</a>	Used to test whether an IP destination can be reached from the local switch.
<a href="#">traceroute</a>	Used to find the path taken by an IP packet from the local switch to a specified destination.
<a href="#">show ip router database</a>	Displays a list of all routes (static and dynamic) that exist in the IP router database.

### MIB Objects

```

ipCidrRouteTable
  ipCidrRouteDest
  ipCidrRouteMask
  ipCidrRouteTos
  ipCidrRouteNextHop
  ipCidrRouteIfIndex
  ipCidrRouteType
  ipCidrRouteProto
  ipCidrRouteAge
  ipCidrRouteInfo
  ipCidrRouteNextHopAS
  ipCidrRouteMetric1
  ipCidrRouteMetric2
  ipCidrRouteMetric3
  ipCidrRouteMetric4
  ipCidrRouteMetric5
  ipCidrRouteStatus

```

---

## show ip route-pref

Displays the IPv4 routing preferences of a router.

**show ip route-pref**

---

### Syntax Definitions

N/A

### Defaults

N/A

### Platforms Supported

OmniSwitch 2360

### Usage Guidelines

N/A

### Examples

```
-> show ip route-pref
  Protocol      Route Preference Value
-----+-----
  Local         1
  Static        2
```

### Release History

Release 5.1; command introduced.

### Related Commands

[ip route-pref](#) Configures the route preference of a router.

### MIB Objects

```
alaIprmRtPrefTable
  alaIprmRtPrefEntryType
  alaIprmRtPrefEntryValue
```

---

## show ip router database

Displays a list of all routes (static and dynamic) that exist in the IP router database. This database serves as a central repository where routes are first processed and where duplicate routes are compared to determine the best route for the Forwarding Routing Database. If a route does not appear in the IP router database list, then the switch does not know about it. In the case of dynamically learned routes, this could indicate that the route was never received by the switch.

```
show ip router database [protocol type | gateway ip_address | dest {ip_address/prefixlen | ip_address}]
```

---

### Syntax Definitions

<i>type</i>	Routing protocol type (local, static, OSPF, RIP, or BGP).
<i>ip_address</i>	Destination IP address.
<i>ip_address/prefixlen</i>	The destination IP address along with the prefix length of the routes processed for redistribution.

### Defaults

By default, all routes are displayed.

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- Command options are not mutually exclusive. You can use them on the same command line to narrow and/or customize the output display of this command. For example, use the **protocol** and **dest** options to display only those routes that are of a specific protocol type and have the specified destination network.
- The IP forwarding table is derived from IP router database processing performed by the switch and contains only unique routes that the switch currently uses. Use the **show ip route** command to view the forwarding table.
- If an expected route does not appear in the IP forwarding table, use the **show ip router database** command to see if the switch knows about the route and/or if a duplicate route with a higher precedence was selected instead.
- The switch compares the protocol of duplicate routes to determine which one to use. Regardless of whether a route has a higher priority metric value, protocol determines precedence. Local routes are given the highest level of precedence followed by static, OSFP, RIP, then BGP routes. As a result, a route that is known to the switch does not appear in the IP forwarding table if a duplicate route with a higher protocol precedence exists.
- A list of inactive static routes is also included in the **show ip router database** output display. A route becomes inactive if the interface for its gateway goes down. Inactive routes are unable to get to their destination and further investigation is warranted to determine why their gateway is unavailable.
- Static routes that appear as inactive are not included in the main IP router database listing. If an inactive route becomes active, however, it is removed from the inactive list and added to the active route list.

- The imported routes are also displayed under the protocol field as IMPORT in the show output.

## Examples

```
-> show ip router database
```

```
Legend: + indicates routes in-use
```

```
      b indicates BFD-enabled static route
```

```
      r indicates recursive static route, with following address in brackets
```

```
      i indicates static interface route
```

Destination	Gateway	Interface	Protocol	Metric	Tag	Misc-Info
+ 20.0.0.0/8	20.0.0.1	ip20	LOCAL	1	0	
+b 22.0.0.0/8	20.0.0.22	ip20	STATIC	4	0	
22.0.0.0/8	20.0.0.9	ip20	RIP	22	0	(backup)
+r 33.0.0.0/8	20.0.0.9	ip20	STATIC	33	0	[22.0.0.33]
+i 44.0.0.0/8	20.0.0.1	ip20	STATIC	5	0	
+ 127.0.0.1/32	127.0.0.1	Loopback	LOCAL	1	0	
+ 172.28.4.0/32	172.28.4.1	EMP	LOCAL	1	0	
+ 55.0.0.0/8	0.0.0.0	Loopback	STATIC	1	0	

```
Inactive Static Routes
```

Destination	Gateway	Metric	Tag	Misc-Info
1.0.0.0/8	8.4.5.3	1	0	

```
-> show ip router database dest 10.212.62.0/24 protocol ospf
```

Destination	Gateway	Interface	Protocol	Metric	Tag	Misc-Info
10.212.62.0/24	10.212.60.27	I1	OSPF	2	0	
10.212.62.0/24	10.212.61.27	I2	OSPF	2	0	

### output definitions

<b>Destination</b>	Destination IP address. Also includes the mask prefix length notation after the address to indicate the subnet mask value. For example, /24 indicates the destination IP address has a 24-bit mask (255.255.255.0).
<b>Gateway</b>	IP address of the gateway from which this route was learned. Gateway address '0.0.0.0' indicates an IPv4 blackhole route.
<b>Interface</b>	The interface associated with the gateway.
<b>Protocol</b>	Protocol by which this IP address was learned: LOCAL, STATIC, OSPF, RIP, BGP).
<b>Metric</b>	RIP metric or cost (hop count) for the route. Indicates a priority for the route. The lower the metric value, the higher the priority.
<b>Tag</b>	The tag associated with the route.
<b>Misc-Info</b>	Any additional information about the route.

## Release History

Release 5.1; command introduced.

## Related Commands

[show ip routes](#)

Displays the IP Forwarding table.

## MIB Objects

```
alaIprmRouteTable
  alaIprmRouteDest
  alaIprmRouteMask
  alaIprmRouteTos
  alaIprmRouteNextHop
  alaIprmRouteProto
  alaIprmRouteMetric
  alaIprmRoutePriority
```

---

## show ip emp-routes

Displays the IP routes associated with the Ethernet Management Port (EMP).

**show ip emp-routes**

---

### Syntax Definitions

N/A

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- This command displays the routes that are connected to the Ethernet Management Port (EMP).
- The EMP cannot handle routing protocols such as RIP or OSPF.
- The default route for the switch cannot be set up on the EMP.
- There is no dedicated routing table for the EMP interface. All management interfaces use the same routing table with EMP and non-EMP routes.

### Examples

```
-> show ip emp-routes
```

Dest Address	Subnet Mask	Gateway Addr	Age	Protocol
127.0.0.1	255.255.255.255	127.0.0.1	2d 4h	LOCAL
172.17.1.10	255.255.255.255	10.255.11.225	1d 5h	LOCAL

#### *output definitions*

<b>Dest Addr</b>	Destination IP address.
<b>Subnet Mask</b>	Destination IP address IP subnet mask.
<b>Gateway Addr</b>	IP address of the gateway from which this address was learned.
<b>Age</b>	Age of the entry. If the entry is less than a day old, it is displayed in <i>hh/mm/ss</i> format. If it is more than a day old, it is displayed in <i>dd/hh</i> format (for example, a route that is 2 days and 12 hours old is displayed as 2d12h).
<b>Protocol</b>	Protocol by which this IP address was learned (for example, RIP). NETMGT indicates a static route. LOCAL indicates a local interface.

### Release History

Release 5.1; command introduced

**Related Commands****ping**

Tests whether an IP destination can be reached from the local switch.

**traceroute**

Finds the path taken by an IP packet from the local switch to a specified destination.

**MIB Objects**

N/A

---



## show ip config

Displays IP configuration parameters.

**show ip config**

---

### Syntax Definitions

N/A

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

N/A

### Examples

```
-> show ip config
IP directed-broadcast = OFF,
IP default TTL       = 64
```

#### *output definitions*

---

<b>IP directed-broadcast</b>	Indicates whether the IP directed-broadcast feature is on or off.
<b>IP default TTL</b>	IP default TTL interval.

---

### Release History

Release 5.1; command introduced

### Related Commands

- ip directed-broadcast** Enables or disables IP directed broadcasts routed through the switch.
- ip default-ttl** Sets TTL value for IP packets.

### MIB Objects

N/A

---

## show ip protocols

Displays switch routing protocol information and status.

**show ip protocols**

---

### Syntax Definitions

N/A

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

N/A

### Examples

```
-> show ip protocols
IP Protocols
RIP status                = Not Loaded,
OSPF status               = Loaded,
ISIS status               = Not Loaded,
BGP status                 = Loaded,
PIM status                 = Loaded,
DVMRP status              = Not Loaded,
RIPng status              = Not Loaded,
OSPF3 status              = Loaded,
```

#### *output definitions*

---

<b>RIP status</b>	Whether RIP is loaded or not.
<b>OSPF status</b>	Whether OSPF is loaded or not.
<b>BGP status</b>	Whether BGP is loaded or not.
<b>DVMRP status</b>	Whether DVMRP is loaded or not.
<b>PIMSM status</b>	Whether PIMSM is loaded or not.
<b>RIPng status</b>	Whether RIP is loaded or not.
<b>OSPF3 status</b>	Whether OSPFv3 is loaded or not.

---

### Release History

Release 5.1; command introduced

**Related Commands****ip interface dhcp-client**

Configures the router primary IP address.

**MIB Objects**

alaIpRouteSumTable

    alaIpRouteProtocol

---

## show ip service

Displays the status of TCP/UDP service ports.

**show ip service**

---

### Syntax Definitions

N/A

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

The display output from this command also includes the service port number.

### Examples

```
-> show ip service
```

Name	Port	Status
ftp	21	enabled
ssh	22	disabled
telnet	23	disabled
udp-relay	67	disabled
http	80	disabled
network-time	123	disabled
snmp	161	disabled
avlan-telnet	259	disabled
avlan-http	260	disabled
avlan-secure-http	261	disabled
secure_http	443	enabled
proprietary	1024	disabled
proprietary	1025	disabled

#### *output definitions*

---

<b>Name</b>	Name of the TCP/UDP service.
<b>Port</b>	The TCP/UDP well-known port number associated with the service.
<b>Status</b>	The status of the well-known service port: <b>enabled</b> (port is closed) or <b>disabled</b> (port is open).

---

### Release History

Release 5.1; command introduced

## Related Commands

### [ip service](#)

Enables (opens) or disables (closes) well-known TCP/UDP service ports.

## MIB Objects

```
alaIpServiceTable
  alaIpServiceType
  alaIpServicePort
  alaIpServiceStatus
alaIpPortServiceTable
  alaIpPortServicePort
  alaIpPortServiceStatus
```

---

## show ip service source-ip

Displays the source IP interfaces configured for the applications.

**show ip service source-ip**

---

### Syntax Definitions

N/A

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

N/A

### Examples

-> show ip service source-ip  
Legend: "-"denotes no explicit configuration.

Application	Interface-name
-----+-----	
dns	-
ftp	ipVlan100
ldap	Loopback0
ntp	Loopback0
radius	Loopback0
snmp	Loopback0
ssh	ipVlan100
swlog	-
tacacs	-
telnet	-
tftp	ipVlan100

#### *output definitions*

---

<b>Application</b>	Name of the TCP/UDP service.
<b>Interface-name</b>	The source IP configured for the application.

---

### Release History

Release 5.1; command introduced

## Related Commands

### **ip service source-ip**

Configures a user-defined source IP address as the outgoing IP interface for the IP service.

## MIB Objects

```
alaIpServiceSourceIPTable  
  alaIPServiceSourceIpAppIndex  
  alaIPServiceSourceIpName  
  alaIpServiceSourceIpRowStatus
```

---

## show ip dos arp-poison

Displays the number of attacks detected for configured ARP poison restricted-addresses.

**show ip dos arp-poison**

---

### Syntax Definitions

N/A

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

N/A

### Examples

```
-> show ip dos arp-poison
  IP Address                Attacks
-----+-----
192.165.1                   0
192.168.1.2                 0
192.168.1.3                 0
```

#### *output definitions*

---

<b>IP Address</b>	The configured ARP Poison restricted-addresses.
<b>Attacks detected</b>	The number of ARP Poison attacks detected for each address.

---

### Release History

Release 5.1; command introduced

### Related Commands

[ip dos arp-poison restricted-address](#) Adds or deletes an ARP Poison restricted address.

### MIB Objects

```
alaDoSArpPoisonTable
  alaDoSArpPoisonIpAddr
  alaDoSArpPoisonDetected
```

---



## show arp

Displays the ARP table. The ARP table contains a listing of IP addresses and their corresponding translations to physical MAC addresses.

**show arp** [*ip\_address* | *mac\_address*]

---

### Syntax Definitions

*ip\_address* IP address of the entry you want to view.  
*mac\_address* MAC address of the entry you want to view.

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

Use the basic command (**show arp**) to view all of the entries in the table. Enter a specific IP address or MAC address to view a specific entry.

### Examples

```
-> show arp
Total 8 arp entries
Flags (P=Proxy, A=Authentication, V=VRRP, R=Remote, B=BFD, H=HAVLAN, I=Interface)
```

IP Addr	Hardware Addr	Type	Flags	Port	Interface
10.255.11.59	00:50:04:b2:c9:ee	DYNAMIC			3/20 vlan 1
10.255.11.48	00:50:04:b2:ca:11	DYNAMIC			3/20 vlan 1
10.255.11.201	00:10:83:03:e7:e4	DYNAMIC			3/20 vlan 1
10.255.11.14	00:10:5a:04:19:a7	DYNAMIC			3/20 vlan 1
10.255.11.64	00:b0:d0:62:fa:f1	DYNAMIC			3/20 vlan 1
10.255.11.25	00:b0:d0:42:80:24	DYNAMIC			3/20 vlan 1
10.255.11.26	00:b0:d0:42:82:59	DYNAMIC			3/20 vlan 1
20.0.0.22	e4:c2:33:00:21:12	STATIC	I		1/20 ip20
10.255.11.254	00:20:da:db:00:47	DYNAMIC			3/20 vlan 1
11.1.1.2	e2:e7:32:1e:4b:f8	DYNAMIC		sap:2/1:200	L3VPN-2000
11.1.1.3	e2:e7:32:1e:3b:f1	DYNAMIC		sdp:32768:200	L3VPN-2000

### output definitions

---

<b>IP Address</b>	Device IP address.
<b>Hardware Addr</b>	MAC address of the device that corresponds to the IP address.
<b>Type</b>	Indicates whether the ARP cache entries are dynamic or static.

**output definitions (continued)**


---

<b>Flags</b>	Indicates the type of entry: <ul style="list-style-type: none"> <li>• P = Proxy</li> <li>• A = Authentication (AVLAN)</li> <li>• V = VRRP</li> <li>• R = Remote</li> <li>• B = BFD</li> <li>• H = HAVLAN</li> <li>• I = Interface</li> </ul>
<b>Port</b>	The port on the switch attached to the device identified by the IP address.
<b>Interface</b>	The interface to which the entry belongs (for example, VLAN, EMP).

---

**Release History**

Release 5.1; command introduced

**Related Commands**

**arp** Adds a permanent entry to the ARP table.

**MIB Objects**

```

ipNetToMediaTable
  ipNetToMediaIfIndex
  ipNetToMediaNetAddress
  ipNetToMediaPhyAddress
  ipNetToMediaType
ipNetToMediaAugTable
  ipNetToMediaSlot
  ipNetToMediaPort
alaIpNetToMediaTable
  alaIpNetToMediaPhyAddress
  alaIpNetToMediaProxy
  alaIpNetToMediaVRRP
  alaIpNetToMediaAuth

```

---

## show arp filter

Displays a list of ARP filters configured for the switch.

**show arp filter** [*ip\_address*]

---

### Syntax Definitions

*ip\_address* IP address of the filter entry you want to view.

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- If an IP address is not specified with this command, a list of all ARP filters is displayed.
- Enter a specific IP address to view the configuration for an individual filter.

### Examples

```
-> show arp filter
  IP Addr      IP Mask          Vlan  Type      Mode
-----+-----+-----+-----+-----
171.11.1.1    255.255.255.255    0    target    block
172.0.0.0     255.0.0.0          0    target    block
198.0.0.0     255.0.0.0          0    sender    block
198.172.16.1  255.255.255.255   200   target    allow
```

```
-> show arp filter 198.172.16.1
  IP Addr      IP Mask          Vlan  Type      Mode
-----+-----+-----+-----+-----
198.0.0.0     255.0.0.0          0    sender    block
198.172.16.1  255.255.255.255   200   target    allow
```

### output definitions

---

<b>IP Addr</b>	The ARP packet IP address to which the filter is applied.
<b>IP Mask</b>	The IP mask that specifies which part of the IP address to which the filter is applied.
<b>Vlan</b>	A VLAN ID. The filter is applied only to ARP packets received on ports associated with this VLAN.
<b>Type</b>	Indicates which IP address in the ARP packet ( <b>sender</b> or <b>target</b> ) is used to identify if a filter exists for that address.
<b>Mode</b>	Indicates whether to <b>block</b> or <b>allow</b> a switch response to an ARP packet that matches the filter.

---

## Release History

Release 5.1; command introduced

## Related Commands

[arp filter](#)

Adds a permanent entry to the ARP table.

[clear arp filter](#)

Deletes all dynamic entries from the ARP table.

## MIB Objects

```
alaIpArpFilterTable
  alaIpArpFilterIpAddr
  alaIpArpFilterIpMask
  alaIpArpFilterVlan
  alaIpArpFilterMode
  alaIpArpFilterType
```

---

## show icmp control

Allows the viewing of the ICMP control settings.

**show icmp control**

---

### Syntax Definitions

N/A

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

Use this command to view the status of the various ICMP messages. It is also useful to determine the type and code of the less common ICMP messages.

### Examples

```
-> show icmp control
```

Name	Type	Code	Status	min-pkt-gap (us)
echo reply	0	0	enabled	0
network unreachable	3	0	enabled	0
host unreachable	3	1	enabled	0
protocal unreachable	3	2	enabled	0
port unreachable	3	3	enabled	0
frag needed but DF bit set	3	4	enabled	0
source route failed	3	5	enabled	0
destination network unknown	3	6	enabled	0
destination host unknown	3	7	enabled	0
source host isolated	3	8	enabled	0
dest network admin prohibited	3	9	enabled	0
host admin prohibited by filter	3	10	enabled	0
network unreachable for TOS	3	11	enabled	0
host unreachable for TOS	3	12	enabled	0
source quench	4	0	enabled	0
redirect for network	5	0	enabled	0
redirect for host	5	1	enabled	0
redirect for TOS and network	5	2	enabled	0
redirect for TOS and host	5	3	enabled	0
echo request	8	0	enabled	0
router advertisement	9	0	enabled	0
router solicitation	10	0	enabled	0
time exceeded during transmit	11	0	enabled	0
time exceeded during reassembly	11	1	enabled	0
ip header bad	12	0	enabled	0
required option missing	12	1	enabled	0
timestamp request	13	0	enabled	0

timestamp reply	14	0	enabled	0
information request (obsolete)	15	0	enabled	0
information reply (obsolete)	16	0	enabled	0
address mask request	17	0	enabled	0
address mask reply	18	0	enabled	0

**output definitions**

<b>Name</b>	The name of the ICMP message.
<b>Type</b>	The ICMP message type. This along with the ICMP code specifies the ICMP message.
<b>Code</b>	The ICMP message code. This along with the ICMP type specifies the ICMP message.
<b>Status</b>	Whether this message is <b>Enabled</b> or <b>Disabled</b> .
<b>min-pkt-gap</b>	The minimum packet gap, in microseconds, for this ICMP message. The minimum packet gap is the amount of time that must pass between ICMP messages of like types.

**Release History**

Release 5.1; command introduced

**Related Commands**

<b>icmp type</b>	Enables or disables a specific type of ICMP message, and sets the minimum packet gap.
<b>icmp unreachable</b>	Enables or disables ICMP messages pertaining to unreachable destinations, and sets the minimum packet gap.
<b>icmp echo</b>	Enables or disables ICMP echo messages, and sets the minimum packet gap.
<b>icmp timestamp</b>	Enables or disables ICMP timestamp messages, and sets the minimum packet gap.
<b>icmp addr-mask</b>	Enables or disables ICMP address mask messages, and sets the minimum packet gap.
<b>icmp messages</b>	Enables or disables all ICMP messages.

**MIB Objects**

N/A

## show icmp statistics

Displays Internet Control Message Protocol (ICMP) statistics and errors. ICMP is a network layer protocol within the IP protocol suite that provides message packets to report errors and other IP packet processing information back to the source. ICMP generates several kinds of useful messages, including Destination Unreachable, Echo Request and Reply, Redirect, Time Exceeded, and Router Advertisement and Solicitation. If an ICMP message cannot be delivered, no second one is generated. This is to avoid an endless flood of ICMP messages.

**show icmp [statistics]**

---

### Syntax Definitions

**statistics**                      Optional syntax.

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

Use the ICMP Table to monitor and troubleshoot the switch.

### Examples

```
-> show icmp
```

Messages	Received	Sent
-----+-----+		
Total	2105	2105
Error	0	0
Destination unreachable	0	0
Time exceeded	0	0
Parameter problem	0	0
Source quench	0	0
Redirect	0	0
Echo request	2105	0
Echo reply	0	2105
Time stamp request	0	0
Time stamp reply	0	0
Address mask request	0	0
Address mask reply	0	0

#### output definitions

<b>Total</b>	Total number of ICMP messages the switch received or attempted to send. This counter also includes all the messages that were counted as errors.
<b>Error</b>	Number of ICMP messages the switch sent/received but was unable to process because of ICMP-specific errors (for example, bad ICMP checksums, bad length).

*output definitions (continued)*


---

<b>Destination unreachable</b>	Number of “destination unreachable” messages that were sent/received by the switch.
<b>Time exceeded</b>	Number of “time exceeded” messages that were sent/received by the switch. These messages occur when a packet is dropped because the TTL counter reaches zero. When a large number of these messages occur, it is a symptom that packets are looping, that congestion is severe, or that the TTL counter value is set too low. These messages also occur when all the fragments trying to be reassembled do not arrive before the reassembly timer expires.
<b>Parameter problem</b>	Number of messages sent/received which indicate that an illegal value has been detected in a header field. These messages can indicate a problem in the sending IP software of the host or gateway.
<b>Source quench</b>	Number of messages sent/received that tell a host that it is sending too many packets. A host must attempt to reduce its transmissions upon receiving these messages.
<b>Redirect</b>	Number of ICMP redirect messages sent/received by the switch.
<b>Echo request</b>	Number of ICMP echo messages sent/received by the switch to see if a destination is active and unreachable.
<b>Echo reply</b>	Number of echo reply messages received by the switch.
<b>Time stamp request</b>	Number of time stamp request messages sent/received by the switch.
<b>Time stamp reply</b>	Number of time stamp reply messages sent/received by the switch.
<b>Address mask request</b>	Number of address mask request messages that were sent/received by the switch in an attempt to determine the subnet mask for the network.
<b>Address mask reply</b>	Number of address mask reply messages that were sent/received by the switch.

---

**Release History**

Release 5.1; command introduced

**Related Commands**

[show udp statistics](#) Displays UDP errors and statistics.

**MIB Objects**

N/A

---



## show tcp statistics

Displays TCP statistics.

**show tcp statistics**

---

### Syntax Definitions

N/A

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

N/A

### Examples

```
-> show tcp statistics
Total segments received = 235080,
Error segments received = 0,
Total segments sent = 363218,
Segments retransmitted = 38,
Reset segments sent = 97,
Connections initiated = 57185,
Connections accepted = 412,
Connections established = 1,
Attempt fails = 24393,
Established resets = 221
```

#### *output definitions*

---

<b>Total segments received</b>	Total number of segments received, including the segments received in the error. This count includes segments received on currently established connections.
<b>Error segments received</b>	Total number of segments received in error (for example, bad TCP checksums).
<b>Total segments sent</b>	Total number of segments sent, including those on current connections but excluding those containing only retransmitted octets.
<b>Segments retransmitted</b>	Number of TCP segments transmitted containing one or more previously transmitted octets.
<b>Reset segments sent</b>	Number of TCP segments containing the reset flag.
<b>Connections initiated</b>	Number of connections attempted.
<b>Connections accepted</b>	Number of connections allowed.
<b>Connections established</b>	Number of successful connections.

*output definitions (continued)*

---

<b>Attempt fails</b>	Number of times attempted TCP connections have failed.
<b>Established resets</b>	Number of times TCP connections have been reset from the "Established" or "Close Wait" state to the "Closed" state.

---

**Release History**

Release 5.1; command introduced

**Related Commands**

<a href="#">show icmp statistics</a>	Displays ICMP statistics and errors.
<a href="#">show tcp ports</a>	Displays the TCP connection table.

**MIB Objects**

N/A

---

## show tcp ports

Displays the TCP connection table.

**show tcp ports**

---

### Syntax Definitions

N/A

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

Use this table to check the current available TCP connections.

### Examples

-> show tcp ports

Local Address	Local Port	Remote Address	Remote Port	State
0.0.0.0	21	0.0.0.0	0	LISTEN
0.0.0.0	23	0.0.0.0	0	LISTEN
0.0.0.0	80	0.0.0.0	0	LISTEN
0.0.0.0	260	0.0.0.0	0	LISTEN
0.0.0.0	261	0.0.0.0	0	LISTEN
0.0.0.0	443	0.0.0.0	0	LISTEN
0.0.0.0	6778	0.0.0.0	0	LISTEN
10.255.11.223	23	128.251.16.224	1867	ESTABLISHED
10.255.11.223	2509	10.255.11.33	389	TIME-WAIT
10.255.11.223	2510	10.255.11.25	389	TIME-WAIT
10.255.11.223	2513	10.255.11.33	389	TIME-WAIT
10.255.11.223	2514	10.255.11.25	389	TIME-WAIT
10.255.11.223	2517	10.255.11.33	389	TIME-WAIT
10.255.11.223	2518	10.255.11.25	389	TIME-WAIT
10.255.11.223	2521	10.255.11.33	389	TIME-WAIT
10.255.11.223	2522	10.255.11.25	389	TIME-WAIT
10.255.11.223	2525	10.255.11.33	389	TIME-WAIT
10.255.11.223	2526	10.255.11.25	389	TIME-WAIT
10.255.11.223	2529	10.255.11.33	389	TIME-WAIT
10.255.11.223	2530	10.255.11.25	389	TIME-WAIT

#### *output definitions*

---

<b>Local Address</b>	Local IP address for this TCP connection. If a connection is in the LISTEN state it accepts connections for any IP interface associated with the node. The IP address 0.0.0.0 is used.
<b>Local Port</b>	Local port number for this TCP connection. The range is 0–65535.

**output definitions (continued)**

---

<b>Remote Address</b>	Remote IP address for this TCP connection.
<b>Remote Port</b>	Remote port number for this TCP connection. The range is 0–65535.
<b>State</b>	<p>State of the TCP connection, as defined in RFC 793. A connection progresses through a series of states during its lifetime:</p> <ul style="list-style-type: none"><li>• Listen—Waiting for a connection request from any remote TCP and port.</li><li>• Syn Sent—Waiting for a matching connection request after having sent a connection request.</li><li>• Syn Received—Waiting for a confirming connection request acknowledgment after having both received and sent a connection request.</li><li>• Established—Open connection. Data received can be delivered to the user. This is the normal state for the data transfer phase of the connection.</li><li>• Fin Wait 1—Waiting for a connection termination request from the remote TCP, or an acknowledgment of the connection termination request previously sent.</li><li>• Fin Wait 2—Waiting for a connection termination request from the remote TCP.</li><li>• Close Wait—Waiting for a connection termination request from the local user.</li><li>• Closing—Waiting for a connection termination request acknowledgment from the remote TCP.</li><li>• Last Ack—Waiting for an acknowledgment of the connection termination request previously sent to the remote TCP (which includes an acknowledgment of its connection termination request).</li><li>• Time Wait—Waiting for enough time to pass to be sure the remote TCP received the acknowledgment of its connection termination request.</li><li>• Closed—No connection state.</li></ul>

---

**Release History**

Release 5.1; command introduced

**Related Commands**

<a href="#">show ip interface</a>	Displays the status and configuration of IP interfaces.
<a href="#">show tcp statistics</a>	Displays TCP statistics.

**MIB Objects**

N/A

---

## show ip tcp half-open-timeout

Displays the timeout value configured for half-open TCP sessions.

```
show ip tcp half-open-timeout
```

---

### Syntax Definitions

N/A

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

N/A

### Examples

```
-> show ip tcp half-open-timeout  
Tcp Half-Open Timeout(Seconds): 15.
```

### Release History

Release 5.1; command introduced.

### Related Commands

[ip tcp half-open-timeout](#) Configures the timeout periods for dropping half-open TCP connections.

### MIB Objects

```
systemServicesTcpHalfOpenTimeout
```

---

## show udp statistics

Displays UDP errors and statistics.

**show udp statistics**

---

### Syntax Definitions

N/A

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

This command displays cumulative statistics since the last time the switch was powered on or since the last reset of the switch.

### Examples

```
-> show udp statistics
Total datagrams received = 214937,
Error datagrams received = 0,
No port datagrams received = 32891,
Total datagrams sent = 211884
```

#### *output definitions*

---

<b>Total datagrams received</b>	Total number of UDP datagrams delivered to UDP applications.
<b>Error datagrams received</b>	Number of UDP datagrams that could not be delivered for any reason.
<b>No port datagrams received</b>	Number of UDP datagrams that could not be delivered for reasons other than lack of application at the destination.
<b>Total datagrams sent</b>	Total number of UDP datagrams sent from this switch.

---

### Release History

Release 5.1; command introduced

### Related Commands

[show udp ports](#) Displays the UDP Listener table.

### MIB Objects

N/A

---

## show udp ports

Displays the UDP Listener table. The table shows the local IP addresses and the local port number for each UDP listener.

**show udp ports**

---

### Syntax Definitions

N/A

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- An IP address of zero (0.0.0.0) indicates that it is listening on all interfaces.
- This table contains information about the UDP end-points on which a local application is currently accepting datagrams.

### Examples

```
-> show udp port
Local Address      Local Port
-----+-----
 0.0.0.0           67
 0.0.0.0           161
 0.0.0.0           520
```

#### *output definitions*

---

<b>Local Address</b>	Local IP address for this UDP connection.
<b>Local Port</b>	Local port number for this UDP connection.

---

### Release History

Release 5.1; command introduced

### Related Commands

[show udp statistics](#) Displays UDP errors and statistics.

### MIB Objects

N/A

---

## show ip dos config

Displays the DoS scan configuration for the switch.

**show ip dos config**

---

### Syntax Definitions

N/A

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

This command allows the user to view the configuration parameters of the DoS scan. The scan keeps a record of the penalties incurred by certain types of packets on TCP and UDP ports. When the set penalty threshold is reached, it is assumed a DoS attack is in progress, and a trap is generated to inform the system administrator.

### Examples

```
-> show ip dos config
```

DoS type	Status
port scan	ENABLED
ping of death	ENABLED
loopback-src	ENABLED
invalid-ip	ENABLED
invalid-multicast	ENABLED
unicast dest-ip/multicast-mac	ENABLED
ping overload	DISABLED
arp flood	ENABLED
arp poison	
DoS trap generation	= ENABLED,
DoS port scan threshold	= 1000,
DoS port scan decay	= 2,
DoS port scan close port penalty	= 10,
DoS port scan TCP open port penalty	= 0,
DoS port scan UDP open port penalty	= 0,
Dos MAXimum Ping Rate	= 100
Dos Maximum ARP Request Rate	= 500



*output definitions*


---

<b>DoS Type</b>	The type of DoS attack.
<b>Status</b>	Whether or not detection for this type of DoS attack is enabled. Configured through the <b>ip dos type</b> command.
<b>DoS trap generation</b>	Displays the status of DoS trap generation. It is either <b>ENABLED</b> or <b>DISABLED</b> . This is set using the <b>ip dos trap</b> command.
<b>DoS port scan threshold</b>	The penalty threshold setting. When enough packets have increased the penalty number to this setting, a trap is generated to warn the administrator that a DoS attack is in progress. This is set using the <b>ip dos scan threshold</b> command.
<b>DoS port scan decay</b>	The decay value for the switch. The penalty value of the switch is decreased by this number every minute. This is set using the <b>ip dos scan decay</b> command.
<b>DoS port scan close port penalty</b>	The penalty value for packets received on closed UDP and TCP ports. The penalty number for the switch is increased by this amount every time a packet is received on a closed UDP or TCP port. This is set using the <b>ip dos scan close-port-penalty</b> command.
<b>DoS port scan TCP open port penalty</b>	The penalty value for packets received on open TCP ports. The penalty number for the switch is increased by this amount every time a packet is received on an open TCP port. This is set using the <b>ip dos scan tcp open-port-penalty</b> command.
<b>DoS port scan UDP open port penalty</b>	The penalty value for packets received on open UDP ports. The penalty number for the switch is increased by this amount every time a packet is received on an open UDP port. This is set using the <b>ip dos scan udp open-port-penalty</b> command.

---

**Release History**

Release 5.1; command introduced

**Related Commands**

**show ip dos statistics** Displays the statistics for detected DoS attacks on the switch.

**MIB Objects**

```

alaDosTable
  alaDoSType
  alaDoSStatus
alaDoSConfig
  alaDoSPortScanClosePortPenalty
  alaDoSPortScanUdpOpenPortPenalty
  alaDoSPortScanTotalPenalty
  alaDoSPortScanThreshold
  alaDoSPortScanDecay
  alaDoSTrapCntl
  alaDoSARPRate
  alaDoSPingRate

```

---

## show ip dos statistics

Displays the statistics for detected DoS attacks on the switch.

```
show ip dos statistics
```

---

### Syntax Definitions

N/A

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- This command displays the number of attacks the switch has detected for several types of DoS attacks.
- If an attack is detected and reported, it does not necessarily mean that an attack occurred. The switch assumes a DoS attack is underway anytime the penalty threshold is exceeded. It is possible for this threshold to be exceeded when no attack is in progress.
- Statistics for the “unicast dest-ip/multicast-mac” DoS type are not reported for the multicast MAC address attack. In this case, the packet is dropped at a lower level so IP never sees the attack. IP only collects and reports statistics for IP attacks.

### Examples

```
-> show ip dos statistics
```

```
DoS type                Attacks detected
-----+-----
port scan                0
ping of death            0
loopback-src             0
invalid-ip               0
ping overload            0
arp flood                0
arp poison                0
```

#### *output definitions*

---

<b>DoS type</b>	The type of DoS attack.
<b>Attacks detected</b>	The number of attacks detected for each DoS type.

---

### Release History

Release 5.1; command introduced

## Related Commands

[ip dos type](#)

Enables or disables detection for a specific type of DoS attack.

[show ip dos config](#)

Displays the DoS scan configuration for the switch.

## MIB Objects

alaDoSTable

alaDoSType

alaDoSDetected

---

# 14 DHCP Relay Commands

Bootstrap Protocol (BOOTP) and Dynamic Host Configuration Protocol (DHCP) packets contain configuration information for network hosts. DHCP Relay enables forwarding of BOOTP/DHCP packets between networks. This allows routing of DHCP traffic between clients and servers. It is not necessary to enable DHCP Relay if DHCP traffic is bridged through one network (the clients and servers are on the same physical network).

This chapter includes a description of DHCP Relay commands that are used to define the IP address of DHCP servers, maximum number of hops, and forward delay time. Configure DHCP Relay on the switch where routing of BOOTP/DHCP packets occur.

MIB information for DHCP Relay commands is as follows:

*Filename:* ALCATEL-IND1-UDP-RELAY-MIB.mib  
*Module:* alcatelIND1UDPRelayMIB

A summary of the available commands is listed here.

---

## IP DHCP Relay

**ip dhcp relay admin-state**  
**ip dhcp relay destination**  
**ip dhcp relay per-interface-mode**  
**ip dhcp relay interface destination**  
**ip dhcp relay interface admin-state**  
**ip dhcp relay forward-delay**  
**ip dhcp relay maximum-hops**  
**ip dhcp relay insert-agent-information**  
**ip dhcp relay insert-agent-information policy**  
**ip dhcp relay insert-agent-information format**  
**ip dhcp relay pxe-support**  
**show ip dhcp relay interface**  
**show ip dhcp relay statistics**  
**ip dhcp relay clear statistics**  
**show ip dhcp relay insert-agent-information error-count**  
**ip dhcp relay clear insert-agent-information error-count**  
**show ip dhcp relay counters**

---

---

**DHCP Snooping**

**dhcp-snooping admin-state**  
**dhcp-snooping mac-address-verification**  
**dhcp-snooping option-82-data-insertion**  
**dhcp-snooping bypass option-82-check**  
**dhcp-snooping option-82 format**  
**dhcp-snooping option-82 policy**  
**dhcp-snooping vlan**  
**dhcp-snooping port**  
**dhcp-snooping linkagg**  
**dhcp-snooping ip-source-filter admin-state**  
**dhcp-snooping ip-source-filter**  
**dhcp-snooping binding admin-state**  
**dhcp-snooping binding timeout**  
**dhcp-snooping binding action**  
**dhcp-snooping binding persistency**  
**dhcp-snooping binding**  
**show dhcp-snooping**  
**show dhcp-snooping ip-source-filter**  
**show dhcp-snooping vlan**  
**show dhcp-snooping port**  
**dhcp-snooping clear violation-counters**  
**show dhcp-snooping counters**  
**dhcp-snooping clear counters**  
**show dhcp-snooping isf-statistics**  
**dhcp-snooping clear isf-statistics**  
**show dhcp-snooping binding**

---

**DHCPv6 Snooping**

**dhcpv6-snooping vlan admin-state**  
**dhcpv6-snooping global admin-state**  
**dhcpv6-snooping binding timeout**  
**dhcpv6-snooping binding action**  
**dhcpv6-snooping binding persistency**  
**dhcpv6-snooping ipv6-source-filter**  
**ipv6 dhcp guard**  
**ipv6 dhcp guard trusted**  
**show dhcpv6-snooping**  
**show dhcpv6-snooping interfaces**  
**show dhcpv6-snooping binding**  
**show dhcpv6-snooping ipv6-source-filter**  
**show ipv6 dhcp guard**

---

## ip dhcp relay admin-state

Enables or disables DHCP Relay for the switch. When enabled, DHCP packets can be relayed between a client and a server across VLANs.

**ip dhcp relay admin-state {enable | disable}**

---

### Syntax Definitions

<b>enable</b>	Enables DHCP Relay for the VLAN and service domain.
<b>disable</b>	Disables DHCP Relay for the VLAN and service domain.

### Defaults

By default, DHCP Relay is disabled for the switch.

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- Disabling this feature does not remove the DHCP relay agent configuration from the switch. However, the configuration is not active unless the feature is enabled using this command.
- When this feature is enabled, DHCP packets are relayed on a global basis or on a per-interface basis.
  - Global DHCP Relay requires a global destination IP address (configured through the **ip dhcp relay destination** command). All DHCP packets are forwarded by a global relay agent.
  - Per-interface DHCP Relay is disabled by default. To enable this mode and define a per-interface relay agent, use the **ip dhcp relay per-interface-mode** and **ip dhcp relay interface destination** commands. Only DHCP packets originating from the VLAN that is associated with the specified IP interface are forwarded by the interface relay agent.
  - The global and per-interface modes are mutually exclusive.
  - The global or per-interface mode configuration is not active unless the DHCP Relay feature is enabled for the switch.
- Configure DHCP Relay on switches where packets are routed between IP networks..

### Examples

```
-> ip dhcp relay admin-state enable
-> ip dhcp relay admin-state disable
```

### Release History

Release 5.1; command introduced.

## Related Commands

<a href="#">ip dhcp relay destination</a>	Configures a global destination IP address.
<a href="#">ip dhcp relay per-interface-mode</a>	Enables or disables the per-interface DHCP relay mode, which is used to process DHCP packets on a per-interface basis.
<a href="#">show ip dhcp relay interface</a>	Displays the DHCP Relay configuration.

## MIB Objects

```
alaDhcpRelayGlobalConfig  
alaDhcpRelayAdminStatus
```

---

## ip dhcp relay destination

Configures a global destination IP address. When the global DHCP Relay mode is active, all DHCP client requests are forwarded to the specified destination IP address.

**ip dhcp relay destination** *ip\_address*

**no ip dhcp relay destination** *ip\_address*

---

### Syntax Definitions

*ip\_address*

The Pv4 address (for example 21.0.0.10) of the DHCP server to which packets are relayed.

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- Use the **no** form of the command to remove the configured DHCP relay destination.
- Configuring a global destination IP address is required when the global DHCP Relay mode is enabled for the switch.

### Examples

```
-> ip dhcp relay destination 3.3.0.2
-> ip dhcp relay destination 4.4.0.2
-> no ip dhcp relay destination 3.3.0.2
```

### Release History

Release 5.1; command introduced.

### Related Commands

- ip dhcp relay admin-state** Configures the status of the DHCP Relay feature.
- show ip dhcp relay interface** Displays the DHCP Relay configuration.

### MIB Objects

```
alaDhcpRelayServerDestinationTable
    alaDhcpRelayServerDestinationAddressType,
    alaDhcpRelayServerDestinationAddress,
    alaDhcpRelayServerDestinationRowStatus
```

---



## ip dhcp relay per-interface-mode

Enables or disables the DHCP Relay per-interface mode. When this mode is enabled, a relay agent can be configured for a specific IP interface.

**ip dhcp relay per-interface-mode**

**no ip dhcp relay per-interface-mode**

---

### Syntax Definitions

N/A

### Defaults

By default, the global DHCP Relay mode is active when the DHCP Relay feature is enabled.

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- When the per-interface DHCP relay mode is enabled with this command, the global DHCP relay mode is not available. These two types of relay agents are mutually exclusive.
- Use the **no** form of this command to change the DHCP Relay mode back to global (the default).
- When the per-interface mode is active, use the **ip dhcp relay interface destination** command to configure a destination IP address for each IP interface that will serve as a DHCP relay agent.
- The global or per-interface mode configuration is not active unless the DHCP Relay feature is enabled for the switch.

### Examples

```
-> ip dhcp relay per-interface-mode  
-> no ip dhcp relay per-interface-mode
```

### Release History

Release 5.1; command introduced.

## Related Commands

<b>ip dhcp relay interface destination</b>	Configures the DHCP relay destination address for the specified IP interface.
<b>ip dhcp relay interface admin-state</b>	Enables or disables the per-interface DHCP relay agent.
<b>ip dhcp relay admin-state</b>	Enables or disables the DHCP relay feature.
<b>show ip dhcp relay interface</b>	Displays the DHCP Relay configuration.

## MIB Objects

```
alaDhcpRelayGlobalConfig  
  alaDhcpRelayPerInterfaceMode
```

---

## ip dhcp relay interface destination

Configures a DHCP relay destination IP address for the specified interface. The specified IP interface is bound to a VLAN packets destined for the specified IP address are relayed over the VLAN domain.

**ip dhcp relay interface** *if\_name* **destination** *ip\_address*

**no ip dhcp relay interface** *if\_name* **destination** *ip\_address*

---

### Syntax Definitions

<i>if_name</i>	The name of an IPv4 interface on which a destination IP address is configured. Specify the primary IP interface for the VLAN or service.
<i>ip_address</i>	The Pv4 address (for example 21.0.0.10) of the DHCP server to which packets are relayed.

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- Use the **no** form of this command to remove the configured DHCP relay destination for the specified interface.
- This command works only if the per-interface DHCP mode is active. Use the **ip dhcp relay per-interface-mode** command to enable this option.
- Configure DHCP Relay on switches where packets are routed between IP networks.
- The IP interface must be defined for a VLAN before using this command. Packets destined for the specified IP address are relayed over the VLAN.

### Examples

```
-> ip dhcp relay interface client_traffic destination 75.0.0.10
-> ip dhcp relay interface client_traffic destination 31.0.0.20
-> no ip dhcp relay interface client_traffic destination 31.0.0.20
```

### Release History

Release 5.1; command introduced.

## Related Commands

- ip dhcp relay per-interface-mode** Enables or disables the DHCP Relay per-interface mode.
- ip dhcp relay interface admin-state** Enables or disables DHCP relay on an IP interface.
- show ip dhcp relay interface** Displays the DHCP Relay configuration.

## MIB Objects

dhcpRelayInterfaceTable  
  dhcpRelayInterfaceName  
  dhcpRelayInterfacIpAddressType  
  dhcpRelayInterfacIpAddress  
  dhcpRelayInterfacStatus

---

## ip dhcp relay interface admin-state

Enables or disables the relay of DHCP packets received on the specified interface.

```
ip dhcp relay interface if_name admin-state {enable | disable}
```

---

### Syntax Definitions

<i>if_name</i>	The name of an IPv4 interface.
<b>enable</b>	Enables the relay of DHCP packets on the interface.
<b>disable</b>	Disables the relay of DHCP packets on the interface.

### Defaults

By default, DHCP relay is enabled for the interface when a relay destination IP address is configured for the interface.

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

At least one relay destination must be configured before the DHCP relay is enabled for an interface.

### Examples

```
-> ip dhcp relay interface client_traffic admin-state enable
-> ip dhcp relay interface client-traffic admin-state disable
```

### Release History

Release 5.1; command introduced.

### Related Commands

<a href="#">ip dhcp relay per-interface-mode</a>	Enables or disables the DHCP Relay per-interface mode.
<a href="#">ip dhcp relay interface destination</a>	Configures the DHCP relay destination address for the specified IP interface.
<a href="#">show ip dhcp relay interface</a>	Displays the DHCP Relay configuration.

### MIB Objects

```
alaDhcpRelayInterfaceAdminStateTable
  alaDhcpRelayInterfaceAdminStatus
```

---

## ip dhcp relay forward-delay

Sets the forward delay time value for the DHCP Relay configuration. The BOOTP/DHCP packet sent from the client contains the elapsed boot time. This is the amount of time, in seconds, since the client last booted. DHCP Relay does not process the packet unless the elapsed boot time value of the client is equal to or greater than the configured value of the forward delay time.

**ip dhcp relay forward-delay** *seconds*

---

### Syntax Definitions

*seconds* Forward delay time value in seconds.

### Defaults

By default, the forward delay time is set to 0 seconds.

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- The time specified applies to all defined DHCP Relay agent IP addresses.
- If a packet contains an elapsed boot time value that is less than the specified forward delay time value, DHCP Relay discards the packet.

### Examples

```
-> ip dhcp relay forward-delay 300
-> ip dhcp relay forward-delay 120
```

### Release History

Release 5.1; command introduced.

### Related Commands

<a href="#">ip dhcp relay admin-state</a>	Enables or disables the DHCP Relay feature for the switch.
<a href="#">ip dhcp relay maximum-hops</a>	Sets the maximum number of hops value to specify how many relays a BOOTP/DHCP packet can traverse.
<a href="#">show ip dhcp relay interface</a>	Displays current DHCP Relay configuration information.
<a href="#">show ip dhcp relay statistics</a>	Displays DHCP Relay statistics, including the number of client packets received and transmitted to the DHCP server and packets dropped due to forward delay time and maximum hops violations.

**MIB Objects**

alaDhcpRelayGlobalConfig  
    alaDhcpRelayForwardDelay

---

## ip dhcp relay maximum-hops

Sets the maximum number of hops value for the DHCP Relay configuration. This value specifies the maximum number of relays a BOOTP/DHCP packet is allowed to traverse until it reaches its server destination. Limiting the number of hops that can forward a packet prevents packets from looping through the network.

**ip dhcp relay maximum-hops** *hops*

---

### Syntax Definitions

*hops*                                      The maximum number of relays.

### Defaults

By default, the maximum hops value is set to 16 hops.

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- If a packet contains a hop count equal to or greater than the *hops* value, DHCP Relay discards the packet.
- The maximum hops value only applies to DHCP Relay and is ignored by other services.

### Examples

```
-> ip dhcp relay maximum-hops 1
-> ip dhcp relay maximum-hops 10
```

### Release History

Release 5.1; command introduced.

### Related Commands

<a href="#">ip dhcp relay admin-state</a>	Enables or disables the DHCP Relay feature for the switch.
<a href="#">ip dhcp relay forward-delay</a>	Sets the forward delay time value. DHCP Relay does not process a client packet unless the packet contains an elapsed boot time value that is equal to or greater than the configured value of the forward delay time.
<a href="#">show ip dhcp relay interface</a>	Displays current DHCP Relay configuration information.
<a href="#">show ip dhcp relay statistics</a>	Displays DHCP Relay statistics, including the number of client packets received and transmitted to the DHCP server and packets dropped due to forward delay time and maximum hops violations.



**MIB Objects**

alaDhcpRelayGlobalConfig  
alaDhcpRelayMaximumHops

---

## ip dhcp relay insert-agent-information

Enables or disables the DHCP relay agent information option (Option-82) feature. When this feature is enabled, local relay agent information is inserted into client DHCP packets when the agent forwards these packets to a DHCP server.

**ip dhcp relay insert-agent-information**

**no ip dhcp relay insert-agent-information**

---

### Syntax Definitions

N/A

### Defaults

By default, this feature is disabled on the switch.

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- Use the **no** form of this command to disable the DHCP Option-82 feature.
- This command enables the DHCP Option-82 feature for the entire switch; it is not configurable on a per-interface basis.
- When the relay agent receives a DHCP packet that already contains the Option-82 field, the packet is processed based on the agent information policy configured for the switch. This policy is configured using the **ip dhcp relay insert-agent-information policy** command.
- The DHCP Relay agent information option and DHCP Snooping are mutually exclusive. If the DHCP Relay Option-82 feature is enabled for the switch, then DHCP Snooping is not available. The reverse is also true; if DHCP Snooping is enabled, then DHCP Relay Option-82 is not available

### Examples

```
-> ip dhcp relay insert-agent-information
-> no ip dhcp relay insert-agent-information
```

### Release History

Release 5.1; command introduced.

## Related Commands

[ip dhcp relay insert-agent-information policy](#)

Configures a policy to determine how the relay agent handles DHCP packets that already contain the Option-82 field.

[ip dhcp relay insert-agent-information format](#)

Configures the type of information that is inserted into both the Circuit ID and Remote ID suboption fields of the Option-82 field.

[show ip dhcp relay interface](#)

Displays current DHCP Relay configuration information.

[show ip dhcp relay statistics](#)

Displays DHCP Relay statistics, including the number of client packets received and transmitted to the DHCP server and packets dropped due to forward delay time and maximum hops violations.

## MIB Objects

alaDhcpRelayGlobalConfig

alaDhcpRelayInsertAgentInformation

---

## ip dhcp relay insert-agent-information policy

Configures a policy that determines how the DHCP relay agent handles the DHCP packets that already contain an Option-82 field.

**ip dhcp relay insert-agent-information policy {drop | keep | replace}**

---

### Syntax Definitions

<b>drop</b>	Drop DHCP packets that already contain an Option-82 field.
<b>keep</b>	Keep the existing Option-82 field information and continue to relay the DHCP packet.
<b>replace</b>	Replace the existing Option-82 field information with local relay agent information and continue to relay the DHCP packet.

### Defaults

By default, DHCP packets that already contain an Option-82 field are dropped.

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- The agent information policy is not applied if the DHCP relay agent receives a DHCP packet from a client that contains a non-zero value for the gateway IP address (giaddr). In this case, the agent does not insert the relay agent information option into the DHCP packet and forwards the packet to the DHCP server.
- Note that if a DHCP packet contains a gateway IP address (giaddr) value that matches a local subnet and also contains the Option-82 field, the packet is dropped by the relay agent.

### Examples

```
-> ip dhcp relay insert-agent-information policy drop
-> ip dhcp relay insert-agent-information policy keep
-> ip dhcp relay insert-agent-information policy replace
```

### Release History

Release 5.1; command introduced.

## Related Commands

[ip dhcp relay insert-agent-information](#)

Enables the insertion of relay agent information Option-82 into DHCP packets.

[show ip dhcp relay interface](#)

Displays current DHCP Relay configuration information.

[show ip dhcp relay statistics](#)

Displays DHCP Relay statistics, including the number of client packets received and transmitted to the DHCP server and packets dropped due to forward delay time and maximum hops violations.

## MIB Objects

alaDhcpRelayGlobalConfig

alaDhcpRelayInsertAgentInformationPolicy

---

## ip dhcp relay insert-agent-information format

Configures the type of information that is inserted into both the Circuit ID and Remote ID suboption fields of the Option-82 field.

```
ip dhcp relay insert-agent-information format {base-mac | system-name | user-string string |
interface-alias | auto-interface-alias | ascii {{circuit-id | remoted-id} {base-mac | cvlan | interface |
interface-alias | system-name | user-string string | vlan}} {delimiter string}}
```

---

### Syntax Definitions

<b>base-mac</b>	The base MAC address of the switch.
<b>system-name</b>	The system name of the switch.
<i>string</i>	A user defined text string. Supports up to 64 characters.
<b>interface-alias</b>	The alias configured for the interface.
<b>auto-interface-alias</b>	The switch automatically generates the interface-alias in the following format: <i>SystemName_slot_port</i> .
<b>ascii</b>	ASCII format. <b>base-mac:</b> The base MAC address of the switch. <b>cvlan:</b> The Customer VLAN ID. <b>interface:</b> The interface name. <b>interface-alias:</b> The alias configured for the interface. <b>system-name:</b> The system name of the switch. <b>user-string:</b> A user defined text string. <b>vlan:</b> The VLAN ID of which the client is a member. <i>string:</i> A user-defined text string. <b>delimiter:</b> The delimiter character that separates fields within the Circuit ID and Remote ID ASCII string value. Valid characters are   (pipe), \ (backward slash), / (forward slash), - (dash), _ (underscore), and " " (space).

### Defaults

parameter	default
<b>base-mac   system-name   user-string <i>string</i>   interface-alias   auto-interface-alias   ascii</b>	<b>base-mac</b>
<b>ascii</b>	<b>base-mac</b>

### Platforms Supported

OmniSwitch 2260, 2360

## Usage Guidelines

- The string parameter specifies user-defined information to insert into the Circuit ID and Remote ID fields.
- When entering a *string* for user-defined Option-82 information, quotes are required around ambiguous characters, such as hex characters, spaces, etc, so they are interpreted as text. For example, the *string* “Building B Server” requires quotes because of the spaces between the words.
- The **interface-alias** parameter will use the alias configured with the **interfaces alias** command. If no alias is configured a NULL string will be inserted.
- A maximum of 63 characters can be inserted when using the **interface-alias** and **auto-interface-alias** parameters, remaining characters will be truncated.
- The Option-82 format option is a global setting, the format specified is applied to all ports on the switch.
- The data specified with this command is added to the Circuit ID and Remote ID fields only when DHCP Option-82 data insertion is enabled for the switch.
- The ASCII option is used to specify the type of information that is configured in ASCII text string format and then inserted into the Option-82 Circuit ID suboption. Each parameter provided with this command represents a different type of information.
  - Configuring the Circuit ID or Remote ID suboption in ASCII format allows up to five fields (types) of information within the ASCII string. However, if the contents of all the fields combined exceeds 127 characters, then the ASCII string is truncated.
  - Specifying at least one parameter with ASCII option is required. If multiple parameters are selected, then specifying one of the valid delimiter characters is also required.
  - To ensure that the “\” (backward slash) delimiter is parsed correctly, enter two backward slashes in quotes (for example, “\\”).

## Examples

```
-> ip dhcp relay insert-agent-information format user-string "Building B Server"
-> ip dhcp relay insert-agent-information format system-name
-> ip dhcp relay insert-agent-information format base-mac
-> ip dhcp relay insert-agent-information format interface-alias
-> ip dhcp relay insert-agent-information format auto-interface-alias
-> ip dhcp relay insert-agent-information format ascii circuit-id user-string "Bldg
A Server"
-> ip dhcp relay insert-agent-information format ascii remote-id vlan system-name
delimiter |
-> ip dhcp relay insert-agent-information ascii interface system-name delimiter
"\""
```

## Release History

Release 5.1; command introduced.

## Related Commands

**show ip dhcp relay interface** Displays the current DHCP configuration for the switch.

## MIB Objects

```
alaDhcpRelayGlobalConfig
  alaDhcpRelayOption82FormatType
alaDhcpRelayOption82FormatASCIIconfTable
  alaDhcpRelayOption82FormatASCIIconfField1
  alaDhcpRelayOption82FormatASCIIconfField2
  alaDhcpRelayOption82FormatASCIIconfField3
  alaDhcpRelayOption82FormatASCIIconfField4
  alaDhcpRelayOption82FormatASCIIconfField5
  alaDhcpRelayOption82FormatASCIIconfDelimiter
  alaDhcpRelayOption82FormatASCIIconfStatus
```

---



## ip dhcp relay pxe-support

Enables or disables relay agent support for Preboot Execution Environment (PXE) devices.

**ip dhcp relay pxe-support**

**no dhcp relay pxe-support**

---

### Syntax Definitions

N/A

### Defaults

By default, PXE support is disabled for the switch.

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

Use the **no** form of the command to disable PXE support.

### Examples

```
-> ip dhcp relay pxe-support  
-> no ip dhcp relay pxe-support
```

### Release History

Release 5.1; command introduced.

### Related Commands

[show ip dhcp relay interface](#) Displays current DHCP Relay configuration information.

### MIB Objects

```
alaDhcpRelayGlobalConfig  
alaDhcpRelayPxeSupport
```

---

## show ip dhcp relay interface

Display the DHCP Relay and Relay Agent information.

**show ip dhcp relay interface**

---

### Syntax Definitions

N/A

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- DHCP packets are relayed on a global basis or on a per-interface basis.
- When the global DHCP Relay mode is active (the default), a global destination IP address is required. Global destination IP addresses are displayed in the **Relay Destination list** field.
- When the per-interface DHCP Relay mode is enabled, destination IP addresses are configured for specific interfaces. The **Relay Destination list** displays these IP addresses along with the name of the IP interface associated with each address.

### Examples

```
-> show ip dhcp relay interface
IP DHCP Relay :
  DHCP Relay Admin Status      = Disable,
  Forward Delay(seconds)      = 0,
  Max number of hops           = 16,
  Relay Agent Information      = Disabled,
  Relay Agent Information Policy = Drop,
  DHCP Relay Opt82 Format      = Base MAC,
  DHCP Relay Opt82 String     = 00:e0:b1:e7:09:a3,
  PXE support                  = Disabled,
  Relay Mode                   = Global,
  Bootup Option                = Disable,
  Relay Destination list (Global Mode):
    From Interface Any to Server 128.100.16.1
```

```
-> show ip dhcp relay interface
IP DHCP Relay :
  DHCP Relay Admin Status      = Enable,
  Forward Delay(seconds)      = 0,
  Max number of hops           = 16,
  Relay Agent Information      = Disabled,
  Relay Agent Information Policy = Drop,
  DHCP Relay Opt82 Format      = Base MAC,
  DHCP Relay Opt82 String     = 2c:fa:a2:13:e4:02,
```

```

PXE support                = Disabled,
Relay Mode                 = Per Interface,
Bootup Option              = Disable,
Relay Destination list (Per Interface Mode):
  From Interface ipvpn1 to Server 50.3.3.1

```

### *output definitions*

---

<b>DHCP Relay Admin Status</b>	The status ( <b>Enable</b> or <b>Disable</b> ) of DHCP Relay. Configured through the <b>ip dhcp relay admin-state</b> command.
<b>Forward Delay (seconds)</b>	The current forward delay time. Use the <b>ip dhcp relay forward-delay</b> command to change this value.
<b>Max number of hops</b>	The current maximum number of hops allowed. Use the <b>ip dhcp relay maximum-hops</b> command to change this value.
<b>Relay Agent Information</b>	Indicates whether the DHCP relay agent information option (Option-82) is <b>Enabled</b> or <b>Disabled</b> . Configured through the <b>ip dhcp relay insert-agent-information</b> command.
<b>Relay Agent Information Policy</b>	The policy configured to determine how the DHCP relay agent handles the DHCP packets that already contain an Option-82 field. Configured through the <b>ip dhcp relay insert-agent-information policy</b> command.
<b>DHCP Relay Opt82 Format</b>	The type of Option-82 information inserted. Configured through the <b>ip dhcp relay insert-agent-information format</b> command.
<b>DHCP Relay Opt82 String</b>	The Option-82 string based on the specified Option-82 format.
<b>PXE support</b>	Specifies the status ( <b>Enabled</b> or <b>Disabled</b> ) of the relay agent support for PXE devices. By default the PXE support is disabled. Configured through the <b>ip dhcp relay pxe-support</b> command.
<b>Relay Mode</b>	Whether DHCP Relay is set to operate in the global mode or the per-interface mode. Configured through the <b>ip dhcp relay per-interface-mode</b> command.
<b>Bootup Option</b>	Indicates whether or not automatic IP address configuration for a specific VLAN is done when the switch boots up ( <b>Enabled</b> or <b>Disabled</b> ). Configured through the <b>ip interface dhcp-client</b> command.
<b>Relay Destination list</b>	IP addresses for DHCP servers that receive BOOTP/DHCP packets forwarded by this DHCP Relay service. Use the <b>ip dhcp relay destination</b> command (global mode) or <b>ip dhcp relay interface destination</b> (per-interface mode) to add or remove DHCP server IP addresses from the DHCP Relay configuration.

---

## **Release History**

Release 5.1; command introduced.

**Related Commands**

[show ip dhcp relay statistics](#) Displays the collected DHCP Relay statistics.

**MIB Objects**

N/A

---

## show ip dhcp relay statistics

Displays all DHCP Relay statistics collected.

**show ip dhcp relay statistics**

---

### Syntax Definitions

N/A

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- The following DHCP Relay statistics are collected:
  - The number of packets DHCP Relay has received.
  - The number of packets dropped due to forward delay, maximum hops, relay agent, and gateway IP violations.
  - Statistics that apply to a specific DHCP server (such as the number of packets transmitted to the server and the number of invalid Option-82 DHCP server packets dropped by the relay agent).
  - The number of packets processed since the last time these statistics were displayed.
- Use the [ip dhcp relay clear statistics](#) command to clear all DHCP Relay statistics.

### Examples

```
-> show ip dhcp relay statistics
Global Statistics :
  Reception From Client :
    Total Count =          12, Delta =          12
  Forw Delay Violation :
    Total Count =           3, Delta =           3
  Max Hops Violation :
    Total Count =           0, Delta =           0
  Agent Info Violation :
    Total Count =           0, Delta =           0
  Invalid Gateway IP :
    Total Count =           0, Delta =           0
Server Specific Statistics :
  From Interface ipv4-v200 to Server 75.0.0.1
  Tx Server :
    Total Count =           9, Delta =           9
  InvAgentInfoFromServer:
    Total Count =           0, Delta =           0
```

*output definitions*


---

<b>Reception From Client</b>	Number of packets DHCP Relay has received from the DHCP client.
<b>Forw Delay Violation</b>	Number of packets dropped as a result of forward delay violations. A violation occurs if a client packet contains an elapsed boot time value that is less than the configured DHCP Relay forward delay time value.
<b>Max Hops Violation</b>	Number of packets dropped as a result of maximum hop violations. A violation occurs if a packet contains a hop count equal to or greater than the configured DHCP Relay maximum hops value.
<b>Agent Info Violation</b>	Number of packets dropped as a result of a relay agent information (Option-82) violation. A violation occurs if an Option-82 DHCP packet contains a zero gateway IP address (giaddr) and the relay agent information policy is set to <b>Drop</b> or a DHCP packet has no Option-82 field and contains a non-zero giaddr.
<b>Invalid Gateway IP</b>	Number of packets dropped as a result of a gateway IP violation. A violation occurs if an Option-82 DHCP packet contains a gateway IP address (giaddr) that matches a local subnet address.
<b>Delta</b>	Total number of packets processed since the last time the DHCP Relay statistics were checked during any user session.
<b>Server</b>	DHCP server IP address that receives BOOTP/DHCP packets forwarded by this DHCP Relay service.
<b>Tx Server</b>	Number of packets DHCP Relay has transmitted to the DHCP server.
<b>InvAgentInfoFromServer</b>	Number of invalid Option-82 DHCP server packets dropped by the relay agent.
<b>Delta</b>	The difference between the number of packets received from the client and the number of packets transmitted to the DHCP server since the last time DHCP Relay statistics were checked during any user session.

---

**Release History**

Release 5.1; command introduced.

**Related Commands**

<a href="#">ip dhcp relay admin-state</a>	Enables or disables the DHCP relay feature.
<a href="#">ip dhcp relay clear statistics</a>	Resets the DHCP Relay statistic counters to zero.
<a href="#">show ip dhcp relay insert-agent-information error-count</a>	Displays the Option-82 related error statistics.

**MIB Objects**

N/A

---

## ip dhcp relay clear statistics

Clears DHCP relay statistics collected.

**ip dhcp relay clear statistics** [**global-only** | **destination** *ip\_address* | **interface** *if\_name* **destination** *ip\_address*]

---

### Syntax Definitions

<b>global-only</b>	Clears statistics collected for global DHCP Relay.
<i>ip_address</i>	The IPv4 destination address for which statistics are cleared.
<i>if_name</i>	The IPv4 interface name for which statistics are cleared.

### Defaults

By default, all DHCP Relay statistics are cleared.

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- When this command is used, all DHCP Relay statistics are reset to zero.
- Use the [show ip dhcp relay statistics](#) command to display DHCP Relay statistics.

### Examples

```
-> ip dhcp relay clear statistics
-> ip dhcp relay clear statistics global-only
-> ip dhcp relay clear statistics destination 75.0.0.2
-> ip dhcp relay clear statistics interface ipv4-200 destination 75.0.0.2
```

### Release History

Release 5.1; command introduced.

### Related Commands

<a href="#">ip dhcp relay admin-state</a>	Enables or disables the DHCP Relay feature.
<a href="#">show ip dhcp relay statistics</a>	Displays DHCP Relay statistics.

**MIB Objects**

```
alaDhcpRelayGlobalConfig
  alaDhcpRelayStatisticsClear
alaDhcpRelayClearStatisticsTable
  alaDhcpRelayClearStatisticsAction
```

---



## show ip dhcp relay insert-agent-information error-count

Displays the Option-82 related error statistics on a per-port and per-interface basis.

```
show ip dhcp relay insert-agent-informaton error-count [interface if_name | port chassis/slot/port
[interface if_name]]
```

---

### Syntax Definitions

<i>if_name</i>	The name of the IPv4 interface for which the Option-82 error count statistics are displayed.
<i>chassis/slot/port</i>	The chassis, slot, and port number of the port for which the Option-82 error count statistics are displayed.

### Defaults

By default, all Option-82 error count statistics are displayed.

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- To display the statistics for a specific port, use the **port *chassis/slot/port*** parameter option.
- To display the statistics for a specific IPv4 interface, use the **interface *if\_name*** parameter option.
- Use the **ip dhcp relay clear insert-agent-information error-count** command to clear Option-82 error statistics.

### Examples

```
-> show ip dhcp relay insert-agent-information error-count port 1/1/3
Slot/Port | Interface | Agent Info Violation | Invalid Gateway IP
```

```
-----+-----+-----+-----+
1/1/3   ipv4-v100           500                0
1/1/3   ipv4-v200           0                  10
1/1/3   ipv4-v1100        500                0
1/1/3   ipv4-v3100        500                0
```

```
-> show ip dhcp relay insert-agent-information error-count interface ipv4-v100
Slot/Port | Interface | Agent Info Violation | Invalid Gateway IP
```

```
-----+-----+-----+-----+
1/1/1   ipv4-v100           400                0
2/1/3   ipv4-v100           500                0
```

```
-> show ip dhcp relay insert-agent-information error-count port 1/1/3 interface
ipv4-v100
```

```
Slot/Port | Interface | Agent Info Violation | Invalid Gateway IP
-----+-----+-----+-----+
1/1/3   ipv4-v100           500                0
```

*output definitions*


---

<b>Slot/port</b>	The chassis, slot, and port number for which the error count statistics is displayed.
<b>Interface</b>	The name of the IPv4 interface associated with the port.
<b>Agent Info Violation</b>	Number of packets dropped as a result of a relay agent information (Option-82) violation. A violation occurs if an Option-82 DHCP packet contains a zero gateway IP address (giaddr) and the relay agent information policy is set to <b>Drop</b> or a DHCP packet has no Option-82 field and contains a non-zero giaddr.
<b>Invalid Gateway IP</b>	Number of packets dropped as a result of a gateway IP violation. A violation occurs if an Option-82 DHCP packet contains a gateway IP address (giaddr) that matches a local subnet address.

---

**Release History**

Release 5.1; command introduced.

**Related Commands**

<a href="#">ip dhcp relay insert-agent-information format</a>	Configures the type of information that is inserted into both the Circuit ID and Remote ID suboption fields of the Option-82 field.
<a href="#">show ip dhcp relay interface</a>	Displays current DHCP Relay configuration information.

**MIB Objects**

```
alaDhcpRelayOpt82ErrStatsTable
  alaDhcpRelayOpt82ErrStatsIfIndex
  alaDhcpRelayOpt82ErrStatsIfName
  alaDhcpRelayOpt82ErrStatsAgentInfoViolation
  alaDhcpRelayOpt82ErrStatsInvalidGatewayIPAddr
```

---

## ip dhcp relay clear insert-agent-information error-count

Clears the Option-82 related error statistics on a per-port and per-interface basis.

**ip dhcp relay clear insert-agent-informaton error-count** [**interface** *if\_name* | **port** *chassis/slot/port*]

---

### Syntax Definitions

<i>if_name</i>	The name of the IPv4 interface for which the Option-82 error count statistics are cleared.
<i>chassis/slot/port</i>	The chassis, slot, and port number of the port for which the Option-82 error count statistics are cleared.

### Defaults

By default, all Option-82 error count statistics are cleared.

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- To clear the statistics for a specific IPv4 interface, use the **interface** *if\_name* parameter option.
- To clear the statistics for a specific port, use the **port** *chassis/slot/port* parameter option.
- When this command is used, all Option-82 error statistics are reset to zero.
- Use the [show ip dhcp relay insert-agent-information error-count](#) command to display Option-82 statistics collected.

### Examples

```
-> ip dhcp relay clear insert-agent-information error-count
-> ip dhcp relay clear insert-agent-information error-count interface ipv4-v100
-> ip dhcp relay clear insert-agent-information error-count port 1/1/3
```

### Release History

Release 5.1; command introduced.

## Related Commands

**ip dhcp relay insert-agent-information format**

Configures the type of information that is inserted into both the Circuit ID and Remote ID suboption fields of the Option-82 field.

**show ip dhcp relay interface**

Displays current DHCP Relay configuration information.

## MIB Objects

alaDhcpRelayOpt82ErrStatsTable

alaDhcpRelayOpt82ErrStatsReset

---

## show ip dhcp relay counters

Displays DHCP Relay packet statistics.

**show ip dhcp relay counters**

---

### Syntax Definitions

N/A

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

Use this command to display statistics for the various types of DHCP packets that were relayed or passed through by the switch.

### Examples

```
-> show ip dhcp relay counters
DHCP Packets:
DHCP Discover Packets           : 0,
DHCP Offer Packets             : 0,
DHCP Request Packets           : 0,
DHCP ACK Packets               : 0,
DHCP NACK Packets              : 0,
DHCP Release Packets           : 0,
DHCP Decline Packets           : 0,
DHCP Inform Packets            : 0,
DHCP Renew Packets             : 0,
```

### Release History

Release 5.1; command introduced.

### Related Commands

- [ip dhcp relay admin-state](#) Enables or disables the DHCP relay feature.
- [show ip dhcp relay statistics](#) Displays DHCP Relay error statistics.
- [show ip dhcp relay insert-agent-information error-count](#) Displays the Option-82 related error statistics.

### MIB Objects

N/A

---

## dhcp-snooping admin-state

Enables or disables DHCP Snooping for the switch.

**dhcp-snooping admin-state {enable | disable}**

**no dhcp-snooping**

---

### Syntax Definitions

<b>enable</b>	Enables DHCP Snooping for the switch.
<b>disable</b>	Disables DHCP Snooping for the switch.

### Defaults

By default, this feature is disabled.

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- When DHCP Snooping is administratively disabled for the switch, the DHCP Snooping configuration remains and dynamic binding table entries are cleared.
- When the **no** form of the command is used, the DHCP Snooping configuration is *removed* and dynamic binding table entries are cleared.

### Examples

```
-> dhcp-snooping admin-state enable
-> dhcp-snooping admin-state disable
-> no dhcp-snooping
```

### Release History

Release 5.1; command introduced.

Release 5.1; **no** form of the command added.

### Related Commands

<a href="#">dhcp-snooping vlan</a>	.Enables or disables DHCP Snooping on a per-VLAN basis.
<a href="#">show dhcp-snooping</a>	Displays the current DHCP Snooping configuration for the switch.

### MIB Objects

dhcpSnoopingMode

---

## dhcp-snooping mac-address-verification

Globally enables or disables MAC address verification for incoming DHCP traffic. When this feature is enabled, the source MAC address is compared to the client hardware MAC address in the DHCP packet. If these two addresses do not match, the DHCP packet is dropped.

**dhcp-snooping mac-address-verification admin-state {enable | disable}**

---

### Syntax Definitions

<b>enable</b>	Enables DHCP MAC address verification for the switch.
<b>disable</b>	Disables DHCP MAC address verification for the switch.

### Defaults

By default, this feature is enabled.

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- DHCP Snooping must be enabled before using this command.
- When DHCP Snooping is enabled at the switch level, MAC address verification and Option-82 data insertion are enabled by default. In addition, the trust mode for all ports is set to the DHCP client only mode.
- Changing the enabled or disabled status for MAC address verification is only allowed when DHCP Snooping is globally enabled for the switch.

### Examples

```
-> dhcp-snooping mac-address-verification admin-state enable
-> dhcp-snooping mac-address-verification admin-state disable
```

### Release History

Release 5.1; command introduced.

### Related Commands

<a href="#">dhcp-snooping admin-state</a>	Globally enables or disables DHCP Snooping for the switch.
<a href="#">dhcp-snooping option-82-data-insertion</a>	Globally enables or disables DHCP Option-82 data insertion for DHCP packets.
<a href="#">show dhcp-snooping</a>	Displays the current DHCP Snooping configuration for the switch.

## **MIB Objects**

dhcpSnoopingMacAddrVerificationStatus

---



## dhcp-snooping option-82-data-insertion

Globally enables or disables DHCP Option-82 data insertion for DHCP packets. When this feature is enabled, the relay agent inserts the Option-82 field into DHCP packets before forwarding them to the DHCP server.

**dhcp-snooping option-82-data-insertion admin-state {enable | disable}**

---

### Syntax Definitions

<b>enable</b>	Enables inserting the DHCP Option-82 field into DHCP packets.
<b>disable</b>	Disables inserting the DHCP Option-82 field into DHCP packets.

### Defaults

By default, this feature is enabled.

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- DHCP Snooping must be enabled before using this command.
- When DHCP Snooping is enabled at the switch level, Option-82-data-insertion and MAC address verification are enabled by default. In addition, the trust mode for all ports is set to the DHCP client only mode.

### Examples

```
-> dhcp-snooping option-82-data-insertion admin-state enable
-> dhcp-snooping option-82-data-insertion admin-state disable
```

### Release History

Release 5.1; command introduced.

### Related Commands

<a href="#">dhcp-snooping admin-state</a>	.Globally enables or disables DHCP Snooping for the switch.
<a href="#">dhcp-snooping option-82 format</a>	Configures the type of information that is inserted in both the Circuit ID and Remote ID suboption of the Option-82 field.
<a href="#">show dhcp-snooping</a>	Displays the current DHCP Snooping configuration for the switch.

### MIB Objects

dhcpSnoopingOpt82DataInsertionStatus

---

## dhcp-snooping bypass option-82-check

Enables or disables checking for an Option-82 field in DHCP packets ingressing on untrusted ports.

```
dhcp-snooping bypass option-82-check admin-state {enable | disable}
```

---

### Syntax Definitions

<b>enable</b>	Bypasses the Option-82 field check.
<b>disable</b>	Checks DHCP packets for the Option-82 field.

### Defaults

By default, this feature is disabled.

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- When this feature is disabled (the default), DHCP packets ingressing on untrusted ports are checked to see if they contain the Option-82 field. If this field is present, the DHCP packet is discarded.
- When this feature is enabled, DHCP packets ingressing on untrusted ports are *not* checked to see if they contain the Option-82 field. In this case, the Option-82 field is ignored and all DHCP packets are processed.
- Using this command is only allowed when DHCP Snooping is enabled globally for the switch or at the VLAN level.

### Examples

```
-> dhcp-snooping bypass option-82-check admin-state enable  
-> dhcp-snooping bypass option-82-check admin-state disable
```

### Release History

Release 5.1; command introduced.

### Related Commands

<a href="#">dhcp-snooping admin-state</a>	Globally enables or disables DHCP Snooping for the switch.
<a href="#">show dhcp-snooping</a>	Displays the current DHCP Snooping configuration for the switch.

### MIB Objects

```
dhcpSnoopingBypassOpt82CheckStatus
```

---

## dhcp-snooping option-82 format

Configures the type of information that is inserted into both the Circuit ID and Remote ID suboption fields of the Option-82 field.

```
dhcp-snooping option-82 format [base-mac | system-name | user-string string | interface-alias | auto-interface-alias | ascii [{ remote-id | circuit-id } {base-mac | cvlan | interface | interface-alias | system-name | user-string string | vlan } {delimiter string}]]
```

```
no dhcp-snooping option-82 format ascii {remote-id | circuit-id}
```

---

### Syntax Definitions

<b>base-mac</b>	The base MAC address of the switch.
<b>system-name</b>	The system name of the switch.
<i>string</i>	A user defined text string. Supports up to 64 characters.
<b>interface-alias</b>	The alias configured for the interface.
<b>auto-interface-alias</b>	The switch automatically generates the interface-alias in the following format: SystemName_slot_port. ascii ASCII format.
<b>ascii</b>	ASCII format. <b>remote-id</b>   <b>circuit-id</b> : Select the sub-id fields of option-82 to configure ASCII. <b>base-mac</b> : The base MAC address of the switch. <b>cvlan</b> : The Customer VLAN ID. <b>interface</b> : The interface name. <b>interface-alias</b> : The alias configured for the interface. <b>system-name</b> : The system name of the switch. <b>user-string</b> : A user defined text string. <b>vlan</b> : The VLAN ID of which the client is a member. <i>string</i> : A user-defined text string. <b>delimiter</b> : The delimiter character that separates fields within the Circuit ID and Remote ID ASCII string value. Valid characters are   (pipe), \ (backward slash), / (forward slash), - (dash), _ (underscore), and " " (space).

### Defaults

parameter	default
<b>user-string</b> <i>string</i>   <b>system-name</b>   <b>interface-alias</b>   <b>base-mac</b>   <b>auto-interface-alias</b>   <b>ascii</b>	base-mac
<b>ascii</b>	base-mac

### Platforms Supported

OmniSwitch 2260, 2360

## Usage Guidelines

- The string parameter specifies user-defined information to insert into the Circuit ID and Remote ID fields.
- When entering a string for user-defined Option-82 information, quotes are required around ambiguous characters, such as hex characters, spaces, etc, so they are interpreted as text. For example, the string “Building B Server” requires quotes because of the spaces between the words.
- The interface-alias parameter will use the alias configured with the interfaces alias command. If no alias is configured a NULL string will be inserted.
- A maximum of 63 characters can be inserted when using the interface-alias and auto-interface-alias commands, remaining characters will be truncated.
- The Option-82 format option is a global setting, the format specified will be applied to all ports on the switch.
- The data specified with this command is added to the Circuit ID and Remote ID fields only when DHCP Option-82 data insertion is enabled for the switch.
- When DHCP Snooping is enabled at the switch level, Option-82 data insertion is enabled by default.
- The ASCII option is used to specify the type of information that is configured in ASCII text string format and then inserted into the Option-82 Circuit ID suboption. Each parameter provided with this command represents a different type of information.
- Configuring the Circuit ID or Remote ID suboption in ASCII format allows up to five fields (types) of information within the ASCII string. However, if the contents of all the fields combined exceeds 127 characters, then the ASCII string is truncated.
- Specifying at least one parameter with ASCII option is required. If multiple parameters are selected, then specifying one of the valid delimiter characters is also required.
- In order for the backward slash “\” delimiter to be parsed correctly it must be entered as “\\”.
- Use the **no** form of this command to remove the type of information that is inserted into both the Circuit ID and Remote ID suboption fields of the Option-82 fields option-82-check admin-state disable.

## Examples

```
-> dhcp-snooping option-82 format user-string "Building B Server"  
-> dhcp-snooping option-82 format system-name  
-> dhcp-snooping option-82 format base-mac  
-> dhcp-snooping option-82 format interface-alias  
-> dhcp-snooping option-82 format auto-interface-alias  
-> no dhcp-snooping option-82 format ascii remote-id  
-> no dhcp-snooping option-82 format ascii circuit-id  
-> dhcp-snooping option-82 format ascii circuit-id cvlan cvlan delimiter "\\\""
```

## Release History

Release 5.1; command introduced.

## Related Commands

<b>dhcp-snooping option-82-data-insertion</b>	Globally enables or disables DHCP Option-82 data insertion for DHCP packets.
<b>dhcp-snooping admin-state</b>	Globally enables or disables DHCP Snooping for the switch
<b>show dhcp-snooping</b>	Displays the current DHCP Snooping configuration for the switch.

## MIB Objects

```
dhcpSnoopingOption82FormatType  
dhcpSnoopingOption82StringValue  
dhcpSnoopingOption82FormatASCIIconfigurabledEntry  
dhcpSnoopingOption82FormatASCIIconfigurabledIndex  
dhcpSnoopingOption82FormatASCIIconfigurabledField1  
dhcpSnoopingOption82FormatASCIIconfigurabledField1StrVal  
dhcpSnoopingOption82FormatASCIIconfigurabledField2  
dhcpSnoopingOption82FormatASCIIconfigurabledField2StrVal  
dhcpSnoopingOption82FormatASCIIconfigurabledField3  
dhcpSnoopingOption82FormatASCIIconfigurabledField3StrVal  
dhcpSnoopingOption82FormatASCIIconfigurabledField4  
dhcpSnoopingOption82FormatASCIIconfigurabledField4StrVal  
dhcpSnoopingOption82FormatASCIIconfigurabledField5  
dhcpSnoopingOption82FormatASCIIconfigurabledField5StrVal  
dhcpSnoopingOption82FormatASCIIconfigurabledDelimiter
```

---

## dhcp-snooping option-82 policy

Specifies whether to keep, replace, or drop the Option-82 field from DHCP packets entering the switch.

**dhcp-snooping option-82 policy [replace | keep | drop]**

---

### Syntax Definitions

<b>replace</b>	Replaces Option-82 field in the incoming DHCP packets.
<b>keep</b>	Keeps Option-82 field in the incoming DHCP packets.
<b>drop</b>	Drops the packet with Option-82 in the incoming DHCP packets.

### Defaults

By default, the Option-82 field is replaced in the DHCP packets.

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

N/A

### Examples

```
-> dhcp-snooping option-82 policy replace
-> dhcp-snooping option-82 policy keep
-> dhcp-snooping option-82 policy drop
```

### Release History

Release 5.1; command introduced.

### Related Commands

<a href="#">dhcp-snooping admin-state</a>	Globally enables or disables DHCP Snooping for the switch.
<a href="#">show dhcp-snooping</a>	Displays the global DHCP Snooping configuration.

### MIB Objects

dhcpSnoopingOption82Policy

---

## dhcp-snooping vlan

Enables or disables DHCP Snooping on a per VLAN basis. When this feature is enabled, all DHCP packets received on ports associated with the DHCP Snooping VLAN are filtered.

**dhcp-snooping vlan** *vlan\_id[-vlan\_id2]* [**mac-address-verification** | **option-82-data-insertion**] **admin-state** {**enable** | **disable**}

**no dhcp-snooping vlan** *vlan\_id[-vlan\_id2]*

---

### Syntax Definitions

*vlan\_id[-vlan\_id2]*

The VLAN identification number. Valid range is 1–4094. Use a hyphen to specify a range of VLANs (10-15).

**mac-address verification**

Enables or disables verifying the source MAC address of DHCP packets with the client MAC address contained in the same packet.

**option-82 data-insertion**

Enables or disables inserting Option-82 information into DHCP packets.

**admin-state**

Enables or disables DHCP snooping feature for specified VLAN.

### Defaults

By default, DHCP Snooping is disabled. When this feature is enabled for the specified VLAN, the following default parameter values apply:

parameter	default
<b>mac-address verification</b>	Enabled
<b>option-82 data-insertion</b>	Enabled

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- Use the **no** form of this command to remove the DHCP Snooping configuration for the specified VLAN.
- The MAC address verification and Option-82 data insertion are applied to packets received on ports associated with the DHCP Snooping VLAN.
- If the DHCP relay agent Option-82 feature is enabled, DHCP Snooping is not available. These two features are mutually exclusive.
- If the DHCP Snooping feature is globally enabled for the switch, then configuring snooping on a per-VLAN basis is not allowed. The opposite is also true; invoking VLAN based snooping prevents the use of switch level snooping.

- Note that disabling the DHCP Snooping Option-82 data insertion operation for a VLAN is not allowed when the binding table functionality is enabled.

## Examples

```
-> dhcp-snooping vlan 100 admin-state enable
-> dhcp-snooping vlan 100 admin-state disable
-> dhcp-snooping vlan 100 mac-address-verification admin-state enable
-> no dhcp-snooping vlan 100
-> dhcp-snooping vlan 200-205 admin-state enable
-> dhcp-snooping vlan 200-205 admin-state disable
-> dhcp-snooping vlan 200-205 option-82 data-insertion admin-state enable
-> no dhcp-snooping vlan 200-205
```

## Release History

Release 5.1; command introduced.

Release 5.1; **no** form of the command added.

## Related Commands

<a href="#">dhcp-snooping admin-state</a>	Globally enables or disables DHCP Snooping for the switch.
<a href="#">show dhcp-snooping vlan</a>	Displays a list of DHCP Snooping VLANs.

## MIB Objects

```
dhcpSnoopingVlanTable
  dhcpSnoopingVlanNumber
  dhcpSnoopingVlanMacAddrVerificationStatus
  dhcpSnoopingVlanOpt82DataInsertionStatus
  dhcpSnoopingVlanStatus
  dhcpSnoopingVlanAdminState
```

---



## dhcp-snooping port

Configures the DHCP Snooping trust mode for the port. The trust mode determines if the port will accept all DHCP traffic, block all DHCP traffic, or accept only client DHCP traffic.

```
dhcp-snooping port chassis/slot1/port[-port2] {block | client-only | trust}
```

---

### Syntax Definitions

<i>chassis</i>	The chassis identifier.
<i>slot1/port[-port2]</i>	The slot and port number (1/1/3). Use a hyphen to specify a range of ports (1/1/3-8).
<b>block</b>	Blocks all DHCP traffic on the port.
<b>client-only</b>	Allows only DHCP client traffic on the port.
<b>trust</b>	Allows all DHCP traffic on the port. The port behaves as if DHCP Snooping was not enabled.

### Defaults

By default, the trust mode for a port is set to **client-only** when the DHCP Snooping feature is enabled for the switch or for a VLAN.

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- The DHCP trust mode only applies when the DHCP Snooping feature is enabled for the switch or for a VLAN.
- If DHCP Snooping is enabled at the switch level, the trust mode applies to all switch ports.
- If DHCP Snooping is enabled for a specific VLAN, then the trust mode applies to only those ports that are associated with that VLAN.

### Examples

```
-> dhcp-snooping port 1/1/24 trust
-> dhcp-snooping port 1/1/1-10 block
-> dhcp-snooping port 1/1/8 client-only
```

### Release History

Release 5.1; command introduced.

**Related Commands**

<a href="#">dhcp-snooping admin-state</a>	Globally enables or disables DHCP Snooping for the switch.
<a href="#">dhcp-snooping vlan</a>	Enables or disables DHCP Snooping on a per-VLAN basis.
<a href="#">show dhcp-snooping port</a>	Displays the current trust mode for a port and statistics regarding the number of packets dropped due to DHCP Snooping violations

**MIB Objects**

```
dhcpSnoopingPortTable  
  dhcpSnoopingPortIfIndex  
  dhcpSnoopingPortTrustMode
```

---

## dhcp-snooping linkagg

Configures the DHCP Snooping trust mode for the link aggregate. The trust mode determines if the link aggregate will accept all DHCP traffic, block all DHCP traffic, or accept only client DHCP traffic.

```
dhcp-snooping linkagg agg_id[-agg_id2] {block | client-only | trust}
```

---

### Syntax Definitions

<i>agg_id</i> [- <i>agg_id2</i> ]	The link aggregate ID number. Use a hyphen to specify a range of IDs (1-5).
<b>block</b>	Blocks all DHCP traffic on the link aggregate.
<b>client-only</b>	Allows only DHCP client traffic on the link aggregate.
<b>trust</b>	Allows all DHCP traffic on the link aggregate. The link aggregate behaves as if DHCP Snooping was not enabled.

### Defaults

By default, the trust mode for a link aggregate is set to **client-only** when the DHCP Snooping feature is enabled for the switch or for a VLAN.

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- The DHCP trust mode only applies when the DHCP Snooping feature is enabled for the switch or for a VLAN.
- If DHCP Snooping is enabled at the switch level, the trust mode applies to all link aggregates.
- If DHCP Snooping is enabled for a specific VLAN, then the trust mode applies to only those link aggregates that are associated with that VLAN.
- Use the [show dhcp-snooping port](#) command to display the current trust mode for a link aggregate and statistics regarding the number of packets dropped due to DHCP Snooping violations.

### Examples

```
-> dhcp-snooping linkagg 1 trust
-> dhcp-snooping linkagg 5-8 trust
-> dhcp-snooping linkagg 2 block
-> dhcp-snooping linkagg 5-8 block
-> dhcp-snooping linkagg 3 client-only
-> dhcp-snooping linkagg 5-8 client-only
```

### Release History

Release 5.1; command introduced.

## Related Commands

- dhcp-snooping admin-state** Globally enables or disables DHCP Snooping for the switch.  
**dhcp-snooping vlan** Enables or disables DHCP Snooping on a per-VLAN basis.

## MIB Objects

dhcpSnoopingPortTable  
  dhcpSnoopingPortIfIndex  
  dhcpSnoopingPortTrustMode

---

## dhcp-snooping ip-source-filter admin-state

Enables or disables the DHCP Snooping IP source filtering functionality for the switch.

**dhcp-snooping ip-source-filtering admin-state {enable | disable}**

---

### Syntax Definitions

<b>enable</b>	Enables IP source filtering for the switch.
<b>disable</b>	Disables IP source filtering for the switch.

### Defaults

By default, the DHCP Snooping IP source filtering functionality is enabled for the switch.

### Platforms Supported

Not supported in this release.

### Usage Guidelines

- When IP source filtering is disabled for the switch, the user-defined IP source filtering configuration is maintained but not operationally active.
- When DHCP Snooping is disabled for the switch, the status of IP source filtering is not changed; if IP source filtering is enabled, the functionality is still applied to static binding table entries.

### Examples

```
-> dhcp-snooping ip-source-filter admin-state disable  
-> dhcp-snooping ip-source-filter admin-state enable
```

### Release History

Release 5.1; command introduced.

### Related Commands

**dhcp-snooping ip-source-filter** Enables or disables DHCP Snooping IP source filtering for a port, link aggregate, or VLAN.

**show dhcp-snooping ip-source-filter** Displays the global IP source filtering status.

### MIB Objects

dhcpSnoopingIpSourceFilterAdminState

---

## dhcp-snooping ip-source-filter

Enables or disables the IP source filtering capability on a port, link aggregate, or VLAN. When this function is enabled, the switch allows the traffic that matches the client IP address, MAC address, port, and VLAN combination obtained from the DHCP snooping binding table entry.

**dhcp-snooping ip-source-filter** {vlan *vlan\_id*[-*vlan\_id2*]| port *chassis/slot/port*[-*port2*] | linkagg *agg\_id*[-*agg\_id2*]} admin-state {enable | disable}

---

### Syntax Definitions

<i>vlan_id</i> [- <i>vlan_id2</i> ]	The VLAN identification number (1–4094). Use a hyphen to specify a range of VLANs (10-15).
<i>chassis</i>	The chassis identifier.
<i>slot1/port</i> [- <i>port2</i> ]	The slot and port number (1/1/3). Use a hyphen to specify a range of ports (1/1/3-8).
<i>agg_id</i> [- <i>agg_id2</i> ]	The link aggregate ID number. Use a hyphen to specify a range of IDs (1-5).
<b>enable</b>	Enables IP source filtering for the specified port, link aggregate, or VLAN.
<b>disable</b>	Disables IP source filtering for the specified port, link aggregate, or VLAN level.

### Defaults

By default, IP source filtering is disabled for a port, link aggregate, or VLAN.

### Platforms Supported

Not supported in this release.

### Usage Guidelines

- Source filtering can be enabled only on the VLANs on which the DHCP Snooping is enabled.
- Source filtering can be enabled as follows:
  - on the ports that are associated with a VLAN on which DHCP Snooping is enabled.
  - on all the ports when DHCP Snooping is globally enabled for the switch.
- The user-defined IP source filtering configuration is not operationally active unless the IP source filtering functionality is globally enabled for the switch. By default, the global functionality is enabled and is configurable through the **dhcp-snooping ip-source-filter admin-state** command.

### Examples

```
-> dhcp-snooping ip-source-filter port 1/1/1 admin-state enable
-> dhcp-snooping ip-source-filter port 1/1/1-5 admin-state enable
-> dhcp-snooping ip-source-filter linkagg 2 admin-state enable
-> dhcp-snooping ip-source-filter vlan 10 admin-state enable
-> dhcp-snooping ip-source-filter vlan 20 admin-state disable
```

## Release History

Release 5.1; command introduced.

## Related Commands

**dhcp-snooping ip-source-filter admin-state** Enables or disables DHCP Snooping IP source filtering functionality for the switch.

**show dhcp-snooping ip-source-filter** Displays the ports or VLANs on which IP source filtering is enabled.

## MIB Objects

```
dhcpSnoopingSourceFilterVlanTable
  dhcpSnoopingSourceFilterVlanNumber
  dhcpSnoopingSourceFilterVlanFilteringStatus
dhcpSnoopingPortTable
  dhcpSnoopingPortIpSourceFiltering
```

---

## dhcp-snooping binding admin-state

Enables or disables the DHCP Snooping binding table functionality. The binding table contains the MAC address, IP address, lease time, binding type (dynamic or static), VLAN number, and the interface information that corresponds to a local untrusted port on the switch.

**dhcp-snooping binding admin-state {enable | disable}**

---

### Syntax Definitions

<b>enable</b>	Enables the creation of binding table entries.
<b>disable</b>	Disables the creation of binding table entries.

### Defaults

By default, the binding table functionality is enabled when the DHCP Snooping feature is enabled for the switch or for a VLAN.

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

Note that enabling the binding table functionality is not allowed if Option-82 data insertion is *not* enabled at either the switch or VLAN level.

### Examples

```
-> dhcp-snooping binding admin-state disable
-> dhcp-snooping binding admin-state enable
```

### Release History

Release 5.1; command introduced.

### Related Commands

**dhcp-snooping binding timeout** Configures the amount of time between each automatic save of the binding table contents to a file on the switch.

**dhcp-snooping binding action** Synchronizes the contents of the DHCP Snooping binding table with the contents of the **dhcpBinding.db** file saved on the switch.

### MIB Objects

dhcpSnoopingBindingStatus

---



## dhcp-snooping binding timeout

Configures the amount of time between each automatic save of the DHCP Snooping binding table contents maintained in memory to a file on the switch. This functionality preserves binding table contents across switch reboots.

**dhcp-snooping binding timeout** *seconds*

---

### Syntax Definitions

*seconds*                                 The number of seconds to wait before the next save. The valid range is 1–600.

### Defaults

By default, the timeout value is set to 1 second.

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- The timeout value is only valid if the DHCP Snooping binding table functionality is enabled.
- The contents of the binding table is saved to the **dhcpBinding.db** file in the **/flash/switch** directory.
- The **dhcpBinding.db** file is time stamped when a save of the binding table contents is successfully completed.

### Examples

```
-> dhcp-snooping binding timeout 600  
-> dhcp-snooping binding timeout 250
```

### Release History

Release 5.1; command introduced.

### Related Commands

**dhcp-snooping binding admin-state** Enables or disables the DHCP Snooping binding table functionality.

**dhcp-snooping binding action** Synchronizes the contents of the DHCP Snooping binding table with the contents of the **dhcpBinding.db** file saved on the switch.

### MIB Objects

dhcpSnoopingBindingDatabaseSyncTimeout

---

## dhcp-snooping binding action

Triggers a purge, renew, or save action against the DHCP Snooping binding table. A purge action clears the contents of the table. A renew action populates the table with entries saved in the **dhcpBinding.db** file. A save action saves table entries in switch memory to the **dhcpBinding.db** file.

**dhcp-snooping binding action {purge | renew | save}**

---

### Syntax Definitions

<b>purge</b>	Clears all binding table entries that are maintained in switch memory.
<b>renew</b>	Populates the binding table with entries saved in the <b>dhcpBinding.db</b> file located in the <b>/flash/switch</b> directory on the switch.
<b>save</b>	Saves the binding table entries in switch memory to the <b>dhcpBinding.db</b> file located in the <b>/flash/switch</b> directory on the switch.

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- The DHCP Snooping binding table is maintained in the switch memory. Binding table entries are saved on a periodic basis to the **dhcpBinding.db** file on the switch. Use the **save** option to invoke an explicit save of binding table entries to the **dhcpBinding.db** file.
- To sync the binding table contents with the contents of the **dhcpBinding.db** file:
  - use the **purge** option to clear the binding table entries, then
  - use the **renew** option to repopulate the binding table with entries saved in the **dhcpBinding.db** file.

### Examples

```
-> dhcp-snooping binding action purge
-> dhcp-snooping binding action renew
-> dhcp-snooping binding action save
```

### Release History

Release 5.1; command introduced.

## Related Commands

**dhcp-snooping binding admin-state** Enables or disables the DHCP Snooping binding table functionality.

**dhcp-snooping binding timeout** Configures the amount of time between each automatic save of the binding table contents to a file on the switch.

## MIB Objects

dhcpSnoopingBindingDatabaseAction

---

## dhcp-snooping binding persistency

Retains the entries in the DHCP Snooping binding table for the duration of the lease regardless of the existence of the MAC address in the MAC address table.

**dhcp-snooping binding persistency admin-state {enable | disable}**

---

### Syntax Definitions

<b>enable</b>	Enables DHCP Snooping binding persistency.
<b>disable</b>	Disables DHCP Snooping binding persistency.

### Defaults

By default, DHCP Snooping binding persistency is disabled.

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- With this option disabled, the entry will be removed if the MAC address is missing from the MAC address table when the database is synchronized.
- Use the [show dhcp-snooping](#) command to display the current status.

### Examples

```
-> dhcp-snooping binding persistency admin-state enable
-> dhcp-snooping binding persistency admin-state disable
```

### Release History

Release 5.1; command introduced.

### Related Commands

[dhcp-snooping binding admin-state](#) Enables or disables the DHCP Snooping binding table functionality.

[dhcp-snooping binding timeout](#) Configures the amount of time between each automatic save of the binding table contents to a file on the switch.

### MIB Objects

dhcpSnoopingBindingPersistencyStatus

---

## dhcp-snooping binding

Creates a static entry in the binding table.

**dhcp-snooping binding** *mac\_address* **port** *chassis/slot/port* **address** *ip\_address* **vlan** *vlan\_id*

**no dhcp-snooping binding** *mac\_address* **port** *chassis/slot/port* **address** *ip\_address* **vlan** *vlan\_id*

---

### Syntax Definitions

<i>mac_address</i>	The client MAC address.
<i>chassis</i>	The chassis identifier.
<i>slot1/port[-port2]</i>	The slot and port number (3/1).
<i>ip_address</i>	The IP address that the DHCP server offered to the client.
<i>vlan_id</i>	The VLAN identification number (1–4094).

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- Static binding table entries are created using this command. If DHCP Snooping binding table functionality is not enabled, creating a static entry is not allowed.
- Dynamic binding table entries are created when the relay agent receives a DHCPACK packet.
- Use the **no** form of this command to remove a static entry from the DHCP Snooping binding table.

### Examples

```
-> dhcp-snooping binding 00:2a:95:51:6c:10 port 1/1/15 address 17.15.3.10 vlan 200
-> no dhcp-snooping binding 00:2a:95:51:6c:10 port 1/1/15 address 17.15.3.10 vlan
200
```

### Release History

Release 5.1; command introduced.

### Related Commands

- dhcp-snooping binding timeout** Configures the amount of time between each automatic save of the binding table contents to a file on the switch.
- dhcp-snooping binding action** Synchronizes the contents of the DHCP Snooping binding table with the contents of the **dhcpBinding.db** file saved on the switch.
- show dhcp-snooping binding** Displays the contents of the DHCP Snooping binding table (database).

**MIB Objects**

dhcpSnoopingBindingTable  
  dhcpSnoopingBindingMacAddress  
  dhcpSnoopingBindingIfIndex  
  dhcpSnoopingBindingIpAddress  
  dhcpSnoopingBindingVlan  
  dhcpSnoopingBindingRowStatus

---

## show dhcp-snooping

Displays the global DHCP Snooping configuration.

**show dhcp-snooping**

---

### Syntax Definitions

N/A

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- When DHCP Snooping is enabled for the switch or for a specific VLAN, the DHCP Snooping binding database status is automatically enabled and additional fields are displayed.
- When DHCP Snooping is enabled at the switch level, the “Option 82 Data Insertion Per Switch” and “MAC Address Verification Per Switch” fields are displayed; these fields do not display when DHCP Snooping is enabled at the VLAN level.

### Examples

```
-> show dhcp-snooping
DHCP Snooping :
  DHCP Snooping Status                = Disabled
  DHCP Snooping Bypass Opt82-Check    = Disabled,
  DHCP Snooping Opt82 Format           = Base MAC,
  DHCP Snooping Opt82 String          = 2c:fa:a2:13:e4:02,
  DHCP Snooping Binding DB Status     = Disabled,
  DHCP Snooping Option-82 Policy      = Replace,

-> dhcp-snooping admin-state enable
-> show dhcp-snooping
DHCP Snooping :
  DHCP Snooping Status                = Switch-Level Enabled,
  Option 82 Data Insertion Per Switch = Enabled,
  MAC Address Verification Per Switch = Enabled,
  DHCP Snooping Bypass Opt82-Check    = Disabled,
  DHCP Snooping Opt82 Format           = Base MAC,
  DHCP Snooping Opt82 String          = 2c:fa:a2:13:e4:02,
  DHCP Snooping Binding DB Status     = Enabled,
  Database Sync Timeout               = 1,
  Database Last Sync Time             = Oct 25 2016 14:56,
  Binding Persistency Status         = Disabled,
  DHCP Snooping Option-82 Policy      = Replace,

-> dhcp-snooping vlan 200 admin-state enable
-> show dhcp-snooping
```

```

DHCP Snooping :
  DHCP Snooping Status                = VLAN-Level,
  DHCP Snooping Bypass Opt82-Check    = Disabled,
  DHCP Snooping Opt82 Format           = Base MAC,
  DHCP Snooping Opt82 String          = 2c:fa:a2:13:e4:02,
  DHCP Snooping Binding DB Status     = Enabled,
    Database Sync Timeout              = 1,
    Database Last Sync Time            = Oct 28 2016 07:36,
    Binding Persistency Status         = Disabled,
  DHCP Snooping Option-82 Policy      = Replace,

```

### *output definitions*

---

<b>DHCP Snooping Status</b>	Displays whether DHCP Snooping is enabled at the <b>Switch-Level</b> , <b>VLAN-Level</b> , or <b>Disabled</b> .
<b>Option 82 Data Insertion Per Switch</b>	Indicates whether or not ( <b>Enabled</b> or <b>Disabled</b> ) the relay agent inserts the Option-82 field into DHCP packets before forwarding them to the DHCP server. Configured through the <a href="#">dhcp-snooping option-82-data-insertion</a> command.
<b>MAC Address Verification Per Switch</b>	Indicates whether or not ( <b>Enabled</b> or <b>Disabled</b> ) the source MAC address is compared to the client hardware MAC address in the DHCP packet; if there is a mismatch the packet is dropped. Configured through the <a href="#">dhcp-snooping mac-address-verification</a>
<b>DHCP Snooping Bypass Opt82-Check</b>	Indicates whether DHCP packets received on untrusted ports are checked to see if they contain the Option-82 field ( <b>Disabled</b> ) or not checked ( <b>Enabled</b> ). Configured through the <a href="#">dhcp-snooping bypass option-82-check</a> command.
<b>DHCP Snooping Opt82 Format</b>	Displays the type of Option-82 information inserted into the Circuit ID and Remote ID suboptions of the Option-82 field. Configured through the <a href="#">dhcp-snooping option-82 format</a> command.
<b>DHCP Snooping Opt82 string</b>	Displays the contents of the Option-82 string that is inserted into the Circuit ID and Remote ID suboptions of the Option-82 field.
<b>DHCP Snooping Binding DB Status</b>	Displays whether the DHCP Snooping binding table functionality is <b>Enabled</b> or <b>Disabled</b> . Configured through the <a href="#">dhcp-snooping binding admin-state</a> command.
<b>Database Sync Timeout</b>	The amount of time, in seconds, between each automatic save of the DHCP Snooping binding table contents maintained in memory to a file on the switch. Configured through the <a href="#">dhcp-snooping binding timeout</a> command.
<b>Database Last Sync Time</b>	The last date and time DHCP Snooping binding table entries were saved from memory to a file on the switch.
<b>Binding Persistency Status</b>	Indicates whether a binding table entry is retained ( <b>Enabled</b> ) or removed ( <b>Disabled</b> ) if the MAC address is missing from the MAC address table when the binding table database is synchronized. Configured through the <a href="#">dhcp-snooping binding persistency</a> command.
<b>DHCP Snooping Option-82 Policy</b>	Indicates whether to <b>keep</b> , <b>replace</b> , or <b>drop</b> the Option-82 field information contained in DHCP packets received by the switch. Configured through the <a href="#">dhcp-snooping option-82 policy</a> command.

---



## Release History

Release 5.1; command introduced.

## Related Commands

- |   |  |
|---|--|
| <a href="#">dhcp-snooping admin-state</a> | Enables or disables DHCP Snooping for the switch.    |
| <a href="#">dhcp-snooping vlan</a>        | Enables or disables DHCP Snooping at the VLAN level. |

## MIB Objects

```
dhcpSnoopingMode  
dhcpSnoopingOpt82DataInsertionStatus  
dhcpSnoopingMacAddrVerificationStatus  
dhcpSnoopingBypassOpt82CheckStatus  
dhcpSnoopingOption82FormatType  
dhcpSnoopingOption82StringValue  
dhcpSnoopingOption82Policy  
dhcpSnoopingBindingStatus  
dhcpSnoopingBindingDatabaseSyncTimeout  
dhcpSnoopingBindingDatabaseLastSyncTime  
dhcpSnoopingBindingPersistencyStatus
```

---

## show dhcp-snooping ip-source-filter

Displays the ports or VLANs on which IP source filtering is enabled.

```
show dhcp-snooping ip-source-filter {vlan | port}
```

---

### Syntax Definitions

<b>vlan</b>	Displays the VLANs on which IP source filtering is enabled.
<b>port</b>	Displays the ports on which IP source filtering is enabled.

### Defaults

N/A

### Platforms Supported

Not supported in this release.

### Usage Guidelines

- The show output displays only those ports or VLANs on which IP source filtering is enabled.
- This command also displays the status of the link aggregate ports when source filtering is enabled at VLAN or port level.

### Examples

```
-> show dhcp-snooping ip-source-filter port
```

```
Global Admin Status : Enabled
```

```

      Port          IP Src
      -----+-----
      Filtering
1/1/7              Enabled
1/1/12             Enabled
1/4/30             Enabled
1/4/35             Enabled

```

#### *output definitions*

---

<b>Global Admin Status</b>	The status of DHCP Snooping IP source filtering functionality for the switch ( <b>Enabled</b> or <b>Disabled</b> ).
<b>Port</b>	The chassis, slot, and port number.
<b>IP Src Filtering</b>	The IP source filtering status ( <b>Enabled</b> or <b>Disabled</b> ) for the port.

---

```
-> show dhcp-snooping ip-source-filter vlan
```

```
Global Admin Status : Enabled
```

```

VLAN      Ip Src
  ID      Filtering
-----+-----
  10      Enabled
  11      Enabled

```

### *output definitions*

---

<b>Global Admin Status</b>	The status of DHCP Snooping IP source filtering functionality for the switch ( <b>Enabled</b> or <b>Disabled</b> ).
<b>Vlan ID</b>	The VLAN ID number.
<b>IP Src Filtering</b>	The IP source filtering status ( <b>Enabled</b> or <b>Disabled</b> ) for the VLAN ID.

---

### **Release History**

Release 5.1; command introduced.

### **Related Commands**

- dhcp-snooping ip-source-filter admin-state** Enables or disabled the DHCP Snooping IP source filtering functionality for the switch.
- dhcp-snooping ip-source-filter** Enables or disables IP source filtering for a specific port, link aggregate, or VLAN.

### **MIB Objects**

```

dhcpSnoopingIpSourceFilterAdminState
dhcpSnoopingSourceFilterVlanTable
  dhcpSnoopingSourceFilterVlanNumber
  dhcpSnoopingSourceFilterVlanFilteringStatus
dhcpSnoopingPortTable
  dhcpSnoopingPortIpSourceFiltering

```

---

## show dhcp-snooping vlan

Displays a list of VLANs that have DHCP Snooping enabled and whether or not MAC address verification and Option-82 data insertion is enabled for each VLAN.

**show dhcp-snooping vlan**

---

### Syntax Definitions

N/A

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- This command only applies if DHCP Snooping is enabled at the VLAN level.
- Use the **show dhcp-snooping** command to determine the status of DHCP Snooping at the switch level.

### Examples

```
-> show dhcp-snooping vlan
VLAN      Admin      Opt82      MAC Addr
ID        State      Insertion  Verification
-----+-----+-----+-----
50        Enabled    Enabled    Enabled
60        Enabled    Enabled    Enabled
100       Enabled    Disabled   Enabled
200       Enabled    Enabled    Disabled
300       Disabled   Enabled    Enabled
1500     Disabled   Disabled   Disabled
```

#### *output definitions*

---

<b>VLAN ID</b>	The VLAN identification number for the DHCP Snooping VLAN.
<b>Admin State</b>	The administrative status of DHCP Snooping for the VLAN ( <b>Enabled</b> or <b>Disabled</b> ).
<b>MAC Addr Verification</b>	Indicates whether or not MAC address verification is enabled for the VLAN ( <b>Enabled</b> or <b>Disabled</b> ).
<b>Opt-82 Insertion</b>	Indicates whether or not Option-82 data insertion is enabled for the VLAN ( <b>Enabled</b> or <b>Disabled</b> ).

---

### Release History

Release 5.1; command introduced.

## Related Commands

<a href="#">dhcp-snooping vlan</a>	Enables or disables DHCP Snooping, MAC address verification, and Option-82 data insertion for the specified VLAN.
<a href="#">show dhcp-snooping</a>	Displays the current DHCP Snooping configuration.
<a href="#">show dhcp-snooping port</a>	Displays the trust mode and DHCP violation statistics for all switch ports that are filtered by DHCP Snooping.

## MIB Objects

```
dhcpSnoopingVlanTable  
  dhcpSnoopingVlanNumber  
  dhcpSnoopingVlanMacAddrVerificationStatus  
  dhcpSnoopingVlanOpt82DataInsertionStatus  
  dhcpSnoopingVlanStatus  
  dhcpSnoopingVlanAdminState
```

---

## show dhcp-snooping port

Displays the trust mode and DHCP Snooping violation statistics for all switch ports and link aggregates that are filtered by DHCP Snooping.

**show dhcp-snooping port**

---

### Syntax Definitions

N/A

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- If DHCP Snooping is operating at the switch level, then information for all switch ports and link aggregates is displayed.
- If DHCP Snooping is operating at the VLAN level, then information for only those ports and link aggregates that are associated with a DHCP Snooping VLAN is displayed.
- The violation statistics displayed only apply to ports and link aggregates that are in the client only trust mode. When the trust mode for a port is changed from **client-only** to **trusted** or **blocked**, the violation counters are set to zero (0).

### Examples

```
-> show dhcp-snooping port
```

Port	Trust Mode	Opt82 Violation	MAC Violation	Server Violation	Relay Violation	Binding Violation
1/4/1	Blocked	0	0	0	0	0
1/4/2	Client	0	0	0	0	0
1/4/3	Client	0	0	0	0	0
1/4/4	Trusted	0	0	0	0	0
1/4/5	Client	0	0	0	0	0
0/10	Trusted	0	0	0	0	0

#### *output definitions*

---

<b>Port</b>	The chassis, slot, and port number or a link aggregate ID number
<b>Trust Mode</b>	The DHCP Snooping trust mode for the port ( <b>Blocked</b> , <b>Client</b> , or <b>Trusted</b> ). Configured through the <b>dhcp-snooping port</b> command.
<b>Opt82 Violation</b>	The number of DHCP packets dropped due to a DHCP Snooping Option-82 violation.

*output definitions (continued)*


---

<b>MAC Violation</b>	The number of DHCP packets dropped due to a mismatch between the packet source MAC address and the client hardware address contained within the packet.
<b>Server Violation</b>	The number of DHCP server packets dropped because they originated from outside the network or firewall.
<b>Relay Violation</b>	The number of DHCP packets dropped because the packet included a relay agent IP address that was not 0.0.0.0.
<b>Binding Violation</b>	The number of DHCP packets dropped due to a mismatch between packets received and binding table information.

---

**Release History**

Release 5.1; command introduced.

**Related Commands**

<b>show dhcp-snooping</b>	Displays the current DHCP Snooping configuration.
<b>show dhcp-snooping vlan</b>	Displays a list of DHCP Snooping VLANs.
<b>dhcp-snooping clear violation-counters</b>	Clears the DHCP violation counters.

**MIB Objects**

```

dhcpSnoopingPortTable
  dhcpSnoopingPortIfIndex
  dhcpSnoopingPortTrustMode
  dhcpSnoopingPortOption82Violation
  dhcpSnoopingPortMacAddrViolation
  dhcpSnoopingPortDhcpServerViolation
  dhcpSnoopingPortRelayAgentViolation
  dhcpSnoopingPortBindingViolation

```

---

## dhcp-snooping clear violation-counters

Clears the DHCP violation counters.

```
dhcp-snooping clear violation-counters {port chassis/slot/port [-port2]} | slot chassis/slot | linkagg  
agg_id | all}
```

---

### Syntax Definitions

<i>chassis/slot/port [-port2]</i>	Clear DHCP snooping violation counters for the specified physical port or range of ports
<i>chassis/slot</i>	Clear DHCP snooping violation counters for all ports of the specified slot.
<i>agg_id</i>	Clear DHCP snooping violation counter for the specified link aggregate.
<b>all</b>	Clear DHCP snooping violation counters on all ports.

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

Use the **port**, **slot**, or **linkagg** parameter options to clear the DHCP violation counters for a specific port, all ports on a chassis/slot, or a specific link aggregate.

### Examples

```
-> dhcp-snooping clear violation-counters port 1/2  
-> dhcp-snooping clear violation-counters port 1/2/3  
-> dhcp-snooping clear violation-counters port 1/2/4-9  
-> dhcp-snooping clear violation-counters linkagg 5  
-> dhcp-snooping clear violation-counters slot 3/2  
-> dhcp-snooping clear violation-counters all
```

### Release History

Release 5.1; command introduced.



**Related Commands****show dhcp-snooping port**

Displays the trust mode and DHCP Snooping violation statistics for all switch ports that are filtered by DHCP Snooping.

**MIB Objects**

```
dhcpSnoopingClearViolationTable  
  dhcpSnoopingClearViolationIfIndex  
  dhcpSnoopingClearViolationAction
```

---

## show dhcp-snooping counters

Displays the DHCP Snooping/Relay global counters.

**show dhcp-snooping counters** [*slot chassis\_id/slot\_id*]

---

### Syntax Definitions

N/A

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

NI counters display the cumulative value from requested NIs.

### Examples

```
-> show dhcp-snooping counters
DHCP Discover Packets           : 226,
DHCP Offer Packets             : 226,
DHCP Request Packets           : 226,
DHCP ACK Packets               : 226,
DHCP NACK Packets              : 0,
DHCP Release Packets           : 10,
DHCP Decline Packets           : 0,
DHCP Inform Packets            : 10,
DHCP Renew Packets             : 0,
Total Packet received in CMM    : 2,
Binding error (TCAM Unavailable) : 0,
Unknown/Malformed Packets Dropped : 0,
Packets received in CMM        : 224,
Packets transmitted from CMM    : 909,
Total ISF Packet Drop           : 0
```

```
->show dhcp-snooping counters slot 1/1
Packet received in CMM from NI   : 472,
Packet transmitted from CMM to NI : 453,
Packets received in NI from CMM  : 453,
Packets transmitted from NI to CMM : 472,
Total ISF Packet Drop            : 453,
```

### *output definitions*

---

<b>DHCP Discover Packets</b>	Displays the number of Discover packets.
<b>DHCP Offer Packets</b>	Displays the number of Offer packets.
<b>DHCP Request Packets</b>	Displays the number of Request packets.

*output definitions (continued)*


---

<b>DHCP ACK Packets</b>	Displays the number Acknowledged packets.
<b>DHCP NACK Packets</b>	Displays the number of negative acknowledged packets.
<b>DHCP Release Packets</b>	Displays the number of Release packets.
<b>DHCP Decline Packets</b>	Displays the number of Decline packets.
<b>DHCP Inform Packets</b>	Displays the number of Inform packets.
<b>DHCP Renew Packets</b>	Displays the number of Renew packets,.
<b>Total Packet received in CMM</b>	Displays the total number of packets received in CMM.
<b>Binding error (TCAM Unavailable)</b>	Displays the number of Binding error.
<b>Unknown/Malformed Packets Dropped</b>	Displays the number of Unknown or Malformed packets dropped.
<b>Packets received in CMM</b>	Displays the number of packets received in CMM.
<b>Packets transmitted from CMM</b>	Displays the number of packets transmitted from CMM.
<b>Total ISF Packet Drop</b>	Displays the number of total ISF packets dropped.
<b>Packets received in CMM from NI</b>	Displays the number of packets received in CMM which is transmitted from NI.
<b>Packets transmitted from CMM to NI</b>	Displays the number of packets transmitted from CMM which is received in NI.
<b>Packets received in NI from CMM</b>	Displays the number of packets received in NI which is transmitted from CMM.
<b>Packets transmitted from NI to CMM</b>	Displays the number of packets transmitted from NI which is received in CMM.

---

**Release History**

Release 5.1; command introduced.

**Related Commands**

[dhcp-snooping clear counters](#) Clears the global counters for DHCP Snooping/Relay.

**MIB Objects**

N/A

---

## dhcp-snooping clear counters

Clears the global and per NI counters for DHCP Snooping/Relay.

**dhcp-snooping clear counters**

---

### Syntax Definitions

N/A

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

When this command is used, the counter statistics displayed with the **show dhcp-snooping counters** command are reset to zero.

### Examples

```
-> dhcp-snooping clear counters
```

### Release History

Release 5.1; command introduced.

### Related Commands

**show dhcp-snooping counters** Displays the DHCP snooping/Relay global counters. NI counters display the cumulative value from requested NIs.

### MIB Objects

N/A

---

## show dhcp-snooping isf-statistics

Displays the IP source filter (ISF) drop counters.

```
show dhcp-snooping isf-statistics [vlan vlan_id]
```

---

### Syntax Definitions

N/A

### Defaults

N/A

### Platforms Supported

Not supported in this release.

### Usage Guidelines

Use the **vlan** parameter to display counters for a specific VLAN ID.

### Examples

```
-> show dhcp-snooping isf-statistics
Mode: Vlan based ISF
Chassis  Slot      Vlan      Packets Dropped
-----+-----+-----+-----
      1      1        10         300
      1      2        10         400
      1      3        11         500
      1      4        11         600
```

```
-> show dhcp-snooping isf-statistics vlan 10
Mode: Vlan based ISF
Chassis  Slot      Vlan      Packets Dropped
-----+-----+-----+-----
      1      1        10         300
      1      2        10         400
```

```
-> show dhcp-snooping isf-statistics
Mode: Port based ISF
Chassis  Slot      Vlan      Packets Dropped
-----+-----+-----+-----
      1      1         NA         300
      1      2         NA         400
      2      1         NA         500
      2      2         NA         600
```

### Release History

Release 5.1; command introduced.

**Related Commands**

[dhcp-snooping clear isf-statistics](#)

Clears the ISF drop counters.

**MIB Objects**

N/A

---

## dhcp-snooping clear isf-statistics

Clears the IP source filter (ISF) drop counters.

**dhcp-snooping clear isf-statistics**

---

### Syntax Definitions

N/A

### Defaults

N/A

### Platforms Supported

Not supported in this release.

### Usage Guidelines

When this command is used, the counter statistics displayed with the **show dhcp-snooping isf-statistics** command are reset to zero.

### Examples

```
-> dhcp-snooping clear isf-statistics
```

### Release History

Release 5.1; command introduced.

### Related Commands

**show dhcp-snooping isf-statistics**      Displays the ISF drop counters.

### MIB Objects

N/A

---

## show dhcp-snooping binding

Displays the contents of the DHCP Snooping binding table (database).

**show dhcp-snooping binding** [*port chassis/slot/port*] | **linkagg** *agg\_id* | **ip-address** *ip\_address* | **snapshot** [*static* | *dynamic*]

---

### Syntax Definitions

<i>chassis/slot/port</i>	The chassis, slot, and port number for which binding table entries are displayed.
<i>agg_id</i>	The link aggregate ID for which binding table entries are displayed.
<i>ip_address</i>	The IPv4 address for which binding table entries are displayed.
<b>snapshot</b>	Displays binding table entries in the configuration snapshot format.
<b>static</b>	Displays only static binding table entries.
<b>dynamic</b>	Displays only dynamic binding table entries.

### Defaults

By default, all binding table entries are displayed.

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- Use the [dhcp-snooping binding](#) command to create a static entry in the binding table.
- Dynamic binding table entries are created when the relay agent receives a DHCPACK packet.

### Examples

```
-> show dhcp-snooping binding
```

```
Total Number of Binding Entries: 12
```

MAC Address	Port	IP Address	Lease Time	VLAN ID	Binding Type
00:20:95:11:22:10	1/1/4	100.100.100.10	-	100	Static
02:00:00:00:0a:00	1/1/5	100.100.100.11	30	100	Dynamic
00:20:95:11:22:11	1/1/5	100.100.100.20	-	100	Static
02:00:00:00:02:00	1/1/6	100.100.100.10	30	100	Dynamic
02:00:00:00:09:00	1/1/6	100.100.100.18	30	100	Dynamic
02:00:00:00:08:00	1/1/6	100.100.100.6	30	100	Dynamic
02:00:00:00:05:00	1/1/6	100.100.100.8	30	100	Dynamic
02:00:00:00:03:00	1/1/7	100.100.100.3	30	100	Dynamic
02:00:00:00:01:00	1/1/7	100.100.100.17	30	100	Dynamic
02:00:00:00:07:00	0/1	100.100.100.13	30	100	Dynamic
02:00:00:00:04:00	0/1	100.100.100.15	30	100	Dynamic
00:20:95:11:22:12	0/10	100.100.100.30	-	100	Static



```
-> show dhcp-snooping binding port 1/1/5
```

Total Number of Binding Entries: 2

MAC Address	Port	IP Address	Lease Time	VLAN ID	Binding Type
02:00:00:00:0a:00	1/1/5	100.100.100.11	30	100	Dynamic
00:20:95:11:22:11	1/1/5	100.100.100.20	-	100	Static

```
-> show dhcp-snooping binding linkagg 1
```

Total Number of Binding Entries: 2

MAC Address	Port	IP Address	Lease Time	VLAN ID	Binding Type
02:00:00:00:07:00	0/1	100.100.100.13	30	100	Dynamic
02:00:00:00:04:00	0/1	100.100.100.15	30	100	Dynamic

```
-> show dhcp-snooping binding ip-address 100.100.100.11
```

Total Number of Binding Entries: 1

MAC Address	Port	IP Address	Lease Time	VLAN ID	Binding Type
02:00:00:00:0a:00	1/1/5	100.100.100.11	30	100	Dynamic

```
-> show dhcp-snooping binding snapshot static
```

```
dhcp-snooping binding 00:20:95:11:22:12 linkagg 10 address 100.100.100.30 vlan 100
dhcp-snooping binding 00:20:95:11:22:10 port 1/1/4 address 100.100.100.10 vlan 100
dhcp-snooping binding 00:20:95:11:22:11 port 1/1/5 address 100.100.100.20 vlan 100
```

```
-> show dhcp-snooping binding snapshot dynamic
```

```
dhcp-snooping binding 02:00:00:00:0a:00 port 1/1/5 address 100.100.100.11 vlan 100
dhcp-snooping binding 02:00:00:00:02:00 port 1/1/6 address 100.100.100.10 vlan 100
dhcp-snooping binding 02:00:00:00:09:00 port 1/1/6 address 100.100.100.18 vlan 100
dhcp-snooping binding 02:00:00:00:08:00 port 1/1/6 address 100.100.100.6 vlan 100
dhcp-snooping binding 02:00:00:00:05:00 port 1/1/6 address 100.100.100.8 vlan 100
dhcp-snooping binding 02:00:00:00:03:00 port 1/1/7 address 100.100.100.3 vlan 100
dhcp-snooping binding 02:00:00:00:01:00 port 1/1/7 address 100.100.100.17 vlan 100
dhcp-snooping binding 02:00:00:00:07:00 linkagg 1 address 100.100.100.13 vlan 100
dhcp-snooping binding 02:00:00:00:04:00 linkagg 1 address 100.100.100.15 vlan 100
```

### output definitions

<b>MAC Address</b>	The MAC address of the client.
<b>Port</b>	The chassis/slot/port designation for the switch port that received the DHCP request.
<b>IP Address</b>	The IP address offered by the DHCP server.
<b>Lease Time</b>	The IP address lease time assigned by the DHCP server. A value of 0 indicates a static entry.
<b>VLAN ID</b>	The VLAN ID of the VLAN to which the client belongs.
<b>Binding Type</b>	Indicates whether the binding table entry is <b>dynamic</b> or <b>static</b> . Static entries are created using the <b>dhcp-snooping binding</b> command.

## Release History

Release 5.1; command introduced.

## Related Commands

<a href="#">show dhcp-snooping</a>	Displays the current DHCP Snooping configuration.
<a href="#">show dhcp-snooping vlan</a>	Displays a list of DHCP Snooping VLANs.
<a href="#">show dhcp-snooping port</a>	Displays the trust mode and DHCP violation statistics for all switch ports that are filtered by DHCP Snooping.

## MIB Objects

```
dhcpSnoopingBindingStatus  
dhcpSnoopingBindingTable  
    dhcpSnoopingBindingMacAddress  
    dhcpSnoopingBindingIfIndex  
    dhcpSnoopingBindingIpAddress  
    dhcpSnoopingBindingLeaseTime  
    dhcpSnoopingBindingVlan  
    dhcpSnoopingBindingType
```

---

## dhcpv6-snooping vlan admin-state

Enables or disables DHCPv6 Snooping on a per-VLAN basis.

```
dhcpv6-snooping vlan vlan_id[-vlan_id2] admin-state {enable | disable}
```

```
no dhcpv6-snooping vlan vlan_id[-vlan_id2]
```

---

### Syntax Definitions

<i>vlan_id</i> [- <i>vlan_id2</i> ]	The VLAN ID on which DHCPv6 Snooping must be enabled or disabled. Use a hyphen to specify a range of VLANs (10-15).
<b>enable</b>	Enables DHCPv6 Snooping on the specified VLAN.
<b>disable</b>	Disables DHCPv6 Snooping on the specified VLAN.

### Defaults

By default, this feature is disabled.

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- DHCPv6 Snooping can be enabled on per-VLAN basis or globally on the switch.
- The global DHCPv6 Snooping must be disabled before enabling the per-VLAN DHCPv6 Snooping.
- When DHCPv6 Snooping is configured on a per-VLAN basis, DHCPv6 snooping is limited to a maximum of 64 VLANs.
- DHCPv6 snooping must not be enabled in configurations where a DHCPv6 server assigns multiple addresses to a client. In such situations, only the first address will be stored in the binding table.
- To completely remove DHCPv6 snooping configuration from a VLAN, use the **no** form of the command.

### Examples

```
-> dhcpv6-snooping vlan 1 admin-state enable
-> dhcpv6-snooping vlan 10-20 admin-state enable
-> dhcpv6-snooping vlan 1 admin-state disable
-> dhcpv6-snooping vlan 10-20 admin-state disable
-> no dhcpv6-snooping vlan 2
-> no dhcpv6-snooping vlan 10-20
```

### Release History

Release 5.1; command introduced.

Release 5.1.R2; Support for IPv6.

## Related Commands

<b>dhcpv6-snooping binding</b>	Configures a static entry in the binding table.
<b>dhcpv6-snooping binding persistency</b>	Configures whether to retain or not retain the entries in the DHCPv6 Snooping binding table for the duration of the lease, regardless of the existence of the MAC address in the MAC address table.
<b>dhcpv6-snooping ipv6-source-filter</b>	Enables or disables the IPv6 source filtering capability at a port, link aggregation, or VLAN level using the DHCPv6 Snooping binding table.
<b>show dhcpv6-snooping</b>	Displays the global DHCPv6 Snooping configuration.
<b>show dhcpv6-snooping interfaces</b>	Displays the DHCPv6 Snooping configuration status on per-VLAN.

## MIB Objects

```
alaIdHCPv6SnoopingTable  
  alaDHCp6SnoopingInterfaceIndex  
  alaDHCp6SnoopingInterfaceAdminStatus  
  alaDHCp6SnoopingInterfaceRowStatus
```

---

## dhcpv6-snooping global admin-state

Enables or disables DHCPv6 Snooping globally on the switch.

`dhcpv6-snooping global admin-state {enable | disable}`

---

### Syntax Definitions

<b>global</b>	The DHCPv6 Snooping is enabled or disabled globally on the switch.
<b>enable</b>	Enables DHCPv6 Snooping for the switch.
<b>disable</b>	Disables DHCPv6 Snooping for the switch.

### Defaults

By default, this feature is disabled.

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- DHCPv6 Snooping can be enabled on per-VLAN or globally on the switch.
- The per-VLAN DHCPv6 Snooping must be disabled before enabling global DHCPv6 Snooping.
- DHCPv6 snooping must not be enabled in configurations where a DHCPv6 server assigns multiple addresses to a client. In such situations only the first address will be stored in the binding table.

### Examples

```
-> dhcpv6-snooping global admin-state enable
-> dhcpv6-snooping global admin-state disable
```

### Release History

Release 5.1; command introduced.  
Release 5.1.R2; Support for IPv6.

### Related Commands

<a href="#">dhcpv6-snooping binding</a>	Configures a static entry in the binding table.
<a href="#">dhcpv6-snooping binding persistency</a>	Allows to configure whether to retain or not retain the entries in the DHCPv6 Snooping binding table for the duration of the lease, regardless of the existence of the MAC address in the MAC address table.
<a href="#">dhcpv6-snooping ipv6-source-filter</a>	Enables or disables the IPv6 source filtering capability at a port, link aggregation, or VLAN level using the DHCPv6 Snooping binding table.
<a href="#">show dhcpv6-snooping</a>	Displays the global DHCPv6 Snooping configuration.
<a href="#">show dhcpv6-snooping interfaces</a>	Displays the DHCPv6 Snooping configuration status on per-VLAN.

**MIB Objects**

alaDHCPv6SnoopingTable

  alaDHCPv6SnoopingInterfaceIndex

  alaDHCPv6SnoopingInterfaceAdminStatus

  alaDHCPv6SnoopingInterfaceRowStatus

---

## dhcpv6-snooping binding

Configures a static entry in the binding table.

```
dhcpv6-snooping binding vlan vlan_id link-local ipv6_address [global-address ipv6_address] [mac-address mac_address] [port chassis/slot/port | linkagg agg_id]
```

```
no dhcpv6-snooping binding vlan vlan_id link-local ipv6_address
```

---

### Syntax Definitions

<i>vlan_id</i>	The VLAN ID on which the DHCPv6 client is configured.
<b>link-local</b>	The clients link-local IPV6 address.
<b>global-address</b>	The IPV6 global unicast address assigned by the DHCPv6 lease server.
<b>mac-address</b>	The clients MAC address.
<b>port   linkagg</b>	The port or link aggregate used to reach the DHCPv6 client.

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- When a new binding entry is added or an existing entry is modified using this command, the entry's lease lifetime is changed to indefinite.
- While adding a new binding entry the values for all the parameters must be specified. Else, the binding entry will not be added.
- When a VLAN is deleted, all binding entries on the VLAN including the manually added binding entry is also removed.

### Examples

```
-> dhcpv6-snooping binding vlan 1 link-local fe80::eae7:32ff:fea4:6321 global-address 2001:db8:1000::2b0:d0ff:fe86:880e mac-address 00:00:01:1d:4f:7d linkagg 1
-> no dhcpv6-snooping binding vlan 1 link-local fe80::eae7:32ff:fea4:6321
```

### Release History

Release 5.1; command introduced.

Release 5.1.R2; Support for IPv6.

## Related Commands

**dhcpv6-snooping global admin-state** Enables or disables DHCPv6 Snooping globally on the switch.

**dhcpv6-snooping vlan admin-state** Enables or disables DHCPv6 Snooping on a per-VLAN basis.

**show dhcpv6-snooping binding** Displays the DHCPv6 Snooping binding table information.

## MIB Objects

```
alaDHCPv6BindingTable
  alaDHCPv6SnoopingInterfaceIndex
  alaDHCPv6BindingLinkLocalAddress
  alaDHCPv6BindingGlobalAddress
  alaDHCPv6BindingPhysAddress
  alaDHCPv6BindingPortIfIndex
```

---



## dhcpv6-snooping binding timeout

Configures the amount of time between each automatic save of the DHCPv6 Snooping binding table contents maintained in memory to a file on the switch.

**dhcpv6-snooping binding timeout** *seconds*

---

### Syntax Definitions

*seconds* The time interval in seconds between automatic save of the DHCPv6 Snooping binding table to file on the switch. The time interval range is 1 to 600 seconds.

### Defaults

The default value is 1 second.

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

The timeout value is only valid if the DHCPv6 Snooping binding table functionality is enabled.

### Examples

```
-> dhcpv6-snooping binding timeout 5
```

### Release History

Release 5.1; command introduced.

Release 5.1.R2; Support for IPv6.

### Related Commands

[dhcpv6-snooping binding](#) Configures a static entry in the binding table.  
[show dhcpv6-snooping binding](#) Displays the DHCPv6 Snooping binding table information.

### MIB Objects

```
alaDHCPV6BindingConfig  
  alaDHCPv6BindingTimeout
```

---

## dhcpv6-snooping binding action

Allows to manually purge, renew or save the DHCPv6 Snooping binding table.

**dhcpv6-snooping binding action {purge | renew | save}**

---

### Syntax Definitions

<b>purge</b>	Clears the content of the DHCPv6 binding table.
<b>renew</b>	Restores the DHCPv6 binding table entries with the previously saved values in the permanent storage.
<b>save</b>	Saves the DHCPv6 binding table entries to permanent storage.

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- The DHCPv6 Snooping binding table is maintained in the switch memory. Binding table entries are saved on a periodic basis to the file on the switch. Use the purge, renew, and save options available with this command to sync the binding table contents with the contents of the file.
- While using binding table action commands ensure the binding timeout interval is set greater than 10 seconds from the default interval 1 second to avoid quick timeout.

### Examples

```
-> dhcpv6-snooping binding action purge
-> dhcpv6-snooping binding action renew
-> dhcpv6-snooping binding action save
```

### Release History

Release 5.1; command introduced.

Release 5.1.R2; Support for IPv6.

### Related Commands

- [dhcpv6-snooping binding](#) Configures a static entry in the binding table.
- [show dhcpv6-snooping binding](#) Displays the DHCPv6 Snooping binding table information.

### MIB Objects

```
alaDHCPV6BindingConfig
alaDHCPV6BindingAction
```

---

## dhcpv6-snooping binding persistency

Configures whether to retain or not retain the entries in the DHCPv6 Snooping binding table for the duration of the lease, regardless of the existence of the MAC address in the MAC address table.

**dhcpv6-snooping binding persistency {enable | disable}**

---

### Syntax Definitions

<b>enable</b>	Enables DHCPv6 Snooping binding persistency. The DHCPv6 Snooping binding table entries will be retained even if the MAC address is deleted from the switch's MAC cache.
<b>disable</b>	Disables DHCPv6 Snooping binding persistency. The DHCPv6 Snooping binding table entries will be deleted if the MAC address is deleted from the switch's MAC cache.

### Defaults

By default, DHCPv6 snooping binding persistency is disabled.

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- If the binding table is restored from permanent storage when the DHCPv6 Snooping binding persistency is enabled, all entries will be added to the binding table, even if the MAC address is not in the switch's MAC cache.
- If the binding table is restored from permanent storage when the DHCPv6 Snooping binding persistency is disabled, only entries for which there is a corresponding entry in the switch's MAC cache will be restored.
- The binding entries will get deleted upon lease time expiry and also during link down or MAC address deletion unless persistency is enabled on the switch.

### Examples

```
-> dhcpv6-snooping binding persistency enable
-> dhcpv6-snooping binding persistency disable
```

### Release History

Release 5.1; command introduced.

Release 5.1.R2; Support for IPv6.

**Related Commands**

**show dhcpv6-snooping binding** Displays the DHCPv6 Snooping binding table information.

**MIB Objects**

```
alaDHCPV6BindingConfig  
  alaDHCPv6BindingPersistency
```

---

## dhcpv6-snooping ipv6-source-filter

Enables or disables the IPv6 source filtering capability for a port, link aggregate, or VLAN using the DHCPv6 Snooping binding table.

```
dhcpv6-snooping ipv6-source-filter {vlan vlan_id[-vlan_id2] | port chassis/slot1/port[-port2] | linkagg agg_id[-agg_id2]} admin-state {enable | disable}
```

---

### Syntax Definitions

<i>vlan_id</i> [- <i>vlan_id2</i> ]	The VLAN ID on which the IPv6 source filtering needs to be enabled or disabled. Use a hyphen to specify a range of VLAN IDs (10-15).
<i>chassis/slot1/port</i> [- <i>port2</i> ]	The port number on which the IPv6 source filtering needs to be enabled or disabled. Use a hyphen to specify a range of ports (1/1/3-8).
<i>agg_id</i> [- <i>agg_id2</i> ]	The linkagg ID on which the IPv6 source filtering needs to be enabled or disabled. Use a hyphen to specify a range of IDs (1-5).
<b>enable</b>	Enables IPv6 source filtering for the specified port, link aggregation, or VLAN.
<b>disable</b>	Disables IPv6 source filtering for the specified port, link aggregation, or VLAN level.

### Defaults

By default, IPv6 source filtering is disabled on port, link aggregation, or VLAN level.

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- DHCPv6 Snooping must be enabled for IPv6 source filtering to be enabled.
- IPv6 source filtering can be enabled per-VLAN or per-port (linkagg).
- If DHCPv6 Snooping is enabled on switch level, then IPv6 source filtering can be enabled on any port, linkagg or VLAN.
- If DHCPv6 Snooping is enabled on VLAN, then IPv6 source filtering can only be enabled on ports which are part of that VLAN, or on the same VLAN.
- If a static host is connected to IPv6 source filtering enabled port or VLAN, then all the packets coming from this host are dropped. A static binding entry must be created to allow the packets coming from this host to pass.

## Examples

```
-> dhcpv6-snooping ipv6-source-filter vlan 1 admin-state enable
-> dhcpv6-snooping ipv6-source-filter vlan 10-15 admin-state enable
-> dhcpv6-snooping ipv6-source-filter port 1/1/2 admin-state enable
-> dhcpv6-snooping ipv6-source-filter port 1/1/3-8 admin-state enable
-> dhcpv6-snooping ipv6-source-filter linkagg 6 admin-state enable
-> dhcpv6-snooping ipv6-source-filter linkagg 1-5 admin-state enable

-> dhcpv6-snooping ipv6-source-filter vlan 1 admin-state disable
-> dhcpv6-snooping ipv6-source-filter vlan 10-15 admin-state disable
-> dhcpv6-snooping ipv6-source-filter port 1/1/2 admin-state disable
-> dhcpv6-snooping ipv6-source-filter port 1/1/3-8 admin-state disable
-> dhcpv6-snooping ipv6-source-filter linkagg 6 admin-state disable
-> dhcpv6-snooping ipv6-source-filter linkagg 1-5 admin-state disable
```

## Release History

Release 5.1; command introduced.

Release 5.1.R2; Support for IPv6.

## Related Commands

**dhcpv6-snooping vlan admin-state** Enables or disables DHCPv6 Snooping on a per-VLAN basis.

**dhcpv6-snooping global admin-state** Enables or disables DHCPv6 Snooping globally on the switch.

**show dhcpv6-snooping ipv6-source-filter** Displays the port, VLAN or link aggregation on which IPv6 Source Filter (ISF) is configured.

## MIB Objects

```
alaDHCPv6SourceFilterInterfaceTable
  alaDHCPv6SourceFilterVlanId
  alaDHCPv6SourceFilterInterfaceIfIndex
  alaDHCPv6SourceFilterInterfaceRowStatus
  alaDHCPv6SourceFilterVlanRowStatus
```

---

## ipv6 dhcp guard

Enables or disables DHCPv6 Guard on a VLAN. If enabled (the default), DHCPv6 server messages are discarded unless the messages are received on trusted ports. This command also includes an option to enable DHCPv6 Guard for client messages.

```
ipv6 dhcp guard vlan vlan_id [client {enable | disable}] [admin-state {enable | disable}]
```

```
no ipv6 dhcp guard vlan vlan_id
```

---

### Syntax Definitions

<i>vlan_id</i>	The VLAN ID on which the DHCPv6 Guard is configured.
<b>client enable</b>	Enables DHCPv6 Guard for client messages. Multicast client-originated messages are sent out only on trusted ports. If there are no configured trusted ports, the client messages are dropped.
<b>client disable</b>	Disables DHCPv6 Guard for client messages. Client-originated messages are not checked.
<b>admin-state enable</b>	Enables DHCPv6 guard for server messages. DHCPv6 server messages that are not received on configured trusted ports are dropped. Enabling DHCPv6 Guard helps to prevent access from rogue DHCPv6 servers.
<b>admin-state disable</b>	Disables DHCPv6 Guard. Server messages are not checked.

### Defaults

parameter	default
<b>client enable   disable</b>	disable
<b>admin-state enable   disable</b>	enable

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- Trusted source ports serve as a filtering mechanism and are identified using the **ipv6 dhcp guard trusted** command.
  - Only DHCPv6 server messages received on trusted ports are allowed.
  - Client multicast messages are sent out only on trusted ports rather than flooded out on all ports in the VLAN.
- Enabling DHCPv6 Guard without configuring any trusted ports helps to prevent unwanted DHCPv6 traffic flow. For example:
  - DHCPv6 server messages are discarded, which helps to prevent messages from reaching clients on the VLAN.
  - If the client option is also enabled, then DHCPv6 multicast client messages are also discarded. This helps to prevent DHCPv6 traffic from getting past the switch. If there are no client messages sent out, then there are no responses sent from the DHCPv6 server.

- Use the **no** form of this command to remove the DHCPv6 Guard configuration, which includes removing any configured trusted ports for the VLAN.

## Examples

```
-> ipv6 dhcp guard vlan 200 admin-state enable
-> ipv6 dhcp guard vlan 200 admin-state disable
-> ipv6 dhcp guard vlan 200 client enable
-> ipv6 dhcp guard vlan 200 client disable
-> no ipv6 dhcp guard vlan 200
```

## Release History

Release 5.1; command introduced.

Release 5.1.R2; Support for IPv6.

## Related Commands

<a href="#">ipv6 dhcp guard trusted</a>	Configures the DHCPv6 Guard trusted source ports.
<a href="#">show ipv6 dhcp guard</a>	Displays the DHCPv6 Guard configuration.

## MIB Objects

```
alaDHCPv6GuardInterfaceTable
  alaDHCPv6GuardInterfaceEntry
  alaDHCPv6GuardInterfaceAdminStatus
  alaDHCPv6GuardInterfaceClient
  alaDHCPv6GuardInterfaceRowStatus
```

---



## ipv6 dhcp guard trusted

Configures the DHCPv6 Guard trusted source ports.

```
ipv6 dhcp guard vlan vlan_id trusted [port chassis/slot/port | linkagg agg_id]
```

```
no ipv6 dhcp guard vlan vlan_id trusted [port chassis/slot/port | linkagg agg_id]
```

---

### Syntax Definitions

<i>vlan_id</i>	The VLAN ID on which DHCPv6 Guard is configured.
<i>chassis/slot/port</i>	The <i>chassis/slot/port</i> on which the DHCPv6 server messages must be allowed. Make sure the port is a member of the specified VLAN.
<i>agg_id</i>	The link aggregate ID on which the DHCPv6 server messages must be allowed. Make sure the link aggregate ID is a member of the specified VLAN.

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- When DHCPv6 Guard is enabled, trusted source ports serve as a filtering mechanism.
  - Only DHCPv6 server messages received on trusted ports are allowed. This functionality helps to prevent access from rogue DHCPv6 servers.
  - Client multicast messages are sent out only on trusted ports rather than flooded out on all ports in the VLAN.
- Enabling DHCPv6 Guard without configuring any trusted ports helps to prevent unwanted DHCPv6 traffic flow. For example:
  - DHCPv6 server messages are discarded, which helps to prevent messages from reaching clients on the VLAN.
  - DHCPv6 multicast client messages are also discarded, which helps to prevent DHCPv6 traffic from getting past the switch. If there are no client messages sent out, then there are no responses sent from the DHCPv6 server.
- Use the **no** form of the command to remove the DHCPv6 Guard trusted source.

### Examples

```
-> ipv6 dhcp guard vlan 200 trusted port 2/1/11
-> ipv6 dhcp guard vlan 200 trusted linkagg 10
-> no ipv6 dhcp guard vlan 200 trusted port 2/1/11
```

## Release History

Release 5.1; command introduced.  
Release 5.1.R2; Support for IPv6.

## Related Commands

<a href="#">ipv6 dhcp guard</a>	Enables or disables the DHCPv6 Guard on a VLAN.
<a href="#">show ipv6 dhcp guard</a>	Displays the DHCPv6 Guard configuration.

## MIB Objects

```
alaDHCPv6GuardTrustedSourceTable  
  alaDHCPv6GuardTrustedSourceIfIndex  
  alaDHCPv6GuardTrustedSourceRowStatus
```

---

## show dhcpv6-snooping

Displays the global DHCPv6 Snooping configuration.

**show dhcpv6-snooping**

---

### Syntax Definitions

N/A

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

N/A

### Examples

```
-> show dhcpv6-snooping
DHCPv6 Snooping      = Global,
Binding timeout (sec) = 1,
Binding persistency  = Disabled
```

### *output definitions*

---

<b>DHCPv6 Snooping</b>	Displays if the DHCPv6 Snooping is enabled globally or Per-VLAN mode.
<b>Binding timeout</b>	Displays the binding table automatic save timeout.
<b>Binding persistency</b>	Displays the configured DHCPv6 Relay destination(s) for the interface.

---

### Release History

Release 5.1; command introduced.

Release 5.1.R2; Support for IPv6.

## Related Commands

- dhcpv6-snooping vlan admin-state** Enables or disables DHCPv6 Snooping on a per-VLAN basis.
- dhcpv6-snooping global admin-state** Enables or disables DHCPv6 Snooping globally on the switch.
- dhcpv6-snooping binding timeout** Configures the amount of time between each automatic save of the DHCPv6 Snooping binding table contents maintained in memory to a file on the switch.
- dhcpv6-snooping binding persistency** Configures whether to retain or not retain the entries in the DHCPv6 Snooping binding table for the duration of the lease, regardless of the existence of the MAC address in the MAC address table.

## MIB Objects

```
alaDHCPv6SnoopingInterfaceAdminStatus  
alaDHCPv6BindingTimeout  
alaDHCPv6BindingPersistency
```

---

## show dhcpv6-snooping interfaces

Displays the DHCPv6 Snooping configuration status per-VLAN.

**show dhcpv6-snooping interfaces**

---

### Syntax Definitions

N/A

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

N/A

### Examples

```
-> show dhcpv6-snooping interfaces
Interface           Admin Status
-----+-----
VLAN 11             Enabled
VLAN 99             Disabled
```

#### *output definitions*

---

<b>Interface</b>	Displays the VLAN on which DHCPv6 Snooping is configured.
<b>Admin Status</b>	Displays the operational status of DHCPv6 Snooping on the VLAN interface.

---

### Release History

Release 5.1; command introduced.

Release 5.1.R2; Support for IPv6.

### Related Commands

**dhcpv6-snooping vlan admin-state** Enables or disables DHCPv6 Snooping on a per-VLAN basis.

**dhcpv6-snooping global admin-state** Enables or disables DHCPv6 Snooping globally on the switch.

### MIB Objects

```
alaDHCPv6SnoopingInterfaceIndex
alaDHCPv6SnoopingInterfaceAdminStatus
```

---

## show dhcpv6-snooping binding

Displays the DHCPv6 Snooping binding table information.

**show dhcpv6-snooping binding** [*global-address ipv6\_address*] [*port chassis/slot/port*] [*linkagg agg\_id*]

---

### Syntax Definitions

<i>ipv6_address</i>	The IPV6 global unicast address for which binding table entries are displayed.
<i>chassis/slot/port</i>	The chassis, slot, and port number for which binding table entries are displayed.
<i>agg_id</i>	The link aggregate ID for which binding table entries are displayed.

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

N/A

### Examples

```
-> show dhcpv6-snooping binding
Total Number of Binding Entries: 3
Link-Local Address      Global Address  Lifetime  Interface  Port  MAC Address
-----+-----+-----+-----+-----+-----
fe80::02aa:81ff:febb:0101 2001:db8:11::1 2000      VLAN 11    1/1/1 00:AA:81:BB:01:01
fe80::02aa:81ff:febb:0202 2001:db8:11::2 indefinite  VLAN 11    1/1/2 00:AA:81:BB:02:02
fe80::02cc:99ff:fe11:3131 2001:db8:99::33 static      VLAN 99    agg 7   00:CC:99:11:31:31

-> show dhcpv6-snooping binding port 1/1/1
Total Number of Binding Entries: 1
fe80::02aa:81ff:febb:0101 2001:db8:11::1 2000      VLAN 11    1/1/1 00:AA:81:BB:01:01

-> show dhcpv6-snooping binding global-address 2001:db8:11::2
Total Number of Binding Entries: 1
Link-Local Address      Global Address  Lifetime  Interface  Port  MAC Address
-----+-----+-----+-----+-----+-----
fe80::02aa:81ff:febb:0202 2001:db8:11::2 indefinite  VLAN 11    1/1/2 00:AA:81:BB:02:02

-> show dhcpv6-snooping binding linkagg 7
Total Number of Binding Entries: 1
Link-Local Address      Global Address  Lifetime  Interface  Port  MAC Address
-----+-----+-----+-----+-----+-----
sfe80::02cc:99ff:fe11:3131 2001:db8:99::33 static      VLAN 99    agg 7   00:CC:99:11:31:31
```

*output definitions*


---

<b>Total Number of Binding Entries</b>	The total number of binding entries in the switch.
<b>Link-Local Address</b>	The link-local address of the client.
<b>Global Address</b>	The global IPv6 address obtained through the DHCPv6 lease.
<b>Lifetime</b>	The lifetime of the DHCPv6 lease. The lifetime is displayed in seconds. The lifetime is displayed as <b>indefinite</b> for the leases with indefinite lifetime. The lifetime is displayed as <b>static</b> if the time is manually configured.
<b>Interface</b>	The VLAN on which the client exists.
<b>Port</b>	The physical port or link aggregation used to communicate with the client.
<b>MAC Address</b>	The MAC address of the client.

---

**Release History**

Release 5.1; command introduced.

Release 5.1.R2; Support for IPv6.

**Related Commands**

<b>dhcpv6-snooping binding</b>	Configures a static entry in the binding table.
<b>dhcpv6-snooping binding timeout</b>	Allows to configure the amount of time between each automatic save of the DHCPv6 Snooping binding table contents maintained in memory to a file on the switch.
<b>dhcpv6-snooping binding action</b>	Allows to manually purge, renew or save the DHCPv6 Snooping binding table.

**MIB Objects**

```

alaDHCPv6BindingLinkLocalAddress
alaDHCPv6BindingPortIfIndex
alaDHCPv6BindingLeasedAddress
alaDHCPv6BindingLeaseTime
alaDHCPv6BindingType
alaDHCPv6SnoopingInterfaceIndex
alaDHCPv6BindingPhysAddress

```

---

## show dhcpv6-snooping ipv6-source-filter

Displays the port, VLAN or link aggregation on which IPv6 Source Filter (ISF) is configured.

```
show dhcpv6-snooping ipv6-source-filter
```

---

### Syntax Definitions

N/A

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

N/A

### Examples

```
-> show dhcpv6-snooping ipv6-source-filter
```

```
Mode: Vlan based ISF
```

```
VLAN ID
-----
 10-15
 20
```

```
-> show dhcpv6-snooping ipv6-source-filter
```

```
Mode: Port based ISF
```

```
PORT
-----
 1/1/10
 1/1/15-20
 0/2
```

### *output definitions*

---

<b>VLAN ID</b>	Displays the VLAN on which the ISF is enabled.
<b>PORT</b>	Displays the port or link aggregation on which the ISF is enabled.

---

### Release History

Release 5.1; command introduced.  
Release 5.1.R2; Support for IPv6.



## Related Commands

**dhcpv6-snooping ipv6-source-filter** Enables or disables the IPv6 source filtering capability at a port, link aggregation, or VLAN level using the DHCPv6 Snooping binding table.

## MIB Objects

alaDHCPv6SourceFilterVlanId  
alaDHCPv6SourceFilterInterfaceIfIndex

---

## show ipv6 dhcp guard

Displays the DHCPv6 Guard configuration.

**show ipv6 dhcp guard [vlan *vlan\_id*]**

---

### Syntax Definitions

*vlan\_id* Displays the DHCPv6 Guard configuration for the specified VLAN.

### Defaults

By default, a summary table of information about all VLANs on which DHCPv6 Guard is configured is displayed.

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

Specify the **vlan *vlan\_id*** option to view the DHCPv6 Guard configuration for a specific VLAN.

### Examples

```
-> show ipv6 dhcp guard
```

Interface	Status	Client	Trusted Ports
VLAN 200	Enabled	Disabled	1/1/9, 1/1/10, 1/1/11, 1/1/12+
VLAN 250	Enabled	Disabled	
VLAN 300	Enabled	Enabled	agg 10, 1/4/20

#### *output definitions*

---

<b>Interface</b>	Displays the VLAN on which the DHCPv6 Guard is configured.
<b>Status</b>	Displays the status of DHCPv6 Guard ( <b>Enabled</b> or <b>Disabled</b> ).
<b>Client</b>	Displays the status of DHCPv6 Guard for client messages ( <b>Enabled</b> or <b>Disabled</b> ).
<b>Trusted Ports</b>	Displays the DHCPv6 Guard trusted sources. A '+' will appear at the end of the list to indicate that there are more trusted sources configured which cannot be displayed in a single line. To view the full list of configured trusted sources, specify the VLAN ID in the show command.

---

```
-> show ipv6 dhcp guard vlan 200
```

```
DHCPv6 Guard = Enabled
Client Guard = Disabled
Trusted ports:
  1/1/9
  1/1/10
  1/1/11
  1/1/12
  1/1/20
```

```
-> show ipv6 dhcp guard vlan 250
DHCPv6 Guard = Enabled
Client Guard = Disabled

-> show ipv6 dhcp guard vlan 300
DHCPv6 Guard = Enabled
Client Guard = Enabled
Trusted ports:
  linkagg 10
  1/4/20
```

### output definitions

---

<b>DHCPv6 Guard</b>	Displays the status of DHCPv6 Guard on the VLAN.
<b>Client Guard</b>	Displays the status of DHCPv6 Guard for client messages.
<b>Trusted ports</b>	Displays the DHCPv6 Guard trusted sources, if any. Ports are displayed as <i>chassis/slot/port</i> . Link aggregates are displayed as linkagg ID.

---

### Release History

Release 5.1; command introduced.  
 Release 5.1.R2; Support for IPv6.

### Related Commands

**ipv6 dhcp guard** Enables or disables the DHCPv6 Guard on a VLAN.  
**ipv6 dhcp guard trusted** Configures DHCPv6 Guard trusted source ports.

### MIB Objects

```
alaDHCPv6GuardInterfaceTable
  AlaDHCPv6GuardInterfaceEntry
  alaDHCPv6GuardInterfaceAdminStatus
  alaDHCPv6GuardInterfaceClient
alaDHCPv6GuardTrustedSourceTable
  alaDHCPv6GuardTrustedSourceIfIndex
```

---

# 15 IP Multicast Switching Commands

IP Multicast Switching (IPMS) is a one-to-many communication technique employed by emerging applications such as video distribution, news feeds, conferencing, netcasting, and resource discovery (OSPF, RIP2, and BOOTP). Unlike unicast, which sends one packet per destination, multicast sends one packet to all devices in any subnetwork that has at least one device requesting the multicast traffic.

The OmniSwitch IPMS software is compatible with the following RFCs:

- RFC 1112 — Host Extensions for IP Multicasting
- RFC 2236 — Internet Group Management Protocol, Version 2
- RFC 2933 — Internet Group Management Protocol MIB
- RFC 3376 — Internet Group Management Protocol, Version 3

The OmniSwitch IPv6MS software is compatible with the following RFCs:

- RFC 2710 — Multicast Listener Discovery for IPv6
- RFC 3019 — IPv6 MIB for Multicast Listener Discovery Protocol
- RFC 3810 — Multicast Listener Discovery Version 2 for IPv6

MIB information for the IPMS and IPv6MS commands is as follows:

*Filename:* ALCATEL-IND1-IPMS-MIB.mib  
*Module:* alcatelIND1IpmsMIB

The following table summarizes the available IP and IPv6 multicast commands:

---

<b>ip multicast admin-state</b>	<b>ipv6 multicast admin-state</b>
<b>ip multicast flood-unknown</b>	<b>ipv6 multicast flood-unknown</b>
<b>ip multicast version</b>	<b>ipv6 multicast version</b>
<b>ip multicast port max-group</b>	<b>ipv6 multicast port max-group</b>
<b>ip multicast max-group</b>	<b>ipv6 multicast max-group</b>
<b>ip multicast static-neighbor</b>	<b>ipv6 multicast static-neighbor</b>
<b>ip multicast static-querier</b>	<b>ipv6 multicast static-querier</b>
<b>ip multicast static-group</b>	<b>ipv6 multicast static-group</b>
<b>ip multicast query-interval</b>	<b>ipv6 multicast query-interval</b>
<b>ip multicast last-member-query-interval</b>	<b>ipv6 multicast last-member-query-interval</b>
<b>ip multicast query-response-interval</b>	<b>ipv6 multicast query-response-interval</b>
<b>ip multicast unsolicited-report-interval</b>	<b>ipv6 multicast unsolicited-report-interval</b>
<b>ip multicast router-timeout</b>	<b>ipv6 multicast router-timeout</b>
<b>ip multicast source-timeout</b>	<b>ipv6 multicast source-timeout</b>
<b>ip multicast querying</b>	<b>ipv6 multicast querying</b>
<b>ip multicast robustness</b>	<b>ipv6 multicast robustness</b>
<b>ip multicast spoofing</b>	<b>ipv6 multicast spoofing</b>
<b>ip multicast spoofing static-source-ip</b>	<b>ipv6 multicast spoofing static-source-ip</b>
<b>ip multicast zapping</b>	<b>ipv6 multicast zapping</b>
<b>ip multicast querier-forwarding</b>	<b>ipv6 multicast querier-forwarding</b>
<b>ip multicast proxying</b>	<b>ipv6 multicast proxying</b>
<b>ip multicast helper-address</b>	<b>ipv6 multicast helper-address</b>
<b>ip multicast zero-based-query</b>	<b>ipv6 multicast zero-based-query</b>
<b>ip multicast forward-mode</b>	<b>ipv6 multicast forward-mode</b>
<b>ip multicast update-delay-interval</b>	<b>ipv6 multicast update-delay-interval</b>
<b>ip multicast display-interface-names</b>	<b>ipv6 multicast display-interface-names</b>
<b>ip multicast inherit-default-vrf-config</b>	<b>ipv6 multicast inherit-default-vrf-config</b>
<b>ip multicast profile</b>	<b>ipv6 multicast profile</b>
<b>ip multicast apply-profile</b>	<b>ipv6 multicast apply-profile</b>
<b>show ip multicast</b>	<b>show ipv6 multicast</b>
<b>show ip multicast port</b>	<b>show ipv6 multicast port</b>
<b>show ip multicast forward</b>	<b>show ipv6 multicast forward</b>
<b>show ip multicast neighbor</b>	<b>show ipv6 multicast neighbor</b>
<b>show ip multicast querier</b>	<b>show ipv6 multicast querier</b>
<b>show ip multicast group</b>	<b>show ipv6 multicast group</b>
<b>show ip multicast source</b>	<b>show ipv6 multicast source</b>
<b>show ip multicast tunnel</b>	<b>show ipv6 multicast tunnel</b>
<b>show ip multicast bridge</b>	<b>show ipv6 multicast bridge</b>
<b>show ip multicast bridge-forward</b>	<b>show ipv6 multicast bridge-forward</b>
<b>show ip multicast profile</b>	<b>show ipv6 multicast profile</b>

---

## ip multicast admin-state

Enables or disables IP Multicast Switching and Routing on the specified VLAN or on the system if no VLAN is specified.

**ip multicast [vlan *vlan\_id*[-*vlan\_id2*]] admin-state [enable | disable]**

**no ip multicast [vlan *vlan\_id*[-*vlan\_id2*]] admin-state**

---

### Syntax Definitions

<i>vlan_id</i> [- <i>vlan_id2</i> ]	VLAN on which to apply the configuration. Use a hyphen to specify a range of VLAN IDs.
<b>enable</b>	Enable IP Multicast Switching.
<b>disable</b>	Disable IP Multicast Switching.

### Defaults

---

parameter	default
<b>enable   disable</b>	<b>disable</b>

---

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- The configuration of an IP multicast routing protocol on an IP interface operationally triggers IP Multicast Switching and Routing functionality on any underlying VLAN. This occurs regardless of any explicit IPMS configuration, such as attempting to specifically disable IPMS.
- If there is no IP Multicast routing protocol already running on the switch, then the **ip multicast admin-state** or the **ipv6 multicast admin-state** command alone controls IPMS operations.
- Enabling IPMS on individual VLANs, as needed, is recommended to conserve switch resources.
- If IPMS is already enabled on the system, then the VLAN configuration will override the system's configuration.
- Use the **no** form of this command to restore the IP Multicast Switching and Routing status back to the default value (disabled) on the system or the specified VLAN.

### Examples

```
-> ip multicast admin-state enable
-> ip multicast admin-state disable
-> no ip multicast admin-state
-> ip multicast vlan 2 admin-state enable
-> ip multicast vlan 3-5 admin-state disable
-> no ip multicast vlan 2 admin-state
-> no ip multicast vlan 3-5 admin-state
```

## Release History

Release 5.1; command was introduced.

## Related Commands

### [show ip multicast](#)

Displays the IP Multicast Switching and Routing status and general configuration parameters.

## MIB Objects

```
alaIpmsConfigTable  
  alaIpmsConfigType  
  alaIpmsConfigAddressType  
  alaIpmsConfigValue  
  alaIpmsConfigStatus
```

---

## ip multicast flood-unknown

Enables or disables the flooding of unknown multicast traffic for the specified VLAN or on the system if no VLAN is specified. When a traffic flow is first seen on a port, there is a brief period of time where traffic may get dropped before the forwarding information is calculated. When flooding unknown multicast traffic is enabled, no packets are dropped before the forwarding information is available.

**ip multicast [vlan *vlan\_id*[-*vlan\_id2*]] flood-unknown [enable | disable]**

**no ip multicast [vlan *vlan\_id*[-*vlan\_id2*]] flood-unknown**

---

### Syntax Definitions

<i>vlan_id</i> [- <i>vlan_id2</i> ]	VLAN on which to apply the configuration. Use a hyphen to specify a range of VLAN IDs.
<b>enable</b>	Enable flooding of unknown traffic until it is learned.
<b>disable</b>	Disable flooding of unknown traffic.

### Defaults

parameter	default
<b>enable   disable</b>	<b>disable</b>

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- If this command function is enabled after the system is up and running, the flooding of unknown multicast traffic only applies to new flows.
- If the flooding of unknown traffic is already configured on the system, then the VLAN configuration will override the system's configuration.
- Use this command to provide an "open failure" strategy for when hardware resource conflicts or software limits prevent the traffic from being registered in the fast path.
- Use the **no** form of this command to restore the flooding of unknown traffic back to the default value (disabled) on the system or the specified VLAN.

### Examples

```
-> ip multicast flood-unknown enable
-> ip multicast flood-unknown disable
-> no ip multicast flood-unknown
-> ip multicast vlan 100 flood-unknown enable
-> ip multicast vlan 101-105 flood-unknown enable
-> ip multicast vlan 100 flood-unknown disable
-> no ip multicast vlan 100 flood-unknown
-> no ip multicast vlan 101-105 flood-unknown
```



## Release History

Release 5.1; command introduced.

## Related Commands

### [show ip multicast](#)

Displays the IP Multicast Switching and Routing status and general configuration parameters.

## MIB Objects

```
alaIpmsConfigTable  
  alaIpmsConfigType  
  alaIpmsConfigAddressType  
  alaIpmsConfigValue  
  alaIpmsConfigFloodUnknown
```

---

## ip multicast version

Sets the default version of the IGMP protocol on the specified VLAN or on the system if no VLAN is specified.

**ip multicast** [**vlan** *vlan\_id*[-*vlan\_id2*]] **version** [*version*]

**no ip multicast** [**vlan** *vlan\_id*[-*vlan\_id2*]] **version**

---

### Syntax Definitions

*vlan\_id*[-*vlan\_id2*]                      VLAN on which to apply the configuration. Use a hyphen to specify a range of VLAN IDs.

*version*                                      Default IGMP protocol version to run. Valid range is 1–3.

### Defaults

parameter	default
<i>version</i>	2

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- IP Multicast Switching and Routing must be enabled to set the default IGMP protocol version on the system and/or the specified VLANs.
- If the default IGMP protocol version is already configured on the system, then the VLAN configuration will override the system's configuration.
- Due to protocol inter-operation requirements, this command specifies only a default version of the IGMP protocol to run.
- Use the **no** form of this command to restore the IGMP multicast version back to the default value (version 2) on the system or the specified VLAN. In addition, specifying a value of 0 with this command also restores the default value (for example, ip multicast version 0).

### Examples

```
-> ip multicast version 3
-> ip multicast version 0
-> no ip multicast version
-> ip multicast vlan 2 version 3
-> ip multicast vlan 3-5 version 3
-> ip multicast vlan 2 version 0
-> no ip multicast vlan 2 version
-> no ip multicast vlan 3-5 version
```

### Release History

Release 5.1; command introduced.

## Related Commands

### **show ip multicast**

Displays the IP Multicast Switching and Routing status and general configuration parameters.

## MIB Objects

```
alaIpmsConfigTable  
  alaIpmsConfigType  
  alaIpmsConfigAddressType  
  alaIpmsConfigValue  
  alaIpmsConfigVersion
```

---

## ip multicast port max-group

Configures the maximum group limit learned per port. The group limit is applicable to all VLAN instances associated with the specified port.

```
ip multicast port chassis/slot/port max-group [num] [action {none | drop | replace}]
```

---

### Syntax Definitions

<i>chassis</i>	The chassis identifier.
<i>slot port</i>	The slot and port number (3/1).
<i>num</i>	The maximum IGMP group count. Valid range is 0–4294967295.
<b>none</b>	Disables the maximum group limit configuration.
<b>drop</b>	Drops the incoming membership request.
<b>replace</b>	Replaces an existing membership with the incoming membership request. A leave is not sent to the router for the replaced group.

### Defaults

By default, the maximum group limit is set to zero.

---

parameter	defaults
<b>action</b>	<b>none</b>

---

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- If group memberships are already registered on a port/VLAN instance and the group limit is set to a lower value for the instance, the current group memberships are not removed until they expire. The effect of the new lower group limit value is applied when one of the following occurs to help avoid any undetermined behavior:
  - IP multicast memberships are aged out on a port/VLAN instance.
  - IP multicast memberships are pruned by a leave or when IP multicast is disabled on the specific VLAN or globally disabled for the switch.
- If the *num* and **action** parameters are not specified, then the limit is removed.
- IGMP zapping must be enabled when the maximum group limit is enabled and the action is set to drop.
- Configuring a maximum group limit is allowed even when the IP multicast status is disabled.

- The maximum group configuration is applied in the following order of precedence (listed from highest to lowest precedence):
  - Group limit configured for a port.
  - Group limit configured for a specific VLAN.
  - Group limit configured for the IPMS profile assigned to a VLAN.
  - Group limit configured for a VLAN within a specific VRF context.
  - Group limit configured for the IPMS profile assigned to a VLAN within a specific VRF context.

## Examples

```
-> ip multicast port 1/1/12 max-group 10 action drop
-> ip multicast port 1/1/14 max-group 20 action replace
-> ip multicast port 1/1/14 max-group
```

## Release History

Release 5.1; command introduced.

## Related Commands

- |  |  |
|--|--|
| <a href="#">show ip multicast</a>      | Displays the IP Multicast Switching and Routing status and general configuration parameters. |
| <a href="#">show ip multicast port</a> | Displays the maximum group configuration for VLAN ports.                                     |

## MIB Objects

```
alaIpmsIntfTable
  alaIpmsIntfConfigType
  alaIpmsIntfAddressType
  alaIpmsIntfMaxGroupLimit
  alaIpmsIntfMaxGroupExceedAction
```

---

## ip multicast max-group

Configures the maximum group limit learned per port for the specified VLAN or per port on the system if no VLAN is specified. The limit is applied to each port that is a member of the given VLAN and the specified action is taken when the limit is exceeded.

```
ip multicast [vlan vlan_id[-vlan_id2]] max-group [num] [action {none | drop | replace}]
```

---

### Syntax Definitions

<i>vlan_id</i> [- <i>vlan_id2</i> ]	VLAN on which to apply the configuration. Use a hyphen to specify a range of VLAN IDs.
<i>num</i>	The maximum IGMP group count. Valid range is 0–4294967295.
<b>none</b>	Disables the maximum group limit configuration.
<b>drop</b>	Drops the incoming membership request.
<b>replace</b>	Replaces an existing membership with the incoming membership request.

### Defaults

By default, the maximum group limit is set to zero.

---

parameter	defaults
<b>action</b>	<b>none</b>

---

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- If a VLAN is not specified, this command configures the global maximum group limit applied to all VLAN ports.
- If a VLAN is specified, this command configures the maximum group limit learned per port on a VLAN. The limit is applied to each port that is a member of the given VLAN.
- Configuring a maximum group value will have no affect on existing group memberships until the memberships are refreshed on the port/VLAN instance
- If the *num* and **action** parameters are not specified, then the limit is removed.
- The maximum group configuration on a VLAN will override the global configuration.

- The maximum group configuration is applied in the following order of precedence (listed from highest to lowest precedence):
  - Group limit configured for a port.
  - Group limit configured for a specific VLAN.
  - Group limit configured for the IPMS profile assigned to a VLAN.
  - Group limit configured for a VLAN within a specific VRF context.
  - Group limit configured for the IPMS profile assigned to a VLAN within a specific VRF context.
- IGMP zapping must be enabled when the maximum group limit is enabled and the action is to drop incoming membership requests.

## Examples

```
-> ip multicast max-group 10 action drop
-> ip multicast max-group 20 action replace
-> ip multicast max-group
-> ip multicast vlan 10 max-group 10 action drop
-> ip multicast vlan 20 max-group action drop
-> ip multicast vlan 11-15 max-group 10 action replace
-> ip multicast vlan 10 max-group
-> ip multicast vlan 11-15 max-group
```

## Release History

Release 5.1; command was introduced.

## Related Commands

### [show ip multicast](#)

Displays the IP Multicast Switching and Routing status and general configuration parameters.

### [show ip multicast group](#)

Displays the maximum group configuration for all ports or for VLAN instances of a given port.

## MIB Objects

```
alaIpmsConfigTable
  alaIpmsConfigType
  alaIpmsConfigAddressType
  alaIpmsConfigValue
  alaIpmsConfigMaxGroupLimit
  alaIpmsConfigMaxGroupExceedAction
```

---

## ip multicast static-neighbor

Creates a static IGMP neighbor entry on the specified port for the specified VLAN.

```
ip multicast static-neighbor vlan vlan_id {port chassis/slot/port | linkagg agg_id}
```

```
no ip multicast static-neighbor vlan vlan_id {port chassis/slot/port | linkagg agg_id}
```

---

### Syntax Definitions

<i>vlan_id</i>	VLAN to include as a static IGMP neighbor.
<i>chassis</i>	The chassis identifier.
<i>slot/port</i>	The slot and port number to configure as a static IGMP neighbor.
<i>agg_id</i>	The link aggregate ID number to configure as a static IGMP neighbor.

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- Use the **no** form of this command to remove an IGMP static neighbor entry on the specified port for the specified VLAN.
- Creating an IGMP static neighbor entry on the specified port/VLAN, enables that network segment to receive all of the IGMP traffic *and* IPv4 multicast traffic.
- To create an IGMP static neighbor entry on a link aggregate, use the **linkagg** parameter (for example, **ip multicast static-neighbor vlan 2 linkagg 7**).

### Examples

```
-> ip multicast static-neighbor vlan 4 port 1/1/5
-> no ip multicast static-neighbor vlan 4 port 1/1/5
-> ip multicast static-neighbor vlan 4 linkagg 7
-> no ip multicast static-neighbor vlan 4 linkagg 7
```

### Release History

Release 5.1; command was introduced.



## Related Commands

**show ip multicast neighbor** Displays the IGMP neighbor table entries of IP Multicast Switching and Routing.

## MIB Objects

```
alaIpmsStaticNeighborTable
  alaIpmsStaticNeighborConfigType
  alaIpmsStaticNeighborAddressType
  alaIpmsStaticNeighborValue
  alaIpmsStaticNeighborIfIndex
  alaIpmsStaticNeighborSubValue
  alaIpmsStaticNeighborRowStatus
```

---

## ip multicast static-querier

Creates a static IGMP querier entry on the specified port for the specified VLAN.

```
ip multicast static-querier vlan vlan_id {port chassis/slot/port | linkagg agg_id}
```

```
no ip multicast static-querier vlan vlan_id {port chassis/slot/port | linkagg agg_id}
```

---

### Syntax Definitions

<i>vlan_id</i>	VLAN to include as a static IGMP querier.
<i>chassis</i>	The chassis identifier.
<i>slot/port</i>	The slot and port number to configure as a static IGMP querier.
<i>agg_id</i>	The link aggregate ID number to configure as a static IGMP querier.

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- Use the **no** form of this command to remove an IGMP static querier entry on the specified port for the specified VLAN.
- Creating an IGMP static querier entry on the specified port/VLAN, enables that network segment to receive all of the IGMP traffic.
- To create an IGMP static querier entry on a link aggregate, use the **linkagg** parameter (for example, **ip multicast static-querier vlan 2 linkagg 7**).

### Examples

```
-> ip multicast static-querier vlan 4 port 1/1/2
-> no ip multicast static-querier vlan 4 port 1/1/2
-> ip multicast static-querier vlan 4 linkagg 7
-> no ip multicast static-querier vlan 4 linkagg 7
```

### Release History

Release 5.1; command was introduced.

## Related Commands

**show ip multicast querier** Displays the IGMP querier table entries of IP Multicast Switching and Routing.

## MIB Objects

```
alaIpmsStaticQuerierTable  
  alaIpmsStaticQuerierConfigType  
  alaIpmsStaticQuerierAddressType  
  alaIpmsStaticQuerierValue  
  alaIpmsStaticQuerierIfIndex  
  alaIpmsStaticQuerierSubValue  
  alaIpmsStaticQuerierRowStatus
```

---

## ip multicast static-group

Creates a static IGMP group entry on the specified port for the specified VLAN.

```
ip multicast static-group ip_address vlan vlan_id {port chassis/slot/port | linkagg agg_id}
```

```
no ip multicast static-group ip_address vlan vlan_id {port chassis/slot/port | linkagg agg_id}
```

---

### Syntax Definitions

<i>ip_address</i>	The IP address of the multicast group.
<i>vlan_id</i>	VLAN to include as a static IGMP group.
<i>chassis</i>	The chassis identifier.
<i>slot port</i>	The slot and port number to configure as a static IGMP group.
<i>agg_id</i>	The link aggregate ID number to configure as a static IGMP group.

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- Use the **no** form of this command to remove an IGMP static group entry on the specified port for the specified VLAN.
- Creating an IGMP static group entry on the specified port/VLAN, enables that network segment to receive IGMP traffic addressed to the specified IP multicast group address.
- To create an IGMP static group entry on a link aggregate, use the **linkagg** parameter (for example, **ip multicast static-group 225.0.0.1 vlan 2 linkagg 7**).

### Examples

```
-> ip multicast static-group 229.10.10.10 vlan 4 port 1/1/2
-> no ip multicast static-group 229.10.10.10 vlan 4 port 1/1/2
-> ip multicast static-group 225.11.11.11 vlan 4 linkagg 7
-> no ip multicast static-group 225.11.11.11 vlan 4 linkagg 7
```

### Release History

Release 5.1; command was introduced.

## Related Commands

### **show ip multicast group**

Displays the IGMP group membership table entries of IP Multicast Switching and Routing for the specified IP multicast group address or all entries if no IP multicast group address is specified.

## MIB Objects

```
alaIcmpStaticMemberTable  
  alaIpmsStaticMemberConfigType  
  alaIpmsStaticMemberAddressType  
  alaIpmsStaticMemberValue  
  alaIpmsStaticMemberIfIndex  
  alaIpmsStaticMemberSubValue  
  alaIpmsStaticMemberGroupAddress  
  alaIpmsStaticMemberRowStatus
```

---

## ip multicast query-interval

Sets the IGMP query interval on the specified VLAN or on the system if no VLAN is specified.

**ip multicast** [vlan *vlan\_id*[-*vlan\_id2*]] **query-interval** [*seconds*]

**no ip multicast** [vlan *vlan\_id*[-*vlan\_id2*]] **query-interval**

---

### Syntax Definitions

*vlan\_id*[-*vlan\_id2*]                      VLAN on which to apply the configuration. Use a hyphen to specify a range of VLAN IDs.

*seconds*                                      IGMP query interval in seconds. Valid range is 1–65535.

### Defaults

parameter	default
<i>seconds</i>	125

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- IP Multicast Switching and Routing must be enabled to set the IGMP query interval on the system and/or the specified VLANs.
- If the IGMP query interval is already configured on the system, then the VLAN configuration will override the system's configuration.
- The IGMP query interval refers to the time period between IGMP query messages.
- Due to protocol inter-operation requirements, this command specifies only a default version of the IGMP query interval to use.
- Use the **no** form of this command to restore the IGMP query interval back to the default value (125 seconds) on the system or the specified VLAN. In addition, specifying a value of 0 with this command also restores the default value (for example, **ip multicast query-interval 0**).

### Examples

```
-> ip multicast query-interval 100
-> ip multicast query-interval 0
-> no ip multicast query-interval
-> ip multicast vlan 2 query-interval 100
-> ip multicast vlan 3-5 query-interval 100
-> ip multicast vlan 2 query-interval 0
-> no ip multicast vlan 2 query-interval
-> no ip multicast vlan 3-5 query-interval
```

## Release History

Release 5.1; command was introduced.

## Related Commands

### [show ip multicast](#)

Displays the IP Multicast Switching and Routing status and general configuration parameters.

## MIB Objects

```
alaIpmsConfigTable  
  alaIpmsConfigType  
  alaIpmsConfigAddressType  
  alaIpmsConfigValue  
  alaIpmsConfigQueryInterval
```

---

## ip multicast last-member-query-interval

Sets the IGMP last member query interval value on the specified VLAN or on the system if no VLAN is specified.

**ip multicast** [**vlan** *vlan\_id*[-*vlan\_id2*]] **last-member-query-interval** [*tenths\_of\_seconds*]

**no ip multicast** [**vlan** *vlan\_id*[-*vlan\_id2*]] **last-member-query-interval**

---

### Syntax Definitions

<i>vlan_id</i> [- <i>vlan_id2</i> ]	VLAN on which to apply the configuration. Use a hyphen to specify a range of VLAN IDs.
<i>tenths_of_seconds</i>	IGMP last member query interval in tenths of seconds. The valid range is 1–65535.

### Defaults

parameter	default
<i>tenths_of_seconds</i>	10

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- IP Multicast Switching and Routing must be enabled to set the IGMP last member query interval on the system and/or the specified VLANs.
- If the IGMP last member query interval is already configured on the system, then the VLAN configuration will override the system's configuration.
- The IGMP last member query interval refers to the time period to reply to an IGMP query message sent in response to a leave group message.
- Use the **no** form of this command to restore the IGMP last member query interval back to the default value (10 tenth-of-seconds) on the system or the specified VLAN. In addition, specifying a value of 0 with this command also restores the default value (for example, **ip multicast last-member-query-interval 0**).

### Examples

```
-> ip multicast last-member-query-interval 22
-> ip multicast last-member-query-interval 0
-> no ip multicast last-member-query-interval
-> ip multicast vlan 2 last-member-query-interval 22
-> ip multicast vlan 3-5 last-member-query-interval 22
-> ip multicast vlan 2 last-member-query-interval 0
-> no ip multicast vlan 2 last-member-query-interval
-> no ip multicast vlan 3-5 last-member-query-interval
```



## Release History

Release 5.1; command was introduced.

## Related Commands

### [show ip multicast](#)

Displays the IP Multicast Switching and Routing status and general configuration parameters.

## MIB Objects

```
alaIpmsConfigTable  
  alaIpmsConfigType  
  alaIpmsConfigAddressType  
  alaIpmsConfigValue  
  alaIpmsConfigLastMemberQueryInterval
```

---

## ip multicast query-response-interval

Sets the IGMP query response interval on the specified VLAN or on the system if no VLAN is specified.

**ip multicast** [*vlan vlan\_id[-vlan\_id2]*] **query-response-interval** [*tenths\_of\_seconds*]

**no ip multicast** [*vlan vlan\_id[-vlan\_id2]*] **query-response-interval**

---

### Syntax Definitions

<i>vlan_id[-vlan_id2]</i>	VLAN on which to apply the configuration. Use a hyphen to specify a range of VLAN IDs.
<i>tenths_of_seconds</i>	IGMP query response interval in tenths of seconds. The valid range is 1–65535.

### Defaults

parameter	default
<i>tenths_of_seconds</i>	100

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- IP Multicast Switching and Routing must be enabled to set the IGMP query response interval on the system and/or the specified VLANs.
- If the IGMP query response interval is already configured on the system, then the VLAN configuration will override the system's configuration.
- The query response interval refers to the time period to reply to an IGMP query message.
- Use the **no** form of this command to restore the IGMP query response interval back to the default value (100 tenths-of-seconds) on the system or the specified VLAN. In addition, specifying a value of 0 with this command also restores the default value (for example, **ip multicast query-response-interval 0**).

### Examples

```
-> ip multicast query-response-interval 200
-> ip multicast query-response-interval 0
-> no ip multicast query-response-interval
-> ip multicast vlan 2 query-response-interval 300
-> ip multicast vlan 3-5 query-response-interval 300
-> ip multicast vlan 2 query-response-interval 0
-> no ip multicast vlan 2 query-response-interval
-> no ip multicast vlan 3-5 query-response-interval
```

### Release History

Release 5.1; command was introduced.

## Related Commands

### [show ip multicast](#)

Displays the IP Multicast Switching and Routing status and general configuration parameters.

## MIB Objects

```
alaIpmsConfigTable  
  alaIpmsConfigType  
  alaIpmsConfigAddressType  
  alaIpmsConfigValue  
  alaIpmsConfigQueryReponseInterval
```

---

## ip multicast unsolicited-report-interval

Sets the value of the IGMP unsolicited report interval on the specified VLAN or on the system if no VLAN is specified.

**ip multicast [vlan *vlan\_id*[-*vlan\_id2*]] unsolicited-report-interval [*seconds*]**

**no ip multicast [vlan *vlan\_id*[-*vlan\_id2*]] unsolicited-report-interval**

---

### Syntax Definitions

*vlan\_id*[-*vlan\_id2*]                      VLAN on which to apply the configuration. Use a hyphen to specify a range of VLAN IDs.

*seconds*                                      IGMP unsolicited report interval in seconds. Valid range is 1–65535.

### Defaults

parameter	default
<i>seconds</i>	1

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- IP Multicast Switching and Routing must be enabled to set the IGMP unsolicited report interval on the system and/or the specified VLANs.
- If the IGMP query response interval is already configured on the system, then the VLAN configuration will override the system's configuration.
- The unsolicited report interval refers to the time period to proxy any changed IGMP membership state.
- Use the **no** form of this command to restore the IGMP unsolicited report interval back to the default value (1 second) on the system or the specified VLAN. In addition, specifying a value of 0 with this command also restores the default value (for example, **ip multicast unsolicited-report-interval 0**).

### Examples

```
-> ip multicast unsolicited-report-interval 200
-> ip multicast unsolicited-report-interval 0
-> no ip multicast unsolicited-report-interval
-> ip multicast vlan 2 unsolicited-report-interval 300
-> ip multicast vlan 3-5 unsolicited-report-interval 300
-> ip multicast vlan 2 unsolicited-report-interval 0
-> no ip multicast vlan 2 unsolicited-report-interval
-> no ip multicast vlan 3-5 unsolicited-report-interval
```

### Release History

Release 5.1; command was introduced.

## Related Commands

### [show ip multicast](#)

Displays the IP Multicast Switching and Routing status and general configuration parameters.

## MIB Objects

```
alaIpmsConfigTable  
  alaIpmsConfigType  
  alaIpmsConfigAddressType  
  alaIpmsConfigValue  
  alaIpmsConfigUnsolicitedReportInterval
```

---

## ip multicast router-timeout

Configures the expiry time of IP multicast routers on the specified VLAN or on the system if no VLAN is specified.

**ip multicast** [vlan *vlan\_id*[-*vlan\_id2*]] **router-timeout** [*seconds*]

**no ip multicast** [vlan *vlan\_id*[-*vlan\_id2*]] **router-timeout**

---

### Syntax Definitions

*vlan\_id*[-*vlan\_id2*]                      VLAN on which to apply the configuration. Use a hyphen to specify a range of VLAN IDs.

*seconds*                                      IGMP router timeout in seconds. Valid range is 1–65535.

### Defaults

parameter	default
<i>seconds</i>	90

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- IP Multicast Switching and Routing must be enabled to set the IGMP router timeout on the system and/or the specified VLANs.
- If the IGMP router timeout is already configured on the system, then the VLAN configuration will override the system's configuration.
- Use the **no** form of this command to restore the IGMP router timeout back to the default value (90 seconds) on the system or the specified VLAN. In addition, specifying a value of 0 with this command also restores the default value (for example, **ip multicast router-timeout 0**).

### Examples

```
-> ip multicast router-timeout 100
-> ip multicast router-timeout 0
-> no ip multicast router-timeout
-> ip multicast vlan 2 router-timeout 100
-> ip multicast vlan 3-5 router-timeout 100
-> ip multicast vlan 2 router-timeout 0
-> no ip multicast vlan 2 router-timeout
-> no ip multicast vlan 3-5 router-timeout
```

### Release History

Release 5.1; command was introduced.

## Related Commands

### **show ip multicast**

Displays the IP Multicast Switching and Routing status and general configuration parameters.

## MIB Objects

```
alaIpmsConfigTable  
  alaIpmsConfigType  
  alaIpmsConfigAddressType  
  alaIpmsConfigValue  
  alaIpmsConfigRouterTimeout
```

---

## ip multicast source-timeout

Configures the expiry time of IP multicast sources on the specified VLAN or on the system if no VLAN is specified.

**ip multicast** [vlan *vlan\_id*[-*vlan\_id2*]] **source-timeout** [*seconds*]

**no ip multicast** [vlan *vlan\_id*[-*vlan\_id2*]] **source-timeout**

---

### Syntax Definitions

*vlan\_id*[-*vlan\_id2*]                      VLAN on which to apply the configuration. Use a hyphen to specify a range of VLAN IDs.

*seconds*                                      IGMP source timeout in seconds. Valid range is 1–65535.

### Defaults

parameter	default
<i>seconds</i>	30

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- IP Multicast Switching and Routing must be enabled to set the IGMP source timeout on the system and/or the specified VLANs.
- If the IGMP source timeout is already configured on the system, then the VLAN configuration will override the system's configuration.
- Use the **no** form of this command to restore the IGMP source timeout back to the default value (30 seconds) on the system or the specified VLAN. In addition, specifying a value of 0 with this command also restores the default value (for example, **ip multicast source-timeout 0**).

### Examples

```
-> ip multicast source-timeout 100
-> ip multicast source-timeout 0
-> no ip multicast source-timeout
-> ip multicast vlan 2 source-timeout 100
-> ip multicast vlan 3-5 source-timeout 100
-> ip multicast vlan 2 source-timeout 0
-> no ip multicast vlan 2 source-timeout
-> no ip multicast vlan 3-5 source-timeout 100
```

### Release History

Release 5.1; command was introduced.



## Related Commands

### [show ip multicast](#)

Displays the IP Multicast Switching and Routing status and general configuration parameters.

## MIB Objects

```
alaIpmsConfigTable  
  alaIpmsConfigType  
  alaIpmsConfigAddressType  
  alaIpmsConfigValue  
  alaIpmsConfigSourceTimeout
```

---

## ip multicast querying

Enables or disables IGMP querying on the specified VLAN or on the system if no VLAN is specified.

**ip multicast [vlan *vlan\_id*[-*vlan\_id2*]] querying {enable | disable} [static-source-ip *ip\_address*]**

**no ip multicast [vlan *vlan\_id*[-*vlan\_id2*]] querying [static-source-ip]**

---

### Syntax Definitions

<i>vlan_id</i> [- <i>vlan_id2</i> ]	VLAN on which to apply the configuration. Use a hyphen to specify a range of VLAN IDs.
<b>enable</b>	Enable IGMP querying.
<b>disable</b>	Disable IGMP querying.
<i>ip_address</i>	A static source IPv4 address to use for IGMP querying. <i>This parameter is currently not supported.</i>

### Defaults

parameter	default
enable   disable	disable

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- IP Multicast Switching and Routing must be enabled to enable IGMP querying on the system and/or specified VLANs.
- If the IGMP querying is already enabled/disabled on the system, then the VLAN configuration will override the system's configuration.
- IGMP querying refers to requesting the network's IGMP group membership information by sending out IGMP queries. IGMP querying also involves participating in IGMP querier election.
- Use the **no** form of this command to restore the IGMP querying status to the default value (disabled) on the system or the specified VLAN.

### Examples

```
-> ip multicast querying enable
-> ip multicast querying disable
-> no ip multicast querying
-> ip multicast vlan 2 querying enable
-> ip multicast vlan 3-5 querying disable
-> no ip multicast vlan 2 querying
-> no ip multicast vlan 3-5 querying
```

## Release History

Release 5.1; command was introduced.

## Related Commands

### [show ip multicast](#)

Displays the IP Multicast Switching and Routing status and general configuration parameters.

## MIB Objects

```
alaIpmsConfigTable  
  alaIpmsConfigType  
  alaIpmsConfigAddressType  
  alaIpmsConfigValue  
  alaIpmsConfigQuerying  
  alaIpmsConfigQueryingStaticSourceAddress
```

---

## ip multicast robustness

Sets the IGMP robustness variable on the specified VLAN or on the system if no VLAN is specified.

**ip multicast** [**vlan** *vlan\_id*[-*vlan\_id2*]] **robustness** [*robustness*]

**no ip multicast** [**vlan** *vlan\_id*[-*vlan\_id2*]] **robustness**

---

### Syntax Definitions

*vlan\_id*[-*vlan\_id2*]                      VLAN on which to apply the configuration. Use a hyphen to specify a range of VLAN IDs.

*robustness*                                      IGMP robustness variable. Valid range is 1–7.

### Defaults

parameter	default
<i>robustness</i>	2

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- IP Multicast Switching and Routing must be enabled to set the IGMP robustness variable on the system and/or the specified VLANs.
- If the IGMP robustness variable is already configured on the system, then the VLAN configuration will override the system's configuration.
- Robustness variable allows fine-tuning on the network, where the expected packet loss would be greater.
- Due to protocol inter-operation requirements, this command specifies only a default version of the IGMP robustness variable to use.
- Use the **no** form of this command to restore the IGMP robustness variable back to the default value (2) on the system or the specified VLAN. In addition, specifying a value of 0 with this command also restores the default value (for example, ip multicast robustness 0).

### Examples

```
-> ip multicast robustness 3
-> ip multicast robustness 0
-> no ip multicast robustness
-> ip multicast vlan 2 robustness 3
-> ip multicast vlan 3-5 robustness 3
-> ip multicast vlan 2 robustness 0
-> no ip multicast vlan 2 robustness
-> no ip multicast vlan 3-5 robustness
```

## Release History

Release 5.1; command was introduced.

## Related Commands

### [show ip multicast](#)

Displays the IP Multicast Switching and Routing status and general configuration parameters.

## MIB Objects

```
alaIpmsConfigTable  
  alaIpmsConfigType  
  alaIpmsConfigAddressType  
  alaIpmsConfigValue  
  alaIpmsConfigRobustness
```

---

## ip multicast spoofing

Enables or disables IGMP spoofing on the specified VLAN or on the system if no VLAN is specified.

**ip multicast [vlan *vlan\_id*[-*vlan\_id2*]] spoofing {enable | disable}**

**no ip multicast [vlan *vlan\_id*[-*vlan\_id2*]] spoofing**

---

### Syntax Definitions

<i>vlan_id</i> [- <i>vlan_id2</i> ]	VLAN on which to apply the configuration. Use a hyphen to specify a range of VLAN IDs.
<b>enable</b>	Enable IGMP spoofing.
<b>disable</b>	Disable IGMP spoofing.

### Defaults

---

parameter	default
<b>enable   disable</b>	<b>disable</b>

---

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- Use the **no** form of this command to remove an IGMP spoofing configuration and return the specified VLAN or system to the default behavior.
- If the IGMP spoofing is already enabled on the system, then the VLAN configuration will override the system's configuration.
- IGMP spoofing refers to replacing a client source MAC and IP address with the system's MAC and IP address when relaying or proxying aggregated IGMP group membership information to other devices.
- By default, the source IP address is not specified for spoofing; the system determines these addresses automatically. Optionally configure a static source IP address using the **ip multicast spoofing static-source-ip** command to overcome the need for an IP interface. If configured, the static source IP is always used for spoofing, regardless of the IP interface address or administrative state.

### Examples

```
-> ip multicast spoofing enable
-> ip multicast spoofing disable
-> no ip multicast spoofing
-> ip multicast vlan 2 spoofing enable
-> ip multicast vlan 3-5 spoofing disable
-> no ip multicast vlan 2 spoofing
-> no ip multicast vlan 3-5 spoofing
```

## Release History

Release 5.1; command was introduced.

## Related Commands

### [show ip multicast](#)

Displays the IP Multicast Switching and Routing status and general configuration parameters.

## MIB Objects

```
alaIpmsConfigTable  
  alaIpmsConfigType  
  alaIpmsConfigAddressType  
  alaIpmsConfigValue  
  alaIpmsConfigSpoofing
```

---

## ip multicast spoofing static-source-ip

Configures an IGMP static spoofing address on the specified VLAN or on the system if no VLAN or is specified.

```
ip multicast [vlan vlan_id[-vlan_id2]] spoofing static-source-ip ip_address
```

```
no ip multicast [vlan vlan_id[-vlan_id2]] spoofing static-source-ip
```

---

### Syntax Definitions

<i>vlan_id</i> [- <i>vlan_id2</i> ]	VLAN on which to apply the configuration. Use a hyphen to specify a range of VLAN IDs.
<i>ip_address</i>	A static source IPv4 address to use for spoofing.

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- Use the **no** form of this command to remove a static source IP address.
- IGMP spoofing refers to replacing a client source MAC and IP address with the system's MAC and IP address when relaying or proxying aggregated IGMP group membership information to other devices.
- By default, a source IP address is not specified when spoofing is enabled. As a result, the switch will automatically use the address of the IP interface associated with the LAN. If there is no IP interface address to use, the switch will then use the Loopback0 interface address associated with the current VRF instance.
- Use this command to optionally configure a static source IP address to overcome the need for an IP interface. If configured, the static source IP is always used for spoofing, regardless of the IP interface address or administrative state.

### Examples

```
-> ip multicast spoofing static-source-ip 10.2.2.1
-> no ip multicast spoofing static-source-ip
-> ip multicast vlan 2 spoofing static-source-ip 10.2.2.1
-> ip multicast vlan 3-5 spoofing static-source-ip 10.2.2.1
-> no ip multicast vlan 2 spoofing static-source-ip
-> no ip multicast vlan 3-5 spoofing static-source-ip
```

### Release History

Release 5.1; command introduced.



## Related Commands

### **show ip multicast**

Displays the IP Multicast Switching and Routing status and general configuration parameters.

## MIB Objects

```
alaIpmsConfigTable  
  alaIpmsConfigType  
  alaIpmsConfigAddressType  
  alaIpmsConfigValue  
  alaIpmsConfigSpoofingStaticSourceAddress
```

---

## ip multicast zapping

Enables or disables IGMP zapping on the specified VLAN or on the system if no VLAN is specified.

```
ip multicast [vlan vlan_id[-vlan_id2] zapping [{enable | disable}]
```

```
no ip multicast [vlan vlan_id[-vlan_id2]] zapping
```

---

### Syntax Definitions

<i>vlan_id</i> [- <i>vlan_id2</i> ]	VLAN on which to apply the configuration. Use a hyphen to specify a range of VLAN IDs.
<b>enable</b>	Enable IGMP zapping.
<b>disable</b>	Disable IGMP zapping.

### Defaults

---

parameter	default
<b>enable   disable</b>	<b>disable</b>

---

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- If the IGMP zapping is already enabled on the system, then the VLAN configuration will override the system's configuration.
- IGMP zapping refers to processing membership, immediate source filter removals and will not wait for the protocol's specified time period. This mode facilitates IP TV applications looking for quick changes between IP multicast groups.
- Use the **no** form of this command to restore the IGMP zapping status back to the default value (disabled) on the system or the specified VLAN.

### Examples

```
-> ip multicast zapping enable
-> ip multicast zapping disable
-> no ip multicast zapping
-> ip multicast vlan 2 zapping enable
-> ip multicast vlan 3-5 zapping disable
-> no ip multicast vlan 2 zapping
-> no ip multicast vlan 3-5 zapping
```

### Release History

Release 5.1; command was introduced.

## Related Commands

### [show ip multicast](#)

Displays the IP Multicast Switching and Routing status and general configuration parameters.

## MIB Objects

```
alaIpmsConfigTable  
  alaIpmsConfigType  
  alaIpmsConfigAddressType  
  alaIpmsConfigValue  
  alaIpmsConfigZapping
```

---

## ip multicast querier-forwarding

Enables or disables IGMP querier forwarding on the specified VLAN or on the system if no VLAN is specified.

```
ip multicast [vlan vlan_id[-vlan_id2]] querier-forwarding [enable | disable]
```

```
no ip multicast [vlan vlan_id[-vlan_id2]] querier-forwarding
```

---

### Syntax Definitions

<i>vlan_id</i> [- <i>vlan_id2</i> ]	VLAN on which to apply the configuration. Use a hyphen to specify a range of VLAN IDs.
<b>enable</b>	Enable IGMP querier forwarding.
<b>disable</b>	Disable IGMP querier forwarding.

### Defaults

---

parameter	default
<b>enable   disable</b>	<b>disable</b>

---

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- If the IGMP querier forwarding is already enabled on the system, then the VLAN configuration will override the system's configuration.
- IGMP querier forwarding refers to promoting detected IGMP queriers to receive all IP multicast data traffic.
- Use the **no** form of this command to restore the IGMP querier forwarding status back to the default value (disabled) on the system or the specified VLAN.

### Examples

```
-> ip multicast querier-forwarding enable
-> ip multicast querier-forwarding disable
-> no ip multicast querier-forwarding
-> ip multicast vlan 2 querier-forwarding enable
-> ip multicast vlan 3-5 querier-forwarding disable
-> no ip multicast vlan 2 querier-forwarding
-> no ip multicast vlan 3-5 querier-forwarding
```

### Release History

Release 5.1; command was introduced.

## Related Commands

### `show ip multicast`

Displays the IP Multicast Switching and Routing status and general configuration parameters.

## MIB Objects

```
alaIpmsConfigTable  
  alaIpmsConfigType  
  alaIpmsConfigAddressType  
  alaIpmsConfigValue  
  alaIpmsConfigQuerierForwarding
```

---

## ip multicast proxying

Enables or disables IGMP proxying on the specified VLAN or on the system if no VLAN is specified.

**ip multicast [vlan *vlan\_id*[-*vlan\_id2*]] proxying [enable | disable]**

**no ip multicast [vlan *vlan\_id*[-*vlan\_id2*]] proxying**

---

### Syntax Definitions

<i>vlan_id</i> [- <i>vlan_id2</i> ]	VLAN on which to apply the configuration. Use a hyphen to specify a range of VLAN IDs.
<b>enable</b>	Enable IGMP proxying.
<b>disable</b>	Disable IGMP proxying.

### Defaults

---

parameter	default
<b>enable   disable</b>	<b>disable</b>

---

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- If the IGMP proxying is already enabled on the system, then the VLAN configuration will override the system's configuration.
- IGMP proxying refers to processing membership information on behalf of client systems and reporting membership on their behalf.
- Proxy reported IGMP packets are sent using the source MAC address of the proxying switch. Unless the spoofing feature is used, proxy reported IGMP packets will be sent using 0.0.0.0 for the IPv4 source address.
- Use the **no** form of this command to restore the IGMP proxying status back to the default value (disabled) on the system or the specified VLAN.

### Examples

```
-> ip multicast proxying enable
-> ip multicast proxying disable
-> no ip multicast proxying
-> ip multicast vlan 2 proxying enable
-> ip multicast vlan 3-5 proxying disable
-> no ip multicast vlan 2 proxying
-> no ip multicast vlan 3-5 proxying
```

### Release History

Release 5.1; command was introduced.

## Related Commands

### `show ip multicast`

Displays the IP Multicast Switching and Routing status and general configuration parameters.

## MIB Objects

```
alaIpmsConfigTable  
  alaIpmsConfigType  
  alaIpmsConfigAddressType  
  alaIpmsConfigValue  
  alaIpmsConfigProxying
```

---

## ip multicast helper-address

Specifies the destination IP address of a relay host where IGMP host Reports and Leave messages are sent.

```
ip multicast [vlan vlan_id[-vlan_id2] helper-address ip_address
```

```
no ip multicast [vlan vlan_id[-vlan_id2] helper-address
```

---

### Syntax Definitions

*vlan\_id*[-*vlan\_id2*]                    VLAN on which to apply the configuration. Use a hyphen to specify a range of VLAN IDs.

*ip\_address*                            The IP address of the relay host.

### Defaults

parameter	default
<i>ip_address</i>	0.0.0.0

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- After the destination IP address is specified, the IPMS reporting feature is enabled.
- An operational IPv4 interface is required for the receiving LAN before any IGMP Reports and Leave messages can be relayed.
- Use the **no** form of this command to restore the IPMS reporting feature back to the default value (IP address 0.0.0.0) on the system. When the IP address is set to 0.0.0.0, the IPMS reporting feature is disabled.

### Examples

```
-> ip multicast helper-address 10.1.1.198
-> no ip multicast helper-address
-> ip multicast vlan 2 helper-address 10.1.1.198
-> ip multicast vlan 3-5 helper-address 10.1.1.198
-> no ip multicast vlan 2 helper-address
-> no ip multicast vlan 3-5 helper-address
```

### Release History

Release 5.1; command was introduced.



## Related Commands

### **show ip multicast**

Displays the IP Multicast Switching and Routing status and general configuration parameters,

## MIB Objects

```
alaIpmsConfigTable  
  alaIpmsConfigType  
  alaIpmsConfigAddressType  
  alaIpmsConfigValue  
  alaIpmsConfigHelperAddress
```

---

## ip multicast zero-based-query

Configures the use of an all-zero source IPv4 address for IGMP query packets when a non-querier is querying the membership of a port. This value is set for the specified VLAN or on the system if no VLAN is specified.

```
ip multicast [vlan vlan_id[-vlan_id2]] zero-based-query [enable | disable]
```

```
no ip multicast [vlan vlan_id[-vlan_id2]] zero-based-query
```

---

### Syntax Definitions

<i>vlan_id</i> [- <i>vlan_id2</i> ]	VLAN on which to apply the configuration. Use a hyphen to specify a range of VLAN IDs.
<b>enable</b>	Enable IGMP zero-based querying.
<b>disable</b>	Disable IGMP zero-based querying.

### Defaults

---

parameter	default
<b>enable   disable</b>	<b>enable</b>

---

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- The IGMP zero-based query status set for a specific VLAN overrides the zero-based query status set for the system.
- Use the **no** form of this command to restore the IGMP zero-based query status back to the default value (enabled) on the system or the specified VLAN.

### Examples

```
-> ip multicast zero-based-query enable
-> ip multicast zero-based-query disable
-> no ip multicast zero-based-query
-> ip multicast vlan 2 zero-based-query enable
-> ip multicast vlan 3-5 zero-based-query disable
-> no ip multicast vlan 2 zero-based-query
-> no ip multicast vlan 3-5 zero-based-query
```

### Release History

Release 5.1; command introduced.

## Related Commands

### `show ip multicast`

Displays the IP Multicast Switching and Routing status and general configuration parameters.

## MIB Objects

```
alaIpmsConfigTable  
  alaIpmsConfigType  
  alaIpmsConfigAddressType  
  alaIpmsConfigValue  
  alaIpmsConfigZeroBasedQuery
```

---

## ip multicast forward-mode

Configures the Layer 2 forwarding mode for IPv4 Multicast Switching (does not apply to IPv4 Multicast Routing). The forwarding mode is set for the specified VLAN or on the system if no VLAN is specified.

```
ip multicast [vlan vlan_id[-vlan_id2]] forward-mode {asm | ssm | mac | auto}
```

```
no ip multicast [vlan vlan_id[-vlan_id2]] forward-mode
```

---

### Syntax Definitions

<i>vlan_id</i> [- <i>vlan_id2</i> ]	VLAN on which to apply the configuration. Use a hyphen to specify a range of VLAN IDs.
<b>asm</b>	Sets the IPMS forwarding mode to ASM (the bridge lookup is based on the packet group destination IP address).
<b>ssm</b>	Sets the IPMS forwarding mode to SSM (the bridge lookup is based on the packet source IP as well as the group destination IP).
<b>mac</b>	Sets the IPMS forwarding mode to MAC address (the bridge lookup is based on the MAC destination address).
<b>auto</b>	Automatically determines the IPMS forwarding mode based on the current IGMP protocol version and the existing protocol state.

### Defaults

By default, the forwarding mode is set to automatic.

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- The forwarding mode set for a specific VLAN overrides the forwarding mode set for the system.
- If multicast routing is enabled on a VLAN, the following conditions apply:
  - The routing configuration overrides the forwarding mode setting and determines the forwarding mode based on the group mappings. For example, BIDIR flows will use ASM while DVMRP flows and all other PIM modes will use SSM.
- Use the **no** form of this command to restore the Layer 2 forwarding mode back to the default value (automatic) on the system or the specified VLAN.

### Examples

```
-> ip multicast forward-mode auto
-> ip multicast forward-mode asm
-> ip multicast forward-mode ssm
-> ip multicast forward-mode mac
-> no ip multicast forward-mode
-> ip multicast vlan 100 forward-mode auto
-> ip multicast vlan 101-104 forward-mode asm
-> ip multicast vlan 100 forward-mode ssm
```

```
-> ip multicast vlan 101-104 forward-mode mac
-> no ip multicast vlan 100 forward-mode
-> no ip multicast vlan 101-104 forward-mode
```

## Release History

Release 5.1; command introduced.

## Related Commands

- |  |  |
|--|--|
| <a href="#">show ip multicast</a>        | Displays the IP Multicast Switching and Routing status and general configuration parameters. |
| <a href="#">show ip multicast bridge</a> | Displays the forwarding mode for IP multicast bridge table entries.                          |

## MIB Objects

```
alaIpmsConfigTable
  alaIpmsConfigType
  alaIpmsConfigAddressType
  alaIpmsConfigValue
  alaIpmsConfigForwardMode
```

---

## ip multicast update-delay-interval

Sets the amount of time to delay IPv4 multicast forwarding updates on the specified VLAN or on the system if no VLAN is specified.

**ip multicast** [vlan *vlan\_id*[-*vlan\_id2*]] **update-delay-interval** *milliseconds*

**no ip multicast** [vlan *vlan\_id*[-*vlan\_id2*]] **update-delay-interval**

---

### Syntax Definitions

<i>vlan_id</i> [- <i>vlan_id2</i> ]	VLAN on which to apply the configuration. Use a hyphen to specify a range of VLAN IDs.
<i>milliseconds</i>	The number of milliseconds to defer forwarding updates. Valid range is 0–10000.

### Defaults

By default, the forwarding update delay interval is set to zero.

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- When the forwarding update delay is set to zero, forwarding updates are processed immediately with minimal latency. Configuring a forwarding update delay value can limit the effects of persistent churn on the system.
- If the forwarding update delay interval is already configured on the system, then the VLAN configuration will override the system's configuration.
- Use the **no** form of this command to restore the forwarding update delay interval back to the default value (zero) on the system or the specified VLAN.

### Examples

```
-> ip multicast update-delay-interval 10
-> no ip multicast update-delay-interval
-> ip multicast vlan 100 update-delay-interval 20
-> ip multicast vlan 101-105 update-delay-interval 20
-> no ip multicast vlan 100 update-delay-interval
-> no ip multicast vlan 101-105 update-delay-interval
```

### Release History

Release 5.1; command was introduced.

## Related Commands

### **show ip multicast**

Displays the IP Multicast Switching and Routing status and general configuration parameters.

## MIB Objects

```
alaIpmsConfigTable  
  alaIpmsConfigType  
  alaIpmsConfigAddressType  
  alaIpmsConfigValue  
  alaIpmsConfigUpdateDelayInterval
```

---

## ip multicast display-interface-names

Sets the display output of the **show** commands listed below. When enabled, the display outputs for these commands will show the IP interface name for each VLAN associated with the IP multicast table entry.

**ip multicast display-interface-names**

**no ip multicast display-interface-names**

---

### Syntax Definitions

N/A

### Defaults

By default, this function is disabled. The display format is set to include the VLANs that are associated with the IP multicast source and forward flows.

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- Use the **no** form of this command to revert back to displaying the VLAN name.
- If there are any VLANs that are not configured with an IP interface or the IP interface is disabled, the output display will still include the VLAN when this function is enabled.
- This command may be helpful when reviewing output from multicast snooping commands and comparing state in multicast routing, which only interacts with IP interfaces.
- Enabling the display interface names option applies to the following **show** commands:

**show ip multicast forward**  
**show ip multicast neighbor**  
**show ip multicast querier**  
**show ip multicast group**  
**show ip multicast source**  
**show ip multicast tunnel**

- The command examples provided display the **show ip multicast source** output after the display interface name function is turned on (enabled) and off (disabled).



## Examples

```
-> ip multicast display-interface-name
-> show ip multicast source
```

Total 11 Sources

Group Address	Host Address	Source		Ingress
		Tunnel Address	Address	Vlan
239.192.1.17	172.1.1.1	0.0.0.0		VL-10
239.192.1.18	172.1.1.2	0.0.0.0		VL-10
239.192.1.19	172.1.1.3	0.0.0.0		VL-10
239.192.1.20	172.1.1.4	0.0.0.0		VL-10
239.192.1.21	172.1.1.5	0.0.0.0		VL-10
239.192.1.22	172.1.1.6	0.0.0.0		VL-10
239.192.1.23	172.1.1.7	0.0.0.0		VL-10
239.192.1.24	172.1.1.8	0.0.0.0		VL-10
239.192.1.25	172.1.1.9	0.0.0.0		VL-10
239.192.1.9	173.1.1.9	0.0.0.0		VL-20
239.192.1.10	173.1.1.10	0.0.0.0		VL-20

```
-> no ip multicast display-interface-name
-> show ip multicast source
```

Total 11 Sources

Group Address	Host Address	Source		Ingress
		Tunnel Address	Address	Vlan
239.192.1.17	172.1.1.1	0.0.0.0		vlan 1001
239.192.1.18	172.1.1.2	0.0.0.0		vlan 1001
239.192.1.19	172.1.1.3	0.0.0.0		vlan 1001
239.192.1.20	172.1.1.4	0.0.0.0		vlan 1001
239.192.1.21	172.1.1.5	0.0.0.0		vlan 1001
239.192.1.22	172.1.1.6	0.0.0.0		vlan 1001
239.192.1.23	172.1.1.7	0.0.0.0		vlan 1001
239.192.1.24	172.1.1.8	0.0.0.0		vlan 1001
239.192.1.25	172.1.1.9	0.0.0.0		vlan 1001
239.192.1.9	173.1.1.9	0.0.0.0		vlan 2001
239.192.1.10	173.1.1.10	0.0.0.0		vlan 2001

## Release History

Release 5.1; command introduced.

## Related Commands

- show ip multicast source** Displays the IP Multicast Switching and Routing source table entries.
- show ip multicast forward** Displays the IP Multicast Switching and Routing forwarding table entries.

## MIB Objects

```
alaIpmsGlobalConfigTable  
  alaIpmsGlobalConfigAddressType  
  alaIpmsGlobalConfigDisplayInterfaceNames
```

---

## ip multicast inherit-default-vrf-config

Configures whether or not the global IPMS configuration defined in the default VRF instance is applied to all VRF instances.

**ip multicast inherit-default-vrf-config**

**no ip multicast inherit-default-vrf-config**

---

### Syntax Definitions

N/A

### Defaults

By default, the global IPMS configuration defined in the default VRF instance is applied to all VRF instances on the switch.

### Platforms Supported

Not supported in this release.

### Usage Guidelines

- Use the **no** form of this command to disable this function. When disabled, the global IPMS configuration defined in the default VRF instance is not applied to all other VRF instances on the switch.
- When enabled (the default), additional VRF instances will inherit the global IPMS configuration defined in the default VRF instance.
- A global IPMS configuration defined for a specific non-default VRF instance takes precedence over the global IPMS configuration defined for the default VRF.
- Note that any per-VLAN IPMS configuration defined in a non-default VRF instance will show up as part of the default VRF instance in the configuration snapshot file. However, the functionality is still applied within the context of VRF instance in which the per-VLAN configuration was originally defined.

### Examples

```
-> ip multicast inherit-default-vrf-config  
-> no ip multicast inherit-default-vrf-config
```

### Release History

Release 5.1; command introduced.

## Related Commands

### **show ip multicast**

Displays the status and configuration parameters of initial multicast packet buffer for IPv4 flows on the system.

## MIB Objects

```
alaIpmsGlobalConfigTable  
  alaIpmsGlobalConfigAddressType  
  alaIpmsGlobalConfigInheritDefaultVrfConfig
```

---

## ip multicast profile

Defines an IPMS profile that is used to apply a pre-defined configuration to the global IPMS instance (all VLAN instances) or to a specific VLAN instance. Using a configuration profile to configure IPMS functionality avoids having to configure each IPMS parameter with a separate CLI command.

This section describes the base command (**ip multicast profile**) along with optional command keywords that are used to configure IPMS parameter values that are applied when the profile is assigned to an IPMS instance. Optional keywords are listed separately but can be entered in combination on the same command line. Use the **no** form for the keywords to change a specific parameter value for the profile.

There is a “default” profile that defines a default set of IPMS parameter values that is automatically assigned to an IPMS instance. The default profile cannot be deleted, but the profile parameter values are configurable through this command.

**ip multicast profile** *profile\_name*

[**admin-state** {enable | disable}]  
[**flood-unknown** {enable | disable}]  
[**version** *version*]  
[**robustness** *robustness*]  
[**querying** {enable | disable}]  
[**query-interval** [*seconds*]]  
[**query-response-interval** [*tenths-of-seconds*]]  
[**last-member-query-interval** [*tenths-of-seconds*]]  
[**unsolicited-report-interval** [*seconds*]]  
[**proxying** {enable | disable}]  
[**spoofing** {enable | disable}]  
[**spoofing static-source-ip** *ip\_address*]  
[**zapping** {enable | disable}]  
[**querier-forwarding** {enable | disable}]  
[**router-timeout** [*seconds*]]  
[**source-timeout** [*seconds*]]  
[**max-group** [*num*] [**action** {none | drop | replace}]]  
[**helper-address** [*ip\_address*]]  
[**zero-based-query** {enable | disable}]  
[**forward-mode** {asm | ssm | mac | auto}]  
[**update-delay-interval** *milliseconds*]

**no ip multicast profile** *profile\_name* [**admin-state** | **flood-unknown** | **version** | **robustness** | ...]

---

### Syntax Definitions

*profile\_name*                      The name to associate with the IPMS profile.

### Defaults

N/A

## Platforms Supported

OmniSwitch 2260, 2360

## Usage Guidelines

- Use the **no** form of this command to remove an IPMS profile from the switch configuration.
- To change the value of a specific profile parameter, specify the parameter keyword with this command. For example, **no ip multicast profile ipms-1 admin-state**, **ip multicast profile ipms-1 query-interval 100**, or **ip multicast profile ipms-1 querying enable**. The new parameter values are applied to all IPMS instances to which the profile is assigned.
- The profile name must already exist in the switch configuration before parameter values can be modified. Use this command to create the profile first, then configure the profile parameter values.
- For more information about specific profile parameter values, refer to the following explicit IPMS configuration commands for each profile parameter:

Port Template Parameter	Explicit Port Configuration Command
[admin-state {enable   disable}]	<b>ip multicast admin-state</b>
[flood-unknown {enable   disable}]	<b>ip multicast flood-unknown</b>
[version <i>version</i> ]	<b>ip multicast version</b>
[robustness <i>robustness</i> ]	<b>ip multicast robustness</b>
[querying {enable   disable}]	<b>ip multicast querying</b>
[query-interval [ <i>seconds</i> ]]	<b>ip multicast query-interval</b>
[query-response-interval [ <i>tenths-of-seconds</i> ]]	<b>ip multicast query-response-interval</b>
[last-member-query-interval [ <i>tenths-of-seconds</i> ]]	<b>ip multicast last-member-query-interval</b>
[unsolicited-report-interval [ <i>seconds</i> ]]	<b>ip multicast unsolicited-report-interval</b>
[proxying {enable   disable}]	<b>ip multicast proxying</b>
[spoofing {enable   disable}]	<b>ip multicast spoofing</b>
[spoofing static-source-ip <i>ip_address</i> ]	<b>ip multicast spoofing static-source-ip</b>
[zapping {enable   disable}]	<b>ip multicast zapping</b>
[querier-forwarding {enable   disable}]	<b>ip multicast querier-forwarding</b>
[router-timeout [ <i>seconds</i> ]]	<b>ip multicast router-timeout</b>
[source-timeout [ <i>seconds</i> ]]	<b>ip multicast source-timeout</b>
[max-group [ <i>num</i> ] [action {none   drop   replace}]]	<b>ip multicast max-group</b>
[helper-address [ <i>ip_address</i> ]]	<b>ip multicast helper-address</b>
[zero-based-query {enable   disable}]	<b>ip multicast zero-based-query</b>
[forward-mode {asm   ssm   mac   auto}]	<b>ip multicast forward-mode</b>
[update-delay-interval [ <i>milliseconds</i> ]]	<b>ip multicast update-delay-interval</b>

## Examples

```
-> ip multicast profile "IGMPv3 with Zapping"
```

```
-> ip multicast profile "IGMPv3 with Zapping" admin-state enable
-> ip multicast profile "IGMPv3 with Zapping" zapping enable version 3
-> ip multicast profile "IGMPv3 with Zapping" proxying enable
-> no ip multicast profile "IGMPv3 with Zapping" proxying
-> no ip multicast profile "IGMPv3 with Zapping"
```

## Release History

Release 5.1; command introduced.

## Related Commands

<a href="#">ip multicast apply-profile</a>	Assigns an IPMS configuration profile globally for the switch or to a specific VLAN.
<a href="#">show ip multicast</a>	Displays the profile assignment for the IPMS instance.
<a href="#">show ip multicast profile</a>	Displays the IPMS profile configuration.

## MIB Objects

```
alaIpmsProfileTable
  alaIpmsProfileAddressType
  alaIpmsProfileName
  alaIpmsProfileIndex
  alaIpmsProfileRowStatus
alaIpmsConfigTable
  alaIpmsConfigType
  alaIpmsConfigAddressType
  alaIpmsConfigValue
  alaIpmsConfigProfileName
```

---

## ip multicast apply-profile

Assigns the name of an existing IPMS configuration profile to the global IPMS instance (all VLANs) or to a specific VLAN instance. An IPMS configuration profile defines parameter options that are applied to the IPMS instance to which the profile is assigned.

**ip multicast** [vlan *vlan\_id*[-*vlan\_id2*]] **apply-profile** *profile\_name*

**no ip multicast** [vlan *vlan\_id*[-*vlan\_id2*]] **apply-profile**

---

### Syntax Definitions

<i>vlan_id</i> [- <i>vlan_id2</i> ]	VLAN on which to apply the configuration. Use a hyphen to specify a range of VLAN IDs.
<i>profile_name</i>	The name to associate with the IPMS profile.

### Defaults

There is a “default” profile that defines a default set of IPMS parameter values that is automatically assigned to an IPMS instance.

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- Use the **no** form of this command to revert the profile assignment back to the “default” profile.
- Specify a range of VLANs (**vlan 20-25**) to apply the specified profile to multiple VLANs with one CLI command.
- The specified profile name must already exist in the switch configuration.

### Examples

```
-> ip multicast apply-profile "IGMPv3 with Zapping"  
-> ip multicast vlan 20 apply-profile "IGMPv3 with Zapping"  
-> ip multicast vlan 20-25 apply-profile "IGMPv3 with Zapping"  
-> no ip multicast apply-profile  
-> no ip multicast vlan 20 apply-profile  
-> no ip multicast vlan 20-15 apply-profile
```

### Release History

Release 5.1; command introduced.



## Related Commands

<b>ip multicast profile</b>	Defines an IPMS profile that is used to apply a pre-defined IPMS configuration.
<b>show ip multicast</b>	Displays the profile assignment for the IPMS instance.
<b>show ip multicast profile</b>	Displays the IPMS profile configuration.

## MIB Objects

```
alaIpmsProfileTable
  alaIpmsProfileAddressType
  alaIpmsProfileName
  alaIpmsProfileIndex
  alaIpmsProfileRowStatus
alaIpmsConfigTable
  alaIpmsConfigType
  alaIpmsConfigAddressType
  alaIpmsConfigValue
  alaIpmsConfigProfileName
```

---

## ipv6 multicast admin-state

Enables or disables IPv6 Multicast Switching and Routing on the specified VLAN or on the system if no VLAN is specified.

**ipv6 multicast** [*vlan vlan\_id*[-*vlan\_id2*]] **admin-state** [**enable** | **disable**]

**no ipv6 multicast** [*vlan vlan\_id*[-*vlan\_id2*]] **admin-state**

---

### Syntax Definitions

<i>vlan_id</i> [- <i>vlan_id2</i> ]	VLAN on which to apply the configuration. Use a hyphen to specify a range of VLAN IDs.
<b>enable</b>	Enable IPv6 Multicast Switching and Routing.
<b>disable</b>	Disable IPv6 Multicast Switching and Routing.

### Defaults

parameter	default
<b>enable</b>   <b>disable</b>	<b>disable</b>

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- The configuration of an IPv6 multicast routing protocol on an IPv6 interface operationally triggers IP Multicast Switching and Routing functionality on any underlying VLAN. This occurs regardless of any explicit IPMS configuration, such as attempting to specifically disable IPMS.
- If there is no IPv6 Multicast routing protocol already running on the switch, then the **ipv6 multicast admin-state** command alone controls IPMS operations.
- Enabling IPMS on individual VLANs, as needed, is recommended to conserve switch resources.
- If the IPv6 Multicast Switching and Routing is already enabled on the system, then the VLAN configuration will override the system's configuration.
- Use the **no** form of this command to restore the IPv6 Multicast Switching and Routing status back to the default value (disabled) on the system or the specified VLAN.

### Examples

```
-> ipv6 multicast admin-state enable
-> ipv6 multicast admin-state disable
-> no ipv6 multicast admin-state
-> ipv6 multicast vlan 2 admin-state enable
-> ipv6 multicast vlan 3-5 admin-state disable
-> no ipv6 multicast vlan 2 admin-state
-> no ipv6 multicast vlan 3-5 admin-state
```

## Release History

Release 5.1.R2; command introduced.

## Related Commands

### **show ipv6 multicast**

Displays the IPv6 Multicast Switching and Routing status and general configuration parameters.

## MIB Objects

```
alaIpmsConfigTable  
  alaIpmsConfigType  
  alaIpmsConfigAddressType  
  alaIpmsConfigValue  
  alaIpmsConfigStatus
```

---

## ipv6 multicast flood-unknown

Enables or disables the flooding of initial unknown multicast traffic for the specified VLAN or on the system if no VLAN is specified. When a traffic flow is first seen on a port, there is a brief period of time where traffic may get dropped before the forwarding information is calculated. When flooding unknown multicast traffic is enabled, no packets are dropped before the forwarding information is available.

**ipv6 multicast [vlan *vlan\_id*[-*vlan\_id2*]] flood-unknown [enable | disable]**

**no ipv6 multicast [vlan *vlan\_id*[-*vlan\_id2*]] flood-unknown**

---

### Syntax Definitions

<i>vlan_id</i> [- <i>vlan_id2</i> ]	VLAN on which to apply the configuration. Use a hyphen to specify a range of VLAN IDs.
<b>enable</b>	Enable flooding of unknown traffic until it is learned.
<b>disable</b>	Disable flooding of unknown traffic.

### Defaults

parameter	default
<b>enable   disable</b>	<b>disable</b>

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- If this command function is enabled after the system is up and running, the flooding of unknown multicast traffic only applies to new flows.
- Configuring the flood unknown status for any VLAN enforces the flood unknown behavior globally across all VLANs. The IPv4 multicast version of this command (**ip multicast flood-unknown**), however, enforces the flood unknown behavior at the per-VLAN level.
- IPv6 multicast snooping for VLANs does not snoop ff02::/64 and the traffic is allowed to flood even if the flooding of unknown multicast traffic is disabled. Avoid using any multicast groups that map to the excluded IPv6 addresses.
- Use this command to provide an "open failure" strategy for when hardware resource conflicts or software limits prevent the traffic from being registered in the fast path.
- Use the **no** form of this command to restore the flooding of unknown traffic back to the default value (disabled) on the system.

### Examples

```
-> ipv6 multicast flood-unknown enable
-> ipv6 multicast flood-unknown disable
-> no ipv6 multicast flood-unknown
-> ipv6 multicast vlan 100 flood-unknown enable
```

```
-> ipv6 multicast vlan 101-105 flood-unknown enable
-> ipv6 multicast vlan 100 flood-unknown disable
-> no ipv6 multicast vlan 100 flood-unknown
-> no ipv6 multicast vlan 101-105 flood-unknown
```

## Release History

Release 5.1.R2; command introduced.

## Related Commands

### [show ipv6 multicast](#)

Displays the IPv6 Multicast Switching and Routing status and general configuration parameters.

## MIB Objects

```
alaIpmsConfigTable
  alaIpmsConfigType
  alaIpmsConfigAddressType
  alaIpmsConfigValue
  alaIpmsConfigFloodUnknown
```

---

## ipv6 multicast version

Sets the default version of the MLD protocol on the specified VLAN or on the system if no VLAN is specified.

**ipv6 multicast** [**vlan** *vlan\_id*[-*vlan\_id2*]] **version** [*version*]

**no ipv6 multicast** [**vlan** *vlan\_id*[-*vlan\_id2*]] **version**

---

### Syntax Definitions

*vlan\_id*[-*vlan\_id2*]                      VLAN on which to apply the configuration. Use a hyphen to specify a range of VLAN IDs.

*version*                                      Default MLD protocol version to run. Valid entries are 1 or 2.

### Defaults

parameter	default
<i>version</i>	1

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- IPv6 Multicast Switching and Routing must be enabled to set the default MLD protocol version on the system and/or the specified VLANs.
- If the default MLD protocol version is already configured on the system, then the VLAN configuration will override the system's configuration.
- Due to protocol inter-operation requirements, this command specifies only a default version of the MLD protocol to run.
- Use the **no** form of this command to restore the MLD multicast version back to the default value (version 1) on the system or the specified VLAN. In addition, specifying a value of 0 with this command also restores the default value (for example, `ipv6 multicast version 0`).

### Examples

```
-> ipv6 multicast version 2
-> ipv6 multicast version 0
-> no ipv6 multicast version
-> ipv6 multicast vlan 2 version 2
-> ipv6 multicast vlan 3-5 version 2
-> ipv6 multicast vlan 2 version 0
-> no ipv6 multicast vlan 2 version
-> no ipv6 multicast vlan 3-5 version
```

### Release History

Release 5.1.R2; command introduced.

## Related Commands

### **show ipv6 multicast**

Displays the IPv6 Multicast Switching and Routing status and general configuration parameters.

## MIB Objects

```
alaIpmsConfigTable  
  alaIpmsConfigType  
  alaIpmsConfigAddressType  
  alaIpmsConfigValue  
  alaIpmsConfigVersion
```

---

## ipv6 multicast port max-group

Configures the maximum group limit learned per port. The limit is applicable on the given port for all VLAN instances of the port.

**ipv6 multicast port** *chassis/slot/port* **max-group** [*num*] [**action** {**none** | **drop** | **replace**}]

---

### Syntax Definitions

<i>chassis</i>	The chassis identifier.
<i>slot port</i>	The slot and port number (3/1).
<i>num</i>	The maximum MLD group count. Valid range is 0–4294967295.
<b>none</b>	Disables the maximum group limit configuration.
<b>drop</b>	Drops the incoming membership request.
<b>replace</b>	Replaces an existing membership with the incoming membership request. A leave is not sent to the router for the replaced group.

### Defaults

By default, the max-group limit is set to zero.

parameter	defaults
<b>action</b>	<b>none</b>

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- If group memberships are already registered on a port/VLAN instance and the group limit is set to a lower value for the instance, the current group memberships are not removed until they expire. The effect of the new lower group limit value is applied when one of the following occurs to help avoid any undetermined behavior:
  - IP multicast memberships are aged out on a port/VLAN instance.
  - IP multicast memberships are pruned by a leave or when IP multicast is disabled on the specific VLAN or globally disabled for the switch.
- The configuration is allowed even when the IP multicast status is disabled.
- If the *num* and **action** parameters are not specified, then the limit is removed.
- The maximum group configuration on a port will override the VLAN or global configuration.
- MLD zapping must be enabled when the maximum group limit is enabled and the action is dropped.



- The maximum group configuration is applied in the following order of precedence (listed from highest to lowest precedence):
  - Group limit configured for a port.
  - Group limit configured for a specific VLAN.
  - Group limit configured for the IPMS profile assigned to a VLAN.
  - Group limit configured for a VLAN within a specific VRF context.
  - Group limit configured for the IPMS profile assigned to a VLAN within a specific VRF context.

## Examples

```
-> ipv6 multicast port 1/1/12 max-group 10 action drop
-> ipv6 multicast port 1/1/14 max-group action replace
-> ipv6 multicast port 1/1/14 max-group
```

## Release History

Release 5.1.R2; command introduced.

## Related Commands

- |  |  |
|--|--|
| <a href="#">show ipv6 multicast</a>      | Displays the IPv6 Multicast Switching and Routing status and general configuration parameters. |
| <a href="#">show ipv6 multicast port</a> | Displays the maximum group configuration for VLAN ports.                                       |

## MIB Objects

```
alaIpmsIntfTable
  alaIpmsIntfConfigType
  alaIpmsIntfAddressType
  alaIpmsIntfMaxGroupLimit
  alaIpmsIntfMaxGroupExceedAction
```

---

## ipv6 multicast max-group

Configures the maximum group limit learned per port for the specified VLAN or per port on the system if no VLAN is specified. The limit is applied to each port that is a member of the given VLAN and the specified action is taken when the limit is exceeded.

```
ipv6 multicast [vlan vlan_id[-vlan_id2]] max-group [num] [action {none | drop | replace}]
```

---

### Syntax Definitions

<i>vlan_id</i> [- <i>vlan_id2</i> ]	VLAN on which to apply the configuration. Use a hyphen to specify a range of VLAN IDs.
<i>num</i>	The maximum MLD group count. Valid range is 0–4294967295.
<b>none</b>	Disables the maximum group limit configuration.
<b>drop</b>	Drops the incoming membership request.
<b>replace</b>	Replaces an existing membership with the incoming membership request.

### Defaults

By default, the max-group limit is set to zero.

parameter	defaults
<b>action</b>	<b>none</b>

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- If a VLAN is not specified, this command configures the global maximum group limit applied to all VLAN ports.
- If a VLAN is specified, this command configures the maximum group limit learned per port on a VLAN. The limit is applied to each port that is a member of the given VLAN.
- Configuring a maximum group value will have no affect on existing group memberships until the memberships are refreshed on the port/VLAN instance
- The configuration of a maximum group limit is allowed even when the IP multicast status is disabled.
- If the *num* and **action** parameters are not specified, then the limit is removed.
- The maximum group configuration on a VLAN will override the global configuration.

- The maximum group configuration is applied in the following order of precedence (listed from highest to lowest precedence):
  - Group limit configured for a port.
  - Group limit configured for a specific VLAN.
  - Group limit configured for the IPMS profile assigned to a VLAN.
  - Group limit configured for a VLAN within a specific VRF context.
  - Group limit configured for the IPMS profile assigned to a VLAN within a specific VRF context.
- MLD zapping must be enabled when the max-group limit is enabled and the action is dropped.

## Examples

```
-> ipv6 multicast max-group 10 action drop
-> ipv6 multicast max-group 20 action replace
-> ipv6 multicast max-group
-> ipv6 multicast vlan 10 max-group 10 action drop
-> ipv6 multicast vlan 20 max-group action drop
-> ipv6 multicast vlan 11-15 max-group 10 action replace
```

## Release History

Release 5.1.R2; command introduced.

## Related Commands

**show ipv6 multicast** Displays the IPv6 Multicast Switching and Routing status and general configuration parameters.

## MIB Objects

```
alaIpmsConfigTable
  alaIpmsConfigType
  alaIpmsConfigAddressType
  alaIpmsConfigValue
  alaIpmsConfigMaxGroupLimit
  alaIpmsConfigMaxGroupExceedAction
```

---

## ipv6 multicast static-neighbor

Creates a static MLD neighbor entry on the specified port for the specified VLAN.

```
ipv6 multicast static-neighbor vlan vlan_id {port chassis/slot/port | linkagg agg_id}
```

```
no ipv6 multicast static-neighbor vlan vlan_id {port chassis/slot/port | linkagg agg_id}
```

---

### Syntax Definitions

<i>vlan_id</i>	VLAN to include as a static MLD neighbor.
<i>chassis</i>	The chassis identifier.
<i>slot/port</i>	The slot and port number to configure as a static MLD neighbor.
<i>agg_id</i>	The link aggregate to configure as a static MLD neighbor.

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- Use the **no** form of this command to remove an MLD static neighbor entry on the specified port for the specified VLAN.
- Creating an MLD static neighbor entry on the specified port/VLAN, enables that network segment to receive all of the MLD traffic *and* IPv6 multicast traffic.
- To create an MLD static neighbor entry on a link aggregate, use the **linkagg** parameter (for example, **ipv6 multicast static-neighbor vlan 2 linkagg 7**).

### Examples

```
-> ipv6 multicast static-neighbor vlan 4 port 1/1
-> no ipv6 multicast static-neighbor vlan 4 port 1/1
-> ipv6 multicast static-neighbor vlan 4 port 7
-> no ipv6 multicast static-neighbor vlan 4 port 7
```

### Release History

Release 5.1.R2; command introduced.

## Related Commands

**show ipv6 multicast neighbor** Displays the MLD neighbor table entries of IPv6 Multicast Switching and Routing.

## MIB Objects

```
alaIpmsStaticNeighborTable  
  alaIpmsStaticNeighborConfigType  
  alaIpmsStaticNeighborAddressType  
  alaIpmsStaticNeighborValue  
  alaIpmsStaticNeighborIfIndex  
  alaIpmsStaticNeighborSubValue  
  alaIpmsStaticNeighborRowStatus
```

---

## ipv6 multicast static-querier

Creates a static MLD querier entry on the specified port for the specified VLAN.

```
ipv6 multicast static-querier vlan vlan_id {port chassis/slot/port | linkagg agg_id}
```

```
no ipv6 multicast static-querier vlan vlan_id {port chassis/slot/port | linkagg agg_id}
```

---

### Syntax Definitions

<i>vlan_id</i>	VLAN to include as a static MLD querier.
<i>chassis</i>	The chassis identifier.
<i>slot port</i>	The slot and port number to configure as a static MLD querier.
<i>agg_id</i>	The link aggregate to configure as a static MLD querier.

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- Use the **no** form of this command to remove an MLD static querier entry on the specified port for the specified VLAN.
- Creating an MLD static querier entry on the specified port/VLAN, enables that network segment to receive all of the MLD traffic.
- To create an MLD static querier entry on a link aggregate, use the **linkagg** parameter (for example, **ipv6 multicast static-querier vlan 2 linkagg 7**).

### Examples

```
-> ipv6 multicast static-querier vlan 4 port 1/1
-> no ipv6 multicast static-querier vlan 4 port 1/1
-> ipv6 multicast static-querier vlan 4 port 7
-> no ipv6 multicast static-querier vlan 4 port 7
```

### Release History

Release 5.1.R2; command introduced.

## Related Commands

**show ipv6 multicast querier** Displays the MLD querier table entries of IPv6 Multicast Switching and Routing.

## MIB Objects

```
alaIpmsStaticQuerierTable  
  alaIpmsStaticQuerierConfigType  
  alaIpmsStaticQuerierAddressType  
  alaIpmsStaticQuerierValue  
  alaIpmsStaticQuerierIfIndex  
  alaIpmsStaticQuerierSubValue  
  alaIpmsStaticQuerierRowStatus
```

---

## ipv6 multicast static-group

Creates a static MLD group entry on the specified port for the specified VLAN.

```
ipv6 multicast static-group ipv6_address vlan vlan_id {port chassis/slot/port | linkagg agg_id}
```

```
no ipv6 multicast static-group ipv6_address vlan vlan_id {port chassis/slot/port | linkagg agg_id}
```

---

### Syntax Definitions

<i>ipv6_address</i>	IPv6 multicast group address.
<i>vlan_id</i>	VLAN to include as a static MLD group.
<i>chassis</i>	The chassis identifier.
<i>slot port</i>	The slot and port number to configure as a static MLD group.
<i>agg_id</i>	The link aggregate to configure as a static MLD group.

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- Use the **no** form of this command to remove an MLD static group entry on the specified port for the specified VLAN.
- Creating an MLD static group entry on the specified port/VLAN, enables that network segment to receive MLD traffic addressed to the specified IP multicast group address.
- To create an MLD static group entry on a link aggregate, use the **linkagg** parameter (for example, **ipv6 multicast static-group 225.0.0.1 vlan 2 linkagg 7**).

### Examples

```
-> ipv6 multicast static-group ff05::4681 vlan 4 port 1/1
-> no ipv6 multicast static-group ff05::4681 vlan 4 port 1/1
-> ipv6 multicast static-group ff05::4681 vlan 4 port 7
-> no ipv6 multicast static-group ff05::4681 vlan 4 port 7
```

### Release History

Release 5.1.R2; command introduced.



## Related Commands

### **show ipv6 multicast group**

Displays the MLD group membership table entries of IPv6 Multicast Switching and Routing for the specified IPv6 multicast group address or all entries if no IPv6 multicast group address is specified.

## MIB Objects

```
alaIpmsStaticMemberTable  
  alaIpmsStaticMemberConfigType  
  alaIpmsStaticMemberAddressType  
  alaIpmsStaticMemberValue  
  alaIpmsStaticMemberIfIndex  
  alaIpmsStaticMemberSubValue  
  alaIpmsStaticMemberGroupAddress  
  alaIpmsStaticMemberRowStatus
```

---

## ipv6 multicast query-interval

Sets the MLD query interval on the specified VLAN or on the system if no VLAN is specified.

**ipv6 multicast** [*vlan vlan\_id*[-*vlan\_id2*]] **query-interval** [*seconds*]

**no ipv6 multicast** [*vlan vlan\_id*[-*vlan\_id2*]] **query-interval**

---

### Syntax Definitions

*vlan\_id*[-*vlan\_id2*]                      VLAN on which to apply the configuration. Use a hyphen to specify a range of VLAN IDs.

*seconds*                                      MLD query interval in seconds. Valid range is 1–65535.

### Defaults

parameter	default
<i>seconds</i>	125

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- IPv6 Multicast Switching and Routing must be enabled to set the MLD query interval on the system and/or the specified VLANs.
- If the MLD query interval is already configured on the system, then the VLAN configuration will override the system's configuration.
- The MLD query interval refers to the time period between MLD query messages.
- Due to protocol inter-operation requirements, this command specifies only a default version of the MLD query interval to use.
- Use the **no** form of this command to restore the MLD query interval back to the default value (125 seconds) on the system or the specified VLAN. In addition, specifying a value of 0 with this command also restores the default value (for example, **ipv6 multicast query-interval 0**).

### Examples

```
-> ipv6 multicast query-interval 100
-> ipv6 multicast query-interval 0
-> no ipv6 multicast query-interval
-> ipv6 multicast vlan 2 query-interval 100
-> ipv6 multicast vlan 3-5 query-interval 100
-> ipv6 multicast vlan 2 query-interval 0
-> no ipv6 multicast vlan 2 query-interval
-> no ipv6 multicast vlan 3-5 query-interval
```

## Release History

Release 5.1.R2; command introduced.

## Related Commands

### [show ipv6 multicast](#)

Displays the IPv6 Multicast Switching and Routing status and general configuration parameters.

## MIB Objects

alaIpmsConfigTable

    alaIpmsConfigType

    alaIpmsConfigAddressType

    alaIpmsConfigValue

    alaIpmsConfigQueryInterval

---

## ipv6 multicast last-member-query-interval

Sets the MLD last member query interval on the specified VLAN or on the system if no VLAN is specified.

**ipv6 multicast** [*vlan* *vlan\_id*[-*vlan\_id2*]] **last-member-query-interval** [*milliseconds*]

**no ipv6 multicast** [*vlan* *vlan\_id*[-*vlan\_id2*]] **last-member-query-interval**

---

### Syntax Definitions

<i>vlan_id</i> [- <i>vlan_id2</i> ]	VLAN on which to apply the configuration. Use a hyphen to specify a range of VLAN IDs.
<i>milliseconds</i>	MLD last member query interval in milliseconds. Valid range is 1–65535.

### Defaults

parameter	default
<i>milliseconds</i>	1000

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- IPv6 Multicast Switching and Routing must be enabled to set the MLD last member query interval to use on the system and/or the specified VLANs.
- If the MLD last member query interval is already configured on the system, then the VLAN configuration will override the system's configuration.
- The MLD last member query interval refers to the time period to reply to an MLD query message sent in response to a leave group message.
- Use the **no** form of this command to restore the MLD last member query interval back to the default value (1000 milliseconds) on the system or the specified VLAN. In addition, specifying a value of 0 with this command also restores the default value (for example, **ipv6 multicast last-member-query-interval 0**).

### Examples

```
-> ipv6 multicast last-member-query-interval 2200
-> ipv6 multicast last-member-query-interval 0
-> no ipv6 multicast last-member-query-interval
-> ipv6 multicast vlan 4 last-member-query-interval 2200
-> ipv6 multicast vlan 3-5 last-member-query-interval 2200
-> ipv6 multicast vlan 4 last-member-query-interval 0
-> no ipv6 multicast vlan 4 last-member-query-interval
-> no ipv6 multicast vlan 3-5 last-member-query-interval
```

## Release History

Release 5.1.R2; command introduced.

## Related Commands

### [show ipv6 multicast](#)

Displays the IPv6 Multicast Switching and Routing status and general configuration parameters.

## MIB Objects

```
alaIpmsConfigTable  
  alaIpmsConfigType  
  alaIpmsConfigAddressType  
  alaIpmsConfigValue  
  alaIpmsConfigLastMemberQueryInterval
```

---

## ipv6 multicast query-response-interval

Sets the MLD query response interval on the specified VLAN or on the system if no VLAN is specified.

**ipv6 multicast** [vlan *vlan\_id*[-*vlan\_id2*]] **query-response-interval** [*milliseconds*]

**no ip multicast** [vlan *vlan\_id*[-*vlan\_id2*]] **query-response-interval**

---

### Syntax Definitions

<i>vlan_id</i> [- <i>vlan_id2</i> ]	VLAN on which to apply the configuration. Use a hyphen to specify a range of VLAN IDs.
<i>milliseconds</i>	MLD query response interval in milliseconds. Valid range is 1–65535.

### Defaults

parameter	default
<i>milliseconds</i>	10000

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- IPv6 Multicast Switching and Routing must be enabled to set the MLD query response interval to use on the system and/or the specified VLANs.
- If the MLD query response interval is already configured on the system, then the VLAN configuration will override the system's configuration.
- The MLD query response interval refers to the time period to reply to an MLD query message.
- Use the **no** form of this command to restore the MLD query response interval back to the default value (10000 milliseconds) on the system or the specified VLAN. In addition, specifying a value of 0 with this command also restores the default value (for example, **ipv6 multicast query-response-interval 0**).

### Examples

```
-> ipv6 multicast query-response-interval 20000
-> ipv6 multicast query-response-interval 0
-> no ipv6 multicast query-response-interval
-> ipv6 multicast vlan 2 query-response-interval 20000
-> ipv6 multicast vlan 3-5 query-response-interval 20000
-> ipv6 multicast vlan 2 query-response-interval 0
-> no ipv6 multicast vlan 2 query-response-interval
-> no ipv6 multicast vlan 3-5 query-response-interval
```

### Release History

Release 5.1.R2; command introduced.

## Related Commands

### `show ipv6 multicast`

Displays the IPv6 Multicast Switching and Routing status and general configuration parameters.

## MIB Objects

```
alaIpmsConfigTable  
  alaIpmsConfigType  
  alaIpmsConfigAddressType  
  alaIpmsConfigValue  
  alaIpmsConfigQueryReponseInterval
```

---

## ipv6 multicast unsolicited-report-interval

Sets the value of the MLD unsolicited report interval on the specified VLAN or on the system if no VLAN is specified.

**ipv6 multicast** [*vlan vlan\_id*[-*vlan\_id2*]] **unsolicited-report-interval** [*seconds*]

**no ipv6 multicast** [*vlan vlan\_id*[-*vlan\_id2*]] **unsolicited-report-interval**

---

### Syntax Definitions

<i>vlan_id</i> [- <i>vlan_id2</i> ]	VLAN on which to apply the configuration. Use a hyphen to specify a range of VLAN IDs.
<i>seconds</i>	MLD unsolicited report interval in seconds. Valid range is 1–65535, where 0 represents the default setting.

### Defaults

parameter	default
<i>seconds</i>	1

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- IPv6 Multicast Switching and Routing must be enabled to set the MLD unsolicited report interval to use on the system and/or the specified VLANs.
- If the MLD unsolicited report interval is already configured on the system, then the VLAN configuration will override the system's configuration.
- The unsolicited report interval refers to the time period to proxy any changed MLD membership state.
- Use the **no** form of this command to restore the MLD unsolicited report interval back to the default value (1 second) on the system or the specified VLAN. In addition, specifying a value of 0 with this command also restores the default value (for example, **ipv6 multicast unsolicited-report-interval 0**).

### Examples

```
-> ipv6 multicast unsolicited-report-interval 20000
-> ipv6 multicast unsolicited-report-interval 0
-> no ipv6 multicast unsolicited-report-interval
-> ipv6 multicast vlan 2 unsolicited-report-interval 20000
-> ipv6 multicast vlan 3-5 unsolicited-report-interval 20000
-> ipv6 multicast vlan 2 unsolicited-report-interval 0
-> no ipv6 multicast vlan 2 unsolicited-report-interval
-> no ipv6 multicast vlan 3-5 unsolicited-report-interval
```



## Release History

Release 5.1.R2; command introduced.

## Related Commands

### [show ipv6 multicast](#)

Displays the IPv6 Multicast Switching and Routing status and general configuration parameters.

## MIB Objects

```
alaIpmsConfigTable  
  alaIpmsConfigType  
  alaIpmsConfigAddressType  
  alaIpmsConfigValue  
  alaIpmsConfigUnsolicitedReportInterval
```

---

## ipv6 multicast router-timeout

Configures the expiry time of IPv6 multicast routers on the specified VLAN or on the system if no VLAN is specified.

```
ipv6 multicast [vlan vlan_id[-vlan_id2]] router-timeout [seconds]
```

```
no ipv6 multicast [vlan vlan_id[-vlan_id2]] router-timeout
```

---

### Syntax Definitions

*vlan\_id*[-*vlan\_id2*]            VLAN on which to apply the configuration. Use a hyphen to specify a range of VLAN IDs.

*seconds*                        MLD router timeout in seconds. Valid range is 1–65535.

### Defaults

parameter	default
<i>seconds</i>	90

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- IPv6 Multicast Switching and Routing must be enabled to set the MLD router timeout on the system and/or the specified VLANs.
- If the MLD router timeout is already configured on the system, then the VLAN configuration will override the system's configuration.
- Use the **no** form of this command to restore the MLD router timeout back to the default value (90 seconds) on the system or the specified VLAN. In addition, specifying a value of 0 with this command also restores the default value (for example, **ipv6 multicast router-timeout 0**).

### Examples

```
-> ipv6 multicast router-timeout 100
-> ipv6 multicast router-timeout 0
-> no ipv6 multicast router-timeout
-> ipv6 multicast vlan 2 router-timeout 100
-> ipv6 multicast vlan 3-5 router-timeout 100
-> ipv6 multicast vlan 2 router-timeout 0
-> no ipv6 multicast vlan 2 router-timeout
-> no ipv6 multicast vlan 3-5 router-timeout
```

### Release History

Release 5.1.R2; command introduced.

## Related Commands

### `show ipv6 multicast`

Displays the IPv6 Multicast Switching and Routing status and general configuration parameters.

## MIB Objects

`alaIpmsConfigTable`

`alaIpmsConfigRouterTimeout`

---

## ipv6 multicast source-timeout

Configures the expiry time of IPv6 multicast sources on the specified VLAN or on the system if no VLAN is specified.

**ipv6 multicast** [*vlan vlan\_id*[-*vlan\_id2*]] **source-timeout** [*seconds*]

**no ip multicast** [*vlan vlan\_id*[-*vlan\_id2*]] **source-timeout**

---

### Syntax Definitions

*vlan\_id*[-*vlan\_id2*]                      VLAN on which to apply the configuration. Use a hyphen to specify a range of VLAN IDs.

*seconds*                                      MLD source timeout in seconds. Valid range is 1–65535.

### Defaults

parameter	default
<i>seconds</i>	30

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- IPv6 Multicast Switching and Routing must be enabled to set the MLD source timeout on the system and/or the specified VLANs.
- If the MLD source timeout is already configured on the system, then the VLAN configuration will override the system's configuration.
- Use the **no** form of this command to restore the MLD source timeout back to the default value (30 seconds) on the system or the specified VLAN. In addition, specifying a value of 0 with this command also restores the default value (for example, **ipv6 multicast source-timeout 0**).

### Examples

```
-> ipv6 multicast source-timeout 100
-> ipv6 multicast source-timeout 0
-> no ipv6 multicast source-timeout
-> ipv6 multicast vlan 2 source-timeout 100
-> ipv6 multicast vlan 3-5 source-timeout 100
-> ipv6 multicast vlan 2 source-timeout 0
-> no ipv6 multicast vlan 2 source-timeout
-> no ipv6 multicast vlan 3-5 source-timeout 100
```

### Release History

Release 5.1.R2; command introduced.

## Related Commands

### **show ipv6 multicast**

Displays the IPv6 Multicast Switching and Routing status and general configuration parameters.

## MIB Objects

alaIpmsConfigTable

    alaIpmsConfigSourceTimeout

---

## ipv6 multicast querying

Enables or disables MLD querying on the specified VLAN or on the system if no VLAN is specified.

**ipv6 multicast** [vlan *vlan\_id*[-*vlan\_id2*]] **querying** [{enable | disable}] [static-source-ip *ipv6\_address*]

**no ipv6 multicast** [vlan *vlan\_id*[-*vlan\_id2*]] **querying** [static-source-ip]

---

### Syntax Definitions

<i>vlan_id</i> [- <i>vlan_id2</i> ]	VLAN on which to apply the configuration. Use a hyphen to specify a range of VLAN IDs.
<b>enable</b>	Enable MLD querying.
<b>disable</b>	Disable MLD querying.
<i>ipv6_address</i>	A static source IPv6 address to use for MLD querying. <i>This parameter is currently not supported.</i>

### Defaults

parameter	default
enable   disable	disable

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- IPv6 Multicast Switching and Routing must be enabled to enable MLD querying on the system and/or specified VLANs.
- If the MLD querying is already enabled/disabled on the system, then the VLAN configuration will override the system's configuration.
- MLD querying refers to requesting the network's MLD group membership information by sending out MLD queries. MLD querying also involves participating in MLD querier election.
- Use the **no** form of this command to restore the MLD querying status to the default value (disabled) on the system or the specified VLAN.

### Examples

```
-> ipv6 multicast querying enable
-> ipv6 multicast querying disable
-> no ipv6 multicast querying
-> ipv6 multicast vlan 2 querying enable
-> ipv6 multicast vlan 3-5 querying disable
-> no ipv6 multicast vlan 2 querying
-> no ipv6 multicast vlan 3-5 querying
```

## Release History

Release 5.1.R2; command introduced.

## Related Commands

### `show ipv6 multicast`

Displays the IPv6 Multicast Switching and Routing status and general configuration parameters.

## MIB Objects

```
alaIpmsConfigTable  
  alaIpmsConfigType  
  alaIpmsConfigAddressType  
  alaIpmsConfigValue  
  alaIpmsConfigQuerying  
  alaIpmsConfigQueryingStaticSourceAddress
```

---

## ipv6 multicast robustness

Sets the MLD robustness variable on the specified VLAN or on the system if no VLAN is specified.

**ipv6 multicast** [**vlan** *vlan\_id*[-*vlan\_id2*]] **robustness** [*robustness*]

**no ipv6 multicast** [**vlan** *vlan\_id*[-*vlan\_id2*]] **robustness**

---

### Syntax Definitions

<i>vlan_id</i> [- <i>vlan_id2</i> ]	VLAN on which to apply the configuration. Use a hyphen to specify a range of VLAN IDs.
<i>robustness</i>	MLD robustness variable. Valid range is 1–7.

### Defaults

parameter	default
<i>robustness</i>	2

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- IPv6 Multicast Switching and Routing must be enabled to set the MLD robustness variable on the system and/or the specified VLANs.
- If the MLD robustness variable is already configured on the system, then the VLAN configuration will override the system's configuration.
- Robustness variable allows fine-tuning on the network, where the expected packet loss would be greater.
- Due to protocol inter-operation requirements, this command specifies only a default version of the MLD robustness variable to use.
- Use the **no** form of this command to restore the MLD robustness variable back to the default value (2) on the system or the specified VLAN. In addition, specifying a value of 0 with this command also restores the default value (for example, **ipv6 multicast robustness 0**).

### Examples

```
-> ipv6 multicast robustness 3
-> ipv6 multicast robustness 0
-> no ipv6 multicast robustness
-> ipv6 multicast vlan 2 robustness 3
-> ipv6 multicast vlan 3-5 robustness 3
-> ipv6 multicast vlan 2 robustness 0
-> no ipv6 multicast vlan 2 robustness
-> no ipv6 multicast vlan 3-5 robustness
```



## Release History

Release 5.1.R2; command introduced.

## Related Commands

### `show ipv6 multicast`

Displays the IPv6 Multicast Switching and Routing status and general configuration parameters.

## MIB Objects

```
alaIpmsConfigTable  
  alaIpmsConfigType  
  alaIpmsConfigAddressType  
  alaIpmsConfigValue  
  alaIpmsConfigRobustness
```

---

## ipv6 multicast spoofing

Enables or disables MLD spoofing on the specified VLAN or on the system if no VLAN is specified.

**ipv6 multicast [vlan *vlan\_id*[-*vlan\_id2*]] spoofing {enable | disable}**

**no ipv6 multicast [vlan *vlan\_id*[-*vlan\_id2*]] spoofing**

---

### Syntax Definitions

<i>vlan_id</i> [- <i>vlan_id2</i> ]	VLAN on which to apply the configuration. Use a hyphen to specify a range of VLAN IDs.
<b>enable</b>	Enable MLD spoofing.
<b>disable</b>	Disable MLD spoofing.

### Defaults

parameter	defaults
<b>enable   disable</b>	<b>disable</b>

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- If the MLD spoofing is already enabled on the system, then the VLAN configuration will override the system's configuration.
- MLD spoofing refers to replacing a client's MAC and IPv6 address with the system's MAC and IPv6 address when proxying aggregated MLD group membership information.
- By default, the source IPv6 address is not specified for spoofing; the system determines these addresses automatically. Optionally configure a static source IPv6 address to overcome the need for an IPv6 interface. If configured, the static source IPv6 is always used for spoofing, regardless of the IPv6 interface address or administrative state.
- Use the **no** form of this command to remove an MLD spoofing configuration and return the specified VLAN or system to the default behavior.

### Examples

```
-> ipv6 multicast spoofing enable
-> ipv6 multicast spoofing disable
-> no ipv6 multicast spoofing
-> ipv6 multicast vlan 2 spoofing enable
-> ipv6 multicast vlan 3-5 spoofing disable
-> no ipv6 multicast vlan 2 spoofing
-> no ipv6 multicast vlan 3-5 spoofing
```

## Release History

Release 5.1.R2; command introduced.

## Related Commands

### [show ipv6 multicast](#)

Displays the IPv6 Multicast Switching and Routing status and general configuration parameters.

## MIB Objects

```
alaIpmsConfigTable  
  alaIpmsConfigType  
  alaIpmsConfigAddressType  
  alaIpmsConfigValue  
  alaIpmsConfigSpoofing
```

---

## ipv6 multicast spoofing static-source-ip

Enables or disables MLD static spoofing on the specified VLAN or on the system if no VLAN is specified.

**ipv6 multicast [vlan *vlan\_id*[-*vlan\_id2*]] spoofing static-source-ip *ipv6\_address***

**no ipv6 multicast [vlan *vlan\_id*[-*vlan\_id2*]] spoofing static-source-ip**

---

### Syntax Definitions

*vlan\_id*[-*vlan\_id2*]                      VLAN on which to apply the configuration. Use a hyphen to specify a range of VLAN IDs.

*ipv6\_address*                              A static source IPv6 address to use for spoofing.

### Defaults

parameter	defaults
enable   disable	disable

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- Use the **no** form of this command to remove a static source IP address.
- MLD spoofing refers to replacing a client's MAC and IPv6 address with the system's MAC and IPv6 address when proxying aggregated MLD group membership information.
- By default, the source IPv6 address is not specified for spoofing; the system determines these addresses automatically. Optionally configure a static source IPv6 address to overcome the need for an IPv6 interface. If configured, the static source IPv6 is always used for spoofing, regardless of the IPv6 interface address or administrative state.

### Examples

```
-> ipv6 multicast spoofing static-source-ip 3333::1
-> no ipv6 ip multicast spoofing static-source-ip
-> ipv6 multicast vlan 2 spoofing static-source-ip 3333::1
-> ipv6 multicast vlan 3-5 spoofing static-source-ip 3333::1
-> no ipv6 ip multicast vlan 2 spoofing static-source-ip
-> no ipv6 multicast vlan 3-5 spoofing static-source-ip
```

### Release History

Release 5.1.R2; command introduced.

## Related Commands

### **show ipv6 multicast**

Displays the IPv6 Multicast Switching and Routing status and general configuration parameters-

## MIB Objects

```
alaIpmsConfigTable  
  alaIpmsConfigType  
  alaIpmsConfigAddressType  
  alaIpmsConfigValue  
  alaIpmsConfigSpoofing  
  alaIpmsConfigSpoofingStaticSourceAddress
```

---

## ipv6 multicast zapping

Enables or disables MLD zapping on the specified VLAN or on the system if no VLAN is specified.

```
ipv6 multicast [vlan vlan_id[-vlan_id2]] zapping [enable | disable]
```

```
no ipv6 multicast [vlan vlan_id[-vlan_id2]] zapping
```

---

### Syntax Definitions

<i>vlan_id</i> [- <i>vlan_id2</i> ]	VLAN on which to apply the configuration. Use a hyphen to specify a range of VLAN IDs.
<b>enable</b>	Enable MLD zapping.
<b>disable</b>	Disable MLD zapping.

### Defaults

---

parameter	default
enable   disable	disable

---

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- If the MLD zapping is already enabled on the system, then the VLAN configuration will override the system's configuration.
- MLD zapping refers to processing membership and source filter removals immediately and not waiting for the protocol's specified time period. This mode facilitates IP TV applications looking for quick changes between IP multicast groups.
- Use the **no** form of this command to restore the MLD zapping status back to the default value (disabled) on the system or the specified VLAN.

### Examples

```
-> ipv6 multicast zapping enable
-> ipv6 multicast zapping disable
-> no ipv6 multicast zapping
-> ipv6 multicast vlan 2 zapping enable
-> ipv6 multicast vlan 3-5 zapping disable
-> no ipv6 multicast vlan 2 zapping
-> no ipv6 multicast vlan 3-5 zapping
```

### Release History

Release 5.1.R2; command introduced.

## Related Commands

### `show ipv6 multicast`

Displays the IPv6 Multicast Switching and Routing status and general configuration parameters.

## MIB Objects

```
alaIpmsConfigTable  
  alaIpmsConfigType  
  alaIpmsConfigAddressType  
  alaIpmsConfigValue  
  alaIpmsConfigZapping
```

---

## ipv6 multicast querier-forwarding

Enables or disables MLD querier forwarding on the specified VLAN or on the system if no VLAN is specified.

**ipv6 multicast [vlan *vlan\_id*[-*vlan\_id2*]] querier-forwarding [enable | disable]**

**no ipv6 multicast [vlan *vlan\_id*[-*vlan\_id2*]] querier-forwarding**

---

### Syntax Definitions

<i>vlan_id</i> [- <i>vlan_id2</i> ]	VLAN on which to apply the configuration. Use a hyphen to specify a range of VLAN IDs.
<b>enable</b>	Enable MLD querier forwarding.
<b>disable</b>	Disable MLD querier forwarding.

### Defaults

parameter	default
enable   disable	disable

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- If the MLD querier forwarding is already enabled on the system, then the VLAN configuration will override the system's configuration.
- MLD querier forwarding refers to promoting detected MLD queriers to receive all IP multicast data traffic.
- Use the **no** form of this command to restore the MLD querier forwarding status back to the default value (disabled) on the system or the specified VLAN.

### Examples

```
-> ipv6 multicast querier-forwarding enable
-> ipv6 multicast querier-forwarding disable
-> no ipv6 multicast querier-forwarding
-> ipv6 multicast vlan 2 querier-forwarding enable
-> ipv6 multicast vlan 3-5 querier-forwarding disable
-> no ipv6 multicast vlan 2 querier-forwarding
-> no ipv6 multicast vlan 3-5 querier-forwarding
```

### Release History

Release 5.1.R2; command introduced.



## Related Commands

### `show ipv6 multicast`

Displays the IPv6 Multicast Switching and Routing status and general configuration parameters.

## MIB Objects

```
alaIpmsConfigTable  
  alaIpmsConfigType  
  alaIpmsConfigAddressType  
  alaIpmsConfigValue  
  alaIpmsConfigQuerierForwarding
```

---

## ipv6 multicast proxying

Enables or disables MLD proxying on the specified VLAN or on the system if no VLAN is specified.

**ipv6 multicast [vlan *vlan\_id*[-*vlan\_id2*]] proxying [enable | disable]**

**no ipv6 multicast [vlan *vlan\_id*[-*vlan\_id2*]] proxying**

---

### Syntax Definitions

<i>vlan_id</i> [- <i>vlan_id2</i> ]	VLAN on which to apply the configuration. Use a hyphen to specify a range of VLAN IDs.
<b>enable</b>	Enable MLD proxying.
<b>disable</b>	Disable MLD proxying.

### Defaults

---

parameter	default
<b>enable   disable</b>	<b>disable</b>

---

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- If the MLD proxying is already enabled on the system, then the VLAN configuration will override the system's configuration.
- MLD proxying refers to processing membership information on behalf of client systems and reporting membership on their behalf.
- Proxy reported MLD packets are sent using the source MAC address of the proxying switch. Unless the spoofing feature is used, proxy reported MLD packets will be sent using ":::" for the IPv6 source address.
- Use the **no** form of this command to restore the MLD proxying status back to the default value (disabled) on the system or the specified VLAN.

### Examples

```
-> ipv6 multicast proxying enable
-> ipv6 multicast proxying disable
-> no ipv6 multicast proxying
-> ipv6 multicast vlan 2 proxying enable
-> ipv6 multicast vlan 3-5 proxying disable
-> no ipv6 multicast vlan 2 proxying
-> no ipv6 multicast vlan 3-5 proxying
```

### Release History

Release 5.1.R2; command introduced.

## Related Commands

### `show ipv6 multicast`

Displays the IPv6 Multicast Switching and Routing status and general configuration parameters.

## MIB Objects

```
alaIpmsConfigTable  
  alaIpmsConfigType  
  alaIpmsConfigAddressType  
  alaIpmsConfigValue  
  alaIpmsConfigProxying
```

---

## ipv6 multicast helper-address

Specifies the destination IPv6 address of a relay host where MLD host Reports and Leave messages are sent.

**ipv6 multicast** [**vlan** *vlan\_id*[-*vlan\_id2*]] **helper-address** [*ipv6\_address*]

**no ipv6 multicast** [**vlan** *vlan\_id*[-*vlan\_id2*]] **helper-address**

---

### Syntax Definitions

<i>vlan_id</i> [- <i>vlan_id2</i> ]	VLAN on which to apply the configuration. Use a hyphen to specify a range of VLAN IDs.
<i>ipv6_address</i>	The IPv6 address of the relay host.

### Defaults

By default, no destination IPv6 address is set.

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- After the destination IPv6 address is specified, the IPMS reporting feature is enabled.
- An operational IPv6 interface is required for the receiving LAN before any MLD Reports and Leave messages can be relayed.
- Use the **no** form of this command to restore the IPMS reporting feature back to the default value (no IPv6 helper address) on the system. When there is no IPv6 helper address set, the IPMS reporting feature is disabled.

### Examples

```
-> ipv6 multicast helper-address 3333::2
-> no ipv6 multicast helper-address
-> ipv6 multicast vlan 2 helper-address 3333::2
-> ipv6 multicast vlan 3-5 helper-address 3333::2
-> no ipv6 multicast vlan 2 helper-address
-> no ipv6 multicast vlan 3-5 helper-address
```

### Release History

Release 5.1.R2; command introduced.

## Related Commands

### **show ipv6 multicast**

Displays the IPv6 Multicast Switching and Routing status and general configuration parameters.

## MIB Objects

```
alaIpmsConfigTable  
  alaIpmsConfigType  
  alaIpmsConfigAddressType  
  alaIpmsConfigValue  
  alaIpmsConfigHelperAddress
```

---

## ipv6 multicast zero-based-query

Configures the use of an all-zero source IPv6 address for MLD query packets when a non-querier is querying the membership of a port. This value is set for the specified VLAN or on the system if no VLAN is specified.

**ipv6 multicast [vlan *vlan\_id*[-*vlan\_id2*]] zero-based-query [enable | disable]**

**no ipv6 multicast [vlan *vlan\_id*[-*vlan\_id2*]] zero-based-query**

---

### Syntax Definitions

<i>vlan_id</i> [- <i>vlan_id2</i> ]	VLAN on which to apply the configuration. Use a hyphen to specify a range of VLAN IDs.
<b>enable</b>	Enable MLD zero-based querying.
<b>disable</b>	Disable MLD zero-based querying.

### Defaults

parameter	default
<b>enable   disable</b>	<b>enable</b>

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- The MLD zero-based query status set for a specific VLAN overrides the zero-based query status set for the system.
- Use the **no** form of this command to restore the MLD zero-based query status back to the default value (enabled) on the system or the specified VLAN.

### Examples

```
-> ipv6 multicast zero-based-query enable
-> ipv6 multicast zero-based-query disable
-> no ipv6 multicast zero-based-query
-> ipv6 multicast vlan 2 zero-based-query enable
-> ipv6 multicast vlan 3-5 zero-based-query disable
-> no ipv6 multicast vlan 2 zero-based-query
-> no ipv6 multicast vlan 3-5 zero-based-query
```

### Release History

Release 5.1.R2; command introduced.

## Related Commands

### `show ipv6 multicast`

Displays the IPv6 Multicast Switching and Routing status and general configuration parameters.

## MIB Objects

```
alaIpmsConfigTable  
  alaIpmsConfigType  
  alaIpmsConfigAddressType  
  alaIpmsConfigValue  
  alaIpmsConfigZeroBasedQuery
```

---

## ipv6 multicast forward-mode

Configures the Layer 2 forwarding mode for IPv6 Multicast Switching (does not apply to IPv6 Multicast Routing). The forwarding mode is set for the specified VLAN or on the system if no VLAN is specified.

```
ipv6 multicast [vlan vlan_id[-vlan_id2]] forward-mode {asm | ssm | mac | auto}
```

```
no ipv6 multicast [vlan vlan_id[-vlan_id2]] forward-mode
```

---

### Syntax Definitions

<i>vlan_id</i> [- <i>vlan_id2</i> ]	VLAN on which to apply the configuration. Use a hyphen to specify a range of VLAN IDs.
<b>asm</b>	Sets the IPMSv6 forwarding mode to ASM (the bridge lookup is based on the packet group destination IPv6 address).
<b>ssm</b>	Sets the IPMSv6 forwarding mode to SSM (the bridge lookup is based on the packet source IPv6 as well as the group destination IPv6).
<b>mac</b>	Sets the IPMSv6 forwarding mode to MAC address (the bridge lookup is based on the MAC destination address).
<b>auto</b>	Automatically determines the IPMSv6 forwarding mode based on the current MLD protocol version and the existing protocol state.

### Defaults

By default, the forwarding mode is set to automatic.

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- The forwarding mode set for a specific VLAN overrides the forwarding mode set for the system.
- If multicast routing is enabled on a VLAN, the following conditions apply:
  - The routing configuration overrides the forwarding mode setting and determines the forwarding mode based on the group mappings. For example, BIDIR flows will use ASM while DVMRP flows and all other PIM modes will use SSM.
- Use the **no** form of this command to restore the Layer 2 forwarding mode back to the default value (automatic) on the system or the specified VLAN.

### Examples

```
-> ipv6 multicast forward-mode auto
-> ipv6 multicast forward-mode asm
-> ipv6 multicast forward-mode ssm
-> ipv6 multicast forward-mode mac
-> no ipv6 multicast forward-mode
-> ipv6 multicast vlan 100 forward-mode auto
-> ipv6 multicast vlan 101-104 forward-mode asm
-> ipv6 multicast vlan 100 forward-mode ssm
```



```
-> ipv6 multicast vlan 101-104 forward-mode mac
-> no ipv6 multicast vlan 100 forward-mode
-> no ipv6 multicast vlan 101-104 forward-mode
```

## Release History

Release 5.1.R2; command introduced.

## Related Commands

- |                                   |  |
|-----------------------------------|--|
| <b>show ipv6 multicast</b>        | Displays the IPv6 Multicast Switching and Routing status and general configuration parameters. |
| <b>show ipv6 multicast bridge</b> | Displays IPv6 multicast bridge table entries.  |

## MIB Objects

```
alaIpmsConfigTable
  alaIpmsConfigType
  alaIpmsConfigAddressType
  alaIpmsConfigValue
  alaIpmsConfigForwardMode
```

---

## ipv6 multicast update-delay-interval

Sets the amount of time to delay IPv6 multicast forwarding updates on the specified VLAN or on the system if no VLAN is specified.

**ipv6 multicast [vlan *vlan\_id*[-*vlan\_id2*]] update-delay-interval *milliseconds***

**no ipv6 multicast [vlan *vlan\_id*[-*vlan\_id2*]] update-delay-interval**

---

### Syntax Definitions

<i>vlan_id</i> [- <i>vlan_id2</i> ]	VLAN on which to apply the configuration. Use a hyphen to specify a range of VLAN IDs.
<i>milliseconds</i>	The number of milliseconds to defer forwarding updates. Valid range is 0–10000.

### Defaults

By default, the forwarding update delay interval is set to zero.

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- When the forwarding update delay is set to zero, forwarding updates are processed immediately with minimal latency. Configuring a forwarding update delay value can limit the effects of persistent churn on the system.
- If the forwarding update delay interval is already configured on the system, then the VLAN configuration will override the system's configuration.
- Use the **no** form of this command to restore the forwarding update delay interval back to the default value (zero) on the system or the specified VLAN.

### Examples

```
-> ipv6 multicast update-delay-interval 10
-> no ipv6 multicast update-delay-interval
-> ipv6 multicast vlan 100 update-delay-interval 20
-> ipv6 multicast vlan 101-105 update-delay-interval 20
-> no ipv6 multicast vlan 100 update-delay-interval 20
-> no ipv6 multicast vlan 101-105 update-delay-interval
```

### Release History

Release 5.1.R2; command introduced.

## Related Commands

### `show ipv6 multicast`

Displays the IPv6 Multicast Switching and Routing status and general configuration parameters.

## MIB Objects

```
alaIpmsConfigTable  
  alaIpmsConfigType  
  alaIpmsConfigAddressType  
  alaIpmsConfigValue  
  alaIpmsConfigUpdateDelayInterval
```

---

## ipv6 multicast display-interface-names

Sets the display output of the **show** commands listed below. When enabled, the display outputs for these commands will show the IPv6 interface name for each VLAN associated with the IPv6 multicast table entry.

**ipv6 multicast display-interface-names**

**no ipv6 multicast display-interface-names**

---

### Syntax Definitions

N/A

### Defaults

By default, this function is disabled. The display format is set to include the VLANs that are associated with the IPv6 multicast source and forward flows.

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- Use the **no** form of this command to revert back to displaying the VLAN name.
- If there are any VLANs that are not configured with an IPv6 interface or the IPv6 interface is disabled, the output display will still include the VLAN when this function is enabled.
- This command may be helpful when reviewing output from multicast snooping commands and comparing state in multicast routing, which only interacts with IPv6 interfaces.
- Enabling the display interface names option applies to the following **show** commands:
  - show ipv6 multicast forward**
  - show ipv6 multicast neighbor**
  - show ipv6 multicast querier**
  - show ipv6 multicast group**
  - show ipv6 multicast source**
  - show ipv6 multicast tunnel**
- The command examples provided display the **show ipv6 multicast source** output after the display interface name function is turned on (enabled) and off (disabled).

## Examples

```
-> ipv6 multicast display-interface-name
```

```
-> show ipv6 multicast source
```

Total 4 Sources

Group Address	Host Address	Source		Ingress
		Tunnel Address	VLAN	
ff05::5	4444::2	::		VL-21
ff05::6	4444::2	::		VL-21
ff06::1	::	::		VL-20
ff06::1	::	::		VL-20

```
-> no ip multicast display-interface-name
```

```
-> show ipv6 multicast source
```

Total 4 Sources

Group Address	Host Address	Source		Ingress
		Tunnel Address	VLAN	
ff05::5	4444::2	::		vlan 21
ff05::6	4444::2	::		vlan 21
ff06::1	::	::		vlan 20
ff06::1	::	::		vlan 20

## Release History

Release 5.1.R2; command introduced.

## Related Commands

- show ipv6 multicast source-** Displays the IPv6 Multicast Switching and Routing source table entries.
- show ipv6 multicast forward** Displays the IPv6 Multicast Switching and Routing forwarding table entries.

## MIB Objects

```
alaIpmsGlobalConfigTable
  alaIpmsGlobalConfigAddressType
  alaIpmsGlobalConfigDisplayInterfaceNames
```

---

## ipv6 multicast inherit-default-vrf-config

Configures whether or not the global IPMSv6 configuration defined in the default VRF instance is applied to all VRF instances.

**ipv6 multicast inherit-default-vrf-config**

**no ipv6 multicast inherit-default-vrf-config**

---

### Syntax Definitions

N/A

### Defaults

By default, the global IPMSv6 configuration defined in the default VRF instance is applied to all VRF instances on the switch.

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- Use the **no** form of this command to disable this function. When disabled, the global IPMSv6 configuration defined in the default VRF instance is not applied to all other VRF instances on the switch.
- When enabled, additional VRF instances will inherit the global IPMSv6 configuration defined in the default VRF instance.
- A global IPMSv6 configuration defined for a specific non-default VRF instance takes precedence over the global IPMSv6 configuration defined for the default VRF.

### Examples

```
-> ipv6 multicast inherit-default-vrf-config  
-> no ipv6 multicast inherit-default-vrf-config
```

### Release History

Release 5.1.R2; command introduced.

## Related Commands

### **show ipv6 multicast**

Displays the IPv6 Multicast Switching and Routing status and general configuration parameters.

## MIB Objects

```
alaIpmsGlobalConfigTable  
  alaIpmsGlobalConfigAddressType  
  alaIpmsGlobalConfigInheritDefaultVrfConfig
```

---

## ipv6 multicast profile

Defines an IPMS profile that is used to apply a pre-defined configuration to the global IPMS instance (all VLANs) or to a specific VLAN. Using a configuration profile to configure IPMS functionality avoids having to configure each IPMS parameter with a separate CLI command.

This section describes the base command (**ipv6 multicast profile**) along with optional command keywords that are used to configure IPMS parameter values that are applied when the profile is assigned to an IPMS instance. Optional keywords are listed separately but can be entered in combination on the same command line. Use the **no** form for the keywords to change a specific parameter value for the profile.

There is a “default” profile that defines a default set of IPMS parameter values that is automatically assigned to an IPMS instance. The default profile cannot be deleted, but the profile parameter values are configurable through this command.

```

ipv6 multicast profile profile_name
  [admin-state {enable | disable}]
  [flood-unknown {enable | disable}]
  [version version]
  [robustness robustness]
  [querying {enable | disable}]
  [query-interval [seconds]]
  [query-response-interval [milliseconds]]
  [last-member-query-interval [milliseconds]]
  [unsolicited-report-interval [seconds]]
  [proxying {enable | disable}]
  [spoofing {enable | disable}]
  [spoofing static-source-ip ipv6_address]
  [zapping {enable | disable}]
  [querier-forwarding {enable | disable}]
  [router-timeout [seconds]]
  [source-timeout [seconds]]
  [max-group [num] [action {none | drop | replace}]]
  [helper-address [ipv6_address]]
  [zero-based-query {enable | disable}]
  [forward-mode {asm | ssm | mac | auto}]
  [update-delay-interval milliseconds]

```

```

no ipv6 multicast profile profile_name [admin-state | flood-unknown | version | robustness | ...]

```

---

### Syntax Definitions

*profile\_name*                      The name to associate with the IPMS profile.

### Defaults

N/A



## Platforms Supported

OmniSwitch 2260, 2360

## Usage Guidelines

- Use the **no** form of this command to remove an IPMS profile from the switch configuration.
- To change the value of a specific profile parameter, specify the parameter keyword with this command. For example, **no ipv6 multicast profile ipms-1 admin-state**, **ipv6 multicast profile ipms-1 query-interval 100**, or **ipv6 multicast profile ipms-1 querying enable**. The new parameter values are applied to all IPMS instances to which the profile is assigned.
- The profile name must already exist in the switch configuration before parameter values can be modified. Use this command to create the profile first, then configure the profile parameter values.
- For more information about specific profile parameter values, refer to the following explicit IPMS configuration commands for each profile parameter:

Port Template Parameter	Explicit Port Configuration Command
[admin-state {enable   disable}]	<b>ipv6 multicast admin-state</b>
[flood-unknown {enable   disable}]	<b>ipv6 multicast flood-unknown</b>
[version <i>version</i> ]	<b>ipv6 multicast version</b>
[robustness <i>robustness</i> ]	<b>ipv6 multicast robustness</b>
[querying {enable   disable}]	<b>ipv6 multicast querying</b>
[query-interval [ <i>seconds</i> ]]	<b>ipv6 multicast query-interval</b>
[query-response-interval [ <i>milliseconds</i> ]]	<b>ipv6 multicast query-response-interval</b>
[last-member-query-interval [ <i>milliseconds</i> ]]	<b>ipv6 multicast last-member-query-interval</b>
[unsolicited-report-interval [ <i>seconds</i> ]]	<b>ipv6 multicast unsolicited-report-interval</b>
[proxying {enable   disable}]	<b>ipv6 multicast proxying</b>
[spoofing {enable   disable}]	<b>ipv6 multicast spoofing</b>
[spoofing static-source-ip <i>ipv6_address</i> ]	<b>ipv6 multicast spoofing static-source-ip</b>
[zapping {enable   disable}]	<b>ipv6 multicast zapping</b>
[querier-forwarding {enable   disable}]	<b>ipv6 multicast querier-forwarding</b>
[router-timeout [ <i>seconds</i> ]]	<b>ipv6 multicast router-timeout</b>
[source-timeout [ <i>seconds</i> ]]	<b>ipv6 multicast source-timeout</b>
[max-group [ <i>num</i> ] [action {none   drop   replace}]]	<b>ipv6 multicast max-group</b>
[helper-address [ <i>ipv6_address</i> ]]	<b>ipv6 multicast helper-address</b>
[zero-based-query {enable   disable}]	<b>ipv6 multicast zero-based-query</b>
[forward-mode {asm   ssm   mac   auto}]	<b>ipv6 multicast forward-mode</b>
[update-delay-interval <i>milliseconds</i> ]	<b>ipv6 multicast update-delay-interval</b>

## Examples

```
-> ipv6 multicast profile "MLDv2 with Zapping"
```

```
-> ipv6 multicast profile "MLDv2 with Zapping" admin-state enable
-> ipv6 multicast profile "MLDv2 with Zapping" zapping enable version 2
-> ipv6 multicast profile "MLDv2 with Zapping" enable proxying enable
-> no ipv6 multicast profile "MLDv2 with Zapping" proxying
-> no ipv6 multicast profile "MLDv2 with Zapping"
```

## Release History

Release 5.1.R2; command introduced.

## Related Commands

<a href="#">ipv6 multicast apply-profile</a>	Assigns an IPMS configuration profile globally for the switch or to a specific VLAN instance.
<a href="#">show ipv6 multicast</a>	Displays the profile assignment for the IPMS instance.
<a href="#">show ipv6 multicast profile</a>	Displays the IPMS profile configuration.

**MIB Objects**

```
alaIpmsProfileTable
  alaIpmsProfileAddressType
  alaIpmsProfileName
  alaIpmsProfileIndex
  alaIpmsProfileRowStatus
alaIpmsConfigTable
  alaIpmsConfigType
  alaIpmsConfigAddressType
  alaIpmsConfigValue
  alaIpmsConfigProfileName
```

---

## ipv6 multicast apply-profile

Assigns the name of an existing IPMS configuration profile to the global IPMS instance (all VLANs) or to a specific VLAN instance. An IPMS configuration profile defines parameter options that are applied to the IPMS instance to which the profile is assigned.

```
ipv6 multicast [vlan vlan_id[-vlan_id2]] apply-profile profile_name
```

```
no ipv6 multicast [vlan vlan_id[-vlan_id2]] apply-profile
```

---

### Syntax Definitions

<i>vlan_id</i> [- <i>vlan_id2</i> ]	VLAN on which to apply the configuration. Use a hyphen to specify a range of VLAN IDs.
<i>profile_name</i>	The name to associate with the IPMS profile.

### Defaults

There is a “default” profile that defines a default set of IPMS parameter values that is automatically assigned to an IPMS instance.

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- Use the **no** form of this command to revert the profile assignment back to the “default” profile.
- Specify a range of VLANs (**vlan 20-25**) to apply the specified profile to multiple VLANs with one CLI command.
- The specified profile name must already exist in the switch configuration.

### Examples

```
-> ipv6 multicast apply-profile "MLDv2 with Zapping"  
-> ipv6 multicast vlan 20 apply-profile "MLDv2 with Zapping"  
-> ipv6 multicast vlan 20-25 apply-profile "MLDv2 with Zapping"  
-> no ipv6 multicast apply-profile  
-> no ipv6 multicast vlan 20 apply-profile  
-> no ipv6 multicast vlan 20-15 apply-profile
```

### Release History

Release 5.1.R2; command introduced.

## Related Commands

<b>ipv6 multicast profile</b>	Defines an IPMS profile that is used to apply a pre-defined IPMS configuration.
<b>show ipv6 multicast</b>	Displays the profile assignment for the IPMS instance.
<b>show ipv6 multicast profile</b>	Displays the IPMS profile configuration.

## MIB Objects

```
alaIpmsProfileTable
  alaIpmsProfileAddressType
  alaIpmsProfileName
  alaIpmsProfileIndex
  alaIpmsProfileRowStatus
alaIpmsConfigTable
  alaIpmsConfigType
  alaIpmsConfigAddressType
  alaIpmsConfigValue
  alaIpmsConfigProfileName
```

---

## show ip multicast

Displays the IP Multicast Switching and Routing status and the general configuration parameters for the specified VLAN or on the system if no VLAN is specified.

**show ip multicast** [*vlan vlan\_id*]

---

### Syntax Definitions

*vlan\_id* VLAN ID number (1–4094).

### Defaults

By default the status and general configuration parameters for the system are displayed.

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

Specify a VLAN ID to display the configuration information for a specific VLAN.

### Examples

```
-> show ip multicast
```

```
Profile                = default,
Status                 = disabled,
Flood Unknown         = disabled,
Version                = 2,
Robustness             = 2,
Querying               = disabled,
Query Interval (seconds) = 125,
Query Response Interval (tenths of seconds) = 100,
Last Member Query Interval (tenths of seconds) = 10,
Unsolicited Report Interval (seconds) = 1,
Proxying               = disabled,
Spoofing               = disabled,
Zapping                = disabled,
Querier Forwarding     = disabled,
Router Timeout (seconds) = 90,
Source Timeout (seconds) = 30,
Max-group              = 0,
Max-group action       = none,
Helper-address         = 0.0.0.0,
Static Querier Address = 0.0.0.0,
Static Spoofer Address = 0.0.0.0,
Zero-based Query       = enabled,
Forward Mode           = auto,
Update Delay Interval (milliseconds) = 0,
```

```
-> show ip multicast vlan 200
```

```
Profile = default,
Status = disabled,
Flood Unknown = disabled,
Version = 2,
Robustness = 2,
Querying = disabled,
Query Interval (seconds) = 125,
Query Response Interval (tenths of seconds) = 100,
Last Member Query Interval (tenths of seconds) = 10,
Unsolicited Report Interval (seconds) = 1,
Proxying = disabled,
Spoofing = disabled,
Zapping = disabled,
Querier Forwarding = disabled,
Router Timeout (seconds) = 90,
Source Timeout (seconds) = 30,
Max-group = 0,
Max-group action = none,
Helper-address = 0.0.0.0,
Static Querier Address = 0.0.0.0,
Static Spoofer Address = 0.0.0.0,
Zero-based Query = disabled,
Forward Mode = auto,
Update Delay Interval (milliseconds) = 0,
```

### *output definitions*

<b>Profile</b>	The name of a predefined IPMS configuration profile that is assigned to this instance. Configured through the <b>ip multicast profile</b> command.
<b>Status</b>	Whether IP Multicast Switching and Routing is <b>Enabled</b> or <b>Disabled</b> (the default status). Configured through the <b>ip multicast admin-state</b> command.
<b>Flood Unknown</b>	Whether the flooding of initial unknown multicast traffic is <b>Enabled</b> or <b>Disabled</b> (the default status). Configured through the <b>ip multicast flood-unknown</b> command.
<b>Version</b>	Displays the default IGMP version, which can be <b>1</b> , <b>2</b> or <b>3</b> . Configured through the <b>ip multicast version</b> command.
<b>Robustness</b>	Displays the IGMP robustness value, ranging from <b>1</b> to <b>7</b> . (The default value is <b>2</b> ). Configured through the <b>ip multicast robustness</b> command.
<b>Querying</b>	Whether IGMP querying is <b>Enabled</b> or <b>Disabled</b> (the default status). Configured through the <b>ip multicast querying</b> command.
<b>Query Interval (seconds)</b>	Displays the time (in seconds) between IGMP queries. (The default value is 125 seconds). Configured through the <b>ip multicast query-interval</b> command.
<b>Query Response Interval (tenths of seconds)</b>	Displays the time (in tenths of seconds) taken to reply to an IGMP query message. (The default value is 100 tenths-of-seconds). Configured through the <b>ip multicast query-response-interval</b> command.

---

*output definitions*

---

<b>Last Member Query Interval (tenths of seconds)</b>	Displays the time (in tenths of seconds) taken to reply to an IGMP query message sent in response to a leave group message. (The default value is 10 tenths-of-seconds.) Configured through the <b>ip multicast last-member-query-interval</b> command.
<b>Unsolicited Report Interval (seconds)</b>	Displays the time period (in seconds) to proxy any changed IGMP membership state. (The default value is 1 second). Configured through the <b>ip multicast unsolicited-report-interval</b> command.
<b>Proxying</b>	Whether IGMP proxying on the system is <b>enabled</b> or <b>disabled</b> (the default status). Configured through the <b>ip multicast proxying</b> command.
<b>Spoofing</b>	Whether IGMP spoofing on the system is <b>enabled</b> or <b>disabled</b> (the default status). Configured through the <b>ip multicast spoofing</b> command.
<b>Zapping</b>	Whether IGMP zapping on the system is <b>enabled</b> or <b>disabled</b> (the default status). Configured through the <b>ip multicast zapping</b> command.
<b>Querier Forwarding</b>	Whether IGMP querier forwarding on the system is <b>enabled</b> or <b>disabled</b> (the default status). Configured through the <b>ip multicast querier-forwarding</b> command.
<b>Router Timeout (seconds)</b>	Displays the IGMP router timeout in seconds. (The default value is 90 seconds.) Configured through the <b>ip multicast router-timeout</b> command.
<b>Source Timeout (seconds)</b>	Displays the IGMP source timeout in seconds. (The default value is 30 seconds.) Configured through the <b>ip multicast source-timeout</b> command.
<b>Max-group</b>	Displays the global maximum group limit that can be learned per VLAN instance. (The default value is 0, which means no limit is imposed). Configured through the <b>ip multicast max-group</b> command.
<b>Max-group action</b>	Displays the action taken when the maximum group limit has been exceeded ( <b>none</b> , <b>drop</b> or <b>replace</b> ). Configured through the <b>ip multicast max-group</b> command.
<b>Helper-address</b>	Displays the destination IP address of a relay host, where IGMP host reports and Leave messages are to be sent. (By default, no Helper-address is configured.) Configured through the <b>ip multicast helper-address</b> command.
<b>Static Querier Address</b>	The Static Source IP Address to be used when querying. (The default value of 0.0.0.0 indicates that this is not configured.) <i>This function is currently not supported.</i>
<b>Static Spoofing Address</b>	The Static Source IP Address to be used when spoofing. (The default value of 0.0.0.0 indicates that this is not configured.) Configured through the <b>ip multicast spoofing static-source-ip</b> command.
<b>Zero-based Query</b>	Whether Zero-based Querying is <b>disabled</b> or <b>enabled</b> (the default status). Configured through the <b>ip multicast zero-based-query</b> command.



*output definitions*


---

<b>Forward Mode</b>	Displays the current IPv4 Forwarding mode ( <b>asm</b> , <b>ssm</b> , <b>mac</b> , or <b>auto</b> ). Configured through the <b>ip multicast forward-mode</b> command.
<b>Update Delay Interval (milliseconds)</b>	Displays the amount of time (in milliseconds) between propagating IPMS state changes. (The default value is 0 milliseconds). Configured through the <b>ip multicast update-delay-interval</b> command.

---

**Release History**

Release 5.1; command was introduced.

**Related Commands**

**ip multicast admin-state** Enables or disables IP Multicast Switching and Routing on the specified VLAN, or on the system if no VLAN is specified.

**MIB Objects**

```

alaIpmsConfigTable
  alaIpmsConfigType
  alaIpmsConfigAddressType
  alaIpmsConfigValue
  alaIpmsConfigStatus
  alaIpmsConfigQuerying
  alaIpmsConfigProxying
  alaIpmsConfigSpoofing
  alaIpmsConfigZapping
  alaIpmsConfigQuerierForwarding
  alaIpmsConfigVersion
  alaIpmsConfigRobustness
  alaIpmsConfigQueryInterval
  alaIpmsConfigQueryResponseInterval
  alaIpmsConfigLastMemberQueryInterval
  alaIpmsConfigUnsolicitedReportInterval
  alaIpmsConfigRourceTimeout
  alaIpmsConfigSourceTimeout
  alaIpmsConfigMaxGroupLimit
  alaIpmsConfigMaxGroupExceedAction
  alaIpmsConfigZeroBasedQuery
  alaIpmsConfigFloodUnknown
  alaIpmsConfigUpdateDelayInterval
  alaIpmsConfigForwardMode
  alaIpmsConfigQueryingStaticSourceAddress
  alaIpmsConfigSpoofingStaticSourceAddress
  alaIpmsConfigHelperAddress

```

---

## show ip multicast port

Displays the maximum group configuration applicable for the specified port. The current number of groups learned on a port or port/VLAN instance is also displayed.

**show ip multicast** {port [*chassis/slot/port*]}

---

### Syntax Definitions

*chassis*                                   The chassis identifier.  
*slot/port*                                The slot and port number (3/1).

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

Specify a port number to display the configuration information for a specific switch port.

### Examples

```
-> show ip multicast port
```

```
Legends: Interface Max-group            = Max-group limit on the interface
         Interface Action                = Max-group action on the interface
         Interface-Instance Max-group   = Active Max-group limit on the Lan Interface instance
         Interface-Instance Action       = Active Max-group action on the Lan Interface instance
```

Total 2 Lan Interface Instances

Interface	Vlan	Current Groups	Interface Max-group	Interface Action	Interface-Instance Max-group	Interface-Instance Action
1/1/13	vlan 1036	0	0	none	0	none
1/1/52	vlan 1	0	0	none	0	none

```
-> show ip multicast port 1/1/52
```

```
Legends: Interface Max-group            = Max-group limit on the interface
         Interface Action                = Max-group action on the interface
         Interface-Instance Max-group   = Active Max-group limit on the Lan Interface instance
         Interface-Instance Action       = Active Max-group action on the Lan Interface instance
```

Total 2 Lan Interface Instances

Interface	Vlan	Current Groups	Interface Max-group	Interface Action	Interface-Instance Max-group	Interface-Instance Action
1/1/52	vlan 1	0	0	none	0	none

*output definitions*


---

<b>Interface</b>	The VLAN port.
<b>Vlan</b>	The VLAN ID associated with the IP multicast interface.
<b>Current Groups</b>	The current groups associated with the IP multicast interface.
<b>Interface Max-group</b>	The maximum group count allowed on the port. This limit is applicable on the given port for all VLAN instances of the port.
<b>Interface Action</b>	The action to be taken when the group membership limit is exceeded ( <b>none</b> , <b>drop</b> , or <b>replace</b> ).
<b>Interface-Instance Max-group</b>	The maximum group limit learned per port for the given VLAN. This limit is applied to each port that is a member of the given VLAN.
<b>Interface-Instance Action</b>	The action to be taken when the group membership limit is exceeded ( <b>none</b> , <b>drop</b> , or <b>replace</b> ).

---

**Release History**

Release 5.1; command was introduced.

**Related Commands**

<b>ip multicast port max-group</b>	Configures the maximum group limit learned per port.
<b>ip multicast port max-group</b>	Configures the maximum group limit learned per port for the specified VLAN or on the system if no VLAN is specified.

**MIB Objects**

```

alaIpmsIntfStatsConfigType
  alaIpmsIntfStatsAddressType
  alaIpmsIntfStatsValue
  alaIpmsIntfStatsCurrentGroupCount
  alaIpmsIntfStatsMaxGroupLimit
  alaIpmsIntfStatsMaxGroupExceedAction

```

---

## show ip multicast forward

Displays the IP Multicast Switching and Routing forwarding table entries for the specified IP multicast group address or all the entries if no IP multicast group address is specified.

```
show ip multicast forward [ip_address] [vlan [vlan_id[-vlan_id2]]] [all-vrf]
```

---

### Syntax Definitions

<i>ip_address</i>	IP multicast group address.
vlan [ <i>vlan_id</i> [- <i>vlan_id2</i> ]]	Display forwarding table entries for the VLAN domain. Optionally enter a VLAN ID or use a hyphen to specify a range of VLAN IDs.
<b>all-vrf</b>	Display forwarding table entries for all of the VRF instances.

### Defaults

By default, forwarding entries for all of the IP multicast groups are displayed for the current VRF instance.

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- Use the *ip\_address* parameter to display forwarding table entries for a specific multicast group.
- Use the **all-vrf** parameter option to display the forwarding table entries that exist in all of the VRF instances on the switch.
- Forwarding entries are derived by applying the state from the source table to the state in the group, neighbor, and querier tables.
- To view the multicast forwarding database see the related [show ip multicast bridge](#) and [show ip multicast bridge-forward](#) commands.
- Use the [ip multicast display-interface-names](#) command to enable displaying the associated IP interface name in the “Ingress Vlan” and “Egress Vlan” fields instead of the VLAN ID.

## Examples

```
-> show ip multicast forward
```

Total 3 Forwards

Group Address	Host Address	Tunnel Address	Ingress Vlan	Egress Vlan	Interface
225.0.1.0	21.20.20.2	0.0.0.0	vlan 20	vlan 20	1/1/2
225.0.1.1	21.20.20.2	0.0.0.0	vlan 20	vlan 20	1/1/2
225.0.1.2	21.20.20.2	0.0.0.0	vlan 20	vlan 21	1/1/2

```
-> show ip multicast forward vlan
```

Total 3 Forwards

Group Address	Host Address	Tunnel Address	Ingress Vlan	Egress Vlan	Interface
225.0.1.0	21.20.20.2	0.0.0.0	vlan 20	vlan 20	1/1/2
225.0.1.1	21.20.20.2	0.0.0.0	vlan 20	vlan 20	1/1/2
225.0.1.2	21.20.20.2	0.0.0.0	vlan 20	vlan 21	1/1/2

Sample output when the global display interface names option is enabled:

```
-> ip multicast display-interface-names
```

```
-> show ip multicast forward vlan
```

Total 3 Forwards

Group Address	Host Address	Tunnel Address	Ingress Vlan	Egress Vlan	Interface
225.0.1.0	21.20.20.2	0.0.0.0	VlanToLab	VlanToLab	1/1/2
225.0.1.1	21.20.20.2	0.0.0.0	VlanToLab	VlanToLab	1/1/2
225.0.1.2	21.20.20.2	0.0.0.0	VlanToLab	VlanToCore	1/1/2

### output definitions

<b>Group Address</b>	IP group address of the IP multicast forward.
<b>Host Address</b>	IP host address of the IP multicast forward.
<b>Tunnel Address</b>	IP source tunnel address of the IP multicast forward.
<b>Ingress Vlan</b>	The ingress VLAN associated with the IP multicast forward. If the global display interface names option is enabled, then the ingress interface name associated with the IP multicast forward is displayed.
<b>Egress Vlan</b>	The egress VLAN associated with the IP multicast forward. If the global display interface names option is enabled, then the egress interface name associated with the IP multicast forward is displayed. The egress interface (port) will also be included in the forward entry with both output formats.
<b>Interface</b>	The VLAN port of the IP multicast forward.

## Release History

Release 5.1; command was introduced.

## Related Commands

### **ip multicast static-group**

Creates a static IGMP group entry on a specified port on a specified VLAN.

## MIB Objects

```
alaIpmsForwardTable  
  alaIpmsForwardConfigType  
  alaIpmsForwardAddressType  
  alaIpmsForwardValue  
  alaIpmsForwardGroupAddress  
  alaIpmsForwardHostAddress  
  alaIpmsForwardDestAddress  
  alaIpmsForwardOrigAddress  
  alaIpmsForwardType  
  alaIpmsForwardNextConfigType  
  alaIpmsForwardNextValue  
  alaIpmsForwardNextIfIndex  
  alaIpmsForwardNextType
```

---

## show ip multicast neighbor

Displays the IGMP neighbor table entries of IP Multicast Switching and Routing.

```
show ip multicast neighbor [vlan [vlan_id[-vlan_id2]] [all-vrf]]
```

---

### Syntax Definitions

**vlan [vlan\_id[-vlan\_id2]]** Display IGMP neighbor table entries for the VLAN domain. Optionally enter a VLAN ID or use a hyphen to specify a range of VLAN IDs.

**all-vrf** Display IGMP neighbor table entries for all of the VRF instances.

### Defaults

By default, only the neighbor table entries specific to the current VRF instance are displayed.

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- Use the **all-vrf** parameter option to display the neighbor table entries that exist in all of the VRF instances on the switch.
- Interfaces with neighbors receive all IPv4 multicast, including all IGMP traffic.
- Use the **ip multicast display-interface-names** command to enable displaying the associated IP interface name in the “Vlan” field instead of the VLAN ID.

### Examples

```
-> show ip multicast neighbor
```

```
Total 12 Neighbors
```

Host Address	Vlan Interface	Static	Count	Life
170.0.0.2	vlan 2000	0/10	no	528 85
170.0.1.3	vlan 2001	0/1	no	502 66
170.0.59.45	vlan 2059	0/11	no	554 80
170.0.61.46	vlan 2061	0/12	no	553 79
170.0.63.47	vlan 2063	0/13	no	553 66
170.0.65.48	vlan 2065	0/14	no	553 64
170.0.67.51	vlan 2067	1/5/31	no	475 86
170.0.69.52	vlan 2069	1/5/43	no	553 83
170.0.71.53	vlan 2071	1/6/31	no	552 61
170.0.73.54	vlan 2073	1/6/43	no	552 67

```
-> show ip multicast neighbor vlan
```

```
Total 10 Neighbors
```

Host Address	Vlan	Interface	Static	Count	Life
170.0.0.2	vlan 2000	0/10	no	528	85
170.0.1.3	vlan 2001	0/1	no	502	66
170.0.59.45	vlan 2059	0/11	no	554	80
170.0.61.46	vlan 2061	0/12	no	553	79
170.0.63.47	vlan 2063	0/13	no	553	66
170.0.65.48	vlan 2065	0/14	no	553	64
170.0.67.51	vlan 2067	1/5/31	no	475	86
170.0.69.52	vlan 2069	1/5/43	no	553	83
170.0.71.53	vlan 2071	1/6/31	no	552	61
170.0.73.54	vlan 2073	1/6/43	no	552	67

```
-> show ip multicast neighbor vlan 2063
```

```
Total 1 Neighbors
```

Host Address	Vlan	Interface	Static	Count	Life
170.0.63.47	vlan 2063	0/13	no	553	66

Sample output when the global display interface names option is enabled:

```
-> ip multicast display-interface-names
-> show ip multicast neighbor vlan 2063
```

```
Total 1 Neighbors
```

Host Address	Vlan	Interface	Static	Count	Life
170.0.63.47	VlanToLab	0/13	no	553	66

### *output definitions*

<b>Host Address</b>	The IP address of the IP multicast neighbor.
<b>Vlan</b>	The VLAN associated with the IP multicast neighbor. If the global display interface names option is enabled, then the IP interface name associated with the IP multicast neighbor is displayed.
<b>Interface</b>	The VLAN port of the IP multicast neighbor.
<b>Static</b>	Whether it is a static IP multicast neighbor or not.
<b>Count</b>	Displays the count of IP multicast neighbor.
<b>Life</b>	The life time of the IP multicast neighbor.

### **Release History**

Release 5.1; command was introduced.



## Related Commands

**ip multicast static-neighbor** Creates a static IGMP neighbor entry on a specified port on a specified VLAN.

## MIB Objects

alaIpmsNeighborTable

- alaIpmsNeighborConfigType
- alaIpmsNeighborAddressType
- alaIpmsNeighborValue
- alaIpmsNeighborIfIndex
- alaIpmsNeighborHostAddress
- alaIpmsNeighborCount
- alaIpmsNeighborTimeout
- alaIpmsNeighborUpTime

alaIpmsStaticNeighborTable

- alaIpmsStaticNeighborConfigType
- alaIpmsStaticNeighborAddressType
- alaIpmsStaticNeighborValue
- alaIpmsStaticNeighborIfIndex
- alaIpmsStaticNeighborRowStatus

---

## show ip multicast querier

Displays the IGMP querier table entries of IP Multicast Switching and Routing.

```
show ip multicast querier [vlan [vlan_id[-vlan_id2]] [all-vrf]
```

---

### Syntax Definitions

**vlan** [vlan\_id[-vlan\_id2]]      Display IGMP querier table entries for the VLAN domain. Optionally enter a VLAN ID or use a hyphen to specify a range of VLAN IDs.

**all-vrf**                              Display IGMP querier table entries for all of the VRF instances.

### Defaults

By default, only IGMP querier entries specific to the current VRF instance are displayed

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- Use the **all-vrf** parameter option to display the IGMP querier table entries that exist in all of the VRF instances on the switch.
- Interfaces with queriers receive all IGMP traffic, and if querier forwarding is enabled, these interfaces will also receive all IPv4 multicast traffic.
- Use the **ip multicast display-interface-names** command to enable displaying the associated IP interface name in the “Vlan” field instead of the VLAN ID.

### Examples

```
-> show ip multicast querier
```

```
Total 10 Queriers
```

Host Address	Vlan	Interface	Static	Count	Life
172.1.254.96	vlan 1001	0/1	no	3	213
172.2.254.96	vlan 1002	0/1	no	4	213
172.3.254.96	vlan 1003	0/1	no	4	214
172.4.254.96	vlan 1004	0/1	no	4	213
172.5.254.96	vlan 1005	0/1	no	4	213
172.6.254.96	vlan 1006	0/1	no	4	213
172.7.254.96	vlan 1007	0/1	no	4	213
172.8.254.96	vlan 1008	0/1	no	4	213

```
-> show ip multicast querier vlan
```

```
Total 8 Queriers
```

Host Address	Vlan	Interface	Static	Count	Life
172.1.254.96	vlan 1001	0/1	no	3	213
172.2.254.96	vlan 1002	0/1	no	4	213
172.3.254.96	vlan 1003	0/1	no	4	214
172.4.254.96	vlan 1004	0/1	no	4	213
172.5.254.96	vlan 1005	0/1	no	4	213
172.6.254.96	vlan 1006	0/1	no	4	213
172.7.254.96	vlan 1007	0/1	no	4	213
172.8.254.96	vlan 1008	0/1	no	4	213

Sample output when the global display interface names option is enabled:

```
-> ip multicast display-interface-names
-> show ip multicast querier vlan
```

```
Total 8 Queriers
```

Host Address	Vlan	Interface	Static	Count	Life
172.1.254.96	VlanToLab	0/1	no	3	213
172.2.254.96	VlanToLab	0/1	no	4	213
172.3.254.96	VlanToLab	0/1	no	4	214
172.4.254.96	VlanToLab	0/1	no	4	213
172.5.254.96	VlanToLab	0/1	no	4	213
172.6.254.96	VlanToLab	0/1	no	4	213
172.7.254.96	VlanToLab	0/1	no	4	213
172.8.254.96	VlanToLab	0/1	no	4	213

### *output definitions*

<b>Host Address</b>	The IP address of the IP multicast querier.
<b>Vlan</b>	The VLAN ID associated with the IP multicast querier. If the global display interface names option is enabled, then the IP interface name associated with the IP multicast querier is displayed.
<b>Interface</b>	The VLAN port of the IP multicast querier.
<b>Static</b>	Whether it is a static multicast neighbor or not.
<b>Count</b>	Displays the count of the IP multicast querier.
<b>Life</b>	The life time of the IP multicast querier.

### **Release History**

Release 5.1; command was introduced.

## Related Commands

**ip multicast static-querier**      Creates a static IGMP querier entry on a specified port on a specified VLAN.

## MIB Objects

```
alaIpmsQuerierTable
  alaIpmsQuerierConfigType
  alaIpmsQuerierAddressType
  alaIpmsQuerierValue
  alaIpmsQuerierIfIndex
  alaIpmsQuerierHostAddress
  alaIpmsQuerierCount
  alaIpmsQuerierTimeout
  alaIpmsQuerierUpTime
alaIpmsStaticQuerierTable
  alaIpmsStaticQuerierConfigType
  alaIpmsStaticQuerierAddressType
  alaIpmsStaticQuerierValue
  alaIpmsStaticQuerierIfIndex
  alaIpmsStaticQuerierRowStatus
```

---

## show ip multicast group

Displays the IGMP group membership table entries of IP Multicast Switching and Routing for the specified IP multicast group address or all entries if no IP multicast group address is specified.

```
show ip multicast group [ip_address] [vlan [vlan_id[-vlan_id2]]] [all-vrf]
```

---

### Syntax Definitions

<i>ip_address</i>	IP multicast group address.
vlan [ <i>vlan_id</i> [- <i>vlan_id2</i> ]]	Display group membership entries for the VLAN domain. Optionally enter a VLAN ID or use a hyphen to specify a range of VLAN IDs.
all-vrf	Display group membership entries for all of the VRF instances.

### Defaults

By default, all IP multicast groups are displayed for the current VRF instance.

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- Use the *ip\_address* parameter to display entries for a specific multicast group.
- Use the **all-vrf** parameter option to display the IGMP group membership table entries that exist in all of the VRF instances on the switch.
- Use the **ip multicast display-interface-names** command to enable displaying the associated IP interface name in the “Vlan” field instead of the VLAN ID.

### Examples

```
-> show ip multicast group
```

```
Total 8 Groups
```

Group Address	Source Address	Vlan	Interface	Mode	Static	Count	Life
225.0.1.0	0.0.0.0	vlan 21	1/1/19	exclude	no	5520	172
225.0.1.1	0.0.0.0	vlan 21	1/1/19	exclude	no	5520	172
225.0.1.2	0.0.0.0	vlan 21	1/1/19	exclude	no	5520	172
225.0.1.3	0.0.0.0	vlan 100	1/1/1	exclude	yes	0	0
225.0.1.4	0.0.0.0	vlan 101	1/1/1	exclude	yes	0	0

```
-> show ip multicast group 225.0.1.0
```

```
Total 1 Groups
```

Group Address	Source Address	Vlan	Interface	Mode	Static	Count	Life
225.0.1.0	0.0.0.0	vlan 21	1/1/19	exclude	no	5520	172

```
-> show ip multicast group vlan
```

```
Total 5 Groups
```

Group Address	Source Address	Vlan	Interface	Mode	Static	Count	Life
225.0.1.0	0.0.0.0	vlan 21	1/1/19	exclude	no	5520	172
225.0.1.1	0.0.0.0	vlan 21	1/1/19	exclude	no	5520	172
225.0.1.2	0.0.0.0	vlan 21	1/1/19	exclude	no	5520	172
225.0.1.3	0.0.0.0	vlan 100	1/1/1	exclude	yes	0	0
225.0.1.4	0.0.0.0	vlan 101	1/1/1	exclude	yes	0	0

Sample output when the global display interface names option is enabled:

```
-> ip multicast display-interface-names
-> show ip multicast group vlan
```

```
Total 5 Groups
```

Group Address	Source Address	Vlan	Interface	Mode	Static	Count	Life
225.0.1.0	0.0.0.0	VlanToLab	1/1/19	exclude	no	5520	172
225.0.1.1	0.0.0.0	VlanToLab	1/1/19	exclude	no	5520	172
225.0.1.2	0.0.0.0	VlanToLab	1/1/19	exclude	no	5520	172
225.0.1.3	0.0.0.0	VlanToCore	1/1/1	exclude	yes	0	0
225.0.1.4	0.0.0.0	VlanToDist	1/1/1	exclude	yes	0	0

### *output definitions*

<b>Group Address</b>	IP address of the IP multicast group.
<b>Source Address</b>	IP address of the IP multicast source.
<b>Vlan</b>	The VLAN ID associated with the IPv4 multicast group. If the global display interface names option is enabled, then the IP interface name associated with the IP multicast group is displayed.
<b>Interface</b>	The VLAN port on which the group membership was learned.
<b>Mode</b>	IGMP source filter mode.
<b>Static</b>	Whether it is a static multicast group or not.
<b>Count</b>	Number of IGMP membership requests made.
<b>Life</b>	Life time of the IGMP group membership.

### **Release History**

Release 5.1; command was introduced

**Related Commands.****ip multicast static-group**

Creates a static IGMP group entry on a specified port for the specified VLAN.

**MIB Objects**

alaIpmsMemberTable

- alaIpmsMemberConfigType
- alaIpmsMemberAddressType
- alaIpmsMemberValue
- alaIpmsMemberIfIndex
- alaIpmsMemberGroupAddress
- alaIpmsMemberSourceAddress
- alaIpmsMemberMode
- alaIpmsMemberCount
- alaIpmsMemberTimeout

alaIpmsStaticMemberTable

- alaIpmsStaticMemberConfigType
- alaIpmsStaticMemberConfigAddressType
- alaIpmsStaticMemberValue
- alaIpmsStaticMemberIfIndex
- alaIpmsStaticMemberGroupAddress
- alaIpmsStaticMemberRowStatus

---

## show ip multicast source

Displays the IP Multicast Switching and Routing source table entries matching the specified IP multicast group address or all entries if no IP multicast group address is specified.

```
show ip multicast source [ip_address] [vlan [vlan_id[-vlan_id2]]] [all-vrf]
```

---

### Syntax Definitions

<i>ip_address</i>	IP multicast group address.
vlan [ <i>vlan_id</i> [- <i>vlan_id2</i> ]]	Displays source table entries for the VLAN domain. Optionally enter a VLAN ID or use a hyphen to specify a range of VLAN IDs.
<b>all-vrf</b>	Display source table entries for all of the VRF instances.

### Defaults

By default, all source table entries are displayed for the current VRF instance.

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- Use the *ip\_address* parameter to display source entries for a specific multicast group.
- Use the **all-vrf** parameter option to display the source table entries that exist in all of the VRF instances on the switch.
- To view the multicast forwarding database see the related [show ip multicast bridge](#) and [show ip multicast bridge-forward](#) commands.
- Use the [ip multicast display-interface-names](#) command to enable displaying the associated IP interface name in the “Ingress Vlan” field instead of the VLAN ID.

### Examples

```
-> show ip multicast source
```

```
Total 10 Sources
```

Group Address	Host Address	Source		Ingress
		Tunnel Address	Address	Vlan
225.0.1.0	21.20.20.2	0.0.0.0		vlan 21
225.0.1.1	21.20.20.2	0.0.0.0		vlan 21
225.0.1.2	21.20.20.2	0.0.0.0		vlan 21
225.0.1.3	21.20.20.2	0.0.0.0		vlan 21
225.0.1.4	21.20.20.2	0.0.0.0		vlan 21



```
-> show ip multicast source 225.0.1.2
```

Total 2 Sources

Group Address	Host Address	Source		Ingress
		Tunnel Address		Vlan
225.0.1.2	21.20.20.2	0.0.0.0		vlan 21

```
-> show ip multicast source vlan
```

Total 5 Sources

Group Address	Host Address	Source		Ingress
		Tunnel Address		Vlan
225.0.1.0	21.20.20.2	0.0.0.0		vlan 21
225.0.1.1	21.20.20.2	0.0.0.0		vlan 21
225.0.1.2	21.20.20.2	0.0.0.0		vlan 21
225.0.1.3	21.20.20.2	0.0.0.0		vlan 21
225.0.1.4	21.20.20.2	0.0.0.0		vlan 21

Sample output when the global display interface names option is enabled:

```
-> ip multicast display-interface-names
```

```
-> show ip multicast source vlan
```

Total 5 Sources

Group Address	Host Address	Source		Ingress
		Tunnel Address		Vlan
225.0.1.0	21.20.20.2	0.0.0.0		VlanToLab
225.0.1.1	21.20.20.2	0.0.0.0		VlanToLab
225.0.1.2	21.20.20.2	0.0.0.0		VlanToLab
225.0.1.3	21.20.20.2	0.0.0.0		VlanToLab
225.0.1.4	21.20.20.2	0.0.0.0		VlanToLab

### *output definitions*

<b>Group Address</b>	IP group address of the IP multicast source.
<b>Host Address</b>	IP host address of the IP multicast source.
<b>Source Tunnel Address</b>	IP destination tunnel address of the IP multicast source.
<b>Ingress Vlan</b>	The ingress VLAN ID number associated with the IP multicast source. If the global display interface names option is enabled, then the IP interface name associated with the IP multicast source is displayed.

### **Release History**

Release 5.1; command was introduced.

## Related Commands

### **show ip multicast tunnel**

Display the IP Multicast Switching and Routing tunneling table entries matching the specified IP multicast group address or all entries if no IP multicast address is specified.

## MIB Objects

```
alaIpmsSourceTable  
  alaIpmsSourceConfigType  
  alaIpmsSourceAddressType  
  alaIpmsSourceValue  
  alaIpmsSourceGroupAddress  
  alaIpmsSourceHostAddress  
  alaIpmsSourceDestAddress  
  alaIpmsSourceOrigAddress  
  alaIpmsSourceType  
  alaIpmsSourceUpTime
```

---

## show ip multicast tunnel

Displays the IP Multicast Switching and Routing tunneling table entries matching the specified IP multicast group address or all entries if no IP multicast address is specified.

```
show ip multicast tunnel [ip_address] [vlan [vlan_id[-vlan_id2]]] [all-vrf]
```

---

### Syntax Definitions

<i>ip_address</i>	IP multicast group address.
vlan [ <i>vlan_id</i> [- <i>vlan_id2</i> ]]	Displays tunneling table entries for the VLAN domain. Optionally enter a VLAN ID or use a hyphen to specify a range of VLAN IDs.
<b>all-vrf</b>	Display the tunneling table entries for all of the VRF instances.

### Defaults

By default, all tunnel entries are displayed for the current VRF instance.

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- Use the *ip\_address* parameter to display the tunnel entries for a specific multicast group.
- Use the **all-vrf** parameter option to display the IP multicast tunnel entries that exist in all of the VRF instances on the switch.
- Use the **ip multicast display-interface-names** command to enable displaying the associated IP interface name in the “Ingress Vlan” field instead of the VLAN ID.

### Examples

```
-> show ip multicast tunnel
```

```
Total 3 Tunnels
```

Group Address	Host Address	Destination Tunnel Address	Ingress Vlan
225.0.1.0	21.20.20.2	10.10.10.51	vlan 20
225.0.1.1	21.20.20.2	10.10.10.51	vlan 20
225.0.1.2	21.20.20.2	10.10.10.51	vlan 20

Sample output when the global display interface names option is enabled:

```
-> ip multicast display-interface-names
-> show ip multicast tunnel
```

Total 3 Tunnels

Group Address	Host Address	Destination Tunnel Address	Ingress Vlan
225.0.1.0	21.20.20.2	10.10.10.51	VlanToLab
225.0.1.1	21.20.20.2	10.10.10.51	VlanToLab
225.0.1.2	21.20.20.2	10.10.10.51	VlanToLab

### output definitions

<b>Group Address</b>	IP group address of the IP multicast tunnel.
<b>Host Address</b>	IP host address of the IP multicast tunnel.
<b>Destination Tunnel Address</b>	IP source tunnel address of the IP multicast tunnel.
<b>Ingress Vlan</b>	VLAN ID associated with the IP multicast tunnel. If the global display interface names option is enabled, then the IP interface name associated with the IP multicast tunnel is displayed.

### Release History

Release 5.1; command was introduced.

### Related Commands

#### [show ip multicast source](#)

Displays the IP Multicast Switching and Routing source table entries matching the specified IP multicast group address or all entries if no IP multicast group address is specified

### MIB Objects

```
alaIpmsTunnelTable
  alaIpmsTunnelConfigType
  alaIpmsTunnelAddressType
  alaIpmsTunnelValue
  alaIpmsTunnelGroupAddress
  alaIpmsTunnelHostAddress
  alaIpmsTunnelDestAddress
  alaIpmsTunnelOrigAddress
  alaIpmsTunnelType
  alaIpmsTunnelNextDestAddress
  alaIpmsTunnelNextType
```

## show ip multicast bridge

Displays the IP multicast bridge table entries that match the specified VLAN, IP multicast group address, MAC address, or all entries if no additional parameters are specified.

```
show ip multicast bridge [vlan [vlan_id[-vlan_id2] | ip_address | mac_address]] [all-vrf]
```

---

### Syntax Definitions

<b>vlan</b> [vlan_id[-vlan_id2]	Displays bridge table entries for the VLAN domain. Optionally enter a VLAN ID or use a hyphen to specify a range of VLAN IDs.
<i>ip_address</i>	IP multicast group address.
<i>mac_address</i>	Group MAC address.
<b>all-vrf</b>	Display bridge table entries for all of the VRF instances.

### Defaults

By default, all bridge table entries are displayed for the current VRF instance.

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- Use one of the optional parameters (*vlan\_id*, *ip\_address*, *mac\_address*) to display bridge table entries for a specific multicast group.
- Use the **all-vrf** parameter option to display the source table entries that exist in all of the VRF instances on the switch.
- Based on the forwarding mode set for the switch (ASM, SSM, or MAC):
  - The “Group Address” field will display either a multicast group address (ASM or SSM) or the MAC address for the multicast group (MAC).
  - The “Host Address” field will display zero (MAC) or the IP host address for the bridge entry (ASM or SSM).

### Examples

```
-> show ip multicast bridge
```

```
Total 2 Bridge Entries
```

Vlan	Type	Group Address	Host Address	Action	UpTime
vlan 1	asm	224.1.2.3		forwarding	00d:00h:00m
vlan 10	mac	01-00-5e-09-08-07		forwarding	00d:00h:00m

```
-> show ip multicast bridge vlan 10
```

```
Total 1 Bridge Entries
```

Vlan	Type	Group Address	Host Address	Action	UpTime
vlan 10	mac	01-00-5e-09-08-07		forwarding	00d:00h:00m

### output definitions

<b>Vlan</b>	The VLAN ID associated with the IP multicast bridge entry.
<b>Type</b>	The bridge entry type ( <b>asm</b> , <b>ssm</b> , <b>mac</b> ). Configured through the <b>ip multicast forward-mode</b> command.
<b>Group Address</b>	If the bridge entry type is ASM or SSM, this field displays the destination IP group address; if the bridge entry type is MAC, this field displays the destination MAC address.
<b>Host Address</b>	The source IP host address (only applies to SSM bridge entries, otherwise this field is blank).
<b>Action</b>	The current action taken for the bridge entry ( <b>forwarding</b> or <b>filtering</b> ).
<b>UpTime</b>	The amount of time that has elapsed since the bridge entry was created.

### Release History

Release 5.1; command introduced.

### Related Commands

**show ip multicast bridge-forward** Displays the forwarding state of the IP multicast bridge table entries.

### MIB Objects

```

alaIpmsBridgeTable
  alaIpmsBridgeConfigType
  alaIpmsBridgeAddressType
  alaIpmsBridgeValue
  alaIpmsBridgeType
  alaIpmsBridgeGroupAddress
  alaIpmsBridgeHostAddress
  alaIpmsBridgeUpTime
  alaIpmsBridgeAction

```

## show ip multicast bridge-forward

Displays the forwarding state of the IP multicast bridge table entries that match the specified VLAN, IP multicast group address, MAC address, or all entries if no additional parameters are specified.

**show ip multicast bridge-forward** [vlan [*vlan\_id*[-*vlan\_id2*] | *ip\_address* | *mac\_address*]] [**all-vrf**]

---

### Syntax Definitions

<b>vlan</b> [ <i>vlan_id</i> [- <i>vlan_id2</i> ]	Displays bridge table entries for the VLAN domain. Optionally enter a VLAN ID or use a hyphen to specify a range of VLAN IDs.
<i>ip_address</i>	IP multicast group address.
<i>mac_address</i>	Group MAC address.
<b>all-vrf</b>	Display bridge table entries for all of the VRF instances.

### Defaults

By default, all bridge table entries are displayed for the current VRF instance.

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- Use one of the optional parameters (*vlan\_id*, *ip\_address*, *mac\_address*) to display forwarding information for a specific multicast group.
- Use the **all-vrf** parameter option to display the source table entries that exist in all of the VRF instances on the switch.
- Based on the forwarding mode set for the switch (ASM, SSM, or MAC):
  - The “Group Address” field will display either a multicast group address (ASM or SSM) or the MAC address for the multicast group (MAC). In the examples for this command, the forwarding mode is changed to MAC to show how the “Group Address” field changes.
  - The “Host Address” field will display zero (MAC) or the IP host address for the bridge entry (ASM or SSM).

### Examples

```
-> show ip multicast bridge-forward
```

```
Total 2 Bridge Entries
```

Vlan	Type	Group Address	Host Address	Next Interface	UpTime
vlan 1	asm	224.1.2.3		1/4/12	00h:00m:01s
vlan 10	mac	01-00-5e-09-08-07		1/4/12	00h:00m:05s

```
-> show ip multicast bridge-forward vlan 10
```

```
Total 1 Bridge Entries
```

Vlan	Type	Group Address	Host Address	Next Interface	UpTime
vlan 10	mac	01-00-5e-09-08-07		1/4/12	00h:00m:05s

**output definitions**

<b>Vlan</b>	The VLAN ID associated with the IP multicast bridge entry.
<b>Type</b>	The bridge entry type ( <b>asm</b> , <b>ssm</b> , <b>mac</b> ). Configured through the <b>ip multicast forward-mode</b> command.
<b>Group Address</b>	If the bridge entry type is ASM or SSM, this field displays the destination IP group address; if the bridge entry type is MAC, this field displays the destination MAC address.
<b>Host Address</b>	The source IP host address (only applies to SSM bridge entries, otherwise this field is blank).
<b>Next Interface</b>	The destination interface for the bridge forwarding entry.
<b>UpTime</b>	The amount of time that has elapsed since the bridge forward entry was created.

**Release History**

Release 5.1; command introduced.

**Related Commands**

**show ip multicast bridge** Displays the IP multicast bridge table entries.

**MIB Objects**

```
alaIpmsBridgeForwardTable
  alaIpmsBridgeForwardConfigType,
  alaIpmsBridgeForwardAddressType,
  alaIpmsBridgeForwardValue,
  alaIpmsBridgeForwardType,
  alaIpmsBridgeForwardGroupAddress,
  alaIpmsBridgeForwardHostAddress,
  alaIpmsBridgeForwardNextIfIndex,
  alaIpmsBridgeForwardNextSubValue
  alaIpmsBridgeForwardUpTime
```



## show ip multicast profile

Displays a list of available IPMS configuration profiles or the parameter settings for a specific profile.

**show ip multicast profile** [*profile\_name*]

---

### Syntax Definitions

*profile\_name*                      The name of an existing IPMS profile.

### Defaults

By default, a list of available profiles is displayed.

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

The specified profile name must already exist in the switch configuration.

### Examples

```
-> show ip multicast profile
```

```
Total 2 Profiles
```

```
Profile Name
```

```
-----
```

```
default
```

```
IGMPv3 with Zapping
```

```
-> show ip multicast profile "IGMPv3 with Zapping"
```

```
Status                                      = enabled,
Flood Unknown                               = none,
Version                                     = 3,
Robustness                                  = 0,
Querying                                    = none,
Query Interval (seconds)                   = 0,
Query Response Interval (tenths of seconds) = 0,
Last Member Query Interval (tenths of seconds) = 0,
Unsolicited Report Interval (seconds)     = 0,
Proxying                                    = enabled,
Spoofing                                    = none,
Zapping                                     = enabled,
Querier Forwarding                         = none,
Router Timeout (seconds)                   = 0,
Source Timeout (seconds)                   = 0,
Max-group                                   = 0,
Max-group action                           = none,
Helper-address                             = 0.0.0.0,
Static Querier Address                     = 0.0.0.0,
Static Spoofer Address                     = 0.0.0.0,
```

Zero-based Query	= none,
Forward Mode	= none,
Update Delay Interval (milliseconds)	= 0,

## Release History

Release 5.1; command was introduced.

## Related Commands

<a href="#">ip multicast profile</a>	Defines an IPMS profile that is used to apply a pre-defined IPMS configuration.
<a href="#">ip multicast apply-profile</a>	Applies the specified IPMS profile to the specified IPMS instance.
<a href="#">show ip multicast</a>	Displays the profile assignment for the IPMS instance.

## MIB Objects

```
alaIpmsProfileTable
  alaIpmsProfileAddressType
  alaIpmsProfileName
  alaIpmsProfileIndex
  alaIpmsProfileRowStatus
alaIpmsConfigTable
  alaIpmsConfigType
  alaIpmsConfigAddressType
  alaIpmsConfigValue
  alaIpmsConfigProfileNam
```

---

## show ipv6 multicast

Displays the IPv6 Multicast Switching and Routing status and the general configuration parameters on the specified VLAN or on the system if no VLAN is specified.

**show ipv6 multicast** [**vlan** *vlan\_id*]

---

### Syntax Definitions

*vlan\_id* VLAN for which to display the configuration.

### Defaults

By default, the status and general configuration parameters for the system are displayed.

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

Specify a VLAN ID to display the configuration information for a specific VLAN.

### Examples

```
-> show ipv6 multicast
```

```
Profile                = default,
Status                 = disabled,
Flood Unknown         = disabled,
Version               = 1,
Robustness            = 2,
Querying              = disabled,
Query Interval (seconds) = 125,
Query Response Interval (milliseconds) = 10000,
Last Member Query Interval (milliseconds) = 1000,
Unsolicited Report Interval (seconds) = 1,
Proxying              = disabled,
Spoofing              = disabled,
Zapping              = disabled,
Querier Forwarding    = disabled,
Router Timeout (seconds) = 90,
Source Timeout (seconds) = 30,
Max-group             = 0,
Max-group action      = none,
Helper-address        = ::,
Static Querier Address = ::,
Static Spoofer Address = ::,
Zero-based Query      = enabled,
Forward Mode          = auto,
Update Delay Interval (milliseconds) = 0,
```

```
-> show ipv6 multicast vlan 200
```

```
Profile                = default,
Status                 = disabled,
Flood Unknown          = disabled,
Version                = 1,
Robustness             = 2,
Querying               = disabled,
Query Interval (seconds) = 125,
Query Response Interval (milliseconds) = 10000,
Last Member Query Interval (milliseconds) = 1000,
Unsolicited Report Interval (seconds) = 1,
Proxying               = disabled,
Spoofing               = disabled,
Zapping               = disabled,
Querier Forwarding     = disabled,
Router Timeout (seconds) = 90,
Source Timeout (seconds) = 30,
Max-group              = 0,
Max-group action       = none,
Helper-address         = ::,
Static Querier Address = ::,
Static Spoofer Address = ::,
Zero-based Query       = disabled,
Forward Mode           = auto,
Update Delay Interval (milliseconds) = 0,
```

### *output definitions*

<b>Profile</b>	The name of a predefined IPMS configuration profile that is assigned to this instance. Configured through the <b>ipv6 multicast profile</b> command.
<b>Status</b>	Whether the IPv6 Multicast Switching and Routing is <b>Enabled</b> or <b>Disabled</b> (the default status). Configured through the <b>ipv6 multicast admin-state</b> command.
<b>Flood Unknown</b>	Whether the flooding of initial unknown multicast traffic is <b>Enabled</b> or <b>Disabled</b> (the default status). Configured through the <b>ipv6 multicast flood-unknown</b> command.
<b>Version</b>	Displays the default MLD version, which can be <b>1</b> or <b>2</b> . Configured through the <b>ipv6 multicast version</b> command.
<b>Robustness</b>	Displays the MLD robustness value, ranging from <b>1</b> to <b>7</b> . (The default value is 2). Configured through the <b>ipv6 multicast robustness</b> command.
<b>Querying</b>	Whether MLD querying is <b>Enabled</b> or <b>Disabled</b> (the default status). Configured through the <b>ipv6 multicast querying</b> command.
<b>Query Interval (seconds)</b>	Displays the time (in seconds) between MLD queries. (The default value is 125 seconds). Configured through the <b>ipv6 multicast query-interval</b> command.
<b>Query Response Interval (milliseconds)</b>	Displays the time (in milliseconds) taken to reply to an MLD query message. (The default value is 100 tenths-of-seconds). Configured through the <b>ipv6 multicast query-response-interval</b> command.

*output definitions*


---

<b>Last Member Query Interval (milliseconds)</b>	Displays the time (in milliseconds) taken to reply to an MLD query message sent in response to a leave group message. (The default value is 10 tenths-of-seconds.) Configured through the <b>ipv6 multicast last-member-query-interval</b> command.
<b>Unsolicited Report Interval (seconds)</b>	Displays the time period (in seconds) to proxy any changed MLD membership state. (The default value is 1 second). Configured through the <b>ipv6 multicast unsolicited-report-interval</b> command.
<b>Proxying</b>	Whether MLD proxying on the system is <b>Enabled</b> or <b>Disabled</b> (the default status). Configured through the <b>ipv6 multicast proxying</b> command.
<b>Spoofing</b>	Whether MLD spoofing on the system is <b>Enabled</b> or <b>Disabled</b> (the default status). Configured through the <b>ipv6 multicast spoofing</b> command.
<b>Zapping</b>	Whether MLD zapping on the system is <b>Enabled</b> or <b>Disabled</b> (the default status). Configured through the <b>ipv6 multicast zapping</b> command.
<b>Querier Forwarding</b>	Whether MLD querier forwarding on the system is <b>Enabled</b> or <b>Disabled</b> (the default status). Configured through the <b>ipv6 multicast querier-forwarding</b> command.
<b>Router Timeout (seconds)</b>	Displays the MLD router timeout in seconds. (The default value is 90 seconds.) Configured through the <b>ipv6 multicast router-timeout</b> command.
<b>Source Timeout (seconds)</b>	Displays the MLD source timeout in seconds. (The default value is 30 seconds.) Configured through the <b>ipv6 multicast source-timeout</b> command.
<b>Max-group</b>	Displays the global maximum group limit that can be learned per VLAN instance. (The default value is 0 which means no limit is imposed). Configured through the <b>ipv6 multicast max-group</b> command.
<b>Max-group action</b>	Displays the action taken when the maximum group limit has been exceeded, which can be <b>none</b> , <b>drop</b> or <b>replace</b> . Configured through the <b>ipv6 multicast max-group</b> command.
<b>Helper-address</b>	Displays the destination IPv6 address of a relay host, where MLD host reports and Leave messages are to be sent. (By default, no Helper-address is configured.)
<b>Static Querier Address</b>	The Static Source IPv6 Address to be used when querying. (The default value of ":::" indicates that this is not configured.) <i>This function is currently not supported.</i>
<b>Static Spoofing Address</b>	The Static Source IPv6 Address to be used when spoofing. (The default value of ":::" indicates that this is not configured.) Configured through the <b>ipv6 multicast spoofing static-source-ip</b> command.
<b>Zero-based Query</b>	The current state of Zero-based Querying, which can be <b>disabled</b> or <b>enabled</b> (the default status). Configured through the <b>ipv6 multicast zero-based-query</b> command.

*output definitions*


---

<b>Forward Mode</b>	Displays the current IPv6 Forwarding mode ( <b>asm</b> , <b>ssm</b> , <b>mac</b> , or <b>auto</b> ). Configured through the <b>ipv6 multicast forward-mode</b> command.
<b>Update Delay Interval (milliseconds)</b>	Displays the amount of time (in milliseconds) between propagating IPMS state changes. (The default value is 0 milliseconds). Configured through the <b>ipv6 multicast update-delay-interval</b> command.

---

**Release History**

Release 5.1.R2; command introduced.

**Related Commands**

**ipv6 multicast admin-state** Enables or disables IPv6 Multicast Switching and Routing on the specified VLAN or on the system if no VLAN is specified.

**MIB Objects**

```

alaIpmsConfigTable
  alaIpmsConfigType
  alaIpmsConfigAddressType
  alaIpmsConfigValue
  alaIpmsConfigStatus
  alaIpmsConfigQuerying
  alaIpmsConfigProxying
  alaIpmsConfigSpoofing
  alaIpmsConfigZapping
  alaIpmsConfigQuerierForwarding
  alaIpmsConfigVersion
  alaIpmsConfigRobustness
  alaIpmsConfigQueryInterval
  alaIpmsConfigQueryResponseInterval
  alaIpmsConfigLastMemberQueryInterval
  alaIpmsConfigUnsolicitedReportInterval
  alaIpmsConfigRouterTimeout
  alaIpmsConfigSourceTimeout
  alaIpmsConfigMaxGroupLimit
  alaIpmsConfigMaxGroupExceedAction
  alaIpmsConfigFloodUnknown
  alaIpmsConfigMaxGroupLimit
  alaIpmsConfigMaxGroupExceedAction
  alaIpmsConfigHelperAddress
  alaIpmsConfigZeroBasedQuery
  alaIpmsConfigInitialPacketBuffer
  alaIpmsConfigDisplayInterfaceNames
  alaIpmsConfigUpdateDelayInterval
  alaIpmsConfigForwardMode
  alaIpmsConfigQueryingStaticSourceAddress
  alaIpmsConfigSpoofingStaticSourceAddress

```

---

## show ipv6 multicast port

Displays the maximum group configuration applicable for the specified port. The current number of groups learned on a port or port/VLAN is also displayed.

**show ipv6 multicast port** [*chassis/slot/port*]

---

### Syntax Definitions

*chassis*                                    The chassis identifier.  
*slot/port*                                 The slot and port number (3/1).

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

Specify a port number to display the configuration information for a specific port.

### Examples

```
-> show ipv6 multicast port
Legends: Interface Max-group                = Max-group limit on the interface
         Interface Action                   = Max-group action on the interface
         Interface-Instance Max-group     = Active Max-group limit on the Lan Interface instance
         Interface-Instance Action        = Active Max-group action on the Lan Interface instance
```

Total 1 Lan Interface Instances

Interface	Vlan	Current Groups	Interface Max-group	Interface Action	Interface-Instance Max-group	Interface-Instance Action
1/4/38	vlan 1001	0	0	none	0	none
1/5/43	vlan 1002	0	0	none	0	none
1/6/23	vlan 1003	0	0	none	0	none

```
-> show ipv6 multicast port 1/6/23
```

```
Legends: Interface Max-group                = Max-group limit on the interface
         Interface Action                   = Max-group action on the interface
         Interface-Instance Max-group     = Active Max-group limit on the Lan Interface instance
         Interface-Instance Action        = Active Max-group action on the Lan Interface instance
```

Total 1 Lan Interface Instances

Interface	Vlan	Current Groups	Interface Max-group	Interface Action	Interface-Instance Max-group	Interface-Instance Action
1/6/23	vlan 1003	0	0	none	0	none

*output definitions*


---

<b>Interface</b>	The VLAN port.
<b>Vlan</b>	The VLAN ID associated with the IPv6 multicast interface.
<b>Current Groups</b>	The current groups associated with the IPv6 multicast interface.
<b>Interface Max-group</b>	The maximum group count allowed on the port. This limit is applicable on the given port for all VLAN instances of the port.
<b>Interface Action</b>	The action to be taken when the group membership limit is exceeded ( <b>none</b> , <b>drop</b> , or <b>replace</b> ).
<b>Interface-Instance Max-group</b>	The maximum group limit learned per port for the given VLAN. This limit is applied to each port that is a member of the given VLAN.
<b>Interface-Instance Action</b>	The action to be taken when the group membership limit is exceeded ( <b>none</b> , <b>drop</b> , or <b>replace</b> ).

---

**Release History**

Release 5.1.R2; command introduced.

**Related Commands**

- ipv6 multicast port max-group** Configures the maximum group limit learned per port.
- ipv6 multicast max-group** Configures the maximum group limit learned per port for the specified VLAN or on the system if no VLAN is specified.

**MIB Objects**

```
alaIpmsIntfStatsConfigType
  alaIpmsIntfStatsAddressType
  alaIpmsIntfStatsValue
  alaIpmsIntfStatsCurrentGroupCount
  alaIpmsIntfStatsMaxGroupLimit
  alaIpmsIntfStatsMaxGroupExceedAction
```

---



## show ipv6 multicast forward

Display the IPv6 Multicast Switching and Routing forwarding table entries for the specified IPv6 multicast group address or all entries if no IPv6 multicast address is specified.

```
show ipv6 multicast forward [ipv6_address] [vlan [vlan_id[-vlan_id2]]] [all-vrf]
```

---

### Syntax Definitions

<i>ipv6_address</i>	IPv6 multicast group address.
<b>vlan</b> [vlan_id[-vlan_id2]]	Display forwarding table entries for the VLAN domain. Optionally enter a VLAN ID or use a hyphen to specify a range of VLAN IDs.
<b>all-vrf</b>	Display forwarding table entries for all of the VRF instances.

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- Use the *ipv6\_address* parameter to display forwarding entries for a specific multicast group.
- Use the **all-vrf** parameter option to display the forwarding table entries that exist in all of the VRF instances on the switch.
- Forwarding entries are derived by applying the state from the source table to the state in the group, neighbor, and querier tables.
- To view the multicast forwarding database see the related [show ipv6 multicast bridge](#) and [show ipv6 multicast bridge-forward](#) commands.
- Use the [ipv6 multicast display-interface-names](#) command to enable displaying the associated IPv6 interface name in the “Ingress Vlan” and “Egress Vlan” fields instead of the VLAN ID.

### Examples

```
-> show ipv6 multicast forward
```

```
Total 3 Forwards
```

Group Address	Host Address	Tunnel Address	Ingress	Egress	Interface
			VLAN	VLAN	
ff05::6	4444::2	::	vlan 20	vlan 20	1/1/2
ff05::7	4444::2	::	vlan 20	vlan 20	1/1/2
ff06::1	::	::	vlan 20	vlan 21	1/1/2

```
-> show ipv6 multicast forward ff05::6
```

```
Total 1 Forwards
```

```
Ingress Egress
```

```

Group Address   Host Address   Tunnel Address  VLAN           VLAN           Interface
-----+-----+-----+-----+-----+-----
ff05::6        4444::2       ::             vlan 20        vlan 20        1/1/2

```

```
-> show ipv6 multicast forward vlan
```

```
Total 3 Forwards
```

```

Group Address   Host Address   Tunnel Address  Ingress        Egress
                VLAN           VLAN           Interface
-----+-----+-----+-----+-----+-----
ff05::6        4444::2       ::             vlan 20        vlan 20        1/1/2
ff05::7        4444::2       ::             vlan 20        vlan 20        1/1/2
ff06::1        ::            ::             vlan 20        vlan 21        1/1/2

```

Sample output when the global display interface names option is enabled:

```
-> ip multicast display-interface-names
```

```
-> show ip multicast forward vlan
```

```
Total 3 Forwards
```

```

Group Address   Host Address   Tunnel Address  Ingress        Egress
                VLAN           VLAN           VLAN Interface
-----+-----+-----+-----+-----+-----
ff05::6        4444::2       ::             VlanToLab     VlanToLab     1/1/2
ff05::7        4444::2       ::             VlanToLab     VlanToLab     1/1/2
ff06::1        ::            ::             VlanToCore    VlanToDist    1/1/2

```

### *output definitions*

---

<b>Group Address</b>	IPv6 group address of the IPv6 multicast forward.
<b>Host Address</b>	IPv6 host address of the IPv6 multicast forward.
<b>Tunnel Address</b>	IPv6 source tunnel address of the IPv6 multicast forward.
<b>Ingress VLAN</b>	The ingress VLAN ID associated with the IPv6 multicast forward. If the global display interface names option is enabled, then the ingress interface name associated with the IPv6 multicast forward is displayed.
<b>Egress VLAN</b>	The egress VLAN ID associated with the IPv6 multicast forward. If the global display interface names option is enabled, then the egress interface name associated with the IPv6 multicast forward is displayed. The egress interface (port) will also be included in the forward entry with both output formats.
<b>Interface</b>	The VLAN port of the IPv6 multicast forward.

---

### **Release History**

Release 5.1.R2; command introduced.

## Related Commands

**ipv6 multicast static-group** Creates a static MLD group entry on a specified port on a specified VLAN.

## MIB Objects

```
alaIpmsForwardTable  
  alaIpmsForwardConfigType  
  alaIpmsForwardAddressType  
  alaIpmsForwardValue  
  alaIpmsForwardGroupAddress  
  alaIpmsForwardHostAddress  
  alaIpmsForwardDestAddress  
  alaIpmsForwardOrigAddress  
  alaIpmsForwardType  
  alaIpmsForwardNextConfigType  
  alaIpmsForwardNextValue  
  alaIpmsForwardNextIfIndex  
  alaIpmsForwardNextType
```

---

## show ipv6 multicast neighbor

Displays the MLD neighbor table entries of IPv6 Multicast Switching and Routing.

```
show ipv6 multicast neighbor [vlan [vlan_id[-vlan_id2]] [all-vrf]]
```

---

### Syntax Definitions

**vlan [vlan\_id[-vlan\_id2]]** Display MLD neighbor table entries for the VLAN domain. Optionally enter a VLAN ID or use a hyphen to specify a range of VLAN IDs.

**all-vrf** Display MLD neighbor table entries for all of the VRF instances.

### Defaults

By default, only the neighbor table entries specific to the current VRF instance are displayed.

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- Use the **all-vrf** parameter option to display the IPv6 neighbor table entries that exist in all of the VRF instances on the switch.
- Interfaces with neighbors receive all IPv6 multicast, including all MLD traffic.
- Use the **ipv6 multicast display-interface-names** command to enable displaying the associated IPv6 interface name in the “Vlan” field instead of the VLAN ID.

### Examples

```
-> show ipv6 multicast neighbor
```

```
Total 4 Neighbors
```

Host Address	Vlan	Interface	Static	Count	Life
fe80::2a0:ccff:fed3:2853	vlan 20	1/1/2	no	1	6
::	vlan 20	1/1/13	yes	0	0

```
-> show ipv6 multicast neighbor vlan
```

```
Total 2 Neighbors
```

Host Address	Vlan	Interface	Static	Count	Life
fe80::2a0:ccff:fed3:2853	vlan 20	1/1/2	no	1	6
::	vlan 20	1/1/13	yes	0	0

Sample output when the global display interface names option is enabled:

```
-> ipv6 multicast display-interface-names
-> show ipv6 multicast neighbor vlan
```

Total 2 Neighbors

Host Address	Vlan	Interface	Static	Count	Life
fe80::2a0:ccff:fed3:2853	VlanToLab	1/1/2	no	1	6
::	VlanToLab	1/1/13	yes	0	0

### output definitions

<b>Host Address</b>	The IPv6 address of the IPv6 multicast neighbor.
<b>VLAN</b>	The VLAN ID associated with the IPv6 multicast neighbor. If the global display interface names option is enabled, then the interface name associated with the IP multicast neighbor is displayed.
<b>Interface</b>	The VLAN port of the IPv6 multicast neighbor.
<b>Static</b>	Whether it is a static MLD neighbor or not.
<b>Count</b>	Displays the count of the IPv6 multicast neighbor.
<b>Life</b>	The life time of the IPv6 multicast neighbor.

### Release History

Release 5.1.R2; command introduced.

### Related Commands

**ipv6 multicast static-neighbor** Creates a static MLD neighbor entry on a specified port on a specified VLAN.

### MIB Objects

```

alaIpmsNeighborTable
  alaIpmsNeighborConfigType
  alaIpmsNeighborAddressType
  alaIpmsNeighborValue
  alaIpmsNeighborIfIndex
  alaIpmsNeighborHostAddress
  alaIpmsNeighborCount
  alaIpmsNeighborTimeout
  alaIpmsNeighborUpTime
alaIpmsStaticNeighborTable
  alaIpmsStaticNeighborConfigType
  alaIpmsStaticNeighborAddressType
  alaIpmsStaticNeighborValue
  alaIpmsStaticNeighborIfIndex
  alaIpmsStaticNeighborRowStatus

```

## show ipv6 multicast querier

Displays the MLD querier table entries of IPv6 Multicast Switching and Routing.

```
show ipv6 multicast querier [vlan [vlan_id[-vlan_id2]] [all-vrf]]
```

---

### Syntax Definitions

**vlan** [vlan\_id[-vlan\_id2]]      Display MLD querier table entries for the VLAN domain. Optionally enter a VLAN ID or use a hyphen to specify a range of VLAN IDs.

**all-vrf**                              Display querier table entries for all of the VRF instances.

### Defaults

By default, only MLD querier entries specific to the current VRF instance are displayed

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- Use the **all-vrf** parameter option to display the MLD querier table entries that exist in all of the VRF instances on the switch.
- Interfaces with queriers receive all MLD traffic, and if querier forwarding is enabled, these interfaces will also receive all IPv6 multicast traffic.
- Use the **ipv6 multicast display-interface-names** command to enable displaying the associated IPv6 interface name in the “Vlan” field instead of the VLAN ID.

### Examples

```
-> show ipv6 multicast querier
```

```
Total 4 Queriers
```

Host Address	Vlan	Interface	Static	Count	Life
fe80::2a0:ccff:fed3:2853	vlan 20	1/1/2	no	1	6
::	vlan 20	1/1/13	yes	0	0

```
-> show ipv6 multicast querier vlan
```

```
Total 2 Queriers
```

Host Address	Vlan	Interface	Static	Count	Life
fe80::2a0:ccff:fed3:2853	vlan 20	1/1/2	no	1	6
::	vlan 20	1/1/13	yes	0	0

Sample output when the global display interface names option is enabled:

```
-> ipv6 multicast display-interface-names
-> show ipv6 multicast querier vlan
```

Total 2 Queriers

Host Address	Vlan	Interface	Static	Count	Life
fe80::2a0:ccff:fed3:2853	VlanToLab	1/1/2	no	1	6
::	VlanToLab	1/1/13	yes	0	0

### output definitions

<b>Host Address</b>	The IPv6 address of the IPv6 multicast querier.
<b>VLAN</b>	The VLAN ID associated with the IP multicast querier. If the global display interface names option is enabled, then the IPv6 interface name associated with the IPv6 multicast querier is displayed
<b>Interface</b>	The VLAN port of the IPv6 multicast querier.
<b>Static</b>	Whether it is a static MLD neighbor or not.
<b>Count</b>	Displays the count of the IPv6 multicast querier.
<b>Life</b>	The life time of the IPv6 multicast querier.

### Release History

Release 5.1.R2; command introduced.

### Related Commands

**ipv6 multicast static-querier** Creates a static MLD querier entry on a specified port on a specified VLAN.

### MIB Objects

alaIpmsQuerierTable

```
alaIpmsQuerierConfigType
alaIpmsQuerierAddressType
alaIpmsQuerierValue
alaIpmsQuerierIfIndex
alaIpmsQuerierHostAddress
alaIpmsQuerierCount
alaIpmsQuerierTimeout
alaIpmsQuerierUpTime
```

alaIpmsStaticQuerierTable

```
alaIpmsStaticQuerierConfigType
alaIpmsStaticQuerierAddressType
alaIpmsStaticQuerierValue
alaIpmsStaticQuerierIfIndex
alaIpmsStaticQuerierRowStatus
```

## show ipv6 multicast group

Displays the MLD group membership table entries of IPv6 Multicast Switching and Routing for the specified IPv6 multicast group address or all entries if no IPv6 multicast group address is specified.

**show ipv6 multicast group** [*ipv6\_ddress*] [**vlan** [*vlan\_id*[-*vlan\_id2*]]] [**all-vrf**]

---

### Syntax Definitions

<i>ipv6_ddress</i>	IPv6 multicast group address.
<b>vlan</b> [ <i>vlan_id</i> [- <i>vlan_id2</i> ]]	Display MLD group membership entries for the VLAN domain. Optionally enter a VLAN ID or use a hyphen to specify a range of VLAN IDs.
<b>all-vrf</b>	Display group membership entries for all of the VRF instances.

### Defaults

By default, all IPv6 multicast groups are displayed for the current VRF instance.

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- Use the *ipv6\_ddress* parameter to display entries for a specific multicast group.
- Use the **all-vrf** parameter option to display the MLD group membership table entries that exist in all of the VRF instances on the switch.
- Use the [ipv6 multicast display-interface-names](#) command to enable displaying the associated IP interface name in the “Vlan” field instead of the VLAN ID.

### Examples

```
-> show ipv6 multicast group ff05::5
```

Group Address	Source Address	Vlan	Interface	Mode	Static	Count	Life
ff05::5	::	vlan 21	1/1/19	exclude	no	1	145

```
-> show ipv6 multicast group vlan
```

Total 3 Groups

Group Address	Source Address	Vlan	Interface	Mode	Static	Count	Life
ff05::5	::	vlan 21	1/1/19	exclude	no	100	145
ff05::6	::	vlan 21	1/1/19	exclude	no	100	145
ff05::7	::	vlan 21	1/1/19	exclude	no	101	145
ff05::8	::	vlan 100	1/1/20	exclude	yes	0	0
ff05::9	::	vlan 101	1/1/21	exclude	yes	0	0



Sample output when the global display interface names option is enabled:

```
-> ipv6 multicast display-interface-names
-> show ipv6 multicast group vlan
```

Total 3 Groups

Group Address	Source Address	Vlan	Interface	Mode	Static	Count	Life
ff05::5	::	VlanToLab	1/1/19	exclude	no	100	145
ff05::6	::	VlanToLab	1/1/19	exclude	no	100	145
ff05::7	::	VlanToLab	1/1/19	exclude	no	101	145
ff05::8	::	VlanToCore	1/1/20	exclude	yes	0	0
ff05::9	::	VlanToDist	1/1/21	exclude	yes	0	0

### output definitions

<b>Group Address</b>	IPv6 address of the IPv6 multicast group.
<b>Source Address</b>	IPv6 address of the IPv6 multicast source.
<b>Vlan</b>	The VLAN ID associated with the IPv6 multicast group. If the global display interface names option is enabled, then the IPv6 interface name associated with the IPv6 multicast group is displayed.
<b>Interface</b>	The VLAN port on which the group membership was learned.
<b>Mode</b>	MLD source filter mode.
<b>Static</b>	Whether it is a static MLD group or not.
<b>Count</b>	Number of MLD membership requests made.
<b>Life</b>	Life time of the MLD group membership.

### Release History

Release 5.1.R2; command introduced.

### Related Commands

**ipv6 multicast static-group** Creates a static MLD group entry on a specified port for the specified VLAN.

**MIB Objects**

## alaIpmsMemberTable

- alaIpmsMemberConfigType
- alaIpmsMemberAddressType
- alaIpmsMemberValue
- alaIpmsMemberIfIndex
- alaIpmsMemberGroupAddress
- alaIpmsMemberSourceAddress
- alaIpmsMemberMode
- alaIpmsMemberCount
- alaIpmsMemberTimeout

## alaIpmsStaticMemberTable

- alaIpmsStaticMemberConfigType
- alaIpmsStaticMemberConfigAddressType
- alaIpmsStaticMemberValue
- alaIpmsStaticMemberIfIndex
- alaIpmsStaticMemberGroupAddress
- alaIpmsStaticMemberRowStatus

---

## show ipv6 multicast source

Displays the IPv6 Multicast Switching and Routing source table entries matching the specified IPv6 multicast group address or all entries if no IPv6 multicast group address is specified.

```
show ipv6 multicast source [ipv6_address] [vlan [vlan_id[-vlan_id2]]] [all-vrf]
```

---

### Syntax Definitions

<i>ipv6_address</i>	IPv6 multicast group address.
<b>vlan</b> [ <i>vlan_id</i> [- <i>vlan_id2</i> ]]	Display source table entries for the VLAN domain. Optionally enter a VLAN ID or use a hyphen to specify a range of VLAN IDs.
<b>all-vrf</b>	Displays source table entries for all of the VRF instances.

### Defaults

By default, all source table entries are displayed for the current VRF instance.

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- Use the *ipv6\_address* parameter to display entries for a specific multicast group.
- Use the **all-vrf** parameter option to display the MLD source table entries that exist in all of the VRF instances on the switch.
- To view the multicast forwarding database see the related [show ip multicast bridge](#) and [show ip multicast bridge-forward](#) commands.
- Use the [ipv6 multicast display-interface-names](#) command to enable displaying the associated IP interface name in the “Vlan” field instead of the VLAN ID.

### Examples

```
-> show ipv6 multicast source
```

```
Total 8 Sources
```

Group Address	Host Address	Source		Ingress
		Tunnel Address	VLAN	
ff05::6	4444::2	::		vlan 21
ff05::7	4444::2	::		vlan 21
ff06::1	::	::		vlan 20
ff06::2	::	::		vlan 20

```
-> show ipv6 multicast source ff05::6
```

Total 2 Sources

Group Address	Host Address	Source Tunnel Address	Ingress VLAN
ff05::6	4444::2	::	vlan 21

```
-> show ipv6 multicast source vlan
```

Total 4 Sources

Group Address	Host Address	Source Tunnel Address	Ingress VLAN
ff05::6	4444::2	::	vlan 21
ff05::7	4444::2	::	vlan 21
ff06::1	::	::	vlan 20
ff06::2	::	::	vlan 20

Sample output when the global display interface names option is enabled:

```
-> ipv6 multicast display-interface-names
-> show ipv6 multicast source vlan
```

Total 4 Sources

Group Address	Host Address	Source Tunnel Address	Ingress VLAN
ff05::6	4444::2	::	VlanToLab
ff05::7	4444::2	::	VlanToLab
ff06::1	::	::	VlanToCore
ff06::2	::	::	VlanToCore

### *output definitions*

<b>Group Address</b>	IPv6 group address of the IPv6 multicast source.
<b>Host Address</b>	IPv6 host address of the IPv6 multicast source.
<b>Source Tunnel Address</b>	IPv6 source tunnel address of the IPv6 multicast source.
<b>Ingress VLAN</b>	The ingress VLAN ID number associated with the IP multicast source. If the global display interface names option is enabled, then the IP interface name associated with the IP multicast source is displayed.

## Release History

Release 5.1.R2; command introduced.

## Related Commands

### **show ipv6 multicast tunnel**

Display the IP Multicast Switching and Routing tunneling table entries matching the specified IP multicast group address or all entries if no IP multicast address is specified-

## MIB Objects

```
alaIpmsSourceTable  
  alaIpmsSourceConfigType  
  alaIpmsSourceAddressType  
  alaIpmsSourceValue  
  alaIpmsSourceGroupAddress  
  alaIpmsSourceHostAddress  
  alaIpmsSourceDestAddress  
  alaIpmsSourceOrigAddress  
  alaIpmsSourceType  
  alaIpmsSourceUpTime
```

---

## show ipv6 multicast tunnel

Displays the IPv6 Multicast Switching and Routing tunneling table entries matching the specified IPv6 multicast group address, or all entries if no IPv6 multicast address is specified.

```
show ipv6 multicast tunnel [ipv6_address] [vlan [vlan_id[-vlan_id2]] [all-vrf]
```

---

### Syntax Definitions

<i>ipv6_address</i>	IPv6 multicast group address.
<b>vlan</b> [vlan_id[-vlan_id2]]	Display tunneling table entries for the VLAN domain. Optionally enter a VLAN ID or use a hyphen to specify a range of VLAN IDs.
<b>all-vrf</b>	Display the IPv6 tunneling table entries for all of the VRF instances.

### Defaults

By default, all IPv6 tunnel entries are displayed for the current VRF instance.

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- Use the *ip\_address* parameter to display the tunnel entries for a specific multicast group.
- Use the **all-vrf** parameter option to display the IPv6 multicast tunnel entries that exist in all of the VRF instances on the switch.
- Use the **ipv6 multicast display-interface-names** command to enable displaying the associated IP interface name in the “Vlan” field instead of the VLAN ID.

### Examples

```
-> show ipv6 multicast tunnel
```

```
Total 4 Tunnels
```

Group Address	Host Address	Destination Tunnel Address	Ingress Vlan
ff05::6	4444::2	5555::3	vlan 21
ff05::7	4444::2	5555::3	vlan 21

```
-> show ipv6 multicast tunnel vlan
```

```
Total 2 Tunnels
```

Group Address	Host Address	Destination Tunnel Address	Ingress Vlan
ff05::6	4444::2	5555::3	vlan 21
ff05::7	4444::2	5555::3	vlan 21

Sample output when the global display interface names option is enabled:

```
-> ipv6 multicast display-interface-names
-> show ipv6 multicast tunnel vlan
```

Total 2 Tunnels

Group Address	Host Address	Destination Tunnel Address	Ingress Vlan
ff05::6	4444::2	5555::3	VlanToLab
ff05::7	4444::2	5555::3	VlanToLab

### output definitions

<b>Group Address</b>	IPv6 group address of the IPv6 multicast tunnel.
<b>Host Address</b>	IPv6 host address of the IPv6 multicast tunnel.
<b>Destination Tunnel Address</b>	IPv6 source tunnel address of the IPv6 multicast tunnel.
<b>Ingress Vlan</b>	VLAN ID associated with the IP multicast tunnel. If the global display interface names option is enabled, then the IP interface name associated with the IP multicast tunnel is displayed.

### Release History

Release 5.1.R2; command introduced.

### Related Commands

**show ipv6 multicast source** Displays the IPv6 Multicast Switching and Routing source table entries matching the specified IPv6 multicast group address or all entries if no IPv6 multicast group address is specified

### MIB Objects

```
alaIpmsTunnelTable
  alaIpmsTunnelConfigType
  alaIpmsTunnelAddressType
  alaIpmsTunnelValue
  alaIpmsTunnelGroupAddress
  alaIpmsTunnelHostAddress
  alaIpmsTunnelDestAddress
  alaIpmsTunnelOrigAddress
  alaIpmsTunnelType
  alaIpmsTunnelNextDestAddress
  alaIpmsTunnelNextType
```

## show ipv6 multicast bridge

Displays the IPv6 multicast bridge table entries that match the specified VLAN, IPv6 multicast group address, MAC address, or all entries if no additional parameters are specified.

```
show ipv6 multicast bridge [vlan vlan_id[-vlan_id2] | ipv6_address | mac_address] [all-vrf]
```

---

### Syntax Definitions

<b>vlan</b> [ <i>vlan_id</i> [- <i>vlan_id2</i> ]	Displays bridge table entries for the VLAN domain. Optionally enter a VLAN ID or use a hyphen to specify a range of VLAN IDs.
<i>ipv6_address</i>	IPv6 multicast group address.
<i>mac_address</i>	Group MAC address.
<b>all-vrf</b>	Display bridge table entries for all of the VRF instances.

### Defaults

By default, all bridge table entries are displayed for the current VRF instance.

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- Use one of the optional parameters (*vlan\_id*, *ipv6\_address*, *mac\_address*) to display bridge table entries for a specific multicast group.
- Use the **all-vrf** parameter option to display the source table entries that exist in all of the VRF instances on the switch.
- Based on the forwarding mode set for the switch (ASM, SSM, or MAC):
  - The “Group Address” field will display either a multicast group address (ASM or SSM) or the MAC address for the multicast group (MAC).
  - The “Host Address” field will display zero (MAC) or the IPv6 host address for the bridge entry (ASM or SSM).

### Examples

```
-> show ipv6 multicast bridge vlan 130
```

```
Total 2 Bridge Entries
```

Vlan	Type	Group Address	Host Address	Action	UpTime
vlan 130	asm	ff05::6		forwarding	00h:00m:04s



*output definitions*


---

<b>Vlan</b>	The VLAN ID associated with the IP multicast bridge entry.
<b>Type</b>	The bridge type for the IPv6 multicast bridge entry ( <b>asm</b> , <b>ssm</b> , <b>mac</b> ). Configured through the <b>ipv6 multicast forward-mode</b> command.
<b>Group Address</b>	If the bridge entry type is ASM or SSM, this field displays the destination IP group address; if the bridge entry type is MAC, this field displays the destination MAC address.
<b>Host Address</b>	The source IPv6 host address (only applies to SSM bridge entries, otherwise this field is blank).
<b>Action</b>	The current action taken for the bridge entry ( <b>forwarding</b> or <b>filtering</b> ).
<b>UpTime</b>	The amount of time that has elapsed since the bridge entry was created.

---

**Release History**

Release 5.1.R2; command introduced.

**Related Commands**

**show ipv6 multicast bridge-forward** Displays the forwarding state of the IPv6 multicast bridge table entries.

**MIB Objects**

```
alaIpmsBridgeTable
  alaIpmsBridgeConfigType
  alaIpmsBridgeAddressType
  alaIpmsBridgeValue
  alaIpmsBridgeType
  alaIpmsBridgeGroupAddress
  alaIpmsBridgeHostAddress
  alaIpmsBridgeUpTime
  alaIpmsBridgeAction
```

---

## show ipv6 multicast bridge-forward

Displays the forwarding state of the IPv6 multicast bridge table entries that match the specified VLAN, IPv6 multicast group address, MAC address, or all entries if no additional parameters are specified.

**show ipv6 multicast bridge-forward** [*vlan vlan\_id[-vlan\_id2]* | *ipv6\_address* | *mac\_address*]] [**all-vrf**]

---

### Syntax Definitions

<b>vlan</b> [ <i>vlan_id[-vlan_id2]</i> ]	Displays bridge table entries for the VLAN domain. Optionally enter a VLAN ID or use a hyphen to specify a range of VLAN IDs.
<i>ipv6_address</i>	IPv6 multicast group address.
<i>mac_address</i>	Group MAC address.
<b>all-vrf</b>	Display bridge table entries for all of the VRF instances.

### Defaults

By default, all bridge table entries are displayed for the current VRF instance.

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- Use one of the optional parameters (*vlan\_id*, *ipv6\_address*, *mac\_address*) to display forwarding information for a specific multicast group.
- Use the **all-vrf** parameter option to display the source table entries that exist in all of the VRF instances on the switch.
- Based on the forwarding mode set for the switch (ASM, SSM, or MAC):
  - The “Group Address” field will display either a multicast group address (ASM or SSM) or the MAC address for the multicast group (MAC). In the examples for this command, the forwarding mode is changed to MAC to show how the “Group Address” field changes.
  - The “Host Address” field will display zero (MAC) or the IPv6 host address for the bridge entry (ASM or SSM).

### Examples

```
-> show ipv6 multicast bridge-forward vlan 130
```

```
Total 2 Bridge Forwarding Entries
```

Vlan	Type	Group Address	Host Address	Next Interface	UpTime
vlan 1	asm-partial	::1.1.2.3		1/4/12	00h:00m:10s
vlan 130	asm	33-33-ff-ff-ff-ff		1/4/12	00h:00m:07s

```
-> ipv6 multicast vlan 130 forward-mode mac
```

```
-> show ipv6 multicast bridge-forward vlan 130
```

Total 1 Bridge Forwarding Entries

Vlan	Type	Group Address	Host Address	Next Interface	UpTime
vlan 130	mac	33-33-ff-ff-ff-ff		1/3/25	00h:00m:07s

### output definitions

<b>Vlan</b>	The VLAN ID associated with the IP multicast bridge entry.
<b>Type</b>	The bridge entry type ( <b>asm</b> , <b>ssm</b> , <b>mac</b> ). Configured through the <b>ipv6 multicast forward-mode</b> command.
<b>Group Address</b>	If the bridge entry type is ASM or SSM, this field displays the destination IPv6 group address; if the bridge entry type is MAC, this field displays the destination MAC address.
<b>Host Address</b>	The source IPv6 host address (only applies to SSM bridge entries, otherwise this field is blank).
<b>Next Interface</b>	The destination interface for the bridge forwarding entry.
<b>UpTime</b>	The amount of time that has elapsed since the bridge forward entry was created.

### Release History

Release 5.1.R2; command introduced.

### Related Commands

**show ipv6 multicast bridge** Displays the IPv6 multicast bridge table entries.

### MIB Objects

```
alaIpmsBridgeForwardTable
  alaIpmsBridgeForwardConfigType,
  alaIpmsBridgeForwardAddressType,
  alaIpmsBridgeForwardValue,
  alaIpmsBridgeForwardType,
  alaIpmsBridgeForwardGroupAddress,
  alaIpmsBridgeForwardHostAddress,
  alaIpmsBridgeForwardNextIfIndex,
  alaIpmsBridgeForwardNextSubValue
  alaIpmsBridgeForwardUpTime
```

## show ipv6 multicast profile

Displays a list of available IPMS configuration profiles or the parameter settings for a specific profile.

**show ipv6 multicast profile** [*profile\_name*]

---

### Syntax Definitions

*profile\_name*                      The name of an existing IPMS profile.

### Defaults

By default, a list of available profiles is displayed.

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

The specified profile name must already exist in the switch configuration.

### Examples

```
-> show ipv6 multicast profile
```

```
Total 2 Profiles
```

```
Profile Name
```

```
-----
```

```
default
```

```
IGMPv3 with Zapping
```

```
-> show ip multicast profile "IGMPv3 with Zapping"
```

```
Status                                      = enabled,
Flood Unknown                               = none,
Version                                     = 3,
Robustness                                  = 0,
Querying                                    = none,
Query Interval (seconds)                   = 0,
Query Response Interval (tenths of seconds)= 0,
Last Member Query Interval (tenths of seconds)= 0,
Unsolicited Report Interval (seconds)     = 0,
Proxying                                    = enabled,
Spoofing                                    = none,
Zapping                                     = enabled,
Querier Forwarding                         = none,
Router Timeout (seconds)                   = 0,
Source Timeout (seconds)                   = 0,
Max-group                                   = 0,
Max-group action                            = none,
Helper-address                              = ::,
Static Querier Address                      = ::,
Static Spoofer Address                      = ::,
```

Zero-based Query	= none,
Forward Mode	= none,
Update Delay Interval (milliseconds)	= 0,

## Release History

Release 5.1.R2; command introduced.

## Related Commands

<b>ipv6 multicast profile</b>	Defines an IPMS profile that is used to apply a pre-defined IPMS configuration.
<b>ipv6 multicast apply-profile</b>	Applies the specified IPMS profile to the specified IPMS instance.
<b>show ipv6 multicast</b>	Displays the profile assignment for the IPMS instance.

## MIB Objects

```
alaIpmsProfileTable
  alaIpmsProfileAddressType
  alaIpmsProfileName
  alaIpmsProfileIndex
  alaIpmsProfileRowStatus
alaIpmsConfigTable
  alaIpmsConfigType
  alaIpmsConfigAddressType
  alaIpmsConfigValue
  alaIpmsConfigProfileNam
```

---

# 16 QoS Commands

The OmniSwitch QoS software provides a way to manipulate flows coming through the switch based on user-configured policies. The flow manipulation (generally referred to as *Quality of Service* or *QoS*) may be as simple as allowing/denying traffic, or as complicated as remapping 802.1p bits from a Layer 2 network to ToS values in a Layer 3 network.

This chapter provides information about configuring QoS global and port parameters through the Command Line Interface (CLI).

MIB information for the QoS commands is as follows:

*Filename:* ALCATEL-IND1-QOS-MIB.mib  
*Module:* alaQoS MIB

*Filename:* ALCATEL-IND1-VIRTUAL-FLOW-CONTROL-MIB.mib  
*Module:* alcatelIND1VfcMIB

---

**Important Note.** Some of the commands listed here are not currently supported on one or more platforms. See command descriptions in this chapter and check release notes for information about commands that are not supported.

---

The QoS commands are listed here:

---

<b>Global commands</b>	<a href="#">qos</a> <a href="#">qos trust-ports</a> <a href="#">qos forward log</a> <a href="#">qos log console</a> <a href="#">qos log lines</a> <a href="#">qos log level</a> <a href="#">qos phones</a> <a href="#">qos user-port</a> <a href="#">qos dei</a> <a href="#">debug qos</a> <a href="#">debug qos internal</a> <a href="#">clear qos log</a> <a href="#">qos apply</a> <a href="#">qos revert</a> <a href="#">qos flush</a> <a href="#">qos reset</a> <a href="#">qos stats reset</a> <a href="#">show qos log</a> <a href="#">show qos config</a> <a href="#">show qos statistics</a>
------------------------	--

---

---

**Port and Slice commands**

**qos port**  
**qos port reset**  
**qos port trusted**  
**qos port default 802.1p**  
**qos port default dscp**  
**qos port default classification**  
**qos port dei**  
**show qos port**

---

**Queue Management commands**

**qos qsi qsp**  
**qos qsi stats**  
**show qos qsp**  
**show qos qsi**  
**show qos qsi summary**  
**show qos qsi stats**  
**clear qos qsi stats**

---

## qos

Enables or disables QoS. This section describes the base command with a single required option (**enable** or **disable**).

In lieu of this option, the base command (**qos**) may be used with other keywords to set up global QoS configuration. These keywords are listed here and described as separate commands later in this chapter. In addition, some keywords have a **no** form to remove the parameter or return it to its default.

```
qos {enable | disable}
    [trust-ports]
    [forward log]
    [log console]
    [log lines lines]
    [log level level]
    [stats interval seconds]
    [phones [priority priority_value | trusted]]
    [user-port {filter | shutdown} {spoof | bgp | bpdu | rip | ospf | vrrp | dvmrp | pim | isis | dhcpserver
    | dns-reply}]
```

---

### Syntax Definitions

<b>enable</b>	Enables QoS. The QoS software in the switch classifies flows coming into the switch to attempt to match them to QoS policies. If a match is found, the policy parameters are applied to the flow. The <b>enable</b> setting may be used alone or in conjunction with optional command keywords.
<b>disable</b>	Disables QoS. Flows coming into the switch are not matched to policies. The <b>disable</b> setting cannot be used with any other command keyword.

### Defaults

parameter	default
enable   disable	enable

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- When QoS is disabled, flows coming into the switch are classified but not matched to a policy. Traffic is treated as best effort and assigned to default queues.
- The command keywords may be used with or without **enable**; these keywords cannot be used with **disable**.



## Examples

```
-> qos disable  
-> qos enable
```

## Release History

Release 5.1; command was introduced.

## Related Commands

### [qos apply](#)

Applies configured QoS and policy settings to the current configuration.

## MIB Objects

```
alaQoSConfigTable  
  alaQoSConfigEnable  
  alaQoSConfigTrustedPorts  
  alaQoSConfigForwardLog  
  alaQoSConfigLogLines  
  alaQoSConfigLogLevel  
  alaQoSConfigLogConsolealaQoSConfigStatsInterval  
  alaQoSConfigAutoPhones  
  alaQoSConfigUserportFilter  
  alaQoSConfigAppliedUserportFilter  
  alaQoSConfigUserportShutdown  
  alaQoSConfigAppliedUserportShutdown
```

---

## qos trust-ports

Configures the global trust mode for QoS ports. Trusted ports can accept 802.1p and ToS/DSCP values in incoming packets; untrusted ports will set any 802.1p or ToS/DSCP values to zero in incoming packets, unless a default 802.1p or ToS/DSCP value is configured.

Any port configured through the **qos port** command will automatically be added in the trust mode specified by this command. See [page 16-29](#) for more information about this command.

**qos trust-ports**

**qos no trust-ports**

---

### Syntax Definitions

N/A

### Defaults

By default, all ports are untrusted.

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- Use the **qos ports trusted** command to override the default for a particular port.
- The setting only applies to ports with incoming traffic.
- Mobile ports are always trusted regardless of the global setting.
- Use the **qos port default 802.1p** or **qos port default dscp** commands to specify that a value other than zero should be applied to the incoming packets. Note that this value is overridden if a policy exists that specifies a different value for such packets.

### Examples

```
-> qos trust-ports  
-> qos no trust-ports
```

### Release History

Release 5.1; command was introduced.

## Related Commands

<b>qos port</b>	Configures a physical port for QoS.
<b>qos port trusted</b>	Configures whether or not a particular port is trusted or untrusted.
<b>show qos port</b>	Displays information about QoS ports.

## MIB Objects

alaQoSConfigTable  
alaQoSConfigTrustedPorts

---

## qos forward log

Enables the QoS software in the switch to send events to the policy server software in the switch in real time. The policy server software may then be polled by an NMS application for logged events.

**qos forward log**

**qos no forward log**

---

### Syntax Definitions

N/A

### Defaults

By default, logged events are not sent to the policy server software in the switch.

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

An NMS application may query the Policy Manager in the switch for logged events. Use the **qos forward log** command to forward each event as it happens.

### Examples

```
-> qos forward log
```

### Release History

Release 5.1; command was introduced.

### Related Commands

<a href="#">qos log lines</a>	Configures the number of lines in the QoS log.
<a href="#">show qos log</a>	Displays the log of QoS events.

### MIB Objects

```
alaQoSConfigTable  
  alaQoSConfigForwardLog
```

---

## qos log console

Sends QoS log messages to the switch logging utility, which is an event logging application available on the OmniSwitch. The configuration of the switch logging utility determines if QoS messages are sent to a log file in the switch's flash file system, displayed on the switch console, or sent to a remote syslog server.

**qos log console**

**qos no log console**

---

### Syntax Definitions

N/A

### Defaults

QoS log messages are not sent to the switch logging utility by default.

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- To display QoS log events as they happen on an output console attached to the switch, configure the switch logging utility to output events to the console. This is done using the **swlog output** command.
- The entire log may be viewed at any time using the **show qos log** command.

### Examples

```
-> qos log console  
-> qos no log console
```

### Release History

Release 5.1; command was introduced.

### Related Commands

<a href="#">qos log lines</a>	Configures the number of lines in the QoS log.
<a href="#">swlog output</a>	Enables or disables switch logging output to the console, file, or data socket (remote session).
<a href="#">show qos log</a>	Displays the log of QoS events.

### MIB Objects

```
alaQoSConfigTable  
  alaQoSConfigLogConsole
```

---

## qos log lines

Configures the number of lines in the QoS log.

**qos log lines** *lines*

---

### Syntax Definitions

*lines* The number of lines included in the QoS log. A value of zero turns off logging to the console. The range is 0–10240.

### Defaults

parameter	default
<i>lines</i>	10240

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- To turn off logging, enter 0 for the number of log lines. (Note that error messages will still be logged.)
- If you change the number of log lines, you may clear all messages in the QoS log. To avoid clearing all messages in the log, enter the **qos log lines** command in the **boot.cfg** file. The log length will be changed at the next reboot.

### Examples

```
-> qos log lines 5
-> qos log lines 0
```

### Release History

Release 5.1; command was introduced.

### Related Commands

[show qos log](#) Displays the log of QoS events.

### MIB Objects

```
alaQoSConfigTable
  alaQoSConfigLogLines
```

---

## qos log level

Configures the level of log detail.

**qos log level** *level*

**qos no log level**

---

### Syntax Definitions

*level* The level of log detail, ranging from 1 (least detail) to 8 (most detail).

### Defaults

parameter	default
<i>level</i>	5

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- Use the **debug qos** command to change the type of debugging messages that are logged. The **qos log level** command configures the level of detail for these messages.
- If the **debug qos** command is not configured to log any kind of information (this is the default), the **qos log level** command has no effect.
- Note that a high log level value will impact the performance of the switch.

### Examples

```
-> qos log level 4  
-> qos log level 0
```

### Release History

Release 5.1; command was introduced.

### Related Commands

[qos log lines](#) Configures the number of lines in the QoS log.  
[show qos log](#) Displays the log of QoS events.

### MIB Objects

alaQoSConfigTable  
    alaQoSConfigLogLevel

---

## qos phones

Enables or disables the automatic prioritization of IP phone traffic.

**qos phones** [*priority priority\_value* | **trusted**]

**qos no phones**

---

### Syntax Definitions

<i>priority_value</i>	The priority given to scheduling traffic on the output port. Values range from 0 (lowest) to 7 (highest).
<b>trusted</b>	Trusts IP phone traffic; priority value of the IP phone packet is used.

### Defaults

parameter	default
<i>priority_value</i>   <b>trusted</b>	trusted

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- Use the **no** form of this command to disable automatic prioritization of IP phone traffic.
- IP phone traffic is identified by examining the source MAC address of the packet received on the port. If the source MAC falls within one of the following ranges, the QoS IP phone priority is automatically assigned to the MAC:

MAC Address Range	Description
00:80:9f:00:00:00—00:80:9f:ff:ff:ff	Enterprise IP Phones Range
78:81:02:00:00:00—78:81:02:ff:ff:ff	Communications IP Phones Range
00:13:fa:00:00:00—00:13:fa:ff:ff:ff	Lifesize IP Phones Range
48:7a:55:00:00:00—48:7a:55:ff:ff:ff	ALE 8008 IP Phone MAC Range

- To automatically apply the QoS IP phone priority to other, non-IP phone traffic, add the source MAC addresses of such traffic to the QoS “alaPhone” group.
- When automatic prioritization of IP phone traffic is enabled, QoS policies that specify priority are not applied to the IP phone traffic. Other QoS policies, however, are applied to this type of traffic as usual.

### Examples

```
-> qos phones priority 7
-> qos phones trusted
-> qos no phones
```



## Release History

Release 5.1; command was introduced.

## Related Commands

[show qos config](#)

Displays the QoS configuration for the switch.

## MIB Objects

alaQoSConfigTable

alaQoSConfigAutoPhones

---

## qos user-port

Configures the option to filter packets or administratively disable a port when the specified type of traffic is received on a port that is a member of the pre-defined UserPorts group.

**qos user-port** {**filter** | **shutdown**} {**spoof** | **bgp** | **bpdu** | **rip** | **ospf** | **vrrp** | **dvmrp** | **pim** | **isis** | **dhcp-server** | **dns-reply**}

**qos no user-port** {**filter** | **shutdown**}

---

### Syntax Definitions

<b>filter</b>	Filters the specified type of traffic when it is received on UserPort ports.
<b>shutdown</b>	Administratively disables UserPort ports that receive the specified type of traffic.
<b>spoof</b>	Detects IP spoofing. The source IP address of a packet ingressing on a user port is compared to the subnet of the VLAN for the user port; the packet is dropped if these two items do not match. Also applies to ARP packets.
<b>bgp</b>	Filters only BGP protocol packets from a TCP session that was not originated by the same switch that has this filter configured.
<b>bpdu</b>	Filters conventional Spanning Tree BPDU (destination MAC address 0x0180c2:000000) packets and GVRP (destination MAC address 0x0180c2:000021) packets.
<b>rip</b>	Filters RIP protocol packets.
<b>ospf</b>	Filters OSPF protocol packets.
<b>vrrp</b>	Filters VRRP protocol packets.
<b>dvmrp</b>	Filters IGMP packets with a type of 0x13. This applies only to IP packets with no options.
<b>pim</b>	Filters PIMv1, PIM-DM, and PIM-SM packets. The PIMv1 filter applies only to IP packets with no options.
<b>isis</b>	Filters IS-IS protocol packets.
<b>dhcp-server</b>	Filters response packets originating from a DHCP or BOOTP server that is configured on the known UDP port 67.
<b>dns-reply</b>	Filters all packets (both TCP and UDP) that originate from the known DNS port 53.

### Defaults

parameter	default
<b>filter</b>	spoof
<b>shutdown</b>	none

### Platforms Supported

OmniSwitch 2260, 2360

## Usage Guidelines

- Use the **no** form of this command to disable the filter or shutdown function. This form of the command effects the overall operation of the feature.
- To specify more than one traffic type in the same command line, enter each type separated by a space (e.g., **spoof bgp ospf**).
- The **filter** option is applied only to ingress traffic on ports that are members of the UserPorts group. However, the switch will still process the filtered packets to determine if an egress update is sent on the same port. For example, if RIP traffic is filtered, the switch will still send RIP peer updates on that port.
- Note that existing traffic types to filter or shutdown are removed each time the **filter** or **shutdown** option is configured. Specify all desired traffic types each time the **qos user-port** command is performed to retain previously configured traffic types.
- No changes to the **filtering** and **shutdown** options are applied to the switch until the **qos apply** command is performed.
- This command only applies to ports that are members of the UserPorts group. Use the **policy port group** command to create and assign members to the UserPorts group.
- An SNMP trap is sent when a port is administratively disabled through a UserPorts shutdown function or a port disable action.
- To enable a port disabled by a user port shutdown operation, use the **interfaces admin** command to administratively enable the port or disconnect and reconnect the port cable.
- Up to 126 IP interfaces are supported with spoof detection on user ports. If the number of interfaces exceeds this amount, user port packets ingressing on those interfaces that exceed the 126 limit are dropped.
- To enforce anti-spoofing, a VLAN must have an IP address associated with it. If there is no IP address associated with the VLAN, no packets will be dropped.

## Examples

```
-> qos user-port filter spoof bpdu
-> qos user-port shutdown spoof bgp ospf
-> qos no user-port shutdown
```

## Release History

Release 5.1; command introduced.

## Related Commands

**show qos config** Displays QoS configuration information.

**MIB Objects**

```
alaQoSConfigTable  
  alaQoSConfigUserportFilter  
  alaQoSConfigAppliedUserportFilter  
  alaQoSConfigUserportShutdown  
  alaQoSConfigAppliedUserportShutdown
```

---

## qos dei

Configures the global Drop Eligible Indicator (DEI) bit mapping and marking setting for all QoS ports. The DEI setting applies to packets marked yellow (non-conforming) as the result of Tri-Color Marking (TCM) or other rate limiting mechanisms.

```
qos dei {ingress | egress}
```

```
qos no dei {ingress | egress}
```

---

### Syntax Definitions

<b>ingress</b>	Maps the DEI/CFI bit to yellow (non-conforming) if this bit is set for ingress traffic.
<b>egress</b>	Marks the DEI/CFI bit for egress packets if the packets were marked yellow as a result of the rate limiting process.

### Defaults

By default, no DEI bit marking or mapping is done.

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- Use the **no** form of this command to disable the global DEI bit mapping (ingress) or marking (egress) configuration for the switch.
- Packets marked yellow by rate limiting are still transmitted when there is no congestion on the egress port queues. Setting the DEI bit for yellow egress packets (**qos dei egress**) ensures that an upstream switch is made aware that the packet was marked yellow.
- When a switch receives a yellow packet with the DEI bit set and ingress DEI bit mapping is enabled (**qos dei ingress**), the packet is mapped to an internal drop precedence or yellow color marking for the switch.

### Examples

```
-> qos dei ingress  
-> qos dei egress
```

```
-> qos no dei ingress  
-> qos no dei egress
```

## Release History

Release 5.1; command introduced.

## Related Commands

<a href="#">qos port</a>	Configures a physical port for QoS.
<a href="#">show qos config</a>	Displays global information about the QoS configuration.
<a href="#">show qos port</a>	Displays information about QoS ports.

## MIB Objects

```
alaQoSConfigTable  
  alaQoSConfigDEIMapping  
  alaQoSConfigDEIMarking
```

---

## debug qos

Configures the type of QoS events that will be displayed in the QoS log.

```
debug qos [info] [config] [rule] [main] [port] [msg] [sl] [ioctl] [mem] [mapper] [slot] [l2] [l3]
[classifier] [nat] [sem] [pm] [ingress] [egress]
```

```
debug no qos
```

```
debug no qos [info] [config] [rule] [main] [port] [msg] [sl] [ioctl] [mem] [mapper] [slot] [l2] [l3]
[classifier] [nat] [sem] [pm] [ingress] [egress]
```

---

### Syntax Definitions

<b>info</b>	Logs basic information about the switch.
<b>config</b>	Logs information about the global configuration.
<b>rule</b>	Logs events for rules configured on the switch.
<b>main</b>	Logs information about basic program interfaces.
<b>port</b>	Logs events related to QoS ports.
<b>msg</b>	Logs QoS messages.
<b>sl</b>	Logs information about source learning.
<b>mem</b>	Logs information about memory.
<b>mapper</b>	Logs information about mapping queues.
<b>slot</b>	Logs events related to slots.
<b>l2</b>	Logs Layer 2 QoS events on the switch.
<b>l3</b>	Logs Layer 3 QoS events on the switch.
<b>classifier</b>	Logs information whenever the switch classifies a flow; more details are provided if the log level is higher.
<b>nat</b>	<i>Not supported in this release.</i>
<b>sem</b>	Logs information about semaphore, process locking.
<b>pm</b>	Logs events related to the Policy Manager.
<b>ingress</b>	Logs information about packets arriving on the switch.
<b>egress</b>	Logs information about packets leaving the switch.

### Defaults

By default basic information messages are logged (**info**). Error messages are always logged.

### Platforms Supported

Not supported in this release.

### Usage Guidelines

- Use the **no** form of this command to change the type of messages that will be logged or to return debugging to its default state.

- Use this command to troubleshoot QoS events on the switch.

## Examples

```
-> debug qos flows queue
-> qos debug no flows no queue
-> debug no qos
```

## Release History

Release 5.1; command not supported.

## Related Commands

<a href="#">qos forward log</a>	Enables the switch to send events to the PolicyView application in real time.
<a href="#">qos log lines</a>	Configures the number of lines in the QoS log.
<a href="#">qos log level</a>	Configures the level of log detail.
<a href="#">show qos log</a>	Displays the log of QoS events.

## MIB Objects

```
alaQoSConfigTable
  alaQoSConfigDebug
```

---



## debug qos internal

Displays debugging information for QoS internal to the switch.

**debug qos internal** [*slice slot/slice*] [**flow**] [**queue**] [**port**] [**l2tree**] [**l3tree**] [**vector**] [**pending**] [**verbose**] [**mapper**] [**pool**] [**log**] [**pingonly** | **nopingonly**]

---

### Syntax Definitions

<i>slot/slice</i>	The slot number and slice to view debugging information. A <i>slice</i> is a logical section of hardware that corresponds to particular ports on a network interface module.
<b>flow</b>	Displays information about QoS flows.
<b>queue</b>	Displays information about QoS queues.
<b>port</b>	Displays information about QoS ports.
<b>l2tree</b>	Displays information about Layer 2 flows.
<b>l3tree</b>	Displays information about Layer 3 flows.
<b>vector</b>	Displays information about vectors.
<b>pending</b>	Displays information about pending QoS objects.
<b>verbose</b>	Sets the output to verbose mode for more detailed information.
<b>mapper</b>	Displays information about QoS mapping flows to queues.
<b>pool</b>	Displays information about the buffer pool.
<b>log</b>	Displays information about QoS information that is logged.
<b>pingonly</b>	Specifies that any policies configured with an ICMP protocol condition apply only to ICMP echo-requests and echo-replies.
<b>nopingonly</b>	Configures the switch so that any policies configured with an ICMP protocol condition apply to any ICMP packets.

### Defaults

Debugging is disabled by default.

parameter	default
<b>pingonly</b>   <b>nopingonly</b>	<b>nopingonly</b>

### Platforms Supported

Not supported in this release.

### Usage Guidelines

- Use the **debug qos** command to configure the type of QoS events that will be displayed in the QoS log.
- Use the **qos log level** command to set the level of log detail in the QoS log.

## Examples

```
-> debug qos internal "verbose log"
```

## Release History

Release 5.1; command not supported.

## Related Commands

[debug qos](#)

Configures the type of QoS events that will be displayed in the QoS log.

[qos log level](#)

Configures the level of log detail.

## MIB Objects

N/A

---

## clear qos log

Clears messages in the current QoS log.

```
clear qos log
```

---

### Syntax Definitions

N/A

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

This command is useful for clearing messages from a large log file so that the file is easier to view. Logs can get large if invalid rules are configured on the switch, or if a lot of QoS events have taken place. Clearing the log makes the file easier to manage.

### Examples

```
-> clear qos log
```

### Release History

Release 5.1; command was introduced.

### Related Commands

<a href="#">qos log lines</a>	Configures the number of lines in the QoS log.
<a href="#">show qos log</a>	Displays the log of QoS events.

### MIB Objects

```
alaQoSConfigTable  
  alaQoSConfigClearLog
```

---

## qos apply

Applies configured global QoS and policy settings to the current configuration (changes will be active and stored in flash).

**qos apply**

---

### Syntax Definitions

N/A

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- This command is required to activate all QoS and policy commands. This is the only command that causes current changes to be written to flash.
- Rules are configured through the **policy rule** command, but are not active on the switch until you enter **qos apply**.

### Examples

```
-> qos apply
```

### Release History

Release 5.1; command was introduced.

### Related Commands

<a href="#">qos revert</a>	Removes any policies configured through policy rule but not applied to the current configuration through the <b>qos apply</b> command.
<a href="#">qos reset</a>	Resets the QoS configuration to its default values.
<a href="#">qos flush</a>	Deletes all pending policy information.

### MIB Objects

alaQoSConfigTable  
alaQoSConfigApply

---

## qos revert

Deletes any QoS configuration that has not been applied to the configuration through the **qos apply** command.

**qos revert**

---

### Syntax Definitions

N/A

### Defaults

N/A

### Platforms Supported

Not supported in this release.

### Usage Guidelines

Use this command to remove currently configured policies that have not yet been activated through the **qos apply** command.

### Examples

```
-> qos revert
```

### Release History

Release 5.1; command not supported.

### Related Commands

<a href="#">qos apply</a>	Applies all QoS settings configured on the switch to the current configuration.
<a href="#">qos reset</a>	Resets the QoS configuration to its defaults.

### MIB Objects

```
alaQoSConfigTable  
  alaQoSConfigRevert
```

---

## qos flush

Deletes all pending policy information.

**qos flush**

---

### Syntax Definitions

N/A

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- If you enter this command, the pending policy configuration is completely erased. If you then enter **qos apply**, the erased configuration *overwrites the applied policies and you will erase all of your policy configuration*.

---

**Note.** Do not use this command unless you want to erase all of your policy configuration and start configuring new policies.

---

### Examples

```
-> qos flush
```

### Release History

Release 5.1; command was introduced.

### Related Commands

<a href="#">qos revert</a>	Deletes any QoS configuration that has not been applied to the configuration through the <b>qos apply</b> command.
<a href="#">qos apply</a>	Applies configured global QoS and policy settings to the current configuration (changes will be active and stored in flash).
<a href="#">policy server flush</a>	Removes all cached LDAP policy data from the switch.

### MIB Objects

```
alaQoSConfigTable  
  alaQoSConfigFlush
```

---

## qos reset

Resets the QoS configuration to its defaults.

**qos reset**

---

### Syntax Definitions

N/A

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

Use this command to reset QoS configuration that has not yet been applied through the **qos apply** command. The parameters are reset to their defaults.

### Examples

```
-> qos reset
```

### Release History

Release 5.1; command was introduced.

### Related Commands

#### **qos apply**

Applies all QoS settings configured on the switch to the current configuration.

#### **qos revert**

Deletes any QoS configuration that has not been applied to the configuration through the **qos apply** command.

### MIB Objects

alaQoSConfigTable

alaQoSConfigReset

---

## qos stats reset

Resets QoS statistic counters to zero.

**qos stats reset**

---

### Syntax Definitions

N/A

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

Use this command to reset global QoS statistics to zero. Statistics may be displayed with the **show qos statistics** command.

### Examples

```
-> qos stats reset
```

### Release History

Release 5.1; command was introduced.

### Related Commands

[show qos statistics](#) Displays statistics about the QoS configuration.

### MIB Objects

```
alaQoSConfigTable  
  alaQoSConfigStatsReset
```

---



## qos port reset

Resets all QoS port configuration to the default values.

```
qos port chassis/slot/port[-port2] reset
```

---

### Syntax Definitions

<i>chassis</i>	The chassis identifier.
<i>slot/port[-port2]</i>	A physical slot and port number. Use a hyphen to specify a range of ports (1/5-10).

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

The QoS port configuration parameters that are reset include:

parameter	default
default queues	8
trusted	not trusted

### Examples

```
-> qos port 3/1 reset
```

### Release History

Release 5.1; command was introduced.

### Related Commands

[show qos port](#) Displays information about QoS ports.

### MIB Objects

```
alaQoSPortTable  
  alaQoSPortSlot  
  alaQoSPortPort  
  alaQoSPortReset
```

---

## qos port

Configures QoS parameters for a physical port. This section describes the base command with a single required option (*slot/port*).

In lieu of these options, the base command (**qos port**) may be used with other keywords to set up a QoS configuration on a per port basis. These keywords are listed here and described as separate commands later in this chapter. In addition, some keywords have a **no** form to remove the parameter or return it to its default.

```
qos port chassis/slot/port[-port2]  
    [trusted]  
    [default 802.1p value]  
    [default dscp value]  
    [default classification {802.1p | tos | dscp}]
```

---

### Syntax Definitions

<i>chassis</i>	The chassis identifier.
<i>slot/port</i> [- <i>port2</i> ]	A physical slot and port number. Use a hyphen to specify a range of ports (1/5-10).

### Defaults

- All ports are untrusted.
- By default, QoS ports do not preempt queues of lower priority.

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

Use the **trusted** option to change the trust mode for the port.

### Examples

```
-> qos port 3/1 trusted  
-> qos port 4/2 no trusted
```

### Release History

Release 5.1; command was introduced.

## Related Commands

<b>qos apply</b>	Applies configured QoS and policy settings to the current configuration.
<b>qos port trusted</b>	Configures whether the default mode for QoS ports is trusted or untrusted.
<b>show qos port</b>	Displays information about QoS ports.

## MIB Objects

```
alaQoSPortTable
  alaQoSPortSlot
  alaQoSPortPort
  alaQoSPortTrusted
  alaQoSPortMaximumBandwidth
  alaQoSPortMaximumBandwidthStatus
  alaQoSPortMaximumIngBandwidth
  alaQoSPortMaximumIngBandwidthStatus
  alaQoSPortMaximumDefaultDepth
  alaQoSPortMaximumDefaultDepthStatus
  alaQoSPortDefault8021p
  alaQoSPortDefaultDSCPalaQoSPortDefaultClassification
```

---

## qos port trusted

Configures whether an individual port is trusted or untrusted. Trusted ports can accept the 802.1p and ToS/DSCP values in incoming packets; untrusted ports will set any 802.1p or ToS/DSCP values to zero in incoming packets, unless a default 802.1p or ToS/DSCP value is configured.

**qos port chassis/slot/port[-port2] trusted**

**qos port chassis/slot/port no trusted**

---

### Syntax Definitions

<i>chassis</i>	The chassis identifier.
<i>slot/port[-port2]</i>	A physical slot and port number. Use a hyphen to specify a range of ports (1/5-10).

### Defaults

By default, all ports are untrusted.

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- Use the [qos trust-ports](#) command to set the default trust mode for all QoS ports. The **qos port trusted** command may be used to override the default.
- The setting applies only to ports with incoming traffic.
- Use the [qos port default 802.1p](#) or [qos port default dscp](#) commands to specify that a value other than zero should be applied to the incoming packets. Note that this value is overridden if a policy exists that specifies a different 802.1p or ToS/DSCP value for such packets.

### Examples

```
-> qos port 3/1 trusted
-> qos port 4/2 no trusted
```

### Release History

Release 5.1; command was introduced.

**Related Commands****qos apply**

Applies configured QoS and policy settings to the current configuration.

**qos port**

Configures a physical port for QoS.

**qos trust-ports**

Configures the global trust mode for QoS ports.

**show qos port**

Displays information about QoS ports.

**MIB Objects**

alaQoSPortTable

    alaQoSPortTrusted

---

## qos port default 802.1p

Configures the 802.1p value to be inserted in flows ingressing on an untrusted port.

**qos port** *chassis/slot/port[-port2]* **default 802.1p** *value*

---

### Syntax Definitions

<i>chassis</i>	The chassis identifier.
<i>slot/port[-port2]</i>	A physical slot and port number. Use a hyphen to specify a range of ports (1/5-10).
<i>value</i>	The priority value to be set. Values range from 0 (lowest priority) to 7 (highest priority).

### Defaults

---

parameter	default
<i>value</i>	0

---

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- By default untrusted ports will set the 802.1p bit to zero on incoming flows. Use this command to specify that a different 802.1p value should be applied to the flow.
- The default 802.1p value is not used if there is a matching QoS policy rule that sets the priority.
- Note that the 802.1p bit for tagged packets received on untrusted ports is set with the default 802.1p value, which is configured using the **qos port default 802.1p** command. If the packet is untagged, however, then the DSCP bit is set with the default DSCP value, which is configured using the **qos port default dscp** command.

### Examples

```
-> qos port 3/1 default 802.1p 5
-> qos port 4/1-8 default 802.1p 7
```

### Release History

Release 5.1; command was introduced.

**Related Commands****qos apply**

Applies configured QoS and policy settings to the current configuration.

**qos port**

Configures a physical port for QoS.

**show qos port**

Displays information about QoS ports.

**MIB Objects**

alaQoSPortTable

alaQoSPortDefault8021p

---

## qos port default dscp

Configures the ToS/DSCP value to be inserted in flows ingressing on an untrusted port.

**qos port** *chassis/slot/port[-port2]* **default dscp** *value*

---

### Syntax Definitions

<i>chassis</i>	The chassis identifier.
<i>slot/port[-port2]</i>	A physical slot and port number. Use a hyphen to specify a range of ports (1/5-10).
<i>value</i>	The ToS/DSCP value. The range is 0–63.

### Defaults

---

<b>parameter</b>	<b>default</b>
<i>value</i>	0

---

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- The value configured by this command sets the upper byte (precedence) and therefore configures the ToS/DSCP value for the port.
- The default DSCP value is not used if there is a matching QoS policy rule that sets the priority.
- Note that on the 802.1p bit for tagged packets received on untrusted ports is set with the default 802.1p value, which is configured using the **qos port default 802.1p** command. If the packet is untagged, however, then the DSCP bit is set with the default DSCP value, which is configured using the **qos port default dscp** command.

### Examples

```
-> qos port 3/1 default dscp 63
-> qos port 4/1-8 default dscp 33
```

### Release History

Release 5.1; command was introduced.



**Related Commands**

<a href="#">qos apply</a>	Applies configured QoS and policy settings to the current configuration.
<a href="#">qos port</a>	Configures a physical port for QoS.
<a href="#">show qos port</a>	Displays information about QoS ports.

**MIB Objects**

```
alaQoSPortTable  
  alaQoSPortDefaultDSCP
```

---

## qos port default classification

Specifies the default egress priority value to use for IP traffic ingressing on trusted ports.

**qos port *chassis/slot/port[-port2]* default classification {tos | 802.1p | dscp}**

---

### Syntax Definitions

<i>chassis</i>	The chassis identifier.
<i>slot/port[-port2]</i>	A physical slot and port number. Use a hyphen to specify a range of ports (1/5-10).
<b>tos</b>	Specifies that the ToS value of the flow will be used to prioritize flows coming in on the port.
<b>802.1p</b>	Specifies that the 802.1p value of the flow will be used to prioritize flows coming in on the port.
<b>dscp</b>	Specifies that the DSCP value of the flow will be used to prioritize flows coming in on the port.

### Defaults

parameter	default
<b>tos   802.1p   dscp</b>	dscp

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- The egress priority assigned to an IP packet received on a trusted port is based on the DSCP value of the packet unless 802.1p is specified using this command.
- The default classification priority is not used if there is a matching QoS policy rule that sets the egress priority value.
- This command does not affect Layer 2 traffic, which is always classified with 802.1p.
- In some network situations, some IP traffic may be dropped before any QoS rules can take effect for the traffic.

### Examples

```
-> qos port 8/24 default classification dscp
-> qos port 4/1-8 default classification dscp
-> qos port 7/1 default classification 802.1p
-> qos port 5/1-8 default classification 802.1p
```

### Release History

Release 5.1; command was introduced.

**Related Commands**

<b>qos apply</b>	Applies configured QoS and policy settings to the current configuration.
<b>qos port</b>	Configures a physical port for QoS.
<b>show qos port</b>	Displays information about QoS ports.

**MIB Objects**

alaQoSPortTable  
alaQoSPortDefaultClassification

---

## qos port dei

Configures the Drop Eligible Indicator (DEI) bit mapping and marking setting for the specified QoS port. The DEI setting applies to packets marked yellow (non-conforming) as the result of Tri-Color Marking (TCM) or other rate limiting mechanisms.

```
qos port chassis/slot/port dei {ingress | egress}
```

```
qos port chassis/slot/port no dei {ingress | egress}
```

---

### Syntax Definitions

<i>chassis</i>	The chassis identifier.
<i>slot/port[-port2]</i>	The slot and port number (1/5).
<b>ingress</b>	Maps the DEI/CFI bit to yellow (non-conforming) if this bit is set for ingress traffic.
<b>egress</b>	Marks the DEI/CFI bit for egress packets if the packets were marked yellow as a result of the rate limiting process.

### Defaults

By default, no DEI/CFI bit mapping or marking is done.

### Platforms Supported

Not supported in this release.

### Usage Guidelines

- Use the **no** form of this command to disable the DEI bit mapping (ingress) or marking (egress) configuration for the specified port
- Use the **qos dei** command to set the global DEI bit mapping and marking configuration for all QoS switch ports. Note that the port-level setting takes precedence over the global DEI setting.
- Packets marked yellow by rate limiting are still transmitted when there is no congestion on the egress port queues. Setting the DEI bit for yellow egress packets (**qos port dei egress**) ensures that an upstream switch is made aware that the packet was marked yellow.
- When a switch receives a yellow packet with the DEI bit set and ingress DEI bit mapping is enabled (**qos port dei ingress**), the packet is mapped to an internal drop precedence or yellow color marking for the switch.

### Examples

```
-> qos port 1/10 dei ingress
-> qos port 1/20 dei egress
-> qos port 1/10 no dei ingress
-> qos port 1/20 no dei egress
```

## Release History

Release 5.1; command not supported.

## Related Commands

[qos port](#)

Configures a physical port for QoS.

[qos dei](#)

Configures the global Drop Eligible Indicator (DEI) bit mapping and marking setting for all QoS ports.

[show qos config](#)

Displays global information about the QoS configuration.

[show qos port](#)

Displays information about QoS ports.

## MIB Objects

alaQoSPortTable

  alaQoSPortDEIMapping

  alaQoSPortDEIMarking

---

## qos qsi qsp

Configures the QSet profile (QSP) association for the specified QSet instance (QSI). A QSI is a set of eight queues that is automatically associated with each port, link aggregate, and virtual fabric link (VFL).

```
qos qsi {port chassis/slot/port[-port2] | linkagg agg_id[-agg_id2] | vf-link vfl_id} qsp {qsp_id | qsp_name}
```

---

### Syntax Definitions

<i>chassis</i>	The chassis identifier.
<i>slot/port[-port2]</i>	The slot and port number to associate with the QSet. Use a hyphen to specify a range of ports (3/1-10).
<i>agg_id[-agg_id2]</i>	The link aggregate ID to associate with the QSet. Use a hyphen to specify a range of IDs (10-20).
<i>vfl_id</i>	<i>This parameter option is not supported.</i>
<i>qsp_id</i>	An existing QSet profile (QSP) ID number to assign to this instance.
<i>qsp_name</i>	An existing QSet profile name (for example, qsp-1) to assign to this instance.

### Defaults

By default, QSP 1 is assigned to each QSet instance.

### Platforms Supported

Not supported in this release.

### Usage Guidelines

- There is only one QSI for each port, link aggregate, and VFL and only one QSP associated with each QSI.
- A QSI hierarchy exists consisting of parent/child relationships. For example, all member ports of a link aggregate will import the QSI/QSP settings of the parent link aggregate. When a member port moves out of the link aggregate, the QSI/QSP settings for that port are reset to the default settings.
- The number of children supported for a LAG ID is 8.

### Examples

```
-> qos qsi port 1/2 qsp 2
-> qos qsi port 2/1-10 qsp 3
-> qos qsi slot 3 qsp 4
-> qos qsi linkagg 10 qsp 2
```

### Release History

Release 5.1; command not supported.

## Related Commands

<code>qos qsi stats</code>	Configures statistics collection for the QSet instance.
<code>show qos qsi</code>	Displays the QSet instance configuration.
<code>show qos qsp</code>	Displays the QSet profile attributes.

## MIB Objects

```
alcatelIND1VfcMIB  
alaVfcQsetInstanceTable  
  alaVfcQsetId  
  alaVfcQsetQSPId  
  alaVfcQsetQSPName
```

---

## qos qsi stats

Configures the administrative status and interval for statistics collection for the specified QSet instance (QSI). A QSI is a set of eight queues that is automatically associated with each port and link aggregate (LAG) ID.

```
qos qsi {port chassis/slot/port[-port2] | linkagg agg_id[-agg_id2]} stats {admin-state {enable | disable} | interval interval_time}}
```

---

### Syntax Definitions

<i>chassis</i>	The chassis identifier.
<i>slot/port[-port2]</i>	The slot and port number to associate with the QSet. Use a hyphen to specify a range of ports (3/1-10).
<i>agg_id[-agg_id2]</i>	The link aggregate ID to associate with the QSet. Use a hyphen to specify a range of IDs (10-20).
<b>enable</b>	Enables statistics collection for the instance.
<b>disable</b>	Disables statistics collection for the instance.
<i>interval_time</i>	The time interval for statistics gathering. The valid range is 10–300 seconds.

### Defaults

By default, statistics collection is disabled and the time interval is set to 10 seconds.

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- There is only one QSI per port or LAG ID and only one QSet profile (QSP) or DCB profile (DCP) associated with the QSI.
- Changing the statistics collection status for a QSI only changes the status for the port or link aggregate to which the QSI is associated.

### Examples

```
-> qos qsi port 1/2 stats admin-state enable
-> qos qsi port 1/2 stats interval 30
-> qos qsi port 2/1-10 stats admin-state enable
-> qos qsi linkagg 10 stats admin-state enable interval 120
```

### Release History

Release 5.1; command introduced.



## Related Commands

<a href="#">qos qsi qsp</a>	Configures the QSet profile association for the QSet instance.
<a href="#">show qos qsi</a>	Displays the QSet instance configuration.
<a href="#">show qos qsi stats</a>	Displays statistics for one or more QSet instances.

## MIB Objects

```
alcatelIND1VfcMIB  
alaVfcQsetInstanceTable  
  alaVfcQsetQSPID  
  alaVfcQsetQSPName  
  alaVfcQsetStatsAdmin  
  alaVfcQsetStatsInterval
```

---

## show qos port

Displays information about all QoS ports or a particular port.

**show qos port** [*chassis/slot/port*]

---

### Syntax Definitions

*chassis*                                      The chassis identifier.  
*slot/port[-port2]*                         The slot and port number (3/1).

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- Information for all ports is displayed unless a particular port is specified.
- Use the **qos port** command to configure port parameters.
- For ports that are trusted (**Yes** displays in the Trust field), the Trust field includes one of the following characters:

character	definition
+	Indicates that the port is manually configured as trusted through the <b>qos port trusted</b> command; the port setting takes precedence over the global trust setting configured through the <b>qos trust-ports</b> command.
*	Indicates that the port is automatically trusted regardless of the global setting set through the <b>qos trust-ports</b> command. (Applies to mobile ports and ports configured for 802.1Q.)

### Examples

```
-> show qos port
Slot/      Default   Default   Bandwidth   DEI
Port  Active Trust P/DSCP Classification  Physical Ingress Egress  Map/Mark  Type
-----+-----+-----+-----+-----+-----+-----+-----+-----+-----
1/1     No     No  0/ 0          DSCP          0K          -     -     No / No  ethernet
1/2     Yes    No  0/ 0          DSCP          1G          -     -     No / No  ethernet-1G
1/3     No     No  0/ 0          DSCP          0K          -     -     No / No  ethernet
1/4     No     No  0/ 0          DSCP          0K          -     -     No / No  ethernet
1/5     No     No  0/ 0          DSCP          0K          -     -     No / No  ethernet
1/6     No     No  0/ 0          DSCP          0K          -     -     No / No  ethernet
1/7     No     No  0/ 0          DSCP          0K          -     -     No / No  ethernet
1/8     No     No  0/ 0          DSCP          0K          -     -     No / No  ethernet
1/9     No     No  0/ 0          DSCP          0K          -     -     No / No  ethernet
1/10    No     No  0/ 0          DSCP          0K          -     -     No / No  ethernet
1/11    No     *Yes 0/ 0          *802.1P       0K          -     -     No / No  ethernet
1/12    No     *Yes 0/ 0          *802.1P       0K          -     -     No / No  ethernet
```

```

-> show qos port 1/2
Slot/           Default      Default      Bandwidth      DEI
Port  Active Trust P/DSCP Classification Physical Ingress Egress  Map/Mark      Type
-----+-----+-----+-----+-----+-----+-----+-----+-----+-----
1/2   Yes   No  0/ 0           DSCP           1G           -       -   No / No   ethernet-1G

```

### output definitions

<b>Slot/Port</b>	The slot and physical port number.
<b>Active</b>	Whether or not the port is sending/receiving QoS traffic.
<b>Trust</b>	Whether the port is trusted or not trusted. Configured through the <b>qos port trusted</b> command.
<b>Default P</b>	The default 802.1p setting for the port. Configured through the <b>qos port default 802.1p</b> command.
<b>Default DSCP</b>	The default ToS/DSCP setting for the port. Configured through the <b>qos port default dscp</b> command.
<b>Default Classification</b>	The default classification setting for the port ( <b>802.1p</b> , <b>ToS</b> , or <b>DSCP</b> ). Configured through the <b>qos port default classification</b> command.
<b>Physical Bandwidth</b>	The amount of physical bandwidth available on the port.
<b>Ingress Bandwidth</b>	<i>Not supported in this release.</i>
<b>Egress Bandwidth</b>	<i>Not supported in this release.</i>
<b>DEI Map/Mark</b>	The Drop Eligible Indicator (DEI) bit mapping and marking setting for the port. Configured through the <b>qos dei</b> command.
<b>Type</b>	The interface type, <b>ethernet</b> or <b>wan</b> .

### Release History

Release 5.1; command was introduced.

### Related Commands

**qos port** Configures a physical port for QoS.

### MIB Objects

```

alcatelIND1VfcMIB
alaQoSPortTable
  alaQoSPortSlot
  alaQoSPortPort
  alaQoSPortEnabled
  alaQoSPortDefault8021p
  alaQoSPortDefaultDSCP
  alaQoSPortMaximumDefaultBandwidth
  alaQoSPortDefaultClassification

```

## show qos log

Displays the log of QoS events.

**show qos log**

---

### Syntax Definitions

N/A

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

Use this command to display the current QoS log. To clear the log, use the **clear qos log** command.

### Examples

```
-> show qos log
**QOS Log**
Insert rule 0
Rule index at 0
Insert rule 1
Rule index at 1
Insert rule 2
Rule index at 2
Enable rule r1 (1) 1,1
Enable rule r2 (0) 1,1
Enable rule yuba1 (2) 1,1
Verify rule r1(1)
Enable rule r1 (1) 1,1
Really enable r1
Update condition c1 for rule 1 (1)
Verify rule r2(1)
Enable rule r2 (0) 1,1
Really enable r2
Update condition c2 for rule 0 (1)
Verify rule yuba1(1)
Enable rule yuba1 (2) 1,1
Really enable yuba1
Update condition yubamac for rule 2 (1)
QoS Manager started TUE MAR 10 13:46:50 2002

Match rule 2 to 1
Match rule 2 to 2
Match rule 2 to 3
```

## Release History

Release 5.1; command was introduced.

## Related Commands

[clear qos log](#)

Clears messages in the current QoS log.

[qos log lines](#)

Configures the number of lines in the QoS log.

## MIB Objects

N/A

---

## show qos config

Displays global information about the QoS configuration.

**show qos config**

---

### Syntax Definitions

N/A

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

Use this command to view the current global configuration for QoS. Use the **show qos statistics** command to view statistics about the QoS software in the switch.

### Examples

```
-> show qos config
QoS Configuration
Admin                = enable,
Trust ports          = no,
Log lines             = 10240,
Log level             = 5,
Log console           = no,
Forward log           = no,
User-port filter      = spoof,
User-port shutdown    = none,
Phones                = trusted,
DEI Mapping           = Disabled,
DEI Marking           = Disabled,
```

### *output definitions*

---

<b>Admin</b>	Whether or not QoS is enabled or disabled. Configured through the <b>qos</b> command.
<b>Trust Ports</b>	The default trusted mode for switch ports. Configured through the <b>qos trust-ports</b> command.
<b>Log lines</b>	The number of lines included in the QoS log. Configured through the <b>qos log lines</b> command.
<b>Log level</b>	The level of log detail. Configured through the <b>qos log level</b> command.
<b>Log console</b>	Whether or not log messages are sent to the console. Configured through the <b>qos log console</b> command.

*output definitions (continued)*


---

<b>Forward log</b>	Whether or not logged events are sent to the policy server software in the switch in real time. Configured through the <b>qos forward log</b> command.
<b>User-port filter</b>	The type of traffic that is filtered on ports that are members of the UserPorts group. Configured through the <b>qos user-port</b> command.
<b>User-port shutdown</b>	The type of traffic that will trigger an administrative shutdown of the port if the port is a member of the UserPorts group. Configured through the <b>qos user-port</b> command.
<b>Phones</b>	Whether or not IP Phone traffic is automatically trusted or assigned a priority value. Configured through the <b>qos phones</b> command.
<b>DEI Mapping</b>	The status (enabled or disabled) of Drop Eligible Indicator (DEI) bit mapping for ingress traffic. Configured through the <b>qos dei</b> command.
<b>DEI Marking</b>	The status (enabled or disabled) of DEI bit marking for egress traffic. Configured through the <b>qos dei</b> command.

---

**Release History**

Release 5.1; command was introduced.

**Related Commands**

<b>qos</b>	Enables or disables QoS. This base command may be used with keyword options to configure QoS globally on the switch.
<b>show qos statistics</b>	Displays statistics about the QoS configuration.

**MIB Objects**

```

alaQoSConfigTable
  alaQoSConfigEnable
  alaQoSConfigSwitchGroup
  alaQoSConfigTrustPorts
  alaQoSConfigAutoPhones
  alaQoSConfigLogLines
  alaQoSConfigLogLevel
  alaQoSConfigLogConsole
  alaQoSConfigStatsInterval
  alaQoSConfigUserportFilter
  alaQoSConfigUserportShutdown
  alaQoSConfigDebug
  alaQoSConfigDEIMapping
  alaQoSConfigDEIMarking

```

---

## show qos statistics

Displays statistics about the QoS configuration.

**show qos statistics**

---

### Syntax Definitions

N/A

### Defaults

N/A

### Platforms Supported

Not supported in this release.

### Usage Guidelines

This command displays statistics about the global QoS configuration. Use the **show qos config** command to display information about configurable global parameters.

### Examples

```
-> show qos statistics
QoS stats
```

		Events	Matches	Drops
L2	:	0	0	0
L3 Inbound	:	0	0	0
L3 Outbound	:	0	0	0
IGMP Join	:	0	0	0
Fragments	:	0		
Bad Fragments	:	0		
Unknown Fragments	:	0		
Sent NI messages	:	0		
Received NI messages	:	85		
Failed NI messages	:	4		
Max PTree nodes	:	0		
Max PTree depth	:	0		
Spoofed Events	:	0		
NonSpoofed Events	:	0		

Software resources

Table	Applied				Pending				Max
	CLI	LDAP	Blt	Total	CLI	LDAP	Blt	Total	
rules	0	0	0	0	0	0	0	0	8192
actions	0	0	0	0	0	0	0	0	8192
conditions	0	0	0	0	0	0	0	0	8192
services	0	0	0	0	0	0	0	0	256
service groups	0	0	0	0	0	0	0	0	1024
network groups	0	0	1	1	0	0	1	1	1024
port groups	1	0	0	1	1	0	0	1	1024
mac groups	0	0	0	0	0	0	0	0	1024
map groups	0	0	0	0	0	0	0	0	1024



```
validity periods      0      0      0      0      0      0      0      0      64
```

```
Hardware resources
  Slot Slice Unit    Used TCAM      Max      Used  Free  Max
  0/ 1      0      0      1  1023  1024      0   32   32
```

### *output definitions*

---

<b>Events</b>	The number of Layer 2 or Layer 3 flows transmitted on the switch.
<b>Matches</b>	The number of Layer 2 or Layer 3 flows that match policies.
<b>Drops</b>	The number of Layer 2 or Layer 3 flows that were dropped.
<b>L2</b>	The number of Layer 2 events, matches, and drops.
<b>L3 Ingress</b>	The number of Layer 3 ingress events, matches, and drops.
<b>L3 Egress</b>	The number of Layer 3 egress events, matches, and drops.
<b>IGMP join</b>	The number of multicast events, matches, and drops.
<b>Fragments</b>	The number of fragments dropped.
<b>Bad Fragments</b>	The number of fragments received with an offset of 1.
<b>Unknown Fragments</b>	The number of out-of-order fragments received.
<b>Sent NI messages</b>	The number of messages sent to network interfaces.
<b>Received NI messages</b>	The number of messages received by network interfaces.
<b>Failed NI messages</b>	The number of failed message attempts to network interfaces.
<b>Load balanced flows</b>	The number of Server Load Balance flow entries.
<b>Reflexive flows</b>	The number of reflexive flows.
<b>Reflexive correction</b>	The number of reflexive flow corrections.
<b>Flow lookups</b>	The number of flow table lookups.
<b>Flow hits</b>	The number of flow table lookup hits.
<b>Max PTree nodes</b>	The highest number of nodes in the classifier tree.
<b>Max Ptree depth</b>	The length of the longest path in the classifier tree.
<b>Spoofed Events</b>	The number of spoofed events.
<b>Nonspoofed Events</b>	The number of non-spoofed events.
<b>DropServices</b>	The number of TCP/UDP flows dropped.

---

### **Release History**

Release 5.1; command not supported.

### **Related Commands**

[qos stats reset](#) Resets QoS statistic counters to zero.

**MIB Objects**

alaQoSStats

- alaQoSStatsL2Events
- alaQoSStatsL2matches
- alaQoSStatsL2Drops
- alaQoSStatsL3IngressEvents
- alaQoSStatsL3IngressMatches
- alaQoSStatsL3IngressDrops
- alaQoSStatsL3EgressEvents
- alaQoSStatsL3EgressMatches
- alaQoSStatsL3EgressDrops
- alaQoSStatsFragments
- alaQoSStatsBadFragments
- alaQoSStatsUnknownFragments
- alaQoSStatsSpoofedEvents
- alaQoSStatsNonspoofedEvents

---

## show qos qsp

Displays the QSet profile (QSP) configuration for the switch.

```
show qos qsp [qsp_id | qsp_name] [brief | detail [port chassis/slot/port[-port2]] | linkagg agg_id[-agg_id2]]
```

---

### Syntax Definitions

<i>qsp_name</i>	The name of a QSP profile.
<b>brief</b>	Displays a summary of the QSP configuration.
<b>detail</b>	Displays QSP configuration details for a specific profile, port, slot, or link aggregate.
<i>chassis</i>	The chassis identifier.
<i>slot/port</i> [- <i>port2</i> ]	A physical slot and port number. Use a hyphen to specify a range of ports (1/5-10).
<i>agg_id</i> [- <i>agg_id2</i> ]	The link aggregate ID. Use a hyphen to specify a range of IDs (10-15).

### Defaults

By default, displays the configuration for all of the QSet profiles.

### Platforms Supported

Not supported in this release.

### Usage Guidelines

- Use the *qsp\_id* or the *qsp\_name* parameter to display information for a specific profile.
- Use the **detail** parameter in combination with the **port** *slot/port* and **linkagg** *agg\_id* parameters to display profile information associated with specific ports or link aggregates.

## Examples

```

-> show qos qsp 1
QSP 1 (qsp-1)
  #Ports: 107, #Queues: 8, BW (%): 100,
  WRP: 1, Name: wrp-1
  Scheduler: Qspec, Type: Sta,
  Template: 1, Name: qsp-1
  QP 1
    Qtype: SP7,
    WRP: 1, Name: wrp-1
    CIR (%): 0, PIR (%): 100,
    WFQ-Mode: WERR, WFQ-Weight: 1
  QP 2
    Qtype: SP6,
    WRP: 1, Name: wrp-1
    CIR (%): 0, PIR (%): 100,
    WFQ-Mode: WERR, WFQ-Weight: 1
  QP 3
    Qtype: SP5,
    WRP: 1, Name: wrp-1
    CIR (%): 0, PIR (%): 100,
    WFQ-Mode: WERR, WFQ-Weight: 1
  QP 4
    Qtype: SP4,
    WRP: 1, Name: wrp-1
    CIR (%): 0, PIR (%): 100,
    WFQ-Mode: WERR, WFQ-Weight: 1
  QP 5
    Qtype: SP3,
    WRP: 1, Name: wrp-1
    CIR (%): 0, PIR (%): 100,
    WFQ-Mode: WERR, WFQ-Weight: 1
  QP 6
    Qtype: SP2,
    WRP: 1, Name: wrp-1
    CIR (%): 0, PIR (%): 100,
    WFQ-Mode: WERR, WFQ-Weight: 1
  QP 7
    Qtype: SP1,
    WRP: 1, Name: wrp-1
    CIR (%): 0, PIR (%): 100,
    WFQ-Mode: WERR, WFQ-Weight: 1
  QP 8
    Qtype: SP0,
    WRP: 1, Name: wrp-1
    CIR (%): 0, PIR (%): 100,
    WFQ-Mode: WERR, WFQ-Weight: 1

```

### *output definitions*

---

<b>QSP</b>	The QSet profile (QSP) ID number and name.
<b>#Ports</b>	The number of ports to which this profile is attached.
<b>#Queues</b>	The number of queues associated with this QSet. Currently there are eight queues for each QSet.
<b>BW%</b>	The bandwidth percentage for the QSet. The bandwidth is shared between all the queues.

**output definitions (continued)**


---

<b>WRP</b>	<i>Not supported in this release.</i>
<b>Name</b>	<i>Not supported in this release.</i>
<b>Scheduler</b>	The type of scheduler, such as queue specific priority (Qspec) or strict priority.
<b>Type</b>	Whether the QSP is static or dynamic. Currently there are predefined, static profiles on each switch. User-configured, dynamic profiles are not supported.
<b>QP 1...8</b>	The queue profile configuration for each QSet queue. The configuration for each of the individual queue profiles is defined by the QSP in use.

---

```
-> show qos qsp brief
```

Profile	Name	#Ports	#Queues	BW(%)	Type	Base Profile
1	qsp-1	58	8	100	Static	qsp-1

**output definitions**


---

<b>Profile</b>	The QSet profile (QSP) ID number.
<b>Name</b>	The QSP name.
<b>#Ports</b>	The number of ports to which this profile is attached.
<b>#Queues</b>	The number of queues associated with this QSet. Currently there are eight queues for each QSet.
<b>BW%</b>	The bandwidth percentage for the QSet. The bandwidth is shared between all the queues.
<b>Type</b>	Whether the QSP is static or dynamic. Currently there are predefined, static profiles on each switch. User-configured, dynamic profiles are not supported.
<b>Base Profile</b>	The profile on which the QSP is based.

---

```
-> show qos qsp detail
```

Legends: T (Type): S = Static, D = Dynamic

QSAP Port	QSAP Type	dQSI	ID	Name	QSAP Parent	BW (%) Admin	BW (%) Oper	T
1/1/1	Phy	Port 1/1/1	1	qsp-1	Port 1/1/1	100	100	S
1/1/2	Phy	Port 1/1/2	1	qsp-1	Port 1/1/2	100	100	S
1/1/3	Phy	Port 1/1/3	1	qsp-1	Port 1/1/3	100	100	S
1/1/4	Phy	Port 1/1/4	1	qsp-1	Port 1/1/4	100	100	S
1/1/5	Phy	Port 1/1/5	1	qsp-1	Port 1/1/5	100	100	S
1/1/6	Phy	Port 1/1/6	1	qsp-1	Port 1/1/6	100	100	S
1/1/7	Phy	Port 1/1/7	1	qsp-1	Port 1/1/7	100	100	S
1/1/8	Phy	Port 1/1/8	1	qsp-1	Port 1/1/8	100	100	S
1/1/9	Phy	Port 1/1/9	1	qsp-1	Port 1/1/9	100	100	S
1/1/10	Phy	Port 1/1/10	1	qsp-1	Port 1/1/10	100	100	S
1/1/11	Phy	Port 1/1/11	1	qsp-1	Port 1/1/11	100	100	S
1/1/12	Phy	Port 1/1/12	1	qsp-1	Port 1/1/12	100	100	S

```

1/1/13   Phy Port 1/1/13   1   qsp-1   Port 1/1/13   100   100   S
1/1/14   Phy Port 1/1/14   1   qsp-1   Port 1/1/14   100   100   S
1/1/15   Phy Port 1/1/15   1   qsp-1   Port 1/1/15   100   100   S
1/1/16   Phy Port 1/1/16   1   qsp-1   Port 1/1/16   100   100   S
1/1/17   Phy Port 1/1/17   1   qsp-1   Port 1/1/17   100   100   S
1/1/18   Phy Port 1/1/18   1   qsp-1   Port 1/1/18   100   100   S
1/1/19   Phy Port 1/1/19   1   qsp-1   Port 1/1/19   100   100   S
1/1/20   Phy Port 1/1/20   1   qsp-1   Port 1/1/20   100   100   S
1/1/21   Phy Port 1/1/21   1   qsp-1   Port 1/1/21   100   100   S
1/1/22   Phy Port 1/1/22   1   qsp-1   Port 1/1/22   100   100   S
1/1/23   Phy Port 1/1/23   1   qsp-1   Port 1/1/23   100   100   S
1/1/24   Phy Port 1/1/24   1   qsp-1   Port 1/1/24   100   100   S
1/1/25   Phy Port 1/1/25   1   qsp-1   Port 1/1/25   100   100   S
1/1/26   Phy Port 1/1/26   1   qsp-1   Port 1/1/26   100   100   S
1/1/27   Phy Port 1/1/27   1   qsp-1   Port 1/1/27   100   100   S
1/1/28   Phy Port 1/1/28   1   qsp-1   Port 1/1/28   100   100   S

```

```
-> show qos qsp detail port 1/1/12
```

Legends: T (Type): S = Static, D = Dynamic

QSAP Port	QSAP Type	dQSI	ID	Name	QSAP Parent	BW (%) Admin	BW (%) Oper	T
1/1/12	Phy	Port 1/1/12	1	qsp-1	Port 1/1/12	100	100	S

### output definitions

<b>QSAP Port</b>	The port number or link aggregate ID, for the QSet attachment point (QSAP). A QSAP is a logical entity generated internally by the switch to identify the association between a QSet instance and a port or link aggregate. The QSAP is not configurable at this time.
<b>QSAP Type</b>	The type of QSAP port; Phy = physical (slot/port), Log = logical (linkagg ID).
<b>dQSI</b>	The default QSet instance (dQSI) ID number. This number is generated internally by the switch to identify the QSI that is automatically assigned to each port or link aggregate.
<b>ID</b>	The QSet profile (QSP) ID number.
<b>Name</b>	The QSP name.
<b>QSAP Parent</b>	The QSAP parent ID number. If the parent ID is different than the QSAP ID, then the port is a member of a link aggregate or a VFL.
<b>BW (%) Admin</b>	The administrative bandwidth percentage for the QSet. The administrative percentage is not configurable at this time.
<b>BW (%) Oper</b>	The operational percentage of bandwidth as determined by the port speed. For a link aggregate, this value is the sum of the operational bandwidth percentages for the member ports.
<b>Type</b>	Whether the QSP is static or dynamic. Currently there are predefined, static profiles on each switch. User-configured, dynamic profiles are not supported.

### Release History

Release 5.1; command introduced.

## Related Commands

**qos qsi qsp**

Changes the QSet profile association for a QSet instance.

**show qos qsi**

Displays the QSet instance configuration.

## MIB Objects

alcatelIND1VfcMIB

alaVfcQsetProfileTable

  alaVfcQSPId

  alaVfcQSPName

  alaVfcQSPBandwidthLimitValue

  alaVfcQSPQueueCount

  alaVfcQSPSchedulingMethod

  alaVfcQSPStatsAdmin

  alaVfcQSPAttachmentCount

---

## show qos qsi

Displays the QSet instance (QSI) configuration for the switch. A QSI is a logical set of eight egress queues associated with each port or link aggregate (LAG) ID.

**show qos qsi** [*port chassis/slot/port*[-*port2*] | *linkagg agg\_id*[-*agg\_id2*] | *vf-link vfl\_id*] **detail**

---

### Syntax Definitions

<i>chassis</i>	The chassis identifier.
<i>slot/port</i> [- <i>port2</i> ]	The slot and port number (1/5). Use a hyphen to specify a range of ports (1/5-10).
<i>agg_id</i> [- <i>agg_id2</i> ]	The link aggregate ID. Use a hyphen to specify a range of IDs (10-15).
<i>vfl_id</i>	<i>This parameter option is not supported.</i>
<b>detail</b>	Displays additional queue information for the instance.

### Defaults

By default, displays the entire QSI configuration for the switch.

### Platforms Supported

Not supported in this release.

### Usage Guidelines

Use the **port** *slot/port*, **slot** *slot*, **linkagg** *agg\_id*, parameters to display the QSI information associated with specific ports, link aggregates. These parameters can also be combined with the **detail** or **summary** parameter.

### Examples

```
-> show qos qsi port 1/1/1
Port 1/1/1
  QSAP: Port 1/1/1, Parent: Port 1/1/1
  QSI Port 1/1/1
    QSP: 1, Name: qsp-1,
    WRP: 1, Name: wrp-1, Admin: Dis, Oper: Dis
  Stats
    Admin: Dis, Oper: Dis, Interval: 60
  BW
    Admin (%): 100, Oper (%): 100
```

```
-> show qos qsi port 1/1/54
Port 1/1/54
  QSAP: Port 1/1/54, Parent: VFL 1/0
  QSI Port 1/1/54
    QSP: 2, Name: qsp-2,
    WRP: 1, Name: wrp-1, Admin: Dis, Oper: Dis
  Stats
    Admin: Dis, Oper: Dis, Interval: 60
  BW
```



```
Admin (%): 100, Oper (%): 100
```

```
-> show qos qsi port 1/1/1 detail
```

```
Port 1/1/1
```

```
  QSAP: Port 1/1/1, Parent: Port 1/1/1
  QSI   Port 1/1/1
  QSP:  1, Name:           qsp-1,
  WRP:  1, Name:           wrp-1, Admin: Dis, Oper: Dis
  Stats
  Admin: Dis, Oper: Dis, Interval: 60
  BW
  Admin (%): 100, Oper (%): 100
  QI 1
  Qtype: SP7,
  WRP:  1, Name:           wrp-1, Admin: Dis, Oper: Dis
  CIR
  Admin (%): 0, Oper (%): 0
  PIR
  Admin (%): 100, Oper (%): 100
  QI 2
  Qtype: SP6,
  WRP:  1, Name:           wrp-1, Admin: Dis, Oper: Dis
  CIR
  Admin (%): 0, Oper (%): 0
  PIR
  Admin (%): 100, Oper (%): 100
  QI 3
  Qtype: SP5,
  WRP:  1, Name:           wrp-1, Admin: Dis, Oper: Dis
  CIR
  Admin (%): 0, Oper (%): 0
  PIR
  Admin (%): 100, Oper (%): 100
  QI 4
  Qtype: SP4,
  WRP:  1, Name:           wrp-1, Admin: Dis, Oper: Dis
  CIR
  Admin (%): 0, Oper (%): 0
  PIR
  Admin (%): 100, Oper (%): 100
  QI 5
  Qtype: SP3,
  WRP:  1, Name:           wrp-1, Admin: Dis, Oper: Dis
  CIR
  Admin (%): 0, Oper (%): 0
  PIR
  Admin (%): 100, Oper (%): 100
  QI 6
  Qtype: SP2,
  WRP:  1, Name:           wrp-1, Admin: Dis, Oper: Dis
  CIR
  Admin (%): 0, Oper (%): 0
  PIR
  Admin (%): 100, Oper (%): 100
  QI 7
  Qtype: SP1,
  WRP:  1, Name:           wrp-1, Admin: Dis, Oper: Dis
  CIR
```

```

    Admin (%): 0, Oper (%): 0
  PIR
    Admin (%): 100, Oper (%): 100
QI 8
  Qtype: SP0,
  WRP: 1, Name:      wrp-1, Admin: Dis, Oper: Dis
  CIR
    Admin (%): 0, Oper (%): 0
  PIR
    Admin (%): 100, Oper (%): 100

```

### *output definitions*

---

<b>QSAP</b>	The port number, link aggregate ID, for the QSet attachment point (QSAP). A QSAP is a logical entity generated internally by the switch to identify the association between a QSet instance and a port, link aggregate. The QSAP is not configurable at this time.
<b>Parent</b>	The parent QSAP ID. If the parent ID is different than the QSAP ID, then the port is a member of a link aggregate.
<b>QSI</b>	The QSet instance (QSI) ID number, internally generated by the switch.
<b>QSP, Name</b>	The QSet profile (QSP) ID number and name associated with the QSI.
<b>WRP, Name, Admin, Oper</b>	<i>Not supported in this release.</i>
<b>Stats, Admin, Oper, Interval</b>	The QSI administrative status, operational status, and time interval for statistics collection.
<b>BW Admin (%)</b>	The administrative percentage of bandwidth (currently not user-configurable).
<b>BW Oper (%)</b>	The operational percentage of bandwidth as determined by the port speed. For a link aggregate, this value is the sum of the operational bandwidth percentages for the member ports.
<b>QI 1–8</b>	The queue scheduling and bandwidth configuration for each QSI queue. These values are determined by which one of the QSet profiles (QSP 1–4) is associated with the QSI.

---

### **Release History**

Release 5.1; command introduced.

### **Related Commands**

<b>qos qsi qsp</b>	Changes the QSet profile association for a QSet instance.
<b>show qos qsi stats</b>	Displays packet count statistics collected for a specific QSet instance.

**MIB Objects**

```
alcatelIND1VfcMIB
alaVfcQsetInstanceTable
  alaVfcQsetId
  alaVfcQsetQsapId
  alaVfcQsetAdminState
  alaVfcQsetQSPId
  alaVfcQsetQSPName
  alaVfcQsetSchedulingMethod
  alaVfcQsetStatsAdmin
  alaVfcQsetStatsOper
alaVfcQInstanceTable
  alaVfcQInstanceQId
  alaVfcQInstanceCIRBandwidthLimitValue
  alaVfcQInstancePIRBandwidthLimitValue
  alaVfcQInstanceCIROperationalBandwidthLimitValue
  alaVfcQInstancePIROperationalBandwidthLimitValue
  alaVfcQInstanceStatsAdmin
  alaVfcQInstanceStatsOper
```

---

## show qos qsi summary

Displays a list of switch ports showing the QoS profile assigned to each port.

**show qos qsi [port chassis/slot/port[-port2] | linkagg agg\_id[-agg\_id2]] summary**

---

### Syntax Definitions

<i>chassis</i>	The chassis identifier.
<i>slot/port[-port2]</i>	The slot and port number (1/5). Use a hyphen to specify a range of ports (1/5-10).
<i>agg_id[-agg_id2]</i>	The link aggregate ID. Use a hyphen to specify a range of IDs (10-15).

### Defaults

By default, a summary of all ports is displayed.

### Platforms Supported

Not supported in this release.

### Usage Guidelines

Use the **port** *chassis/slot/port* or **linkagg** *agg\_id* parameters to display information for a specific port or link aggregate.

### Examples

```
-> show qos qsi summary
Legends: * indicates port is misconfigured.
```

Port	Profile		Mode	Parent
	#	Name		
1/1/1	1	qsp-1	NDCB	1/1/1
1/1/2	1	qsp-1	NDCB	1/1/2
1/1/3	1	qsp-1	NDCB	1/1/3
1/1/4	1	qsp-1	NDCB	1/1/4
1/1/5	7	qsp-7	NDCB	1/1/5
1/1/6	1	qsp-1	NDCB	1/1/6

```
-> show qos qsi port 1/1-3 summary
Legends: * indicates port is misconfigured.
```

Port	Profile		Mode	Parent
	#	Name		
1/1/1	1	qsp-1	NDCB	1/1/1
1/1/2	1	qsp-1	NDCB	1/1/2
1/1/3	1	qsp-1	NDCB	1/1/3

---

*output definitions*

---

<b>Port</b>	The port or link aggregate ID number.
<b>Profile #</b>	The QSet profile ID number assigned to the port.
<b>Profile Name</b>	The QSet profile name assigned to the port.
<b>Mode</b>	Indicates the port is operating in the QoS mode.
<b>Parent</b>	The parent ID of the port.

---

**Release History**

Release 5.1; command introduced.

**Related Commands**

<a href="#">qos qsi qsp</a>	Changes the QSet profile association for a QSet instance.
<a href="#">show qos qsi</a>	Displays the QSet instance (QSI) configuration for the switch.

**MIB Objects**

```
alcatelIND1VfcMIB
alaVfcQsetInstanceTable
  alaVfcQsetId
  alaVfcQsetQSPID
  alaVfcQsetQSPName
  alaVfcQsetMode
```

---

## show qos qsi stats

Displays statistics for the QSet instance (QSI) queues that are associated with non-DCB (NDCB) ports.

```
show qos qsi {port chassis/slot/port[-port2] | linkagg agg_id[-agg_id2]} stats [bytes | rate [bytes]]
```

---

### Syntax Definitions

<i>chassis</i>	The chassis identifier.
<i>slot/port[-port2]</i>	The slot and port number (1/5). Use a hyphen to specify a range of ports (1/5-10).
<i>agg_id[-agg_id2]</i>	The link aggregate ID number. Use a hyphen to specify a range of IDs (10-15).
<b>bytes</b>	Displays the total number of bytes (instead of packets) that flow through the QSI queues. This parameter is not supported on the
<b>rate</b>	Displays the number of packets-per-second that flow through the QSI queues.

### Defaults

parameter	default
bytes   rate	bytes

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- The specified port or link aggregate must have statistics collection enabled.
- Use the **port** *slot/port* or **linkagg** *agg\_id* parameters to display QSI statistics associated with specific ports or link aggregates.
- It is possible to combine the **bytes** parameter with the **rate** parameter to display the number of bytes-per-second that flow through the QSI queues. For example, **show qos qsi port 1/20 stats rate bytes**.
- Statistics are displayed on a per-queue basis for each port. There are eight queues associated with a single QSet instance. Each queue is identified with a queue ID (1–8). Each port and link aggregate is associated with one QSet instance.

**Examples**

```
-> show qos qsi port 1/20 stats
```

Port	Q	Total	
		Tx	Drop
1/20	1	0	0
1/20	2	0	0
1/20	3	0	0
1/20	4	0	0
1/20	5	0	0
1/20	6	0	0
1/20	7	0	0
1/20	8	9984	0

```
-> show qos qsi port 1/20 stats bytes
```

Port	Q	Total	
		Tx	Drop
1/20	1	0	0
1/20	2	0	0
1/20	3	0	0
1/20	4	0	0
1/20	5	0	0
1/20	6	0	0
1/20	7	0	0
1/20	8	987424	0

```
-> show qos qsi port 1/20 stats rate
```

Port	Q	Average	
		Tx/s	Drop/s
1/20	1	0	0
1/20	2	0	0
1/20	3	0	0
1/20	4	0	0
1/20	5	0	0
1/20	6	0	0
1/20	7	0	0
1/20	8	7	0

```
-> show qos qsi port 1/20 stats rate bytes
```

Port	Q	Average	
		Tx/s	Drop/s
1/20	1	0	0
1/20	2	0	0
1/20	3	0	0
1/20	4	0	0
1/20	5	0	0
1/20	6	0	0
1/20	7	0	0
1/20	8	694	0

**output definitions**

---

<b>Port</b>	The slot and port number.
<b>Q</b>	The QSet queue ID number (1–8) associated with the QoS (non-DCB) port.
<b>Total Tx</b>	Total packets or bytes transmitted.
<b>Total Drop</b>	Total packets or bytes dropped.

---

**Release History**

Release 5.1; command introduced.

**Related Commands**

<a href="#">qos qsi stats</a>	Enables or disables statistics collection for a DCB or non-DCB port.
<a href="#">clear qos qsi stats</a>	Clears statistics collected for one or more QSet instances.

**MIB Objects**

```
alaVfcQInstanceTable
  alaVfcQInstancePacketsEnqueued
  alaVfcQInstanceBytesEnqueued
  alaVfcQInstancePacketsDropped
  alaVfcQInstanceBytesDropped
```

---



## clear qos qsi stats

Clears QSet instance (QSI) statistics.

```
clear qos qsi {port chassis/slot/port[-port2] | linkagg agg_id[-agg_id2]} stats
```

---

### Syntax Definitions

<i>chassis</i>	The chassis identifier.
<i>slot/port[-port2]</i>	The slot and port number (1\5). Use a hyphen to specify a range of ports (1/5-10).
<i>agg_id[-agg_id2]</i>	The link aggregate ID. Use a hyphen to specify a range of IDs (10-15).

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- Use the **port** *slot/port* and **linkagg** *agg\_id* parameters to clear QSI statistics associated with specific ports or link aggregates.
- QSI statistics can only be cleared on ports or link aggregates that have statistics collection enabled.

### Examples

```
-> clear qos qsi port 1/1/2 stats
-> clear qos qsi port 1/1/10-15 stats
-> clear qos qsi linkagg 5 stats
-> clear qos qsi linkagg 10-15 stats
```

### Release History

Release 5.1; command was introduced.

### Related Commands

[show qos qsi stats](#) Displays QSet instance statistics.

### MIB Objects

```
alcatelIND1VfcMIB
alaVfcQsapTable
  alaVfcQsapClearStats
  alaVfcQsapQpId
```

---

# 17 QoS Policy Commands

This chapter describes the CLI commands used for policy management in the switch. The Quality of Service (QoS) software in the switch uses policy rules for classifying incoming flows and deciding how to treat outgoing flows. A policy rule is made up of a policy condition and a policy action. Policy rules may be created on the switch through CLI or SNMP commands, or they may be created through the PolicyView GUI application on an attached LDAP server.

---

Rules created through PolicyView cannot be modified through the CLI; however, you can create policies in the CLI that take precedence over policies created through PolicyView.

---

Refer to [Chapter 16, “QoS Commands,”](#) for information about commands used to configure QoS software.

MIB information for the QoS policy commands is as follows:

*Filename:* ALCATEL-IND1-QOS-MIB.mib  
*Module* alaQoS MIB

---

Some of the commands listed here are not currently supported on one or more platforms. See command descriptions in this chapter and check release notes for information about commands that are not supported.

---

The QoS Policy commands are listed here:

---

<b>Policy commands</b>	<a href="#">policy rule</a> <a href="#">iec message-type priority</a> <a href="#">policy list</a> <a href="#">policy list rules</a> <a href="#">policy condition</a> <a href="#">policy action</a> <a href="#">show policy action</a> <a href="#">show policy condition</a> <a href="#">show active policy rule</a> <a href="#">show policy rule</a> <a href="#">show policy validity period</a> <a href="#">show active policy list</a> <a href="#">show policy list</a> <a href="#">show policy ipv4-summary</a> <a href="#">show policy ipv6-summary</a>
<b>Group commands</b>	<a href="#">policy network group</a> <a href="#">policy service</a> <a href="#">policy service group</a> <a href="#">policy mac group</a> <a href="#">policy port group</a> <a href="#">policy map group</a> <a href="#">show policy network group</a> <a href="#">show policy mac group</a> <a href="#">show policy port group</a> <a href="#">show policy map group</a> <a href="#">show policy service</a> <a href="#">show policy service group</a>

---

**Condition commands**

**policy condition**  
**policy condition source ip**  
**policy condition source ipv6**  
**policy condition destination ip**  
**policy condition destination ipv6**  
**policy condition multicast ip**  
**policy condition source network group**  
**policy condition destination network group**  
**policy condition multicast network group**  
**policy condition source ip-port**  
**policy condition destination ip-port**  
**policy condition source tcp-port**  
**policy condition destination tcp-port**  
**policy condition source udp-port**  
**policy condition destination udp-port**  
**policy condition ethertype**  
**policy condition established**  
**policy condition tcpflags**  
**policy condition service**  
**policy condition service group**  
**policy condition icmp-type**  
**policy condition icmp-code**  
**policy condition ip-protocol**  
**policy condition ipv6**  
**policy condition flow-label**  
**policy condition tos**  
**policy condition dscp**  
**policy condition source mac**  
**policy condition destination mac**  
**policy condition source mac group**  
**policy condition destination mac group**  
**policy condition source vlan**  
**policy condition inner source-vlan**  
**policy condition destination vlan**  
**policy condition 802.1p**  
**policy condition inner 802.1p**  
**policy condition source port**  
**policy condition destination port**  
**policy condition source port group**  
**policy condition destination port group**  
**policy condition vrf**  
**policy condition fragments**  
**policy condition app-mon-application-group**  
**policy condition app-mon-application-name**  
**policy condition appfp-group**

---

---

<b>Action commands</b>	<p> <a href="#">policy action</a>  <a href="#">policy action disposition</a>  <a href="#">policy action shared</a>  <a href="#">policy action priority</a>  <a href="#">policy action maximum bandwidth</a>  <a href="#">policy action maximum depth</a>  <a href="#">policy action cir</a>  <a href="#">policy action cpu priority</a>  <a href="#">policy action tos</a>  <a href="#">policy action 802.1p</a>  <a href="#">policy action dscp</a>  <a href="#">policy action map</a>  <a href="#">policy action permanent gateway-ip</a>  <a href="#">policy action permanent gateway-ipv6</a>  <a href="#">policy action port-disable</a>  <a href="#">policy action redirect port</a>  <a href="#">policy action redirect linkagg</a>  <a href="#">policy action no-cache</a>  <a href="#">policy action mirror</a> </p>
------------------------	---

---

Types of policies are generally determined by the kind of traffic they classify (policy conditions) and how the policy is enforced (policy actions). Commands used for particular types of policies are listed here. See the *OmniSwitch AOS Release 8 Network Configuration Guide* for more information about creating these types of policies and information about valid condition/action combinations.

---

<b>Access Control Lists</b>	<p> <a href="#">policy condition</a>  <a href="#">policy action disposition</a>  <a href="#">policy rule</a> </p>
<b>Traffic prioritization/shaping</b>	<p> <a href="#">policy action shared</a>  <a href="#">policy action priority</a>  <a href="#">policy action maximum bandwidth</a>  <a href="#">policy rule</a> </p>
<b>IEC 6185 traffic prioritization</b>	<p> <a href="#">iec message-type priority</a>  <a href="#">iec message-type flush</a>  <a href="#">iec show</a> </p>
<b>802.1p/ToS/DSCP tagging or mapping</b>	<p> <a href="#">policy condition tos</a>  <a href="#">policy condition dscp</a>  <a href="#">policy condition 802.1p</a>  <a href="#">policy action tos</a>  <a href="#">policy action 802.1p</a>  <a href="#">policy action dscp</a>  <a href="#">policy action map</a>  <a href="#">policy rule</a> </p>
<b>Policy based port mirroring</b>	<p> <a href="#">policy action mirror</a> </p>
<b>VLAN Stacking</b>	<p> <a href="#">policy condition inner source-vlan</a>  <a href="#">policy condition inner 802.1p</a> </p>
<b>VXLAN Snooping</b>	<p> <a href="#">policy condition vxlan</a>  <a href="#">policy condition vxlan inner source mac</a>  <a href="#">policy condition vxlan inner source mac-group</a>  <a href="#">policy condition vxlan inner source ip</a>  <a href="#">policy condition vxlan inner source ipv6</a>  <a href="#">policy condition vxlan inner ip-protocol</a>  <a href="#">policy condition vxlan inner l4-port</a>  <a href="#">policy condition vxlan vxlan-port</a> </p>

---

## policy rule

Configures a policy rule on the switch. A rule is made up of a condition (for classifying incoming traffic) and an action (to be applied to outgoing traffic).

```
policy rule rule_name [enable | disable] [precedence precedence] [condition condition] [action action]  
[validity-period name] [save] [log [log-interval seconds]] [count {packets | bytes}] [trap] [default-list]
```

```
policy rule rule_name no {validity-period | save | log | trap | default-list}
```

```
no policy rule rule_name
```

---

### Syntax Definitions

<i>rule_name</i>	The name of the policy rule, any alphanumeric string.
<b>enable</b>	Enables the policy rule.
<b>disable</b>	Disables the policy rule.
<i>precedence</i>	The precedence value in the range 0–65535. This value determines the order in which rules are searched for a matching condition. A higher number indicates higher precedence. Typically the range 30000–65535 is reserved for PolicyView.
<i>condition</i>	The condition name that is associated with this rule. Conditions are configured through the <b>policy condition</b> command.
<i>action</i>	The name of the action that is associated with this rule. Actions are configured through the <b>policy action</b> command.
<i>name</i>	The name of a user-defined validity period that is associated with this rule. Validity periods are configured through the <b>policy validity period</b> command.
<b>save</b>	Marks the policy rule so that it may be captured as part of the switch configuration.
<b>log</b>	Configures the switch to log messages about specific flows coming into the switch that match this policy rule.
<i>seconds</i>	Configures how often to look for packets that match this policy rule when rule logging is applied (in the range from 0–3600 seconds). A value of 0 specifies to log as often as possible.
<b>packets</b>	Counts the number of packets that match the rule.
<b>bytes</b>	Counts the number of bytes that match the rule.
<b>trap</b>	Enables or disables traps for the rule.
<b>default-list</b>	Adds the rule to the QoS default policy list.

## Defaults

parameter	default
<b>enable   disable</b>	enable
<i>precedence</i>	0
<b>log</b>	no
<i>seconds</i>	60
<b>packets   bytes</b>	packets
<b>trap</b>	enable
<b>default-list</b>	adds rule to the default list

## Platforms Supported

OmniSwitch 2260, 2360

## Usage Guidelines

- Any rule configured through this command is not active on the switch until the **qos apply** command is issued.
- A policy rule configured through the PolicyView application may not be edited in the CLI. You may, however, create a rule using the CLI with a higher precedence that will override a rule created through PolicyView.
- Use the **no** form of the command to remove the rule from the configuration or to remove parameters from a particular rule. The change will not take effect, however, until the **qos apply** command is issued.
- Only one validity period is associated with a policy rule. Each time this command is entered with a validity period name specified, the existing period name is overwritten with the new one.
- Software and hardware resources are allocated for rules associated with a validity period even if the validity period is not active. Pre-allocating the resources makes sure the rule can be enforced when the validity period becomes active.
- The **save** option marks the policy rule so that the rule will be captured in an ASCII text file (using the **configuration snapshot** command), saved to the working directory after the **write memory** command or **copy running-config working** command is entered, or saved after a reboot. Rules are saved by default. If **no save** is entered for the rule, the policy rule will not be written to the configuration. The **save** option should be disabled only if you want to use a policy rule temporarily.
- The **default-list** option adds the rule to the default policy list. Rules are added to this list by default when the rule is created. A rule can belong to multiple policy lists. As a result, the rule remains a member of the default list even when it is subsequently assigned to additional lists. Consider the following recommendations regarding the default policy list:
  - If the rule is going to belong to a QoS policy list for a Universal Network Profile (UNP), use the **no default-list** option when creating the rule. Doing so will give the rule precedence over default list rules when the policy list is applied to UNP device traffic.
  - Note that each time a rule is assigned to a policy list, an instance of that rule is created and each instance is allocated system resources. Use the **no default-list** option with this command to exclude

the rule from the default policy list.

- The **log** option is useful for determining the source of attacks on the switch firewall.
- If traps are enabled for the rule, a trap is only sent when a port disable action or UserPort shutdown operation is triggered.
- If the **configuration snapshot** command is entered after the **policy rule** command is configured, the resulting ASCII file will include the following additional syntax for the **policy rule** command:

**from {cli | ldap | blt}**

This syntax indicates how the rule was created. The **cli** and **ldap** options may be changed by a user modifying the ASCII file; however, changing this setting is not recommended. The **blt** option indicates a built-in rule, this setting is not configurable.

## Examples

```
-> policy rule rule2 condition c2 action a2
-> policy rule rule3 condition c3 action a3 no default-list
-> policy rule rule2 precedence 65535
-> policy rule rule2 validity-period vp01
-> policy rule rule2 no precedence
-> policy rule rule2 no validity-period
-> policy rule rule3 no default-list
-> no policy rule rule2
```

## Release History

Release 5.1.R2; command introduced.

## Related Commands

<a href="#">iec message-type priority</a>	Configures a validity period that specifies days, times, and/or months during which an associated policy rule is in effect.
<a href="#">policy condition</a>	Configures condition parameters.
<a href="#">policy action</a>	Configures action parameters.
<a href="#">qos apply</a>	Applies configured QoS and policy settings to the current configuration.
<a href="#">show policy rule</a>	Displays information for policy rules configured on the switch.
<a href="#">show active policy rule</a>	Displays only those policy rules that are currently being enforced on the switch.

## MIB Objects

### alaQoSRuleTable

- alaQoSRuleName
- alaQoSRuleEnabled
- alaQoSRuleSource
- alaQoSRulePrecedence
- alaQoSRuleCondition
- alaQoSRuleAction
- alaQoSRuleSave
- alaQoSRuleLog
- alaQoSRuleCountType
- alaQoSRulePacketCount
- alaQoSRuleByteCount
- alaQoSRuleDefaultList

### alaQoSAppliedRuleTable

- alaQoSAppliedRuleName
- alaQoSAppliedRuleEnabled
- alaQoSAppliedRuleSource
- alaQoSAppliedRulePrecedence
- alaQoSAppliedRuleCondition
- alaQoSAppliedRuleAction
- alaQoSAppliedRuleSave
- alaQoSAppliedRuleLog
- alaQoSAppliedCountType
- alaQoSAppliedPacketCount
- alaQoSAppliedByteCount
- alaQoSAppliedDefaultList

---



## iec message-type priority

Configures a QoS priority for the specified IEC 61850 message type. This command runs a python script that programs QoS rules that will apply traffic prioritization to IEC 61850 message packets.

**iec message-type** *message* **priority** *string*

---

### Syntax Definitions

<i>message</i>	The message type for which a QoS rule is configured. Specify one of the supported IEC 61850 message types: goose, gse, sv, ptp, sntp, mms, all.
<b>priority</b> <i>string</i>	Sets the priority level. The priority string value must be set to one of the following: <ul style="list-style-type: none"> <li>“high” (maps to QoS priority queue 7)</li> <li>“medium” (maps to QoS priority queue 4)</li> <li>“low” (maps to QoS priority queue 1)</li> <li>“default” (sets the priority to the default value for the message type)</li> </ul>

### Defaults

By default, the priority for all the supported IEC 61850 message type is set to default.

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- To set the priority for all message types at once, specify “all” as the message type value.
- A message type can be configured with only one priority.
- Use the “default” option to restore the default priority as shown in the table:

Message Type	Default Priority
GOOSE	High
GSE	Medium
SV	High
MMS	Low
SNTP	Medium
PTP	Medium

- The QoS policy condition, action, and rule names that are used to prioritize IEC 61759 traffic are predefined. The following reserved names must not be used for user policy configuration:

Function	Message Type	Condition	Action	Rule
1A. Trip	GOOSE	iec_goose_c	iec_goose_a	iec_goose_r
1B. Other	GSE	iec_gse_c	iec_gse_a	iec_gse_r
Raw Data	SV	iec_sv_c	iec_sv_a	iec_sv_r
Time Sync	PTP	iec_ptp_c	iec_ptp_a	iec_ptp_r
Time Sync	SNTP	iec_sntp_c	iec_sntp_a	iec_sntp_r
File Transfer	MMS	iec_mms_c	iec_mms_a	iec_mms_r

- Use the **iec message-type flush** CLI command to remove the prioritization for message type.

## Examples

```
-> iec message-type goose priority high
-> iec message-type gse priority low
-> iec message-type mms priority medium
-> iec message-type all priority high
```

## Release History

Release 5.1.R2; command introduced.

## Related Commands

**iec message-type flush** Removes the rule applied for the IEC 61850 message priority.  
**iec show** Displays the priority configured for the IEC 61850 message types.

## MIB Objects

N/A

## iec message-type flush

Removes the rule applied for the IEC 61850 message priority.

**iec message-type *message* flush**

---

### Syntax Definitions

*message* The message type for which rule must be flushed. Specify one of the supported IEC 61850 message types: goose, gse, sv, ptp, sntp, mms, all.

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- This command runs a python script that programs the QoS rules for traffic prioritization.
- The “all” option flushes the priority rule for all the message types at once.

### Examples

```
-> iec message-type goose flush
-> iec message-type gse flush
-> iec message-type mms flush
-> iec message-type all flush
```

### Release History

Release 5.1.R2; command introduced.

### Related Commands

[iec message-type priority](#) Configures IEC 61850 message priority.

[iec show](#) Displays the priority configured for the IEC 61850 message types.

### MIB Objects

N/A

---

## iec show

Displays the priority configured for the IEC 61850 message types.

**iec show**

---

### Syntax Definitions

N/A

### Defaults

N/A

### Platforms Supported

Not supported in this release.

### Usage Guidelines

The output displays only the configured message types.

### Examples

```
-> iec show
Message Type      Priority
-----+-----
goose             high
sntp              low
```

### Release History

Release 5.1.R2; command introduced.

### Related Commands

[iec message-type priority](#) Configures IEC 61850 message priority.

### MIB Objects

N/A

---

## policy validity-period

Configures a validity period that specifies the days and times in which a policy rule is in effect.

**policy validity-period** *name* [**days** *days*] [**months** *months*] [**hours** *hh:mm to hh:mm*] [**interval** *mm:dd:yy hh:mm to mm:dd:yy hh:mm*]

**policy validity-period** *name* **no** {**hours** | **interval**}

**no policy validity-period** *name*

---

### Syntax Definitions

<i>name</i>	The name of the validity period (up to 31 alphanumeric characters).
<i>days</i>	The day(s) of the week this validity period is active. Enter the actual day of the week (e.g., <b>monday</b> , <b>tuesday</b> , <b>wednesday</b> , etc.).
<i>months</i>	The month(s) in which the validity period is active. Enter the actual month (e.g., <b>january</b> , <b>february</b> , <b>march</b> , etc.).
<i>hh:mm</i>	The time of day, specified in hours and minutes, the validity period starts and the time of day the validity period ends (e.g., 10:30 to 11:30).
<i>mm:dd:yy hh:mm</i>	An interval of time during which a rule is in effect. Specify a start and end to the interval period by entering a beginning date and time followed by an end date and time (e.g., 11:01:17 12:01 to 11:02:17 12:01).

### Defaults

By default, no validity period is in effect for a policy rule.

parameter	default
<i>days</i>	no restriction
<i>months</i>	no restriction
<i>hh:mm</i>	no specific time
<i>mm:dd:yyyy hh:mm</i>	no interval

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- Use the **no** form of the command to remove a validity period from the configuration, or to remove parameters from a particular validity period. Note that at least one parameter must be associated with a validity period.
- Any combination of days, months, hours, and interval parameters is allowed. The validity period is only in effect when all specified parameters are true.

- Use the **policy rule** command to associate a validity period with a rule.
- Software and hardware resources are allocated for rules associated with a validity period even if the validity period is not active. Pre-allocating the resources makes sure the rule can be enforced when the validity period becomes active.
- If the **configuration snapshot** command is entered after the **policy validity-period** command is configured, the resulting ASCII file will include the following additional syntax for the **policy validity-period** command:

**from {cli | ldap | blt}**

This syntax indicates how the service was created. The **cli** and **ldap** options may be changed by a user modifying the ASCII file; however, changing this setting is not recommended. The **blt** option indicates a built-in object, this setting is not configurable.

## Examples

```
-> policy validity-period vp01 days tuesday thursday months january february
-> policy validity-period vp01 hours 13:00 to 19:00
-> policy validity-period vp02 interval 01/01/05 12:01 to 02/01/05 11:59
-> policy validity-period vp01 no days thursday
-> no policy-validity period vp02
```

## Release History

Release 5.1.R2; command introduced.

## Related Commands

<a href="#">policy rule</a>	Configures a policy rule on the switch and optionally associates that rule with a validity period.
<a href="#">show policy validity period</a>	Displays information about policy validity periods.

**MIB Objects**

## alaQoSValidityPeriodTable

- alaQoSValidityPeriodName
- alaQoSValidityPeriodSource
- alaQoSValidityPeriodDays
- alaQoSValidityPeriodDaysStatus
- alaQoSValidityPeriodMonths
- alaQoSValidityPeriodMonthsStatus
- alaQoSValidityPeriodHour
- alaQoSValidityPeriodHourStatus
- alaQoSValidityPeriodEndHour
- alaQoSValidityPeriodInterval
- alaQoSValidityPeriodIntervalStatus
- alaQoSValidityPeriodEndInterval

## alaQoSAppliedValidityPeriodTable

- alaQoSAppliedValidityPeriodName
- alaQoSAppliedValidityPeriodSource
- alaQoSAppliedValidityPeriodDays
- alaQoSAppliedValidityPeriodDaysStatus
- alaQoSAppliedValidityPeriodMonths
- alaQoSAppliedValidityPeriodMonthsStatus
- alaQoSAppliedValidityPeriodHour
- alaQoSAppliedValidityPeriodHourStatus
- alaQoSAppliedValidityPeriodEndHour
- alaQoSAppliedValidityPeriodInterval
- alaQoSAppliedValidityPeriodIntervalStatus
- alaQoSAppliedValidityPeriodEndInterval

---

## policy list

Configures a QoS policy list. There are four types of lists available: a Universal Network Profile (UNP) policy list, an egress policy list, an Application Fingerprinting policy list, and a default policy list.

**policy list** *list\_name* **type** {**unp** | **egress** | **appfp** | **empacl**} [**enable** | **disable**]

**no policy list** *list\_name*

---

### Syntax Definitions

<i>list_name</i>	The name to assign to the policy list. Note that the list name is case sensitive.
<b>unp</b>	Applies the list of policy rules to traffic classified into the User Network Profile to which the list is assigned
<b>egress</b>	Applies the list of policy rules to traffic egressing on switch ports.
<b>appfp</b>	Applies the list of policy rules to an Application Fingerprinting interface.
<b>empacl</b>	<i>This parameter is not supported.</i>
<b>enable</b>	Enables the policy list.
<b>disable</b>	Disables the policy list.

### Defaults

A default policy list is available when the switch boots up; all policy rules belong to this list unless otherwise specified (see the [policy list rules](#) and [policy rule](#) commands for more information).

parameter	default
<b>enable</b>   <b>disable</b>	<b>enable</b>

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- Use the **no** form of the command to remove a policy list from the configuration.
- Once a policy list is created, use the [policy list rules](#) command to add rules to the list.
- Any policy list configured through this command is not active on the switch until the **qos apply** command is issued.
- If the **configuration snapshot** command is entered after the **policy list** command is configured, the resulting ASCII file will include the following additional syntax for the **policy list** command:

**from** {**cli** | **ldap** | **blt**}

This syntax indicates how the list was created. The **cli** and **ldap** options may be changed by a user modifying the ASCII file; however, changing this setting is not recommended. The **blt** option indicates a built-in object, this setting is not configurable.



## Examples

```
-> policy list unpl type unp
-> policy list unpl disable
-> policy list unpl enable
-> no policy list unpl
```

## Release History

Release 5.1.R2; command introduced.

## Related Commands

<a href="#">policy list rules</a>	Assigns QoS policy rules to a QoS policy list.
<a href="#">policy rule</a>	Configures a policy rule on the switch and optionally associates that rule with a validity period.
<a href="#">show policy rule</a>	Displays information for policy rules configured on the switch.
<a href="#">show active policy list</a>	Displays only those policy lists that are currently being enforced on the switch.
<a href="#">show policy list</a>	Displays information for policy lists configured on the switch.

## MIB Objects

```
alaQoSRuleGroupsTable
  alaQoSRuleDefaultList
  alaQoSRuleGroupsName
  alaQoSRuleGroupsSource
  alaQoSRuleGroupsType
  alaQoSRuleGroupsEnabled
  alaQoSRuleGroupsStatus
alaQoSAppliedRuleGroupsTable
  alaQoSAppliedRuleGroupsName
  alaQoSAppliedRuleGroupsSource
  alaQoSAppliedGroupsType
  alaQoSAppliedGroupsEnabled
  alaQoSAppliedRuleGroupsStatus
```

---

## policy list rules

Assigns existing QoS policy rules to the specified QoS policy list.

**policy list** *list\_name* **rules** *rule\_name* [*rule\_name2*...]

**policy list** *list\_name* **no rules** *rule\_name* [*rule\_name2*...]

---

### Syntax Definitions

<i>list_name</i>	The name of an existing QoS policy list. Note that the list name is case sensitive.
<i>rule_name</i>	The name of an existing QoS policy rule to include in the policy list.
<i>rule_name2</i>	Optional. The name of another QoS policy rule to include in the policy list. Separate each rule name specified with a space.

### Defaults

A default policy list is available when the switch boots up. This list has no name and is not configurable. All QoS policy rules are assigned to the default list unless the **no default-list** option of the **policy rule** command is used.

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- Use the **no** form of the command to remove a policy rule from an existing list.
- The QoS policy list and rule names specified with this command must already exist in the switch configuration.
- A rule may belong to a Universal Network Profile (UNP) list, the default list, and an egress policy list at the same time. By default, a rule is assigned to a default policy list when the rule is created. If the rule is subsequently assigned to another policy list, it still remains associated with the default list.
- If a rule is a member of multiple policy lists but one or more of these lists are disabled, the rule is still active in those lists that are enabled.
- If the QoS status of a policy rule is disabled, then the rule is disabled for all lists even if a list to which the policy rule belongs is enabled.
- If a policy rule is going to be assigned to a UNP policy list, make sure the rule was created using the **no default-list** option of the **policy rule** command. This will ensure that the rule will take precedence over other default list rules when the UNP policy list is applied to device traffic.
- A QoS policy list that is assigned to an Application Fingerprinting interface must contain policy rules with the **appfp-group** condition.

- Only those rules that are assigned to an egress policy list are applied to egress traffic. When configuring egress policy lists, consider the following:
  - Only one egress policy list per switch is supported, to which IPv4 and IPv6 rules can be added.
  - Applying egress policy lists to SPB or VXLAN SAP ports is not supported.
  - Only the following policy conditions and actions are supported when creating rules for an egress policy list:

policy conditions	policy actions
Destination port	Disposition (drop/accept)
Destination VLAN	
Source IPv4 address	
Source IPv6 address	
IPv6 (qualifier for traffic types)	

- Any policy list configured through this command is not active on the switch until the **qos apply** command is issued.

## Examples

```
-> policy list unpl rules r1 r2 r3
-> policy list unpl no rules r2
```

## Release History

Release 5.1.R2; command introduced.

## Related Commands

<a href="#">policy list</a>	Configures a QoS policy list.
<a href="#">policy rule</a>	Configures a policy rule on the switch and optionally associates that rule with a validity period.
<a href="#">show policy rule</a>	Displays information for policy rules configured on the switch.
<a href="#">show active policy list</a>	Displays only those policy lists that are currently being enforced on the switch.
<a href="#">show policy list</a>	Displays information for policy lists configured on the switch.

## MIB Objects

```
alaQoSRuleGroupsTable
  alaQoSRuleDefaultList
  alaQoSRuleGroupsName
  alaQoSRuleGroupsSource
  alaQoSRuleGroupsType
  alaQoSRuleGroupsEnabled
  alaQoSRuleGroupsStatus
alaQoSAppliedRuleGroupsTable
  alaQoSAppliedRuleGroupsName
  alaQoSAppliedRuleGroupsSource
  alaQoSAppliedGroupsType
  alaQoSAppliedGroupsEnabled
```

alaQosAppliedRuleGroupsStatus

---

## policy network group

Configures a network group name and its associated IP addresses. The group may be used as part of a policy condition. The action associated with any policy using the condition will be applied to all members of the network group.

**policy network group** *net\_group ip\_address [mask net\_mask] [ip\_address2 [mask net\_mask2]...]*

**no policy network group** *net\_group*

**policy network group** *net\_group no ip\_address [mask netmask] [ip\_address2 [mask net\_mask2]...]*

---

### Syntax Definitions

<i>net_group</i>	The name of the network group (up to 31 alphanumeric characters).
<i>ip_address</i>	An IPv4 or IPv6 address included in the network group.
<i>net_mask</i>	The mask for the IPv4 or IPv6 address. If no mask is entered, the address is assumed to be a host address.
<i>ip_address2</i>	Optional. Another IPv4 or IPv6 address to be included in the network group. Multiple IP addresses may be configured for a network group. Separate each address/mask combination with a space.
<i>net_mask2</i>	Optional mask for the IPv4 or IPv6 address. If no mask is entered, the natural mask for the address will be used.

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- Use this command to configure a group of IP addresses to which you want to apply QoS rules. Rather than create a condition for each IP address, group the addresses together. Use the **policy condition** command to associate a condition with the network group.
- Use the **no** form of the command to remove a network group from the configuration, or to remove an IP address from a network group.

- If the **configuration snapshot** command is entered after the **policy network group** command is configured, the resulting ASCII file will include the following additional syntax for the **policy network group** command:

**from {cli | ldap | blt}**

This syntax indicates how the network group was created. The **cli** and **ldap** options may be changed by a user modifying the ASCII file; however, changing this setting is not recommended. The **blt** option indicates a built-in network group, this setting is not configurable.

## Examples

```
-> policy network group webgroup1 10.10.12.5 10.50.3.1
-> policy network group webgroup1 no 10.10.12.5
-> no policy network group webgroup1

-> policy network group webgroup2 2001:db8:4132:86::19a 2002:c633:6489::35
-> policy network group webgroup2 no 2002:c633:6489::35
-> no policy network group webgroup2
```

## Release History

Release 5.1.R2; command introduced.

## Related Commands

<a href="#">policy condition</a>	Configures a policy condition. A network group may be configured as part of a policy condition.
<a href="#">qos apply</a>	Applies configured QoS and policy settings to the current configuration.
<a href="#">show policy network group</a>	Displays information for policy network groups.

## MIB Objects

```
alaQoSNetworkGroupsTable
  alaQoSNetworkGroupsName
  alaQoSNetworkGroupsSource
alaQoSAppliedNetworkGroupsTable
  alaQoSAppliedNetworkGroupsName
  alaQoSAppliedNetworkGroupsSource
alaQoSNetworkGroupTable
  alaQoSNetworkGroupIpAddr
  alaQoSNetworkGroupsIpMask
alaQoSAppliedNetworkGroupTable
  alaQoSAppliedNetworkGroupIpAddr
  alaQoSAppliedNetworkGroupsIpMask
```

## policy service group

Configures a service group and its associated services. The group may be used as part of a policy condition. The action associated with any policy using the condition will be applied to all members of the service group.

**policy service group** *service\_group service\_name1 [service\_name2...]*

**no policy service group** *service\_group*

**policy service group** *service\_group no service\_name1 [service\_name2...]*

---

### Syntax Definitions

*service\_group*

The name of the service group (up to 31 alphanumeric characters).

*service\_name1*

The service name is configured through the **policy service** command and includes information about protocol, source port, and destination port.

*service\_name2...*

Optional. Additional service names may be configured for a service group. Separate each service name with a space.

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- Use this command to configure a group of services to which you want to apply QoS rules. Rather than create a condition for each service, group services together. Use the **policy condition** command to associate a condition with the service group.
- Use the **no** form of the command to remove a service group from the configuration, or to remove a service from a service group.
- To drop packets destined to specific TCP and UDP ports, create port services for the traffic that you want dropped and add these services to a service group. Then create a condition for this service group and a source port group, which can then be used in a deny rule. Refer to the *OmniSwitch AOS Release 8 Network Configuration Guide* for more information about ACL security enhancements.

- If the **configuration snapshot** command is entered after the **policy service group** command is configured, the resulting ASCII file will include the following additional syntax for the **policy service group** command:

**from {cli | ldap | blt}**

This syntax indicates how the service group was created. The **cli** and **ldap** options may be changed by a user modifying the ASCII file; however, changing this setting is not recommended. The **blt** option indicates a built-in service group, this setting is not configurable.

## Examples

```
-> policy service group servgroup2 telnet ftp
-> policy service group servgroup2 no telnet
-> no policy service group servgroup2
```

## Release History

Release 5.1.R2; command introduced.

## Related Commands

<a href="#">qos apply</a>	Applies configured QoS and policy settings to the current configuration.
<a href="#">policy service</a>	Configures a service that may be used as part of a policy service group.
<a href="#">policy condition</a>	Configures a policy condition. A network group may be configured as part of a policy condition.
<a href="#">show policy service group</a>	Displays information for policy service groups.

## MIB Objects

```
alaQoSServiceGroupsTable
  alaQoSServiceGroupsName
  alaQoSServiceGroupsSource
alaQoSAppliedServiceGroupsTable
  alaQoSAppliedServiceGroupsName
  alaQoSAppliedServiceGroupsSource
alaQoSServiceGroupTable
  alaQoSServiceGroupServiceName
alaQoSAppliedServiceGroupTable
  alaQoSAppliedServiceGroupServiceName
```

---



## policy mac group

Configures a MAC group and its associated MAC addresses. The group may be used as part of a policy condition. The action associated with any policy using the condition will be applied to all members of the MAC group.

```
policy mac group mac_group mac_address [mask mac_mask] [mac_address2 [mask mac_mask2]...]
```

```
no policy mac group mac_group
```

```
policy mac group mac_group no mac_address [mask mac_mask] [mac_address2 [mask mac_mask2]...]
```

---

### Syntax Definitions

<i>mac_group</i>	The name of the MAC group (up to 31 alphanumeric characters).
<i>mac_address</i>	The MAC address associated with the group (for example, 00:20:da:05:f6:23).
<i>mac_mask</i>	The mask of the MAC address, used to identify which bytes in the MAC address are significant when comparing the MAC address in the received frame with the MAC address in the policy condition. If no mask is specified, the switch automatically uses ff:ff:ff:ff:ff:ff.
<i>mac_address2</i>	Optional. Additional MAC addresses may be configured for a MAC group. Separate each address with a space.
<i>mac_mask2</i>	The mask of an additional MAC address, used to identify which bytes in the MAC address are significant when comparing the MAC address in the received frame with the MAC address in the policy condition. If no mask is specified, the switch automatically uses ff:ff:ff:ff:ff:ff.

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- Use this command to configure a group of source or destination MAC addresses to which you want to apply QoS rules. Rather than create a condition for each MAC address, group MAC addresses together. Use the **policy condition** command to associate a condition with the MAC group.
- Use the **no** form of the command to remove a MAC group from the configuration, or to remove a MAC address from a MAC group.
- The MAC group name “alaPhones” is a reserved group name used to identify the MAC addresses of IP phones. See the [qos phones](#) command for more information.
- If the **configuration snapshot** command is entered after the **policy map group** command is configured, the resulting ASCII file will include the following additional syntax for the **policy map group** command:

**from {cli | ldap | blt}**

This syntax indicates how the map group was created. The **cli** and **ldap** options may be changed by a user modifying the ASCII file; however, changing this setting is not recommended. The **blt** option indicates a built-in object, this setting is not configurable.

## Examples

```
-> policy mac group mac_group1 00:20:da:05:f6:23 00:20:da:05:f6:24
-> no policy mac group mac_group1
```

## Release History

Release 5.1.R2; command introduced.

## Related Commands

<a href="#">policy condition</a>	Configures a policy condition. A MAC group may be configured as part of a policy condition.
<a href="#">qos apply</a>	Applies configured QoS and policy settings to the current configuration.
<a href="#">show policy mac group</a>	Displays information about policy MAC groups.

## MIB Objects

```
alaQoSACGroupsTable
  alaQoSACGroupsName
  alaQoSACGroupsSource
alaQoSAppliedMACGroupsTable
  alaQoSAppliedMACGroupsName
  alaQoSAppliedMACGroupsSource
alaQoSACGroupTable
  alaQoSACGroupMacAddr
  alaQoSACGroupMacMask
alaQoSAppliedMACGroupTable
  alaQoSAppliedMACGroupMacAddr
  alaQoSAppliedMACGroupMacMask
```

---

## policy port group

Configures a port group and its associated slot and port numbers. A port group may be attached to a policy condition. The action associated with that policy will be applied to all members of the port group.

```
policy port group group_name {chassis//slot/port[-port2] | agg_id[-agg_id2]} [chassis//slot/port[-port2] | agg_id[-agg_id2]]
```

```
no policy port group group_name
```

```
policy port group group_name no {chassis//slot/port[-port2] | agg_id[-agg_id2]} [chassis//slot/port[-port2] | agg_id[-agg_id2]]
```

---

### Syntax Definitions

<i>group_name</i>	The name of the port group (up to 31 alphanumeric characters).
<i>chassis</i>	The chassis identifier.
<i>slot/port[-port2]</i>	The slot and port (or port range) to be included in the group. At least one slot/port combination must be specified. Additional combinations may be included in the group; each combination should be separated by a space.
<i>agg_id[-agg_id2]</i>	A link aggregate ID to be included in the group. Use a hyphen to specify a range of IDs (10-15). Additional combinations may be included in the group; each combination should be separated by a space.

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- Use this command to configure a group of ports or link aggregates to which you want to apply QoS rules. Rather than create a condition for each port, group ports together. Use the **policy condition** command to associate a condition with the port group.
- Configuring ports and link aggregates in the same port group is allowed.
- Adding link aggregate member ports to a QoS port group is not recommended; doing so may cause undesired results when the port group is used in a QoS policy, particularly if only a subset of member ports is added to the port group.
- Use the **no** form of the command to remove a port group from the configuration, or to remove a slot/port from a port group.
- If a range of ports is specified using the syntax *chassis/slot/port-port2* (that is, 1/2/1-8), a single port within that range cannot be removed on its own. The entire range must be deleted as it was entered.

- If a range of link aggregates is specified using the syntax *agg\_id*[-*agg\_id2*] (that is, 10-15), a single aggregate within that range cannot be removed on its own. The entire range must be deleted as it was entered.
- When a port group is used as part of a policy rule and a policy action specifies a maximum bandwidth, each interface in the port group will be allowed the maximum bandwidth.
- To prevent IP source address spoofing, add ports to the port group called **UserPorts**. This port group does not need to be used in a condition or rule to be effected on flows and applies to both bridged and routed traffic. Ports added to the UserPorts group will block spoofed traffic while still allowing normal traffic on the port.
- Use the **qos user-port** command to configure the option to filter or administratively disable a port when a specific type of traffic (Spoof, RIP, BPDU, OSPF, and/or BGP) is received on a port that is a member of the pre-defined UserPorts group.
- If the **configuration snapshot** command is entered after the **policy port group** command is configured, the resulting ASCII file will include the following additional syntax for the **policy port group** command:

**from {cli | ldap | blt}**

This syntax indicates how the port group was created. The **cli** and **ldap** options may be changed by a user modifying the ASCII file; however, changing this setting is not recommended. The **blt** option indicates a built-in object, this setting is not configurable.

## Examples

```
-> policy port group port_group4 3/1/1-2 4/3/1 5/4/1
-> policy port group port_group4 no 3/1/1-2
-> policy port group UserPorts 4/1/1-8 5/1/1-8
```

## Release History

Release 5.1.R2; command introduced.

## Related Commands

<a href="#">policy condition</a>	Configures a policy condition. A port group may be configured as part of a policy condition.
<a href="#">qos apply</a>	Applies configured QoS and policy settings to the current configuration.
<a href="#">policy action maximum bandwidth</a>	Configures a maximum bandwidth value for a policy action.
<a href="#">show policy port group</a>	Displays information about policy port groups.

## MIB Objects

```
alaQoSPortGroupsTable
  alaQoSPortGroupsName
  alaQoSPortGroupSlot
  alaQoSPortGroupPort
  alaQoSPortGroupPortEnd
```

```
alaQoSAppliedPortGroupsTable
  alaQoSAppliedPortGroupsName
  alaQoSAppliedPortGroupSlot
  alaQoSAppliedPortGroupPort
  alaQoSAppliedPortGroupPortEnd
```

---

## policy map group

Configures a map group and its associated mappings for 802.1p, Type of Service (ToS), or Differentiated Services Code Point (DSCP) values. A map group may be referenced in a policy action with the **map** keyword.

```
policy map group map_group {value1:value2...}
```

```
no policy map group map_group
```

```
policy map group no {value1:value2...}
```

---

### Syntax Definitions

<i>map_group</i>	The name of the map group (up to 31 alphanumeric characters).
<i>value1</i>	The 802.1p, ToS, or DSCP value to be mapped to another value. May be a value or a range of values (for example, <b>1-2</b> ).
<i>value2...</i>	The 802.1p, ToS, or DSCP value to be used in place of <i>value1</i> . Additional mapping pairs may be included.

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- Use the **no** form of this command to remove a mapping pair or to remove the map group entirely.
- The map group may contain more than one mapping pair.
- If the **configuration snapshot** command is entered after the **policy map group** command is configured, the resulting ASCII file will include the following additional syntax for the **policy map group** command:

```
from {cli | ldap | blt}
```

This syntax indicates how the map group was created. The **cli** and **ldap** options may be changed by a user modifying the ASCII file; however, changing this setting is not recommended. The **blt** option indicates a built-in object, this setting is not configurable.

## Examples

```
-> policy map group tosGroup 1-4:3 5-6:5 7:6
-> policy map group tosGroup no 7:6
-> no policy map group tosGroup
```

## Release History

Release 5.1.R2; command introduced.

## Related Commands

[policy action map](#) Configures a mapping group for a policy action.

## MIB Objects

```
alaQoSMapGroupsTable
  alaQoSMapGroupsName
  alaQoSMapGroupsSource
alaQoSAppliedMapGroupsTable
  alaQoSAppliedMapGroupsName
  alaQoSAppliedMapGroupsSource
alaQoSMapGroupTable
  alaQoSMapGroupKey
  alaQoSMapGroupKeyEnd
  alaQoSMapGroupValue
alaQoSAppliedMapGroupTable
  alaQoSAppliedMapGroupKey
  alaQoSAppliedMapGroupKeyEnd
  alaQoSAppliedMapGroupValue
```

---

## policy service

Configures a service that may be used as part of a policy service group or included as part of a policy condition. A service is a source and/or destination TCP or UDP port or port range.

This overview section describes the base command. *At least one option must be configured with the base command.* Some options may be used in combination; some options are shortcuts for keyword combinations (see the Usage Guidelines). Options are described as separate commands. See the command descriptions and usage guidelines for valid combinations.

Use the **no** form for keywords to remove a parameter from a service.

```
policy service service_name
  [protocol protocol]
  [source ip-port port[-port]]
  [destination ip-port port[-port]]
  [source tcp-port port[-port]]
  [destination tcp-port port[-port]]
  [source udp-port port[-port]]
  [destination udp-port port[-port]]
```

```
no policy service service_name
```

---

### Syntax Definitions

<i>service_name</i>	The name of the service (up to 31 alphanumeric characters).
<i>protocol</i>	The protocol associated with the service. The range of values is 0–255. Currently a value of 6 (for TCP) or 17 (for UDP) is supported. This value must be specified for <b>source ip-port</b> or <b>destination ip-port</b> ; it cannot be specified for <b>source tcp-port</b> , <b>destination tcp-port</b> , <b>source udp-port</b> , or <b>destination udp-port</b> .
<i>port</i>	The well-known port number (or port range) for the desired service. For example, the port number for Telnet is 23. Specify a range of ports using a hyphen (for example, <b>22-23</b> ).

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- Use the **no** form of the command to remove a service from the configuration, or to remove parameters from a particular service. Note that at least one parameter must be associated with a service.



- The command options offer alternate ways of configuring TCP or UDP ports for a service. Note that port types (TCP or UDP) cannot be mixed in the same service. The following table shows how the keywords are used:

To configure:	Use keywords:	Notes
TCP or UDP ports for a service	<b>protocol</b> <b>source ip-port</b> <b>destination ip-port</b>	<i>The protocol must be specified with at least one source or destination port.</i>
TCP ports for a service	<b>source tcp-port</b> <b>destination tcp-port</b>	<i>Keywords may be used in combination.</i>
UDP ports for a service	<b>source udp-port</b> <b>destination udp-port</b>	<i>Keywords may be used in combination.</i>

- If the **configuration snapshot** command is entered after the **policy service** command is configured, the resulting ASCII file will include the following additional syntax for the **policy service** command:

**from {cli | ldap | blt}**

This syntax indicates how the service was created. The **cli** and **ldap** options may be changed by a user modifying the ASCII file; however, changing this setting is not recommended. The **blt** option indicates a built-in object, this setting is not configurable.

## Examples

The following two commands show two different ways of configuring the same service:

```
-> policy service telnet2 protocol 6 destination ip-port 23
-> policy service telnet3 destination tcp-port 23
```

## Release History

Release 5.1.R2; command introduced.

## Related Commands

<a href="#">policy service group</a>	Configures a policy service group, which is made up of policy services.
<a href="#">policy condition</a>	Creates a policy condition.
<a href="#">qos apply</a>	Applies configured QoS and policy settings to the current configuration.
<a href="#">show policy service</a>	Displays information about policy services configured on the switch.

**MIB Objects**

## alaQoSServiceTable

- alaQoSServiceName
- alaQoSServiceSource
- alaQoSServiceIpProtocol
- alaQoSServiceSourceIpPort
- alaQoSServiceSourceIpPortEnd
- alaQoSServiceDestinationIpPort
- alaQoSServiceDestinationIpPortEnd
- alaQoSServiceSourceTcpPort
- alaQoSServiceSourceTcpPortEnd
- alaQoSServiceDestinationTcpPort
- alaQoSServiceDestinationTcpPortEnd
- alaQoSServiceSourceUdpPort
- alaQoSServiceSourceUdpPortEnd
- alaQoSServiceDestinationUdpPort
- alaQoSServiceDestinationUdpPortEnd

## alaQoSAppliedServiceTable

- alaQoSAppliedServiceName
- alaQoSAppliedServiceSource
- alaQoSAppliedServiceIpProtocol
- alaQoSAppliedSourceIpPort
- alaQoSAppliedSourceIpPortEnd
- alaQoSAppliedServiceDestinationIpPort
- alaQoSAppliedServiceDestinationIpPortEnd
- alaQoSAppliedSourceTcpPort
- alaQoSAppliedSourceTcpPortEnd
- alaQoSAppliedServiceDestinationTcpPort
- alaQoSAppliedServiceDestinationTcpPortEnd
- alaQoSAppliedSourceUdpPort
- alaQoSAppliedSourceUdpPortEnd
- alaQoSAppliedServiceDestinationUdpPort
- alaQoSAppliedServiceDestinationUdpPortEnd

---

## policy service protocol

Configures a service with a protocol and IP port or port range that may be used as part of a policy service group or included as part of a policy condition.

```
policy service service_name protocol protocol {[source ip-port port[-port]] [destination ip-port port[-port]]}
```

```
no policy service service_name
```

```
policy service service_name no {source ip-port | destination ip-port}
```

---

### Syntax Definitions

<i>service_name</i>	The name of the service (up to 31 alphanumeric characters).
<i>protocol</i>	The protocol associated with the service. The range of values is 0–255. Currently a value of 6 (for TCP) or 17 (for UDP) is supported.
<i>port</i>	The well-known port number (or port range) for the desired service. For example, the port number for Telnet is 23. A port range should be separated by a hyphen (for example, <b>22-23</b> ).

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- Use the **no** form of the command to remove a service from the configuration or to remove parameters from a particular service. (A protocol value cannot be removed from a service.)
- Shortcut commands for the **policy service protocol** command include the following: **policy service source tcp-port**, **policy service destination tcp-port**, **policy service source udp-port**, and **policy service destination udp-port**.
- If the **configuration snapshot** command is entered after the **policy service** command is configured, the resulting ASCII file will include the following additional syntax for the **policy service** command:

```
from {cli | ldap | blt}
```

This syntax indicates how the service was created. The **cli** and **ldap** options may be changed by a user modifying the ASCII file; however, changing this setting is not recommended. The **blt** option indicates a built-in object, this setting is not configurable.

### Examples

```
-> policy service telnet2 protocol 6 destination ip-port 23 source ip-port 22  
-> policy service telnet2 no source ip-port
```

## Release History

Release 5.1.R2; command introduced.

## Related Commands

<a href="#">policy service group</a>	Configures a policy service group, which is made up of policy services.
<a href="#">policy condition</a>	Creates a policy condition.
<a href="#">qos apply</a>	Applies configured QoS and policy settings to the current configuration.
<a href="#">show policy service</a>	Displays information about policy services configured on the switch.

## MIB Objects

```
alaQoSServiceTable
  alaQoSServiceName
  alaQoSServiceSource
  alaQoSServiceIpProtocol
  alaQoSServiceSourceIpPort
  alaQoSServiceSourceIpPortEnd
  alaQoSServiceDestinationIpPort
  alaQoSServiceDestinationIpPortEnd
alaQoSAppliedServiceTable
  alaQoSAppliedServiceName
  alaQoSAppliedServiceSource
  alaQoSAppliedServiceIpProtocol
  alaQoSAppliedSourceIpPort
  alaQoSAppliedSourceIpPortEnd
  alaQoSAppliedServiceDestinationIpPort
  alaQoSAppliedServiceDestinationIpPortEnd
```

---

## policy service source tcp-port

Configures a service with a source TCP port or port range that may be used as part of a policy service group or included as part of a policy condition.

**policy service** *service\_name* **source tcp-port** *port[-port]*

**no policy service** *service\_name*

**policy service** *service\_name* **no source tcp-port**

---

### Syntax Definitions

*service\_name*

The name of the service (up to 31 alphanumeric characters).

*port*

The well-known port number (or port range) for the desired TCP service. For example, the port number for Telnet is 23. A port range should be separated by a hyphen (for example, **22-23**).

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- This command is a shortcut for the **policy service protocol** command.
- Use the **no** form of the command to remove a service from the configuration, or to remove parameters from a particular service. Note that at least one parameter must be associated with a service.
- Ports associated with a particular service must all be of the same type. (The **destination tcp-port** keyword may be used with this command; other keywords for the command are not allowed.)
- If the **configuration snapshot** command is entered after the **policy service** command is configured, the resulting ASCII file will include the following additional syntax for the **policy service** command:

**from {cli | ldap | blt}**

This syntax indicates how the service was created. The **cli** and **ldap** options may be changed by a user modifying the ASCII file; however, changing this setting is not recommended. The **blt** option indicates a built-in object, this setting is not configurable.

### Examples

```
-> policy service serv_5 source tcp-port 21-22
-> policy service serv_5 no source tcp-port
```

### Release History

Release 5.1.R2; command introduced.

## Related Commands

<a href="#">policy service group</a>	Configures a policy service group, which is made up of policy services.
<a href="#">policy condition</a>	Creates a policy condition.
<a href="#">qos apply</a>	Applies configured QoS and policy settings to the current configuration.
<a href="#">show policy service</a>	Displays information about policy services configured on the switch.

## MIB Objects

```
alaQoSServiceTable
  alaQoSServiceName
  alaQoSServiceSource
  alaQoSServiceSourceTcpPort
  alaQoSServiceSourceTcpPortEnd
alaQoSAppliedServiceTable
  alaQoSAppliedServiceName
  alaQoSAppliedServiceSource
  alaQoSAppliedSourceTcpPort
  alaQoSAppliedSourceTcpPortEnd
```

---

## policy service destination tcp-port

Configures a service with a destination TCP port or port range that may be used as part of a policy service group or included as part of a policy condition.

**policy service** *service\_name* **destination tcp-port** *port[-port]*

**no policy service** *service\_name*

**policy service** *service\_name* **no destination tcp-port**

---

### Syntax Definitions

*service\_name*

The name of the service (up to 31 alphanumeric characters).

*port*

The well-known port number (or port range) for the desired TCP service. For example, the port number for Telnet is 23. A port range should be separated by a hyphen (for example, **22-23**).

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- Use the **no** form of this command to remove a service from the configuration, or to remove parameters from a particular service.
- This command is a shortcut for the **policy service protocol** command.
- A policy service may be grouped in a policy group using the **policy service group** command. A policy condition may then be associated with the service group.
- If the **configuration snapshot** command is entered after the **policy service** command is configured, the resulting ASCII file will include the following additional syntax for the **policy service** command:

**from {cli | ldap | blt}**

This syntax indicates how the service was created. The **cli** and **ldap** options may be changed by a user modifying the ASCII file; however, changing this setting is not recommended. The **blt** option indicates a built-in object, this setting is not configurable.

### Examples

```
-> policy service service4 destination tcp-port 23
-> policy service service4 no destination tcp-port
```

### Release History

Release 5.1.R2; command introduced.

## Related Commands

<a href="#">policy service group</a>	Configures a policy service group, which is made up of policy services.
<a href="#">policy condition</a>	Creates a policy condition.
<a href="#">qos apply</a>	Applies configured QoS and policy settings to the current configuration.
<a href="#">show policy service</a>	Displays information about policy services configured on the switch.

## MIB Objects

```
alaQoSServiceTable
  alaQoSServiceName
  alaQoSServiceSource
  alaQoSServiceDestinationTcpPort
  alaQoSServiceDestinationTcpPortEnd
alaQoSAppliedServiceTable
  alaQoSAppliedServiceName
  alaQoSAppliedServiceSource
  alaQoSAppliedServiceDestinationTcpPort
  alaQoSAppliedServiceDestinationTcpPortEnd
```

---



## policy service source udp-port

Configures a service with a source UDP port or port range that may be used as part of a policy service group or included as part of a policy condition.

**policy service** *service\_name* **source udp-port** *port*[-*port*]

**no policy service** *service\_name*

**policy service** *service\_name* **no source udp-port**

---

### Syntax Definitions

*service\_name*

The name of the service (up to 31 alphanumeric characters).

*port*

The well-known port number (or port range) for the desired UDP service. Specify a port range with a hyphen (for example, **22-23**).

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- This command is a shortcut for the **policy service protocol** command.
- Use the **no** form of the command to remove a service from the configuration, or to remove parameters from a particular service. Note that at least one parameter must be associated with a service.
- Ports associated with a particular service must all be of the same type. (The **destination tcp-port** keyword may be used with this command; other keywords for the command are not allowed.)
- If the **configuration snapshot** command is entered after the **policy service** command is configured, the resulting ASCII file will include the following additional syntax for the **policy service** command:

**from** {**cli** | **ldap** | **blt**}

This syntax indicates how the service was created. The **cli** and **ldap** options may be changed by a user modifying the ASCII file; however, changing this setting is not recommended. The **blt** option indicates a built-in object, this setting is not configurable.

### Examples

```
-> policy service serv_a source udp-port 1000
-> no policy service serv_a source udp-port
```

### Release History

Release 5.1.R2; command introduced.

## Related Commands

<a href="#">policy service group</a>	Configures a policy service group, which is made up of policy services.
<a href="#">policy condition</a>	Creates a policy condition.
<a href="#">qos apply</a>	Applies configured QoS and policy settings to the current configuration.
<a href="#">show policy service</a>	Displays information about policy services configured on the switch.

## MIB Objects

```
alaQoSServiceTable
  alaQoSServiceName
  alaQoSServiceSource
  alaQoSServiceSourceUdpPort
  alaQoSServiceSourceUdpPortEnd
alaQoSAppliedServiceTable
  alaQoSAppliedServiceName
  alaQoSAppliedServiceSource
  alaQoSAppliedSourceUdpPort
  alaQoSAppliedSourceUdpPortEnd
```

---

## policy service destination udp-port

Configures a service with a destination UDP port or port range that may be used as part of a policy service group or included as part of a policy condition.

**policy service** *service\_name* **destination udp-port** *port[-port]*

**no policy service** *service\_name*

**policy service** *service\_name* **no destination udp-port**

---

### Syntax Definitions

*service\_name*

The name of the service (up to 31 alphanumeric characters).

*port*

The well-known port number (or port range) for the desired UDP service. For example, a port number for NETBIOS is 137. A port range should be separated by a hyphen (for example, **137-138**).

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- This command is a shortcut for the **policy service protocol** command.
- A policy service may be grouped in a policy group using the **policy service group** command. A policy condition may then be associated with the service group.
- Use the **no** form of the command to remove a service from the configuration, or to remove parameters from a particular service.
- If the **configuration snapshot** command is entered after the **policy service** command is configured, the resulting ASCII file will include the following additional syntax for the **policy service** command:

**from {cli | ldap | blt}**

This syntax indicates how the service was created. The **cli** and **ldap** options may be changed by a user modifying the ASCII file; however, changing this setting is not recommended. The **blt** option indicates a built-in object, this setting is not configurable.

### Examples

```
-> policy service service4 destination udp-port 137
-> policy service service4 no destination udp-port
```

### Release History

Release 5.1.R2; command introduced.

## Related Commands

<a href="#">policy service group</a>	Configures a policy service group, which is made up of policy services.
<a href="#">policy condition</a>	Creates a policy condition.
<a href="#">qos apply</a>	Applies configured QoS and policy settings to the current configuration.
<a href="#">show policy service</a>	Displays information about policy services configured on the switch.

## MIB Objects

```
alaQoSServiceTable
  alaQoSServiceName
  alaQoSServiceSource
  alaQoSServiceDestinationUdpPort
  alaQoSServiceDestinationUdpPortEnd
alaQoSAppliedServiceTable
  alaQoSAppliedServiceName
  alaQoSAppliedServiceSource
  alaQoSAppliedServiceDestinationUdpPort
  alaQoSAppliedServiceDestinationUdpPortEnd
```

---

## policy condition

Creates a QoS policy condition. The condition determines what parameters the switch uses to classify incoming flows. Condition parameters may be configured when the condition is created; or parameters may be configured for an existing condition. At least one parameter must be configured for a condition.

This section describes the base command. Optional keywords are listed below and described as separate commands later in this chapter. (Options may be used in combination but are described separately for ease in explanation.) Use the **no** form for keywords to remove a parameter from the condition.

Some condition parameters may not be supported depending on the platform you are using. Also some condition parameters may not be supported with some action parameters. See the condition/action tables in the *OmniSwitch AOS Release 8 Network Configuration Guide*.

**policy condition** *condition\_name*

```

[source ip ip_address [mask netmask]]
[source ipv6 {any | ipv6_address [mask netmask]}]
[destination ip ip_address [mask netmask]]
[destination ipv6 {any | ipv6_address [mask netmask]}]
[multicast ip ip_address [mask netmask]]
[source network group network_group]
[destination network group network_group]
[multicast network group multicast_group]
[source ip-port port[-port]]
[destination ip-port port[-port]]
[source tcp-port port[-port]]
[destination tcp-port port[-port]]
[source udp-port port[-port]]
[destination udp-port port[-port]]
[ethertype etype]
[established]
[tcpflags {any | all} flag [mask flag]]
[service service]
[service group service_group]
[icmptype type]
[icmpcode code]
[ip-rotocol protocol]
[ipv6]
[flow-label flow_label_value]
[tos tos_value tos_mask]
[dscp {dscp_value[-value] [dscp_mask]}]
[source mac mac_address [mask mac_mask]]
[destination mac mac_address [mask mac_mask]]
[source mac group group_name]
[destination mac group mac_group]
[source vlan vlan_id]
[inner source-vlan vlan_id]
[802.1p 802.1p_value]
[inner 802.1p 802.1p_value]

```

```
[source port chassis/slot/port[-port2]]
[source port group group_name]
[destination port chassis/slot/port[-port2]]
[fragments]
[app-mon-application-group group_name]
[app-mon-application-name app_name]

no policy condition condition_name
```

---

## Syntax Definitions

*condition\_name* The name of the condition. Any alphanumeric string.

## Defaults

N/A

## Platforms Supported

OmniSwitch 2260, 2360

## Usage Guidelines

- A policy condition and a policy action are combined to make a policy rule. See the [policy rule](#) command.
- Use the [qos apply](#) command to activate configuration changes.
- If multiple keywords are defined for a single condition, the traffic flow must match all of the parameters in the condition before the rule is enforced.
- Use the **no** form of the command to remove a condition from a policy rule.
- At least one parameter must be associated with a condition.
- If the **configuration snapshot** command is entered after the **policy condition** command is configured, the resulting ASCII file will include the following additional syntax for the **policy condition** command:

```
from {cli | ldap | blt}
```

This syntax indicates how the condition was created. The **cli** and **ldap** options may be changed by a user modifying the ASCII file; however, changing this setting is not recommended. The **blt** option indicates a built-in condition, this option is not configurable.

## Examples

```
-> policy condition cond4 source port 3/1/1
```

## Release History

Release 5.1.R2; command introduced.

## Related Commands

<a href="#">qos apply</a>	Applies configured QoS and policy settings to the current configuration.
<a href="#">policy action</a>	Configures a policy action.
<a href="#">policy rule</a>	Configures a policy rule on the switch. A rule is made up of a condition (for classifying incoming traffic) and an action (to be applied to outgoing traffic).
<a href="#">show policy condition</a>	Shows information about policy conditions configured on the switch.

## MIB Objects

```
alaQoSConditionTable
  alaQoSConditionName
  alaQoSConditionSource
alaQoSAppliedConditionTable
  alaQoSAppliedConditionName
  alaQoSAppliedConditionSource
```

---

## policy condition source ip

Configures a source IP address for a policy condition.

```
policy condition condition_name source ip {any | ip_address [mask netmask]}
```

```
policy condition condition_name no source ip
```

---

### Syntax Definitions

<i>condition_name</i>	The name of the condition.
<b>any</b>	Any source IPv4 address.
<i>ip_address</i>	The source IP address of the Layer 3 flow.
<i>netmask</i>	The mask for the source IP address.

### Defaults

---

parameter	default
<i>netmask</i>	IP address class

---

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- If a mask is not specified, the IP address is assumed to be a host address.
- A source IP address and a source IP network group cannot be specified in the same condition.
- Use the **no** form of the command to remove a source IP address from a condition; however, at least one classification parameter must be associated with a condition.

### Examples

```
-> policy condition cond3 source ip 173.201.18.3  
-> policy condition cond4 source ip any
```

### Release History

Release 5.1.R2; command introduced.



## Related Commands

<a href="#">qos apply</a>	Applies configured QoS and policy settings to the current configuration.
<a href="#">policy condition</a>	Creates a policy condition.
<a href="#">show policy condition</a>	Shows information about a particular policy condition configured on the switch.

## MIB Objects

```
alaQoSConditionTable
  alaQoSConditionName
  alaQoSConditionSourceIpAddr
  alaQoSConditionSourceIpMask
alaQoSAppliedConditionTable
  alaQoSAppliedConditionName
  alaQoSAppliedConditionSourceIpAddr
  alaQoSAppliedConditionSourceIpMask
```

---

## policy condition source ipv6

Configures a source IPv6 address for a policy condition.

```
policy condition condition_name source ipv6 {any | ipv6_address [mask netmask]}
```

```
policy condition condition_name no source ipv6
```

---

### Syntax Definitions

<i>condition_name</i>	The name of the condition.
<b>any</b>	Any source IPv6 address.
<i>ipv6_address</i>	A specific source IPv6 address.
<i>netmask</i>	The mask for the source IPv6 address.

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- Use the **no** form of the command to remove a source IPv6 address from a condition; however, at least one classification parameter must be associated with a condition.
- If a mask is not specified, the IPv6 address is assumed to be a host address.

### Examples

```
-> policy condition cond3 source ipv6 ::1234:531F:BCD2:F34A
-> policy condition cond4 source ipv6 any
```

### Release History

Release 5.1.R2; command introduced.

### Related Commands

<a href="#">qos apply</a>	Applies configured QoS and policy settings to the current configuration.
<a href="#">policy condition</a>	Creates a policy condition.
<a href="#">show policy condition</a>	Shows information about a particular policy condition configured on the switch.

### MIB Objects

```
alaQoSConditionTable
  alaQoSConditionName
  alaQoSConditionSourceIpv6Addr
```

```
alaQoSConditionSourceIpv6AddrStatus
alaQoSConditionSourceIpv6Mask
alaQoSAppliedConditionTable
  alaQoSAppliedConditionName
  alaQoSAppliedConditionSourceIpv6Addr
  alaQoSAppliedConditionSourceIpv6AddrStatus
  alaQoSAppliedConditionSourceIpMask
```

---

## policy condition destination ip

Configures a destination IP address for a policy condition.

**policy condition** *condition\_name* **destination ip** *ip\_address* [**mask** *netmask*]

**policy condition** *condition\_name* **no destination ip**

---

### Syntax Definitions

<i>condition_name</i>	The name of the condition.
<i>ip_address</i>	The source IP address of the Layer 3 flow.
<i>netmask</i>	The mask for the source IP address.

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- If a mask is not specified, the IP address is assumed to be a host address.
- A destination IP address and a destination IP network group cannot be specified in the same condition.
- Use the **no** form of the command to remove a destination IP address from a condition; however, at least one classification parameter must be associated with a condition.

### Examples

```
-> policy condition cond4 destination ip 208.192.21.0 mask 255.255.255.0
```

### Release History

Release 5.1.R2; command introduced.

### Related Commands

<a href="#">policy condition</a>	Creates a policy condition.
<a href="#">qos apply</a>	Applies configured QoS and policy settings to the current configuration.
<a href="#">show policy condition</a>	Shows information about a particular policy condition configured on the switch.

### MIB Objects

```
alaQoSConditionTable  
    alaQoSConditionName  
    alaQoSConditionDestinationIpAddr
```

```
    alaQoSConditionDestinationIpMask  
alaQoSAppliedConditionTable  
    alaQoSAppliedConditionName  
    alaQoSAppliedConditionDestinationIpAddr  
    alaQoSAppliedConditionDestinationIpMask
```

---

## policy condition destination ipv6

Configures a destination IPv6 address for a policy condition.

```
policy condition condition_name destination ipv6 {any | ipv6_address [mask netmask]}
```

```
policy condition condition_name no destination ipv6
```

---

### Syntax Definitions

<i>condition_name</i>	The name of the condition.
<b>any</b>	Any destination IPv6 address.
<i>ipv6_address</i>	A specific destination IPv6 address.
<i>netmask</i>	The mask for the destination IPv6 address.

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- Use the **no** form of this command to remove a destination IPv6 address from a condition; however, at least one classification parameter must be associated with a condition.
- If a mask is not specified, the IPv6 address is assumed to be a host address.

### Examples

```
-> policy condition cond3 destination ipv6 ::1234:531f:bcd2:f34a
```

### Release History

Release 5.1.R2; command introduced.

### Related Commands

<a href="#">qos apply</a>	Applies configured QoS and policy settings to the current configuration.
<a href="#">policy condition</a>	Creates a policy condition.
<a href="#">show policy condition</a>	Shows information about a particular policy condition configured on the switch.

### MIB Objects

```
alaQoSConditionTable  
  alaQoSConditionName  
  alaQoSConditionDestinationIpv6Addr  
  alaQoSConditionDestinationIpv6AddrStatus
```

```
    alaQoSConditionDestinationIpv6Mask  
alaQoSAppliedConditionTable  
    alaQoSAppliedConditionName  
    alaQoSAppliedConditionDestinationIpv6Addr  
    alaQoSAppliedConditionDestinationIpv6AddrStatus  
    alaQoSAppliedConditionDestinationIpMask
```

---

## policy condition multicast ip

Configures a multicast IP address for a policy condition.

```
policy condition condition_name multicast ip ip_address [mask netmask]
```

```
policy condition condition_name no multicast ip
```

---

### Syntax Definitions

<i>condition_name</i>	The name of the condition.
<i>ip_address</i>	The multicast IP address.
<i>netmask</i>	Optional. The mask for the multicast IP address.

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- If a mask is not specified, the IP address is assumed to be a host address.
- A multicast IP address and a multicast network group cannot be specified in the same condition.
- Use the **no** form of the command to remove a multicast IP address from a condition; however, at least one classification parameter must be associated with a condition.

### Examples

```
-> policy condition cond4 multicast ip 224.1.1.1
```

### Release History

Release 5.1.R2; command introduced.

### Related Commands

<a href="#">policy condition</a>	Creates a policy condition.
<a href="#">qos apply</a>	Applies configured QoS and policy settings to the current configuration.

### MIB Objects

```
alaQoSConditionTable  
  alaQoSConditionName  
  alaQoSMulticastIpAddr  
  alaQoSMulticastIpMask
```



```
alaQoSAppliedConditionTable  
  alaQoSAppliedConditionName  
  alaQoSAppliedMulticastIpAddr  
  alaQoSAppliedMulticastIpMask
```

---

## policy condition source network group

Associates a source network group with a policy condition.

**policy condition** *condition\_name* **source network group** *network\_group*

**policy condition** *condition\_name* **no source network group**

---

### Syntax Definitions

*condition\_name*

The name of the condition.

*network\_group*

The name of the source network group. Network groups are configured through the [policy network group](#) command.

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- Use the **no** form of the command to remove a source network group from a condition; however, at least one classification parameter must be associated with a condition.
- A source IP address and a source IP network group cannot be specified in the same condition.

### Examples

```
-> policy condition cond5 source network group webgroup1
```

### Release History

Release 5.1.R2; command introduced.

### Related Commands

[qos apply](#)

Applies configured QoS and policy settings to the current configuration.

[policy condition](#)

Creates a policy condition.

[policy network group](#)

Configures a network group name and its associated IP addresses.

[show policy condition](#)

Shows information about policy conditions configured on the switch.

[show policy network group](#)

Displays information about policy network groups.

### MIB Objects

alaQoSConditionTable

  alaQoSConditionName

  alaQoSConditionSourceNetworkGroup

```
alaQoSAppliedConditionTable  
  alaQoSAppliedConditionName  
  alaQoSAppliedConditionSourceNetworkGroup
```

---

## policy condition destination network group

Associates a destination network group with a policy condition.

**policy condition** *condition\_name* **destination network group** *network\_group*

**policy condition** *condition\_name* **no destination network group**

---

### Syntax Definitions

*condition\_name*

The name of the condition.

*network\_group*

The name of the destination network group. Network groups are configured through the [policy network group](#) command.

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- Use the **no** form of the command to remove a destination network group from a condition; however, at least one classification parameter must be associated with a condition.
- A destination IP address and a destination IP network group cannot be specified in the same condition.

### Examples

```
-> policy condition cond6 destination network group webgroup1
```

### Release History

Release 5.1.R2; command introduced.

### Related Commands

[policy condition](#)

Creates a policy condition.

[policy network group](#)

Configures a network group name and its associated IP addresses.

[qos apply](#)

Applies configured QoS and policy settings to the current configuration.

[show policy condition](#)

Shows information about policy conditions configured on the switch.

[show policy network group](#)

Displays information about policy network groups.

### MIB Objects

alaQoSConditionTable

alaQoSConditionName

alaQoSConditionDestinationNetworkGroup

```
alaQoSAppliedConditionTable  
  alaQoSAppliedConditionName  
  alaQoSAppliedConditionDestinationNetworkGroup
```

---

## policy condition multicast network group

Associates a multicast group with a policy condition.

**policy condition** *condition\_name* **multicast network group** *multicast\_group*

**policy condition** *condition\_name* **no multicast network group**

---

### Syntax Definitions

*condition\_name*

The name of the condition.

*multicast\_group*

The multicast group name. Multicast groups are configured through the **policy network group** command.

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- Use the **no** form of the command to remove a multicast group from a condition; however, at least one classification parameter must be associated with a condition.
- A multicast address and a multicast network group cannot be specified in the same condition.

### Examples

```
-> policy condition cond3 multicast group video2
```

### Release History

Release 5.1.R2; command introduced.

### Related Commands

[qos apply](#)

Applies configured QoS and policy settings to the current configuration.

[policy condition](#)

Creates a policy condition.

[policy network group](#)

Configures a network group name and its associated IP addresses.

[show policy condition](#)

Shows information about policy conditions configured on the switch.

[show policy network group](#)

Displays information about policy network groups.

### MIB Objects

alaQoSConditionTable

  alaQoSConditionName

  alaQoSConditionMulticastNetworkGroup

```
alaQoSAppliedConditionTable  
  alaQoSAppliedConditionName  
  alaQoSAppliedConditionMulticastNetworkGroup
```

---

## policy condition source ip-port

Configures a source IP port number for a policy condition.

**policy condition** *condition\_name* **source ip-port** *port[-port]*

**policy condition** *condition\_name* **no source ip-port**

---

### Syntax Definitions

*condition\_name*

The name of the condition.

*port*

The TCP or UDP port number of the source address of the Layer 3 flow, in the range from 0–65535. A range of ports (separated by a hyphen) may be specified instead of a single port.

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- Use the **no** form of the command to remove a source IP port from a condition; however, at least one classification parameter must be associated with a condition.
- The protocol (TCP or UDP) must be specified in the condition, either on the same command line or in a previous command. Use the **ip-protocol** keyword. See the [policy condition ip-protocol](#) command.
- The same condition cannot specify a source IP port with a source TCP port, source UDP port, service, or service group.

### Examples

```
-> policy condition cond1 ip-protocol 6 source ip-port 137
```

### Release History

Release 5.1.R2; command introduced.



## Related Commands

<b>qos apply</b>	Applies configured QoS and policy settings to the current configuration.
<b>policy condition ip-protocol</b>	Configures an IP protocol for a policy condition.
<b>show policy condition</b>	Shows information about policy conditions configured on the switch.

## MIB Objects

```
alaQoSConditionTable
  alaQoSConditionName
  alaQoSConditionSourceIpPort
  alaQoSConditionSourceIpPortEnd
alaQoSAppliedConditionTable
  alaQoSAppliedConditionName
  alaQoSAppliedConditionSourceIpPort
  alaQoSAppliedConditionSourceIpPortEnd
```

---

## policy condition destination ip-port

Configures a destination IP port number for a policy condition.

```
policy condition condition_name destination ip-port port[-port]
```

```
policy condition condition_name no destination ip-port
```

---

### Syntax Definitions

*condition\_name*

The name of the condition.

*port*

The TCP or UDP port number (or port range) of the destination address of the Layer 3 flow, in the range from 0–65535. A range of ports (separated by a hyphen) may be specified instead of a single port.

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- Use the **no** form of the command to remove a destination IP port from a condition; however, at least one classification parameter must be associated with a condition.
- The protocol (TCP or UDP) must be specified in the same condition, either on the same command line or in a previous command. Use the **ip-protocol** keyword. See the [policy condition ip-protocol](#) command.
- The same condition cannot specify a destination IP port with a service or service group.

### Examples

```
-> policy condition cond2 ip-protocol 6 destination ip-port 137-138
```

### Release History

Release 5.1.R2; command introduced.

## Related Commands

<a href="#">qos apply</a>	Applies configured QoS and policy settings to the current configuration.
<a href="#">policy condition ip-protocol</a>	Configures an IP protocol for a policy condition.
<a href="#">show policy condition</a>	Shows information about policy conditions configured on the switch.

## MIB Objects

```
alaQoSConditionTable
  alaQoSConditionName
  alaQoSConditionDestinationIpPort
  alaQoSConditionDestinationIpPortEnd
alaQoSAppliedConditionTable
  alaQoSAppliedConditionName
  alaQoSAppliedConditionDestinationIpPort
  alaQoSAppliedConditionDestinationIpPortEnd
```

---

## policy condition source tcp-port

Configures a source TCP port number for a policy condition.

```
policy condition condition_name source tcp-port port[-port]
```

```
policy condition condition_name no source tcp-port
```

---

### Syntax Definitions

*condition\_name*

The name of the condition.

*port*

The TCP port number of the source address of the Layer 3 flow, in the range from 0–65535. A range of ports (separated by a hyphen) may be specified instead of a single port.

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- Use the **no** form of the command to remove a source TCP port from a condition; however, at least one classification parameter must be associated with a condition.
- This command is a shortcut for the **policy condition source ip-port** command, which requires that the protocol also be specified. Rather than specifying **source ip-port** and **ip-protocol**, use **source tcp-port**.
- The same condition cannot specify a source TCP port with a service or service group.
- IP port protocol types cannot be mixed in the same condition; ports must be either TCP or UDP.
- Use this condition in combination with the IPv6 condition (**policy condition ipv6**) to configure IPv6 policies for Layer 4 information, services, and service groups.

### Examples

```
-> policy condition cond3 source tcp-port 137
-> policy condition cond4 ipv6 source tcp-port 21
-> policy condition cond3 no source tcp-port
```

### Release History

Release 5.1.R2; command introduced.

## Related Commands

<a href="#">qos apply</a>	Applies configured QoS and policy settings to the current configuration.
<a href="#">policy condition ip-protocol</a>	Configures an IP protocol for a policy condition.
<a href="#">show policy condition</a>	Shows information about policy conditions configured on the switch.

## MIB Objects

```
alaQoSConditionTable
  alaQoSConditionName
  alaQoSConditionSourceTcpPort
  alaQoSConditionSourceTcpPortEnd
alaQoSAppliedConditionTable
  alaQoSAppliedConditionName
  alaQoSAppliedConditionSourceTcpPort
  alaQoSAppliedConditionSourceTcpPortEnd
```

---

## policy condition destination tcp-port

Configures a destination TCP port number for a policy condition.

```
policy condition condition_name destination tcp-port port[-port]
```

```
policy condition condition_name no destination tcp-port
```

---

### Syntax Definitions

*condition\_name*

The name of the condition.

*port*

The TCP port number (or port range) of the destination address of the Layer 3 flow, in the range from 0–65535. A range of ports (separated by a hyphen) may be specified instead of a single port.

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- Use the **no** form of the command to remove a destination TCP port from a condition; however, at least one classification parameter must be associated with a condition.
- This command is a shortcut for the **policy condition destination ip-port** command, which requires that the protocol also be specified. Rather than specifying **destination ip-port** and **ip-protocol**, use **destination tcp-port**.
- The same condition cannot specify a destination TCP port with a service or service group.
- IP port protocol types cannot be mixed in the same condition; ports must be either TCP or UDP.
- Use this condition in combination with the IPv6 condition (**policy condition ipv6**) to configure IPv6 policies for Layer 4 information, services, and service groups.

### Examples

```
-> policy condition cond4 destination tcp-port 137-138
-> policy condition cond5 ipv6 destination tcp-port 140
-> policy condition cond4 no destination tcp-port
```

### Release History

Release 5.1.R2; command introduced.

## Related Commands

<a href="#">qos apply</a>	Applies configured QoS and policy settings to the current configuration.
<a href="#">policy condition ip-protocol</a>	Configures an IP protocol for a policy condition.
<a href="#">show policy condition</a>	Shows information about policy conditions configured on the switch.

## MIB Objects

```
alaQoSConditionTable
  alaQoSConditionName
  alaQoSConditionDestinationTcpPort
  alaQoSConditionDestinationTcpPortEnd
alaQoSAppliedConditionTable
  alaQoSAppliedConditionName
  alaQoSAppliedConditionDestinationTcpPort
  alaQoSAppliedConditionDestinationTcpPortEnd
```

---

## policy condition source udp-port

Configures a source UDP port number for a policy condition.

```
policy condition condition_name source udp-port port[-port]
```

```
policy condition condition_name no source udp-port
```

---

### Syntax Definitions

<i>condition_name</i>	The name of the condition.
<i>port</i>	The UDP port number of the source address of the Layer 3 flow, in the range from 0–65535. A range of ports (separated by a hyphen) may be specified instead of a single port.

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- Use the **no** form of the command to remove a source UDP port from a condition; however, at least one classification parameter must be associated with a condition.
- This command is a shortcut for the **policy condition source ip-port** command, which requires that the protocol also be specified. Rather than specifying **source ip-port** and **ip-protocol**, use **source udp-port**.
- The same condition cannot specify a source UDP port with a service or service group.
- IP port protocol types cannot be mixed in the same condition; ports must be either TCP or UDP.
- Use this condition in combination with the IPv6 condition (**policy condition ipv6**) to configure IPv6 policies for Layer 4 information, services, and service groups.

### Examples

```
-> policy condition cond5 source udp-port 1200-1400  
-> policy condition cond6 ipv6 source udp-port 1000  
-> policy condition cond5 no source udp-port
```

### Release History

Release 5.1.R2; command introduced.



## Related Commands

<a href="#">qos apply</a>	Applies configured QoS and policy settings to the current configuration.
<a href="#">policy condition ip-protocol</a>	Configures an IP protocol for a policy condition.
<a href="#">show policy condition</a>	Shows information about policy conditions configured on the switch.

## MIB Objects

```
alaQoSConditionTable
  alaQoSConditionName
  alaQoSConditionSourceUdpPort
  alaQoSConditionSourceUdpPortEnd
alaQoSAppliedConditionTable
  alaQoSAppliedConditionName
  alaQoSAppliedConditionSourceUdpPort
  alaQoSAppliedConditionSourceUdpPortEnd
```

---

## policy condition destination udp-port

Configures a destination UDP port number for a policy condition.

**policy condition** *condition\_name* **destination udp-port** *port[-port]*

**policy condition** *condition\_name* **no destination udp-port**

---

### Syntax Definitions

<i>condition_name</i>	The name of the condition.
<i>port</i>	The UDP port number (or port range) of the destination address of the Layer 3 flow, in the range from 0–65535. A range of ports (separated by a hyphen) may be specified instead of a single port.

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- Use the **no** form of the command to remove a destination UDP port from a condition; however, at least one classification parameter must be associated with a condition.
- This command is a shortcut for the **policy condition destination ip-port** command, which requires that the protocol also be specified. Rather than specifying **destination ip-port** and **ip-protocol**, use **destination udp-port**.
- The same condition cannot specify a destination UDP port with a service or service group.
- IP port protocol types cannot be mixed in the same condition; ports must be either TCP or UDP.
- Use this condition in combination with the IPv6 condition (**policy condition ipv6**) to configure IPv6 policies for Layer 4 information, services, and service groups.

### Examples

```
-> policy condition cond4 destination udp-port 137-138
-> policy condition cond5 ipv6 destination udp-port 140
-> policy condition cond4 no destination udp-port
```

### Release History

Release 5.1.R2; command introduced.

## Related Commands

<a href="#">qos apply</a>	Applies configured QoS and policy settings to the current configuration.
<a href="#">policy condition</a>	Creates a policy condition.
<a href="#">show policy condition</a>	Shows information about policy conditions configured on the switch.

## MIB Objects

```
alaQoSConditionTable
  alaQoSConditionName
  alaQoSConditionDestinationTcpPort
  alaQoSConditionDestinationTcpPortEnd
alaQoSAppliedConditionTable
  alaQoSAppliedConditionName
  alaQoSAppliedConditionDestinationTcpPort
  alaQoSAppliedConditionDestinationTcpPortEnd
```

---

## policy condition ethertype

Configures an ethertype value to use for traffic classification.

**policy condition** *condition\_name* **ethertype** *etype*

**policy condition** *condition\_name* **no ethertype**

---

### Syntax Definitions

<i>condition_name</i>	The name of the condition.
<i>etype</i>	The ethertype value, in the range 1536–65535 or 0x600–0xffff hex.

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- Use the **no** form of this command to remove an ethertype value from a condition; however, at least one classification parameter must be associated with a condition.
- Enter a numeric or equivalent hex value for the *etype*.

### Examples

```
-> policy condition cond12 ethertype 8137
```

### Release History

Release 5.1.R2; command introduced.

### Related Commands

<a href="#">qos apply</a>	Applies configured QoS and policy settings to the current configuration.
<a href="#">policy condition</a>	Creates a policy condition.
<a href="#">show policy condition</a>	Shows information about policy conditions configured on the switch.

### MIB Objects

```
alaQoSConditionTable  
  alaQoSConditionName  
  alaQoSConditionEthertype  
  alaQoSConditionEthertypeStatus  
alaQoSAppliedConditionTable  
  alaQoSAppliedConditionName  
  alaQoSAppliedConditionEthertype
```

alaQoSAppliedConditionEthertypeStatus

---

## policy condition established

Configures an established TCP connection as a policy condition. A connection is considered established if the **ack** or **rst** flags in the TCP header of the packet are set.

**policy condition** *condition\_name* **established**

**policy condition** *condition\_name* **no established**

---

### Syntax Definitions

*condition\_name*                      The name of the condition.

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- Use the **no** form of this command to remove **established** from a condition; however, at least one classification parameter must be associated with a condition.
- When an initial TCP connection packet is received only the **syn** flag is set. As a result, TCP packets are only examined if they are not the starting packet.
- Typically this condition is used in combination with **source ip**, **destination ip**, **source port**, **destination port**, **source tcp-port**, or **destination tcp-port** conditions.
- Note that even though **established** can be used with most action parameters, it is mainly intended for ACL use.

### Examples

```
-> policy condition cond2 source ip 192.168.5.10 established
-> policy condition cond3 destination ip 10.255.11.40
```

### Release History

Release 5.1.R2; command introduced.

## Related Commands

<a href="#">qos apply</a>	Applies configured QoS and policy settings to the current configuration.
<a href="#">policy condition</a>	Creates a policy condition.
<a href="#">show policy condition</a>	Shows information about policy conditions configured on the switch.

## MIB Objects

```
alaQoSConditionTable  
  alaQoSConditionTcpEstablished  
alaQoSAppliedConditionTable  
  alaQoSAppliedConditionTcpEstablished
```

---

## policy condition tcpflags

Configures a specific TCP flag value or combination of flag values as a policy condition.

```
policy condition condition_name tcpflags [any | all] {f | s | r | p | a | u | e | w} mask {f | s | r | p | a | u | e | w}
```

```
policy condition condition_name no tcpflags
```

---

### Syntax Definitions

<i>condition_name</i>	The name of the condition.
<b>any</b>	Match on any of the specified TCP flags.
<b>all</b>	Match all specified TCP flags.
<b>f   s   r   p   a   u   e   w</b>	TCP flag value to match ( <b>f</b> =fin, <b>s</b> =syn, <b>r</b> =rst, <b>p</b> =psh, <b>a</b> =ack, <b>u</b> =urg, <b>e</b> =ecn, and <b>w</b> =cwr). <i>The e and w flags are currently not supported.</i>

### Defaults

parameter	default
any   all	all

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- Use the **no** form of the command to remove **tcpflags** from a condition; however, at least one classification parameter must be associated with a condition.
- Use the **any** option to indicate that a match on any one of the specified TCP flags qualifies as a match for the condition. Use the **all** option to indicate that a match on all specified TCP flags is required to qualify as a match for the condition.
- Enter one or more TCP flags after the **any** or **all** keyword to indicate that the value of the flag bit must be set to one to qualify as a match.
- Enter one or more TCP flags after the **mask** keyword to indicate which TCP flags to match.
- If a TCP flag is specified as part of the **mask** but does not have a corresponding match value specified with the **any** or **all** options, then zero is assumed as the match value. For example, **tcpflags all f s mask f s a** looks for the following bit values to determine a match: **f**=1, **s**=1, **a**=0.
- Typically this condition is used in combination with **source ip**, **destination ip**, **source port**, **destination port**, **source tcp-port**, or **destination tcp-port** conditions.
- Note that even though **tcpflags** can be used with most action parameters, it is mainly intended for ACL use.
- Use **tcpflags** in combination with the IPv6 condition to configure an IPv6 TCP flag policy (for example, **policy condition ipv6 tcpflags**).



## Examples

```
-> policy condition tcp-flag tcpflags all f s mask f s a
-> policy condition tcp-flag-ar tcpflags any a r mask a r
-> policy condition tcp-flag-f destination network group Allowed_Resources source
tcp-port 1982 tcpflags any f mask f ipv6
```

## Release History

Release 5.1.R2; command introduced.

## Related Commands

<a href="#">qos apply</a>	Applies configured QoS and policy settings to the current configuration.
<a href="#">policy condition</a>	Creates a policy condition.
<a href="#">show policy condition</a>	Shows information about policy conditions configured on the switch.

## MIB Objects

```
alaQoSConditionTable
    alaQoSConditionTcpFlags,
    alaQoSConditionTcpFlagsStatus,
    alaQoSConditionTcpFlagsVal,
    alaQoSConditionTcpFlagsValStatus,
    alaQoSConditionTcpFlagsMask,
    alaQoSConditionTcpFlagsMaskStatus,
alaQoSAppliedConditionTable
    alaQoSAppliedConditionTcpFlags,
    alaQoSAppliedConditionTcpFlagsStatus,
    alaQoSAppliedConditionTcpFlagsVal,
    alaQoSAppliedConditionTcpFlagsValStatus,
    alaQoSAppliedConditionTcpFlagsMask,
    alaQoSAppliedConditionTcpFlagsMaskStatus,
```

---

## policy condition service

Configures a service for a policy condition.

**policy condition** *condition\_name* **service** *service\_name*

**policy condition** *condition\_name* **no service**

---

### Syntax Definitions

*condition\_name* The name of the condition.

*service\_name* The service name, configured through the **policy service** command.

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- Use the **no** form of the command to remove a service group from a condition; however, at least one classification parameter must be associated with a condition.
- A policy condition that specifies a service cannot also specify a service group, IP protocol, source IP port, or destination IP port.

### Examples

```
-> policy condition cond12 service serv2
```

### Release History

Release 5.1.R2; command introduced.

### Related Commands

<a href="#">policy service</a>	Configures a service that may be used as part of a policy service group.
<a href="#">qos apply</a>	Applies configured global QoS and policy settings to the current configuration (changes will be active and stored in flash).
<a href="#">show policy service</a>	Displays information about all particular policy services or a particular policy service configured on the switch.

### MIB Objects

```
alaQoSConditionTable  
    alaQoSConditionService  
alaQoSAppliedConditionTable  
    alaQoSAppliedConditionService
```

---

## policy condition service group

Associates a policy service group with a policy condition.

**policy condition** *condition\_name* **service group** *service\_group*

**policy condition** *condition\_name* **no service group**

---

### Syntax Definitions

*condition\_name*

The name of the condition.

*service\_group*

The service group name. Service groups are configured through the [policy service group](#) command.

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- Use the **no** form of the command to remove a service group from a condition; however, at least one classification parameter must be associated with a condition.
- A policy condition that specifies a service group cannot also specify a service, IP protocol, source IP port, or destination IP port.

### Examples

```
-> policy condition cond12 service group servgroup2
```

### Release History

Release 5.1.R2; command introduced.

### Related Commands

[policy service group](#)

Configures a service group and its associated services.

[policy condition](#)

Creates a policy condition.

[qos apply](#)

Applies configured global QoS and policy settings to the current configuration (changes will be active and stored in flash).

[show policy condition](#)

Shows information about policy conditions configured on the switch.

### MIB Objects

alaQoSConditionTable

  alaQoSConditionName

  alaQoSConditionServiceGroup

```
alaQoSAppliedConditionTable  
  alaQoSAppliedConditionName  
  alaQoSAppliedConditionServiceGroup
```

---

## policy condition icmptype

Configures an ICMP type value to use for traffic classification.

**policy condition** *condition\_name* **icmptype** *type*

**policy condition** *condition\_name* **no icmptype**

---

### Syntax Definitions

<i>condition_name</i>	The name of the condition.
<i>type</i>	The ICMP type value, in the range 0–255.

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

Use the **no** form of the command to remove an ICMP type value from a condition; however, at least one classification parameter must be associated with a condition.

### Examples

```
-> policy condition cond12 icmptype 100
```

### Release History

Release 5.1.R2; command introduced.

### Related Commands

<a href="#">policy condition icmpcode</a>	Configures an ICMP code value for traffic classification.
<a href="#">policy condition</a>	Creates a policy condition.
<a href="#">qos apply</a>	Applies configured global QoS and policy settings to the current configuration (changes will be active and stored in flash).
<a href="#">show policy condition</a>	Shows information about policy conditions configured on the switch.

### MIB Objects

```
alaQoSConditionTable  
  alaQoSConditionName  
  alaQoSConditionIcmpType  
  alaQoSConditionIcmpTypeStatus
```

```
alaQoSAppliedConditionTable
  alaQoSAppliedConditionName
  alaQoSAppliedConditionIcmpType
  alaQoSAppliedConditionIcmpTypeStatus
```

---

## policy condition icmpcode

Configures an ICMP code value to use for traffic classification.

**policy condition** *condition\_name* **icmpcode** *code*

**policy condition** *condition\_name* **no icmpcode**

---

### Syntax Definitions

<i>condition_name</i>	The name of the condition.
<i>code</i>	The ICMP code value, in the range 0–255.

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

Use the **no** form of the command to remove an ICMP code value from a condition; however, at least one classification parameter must be associated with a condition.

### Examples

```
-> policy condition cond12 icmpcode 150
```

### Release History

Release 5.1.R2; command introduced.

### Related Commands

<a href="#">policy condition icmptype</a>	Configures an ICMP type value for traffic classification.
<a href="#">policy condition</a>	Creates a policy condition.
<a href="#">qos apply</a>	Applies configured global QoS and policy settings to the current configuration (changes will be active and stored in flash).
<a href="#">show policy condition</a>	Shows information about policy conditions configured on the switch.

### MIB Objects

```
alaQoSConditionTable  
  alaQoSConditionName  
  alaQoSConditionIcmpCode  
  alaQoSConditionIcmpCodeStatus
```

```
alaQoSAppliedConditionTable  
  alaQoSAppliedConditionName  
  alaQoSAppliedConditionIcmpCode  
  alaQoSAppliedConditionIcmpCodeStatus
```

---



## policy condition ip-protocol

Configures an IP protocol for a policy condition.

**policy condition** *condition\_name* **ip-protocol** *protocol*

**policy condition** *condition\_name* **no ip-protocol**

---

### Syntax Definitions

*condition\_name*                      The name of the condition.

*protocol*                                The protocol associated with the flow. The range is 0–255.

### Defaults

parameter	default
<i>protocol</i>	6

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- Use the **no** form of the command to remove a protocol from a condition; however, at least one classification parameter must be associated with a condition.
- If a source or destination port is specified (through the **policy condition source ip-port** or **policy condition destination ip-port** commands), the protocol must be specified.
- The same condition cannot specify an IP protocol with a service or service group.

### Examples

```
-> policy condition cond4 ip-protocol 6
```

### Release History

Release 5.1.R2; command introduced.

## Related Commands

- policy condition source ip-port** Configures a source IP port number for a policy condition.
- policy condition destination ip-port** Configures a destination IP port number for a policy condition.
- qos apply** Applies configured global QoS and policy settings to the current configuration (changes will be active and stored in flash).
- show policy condition** Shows information about policy conditions configured on the switch.

## MIB Objects

```
alaQoSConditionTable
  alaQoSConditionName
  alaQoSConditionIpProtocol
alaQoSAppliedConditionTable
  alaQoSAppliedConditionName
  alaQoSAppliedConditionIpProtocol
```

---

## policy condition ipv6

Configures a policy condition to classify IPv6 traffic.

**policy condition** *condition\_name* **ipv6**

**policy condition** *condition\_name* **no ipv6**

---

### Syntax Definitions

*condition\_name*                      The name of the condition.

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- Use the **no** form of the command to remove IPv6 traffic as a condition; however, at least one classification parameter must be associated with a condition.
- When the **ipv6** keyword is used in a condition, a policy that uses the condition is considered an IPv6 policy. IPv6 policies are effected only on IPv6 traffic. All other IP policies are considered IPv4 policies and are effected only on IPv4 traffic.
- IPv6 Layer 4 policies are supported and are configured using the **ipv6** keyword in a condition that specifies Layer 4 information, services, or service groups. Note that IPv6 Layer 4 policies only work with packets that contain a single header.
- The **icmptype** and **icmpcode** keywords in an IPv6 policy imply the ICMPv6 protocol, not the ICMPv4 protocol.

### Examples

```
-> policy condition cond4 ipv6
-> policy condition cond5 ipv6 tos 7
-> policy condition cond6 ipv6 source port 1/1/1
-> policy condition cond7 ipv6 source tcp-port 21
-> policy condition cond8 ipv6 source tcp-port 0-1024
-> policy condition cond6 no ipv6
```

### Release History

Release 5.1.R2; command introduced.

## Related Commands

[qos apply](#)

Applies configured QoS and policy settings to the current configuration.

[show policy condition](#)

Shows information about policy conditions configured on the switch.

## MIB Objects

alaQoSConditionTable

    alaQoSConditionName

    alaQoSConditionIpv6Traffic

alaQoSAppliedConditionTable

    alaQoSAppliedConditionName

    alaQoSAppliedConditionIpv6Traffic

---

## policy condition flow-label

Configures an IPv6 flow label value as a policy condition. This value is compared to the flow label value in the IPv6 header.

**policy condition** *condition\_name* **flow-label** *flow\_label\_value*

**policy condition** *condition\_name* **no flow-label**

---

### Syntax Definitions

<i>condition_name</i>	The name of the condition.
<i>flow_label_value</i>	The flow-label value (0–1048575).

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

Use the **no** form of the command to remove the flow label value as a condition; however, at least one classification parameter must be associated with a condition.

### Examples

```
-> policy condition cond4 flow-label 1500  
-> policy condition cond4 no flow-label
```

### Release History

Release 5.1.R2; command introduced.

## Related Commands

**qos apply**

Applies configured QoS and policy settings to the current configuration.

**show policy condition**

Shows information about policy conditions configured on the switch.

## MIB Objects

alaQoSConditionTable

  alaQoSConditionName

  alaQoSConditionIpv6FlowLabel

  alaQoSConditionIpv6FlowLabelStatus

alaQoSAppliedConditionTable

  alaQoSAppliedConditionName

  alaQoSAppliedConditionIpv6FlowLabel

  alaQoSAppliedConditionIpv6FlowLabelStatus

---

## policy condition tos

Configures the precedence bits in the Type of Service (ToS) byte value for a policy condition.

**policy condition** *condition\_name* **tos** *tos\_value* [**mask** *tos\_mask*]

**policy condition** *condition\_name* **no tos**

---

### Syntax Definitions

<i>condition_name</i>	The name of the condition. May be an existing condition name or a new condition.
<i>tos_value</i>	The Type of Service bits value included in the IP header. The three most significant bits of the byte determine the precedence (i.e, priority) of the frame (0 is the lowest, 7 is the highest).
<i>tos_mask</i>	The mask for the ToS bits, in the range 0–7.

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- Use the **no** form of this command to remove a ToS value from a condition; however, at least one classification parameter must be associated with a condition.
- If a ToS value is specified, a DSCP value may not be specified.

### Examples

```
-> policy condition cond2 tos 7
```

### Release History

Release 5.1.R2; command introduced.

### Related Commands

<a href="#">policy condition</a>	Creates a policy condition.
<a href="#">qos apply</a>	Applies configured QoS and policy settings to the current configuration.
<a href="#">show policy condition</a>	Shows information about policy conditions configured on the switch.

### MIB Objects

```
alaQoSConditionTable  
  alaQoSConditionName  
  alaQoSConditionTos
```

```
alaQoSAppliedConditionTable  
  alaQoSAppliedConditionName  
  alaQoSAppliedConditionTos
```

---



## policy condition dscp

Configures the Differentiated Services Code Point (DSCP) for a policy condition. The DSCP value defines the six most significant bits of the DS byte in the IP header.

**policy condition** *condition\_name* **dscp** {*dscp\_value*[-*value*]} [**mask** *dscp\_mask*]

**policy condition** *condition\_name* **no dscp**

---

### Syntax Definitions

<i>condition_name</i>	The name of the condition. May be an existing condition name or a new condition.
<i>dscp_value</i> [- <i>value</i> ]	The DiffServ Code Point value, in the range 0–63. Use a hyphen to specify a range of DSCP values for the condition (for example, 10-20).
<i>dscp_mask</i>	The mask for the DiffServ Code Point, in the range 0–63.

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- Use the **no** form of this command to remove a DSCP value from a condition; however, at least one classification parameter must be associated with a condition.
- If a DSCP value is specified, a ToS value may not be specified.
- When a DSCP policy condition is configured on one of these switches, QoS automatically calculates the appropriate mask value.

### Examples

```
-> policy condition cond4 dscp 10
-> policy condition cond5 dscp 20-30
```

### Release History

Release 5.1.R2; command introduced.

## Related Commands

<a href="#">policy condition</a>	Creates a policy condition.
<a href="#">qos apply</a>	Applies configured QoS and policy settings to the current configuration.
<a href="#">show policy condition</a>	Shows information about policy conditions configured on the switch.

## MIB Objects

```
alaQoSConditionTable
  alaQoSConditionName
  alaQoSConditionDscp
  alaQoSConditionDscpMask
  alaQoSConditionDscpEnd
  alaQoSConditionDscpStatus
alaQoSAppliedConditionTable
  alaQoSAppliedConditionName
  alaQoSAppliedConditionDscp
  alaQoSAppliedConditionDscpMask
  alaQoSAppliedConditionDscpEnd
  alaQoSAppliedConditionDscpStatus
```

---

## policy condition source mac

Configures a source MAC address for a policy condition.

```
policy condition condition_name source mac mac_address [mask mac_mask]
```

```
policy condition condition_name no source mac
```

---

### Syntax Definitions

<i>condition_name</i>	The name of the condition. May be an existing condition name or a new condition.
<i>mac_address</i>	The source MAC address in the Layer 2 header of the frame (for example, 00:20:da:05:f6:23)
<i>mac_mask</i>	Optional. The mask for the source MAC address (for example, ff:ff:ff:ff:ff:ff).

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- Use the **no** form of the command to remove a source MAC address from a condition; however, at least one classification parameter must be associated with a condition.
- A source MAC address and a source MAC group cannot be specified in the same condition.

### Examples

```
-> policy condition cond2 source mac 00:20:da:05:f6:23
```

### Release History

Release 5.1.R2; command introduced.

### Related Commands

<a href="#">qos apply</a>	Applies configured QoS and policy settings to the current configuration.
<a href="#">policy condition</a>	Creates a policy condition.
<a href="#">show policy condition</a>	Shows information about policy conditions configured on the switch.

### MIB Objects

```
alaQoSConditionTable  
  alaQoSConditionName  
  alaQoSConditionSourceMacAddr
```

```
    alaQoSConditionSourceMacMask  
alaQoSAppliedConditionTable  
    alaQoSAppliedConditionName  
    alaQoSAppliedConditionSourceMacAddr  
    alaQoSAppliedConditionSourceMacMask
```

---

## policy condition destination mac

Configures a destination MAC address for a policy condition.

---

Specifying a destination MAC address and mask of all zeros (00:00:00:00:00:00) as a policy condition can result in the switch dropping all traffic. Only use this type of condition in combination with other policies that will allow desired traffic and/or if a source or destination slot/port is also part of the destination MAC condition.

---

**policy condition** *condition\_name* **destination mac** *mac\_address* [**mask** *mac\_mask*]

**policy condition** *condition\_name* **no destination mac**

---

### Syntax Definitions

<i>condition_name</i>	The name of the condition. May be an existing condition name or a new condition.
<i>mac_address</i>	The destination MAC address in the Layer 2 header of the frame (for example, 00:20:da:05:f6:23).
<i>mac_mask</i>	Optional. The mask for the destination MAC address (for example, ff:ff:ff:ff:ff:ff).

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- Use the **no** form of the command to remove a destination MAC address from a condition; however, at least one classification parameter must be associated with a condition.
- A destination MAC address and a destination MAC group cannot be specified in the same condition.

### Examples

```
-> policy condition cond3 destination mac 00:20:da:05:f6:23
```

### Release History

Release 5.1.R2; command introduced.

## Related Commands

<a href="#">qos apply</a>	Applies configured QoS and policy settings to the current configuration.
<a href="#">policy condition</a>	Creates a policy condition.
<a href="#">show policy condition</a>	Shows information about policy conditions configured on the switch.

## MIB Objects

```
alaQoSConditionTable
  alaQoSConditionName
  alaQoSConditionSource
  alaQoSConditionDestinationMacAddr
  alaQoSConditionDestinationMacMask
alaQoSAppliedConditionTable
  alaQoSAppliedConditionName
  alaQoSAppliedConditionSource
  alaQoSAppliedConditionDestinationMacAddr
  alaQoSAppliedConditionDestinationMacMask
```

---

## policy condition source mac group

Associates a source MAC group with a policy condition.

**policy condition** *condition\_name* **source mac group** *group\_name*

**policy condition** *condition\_name* **no source mac group**

---

### Syntax Definitions

*condition\_name*

The name of the condition. May be an existing condition name or a new condition.

*group\_name*

The name of the source MAC group, configured through the **policy mac group** command.

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- Use the **no** form of the command to remove a source MAC group from a condition; however, at least one classification parameter must be associated with a condition.
- A source MAC address and a source MAC group cannot be specified in the same condition.

### Examples

```
-> policy condition cond4 source mac group mac_group1
```

### Release History

Release 5.1.R2; command introduced.

### Related Commands

**qos apply**

Applies configured QoS and policy settings to the current configuration.

**policy mac group**

Configures a MAC group and its associated MAC addresses.

**policy condition**

Creates a policy condition.

**show policy condition**

Shows information about policy conditions configured on the switch.

### MIB Objects

alaQoSConditionTable

  alaQoSConditionName

  alaQoSConditionSourceMacGroup

```
alaQoSAppliedConditionTable  
  alaQoSAppliedConditionName  
  alaQoSAppliedConditionSourceMacGroup
```

---



## policy condition destination mac group

Associates a destination MAC group with a policy condition.

**policy condition** *condition\_name* **destination mac group** *mac\_group*

**policy condition** *condition\_name* **no destination**

---

### Syntax Definitions

<i>condition_name</i>	The name of the condition. May be an existing condition name or a new condition.
<i>mac_group</i>	The name of the destination MAC group, configured through the <b>policy mac group</b> command.

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- Use the **no** form of the command to remove a destination MAC group from a policy condition; however, at least one classification parameter must be associated with a condition.
- A destination MAC address and a destination MAC group cannot be specified in the same condition.

### Examples

```
-> policy condition cond5 destination mac group mac_group1
```

### Release History

Release 5.1.R2; command introduced.

### Related Commands

<b>qos apply</b>	Applies configured QoS and policy settings to the current configuration.
<b>policy mac group</b>	Configures a MAC group and its associated MAC addresses.
<b>policy condition</b>	Creates a policy condition.
<b>show policy condition</b>	Shows information about policy conditions configured on the switch.

### MIB Objects

```
alaQoSConditionTable  
  alaQoSConditionName  
  alaQoSConditionDestinationMacGroup
```

```
alaQoSAppliedConditionTable  
  alaQoSAppliedConditionName  
  alaQoSAppliedConditionDestinationMacGroup
```

---

## policy condition source vlan

Configures a source VLAN for a policy condition.

**policy condition** *condition\_name* **source vlan** *vlan\_id*

**policy condition** *condition\_name* **no source vlan**

---

### Syntax Definitions

<i>condition_name</i>	The name of the condition. May be an existing condition name or a new condition.
<i>vlan_id</i>	The source VLAN ID for the flow.

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

Use the **no** form of the command to remove a source VLAN from a policy condition; however, at least one classification parameter must be associated with a condition.

### Examples

```
-> policy condition cond5 source vlan 3
```

### Release History

Release 5.1.R2; command introduced.

### Related Commands

<a href="#">qos apply</a>	Applies configured QoS and policy settings to the current configuration.
<a href="#">policy condition</a>	Creates a policy condition.
<a href="#">show policy condition</a>	Shows information about policy conditions configured on the switch.

### MIB Objects

```
alaQoSConditionTable  
  alaQoSConditionName  
  alaQoSConditionSourceVlan  
alaQoSAppliedConditionTable  
  alaQoSAppliedConditionName  
  alaQoSAppliedConditionSourceVlan
```

---

## policy condition inner source-vlan

Configures an inner source VLAN ID as a policy condition. This condition applies to double-tagged VLAN Stacking traffic and is used to classify such traffic based on the inner VLAN ID tag, also known as the customer VLAN ID.

**policy condition** *condition\_name* **inner source-vlan** *vlan\_id*

**policy condition** *condition\_name* **no inner source-vlan**

---

### Syntax Definitions

<i>condition_name</i>	The name of the condition. May be an existing condition name or a new condition.
<i>vlan_id</i>	The inner source VLAN ID (customer VLAN ID) to match on double-tagged packets.

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- Use the **no** form of the command to remove an inner source VLAN from a policy condition; however, at least one classification parameter must be associated with a condition.
- Policies that use the inner source VLAN condition are referred to as QoS VLAN Stacking policies. These are separate policies from those configured through the VLAN Stacking Service application.

### Examples

```
-> policy condition cond5 inner source-vlan 3
-> policy condition cond5 no inner source-vlan
```

### Release History

Release 5.1.R2; command introduced.

## Related Commands

<a href="#">qos apply</a>	Applies configured QoS and policy settings to the current configuration.
<a href="#">policy condition</a>	Creates a policy condition.
<a href="#">show policy condition</a>	Shows information about policy conditions configured on the switch.

## MIB Objects

```
alaQoSConditionTable
  alaQoSConditionName
  alaQoSConditionInnerSourceVlan
  alaQoSConditionInnerSourceVlanStatus
alaQoSAppliedConditionTable
  alaQoSAppliedConditionName
  alaQoSAppliedConditionInnerSourceVlan
  alaQoSAppliedConditionInnerSourceVlanStatus
```

---

## policy condition destination vlan

Configures a destination VLAN (multicast only) for a policy condition.

**policy condition** *condition\_name* **destination vlan** *vlan\_id*

**policy condition** *condition\_name* **no destination vlan**

---

### Syntax Definitions

<i>condition_name</i>	The name of the condition. May be an existing condition name or a new condition.
<i>vlan_id</i>	The destination VLAN ID for the flow.

### Defaults

N/A

### Platforms Supported

Not supported in this release.

### Usage Guidelines

- Use the **no** form of this command to remove a destination VLAN from a condition; however, at least one classification parameter must be associated with a condition.
- Note that this condition is supported for multicast only policies.

### Examples

```
-> policy condition cond4 destination vlan 3 multicast ip any
```

### Release History

Release 5.1.R2; command not supported.

### Related Commands

<a href="#">qos apply</a>	Applies configured QoS and policy settings to the current configuration.
<a href="#">policy condition</a>	Creates a policy condition.
<a href="#">show policy condition</a>	Shows information about policy conditions configured on the switch.

### MIB Objects

```
alaQoSConditionTable  
    alaQoSConditionName  
    alaQoSConditionDestinationVlan
```

```
alaQoSAppliedConditionTable  
  alaQoSAppliedConditionName  
  alaQoSAppliedConditionDestinationVlan
```

---

## policy condition 802.1p

Configures the 802.1p value for a policy condition.

**policy condition** *condition\_name* **802.1p** *802.1p\_value*

**policy condition** *condition\_name* **no 802.1p**

---

### Syntax Definitions

<i>condition_name</i>	The name of the condition. May be an existing condition name or a new condition.
<i>802.1p_value</i>	The 802.1p value in the 802.1Q VLAN tag for the flow. Values range from 0 (lowest priority) to 7 (highest priority).

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

Use the **no** form of the command to remove an 802.1p value for a condition; however, at least one classification parameter must be associated with a condition.

### Examples

```
-> policy condition cond3 802.1p 7
```

### Release History

Release 5.1.R2; command not supported.

### Related Commands

<a href="#">qos apply</a>	Applies configured QoS and policy settings to the current configuration.
<a href="#">policy condition</a>	Creates a policy condition.
<a href="#">show policy condition</a>	Shows information about policy conditions configured on the switch.

### MIB Objects

```
alaQoSConditionTable  
  alaQoSConditionName  
  alaQoSCondition8021p  
alaQoSAppliedConditionTable  
  alaQoSAppliedConditionName  
  alaQoSAppliedCondition8021p
```



## policy condition inner 802.1p

Configures an inner (customer) source 802.1p value for a policy condition. This condition applies to double-tagged VLAN Stacking traffic and is used to classify such traffic based on the inner 802.1p bit value.

**policy condition** *condition\_name* **inner 802.1p** *802.1p\_value*

**policy condition** *condition\_name* **no inner 802.1p**

---

### Syntax Definitions

<i>condition_name</i>	The name of the condition. May be an existing condition name or a new condition.
<i>802.1p_value</i>	The inner 802.1p value of the inner 802.1Q VLAN tag (customer VLAN) to match on double-tagged packets. Values range from 0 (lowest priority) to 7 (highest priority).

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- Use the **no** form of the command to remove an 802.1p value for a condition; however, at least one classification parameter must be associated with a condition.
- Policies that use the inner 802.1p condition are referred to as QoS VLAN Stacking policies. These are separate policies from those configured through the VLAN Stacking Service application.

### Examples

```
-> policy condition cond3 inner 802.1p 7
-> policy condition cond3 no inner 802.1p
```

### Release History

Release 5.1.R2; command introduced.

## Related Commands

<a href="#">qos apply</a>	Applies configured QoS and policy settings to the current configuration.
<a href="#">policy condition</a>	Creates a policy condition.
<a href="#">show policy condition</a>	Shows information about policy conditions configured on the switch.

## MIB Objects

```
alaQoSConditionTable
  alaQoSConditionName
  alaQoSConditionInner8021p
  alaQoSConditionInner8021pStatus
alaQoSAppliedConditionTable
  alaQoSAppliedConditionName
  alaQoSAppliedConditionInner8021p
  alaQoSAppliedConditionInner8021pStatus
```

---

## policy condition source port

Configures a source port number for a policy condition. Use the **no** form of the command to remove a source port number from a condition.

```
policy condition condition_name source {port chassis/slot/port[-port2] | linkagg agg_id[-agg_id2]}
```

```
policy condition condition_name no source {port | linkagg}
```

---

### Syntax Definitions

<i>condition_name</i>	The name of the condition. May be an existing condition name or a new condition.
<i>chassis</i>	The chassis identifier.
<i>slot/port</i> [- <i>port2</i> ]	The slot and port number on which the frame is received. Use a hyphen to specify a range of ports (1/5-10).
<i>agg_id</i> [- <i>agg_id2</i> ]	The link aggregate ID on which the frame is received. Use a hyphen to specify a range of IDs (10-15).

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

Use the **no** form of the command to remove a source port from a condition; however, at least one classification parameter must be associated with a condition.

### Examples

```
-> policy condition cond2 source port 3/1/1
-> policy condition cond3 source port 3/2/1-4
-> policy condition cond3 no source port
-> policy condition cond3 source linkagg 10
-> policy condition cond3 source linkagg 15-20
-> policy condition cond3 no source linkagg
```

### Release History

Release 5.1.R2; command introduced.

## Related Commands

<a href="#">qos apply</a>	Applies configured QoS and policy settings to the current configuration.
<a href="#">policy condition</a>	Creates a policy condition.
<a href="#">show policy condition</a>	Shows information about policy conditions configured on the switch.

## MIB Objects

```
alaQoSConditionTable
  alaQoSConditionName
  alaQoSConditionSourceSlot
  alaQoSConditionSourcePort
  alaQoSConditionSourcePortEnd
  alaQoSConditionSourceChassis
alaQoSAppliedConditionTable
  alaQoSAppliedConditionName
  alaQoSAppliedConditionSourceSlot
  alaQoSAppliedConditionSourcePort
  alaQoSAppliedConditionSourcePortEnd
  alaQoSAppliedConditionSourceChassis
```

---

## policy condition destination port

Configures a destination port number for a policy condition.

```
policy condition condition_name destination {port chassis/slot/port[-port2] | linkagg agg_id[-agg_id2]}
```

```
policy condition condition_name no destination {port | linkagg}
```

---

### Syntax Definitions

<i>condition_name</i>	The name of the condition. May be an existing condition name or a new condition.
<i>chassis</i>	The chassis identifier.
<i>slot/port[-port2]</i>	The slot and port number for which the frame is destined. Use a hyphen to specify a range of ports (1/5-10).
<i>agg_id[-agg_id2]</i>	The link aggregate ID for which the frame is destined. Use a hyphen to specify a range of IDs (10-15).

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- Use the **no** form of the command to remove a destination port from a condition; however, at least one classification parameter must be associated with a condition.
- The destination port condition does not apply to routed traffic. Only bridged unicast traffic is supported (bridged multicast and broadcast traffic is not supported).

### Examples

```
-> policy condition cond3 destination port 4/2/1
-> policy condition cond4 destination port 4/3/1-4
-> policy condition cond4 no destination port
-> policy condition cond4 destination linkagg 10
-> policy condition cond4 destination linkagg 15-20
-> policy condition cond4 no destination linkagg
```

### Release History

Release 5.1.R2; command introduced.

## Related Commands

<b>qos apply</b>	Applies configured QoS and policy settings to the current configuration.
<b>policy condition</b>	Creates a policy condition.
<b>show policy condition</b>	Shows information about policy conditions configured on the switch.

## MIB Objects

```
alaQoSConditionTable
  alaQoSConditionName
  alaQoSConditionDestinationSlot
  alaQoSConditionDestinationPort
  alaQoSConditionDestinationPortEnd
  alaQoSConditionDestinationChassis
alaQoSAppliedConditionTable
  alaQoSAppliedConditionName
  alaQoSAppliedConditionDestinationSlot
  alaQoSAppliedConditionDestinationPort
  alaQoSAppliedConditionDestinationPortEnd
  alaQoSAppliedConditionDestinationChassis
```

---

## policy condition source port group

Associates a source port group with a policy condition. Use the **no** form of the command to remove a source port group from a condition.

**policy condition** *condition\_name* **source port group** *group\_name*

**policy condition** *condition\_name* **no source port group**

---

### Syntax Definitions

<i>condition_name</i>	The name of the condition. May be an existing condition name or a new condition.
<i>group_name</i>	The name of the source port group. Port groups are configured through the <a href="#">policy port group</a> command.

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

Use the **no** form of the command to remove a source port group from a condition; however, at least one classification parameter must be associated with a condition.

### Examples

```
-> policy condition cond6 source port group portgr4
```

### Release History

Release 5.1.R2; command introduced.

### Related Commands

<a href="#">policy port group</a>	Configures a port group and its associated slot and port numbers.
<a href="#">qos apply</a>	Applies configured QoS and policy settings to the current configuration.
<a href="#">policy condition</a>	Creates a policy condition.
<a href="#">show policy condition</a>	Shows information about policy conditions configured on the switch.

### MIB Objects

```
alaQoSConditionTable  
  alaQoSConditionName  
  alaQoSConditionSourcePortGroup
```

```
alaQoSAppliedConditionTable  
  alaQoSAppliedConditionName  
  alaQoSAppliedConditionSourcePortGroup
```

---



## policy condition destination port group

Associates a destination port group with a policy condition. Use the **no** form of the command to remove a destination port group from a condition.

**policy condition** *condition\_name* **destination port group** *group\_name*

**policy condition** *condition\_name* **no destination port**

---

### Syntax Definitions

<i>condition_name</i>	The name of the condition. May be an existing condition name or a new condition.
<i>group_name</i>	The name of the destination port group. Port groups are configured through the <a href="#">policy port group</a> command.

### Defaults

N/A

### Platforms Supported

Not supported in this release.

### Usage Guidelines

Use the **no** form of the command to remove a destination port group from a condition; however, at least one classification parameter must be associated with a condition.

### Examples

```
-> policy condition cond6 destination port group portgr4
```

### Release History

Release 5.1.R2; command not supported.

### Related Commands

<a href="#">policy port group</a>	Configures a port group and its associated slot and port numbers.
<a href="#">qos apply</a>	Applies configured QoS and policy settings to the current configuration.
<a href="#">policy condition</a>	Creates a policy condition.
<a href="#">show policy condition</a>	Shows information about policy conditions configured on the switch.

### MIB Objects

```
alaQoSConditionTable  
  alaQoSConditionName  
  alaQoSConditionDestinationPortGroup
```

```
alaQoSAppliedConditionTable  
  alaQoSAppliedConditionName  
  alaQoSAppliedConditionDestinationPortGroup
```

---

## policy condition vrf

Associates a Virtual Routing and Forwarding (VRF) instance with a policy condition.

**policy condition** *condition\_name* **vrf** {*vrf\_name* | **default**}

**policy condition** *condition\_name* **no vrf**

---

### Syntax Definitions

<i>condition_name</i>	The name of the condition. May be an existing condition name or a new condition.
<i>vrf_name</i>	The name of the VRF instance to which the QoS policy condition applies.
<b>default</b>	Specifies the default VRF instance.

### Defaults

By default, QoS policy conditions are not associated with any VRF instance. The policy applies across all instances.

### Platforms Supported

Not supported in this release.

### Usage Guidelines

- Use the **no** form of the command to remove a VRF instance from a condition; however, at least one classification parameter must be associated with a condition.
- VRF policies are configured in the default VRF, similar to how all other QoS policies are configured. If the VRF name specified does not exist, the policy is not allocated any system resources.
- Policies that do not specify a VRF name are considered global policies and are applied across all VRF instances and VLANs.
- Policies that specify the default VRF apply only to traffic in the default VRF instance.
- Policies that specify a VRF name apply only to traffic in the VRF instance associated with that name.
- The **switch** network group is supported only in VRF policies that specify the default VRF instance. If this group is specified in a global policy (no VRF specified) then the policy is applied across all VRF instances.

## Examples

```
-> policy condition cond6 vrf engr-vrf
-> policy condition cond7 vrf default
-> policy condition cond6 no vrf
```

## Release History

Release 5.1.R2; command not supported.

## Related Commands

<a href="#">qos apply</a>	Applies configured QoS and policy settings to the current configuration.
<a href="#">policy condition</a>	Creates a policy condition.
<a href="#">show policy condition</a>	Shows information about policy conditions configured on the switch.

## MIB Objects

```
alaQoSConditionTable
  alaQoSConditionName
  alaQoSConditionVrfName
  alaQoSConditionVrfNameStatus
alaQoSAppliedConditionTable
  alaQoSAppliedConditionName
  alaQoSAppliedConditionVrfName
  alaQoSAppliedConditionVrfNameStatus
```

---

## policy condition fragments

Associates TCP packet fragments with a policy condition.

**policy condition** *condition\_name* **fragments**

**policy condition** *condition\_name* **no fragments**

---

### Syntax Definitions

*condition\_name*                      The name of the condition. May be an existing condition name or a new condition.

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

Use the **no** form of the command to remove TCP packet fragments from a condition; however, at least one classification parameter must be associated with a condition.

### Examples

```
-> policy condition cond6 fragments
-> policy condition cond7 no fragments
```

### Release History

Release 5.1.R2; command introduced.

### Related Commands

<a href="#">qos apply</a>	Applies configured QoS and policy settings to the current configuration.
<a href="#">policy condition</a>	Creates a policy condition.
<a href="#">show policy condition</a>	Shows information about policy conditions configured on the switch.

### MIB Objects

```
alaQoSConditionTable
  alaQoSConditionName
  alaQoSConditionFragments
alaQoSAppliedConditionTable
  alaQoSAppliedConditionName
  alaQoSAppliedConditionFragments
```

---

## policy condition app-mon-application-group

Associates an Application Monitoring and Enforcement (AppMon) application group with a policy condition.

**policy condition** *condition\_name* **app-mon-application-group** *group\_name*

**policy condition** *condition\_name* **no app-mon-application-group**

---

### Syntax Definitions

<i>condition_name</i>	The name of the condition. May be an existing condition name or a new condition.
<i>group_name</i>	The name of the AppMon application group to which the QoS policy condition applies.

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- Use the **no** form of the command to remove an AppMon group name from a condition; however, at least one classification parameter must be associated with a condition.
- The **app-mon-application-group** policy condition is used in the rules associated with QoS default policy lists or UNP policy lists.
- Policy condition command will not support any other native QoS policy condition keywords along with AppMon application group or name keyword.
- For more information about AppMon, see the “Configuring Application Monitoring and Enforcement” chapter in the *OmniSwitch AOS Release 8 Network Configuration Guide*.

### Examples

```
-> policy condition cond6 app-mon-application-group web  
-> policy condition cond6 no app-mon-application-group
```

### Release History

Release 5.1.R2; command introduced.

## Related Commands

<a href="#">qos apply</a>	Applies configured QoS and policy settings to the current configuration.
<a href="#">policy condition</a>	Creates a policy condition.
<a href="#">show policy condition</a>	Shows information about policy conditions configured on the switch.

## MIB Objects

```
alaQoSConditionTable  
  alaQoSConditionDpiAppGroup  
  alaQoSConditionDPIAppGroupStatus
```

---

## policy condition app-mon-application-name

Associates an Application Monitoring and Enforcement (AppMon) application name with a policy condition.

**policy condition** *condition\_name* **app-mon-application-name** *app\_name*

**policy condition** *condition\_name* **no app-mon-application-name**

---

### Syntax Definitions

<i>condition_name</i>	The name of the condition. May be an existing condition name or a new condition.
<i>app_name</i>	The name of the AppMon application to which the QoS policy condition applies.

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- Use the **no** form of the command to remove an AppMon application name from a condition; however, at least one classification parameter must be associated with a condition.
- The **app-mon-application-group** policy condition is used in the rules associated with QoS default policy lists or UNP policy lists.
- Policy condition command will not support any other native QoS policy condition keywords along with AppMon application group or name keyword.
- For more information about AppMon, see the “Configuring Application Monitoring and Enforcement” chapter in the *OmniSwitch AOS Release 8 Network Configuration Guide*.

### Examples

```
-> policy condition cond6 app-mon-application-name whatsapp
-> policy condition cond6 no app-mon-application-name
```

### Release History

Release 5.1.R2; command introduced.



**Related Commands**

<b>qos apply</b>	Applies configured QoS and policy settings to the current configuration.
<b>policy condition</b>	Creates a policy condition.
<b>show policy condition</b>	Shows information about policy conditions configured on the switch.

**MIB Objects**

```
alaQoSConditionTable  
  alaQoSConditionDPIAppName  
  alaQoSConditionDPIAppNameStatus
```

---

## policy condition appfp-group

Associates an Application Fingerprinting (AFP) application signature group with a policy condition.

**policy condition** *condition\_name* **appfp-group** *group\_name*

**policy condition** *condition\_name* **no appfp-group**

---

### Syntax Definitions

<i>condition_name</i>	The name of the condition. May be an existing condition name or a new condition.
<i>group_name</i>	The name of the AFP application group to which the QoS policy condition applies.

### Defaults

N/A.

### Platforms Supported

Not supported in this release.

### Usage Guidelines

- Use the **no** form of the command to remove an AFP group name from a condition; however, at least one classification parameter must be associated with a condition.
- The **appfp-group** policy condition is used in rules associated with QoS policy lists that are applied to AFP ports running in either the QoS or UNP mode.

### Examples

```
-> policy condition cond6 appfp-group my-p2p
-> policy condition cond6 no appfp-group
```

### Release History

Release 5.1.R2; command not supported.

## Related Commands

<a href="#">qos apply</a>	Applies configured QoS and policy settings to the current configuration.
<a href="#">policy condition</a>	Creates a policy condition.
<a href="#">show policy condition</a>	Shows information about policy conditions configured on the switch.

## MIB Objects

```
alaQoSConditionTable  
  alaQoSConditionAppFpGroup  
  alaQoSConditionAppFpGroupStatus
```

---

## policy condition vxlan

Creates a VXLAN Snooping policy condition to determine the parameters the switch uses to classify incoming encapsulated Virtual eXtensible Local Area Network (VXLAN) packets. Condition parameters may be configured when the condition is created; or parameters may be configured for an existing condition. At least one parameter must be configured for a condition.

This section describes the base command. Optional keywords are listed below and described as separate commands later in this chapter. (Options may be used in combination but are described separately for ease in explanation.) Use the **no** form for keywords to remove a parameter from the condition.

```
policy condition condition_name vxlan vni vxlan_id  
    [inner source mac mac_address [mask mac_mask]]  
    [inner source mac-group mac_group]  
    [inner source ip ip_address [mask netmask]]  
    [inner source ipv6 ip6_address [mask netmask]]  
    [inner ip-protocol protocol]  
    [inner l4-port {src src_port | dest dest_port}]  
    [vxlan-port udp_port]
```

```
no policy condition condition_name
```

---

### Syntax Definitions

<i>condition_name</i>	The name of the VXLAN condition. Any alphanumeric string.
<i>vxlan_id</i>	A 24-bit numerical value that identifies traffic for a VXLAN segment. The valid range is 1– 2147483647.

### Defaults

N/A

### Platforms Supported

Not supported in this release.

### Usage Guidelines

- A policy condition and a policy action are combined to make a policy rule. See the [policy rule](#) command.
- Use the [qos apply](#) command to activate configuration changes.
- If multiple keywords are defined for a single condition, the traffic flow must match all of the parameters in the condition before the rule is enforced.
- Use the **no** form of the command to remove a condition from the switch configuration.
- The **vni** (VXLAN Network Identifier) parameter is required to configure a VM Snooping policy condition. The VXLAN header contains the VNI that is associated with the source MAC address of the Ethernet frame that is encapsulated in a VXLAN packet. The VNI represents the VXLAN segment ID to which the packet belongs.

- The **vxlan-port** condition parameter applies only to the outer header of an encapsulated VXLAN packet. All other **inner** condition parameters apply only to the inner header of the Ethernet frame that was encapsulated in a VXLAN packet.
- When a VXLAN Snooping policy condition is used in a policy rule, the rule is then applied only to traffic on ports that have the VM Snooping feature enabled.
- All existing policy actions are supported in combination with VXLAN Snooping policy conditions; there are no specific policy actions required for policy rules containing VXLAN Snooping policy conditions. Policy actions are applied to the outer header of an encapsulated VXLAN packet.
- See the “Configuring VXLAN Snooping” chapter in the *OmniSwitch AOS Release 8 Data Center Switching Guide* for more information about using VXLAN Snooping policy rules.

## Examples

```
-> policy condition cond4 vxlan vni 23000
```

The following is an example of using VM Snooping policy conditions in a policy rule that is added to a UNP policy list:

```
-> policy condition c1 vxlan vni 1234 udp-port 4789
-> policy condition c1 vxlan inner source mac 00:11:22:33:44:00
-> policy condition c1 vxlan inner source ip 10.10.10.10
-> policy action a1 disposition dscp 45
-> policy rule r1 condition c1 action a1 no default-list
-> policy list list1 type UNP
-> policy list list1 rule r1
-> qos apply
```

## Release History

Release 5.1.R2; command not supported.

## Related Commands

<a href="#">qos apply</a>	Applies configured QoS and policy settings to the current configuration.
<a href="#">policy action</a>	Configures a policy action.
<a href="#">policy rule</a>	Configures a policy rule on the switch. A rule is made up of a condition (for classifying incoming traffic) and an action (to be applied to outgoing traffic).
<a href="#">show policy condition</a>	Shows information about policy conditions configured on the switch.

**MIB Objects**

```
alaQoSConditionTable
  alaQoSConditionVxlanVni
  alaQoSConditionVxlanVniStatus
  alaQoSConditionVxlanPort
  alaQoSConditionVxlanPortStatus
  alaQoSConditionVmSourceMacAddr
  alaQoSConditionVmSourceMacAddrStatus
  alaQoSConditionVmSourceMacMask
  alaQoSConditionVmSourceMacGroup
  alaQoSConditionVmSourceMacGroupStatus
  alaQoSConditionVmSourceIpAddr
  alaQoSConditionVmSourceIpAddrStatus
  alaQoSConditionVmSourceIpMask
  alaQoSConditionVmSourceIpv6IpAddr
  alaQoSConditionVmSourceIpv6IpAddrStatus
  alaQoSConditionVmSourceIpv6IpMask
  alaQoSConditionVmIpProtocol
  alaQoSConditionVmIpProtocolStatus
  alaQoSConditionVmL4SourcePort
  alaQoSConditionVmL4SourcePortStatus
  alaQoSConditionVmL4DestPort
  alaQoSConditionVmL4DestPortStatus
  alaQoSConditionVxlanStatus
```

---

## policy condition vxlan inner source mac

Configures a source MAC address as a policy condition for a VM Snooping policy rule. This type of condition applies to the source MAC address of the inner Ethernet frame of an encapsulated VXLAN packet.

**policy condition** *condition\_name* **vxlan inner source mac** *mac\_address* [**mask** *mac\_mask*]

**policy condition** *condition\_name* **vxlan no source mac**

---

### Syntax Definitions

<i>condition_name</i>	The name of an existing policy condition.
<i>mac_address</i>	The source MAC address of a VM (inner MAC address of an encapsulated VXLAN frame).
<i>mac_mask</i>	Optional. The mask for the source MAC address (for example, ff:ff:ff:ff:ff:ff).

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- Use the **no** form of the command to remove the VM source MAC address from a condition; however, at least one classification parameter must be associated with a condition.
- The **vxlan** policy conditions are used to filter VXLAN packets received on VM Snooping ports.

### Examples

```
-> policy condition c1 vxlan inner source mac 00:11:22:33:44:00
-> policy condition c2 vxlan inner source mac 00:20:da:05:f6:23 mask
ff:ff:ff:ff:ff:ff
-> policy condition c2 vxlan no source mac
```

### Release History

Release 5.1.R2; command introduced.

## Related Commands

<a href="#">qos apply</a>	Applies configured QoS and policy settings to the current configuration.
<a href="#">policy condition vxlan</a>	Creates a policy condition.
<a href="#">show policy condition</a>	Shows information about policy conditions configured on the switch.

## MIB Objects

```
alaQoSConditionTable  
  alaQoSConditionVmSourceMacAddr  
  alaQoSConditionVmSourceMacAddrStatus  
  alaQoSConditionVmSourceMacMask
```

---



## policy condition vxlan inner source mac-group

Configures a source MAC address group as a policy condition for a VXLAN Snooping policy rule. This type of condition checks to see if the source MAC address of the inner Ethernet frame of an encapsulated VXLAN packet matches any of the MAC addresses specified in the MAC address group.

**policy condition** *condition\_name* vxlan inner source mac-group *group\_name*

**policy condition** *condition\_name* vxlan no source mac-group

---

### Syntax Definitions

<i>condition_name</i>	The name of an existing policy condition.
<i>group_name</i>	The name of the source MAC group, configured through the <b>policy mac group</b> command.

### Defaults

N/A.

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- Use the **no** form of the command to remove the source MAC address group name from a condition; however, at least one classification parameter must be associated with a condition.
- The **vxlan** policy conditions are used to filter packets received on VXLAN Snooping ports.

### Examples

```
-> policy condition c1 vxlan inner source mac-group vm-macs  
-> policy condition c1 vxlan no source mac-group
```

### Release History

Release 5.1.R2; command introduced.

## Related Commands

[qos apply](#)

Applies configured QoS and policy settings to the current configuration.

[policy condition vxlan](#)

Creates a VXLAN policy condition.

[show policy condition](#)

Shows information about policy conditions configured on the switch.

## MIB Objects

alaQoSConditionTable

alaQoSConditionVmSourceMacGroup

alaQoSConditionVmSourceMacGroupStatus

---

## policy condition vxlan inner source ip

Configures a source IPv4 address as a policy condition for a VXLAN Snooping policy rule. This type of condition applies to the source IP address of the inner Ethernet frame of an encapsulated VXLAN packet.

**policy condition** *condition\_name* vxlan inner source ip *ip\_address* [**mask** *netmask*]

**policy condition** *condition\_name* vxlan no source ip

---

### Syntax Definitions

<i>condition_name</i>	The name of an existing policy condition.
<i>ip_address</i>	A specific source IP address.
<i>netmask</i>	The network mask for the source IP address (for example, 255.0.0.0, 255.255.0.0).

### Defaults

---

parameter	default
<i>netmask</i>	IP address class

---

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- Use the **no** form of the command to remove the source IP address from a condition; however, at least one classification parameter must be associated with a condition.
- The **vxlan** policy conditions are used to filter VXLAN packets received on VXLAN Snooping ports.

### Examples

```
-> policy condition c1 vxlan inner source ip 10.1.1.2
-> policy condition c2 vxlan inner source ip 10.1.1.3 mask 255.0.0.0
-> policy condition c1 vxlan no source ip
```

### Release History

Release 5.1.R2; command introduced.

## Related Commands

<a href="#">qos apply</a>	Applies configured QoS and policy settings to the current configuration.
<a href="#">policy condition vxlan</a>	Creates a policy condition.
<a href="#">show policy condition</a>	Shows information about policy conditions configured on the switch.

## MIB Objects

```
alaQoSConditionTable  
  alaQoSConditionVmSourceIpAddr  
  alaQoSConditionVmSourceIpAddrStatus  
  alaQoSConditionVmSourceIpMask
```

---

## policy condition vxlan inner source ipv6

Configures a source IPv6 address as a policy condition for a VXLAN Snooping policy rule. This type of condition applies to the source IP address of the inner Ethernet frame of an encapsulated VXLAN packet.

**policy condition** *condition\_name* **vxlan inner source ipv6** *ipv6\_address* [**mask** *netmask*]

**policy condition** *condition\_name* **vxlan no source ipv6**

---

### Syntax Definitions

<i>condition_name</i>	The name of an existing policy condition.
<i>ipv6_address</i>	A specific source IPv6 address.
<i>netmask</i>	The network mask for the source IPv6 address.

### Defaults

---

<b>parameter</b>	<b>default</b>
<i>netmask</i>	IPv6 address class

---

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- Use the **no** form of the command to remove the source IPv6 address from a condition; however, at least one classification parameter must be associated with a condition.
- The **vxlan** policy conditions are used to filter VXLAN packets received on VXLAN Snooping ports.

### Examples

```
-> policy condition c1 vxlan inner source ipv6 ::1234:531F:BCD2:F34A
-> policy condition c1 vxlan no source ipv6
```

### Release History

Release 5.1.R2; command introduced.

## Related Commands

<a href="#">qos apply</a>	Applies configured QoS and policy settings to the current configuration.
<a href="#">policy condition vxlan</a>	Creates a VXLAN Snooping policy condition.
<a href="#">show policy condition</a>	Shows information about policy conditions configured on the switch.

## MIB Objects

```
alaQoSConditionTable  
  alaQoSConditionVmSourceIpv6IpAddr  
  alaQoSConditionVmSourceIpv6IpAddrStatus  
  alaQoSConditionVmSourceIpv6IpMask
```

---

## policy condition vxlan inner ip-protocol

Configures a an IP protocol number as a policy condition for a VXLAN Snooping policy rule. This type of condition applies to the IP protocol of the inner Ethernet frame of an encapsulated VXLAN packet.

**policy condition** *condition\_name* vxlan inner ip-protocol *protocol*

**policy condition** *condition\_name* vxlan no ip-protocol

---

### Syntax Definitions

*condition\_name*                      The name of an existing policy condition.  
*protocol*                                The IP protocol number. The range is 0–255.

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- Use the **no** form of the command to remove the IP protocol number from a condition; however, at least one classification parameter must be associated with a condition.
- The **vxlan** policy conditions are used to filter VXLAN packets received on VXLAN Snooping ports.

### Examples

```
-> policy condition c1 vxlan inner ip-protocol 6  
-> policy condition c1 vxlan no ip-protocol
```

### Release History

Release 5.1.R2; command introduced.

### Related Commands

<a href="#">qos apply</a>	Applies configured QoS and policy settings to the current configuration.
<a href="#">policy condition vxlan</a>	Creates a VXLAN Snooping policy condition.
<a href="#">show policy condition</a>	Shows information about policy conditions configured on the switch.

### MIB Objects

alaQoSConditionTable  
  alaQoSConditionVmIpProtocol  
  alaQoSConditionVmIpProtocolStatus

---

## policy condition vxlan inner l4-port

Configures a Layer 4 (UDP or TCP) source port and/or destination port as a policy condition for a VXLAN Snooping policy rule. This type of condition applies to the Layer 4 port of the inner Ethernet frame of an encapsulated VXLAN packet.

**policy condition** *condition\_name* **vxlan inner l4-port** {**src** *src\_port* | **dest** *dest\_port*}

**policy condition** *condition\_name* **vxlan no l4-port**

---

### Syntax Definitions

<i>condition_name</i>	The name of an existing policy condition.
<i>src_port</i>	The source port number. The valid range is 0–65535
<i>dest_port</i>	The destination port number. The valid range is 0–65535

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- Use the **no** form of the command to remove the Layer 4 port number from a condition; however, at least one classification parameter must be associated with a condition.
- The **vxlan** policy conditions are used to filter packets received on VXLAN Snooping ports.

### Examples

```
-> policy condition c1 vxlan inner l4-port dest 9445
-> policy condition c1 vxlan inner l4-port src 4000
-> policy condition c2 vxlan inner l4-port dest 8100 inner l4-port src 3000
-> policy condition c1 vxlan no l4-port
```

### Release History

Release 5.1.R2; command introduced.



## Related Commands

<a href="#">qos apply</a>	Applies configured QoS and policy settings to the current configuration.
<a href="#">policy condition vxlan</a>	Creates a VXLAN Snooping policy condition.
<a href="#">show policy condition</a>	Shows information about policy conditions configured on the switch.

## MIB Objects

```
alaQoSConditionTable  
  alaQoSConditionVmL4SourcePort  
  alaQoSConditionVmL4SourcePortStatus  
  alaQoSConditionVmL4DestPort  
  alaQoSConditionVmL4DestPortStatus
```

---

## policy condition vxlan vxlan-port

Configures a UDP destination port number as a policy condition for a VXLAN Snooping policy rule. This number is found in the outer IP header of an encapsulated VXLAN packet.

**policy condition** *condition\_name* vxlan vxlan-port *udp\_port*

**policy condition** *condition\_name* vxlan no vxlan-port

---

### Syntax Definitions

<i>condition_name</i>	The name of an existing policy condition.
<i>udp_port</i>	The UDP destination port number of the VXLAN packet. The valid range is 0–65535

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- Use the **no** form of the command to remove the VXLAN port number from a condition; however, at least one classification parameter must be associated with a condition.
- VXLAN packets use the well-known UDP destination port 4789 by default.
- The **vxlan** policy conditions are used to filter packets received on VXLAN Snooping ports.

### Examples

```
-> policy condition c1 vxlan vxlan-port 6000
-> policy condition c1 vxlan 7000
-> policy condition c1 vxlan no vxlan-port
```

### Release History

Release 5.1.R2; command introduced.

## Related Commands

[qos apply](#)

Applies configured QoS and policy settings to the current configuration.

[policy condition vxlan](#)

Creates a VXLAN Snooping policy condition.

[show policy condition](#)

Shows information about policy conditions configured on the switch.

## MIB Objects

alaQoSConditionTable

  alaQoSConditionVxlanPort

  alaQoSConditionVxlanPortStatus

---

## policy action

Configures or deletes a QoS action. A QoS action describes how traffic that matches a particular QoS condition should be treated. It may specify a particular set of bandwidth and queue parameters, or it may simply specify whether the flow is allowed or denied on the switch.

This section describes the base command. Optional keywords are listed below and described as separate commands later in this chapter. (Options may be used in combination but are described separately for ease in explanation.) Use the **no** form for keywords to remove the parameter from the action.

Note that some action parameters may not be supported depending on the platform you are using. Also some action parameters may not be supported with some conditions. See the condition in the *OmniSwitch AOS Release 8 Network Configuration Guide*.

**policy action** *action\_name*

```
[disposition {accept | drop | deny}]
[shared]
[priority priority_value]
[maximum bandwidth bps]
[maximum depth bytes]
[tos tos_value]
[802.1p 802.1p_value]
[dscp dscp_value]
[map {802.1p | tos | dscp} to {802.1p | tos| dscp} using map_group]
[permanent gateway ip ip_address]
[permanent gateway ipv6 ipv6_address]
[port-disable]
[redirect port chassis/slot/port]
[redirect linkagg link_agg]
[no-cache]
[{ingress | egress | ingress egress | no} mirror {chassis/slot/port | session session_id}
```

**policy no action** *action\_name*

---

## Syntax Definitions

*action\_name* A name for the action, any alphanumeric string.

## Defaults

By default, no drop algorithm is configured for the action, and any queues created by the action are not shared.

parameter	default
accept   drop   deny	accept

## Platforms Supported

OmniSwitch 2260, 2360

## Usage Guidelines

- Any condition parameters that the hardware supports will be used to classify the traffic; any condition parameters that are not supported by the hardware will not be used to classify traffic, and the event will be logged in the QoS log.
- Bandwidth parameters may be specified when the action is created or may be specified as separate commands.
- Use the **qos apply** command to activate configuration changes.
- Use the **no** form of the command to remove a QoS action from the configuration.
- If the **configuration snapshot** command is entered after the **policy action** command is configured, the resulting ASCII file will include the following additional syntax for the **policy action** command:

**from {cli | ldap | blt}**

This syntax indicates how the action was created. The **cli** and **ldap** options may be changed by a user modifying the ASCII file; however, changing this setting is not recommended. The **blt** option indicates a built-in action, this setting is not configurable.

## Examples

```
-> policy action action1 accept
```

## Release History

Release 5.1.R2; command introduced.

## Related Commands

<a href="#">policy condition</a>	Configures a condition associated with the action.
<a href="#">qos apply</a>	Applies configured QoS and policy settings to the current configuration.
<a href="#">show policy action</a>	Displays information about policy actions.

## MIB Objects

```
alaQoSActionTable  
    alaQoSActionName  
    alaQoSActionSource  
alaQoSAppliedActionTable  
    alaQoSAppliedActionName  
    alaQoSAppliedActionSource
```

---

## policy action disposition

Configures a disposition for a policy action.

```
policy action action_name disposition {accept | drop | deny}
```

```
policy action action_name no disposition
```

---

### Syntax Definitions

<i>action_name</i>	The name of the action.
<b>accept</b>	Specifies that the switch should accept the flow.
<b>drop</b>	Specifies that the switch should silently drop the flow.
<b>deny</b>	Specifies that the switch should drop the flow and issue an ICMP message indicating the flow was dropped for administrative reasons. Currently this option will provide the same result as <b>drop</b> ; that is, the flow is silently dropped.

### Defaults

---

parameter	default
accept   drop   deny	accept

---

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

Use the **no** form of this command to remove a disposition from an action.

### Examples

```
-> policy action a3 disposition deny  
-> policy action a3 no disposition
```

### Release History

Release 5.1.R2; command introduced.

## Related Commands

<a href="#">qos apply</a>	Applies configured QoS and policy settings to the current configuration.
<a href="#">policy action</a>	Creates a policy action.
<a href="#">show policy action</a>	Displays information about policy actions.

## MIB Objects

```
alaQoSActionTable
  alaQoSActionName
alaQoSActionDispositionalalaQoSAppliedActionTable
  alaQoSAppliedActionName
  alaQoSAppliedActionDisposition
```

---

## policy action shared

Enables bandwidth sharing among multiple QoS rules that use the same maximum bandwidth action.

**policy action** *action\_name* **shared**

**policy action** *action\_name* **no shared**

---

### Syntax Definitions

*action\_name*                      The name of the action.

### Defaults

By default, queues created by an action are *not* shared.

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- If the **shared** policy action is not specified, then each bandwidth rule will implement a separate instance of the specified bandwidth allocation.
- Use the **no** form of the command to disable sharing.

### Example

```
-> policy action action5 maximum bandwidth 10m shared
-> policy action action6 maximum bandwidth 10m shared
-> policy action action5 no shared
```

### Release History

Release 5.1.R2; command introduced.

### Related Commands

<a href="#">qos apply</a>	Applies configured QoS and policy settings to the current configuration.
<a href="#">policy action maximum bandwidth</a>	Creates a maximum bandwidth policy action.
<a href="#">show policy action</a>	Displays information about policy actions.

### MIB Objects

```
alaQoSActionTable
  alaQoSActionName
  alaQoSActionShared
```



```
alaQoSAppliedActionTable  
  alaQoSAppliedActionName  
  alaQoSAppliedActionShared
```

---

## policy action priority

Configures the priority for queuing a flow to which the QoS action applies.

**policy action** *action\_name* **priority** *priority\_value*

**policy action** *action\_name* **no priority**

---

### Syntax Definitions

*action\_name*

The name of the action.

*priority\_value*

The priority given to scheduling traffic on the output port. Values range from 0 (lowest) to 7 (highest).

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- Use the **no** form of this command to remove a priority value from an action.
- This priority value is independent of 802.1Q, Type of Service (ToS), or Differentiated Services Code Point (DSCP) values.

### Examples

```
-> policy action action1 priority 1  
-> policy action action1 no priority
```

### Release History

Release 5.1.R2; command introduced.

### Related Commands

[qos apply](#)

Applies configured QoS and policy settings to the current configuration.

[policy action](#)

Creates a policy action.

[show policy action](#)

Displays information about policy actions.

### MIB Objects

alaQoSActionTable

alaQoSActionName

alaQoSActionPriority

alaQoSActionPriorityStatus

```
alaQoSAppliedActionTable  
  alaQoSAppliedActionName  
  alaQoSAppliedActionPriority  
  alaQoSAppliedActionPriorityStatus
```

---

## policy action maximum bandwidth

Configures a maximum bandwidth value for a policy action.

**policy action** *action\_name* **maximum bandwidth** *bps*[**k** | **m** | **g** | **t**]

**policy action** *action\_name* **no maximum bandwidth**

---

### Syntax Definitions

<i>action_name</i>	The name of the action.
<i>bps</i> [ <b>k</b>   <b>m</b>   <b>g</b>   <b>t</b> ]	The maximum amount of bandwidth, in bits-per-second, for all traffic that ingresses on the port. The value may be entered as an integer (for example, <b>10</b> ) or with abbreviated units (for example, <b>10k</b> , <b>5m</b> , <b>1g</b> , <b>1t</b> ).

### Defaults

parameter	default
<b>k</b>   <b>m</b>   <b>g</b>   <b>t</b>	<b>k</b>

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- Use the **no** form of the command to remove a maximum bandwidth value from an action.
- If the maximum bandwidth value is specified as an integer, without an abbreviated unit designation, the value is applied in kbps by default. For example, if the number **10** is specified, **10K** is the maximum bandwidth value used. However, if **10G** is specified, the maximum bandwidth value applied is **10** gbps.
- Use the **shared** policy action to enabling sharing of bandwidth across policy rules that specify the same maximum bandwidth action.

### Examples

```
-> policy action action3 maximum bandwidth 10000
-> policy action action4 maximum bandwidth 10k shared
-> policy action action5 maximum bandwidth 10k shared
-> policy action action4 no maximum bandwidth
```

### Release History

Release 5.1.R2; command introduced.

## Related Commands

<a href="#">qos apply</a>	Applies configured QoS and policy settings to the current configuration.
<a href="#">policy action</a>	Creates a policy action.
<a href="#">show policy action</a>	Displays information about policy actions.

## MIB Objects

```
alaQoSActionTable
  alaQoSActionName
  alaQoSActionMaximumBandwidth
alaQoSAppliedActionTable
  alaQoSAppliedActionName
  alaQoSAppliedActionMaximumBandwidth
```

---

## policy action maximum depth

Configures the maximum queue depth or bucket size assigned to this action, in bytes. The queue depth or bucket size determines the amount of buffer allocated to each queue. When the queue depth or bucket size is reached, the switch starts dropping packets.

**policy action** *action\_name* **maximum depth** *bytes* [**K (kilo)** | **M (mega)** | **G (giga)** | **T (tera)**]

**policy action** *action\_name* **no maximum depth**

---

### Syntax Definitions

<i>action_name</i>	The name of the action.
<i>bytes</i> [ <b>K</b>   <b>M</b>   <b>G</b>   <b>T</b> ]	The maximum queue depth in bytes. The value may be entered as an integer (for example, <b>10</b> ) or with abbreviated units (for example, <b>10k</b> , <b>5m</b> , <b>1g</b> ). If the value is entered as an integer, the switch uses the default unit of <b>K(kilo)</b> .

### Defaults

parameter	default
<b>K</b>   <b>M</b>   <b>G</b>   <b>T</b>	<b>K</b>
<i>bytes</i>	<b>0</b>

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- Use the **no** form of this command to remove a maximum depth value from a policy action.
- If the maximum depth value is specified as an integer, without an abbreviated unit designation, the value is applied in Kbytes by default. For example, if the number **10** is specified, **10K** bytes is the maximum depth value used. However, if **10G** is specified, the maximum depth value applied is **10G** bytes.
- A maximum depth action is used in combination with a maximum bandwidth action.

### Examples

```
-> policy action action2 maximum depth 100
-> policy action action2 no maximum depth
```

### Release History

Release 5.1.R2; command introduced.

## Related Commands

<b>qos apply</b>	Applies configured QoS and policy settings to the current configuration.
<b>policy action</b>	Creates a policy action.
<b>show policy action</b>	Displays information about policy actions.

## MIB Objects

```
alaQoSActionTable
  alaQoSActionName
  alaQoSActionMaximumDepth
alaQoSAppliedActionTable
  alaQoSAppliedActionName
  alaQoSAppliedActionMaximumDepth
```

---

## policy action cir

Configures a Tri-Color Marking (TCM) policy action. This type of action includes parameters for Committed Information Rate (CIR), Committed Burst Size (CBS), Peak Information Rate (PIR), and Peak Burst Size (PBS). The TCM policier meters and marks packets red, green, or yellow based on the parameter values of this policy action.

**policy action** *action\_name* **cir** *bps* [**cbs** *bytes*] [**pir** *bps*] [**pbs** *bytes*] [**color-only**]

**policy action** *action\_name* **no cir**

**policy action** *action\_name* **no pir**

---

### Syntax Definitions

<i>action_name</i>	The name of the action.
<i>bps</i> [ <b>k</b>   <b>m</b>   <b>g</b>   <b>t</b> ]	The maximum amount of bandwidth, in bits-per-second, for all traffic that ingresses on the port. The value may be entered as an integer (for example, <b>10</b> ) or with abbreviated units (for example, <b>10k</b> , <b>5m</b> , <b>1g</b> , <b>1t</b> ).
<i>bytes</i>	The desired value for maximum bucket size, in bytes.
<b>color-only</b>	Disables TCM rate limiting based on the metering results. Packets are only marked the specific color that applies to the level of packet conformance.

### Defaults

parameter	default
<b>cir pir</b> <i>bps</i>	0
<b>cbs pbs</b> <i>bytes</i>	10K
<b>k</b>   <b>m</b>   <b>g</b>   <b>t</b>	<b>k</b>

By default, this action enables rate limiting based on TCM marking and metering.

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- Use the **no** form of this command to remove the TCM parameter values.
- If the **color-only** parameter is specified with this command, the TCM action will only mark packet color; packets are not rate limited based on the metering results. In this case, packets are then subject to any rate limiting specifications as defined in the queue management configuration for the switch.
- This implementation of TCM supports two rate limiting modes: Single-Rate (srTCM) and Two-Rate (trTCM). The srTCM mode marks packets based only on the CIR and the two burst sizes: CBS and PBS. The trTCM mode marks packets based on both the CIR and PIR and their associated CBS and PBS values.



- There is no explicit CLI command to configure the mode (srTCM or trTCM) in which the TCM meter operates. Instead, the mode is determined by the CIR and PIR values configured for the policy action. If the PIR value is greater than the CIR value, trTCM is used. If the PIR value is less than the CIR value, srTCM is used.
- Configuring CIR and CBS is similar to configuring a maximum bandwidth. Configuring CIR and PIR is similar to configuring maximum depth.
- The number of packets counted as a result of the counter color mode setting is displayed using the **show active policy rule** command. These statistics are only shown for those rules that are configured with a TCM policy action.

## Examples

The following command examples configure srTCM (the default):

```
-> policy action A3 cir 10M
-> policy action A4 cir 10M cbs 4k
-> policy action A5 cir 10M cbs 4k pir 10M
-> policy action A6 cir 10M cbs 4k pir 10M pbs 4k
-> policy action a7 cir 5M cbs 2k color-only
-> policy action A3 no cir
-> policy action A5 no pir
```

The following command examples configure trTCM (note that PIR is greater than CIR):

```
-> policy action A7 cir 10M cbs 4k pir 20M
-> policy action A8 cir 10M cbs 4k pir 20M pbs 40M
-> policy action a9 cir 5M cbs 1M pbs 10M pbs 2M color-only
-> policy action A7 no cir
```

## Release History

Release 5.1.R2; command introduced.

## Related Commands

<a href="#">qos apply</a>	Applies configured QoS and policy settings to the current configuration.
<a href="#">policy action</a>	Creates a policy action.
<a href="#">show policy action</a>	Displays information about policy actions.

**MIB Objects**

## alaQoSActionTable

- alaQoSActionCIR
- alaQoSActionCIRStatus
- alaQoSActionCBS
- alaQoSActionCBSStatus
- alaQoSActionPIR
- alaQoSActionPIRStatus
- alaQoSActionPBS
- alaQoSActionPBSStatus
- alaQoSActionColorOnly

## alaQoSAppliedActionTable

- alaQoSAppliedActionCIR
- alaQoSAppliedActionCIRStatus
- alaQoSAppliedActionCBS
- alaQoSAppliedActionCBSStatus
- alaQoSAppliedActionPIR
- alaQoSAppliedActionPIRStatus
- alaQoSAppliedActionPBS
- alaQoSAppliedActionPBSStatus
- alaQoSAppliedColorOnly

---

## policy action cpu priority

Configures a CPU priority policy action.

**policy action** *action\_name* **cpu priority** *priority*

**policy action** *action\_name* **no cpu priority**

---

### Syntax Definitions

<i>action_name</i>	The name of the action.
<i>priority</i>	The CPU queue on which packets destined for the CPU are received. The valid range is 0–31.

### Defaults

By default, the CPU priority is set to zero.

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

Use the **no** form of this command to remove the CPU priority parameter value.

### Examples

```
-> policy action A7 cpu priority 15
-> policy action A8 cpu priority 31
-> policy action A7 no cpu priority
```

### Release History

Release 5.1.R2; command introduced.

### Related Commands

<a href="#">gos apply</a>	Applies configured QoS and policy settings to the current configuration.
<a href="#">policy action</a>	Creates a policy action.
<a href="#">show policy action</a>	Displays information about policy actions.

### MIB Objects

```
alaQoSActionTable
  alaQoSActionCPUPriority
  alaQoSActionCPUPriorityStatus
alaQoSAppliedActionTable
  alaQoSAppliedActionCPUPriority
  alaQoSAppliedActionCPUPriorityStatus
```

---

## policy action tos

Configures a Type of Service (ToS) bits value to be applied to packets in outgoing flows to which the specified policy applies.

**policy action** *action\_name* **tos** *tos\_value*

**policy action** *action\_name* **no tos**

---

### Syntax Definitions

*action\_name*

The name of the action.

*tos\_value*

The three-bit priority value in the IP header that should be set on outgoing frames in flows that match the specified policy. Values range from 0 (lowest priority) to 7 (highest priority).

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- Use the **no** form of this command to remove a ToS value from a policy action.
- Note that specifying both ToS and DSCP in the same action is *not* allowed.

### Examples

```
-> policy action action3 tos 4
-> policy action action3 no tos
```

### Release History

Release 5.1.R2; command introduced.

### Related Commands

[qos apply](#)

Applies configured QoS and policy settings to the current configuration.

[policy action](#)

Creates a policy action.

[show policy action](#)

Displays information about policy actions.

### MIB Objects

alaQoSActionTable

alaQoSActionName

alaQoSActionTos

```
alaQoSAppliedActionTable  
  alaQoSAppliedActionName  
  alaQoSAppliedActionTos
```

---

## policy action 802.1p

Configures a value to be set in the 802.1p bits of the 802.1Q byte of an outgoing frame for traffic that matches a policy with this action.

**policy action** *action\_name* **802.1p** *802.1p\_value*

**policy action** *action\_name* **no 802.1p**

---

### Syntax Definitions

<i>action_name</i>	The name of the action.
<i>802.1p_value</i>	The priority value to be set in 802.1Q frames. Values range from 0 (lowest priority) to 7 (highest priority).

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- Use the **no** form of the command to remove an 802.1p value from a policy action.
- Note that specifying both ToS and DSCP in the same action is not allowed.

### Examples

```
-> policy action action4 802.1p 7
-> policy action action4 no 802.1p
```

### Release History

Release 5.1.R2; command introduced.

### Related Commands

<a href="#">qos apply</a>	Applies configured QoS and policy settings to the current configuration.
<a href="#">policy action</a>	Creates a policy action.
<a href="#">show policy action</a>	Displays information about policy actions.

### MIB Objects

```
alaQoSActionTable
  alaQoSActionName
  alaQoSAction8021p
```

```
alaQoSAppliedActionTable  
  alaQoSAppliedActionName  
  alaQoSAppliedAction8021p
```

---

## policy action dscp

Configures a Differentiated Services Code Point (DSCP) value to be set in an outgoing flow for traffic that matches rules with this action.

**policy action** *action\_name* **dscp** *dscp\_value*

**policy action** *action\_name* **no dscp**

---

### Syntax Definitions

<i>action_name</i>	The name of the action.
<i>dscp_value</i>	The DSCP value to be set, in the range 0–63.

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- Use the **no** form of this command to remove a DSCP value from a policy action.
- Note that specifying both ToS and DSCP in the same action is *not* allowed.

### Examples

```
-> policy action action2 dscp 61
-> policy action action2 no dscp
```

### Release History

Release 5.1.R2; command introduced.

### Related Commands

<a href="#">qos apply</a>	Applies configured QoS and policy settings to the current configuration.
<a href="#">policy action</a>	Creates a policy action.
<a href="#">show policy action</a>	Displays information about policy actions.

### MIB Objects

```
alaQoSActionTable
  alaQoSActionName
  alaQoSActionDscp
```



```
alaQoSAppliedActionTable  
  alaQoSAppliedActionName  
  alaQoSAppliedActionDscp
```

---

## policy action map

Configures a mapping group for a policy action.

**policy action map** {802.1p | tos | dscp} to {802.1p | tos | dscp} using *map\_group*

**policy action no map**

---

### Syntax Definitions

<i>action_name</i>	The name of the action.
<b>802.1p</b>	Indicates that an 802.1p value should be mapped.
<b>tos</b>	Indicates that a ToS value should be mapped.
<b>dscp</b>	Indicates that a DSCP value should be mapped.
<i>map_group</i>	The name of the map group, configured through the <a href="#">policy map group</a> command.

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- When remapping is configured with this command and a flow matches a policy with this remapping action, and the 802.1p, ToS, or DSCP setting in the incoming flow is specified by the map group, the value will be remapped in the outgoing flow according to the map group.
- If the 802.1p, ToS, or DSCP setting in the incoming flow is not a value specified in the map group, the switch will do one of two things:

If the *remap from* and *remap to* types are the same (802.1p to 802.1p, ToS to ToS, or DSCP to DSCP), the values in the outgoing flow will be unchanged. If the *remap from* and *remap to* types are not the same (for example: 802.1p to ToS), the switch will determine the outgoing 802.1p and ToS based on whether or not the port is trusted or untrusted).

- Use the **no** form of the command to delete the map group from the configuration.

### Examples

```
-> policy action a1 map 802.1p to 802.1p using mapGroup2  
-> policy action a2 map 802.1p to tos using mapGroup3
```

### Release History

Release 5.1.R2; command introduced.

## Related Commands

<a href="#">policy map group</a>	Configures a map group and its associated mappings for 802.1p, Type of Service (ToS), or Differentiated Services Code Point (DSCP) values.
<a href="#">qos apply</a>	Applies configured QoS and policy settings to the current configuration.
<a href="#">policy action</a>	Creates a policy action.
<a href="#">show policy action</a>	Displays information about policy actions.
<a href="#">show policy map group</a>	Displays information about all pending and applied policy map groups or a particular map group.

## MIB Objects

```
alaQoSActionTable
  alaQoSActionMapFrom
  alaQoSActionMapTo
  alaQoSActionMapGroup
alaQoSAppliedActionTable
  alaQoSAppliedActionMapFrom
  alaQoSAppliedActionMapToalaQoSAppliedActionMapGroup
```

---

## policy action permanent gateway-ip

Used for Policy Based Routing (PBR). Routed flows to which this action is applied will be directed to the IP address specified in the action regardless of whether or not a route already exists in the switch routing table.

**policy action** *action\_name* **permanent gateway-ip** *ip\_address*

**policy action** *action\_name* **no permanent gateway-ip**

---

### Syntax Definitions

<i>action_name</i>	The name of the action.
<i>ip_address</i>	The destination IP address to which packets will be routed.

### Defaults

N/A

### Platforms Supported

Not supported in this release.

### Usage Guidelines

- Use the **no** form of the command to remove a gateway IP address from a policy action.
- If the gateway goes down, the traffic to be routed over the gateway will be dropped.

### Examples

```
-> policy action pbr2 permanent gateway-ip 10.10.2.1  
-> policy action pbr2 no permanent gateway-ip
```

### Release History

Release 5.1.R2; command not supported.

### Related Commands

<a href="#">qos apply</a>	Applies configured QoS and policy settings to the current configuration.
<a href="#">policy action</a>	Creates a policy action.
<a href="#">show policy action</a>	Displays information about policy actions.

### MIB Objects

```
alaQoSActionTable  
  alaQoSActionName  
  alaQoSActionPermanentGatewayIpAddr
```

```
alaQoSAppliedActionTable  
  alaQoSAppliedActionName  
  alaQoSAppliedActionPermanentGatewayIpAddr
```

---

## policy action permanent gateway-ipv6

Used for Policy Based Routing (PBR). Routed flows to which this action is applied will be directed to the IPv6 address specified in the action regardless of whether or not a route already exists in the switch routing table.

**policy action** *action\_name* **permanent gateway-ipv6** *ipv6\_address*

**policy action** *action\_name* **no permanent gateway-ipv6**

---

### Syntax Definitions

<i>action_name</i>	The name of the action.
<i>ipv6_address</i>	The destination IPv6 address to which packets will be routed.

### Defaults

N/A

### Platforms Supported

Not supported in this release.

### Usage Guidelines

- Use the **no** form of the command to remove a gateway IPv6 address from a policy action.
- If the gateway goes down, the traffic to be routed over the gateway will be dropped.

### Examples

```
-> policy action pbr2 permanent gateway-ipv6 2607:f0d0:2001:000a:0000:0000:0010
-> policy action pbr2 no permanent gateway-ipv6
```

### Release History

Release 5.1.R2; command not supported.

### Related Commands

<a href="#">qos apply</a>	Applies configured QoS and policy settings to the current configuration.
<a href="#">policy action</a>	Creates a policy action.
<a href="#">show policy action</a>	Displays information about policy actions.

### MIB Objects

```
alaQoSActionTable
  alaQoSActionName
  alaQoSActionPermanentGatewayIPv6Addr
```

```
alaQoSAppliedActionTable  
  alaQoSAppliedActionName  
  alaQoSAppliedActionPermanentGatewayIPv6Addr
```

---

## policy action port-disable

Administratively disables the source port of the traffic to which this action is applied.

**policy action** *action\_name* **port-disable**

**policy action** *action\_name* **no port-disable**

---

### Syntax Definitions

*action\_name*                      The name of the action.

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- Use the **no** form of this command to remove **port-disable** from the policy action.
- An SNMP trap is sent when a port is administratively disabled through a port disable action or a UserPorts shutdown function.
- To enable a port disabled by this action, use the **interfaces** command to administratively enable the port, or physically disconnect and reconnect the port cable.

### Examples

```
-> policy action pd01 port-disable  
-> policy action pb02 no port-disable
```

### Release History

Release 5.1.R2; command introduced.

### Related Commands

<a href="#">qos apply</a>	Applies configured QoS and policy settings to the current configuration.
<a href="#">policy action</a>	Creates a policy action.
<a href="#">show policy action</a>	Displays information about policy actions.
<a href="#">interfaces</a>	Administratively enables or disables a port.

### MIB Objects

```
alaQoSActionTable  
    alaQoSActionName  
    alaQoSActionPortdisable
```



```
alaQoSAppliedActionTable  
  alaQoSAppliedActionName  
  alaQoSAppliedActionPortdisable
```

---

## policy action redirect port

Redirects all traffic (flooded, bridged, routed, and multicast) matching a redirect policy to the specified port instead of the port to which the traffic was destined.

**policy action** *action\_name* **redirect port** *chassis/slot/port*

**policy action** *action\_name* **no redirect port**

---

### Syntax Definitions

<i>action_name</i>	The name of the action.
<i>chassis</i>	The chassis identifier.
<i>slot/port</i>	The slot and port number that will receive the redirected traffic.

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- Use the **no** form of the command to remove **redirect port** from the policy action.
- When redirecting routed traffic from VLAN A to VLAN B, the redirect port must belong to VLAN B (tagged or default VLAN).
- Routed packets (from VLAN A to VLAN B) are not modified after they are redirected; the source and MAC address remain the same. In addition, if the redirect port is tagged, the redirected packets will have a tag from the ingress VLAN A.
- If a route exists for the redirected flow, then redirected packets are the final post-routing packets.
- If a route does not exist for the redirected flow, the flow is not redirected to the specified port or link aggregate and is “blackholed”. As soon as a route is available, the flow is then redirected as specified in the policy.
- In most cases, a redirected flow will *not* trigger an update to the routing and ARP tables. If necessary, create a static route for the flow or assign the redirect port to the ingress VLAN (VLAN A) to send packets to the redirect port until a route is available.
- When redirecting bridged traffic on VLAN A, the redirect port must belong to VLAN A (tagged or default VLAN).

### Examples

```
-> policy action rp01 redirect port 1/12/1
-> policy action rp01 no redirect port
```

## Release History

Release 5.1.R2; command introduced.

## Related Commands

<a href="#">qos apply</a>	Applies configured QoS and policy settings to the current configuration.
<a href="#">policy action</a>	Creates a policy action.
<a href="#">show policy action</a>	Displays information about policy actions.

## MIB Objects

```
alaQoSActionTable
  alaQoSActionName
  alaQoSActionRedirectSlot
  alaQoSActionRedirectPort
alaQoSAppliedActionTable
  alaQoSAppliedActionName
  alaQoSAppliedActionRedirectSlot
  alaQoSAppliedActionRedirectPort
```

---

## policy action redirect linkagg

Redirects all traffic (flooded, bridged, routed, and multicast) matching a redirect policy to the specified link aggregate ID instead of the link aggregate to which the traffic was destined.

**policy action** *action\_name* **redirect linkagg** *agg\_id*

**policy action** *action\_name* **no redirect linkagg**

---

### Syntax Definitions

<i>action_name</i>	The name of the action.
<i>agg_id</i>	The link aggregate ID number (0–32) to assign to the specified VLAN. See the “Link Aggregation Commands” chapter in this guide.

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- Use the **no** form of this command to remove **redirect linkagg** from the policy action.
- When redirecting routed traffic from VLAN A to VLAN B, the redirect link aggregate ID must belong to VLAN B (tagged or default VLAN).
- Routed packets (from VLAN A to VLAN B) are not modified after they are redirected; the source and MAC address remain the same. In addition, if the redirect link aggregate ID is tagged, the redirected packets will have a tag from the ingress VLAN A.
- If a route exists for the redirected flow, then redirected packets are the final post-routing packets.
- If a route does not exist for the redirected flow, the flow is not redirected to the specified link aggregate ID and is “blackholed”. As soon as a route is available, the flow is then redirected as specified in the policy.
- In most cases, a redirected flow will *not* trigger an update to the routing and ARP tables. If necessary, create a static route for the flow or assign the redirect port or link aggregate ID to the ingress VLAN (VLAN A) to send packets to the redirect port until a route is available.
- When redirecting bridged traffic on VLAN A, the redirect port or link aggregate ID must belong to VLAN A (tagged or default VLAN).

## Examples

```
-> policy action rp01 redirect linkagg 2
-> policy action rp01 no redirect linkagg 2
```

## Release History

Release 5.1.R2; command introduced.

## Related Commands

<a href="#">qos apply</a>	Applies configured QoS and policy settings to the current configuration.
<a href="#">policy action</a>	Creates a policy action.
<a href="#">show policy action</a>	Displays information about policy actions.

## MIB Objects

```
alaQoSActionTable
  alaQoSActionName
  alaQoSActionRedirectAgg
alaQoSAppliedActionTable
  alaQoSAppliedActionName
  alaQoSAppliedActionRedirectAgg
```

---

## policy action no-cache

Disables logging of rule entries to the hardware cache.

**policy action** *action\_name* **no-cache**

**policy action** *action\_name* **no no-cache**

---

### Syntax Definitions

*action\_name*                      The name of the action.

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- Use the **no** form of this command to remove **no-cache** from the policy action.
- Recommended for use when applied to traffic going to the switch.

### Examples

```
-> policy action nc01 no-cache  
-> policy action nc01 no no-cache
```

### Release History

Release 5.1.R2; command introduced.

### Related Commands

<a href="#">qos apply</a>	Applies configured QoS and policy settings to the current configuration.
<a href="#">policy action</a>	Creates a policy action.
<a href="#">show policy action</a>	Displays information about policy actions.

### MIB Objects

```
alaQoSActionTable  
  alaQoSActionName  
  alaQoSActionNocache  
alaQoSAppliedActionTable  
  alaQoSAppliedActionName  
  alaQoSAppliedActionNocache
```

---

## policy action mirror

Mirrors ingress, egress, or both ingress and egress packets that match a mirroring policy to the specified port.

**policy action** *action\_name* [**ingress** | **egress** | **ingress egress**] **mirror** {*chassis/slot/port* | **session** *session\_id*}

**policy action** *action\_name* **no mirror** {*chassis/slot/port* | **session** *session\_id*}

---

### Syntax Definitions

<i>action_name</i>	The name of the action.
<b>ingress</b>	Mirrors ingress packets.
<b>egress</b>	Mirrors egress packets.
<b>ingress egress</b>	Mirrors ingress and egress packets.
<i>chassis</i>	The chassis identifier.
<i>slot/port</i>	The slot and port number that will receive the mirrored traffic.
<i>session_id</i>	Mirroring session identifier.

### Defaults

parameter	default
<b>ingress</b>   <b>egress</b>   <b>ingress egress</b>	<b>ingress</b>

### Platforms Supported

Not supported in this release.

### Usage Guidelines

- Use the **no** form of the command to remove **mirror** from the policy action.
- Use this command to configure a mirror-to-port (MTP) and mirror-to-session action used for policy based mirroring.
- Only one policy-based MTP session is supported at any given time either port-based policy mirroring or session-based policy mirroring. As a result, all mirroring policies must specify the same destination port or same port mirroring session ID.
- Policy based mirroring and the port based mirroring feature can run simultaneously on the same switch.

### Examples

```
-> policy action a1 mirror 1/7/1 (default ingress)
-> policy action a1 ingress mirror 1/7/1
-> policy action a1 egress mirror 1/7/1
-> policy action a1 ingress egress mirror 1/7/1
-> policy action a1 no mirror
```

-> policy action a1 mirror session 1

## Release History

Release 5.1.R2; command not supported.

## Related Commands

<a href="#">qos apply</a>	Applies configured QoS and policy settings to the current configuration.
<a href="#">policy action</a>	Creates a policy action.
<a href="#">show policy action</a>	Displays information about policy actions.

## MIB Objects

```
alaQoSActionTable  
  alaQoSActionName  
  alaQoSActionMirrorSlot  
  alaQoSActionMirrorPort  
  alaQoSActionMirrorMode  
  alaQoSActionMirrorModeStatus
```

---



## show policy network group

Displays information about pending and applied policy network groups.

**show [applied] policy network group** [*network\_group*]

---

### Syntax Definitions

**applied**

Displays only network groups that have been applied.

*network\_group*

The name of the policy network group for which you want to display information; or a wildcard sequence of characters for displaying information about network groups with similar names. Use an asterisk (\*) to indicate a wildcard character.

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

Information for all policy network groups displays unless *network\_group* is specified.

### Examples

```
-> show policy network group
```

```
Group Name      : netg1
State           = new,
Entries         = 198.206.10.1
```

```
-> show policy network group
```

```
Group Name      : group1
Entries         = 203.185.129.0 mask 255.255.255.0,
                  203.185.131.192 mask 255.255.255.192,
                  203.185.132.0 mask 255.255.252.0,
                  204.226.0.0 mask 255.255.0.0
```

---

*output definitions*

---

<b>Group Name</b>	The name of the port group, configured through the <b>policy network group</b> command.
<b>State</b>	This field appears if the group was created or modified but not yet applied to the QoS configuration. When the <b>qos apply</b> command is issued, this field no longer displays.
<b>Entries</b>	The IP addresses associated with the network group.

---

**Release History**

Release 5.1.R2; command introduced.

**Related Commands**

[policy network group](#) Configures policy network groups.

**MIB Objects**

```
alaQoSNetworkGroupsTable
  alaNetworkGroupsName
  alaNetworkGroupsSource
alaNetworkGroupTable
  alaNetworkGroupIpAddr
  alaQoSNetworkGroupIpMask
```

---

## show policy service

Displays information about pending and applied policy services.

**show [applied] policy service** *[service\_name]*

---

### Syntax Definitions

<b>applied</b>	Displays only policy services that have been applied.
<i>service_name</i>	The name of the service for which you want to display information; or a wildcard sequence of characters for displaying information about services with similar names. Use an asterisk (*) to indicate a wildcard character.

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

Information about all policy services is displayed unless *service\_name* is specified.

### Examples

```
-> show policy service
Service name           : s1
State                  = new,
Destination UDP port   = 1001-2004
```

### *output definitions*

---

<b>Service Name</b>	The name of the port group, configured through the <b>policy service</b> command.
<b>State</b>	This field appears if the service was created or modified but not yet applied to the QoS configuration. When the <b>qos apply</b> command is issued, this field no longer displays.
<b>IPProto</b>	The IP protocol associated with the service.
<b>SrcPort</b>	A source port associated with the service.
<b>DstPort</b>	A destination port associated with the service.

---

### Release History

Release 5.1.R2; command introduced.

## Related Commands

### [policy service](#)

Configures a service that may be used as part of a policy service group.

## MIB Objects

```
alaQoSServiceTable
  alaQoSServiceName
  alaQoSServiceSource
  alaQoSServiceIpProtocol
  alaQoSServiceSourceIpPort
  alaQoSServiceDestinationIpPort
alaQoSAppliedServiceTable
  alaQoSAppliedServiceName
  alaQoSAppliedServiceSource
  alaQoSAppliedServiceIpProtocol
  alaQoSAppliedSourceIpPort
  alaQoSAppliedServiceDestinationIpPort
```

---

## show policy service group

Displays information about pending and applied policy service groups.

**show** [**applied**] **policy service group** [*service\_group*]

---

### Syntax Definitions

<b>applied</b>	Displays only policy service groups that have been applied.
<i>service_group</i>	The name of the service group for which you want to display information; or a wildcard sequence of characters for displaying information about service groups with similar names. Use an asterisk (*) to indicate a wildcard character.

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

Information for all policy service groups displays unless *service\_group* is specified.

### Examples

```
-> show policy service group
Group Name      : mgmt
State           = new,
Entries         = ftp,
                  http,
                  https,
                  snmp,
                  ssh,
                  telnet
```

### *output definitions*

---

<b>Group Name</b>	The name of the port group, configured through the <b>policy service group</b> command.
<b>State</b>	This field appears if the group was created or modified but not yet applied to the QoS configuration. When the <b>qos apply</b> command is issued, this field no longer displays.
<b>Entries</b>	The services associated with the group. Services are configured through the <b>policy service</b> command.

---

### Release History

Release 5.1.R2; command introduced.

## Related Commands

### [policy service group](#)

Configures a service group and its associated services. A service group may be attached to a policy condition.

## MIB Objects

```
alaQoSServiceGroupsTable
  alaQoSServiceGroupsName
  alaQoSServiceGroupsSource
alaQoSAppliedServiceGroupsTable
  alaQoSAppliedServiceGroupsName
  alaQoSAppliedServiceGroupsSource
alaQoSServiceGroupTable
  alaQoSServiceGroupServiceName
alaQoSAppliedServiceGroupTable
  alaQoSAppliedServiceGroupServiceName
```

---

## show policy mac group

Displays information about pending and applied MAC groups.

**show** [**applied**] **policy mac group** [*mac\_group*]

---

### Syntax Definitions

<b>applied</b>	Displays only MAC groups that have been applied.
<i>mac_group</i>	The name of the MAC group for which you want to display information; or a wildcard sequence of characters for displaying information about MAC groups with similar names. Use an asterisk (*) to indicate a wildcard character.

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

Information for all policy MAC groups displays unless *mac\_group* is specified.

### Examples

```
-> show policy mac group
Group Name      : mg1
State           = new,
Entries         = 00:02:9A:44:5E:10 mask 00:00:00:FF:FF:FF,
                00:11:01:00:00:01 mask 00:00:00:FF:FF:FF
                00:02:9A:44:5E:20
```

### *output definitions*

---

<b>Group Name</b>	The name of the port group, configured through the <b>policy mac group</b> command.
<b>State</b>	This field appears if the group was created or modified but not yet applied to the QoS configuration. When the <b>qos apply</b> command is issued, this field no longer displays.
<b>Entries</b>	The MAC addresses associated with the group.

---

### Release History

Release 5.1.R2; command introduced.

## Related Commands

### [policy mac group](#)

Configures policy MAC groups.

## MIB Objects

```
alaQoSACGroupsTable
  alaQoSACGroupsName
  alaQoSACGroupsSource
alaQoSAppliedMACGroupsTable
  alaQoSAppliedMACGroupsName
  alaQoSAppliedMACGroupsSource
alaQoSACGroupTable
  alaQoSACGroupMacAddr
  alaQoSACGroupMacMask
alaQoSAppliedMACGroupTable
  alaQoSAppliedMACGroupMacAddr
  alaQoSAppliedMACGroupMacMask
```

---



## show policy port group

Displays information about pending and applied policy port groups.

**show** [**applied**] **policy port group** [*group\_name*]

---

### Syntax Definitions

<b>applied</b>	Displays only policy port groups that have been applied.
<i>group_name</i>	The name of the policy port group for which you want to display information; or a wildcard sequence of characters for displaying information about port groups with similar names. Use an asterisk (*) to indicate a wildcard character.

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

Information for all policy port groups displays unless *group\_name* is specified.

### Examples

```
-> show policy port group
Group Name      : pg1
State           = new,
Entries         = 1/2/1,
                1/3/1,
                1/4/1,
                3/1/11
```

#### *output definitions*

---

<b>Group Name</b>	The name of the port group, configured through the <b>policy port group</b> command or built-in port groups automatically set up by the switch ( <b>Slot01, Slot02, Slot03</b> , etc.).
<b>State</b>	This field appears if the group was created or modified but not yet applied to the QoS configuration. When the <b>qos apply</b> command is issued, this field no longer displays.
<b>Entries</b>	The slot/port combinations associated with the port group.

---

### Release History

Release 5.1.R2; command introduced.

## Related Commands

### **policy port group**

Configures a port group and its associated slot and port numbers.

## MIB Objects

```
alaQoSPortGroupsTable
  alaQoSPortGroupsName
  alaQoSPortGroupsSource
alaQoSAppliedPortGroupsTable
  alaQoSAppliedPortGroupsName
  alaQoSAppliedPortGroupsSource
alaPortGroupTable
  alaQoSPortGroupSlot
  alaQoSPortGroupPort
alaAppliedPortGroupTable
  alaQoSAppliedPortGroupSlot
  alaQoSAppliedPortGroupPort
```

---

## show policy map group

Displays information about pending and applied policy map groups.

```
show [applied] policy map group [group_name]
```

---

### Syntax Definitions

**applied**

Displays only policy map groups that have been applied.

*group\_name*

The name of the policy map group for which you want to display information; or a wildcard sequence of characters for displaying information about map groups with similar names. Use an asterisk (\*) to indicate a wildcard character.

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

Information for all policy map groups displays unless *group\_name* is specified.

### Examples

```
-> show policy map group
Group Name      : m1
State           = new,
Entries         = 0:0,
                1:9,
                2:18,
                3:27,
                4:36,
                5:45,
                6:54,
                7:63
```

*output definitions*


---

<b>Group Name</b>	The name of the map group, configured through the <b>policy map group</b> command.
<b>State</b>	This field appears if the group was created or modified but not yet applied to the QoS configuration. When the <b>qos apply</b> command is issued, this field no longer displays.
<b>Entries</b>	The slot/port combinations associated with the port group.

---

**Release History**

Release 5.1.R2; command introduced.

**Related Commands**

**policy map group** Configures a map group and its associated mappings for 802.1p, Type of Service (ToS), or Differentiated Services Code Point (DSCP) values.

**MIB Objects**

```

alaQoSMapGroupsTable
  alaQoSMapGroupsName
  alaQoSMapGroupsSource
alaQoSAppliedMapGroupsTable
  alaQoSAppliedMapGroupsName
  alaQoSAppliedMapGroupsSource
alaQoSMapGroupTable
  alaQoSMapGroupKey
  alaQoSMapGroupKeyEnd
  alaQoSMapGroupValue
alaQoSAppliedMapGroupTable
  alaQoSAppliedMapGroupKey
  alaQoSAppliedMapGroupKeyEnd
  alaQoSAppliedMapGroupValue

```

---

## show policy action

Displays information about pending and applied policy actions configured on the switch.

**show [applied] policy action [action\_name]**

---

### Syntax Definitions

<b>applied</b>	Displays only actions that have been applied to the QoS configuration for the switch.
<i>action_name</i>	The name of the action for which you want to display information; or a wildcard sequence of characters for displaying information about actions with similar names. Use an asterisk (*) to indicate a wildcard character.

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- Information for all policy actions displays unless *action\_name* is specified.
- When the optional **applied** parameter is used, pending QoS actions are not displayed.

### Examples

```
-> show policy action
Action name           : a1
  Committed Information Rate   = 10.0M,
  Committed Burst size        = 5.00M,
  Peak Information Rate        = 20.0M,
  Peak Burst size             = 5.00M

Action name           : a2
  State                  = new,
  Disposition            = deny

Action name           : a3
  State                  = new,
  Priority                = 7,
```

```

-> show applied policy action
Action name                : a1
  Committed Information Rate = 10.0M,
  Committed Burst size     = 5.00M,
  Peak Information Rate    = 20.0M,
  Peak Burst size         = 5.00M

```

### *output definitions*

---

<b>Action Name</b>	The name of the action, configured through the <b>policy action</b> command.
<b>State</b>	This field appears if the action was created or modified but not yet applied to the QoS configuration. When the <b>qos apply</b> command is issued, this field no longer displays.
<b>Policy Action Parameters</b>	Displays the configured policy action parameters.

---

## Release History

Release 5.1.R2; command introduced.

## Related Commands

**policy action** Creates a policy action. A QoS action is a particular set of bandwidth and queue parameters that may be applied to a flow matching particular QoS conditions.

## MIB Objects

```

alaQoSActionTable
  alaQoSActionName
  alaQoSActionSource
  alaQoSActionDisposition
  alaQoSActionShared
  alaQoSActionMinimumBandwidth
  alaQoSActionMaximumBandwidth
  alaQoSActionMaximumDepth
alaQoSAppliedActionTable
  alaQoSAppliedActionName
  alaQoSAppliedActionSource
  alaQoSAppliedActionDisposition
  alaQoSAppliedActionShared
  alaQoSAppliedActionMinimumBandwidth
  alaQoSAppliedActionMaximumBandwidth
  alaQoSAppliedActionMaximumDepth

```

---

## show policy condition

Displays information about pending and applied policy conditions.

```
show [applied] policy condition [condition_name]
```

---

### Syntax Definitions

<b>applied</b>	Displays only conditions that have been applied to the QoS configuration for the switch.
<i>condition_name</i>	The name of the condition for which you want to display information; or a wildcard sequence of characters for displaying information about actions with similar names. Use an asterisk (*) to indicate a wildcard character.

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- Information for all policy conditions displays unless *condition\_name* is specified.
- When the optional **applied** parameter is used, pending QoS conditions are not displayed.

### Examples

```
-> show policy condition
Condition name           : c1
  Source VLAN           = 1001

Condition name           : c2
  State                 = new,
  Source IP              = 10.2.2.1,
  Destination UDP port   = 17

-> show applied policy condition
Condition name           : c1
  Source VLAN           = 1001
```

```

-> show policy condition
Condition name           : c1
Application group       = app1

Condition name           : c2
State                   = new,
Application name         = "jabber -init sequence",
Destination UDP port    = 17

```

### *output definitions*

---

<b>Condition Name</b>	The name of the condition, configured through the <b>policy condition</b> command.
<b>State</b>	This field appears if the condition was created or modified but not yet applied to the QoS configuration. When the <b>qos apply</b> command is issued, this field no longer displays.
<b>Source VLAN</b>	The source VLAN.
<b>Destination UDP port</b>	The destination UDP port.
<b>Application group</b>	Name of the AppMon application group to which the QoS policy condition is applied.
<b>Application name</b>	Name of the AppMon application to which the QoS policy condition applied.

---

### **Release History**

Release 5.1.R2; command introduced.

### **Related Commands**

[policy condition](#) Creates a policy condition. The condition determines what parameters the switch uses to classify incoming flows.



## MIB Objects

```
alaQoSConditionTable
  alaQoSConditionName
  alaQoSConditionSource
  alaQoSConditionSourceSlot
  alaQoSConditionSourcePort
  alaQoSConditionSourcePortGroup
  alaQoSConditionDestinationSlot
  alaQoSConditionDestinationPort
  alaQoSConditionDestinationPortGroup
  alaQoSConditionSourceInterfaceType
  alaQoSConditionDestinationInterfaceType
  alaQoSConditionSourceMacAddr
  alaQoSConditionSourceMacMask
  alaQoSConditionSourceMacGroup
  alaQoSConditionDestinationMacAddr
  alaQoSConditionDestinationMacMask
  alaQoSConditionDestinationMacGroup
  alaQoSConditionSourceVlan
  alaQoSConditionDestinationVlan
  alaQoSCondition8021p
  alaQoSConditionSourceIpAddr
  alaQoSConditionSourceIpMask
  alaQoSConditionSourceNetworkGroup
  alaQoSConditionDestinationIpAddr
  alaQoSConditionDestinationIpMask
  alaQoSConditionDestinationNetworkGroup
  alaQoSConditionMulticastIpAddr
  alaQoSConditionMulticastIpMask
  alaQoSConditionMulticastNetworkGroup
  alaQoSConditionTos
  alaQoSConditionDscp
  alaQoSConditionTcpFlags
  alaQoSConditionIpProtocol
  alaQoSConditionSourceIpPort
  alaQoSConditionDestinationIpPort
  alaQoSConditionService
  alaQoSConditionServiceGroup
```

---

## show active policy rule

Displays information about pending and applied policy rules that are active (enabled) on the switch.

**show active policy rule** [*rule\_name*]

---

### Syntax Definitions

*rule\_name*

The name of the rule for which you want to display information; or a wildcard sequence of characters for displaying information about rules with similar names. Use an asterisk (\*) to indicate a wildcard character.

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- Use the **show policy rule** command to display inactive as well as active policy rules.
- Information for all rules is displayed unless *rule\_name* is specified.
- Applied rules may or may not be active on the switch. Applied rules are inactive if they have been administratively disabled with the **disable** option in the **policy rule** command.

### Examples

```
-> show active policy rule
Rule name           : r1
Condition name      = c1,
Action name         = a1,
Packets             = 4166772,
Bytes               = 266665728
```

#### *output definitions*

---

<b>Rule name</b>	The name of the policy rule, configured through the <b>policy rule</b> command.
<b>Condition name</b>	The name of the condition configured for this rule.
<b>Action name</b>	The name of the action configured for this rule.
<b>Packets</b>	The number of packets that match this rule.
<b>Bytes</b>	The number of bytes that match this rule.

---

### Release History

Release 5.1.R2; command introduced.

## Related Commands

### [policy rule](#)

Configures a policy rule on the switch. A rule is made up of a condition (for classifying incoming traffic) and an action (to be applied to outgoing traffic).

## MIB Objects

```
alaQoSRuleTable
  alaQoSRuleName
  alaQoSRuleEnabled
  alaQoSRuleSource
  alaQoSRulePrecedence
  alaQoSRuleActive
  alaQoSRuleReflexive
  alaQoSRuleLog
  alaQoSRuleTrapEvents
  alaQoSRuleSave
  alaQoSRuleCondition
  alaQoSRuleAction
```

---

## show policy rule

Displays information about pending and applied policy rules.

**show [applied] policy rule** *[rule\_name]*

---

### Syntax Definitions

<b>applied</b>	Displays only policy rules that have been applied.
<i>rule_name</i>	The name of the rule for which you want to display information; or a wildcard sequence of characters for displaying information about rules with similar names. Use an asterisk (*) to indicate a wildcard character.

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- Information for all rules is displayed unless *rule\_name* is specified.
- Use the [show active policy rule](#) command to display only active rules that are currently being enforced on the switch.

### Examples

```
-> show policy rule
Rule name           : r1
  Condition name    = c1,
  Action name       = a1

Rule name           : r2
  State             = new,
  Condition name    = c2,
  Action name       = a1

Rule name           : r3
  State             = new,
  Condition name    = c2,
  Action name       = a2

-> show applied policy rule
Rule name           : r1
  Condition name    = c1,
  Action name       = a1
```

---

*output definitions*

---

<b>Rule name</b>	The name of the policy rule, configured through the <b>policy rule</b> command.
<b>State</b>	This field appears if the rule was created or modified but not yet applied to the QoS configuration. When the <b>qos apply</b> command is issued, this field no longer displays.
<b>Condition name</b>	The name of the condition configured for this rule.
<b>Action name</b>	The name of the action configured for this rule.

---

**Release History**

Release 5.1.R2; command introduced.

**Related Commands**

**policy rule** Configures a policy rule on the switch. A rule is made up of a condition (for classifying incoming traffic) and an action (to be applied to outgoing traffic).

**MIB Objects**

```
alaQoSRuleTable
  alaQoSRuleName
  alaQoSRuleEnabled
  alaQoSRuleSource
  alaQoSRulePrecedence
  alaQoSRuleActive
  alaQoSRuleReflexive
  alaQoSRuleLog
  alaQoSRuleTrapEvents
  alaQoSRuleSave
  alaQoSRuleCondition
  alaQoSRuleAction
```

---

## show policy validity period

Displays information about policy validity periods.

**show policy validity period** [*name*]

---

### Syntax Definitions

*name*                                The name of the validity period.

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- Information for all validity periods is displayed unless *name* is specified.
- Use the [show policy rule](#) command to display the validity period that is associated with a policy rule.

### Examples

```
-> show policy validity-period
Validity period name      = tuesday
   State                  = new,
   Days                   = tuesday

Validity period name      = february
   Months                 = february

-> show applied policy validity-period
Validity period name      = february
   Months                 = february
```

### output definitions

---

<b>Validity period name</b>	The name of the policy validity period, configured through the <a href="#">iec message-type priority</a> command.
<b>State</b>	This field appears if the validity period was created or modified but not yet applied to the QoS configuration. When the <b>qos apply</b> command is issued, this field no longer displays.
<b>Days</b>	The days of the week the validity period is active, configured through the <a href="#">iec message-type priority</a> command. If this field does not appear, then the validity period is not restricted to specific days.
<b>Months</b>	The months during which the validity period is active, configured through the <a href="#">iec message-type priority</a> command. If this field does not appear, then the validity period is not restricted to specific months.

*output definitions*


---

<b>Hours</b>	The time of day the validity period begins and ends, configured through the <b>iec message-type priority</b> command. If this field does not appear, then the validity period is not restricted to a specific time.
<b>Interval</b>	The date and time a validity period interval begins and ends, configured through the <b>iec message-type priority</b> command. If this field does not appear, then the validity period is not restricted to a specific date and time interval.

---

**Release History**

Release 5.1.R2; command introduced.

**Related Commands**

**iec message-type priority** Configures a validity period that specifies days, times, and/or months during which an associated policy rule is in effect.

**MIB Objects**

```

alaQoSValidityPeriodTable
  alaQoSValidityPeriodName
  alaQoSValidityPeriodSource
  alaQoSValidityPeriodDays
  alaQoSValidityPeriodDaysStatus
  alaQoSValidityPeriodMonths
  alaQoSValidityPeriodMonthsStatus
  alaQoSValidityPeriodHour
  alaQoSValidityPeriodHourStatus
  alaQoSValidityPeriodEndHour
  alaQoSValidityPeriodInterval
  alaQoSValidityPeriodIntervalStatus
  alaQoSValidityPeriodEndInterval
alaQoSAppliedValidityPeriodTable
  alaQoSAppliedValidityPeriodName
  alaQoSAppliedValidityPeriodSource
  alaQoSAppliedValidityPeriodDays
  alaQoSAppliedValidityPeriodDaysStatus
  alaQoSAppliedValidityPeriodMonths
  alaQoSAppliedValidityPeriodMonthsStatus
  alaQoSAppliedValidityPeriodHour
  alaQoSAppliedValidityPeriodHourStatus
  alaQoSAppliedValidityPeriodEndHour
  alaQoSAppliedValidityPeriodInterval
  alaQoSAppliedValidityPeriodIntervalStatus
  alaQoSAppliedValidityPeriodEndInterval

```

---

## show active policy list

Displays information about applied policy lists that are active (enabled) on the switch.

**show active policy list** [*list\_name*]

---

### Syntax Definitions

*list\_name*

The name of the list for which you want to display information; or a wildcard sequence of characters for displaying information about lists with similar names. Use an asterisk (\*) to indicate a wildcard character.

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- Information for all active rules is displayed unless a *list\_name* is specified.
- Use the **show policy list** command to display inactive as well as active policy lists.
- Applied lists may or may not be active on the switch. Applied lists are inactive if they have been administratively disabled with the **disable** option in the **policy list** command.
- The display may include any of the following characters:

character	definition
+	Indicates that the policy list has been modified or has been created since the last <b>qos apply</b> .
-	Indicates the policy list is pending deletion.
#	Indicates that the policy list differs between the pending/applied lists.



## Examples

```
-> show active policy list
```

Group Name	From	Type	Enabled	Entries
list1	cli	unp	Yes	r1 r2
+list2	cli	unp	Yes	r3
egress_list1	cli	egress	Yes	r1 r2 r3

### output definitions

<b>Group Name</b>	The name of the policy list. Configured through the <a href="#">policy list</a> command. A plus sign (+) preceding a policy list name indicates that the list was modified or created since the last <b>qos apply</b> .
<b>From</b>	Where the list originated.
<b>Type</b>	The type of rule ( <b>unp</b> , <b>egress</b> , <b>appfp</b> ). Configured through the <a href="#">policy list</a> command. Note that the default policy list is not shown. Use the <a href="#">show policy rule</a> command to display rules that are members of the default policy list.
<b>Enabled</b>	Whether or not the rule is enabled. Configured through the <a href="#">policy list</a> command.
<b>Entries</b>	The QoS policy rules that are grouped together in this policy list. Configured through the <a href="#">policy list</a> command.

## Release History

Release 5.1.R2; command introduced.

## Related Commands

[show policy list](#)

Displays information about pending and applied policy lists.

[show policy rule](#)

Displays information about pending and applied policy rules

## MIB Objects

alaQoSRuleGroupsTable

```
  alaQoSRuleDefaultList
  alaQoSRuleGroupsName
  alaQoSRuleGroupsSource
  alaQoSRuleGroupsType
  alaQoSRuleGroupsEnabled
  alaQoSRuleGroupsStatus
```

alaQoSAppliedRuleGroupsTable

```
  alaQoSAppliedRuleGroupsName
  alaQoSAppliedRuleGroupsSource
  alaQoSAppliedGroupsType
  alaQoSAppliedGroupsEnabled
  alaQoSAppliedRuleGroupsStatus
```

## show policy list

Displays information about pending and applied policy lists.

**show [applied] policy list** *[list\_name]*

---

### Syntax Definitions

<b>applied</b>	Displays only those policy lists that have been applied to the switch configuration.
<i>list_name</i>	The name of the list to display information; or a wildcard sequence of characters for displaying information about lists with similar names. Use an asterisk (*) to indicate a wildcard character.

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- Information for all rules is displayed unless a *list\_name* is specified.
- Use the [show active policy list](#) command to display only active policy lists that are currently enforced on the switch.
- The display may include any of the following characters:

character	definition
+	Indicates that the policy list has been modified or has been created since the last <b>qos apply</b> .
-	Indicates the policy list is pending deletion.
#	Indicates that the policy list differs between the pending/applied lists.

### Examples

```
-> show policy list
Group Name          From  Type   Enabled  Entries
-----+-----+-----+-----
list1                cli   unp    Yes      r1
                   r2
+list2                cli   unp    Yes      r3
-> show applied policy list
Group Name          From  Type   Enabled  Entries
-----+-----+-----+-----
list1                cli   unp    Yes      r1
                   r2
```

*output definitions*


---

<b>Group Name</b>	The name of the policy list. Configured through the <b>policy list</b> command. A plus sign (+) preceding a policy list name indicates that the list was modified or created since the last <b>qos apply</b> .
<b>From</b>	Where the list originated.
<b>Type</b>	The type of rule ( <b>unp</b> , <b>egress</b> , <b>appfp</b> ). Configured through the <b>policy list</b> command. Note that the default policy list is not shown. Use the <b>show policy rule</b> command to display rules that are members of the default policy list.
<b>Enabled</b>	Whether or not the rule is enabled. Configured through the <b>policy list</b> command.
<b>Entries</b>	The QoS policy rules that are grouped together in this policy list. Configured through the <b>policy list</b> command.

---

**Release History**

Release 5.1.R2; command introduced.

**Related Commands**

<b>show active policy list</b>	Displays only those policy lists that are currently being enforced on the switch.
<b>show policy rule</b>	Displays information about pending and applied policy rules

**MIB Objects**

```

alaQoSRuleGroupsTable
  alaQoSRuleDefaultList
  alaQoSRuleGroupsName
  alaQoSRuleGroupsSource
  alaQoSRuleGroupsType
  alaQoSRuleGroupsEnabled
  alaQoSRuleGroupsStatus
alaQoSAppliedRuleGroupsTable
  alaQoSAppliedRuleGroupsName
  alaQoSAppliedRuleGroupsSource
  alaQoSAppliedGroupsType
  alaQoSAppliedGroupsEnabled
  alaQoSAppliedRuleGroupsStatus

```

---

## show policy ipv4-summary

Displays all the IPv4 networks that are currently matched by ACLs on the system.

**show policy ipv4-summary** [*rule rule\_name*]

---

### Syntax Definitions

*rule\_name*                      The name of the policy rule.

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- Specifying the rule name displays the detailed summary for the corresponding rule. If no rule name is specified, then the summary for each rule is displayed in a tabular form.
- If there is an explicit default rule that is set to deny, the same is displayed in the output.

### Examples

```
-> show policy ipv4-summary
```

Legends:

P= Protocol

Act= Action (d = deny, a = accept)

Rule	P	Source IP/ Source Group	Destination IP/ Destination Group	VRF Name	Act	Hit Count
rle-rule3	IP	224.0.0.0/4	224.0.0.0/4	default	a	30129
rle-rule4	UDP	0.0.0.0/0	0.0.0.0/0	default	d	10202020
rle-rule1	IP	192.168.10.0/*	192.168.20.0/24	guest	a	458723011
rle-rule2	IP	192.168.30.0/24	192.168.10.0/24	enterpr*	a	458723011

```
-> show policy ipv4-summary rule rle-rule2
```

```
Rule name           : rle-rule2,
Protocol            : IP,
Source IP           : 192.168.30.0/24,
Destination IP      : 192.168.10.0/24,
VRF Name            : enterprise,
Action              : Accept,
Hit Count           : 458723011
```

*output definitions*

---

<b>Rule</b>	Name of the rule.
<b>P</b>	The associated IP protocol.
<b>Source IP/ Source Group</b>	The IPv4 address of the source or source group.
<b>Destination IP/Destination Group</b>	The IPv4 address of the destination or destination group.
<b>VRF Name</b>	The name of the VRF.
<b>Act</b>	The name of the action.
<b>Hit Count</b>	The sum of packet counts from all NIs matching the corresponding rule.

---

**Release History**

Release 5.1.R2; command introduced.

**Related Commands**

<a href="#">show active policy list</a>	Displays only those policy lists that are currently being enforced on the switch.
<a href="#">show policy rule</a>	Displays information about pending and applied policy rules

**MIB Objects**

N/A

---

## show policy ipv6-summary

Displays all the IPv6 networks that are currently matched by ACLs on the system.

**show policy ipv6-summary** [*rule rule\_name*]

---

### Syntax Definitions

*rule\_name*                                      The name of the policy rule.

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- Specifying the rule name displays the detailed summary for the corresponding rule. If no rule name is specified, then the summary for each rule is displayed in a tabular form.
- If there is an explicit default rule that is set to deny, the same is displayed in the output.

### Examples

```
-> show policy ipv6-summary
```

Legends:

P= Protocol

Act= Action (d = deny, a = accept)

Rule	P	Source IP/ Source Group	VRF Name	Act	Hit Count	Destination IP/ Destination Group
rle-Rule1	IP	2001:abcd:1100:200::/64	default	a	02020	2020:acdc:1010:100::/64
rle-Rule2	IP	2010:3456:8080:4323:6789::/32	default	d	10101010	2005:dead::/16

```
-> show policy ip6-summary rule rle-Rule2
```

```
Rule name           : rle-Rule2,
Protocol            : IP,
Source IP           : 2001:abcd:1100:200::/64,
Destination IP      : 2020:acdc:1010:100::/64,
VRF Name            : default,
Hit Count           : 458723011
```

### output definitions

---

<b>Rule</b>	Name of the rule.
<b>P</b>	The associated IP protocol.
<b>Source IP/ Source Group</b>	The IPv6 address of the source or source group.
<b>Destination IP/Destination Group</b>	The IPv6 address of the destination or destination group.
<b>VRF Name</b>	The name of the VRF.

*output definitions*

---

<b>Act</b>	The name of the action.
<b>Hit Count</b>	The sum of packet counts from all NIs matching the corresponding rule.

---

**Release History**

Release 5.1.R2; command introduced..

**Related Commands**

<a href="#">show active policy list</a>	Displays only those policy lists that are currently being enforced on the switch.
<a href="#">show policy rule</a>	Displays information about pending and applied policy rules

**MIB Objects**

N/A

---







# 18 Policy Server Commands

This chapter describes CLI commands used for managing policies downloaded to the switch from an attached LDAP server. Policy rules can be created on an attached server through the PolicyView GUI application. Policy rules can also be created on the switch directly through CLI or SNMP commands. This chapter describes commands related to managing LDAP policies only. See [Chapter 16, “QoS Commands,”](#) for information about commands for creating and managing policies directly on the switch.

The policy commands are based on RFC 2251 and RFC 3060.

MIB information for policy server commands is as follows:

*Filename:* ALCATEL-IND1-POLICY-MIB.mib  
*Module:* alcatelIND1PolicyMIB

The policy server commands are summarized here:

---

[policy server load](#)  
[policy server flush](#)  
[policy server](#)  
[show policy server](#)  
[show policy server long](#)  
[show policy server statistics](#)  
[show policy server rules](#)  
[show policy server events](#)

---

## policy server load

Downloads policies from an LDAP server. These policies are created through the PolicyView management application.

**policy server load**

---

### Syntax Definitions

N/A

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

Policies are downloaded to the switch from the directory server with the highest preference setting; this server must be enabled and operational (able to bind).

### Examples

```
-> policy server load
```

### Release History

Release 5.1.R2; command introduced.

### Related Commands

[policy server flush](#) Removes all cached LDAP policy data from the switch.

### MIB Objects

```
serverPolicyDecision
```

---

## policy server flush

Removes all cached LDAP policy data from the switch.

**policy server flush**

---

### Syntax Definitions

N/A

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

Use this command to remove LDAP policies. Policies configured through the CLI or SNMP are not removed.

### Examples

```
-> policy server flush
```

### Release History

Release 5.1.R2; command introduced.

### Related Commands

#### [policy server load](#)

Downloads policies from a LDAP server. These policies are created through the PolicyView management application.

### MIB Objects

```
serverPolicyDecision
```

---

## policy server

Configures operational parameters for an LDAP-enabled directory server on which policies are stored.

**policy server** *ip\_address* [**port** *port\_number*] [**admin-state** {**enable** | **disable**}] [**preference** *preference*] [**user** *user\_name* **password** *password*] [**searchbase** *search\_string*] [**ssl** | **no ssl**]

**no policy server** *ip\_address* [**port** *port\_number*]

---

### Syntax Definitions

<i>ip_address</i>	The IP address of the LDAP-enabled directory server.
<i>port_number</i>	The TCP/IP port number used by the switch to connect to the directory server.
<b>enable</b>	Enables the specified policy server to download rules to the switch. The policy servers are <b>up</b> by default.
<b>disable</b>	Prevents the specified policy server from downloading rules to the switch.
<i>preference</i>	Determines which directory server is used for policy downloads when multiple servers are configured. The range is 0–255. The server with the highest value is used as the policy server. If that server becomes unavailable, the server with the next highest preference value is used for policy downloads.
<i>user_name</i>	The user name for accessing the database entries on the directory server. When spaces are used in the user name, quotation marks must be included: (e.g. “Directory Manager”).
<i>password</i>	The password associated with the user name. The password must match the password defined on the directory server.
<i>search_string</i>	The root of the directory required for searching the policy information. Typically, the <i>search_string</i> includes <b>o=organization</b> and <b>c=country</b> . For example, <b>o=company</b> and <b>c=country</b> .
<b>ssl</b>	Enables a Secure Socket Layer between the switch and the policy server.
<b>no ssl</b>	Disables a Secure Socket Layer between the switch and the policy server.

### Defaults

parameter	default
<b>admin</b>	<b>up</b>
<i>port_number</i>	389 (SSL disabled) 636 (SSL enabled)
<i>preference</i>	0
<b>ssl</b>   <b>no ssl</b>	<b>no ssl</b>

## Platforms Supported

OmniSwitch 2260, 2360

## Usage Guidelines

If you change the port number, another entry is added to the policy server table; the existing port number is not changed. To remove a port number, use the **no** form of this command with the relevant policy server IP address and the port number you want to remove.

## Examples

```
-> policy server 222.22.22.2 port 345 user dirmgr password secret88 searchbase  
ou=qos,o=company,c=country
```

## Release History

Release 5.1.R2; command introduced.

## Related Commands

[show policy server](#) Displays information about policies downloaded from an LDAP server.

## MIB Objects

```
DIRECTORYSERVERTABLE  
  directoryServerAddress  
  directoryServerPort  
  directoryServerAdminStatus  
  directoryServerPreference  
  directoryServerUserId  
  directoryServerAuthenticationType  
  directoryServerPassword  
  directoryServerSearchbase  
  directoryServerEnableSSL
```

---

## show policy server

Displays information about servers from which policies can be downloaded to the switch.

**show policy server**

---

### Syntax Definitions

N/A

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

This command displays basic information about policy servers. Use the **show policy server long** command to display more details about the servers.

### Examples

```
-> show policy server
```

Server	IP Address	port	enabled	status	primary
1	208.19.33.112	389	Yes	Up	X
2	208.19.33.66	400	No	Down	-

### *output definitions*

---

<b>Server</b>	The index number corresponding to the LDAP server.
<b>IP Address</b>	The IP address of the LDAP server.
<b>port</b>	The TCP/IP port number used by the switch to connect to the policy server.
<b>enabled</b>	Whether or not the policy server is enabled.
<b>status</b>	The state of the policy server, <b>Unkn</b> , <b>Up</b> or <b>Down</b> .
<b>primary</b>	Indicates whether the server is the primary server; this server can be used for the next download of policies; only one server is a primary server.

---

### Release History

Release 5.1.R2; command introduced.

## Related Commands

### [policy server](#)

Configures operational parameters for an LDAP-enabled directory server on which policies are stored.

## MIB Objects

```
directoryServerTable
  directoryServerAddress
  directoryServerPort
  directoryServerAdminState
```

---



## show policy server long

Displays more detailed information about an LDAP policy server.

**show policy server long**

---

### Syntax Definitions

N/A

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

This command displays detailed information about policy servers. Use the **show policy server** command to display basic information about policy servers.

### Examples

```
-> show policy server long
LDAP server 0
  IP address           : 155.132.44.98,
  TCP port             : 16652,
  Enabled              : Yes,
  Operational status   : Unkn,
  Preference           : 99,
  Authentication       : password,
  SSL                  : Disabled,
  login DN             : cn=Directory Manager,
  searchbase           : ou:4.1, cn=policyRoot, o=company.fr
  Last load time       : 09/13/01 16:38:18
LDAP server 1
  IP address           : 155.132.48.27,,
  TCP port             : 21890,
  Enabled              : Yes,
  Operational status   : Unkn,
  Preference           : 50,
  Authentication       : password,
  SSL                  : Disabled,
  login DN             : cn=Directory Manager,
  searchbase           : o=company.fr
  Last load time       : 00/00/00 00:00:00
```

*output definitions*


---

<b>IP address</b>	The IP address of the policy server.
<b>TCP port</b>	The TCP/IP port number used by the switch to connect to the policy server.
<b>Enabled</b>	Displays whether the policy server is enabled through the PolicyView application.
<b>Operational status</b>	The state of the policy server, <b>Up</b> or <b>Down</b> .
<b>Preference</b>	Determines which directory server is used for policy downloads when multiple servers are configured. The range is 0–255. The server with the highest value is used as the policy server. If that server becomes unavailable, the server with the next highest preference value is used for policy downloads.
<b>Authentication</b>	Displays <b>password</b> if a user name and password was specified for the server through the <b>policy server</b> command. Displays <b>anonymous</b> if a user name and password are not configured.
<b>login DN</b>	The directory user name.
<b>searchbase</b>	The searchbase name, which is the root of the directory that can be searched for policy download information.
<b>Last load time</b>	The date and time that policies were last downloaded. Values of zero indicate that no policies have been downloaded.

---

**Release History**

Release 5.1.R2; command introduced.

**Related Commands**

[policy server](#) Configures operational parameters for an LDAP-enabled directory server on which policies are stored.

**MIB Objects**

```

directoryServerTable
  directoryServerAddress
  directoryServerPort
  directoryServerPreference
  directoryServerAuthenticationType
  directoryServerSearchbase
  directoryServerUserId
  directoryServerPassword
  directoryServerCacheChange
  directoryServerLastChange
  directoryServerAdminStatus
  directoryServerOperStatus

```

---

## show policy server statistics

Displays statistics about policy directory servers.

**show policy server statistics**

---

### Syntax Definitions

N/A

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

This command displays statistics about server downloads. For information about server parameters, use the **show policy server** command.

### Examples

```
-> show policy server statistics
Server  IP Address      port  accesses  delta  successes  delta  errors  delta
-----+-----+-----+-----+-----+-----+-----+-----+-----
   1    155.132.44.98 16652     793     793       295     295       0       0
   2    155.132.48.27 21890       0       0         0       0       0       0
```

### *output definitions*

---

<b>Server</b>	The index number corresponding to the server.
<b>IP Address</b>	The IP address of the LDAP server.
<b>port</b>	The TCP/IP port number used by the switch to connect to the policy server.
<b>accesses</b>	The number of times the server was polled by the switch to download policies.
<b>delta</b>	The change in the number of accesses since the last time the policy server was accessed.
<b>successes</b>	The number of times the server was polled by the switch to download policies and the policies were successfully downloaded.
<b>delta</b>	The change in the number of successful policy downloads since the last time the policy server was accessed.
<b>errors</b>	The number of errors returned by the server.
<b>delta</b>	The change in the number of errors returned by the server since the last time the policy server was accessed.

---

## Release History

Release 5.1.R2; command introduced.

## Related Commands

### [policy server](#)

Configures operational parameters for an LDAP-enabled directory server on which policies are stored.

## MIB Objects

policyStatsTable

  policyStatsAddress

  policyStatsServerPort

  policyStatsAccessCount

  policyStatsSuccessAccessCount

  policyStatsNotFoundCount

---

## show policy server rules

Displays the names of policies originating from a directory server, that have been downloaded to the switch.

**show policy server rules**

---

### Syntax Definitions

N/A

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

This command displays information about policies created on directory servers only. [Chapter 16, “QoS Commands,”](#) for information about configuring and displaying policies directly on the switch.

### Examples

```
-> show policy server rules
Num      name          prio      scope      status
-----+-----+-----+-----+-----
1         QoSRule1       0         Provisioned Active
2         QoSrule2       0         Provisioned Active
```

#### *output definitions*

---

<b>Num</b>	An index number corresponding to the policy rule.
<b>name</b>	The name of the policy rule; only rules configured through PolicyView are displayed in this table.
<b>prio</b>	The priority or preference of the rule. Indicates the order in which rules can be checked to match to the incoming traffic. If two or more rules apply to the traffic, the rule with the highest preference is applied. Preference is determined when the rule is created.
<b>scope</b>	The type of rule. <b>Provisioned</b> is the only type valid for the current release.
<b>status</b>	The status of the rule: <b>Active</b> indicates that the rule is available in the QoS software on the switch and is available to be applied to the traffic; <b>notInService</b> means the rule can be pushed to the QoS software in the future but is not available yet (typically because of a variable validity period); <b>notReady</b> indicates that the rule can never be pushed to the QoS software because its validity period has expired or because it has been disabled through SNMP.

---

## Release History

Release 5.1.R2; command introduced.

## Related Commands

### [policy server load](#)

Downloads policies from a LDAP server. These policies are created through the PolicyView management application.

## MIB Objects

```
policyRuleNamesTable  
  policyRuleNamesIndex  
  policyRuleNamesName  
  policyRuleOperStatus
```

---

## show policy server events

Displays any events related to a directory server on which policies are stored.

**show policy server events**

---

### Syntax Definitions

N/A

### Defaults

The display is limited to 50 events.

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

The Policy Manager initialization event is always the first event logged.

### Examples

```
-> show policy server events
  Event Time                event description
-----+-----
09/13/01 16:38:15 Policy manager log init
09/13/01 16:38:17 LDAP server 155.132.44.98/16652 defined
09/13/01 16:38:17 LDAP server 155.132.44.98/21890 defined
09/13/01 16:38:18 PDP optimization: PVP day-of-week all 1
09/13/01 16:38:18 PDP optimization: PVP Month all 1
09/13/01 16:38:18 PDP optimization: PVP Month all 1
09/13/01 16:38:18 PDP optimization: PVP Month all 1
09/13/01 16:38:18 PDP optimization: PVP Month all 1
09/13/01 16:38:18 IP address and mask make bad address change on desination IP
address 155.132.44.98:155.132.44.101
```

#### *output definitions*

---

<b>Event Time</b>	The date and time the policy event occurred.
<b>event description</b>	A description of the event.

---

### Release History

Release 5.1.R2; command introduced.

## Related Commands

### [policy server](#)

Configures operational parameters for an LDAP-enabled directory server on which policies are stored.

## MIB Objects

```
policyEventTable
  policyEventCode
  policyEventDetailString
  policyEventIndex
  policyEventTime
```

---





# 19 AAA Commands

This chapter includes descriptions for authentication, authorization, and accounting (AAA) commands. The commands are used for configuring the type of authentication as well as the AAA servers and the local user database on the switch.

- **Authenticated Switch Access.** Authenticates users into the switch to manage the switch. User information is stored on a RADIUS, TACACS+, LDAP or information may be stored locally in the switch user database.
- **Local user database.** User information may be configured for Authenticated Switch Access. For functional management access, users may be allowed to access specific command families or domains.

MIB information for the AAA commands is as follows:

*Filename:* ALCATEL-IND1-AAA-MIB.mib  
*Module:* alcatelIND1AAAMIB

*Filename:* ALCATEL-IND1-SYSTEM-MIB.mib  
*Module:* alcatelIND1SystemMIB

A summary of the available commands is listed here:

---

<b>Authentication servers</b>	<b>aaa radius-server</b> <b>aaa radius-server health-check</b> <b>aaa test-radius-server</b> <b>aaa tacacs+-server</b> <b>aaa ldap-server</b> <b>show aaa server</b> <b>show aaa server statistics</b> <b>aaa radius-server clear-statistics</b>
<b>Authenticated Switch Access</b>	<b>aaa authentication</b> <b>aaa console admin-only</b> <b>aaa authentication default</b> <b>aaa accounting session</b> <b>aaa accounting command</b> <b>show aaa authentication</b> <b>show aaa accounting</b>

---

---

<b>Port-based Network Access Control (Access Guardian)</b>	<b>aaa device-authentication</b> <b>aaa accounting</b> <b>aaa accounting radius calling-station-id</b> <b>aaa 802.1x re-authentication</b> <b>aaa interim-interval</b> <b>aaa session-timeout</b> <b>aaa session console</b> <b>aaa inactivity-logout</b> <b>aaa radius nas-port-id</b> <b>aaa radius nas-identifier</b> <b>aaa radius nas-ip-address</b> <b>aaa radius mac-format</b> <b>aaa profile</b> <b>show aaa device-authentication</b> <b>show aaa accounting</b> <b>show aaa config</b> <b>show aaa radius config</b> <b>show aaa radius health-check-config</b> <b>show aaa profile</b> <b>show aaa session console config</b>
<b>Local User Database and Partitioned Management</b>	<b>user</b> <b>password</b> <b>user password-size min</b> <b>user password-expiration</b> <b>show user</b> <b>show aaa priv hexa</b>
<b>Password Policy</b>	<b>user password-size min</b> <b>user password-expiration</b> <b>user password-policy cannot-contain-username</b> <b>user password-policy min-uppercase</b> <b>user password-policy min-lowercase</b> <b>user password-policy min-digit</b> <b>user password-policy min-nonalpha</b> <b>user password-history</b> <b>user password-size min</b> <b>user password-min-age</b> <b>user password-expiration</b> <b>show user</b> <b>show user password-policy</b>
<b>User Lockout Settings</b>	<b>user lockout-window</b> <b>user lockout-threshold</b> <b>user lockout-duration</b> <b>user lockout unlock</b> <b>show user</b> <b>show user lockout-setting</b>
<b>Authenticated Switch Access - Enhanced Mode</b>	<b>aaa switch-access ip-lockout-threshold</b> <b>aaa switch-access banned-ip release</b> <b>aaa switch-access management-stations admin-state</b> <b>show aaa switch-access ip-lockout-threshold</b> <b>show aaa switch-access banned-ip</b> <b>show aaa switch-access priv-mask</b>

---

---

**Common Criteria**

**aaa certificate update-ca-certificate**  
**aaa certificate update-crl**  
**aaa certificate generate-rsa-key key-file**  
**aaa certificate generate-self-signed**  
**aaa certificate view**  
**aaa certificate verify ca-certificate**  
**aaa certificate delete**  
**aaa certificate generate-csr**

---

## aaa radius-server

Configures a RADIUS server for Authenticated Switch Access and device authentication.

```
aaa radius-server server_name host {hostname | ip_address | ipv6_address} [hostname2 | ip_address2 | ipv6_address2] {key secret | hash-key hash_secret | prompt-key} [salt salt | hash-salt hash_salt] [retransmit retries] [timeout seconds] [auth-port auth_port] [acct-port acct_port] [vrf-name name] [ssl | no ssl]
```

```
no aaa radius-server server_name
```

---

### Syntax Definitions

<i>server_name</i>	The name of the RADIUS server.
<i>hostname</i>	The host name (DNS name) of the primary RADIUS server. The host name or IP address is required when creating a server.
<i>ip_address</i>   <i>ipv6_address</i>	The IPv4 or IPv6 address of the primary RADIUS server. An IP address or host name is required when creating a server.
<i>hostname2</i>	The host name (DNS name) of an optional backup RADIUS server.
<i>ip_address2</i>   <i>ipv6_address2</i>	The IPv4 or IPv6 address of an optional backup RADIUS server.
<i>secret</i>	The shared secret known to the switch and the server, but which is not sent over the network. Can be any text or hexadecimal string but <b>MUST</b> match the secret configured on the server. The secret is case-sensitive. Required when creating a server.
<i>hash_secret</i>	A shared secret that the switch saves with a hashing algorithm.
<b>prompt-key</b>	This option enters the secret key in a obscured format rather than as clear text. When this option is selected, press the Enter key. A prompt appears asking for the secret key. Re-enter the key and only if both entries match, the command is accepted. The key provided in this mode is not displayed on the CLI as text.
<i>salt</i>	The input given through ‘salt’ will be used to add randomness to the encryption of the key. The maximum length of the salt is 15 characters and must be in clear text format. By default, system time will be taken as default salt value.
<i>hash-salt</i>	The salt value for which the input must be in an encrypted format. The maximum length of the hash-salt should not exceed 64 characters.
<i>retries</i>	The number of retries the switch makes to authenticate a user before trying the backup server ( <i>hostname2</i> or <i>ip_address2</i> ).
<i>seconds</i>	The timeout for server replies to authentication requests.
<i>auth_port</i>	The UDP destination port for authentication requests.
<i>acct_port</i>	The UDP destination port for accounting requests.
<i>name</i>	The name of the VRF to be used to access the server.
<b>ssl</b>	Enables Transport Layer Security (TLS) between the switch and the RADIUS server.
<b>no ssl</b>	Disables Transport Layer Security (TLS) between the switch and the RADIUS server.

## Defaults

parameter	default
<i>retries</i>	3
<i>seconds</i>	2
<i>auth_port</i>	1812
<i>acct_port</i>	1813
<b>ssl   no ssl</b>	<b>no ssl</b>

## Platforms Supported

OmniSwitch 2260, 2360

## Usage Guidelines

- A host name (or IP address) and a secret are required when configuring a server.
- The server and the backup server must both be RADIUS servers.
- Use the **no** form of the command to remove a RADIUS server from the configuration. Only one server can be deleted at a time.
- A host name (or IP address) and a secret key are required when configuring a server.
- If **key** and **hash-key** parameters are both configured, the **hash-key** value is given priority over **key**.
- The user configured or default salt along with the server name will be combined with 'key' and encrypted as a whole, the output of which will be displayed under 'hash-key'.
- If **salt** and **hash-salt** parameters are both configured, the **hash-salt** value is given priority over **salt**.
- The special character '!' and pure integers will not be accepted as a valid input for both **salt** and **hashsalt**.
- If you want to provide special characters in salt value, give it in between "" double quotes.
- The input given through **salt** and **hash-salt** is encrypted and will be displayed as "hash-salt" in **show configuration snapshot** command.
- Backward compatibility for **salt** and **hash-salt** is not supported. In case of an accidental downgrade, a boot.cfg error is generated for that particular configuration, and re-configuration is required.
- RADIUS server can be configured on any VRF instance or the default VRF instance. However, all the RADIUS servers must reside on the same VRF instance.
- Enabling the RADIUS server health check feature is recommended for each RADIUS server to help improve the user authentication time. Use the **aaa radius-server health-check** command to enable this feature and the **show aaa server** command to determine the reachability status of each RADIUS server on which health check is enabled.

## Examples

```
-> aaa radius-server pubs2 host 10.10.2.1 key wwwtoe timeout 5
-> no aaa radius-server pubs2
```

```
-> aaa radius-server radsrv1 host rad1_ipaddr key rad1_secret vrf-name rad_vrf
-> aaa radius-server "Rad1" host 10.10.10.2 key myorg salt mysalt
-> aaa radius-server "Rad1" host 10.10.2.1 key myorg hash-salt
c7f5eee2c0f9b33e72e3482673fb6059
```

```
-> aaa radius-server rad1 prompt-key host 10.10.2.1
Enter Key: *****
Confirm Key: *****
```

## Release History

Release 5.1; command introduced.

## Related Commands

<a href="#">show aaa server</a>	Displays information about AAA servers.
<a href="#">aaa authentication</a>	Specifies the AAA servers to be used for Authenticated Switch Access.
<a href="#">aaa device-authentication</a>	Specifies the AAA servers to use for Access Guardian device authentication.
<a href="#">aaa accounting session</a>	Specifies the accounting servers to be used for Authenticated Switch Access.

## MIB Objects

```
aaaServerTable
  aaasProtocol
  aaasHostName
  aaasIpAddress
  aaasIpv6Address
  aaasHostName2
  aaasIpAddress2
  aaasIpv6Address2
  aaasRadKey
  aaasRetries
  aaasTimeout
  aaasRadAuthPort
  aaasRadAcctPort
  aaasVrfName
  aaasRadEnableSsl
  aaasRadSalt
  aaasRadSaltHash
```

---

## aaa radius-server health-check

Enables or disables the RADIUS server health check configuration for the specified RADIUS server. When this feature is enabled, individual RADIUS servers are polled at the specified time interval to determine whether the server is up or down.

**aaa radius-server** *server\_name* **health-check** [**poling-interval** *seconds* | **username** *user\_name* | **password** *password* | **hash-key** *hash\_secret* | **failover**]

**no aaa radius-server** *server\_name* **health-check** [**failover**]

---

### Syntax Definitions

<i>server_name</i>	The name of the RADIUS server for which a health check session is configured.
<i>seconds</i>	The number of seconds after which a health check request is sent to the specified RADIUS server. The valid range is 60–600 seconds.
<i>user_name</i>	The user name (up to 32 characters) to use in polling requests to the server.
<i>password</i>	The password (up to 64 characters) to use in polling requests to the server.
<i>hash_secret</i>	A shared secret that the switch saves with a hashing algorithm.
<b>failover</b>	Triggers an attempt to re-authenticate users assigned to the authentication server down profile when the RADIUS server comes back up before the authentication server down timeout expires.

### Defaults

By default, RADIUS server health check is disabled. When health check is enabled without specifying any of the optional parameters, the following default health check parameter values are set for the specified RADIUS server:

parameter	default
<i>seconds</i>	60
<i>user_name</i>	alcatel
<i>password</i>	alcatel
<b>failover</b>	disabled

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- Make sure the specified RADIUS server is defined on the switch before attempting to enable a health check session for that server. See the [aaa radius-server](#) command for more information on RADIUS server configuration.



- Each RADIUS server with health check enabled is polled at regular intervals (instead of checked sequentially) to determine if the server is up or down. Notification of the server status is then provided to help expedite the authentication process.
- User devices are typically assigned to a UNP authentication server down profile when the authentication server is down (unreachable).
  - If the **failover** option is disabled (the default) for the health check session, re-authentication is not attempted for the profile devices until the authentication server down timeout value expires.
  - If the **failover** option is enabled for the health check session, there is no waiting for the authentication server down timeout value to expire. When the health check session receives notification that a server has transitioned from down to up, a re-authentication attempt is immediately triggered for the profile devices.
- Use the **no** form of this command to disable health check.
- Use the **no** form of this command with the **failover** parameter to disable the failover operation.

## Examples

```
-> aaa radius-server rad1 health-check
-> aaa radius-server rad1 health-check polling-interval 300
-> aaa radius-server rad1 health-check username admin password switch failover
-> no aaa radius-server rad1 health-check failover
-> no aaa radius-server rad1 health-check
```

## Release History

Release 5.1; command introduced.

## Related Commands

- |   |   |
|---|---|
| <a href="#">aaa radius-server</a>                   | Configures or modifies a RADIUS server for Authenticated Switch Access and device authentication. |
| <a href="#">show aaa radius health-check-config</a> | Displays the health check configuration for each RADIUS server.                                   |
| <a href="#">show aaa server</a>                     | Displays information about AAA servers configured for the switch.                                 |

## MIB Objects

```
aaaServerTable
  aaasHostName
  aaasRadHealthCheck
  aaasRadPollingInterval
  aaasRadFailover
  aaasRadUsername
  aaasRadPassword
```

---

## aaa test-radius-server

RADIUS test tool allows the user to test the RADIUS server reachability from the OmniSwitch. Use this command to start the authentication or accounting test for the specified user name and password.

```
aaa test-radius-server server_name type {authentication user user_name password password [method {md5 | pap}] | accounting user user_name}
```

---

### Syntax Definitions

<i>server_name</i>	RADIUS server name for which test has been configured.
<b>authentication</b>   <b>accounting</b>	Type of test to run.
<i>user_name</i>	User name configured on the server.
<i>password</i>	Password for the given user name.
<b>md5</b>   <b>pap</b>	Authentication method for the test.

### Defaults

By default, MD5 is used as the authentication method.

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- RADIUS server must be configured on the switch to test the tool.
- The switch must have the following RADIUS server configuration before starting the test tool: RADIUS server name, acct-port, auth-port, secret key, retransmit count, and timeout. See the [aaa radius-server](#) command for more information on RADIUS server configuration.
- Supports multiple sessions (console, telnet, SSH) to test multiple RADIUS servers.
- The CLI of the user session (console, telnet, SSH) goes in the blocking state when the test is started. In the blocking state, no other command (CLI) is accepted. The blocking state of the CLI prompt of the switch can be terminated by pressing any key.
- Two IP addresses are configurable for a RADIUS server. When the test starts, the requests are sent to the first address. When all the requests to the first address time out, then the requests are sent to the second address.

### Examples

```
-> aaa test-radius-server rad1 type authentication user admin password switch  
method MD5  
-> aaa test-radius-server rad2 type authentication user admin password switch  
method pap  
-> aaa test-radius-server rad1 type accounting user admin
```

## Release History

Release 5.1; command introduced.

## Related Commands

[aaa authentication](#)

Servers for authenticated switch access.

[show aaa server](#)

Displays information about AAA servers configured for the switch.

## MIB Objects

N/A

---

## aaa tacacs+-server

Configures or modifies a TACACS+ server for Authenticated Switch Access.

```
aaa tacacs+-server server_name host {hostname | ip_address} [hostname2 | ip_address2] {key secret | prompt-key} [salt salt | hash-salt hash_salt] [timeout seconds] [port port] [vrf-name name]
```

```
no aaa tacacs+-server server
```

---

### Syntax Definitions

<i>server_name</i>	The name of the TACACS+ server.
<i>hostname</i>	The host name (DNS name) of the primary TACACS+ server. The host name or IP address is required when creating a server.
<i>ip_address</i>	The IP address of the primary TACACS+ server. An IP address or host name is required when creating a server.
<i>hostname2</i>	The host name (DNS name) of an optional backup TACACS+ server.
<i>ip_address2</i>	The IP address of an optional backup TACACS+ server.
<i>secret</i>	The shared secret known to the switch and the server, but which is not sent over the network. Can be any text or hexadecimal string but <b>MUST</b> match the secret configured on the server. The secret is case-sensitive. Required when creating a server.
<i>salt</i>	The input given through ‘salt’ will be used to add randomness to the encryption of the key. The maximum length of the salt is 15 characters, and must be in clear text format. By default, the system time will be taken as default salt value.
<i>hash-salt</i>	The salt value for which the input must be in an encrypted format. The maximum length of the hash-salt should not exceed 64 characters.
<b>prompt-key</b>	This option enters the secret key in a obscured format rather than as clear text. When this option is selected, press the Enter key. A prompt appears asking for the secret key. Re-enter the key and only if both the entries match, the command is accepted. Password provided in this mode is not displayed on the CLI as text.
<i>seconds</i>	The timeout for server replies to authentication requests.
<i>port</i>	The port number for the primary TACACS+ server.
<i>name</i>	The name of the VRF to be used to access the server.

### Defaults

parameter	default
<i>seconds</i>	2
<i>port</i>	49

### Platforms Supported

OmniSwitch 2260, 2360

## Usage Guidelines

- Use the **no** form of the command to remove a TACACS+ server from the configuration. Only one server may be deleted at a time.
- A host name (or IP address) and a secret are required when configuring a server.
- If 'key' and 'hash-key' parameters are configured at a time, hash-key value is given priority over key.
- The user configured or default salt along with the server name will be combined with 'key' and encrypted as a whole, the output of which will be displayed under 'hash-key'.
- If 'salt' and 'hash-salt' parameters are configured at a time, hash-salt value is given priority over salt.
- The special character '!' and pure intergers will not be accepted as a valid input for both salt and hashesalt.
- If you want to provide special characters in salt value, give it in between "" double quotes.
- The input given through 'salt' and 'hash-salt' is encrypted and will be displayed as 'hash-salt' in 'show configuration snapshot' command.
- Backward compatibility for 'salt' and 'hash-salt' is not supported. In case of an accidental downgrade, boot.cfg error is generated for that particular configuration, and re-configuration is required.
- The server and the backup server must both be TACACS+ servers.
- TACACS+ server can be configured on any VRF instance or the default VRF instance. However, all the TACACS+ servers must reside on the same VRF instance.

## Examples

```
-> aaa tacacs+-server tpub host 10.10.2.2 key otna timeout 10
-> no aaa tacacs+-server tpub
-> aaa tacacs+-server T1 host 10.10.10.3 key myorg salt salt@123
-> aaa tacacs+-server tacsv1 host tac1_ipaddr key tac1_secret vrf-name tac_vrf

-> aaa tacacs+-server tac1 prompt-key host 10.10.2.2
Enter Key:  *****
Confirm Key:  *****
```

## Release History

Release 5.1; command was introduced.

## Related Commands

[show aaa server](#)

Displays information about AAA servers.

[aaa authentication](#)

Specifies the AAA servers to be used for Authenticated Switch Access.

[aaa accounting session](#)

Specifies the accounting servers to be used for Authenticated Switch Access.

## MIB Objects

aaaServerTable

aaasName

aaasProtocol

aaasHostName

aaasIpAddress

aaasHostName2

aaasIpAddress2

aaasTacacsKey

aaasTimeout

aaasTacacsPort

aaasVrfName

aaasRadSalt

aaasRadSaltHash

---

## aaa ldap-server

Configures or modifies an LDAP server for Authenticated Switch Access.

```
aaa ldap-server server_name host {hostname | ip_address} [hostname2 | ip_address2] dn dn_name
{password super_password | prompt-password} [salt salt | hash-salt hash_salt] [base search_base]
[retransmit retries] [timeout seconds] [ssl | no ssl] [port port] [vrf-name name]
```

```
no aaa ldap-server server-name
```

---

### Syntax Definitions

<i>server_name</i>	The name of the LDAP server.
<i>hostname</i>	The host name (DNS name) of the primary LDAP server. The host name or IP address is required when creating a server.
<i>ip_address</i>	The IP address of the primary LDAP server.
<i>hostname2</i>	The host name (DNS name) of the backup LDAP server.
<i>ip_address2</i>	The IP address of a backup host for the LDAP server.
<i>dn_name</i>	The super-user or administrative distinguished name in the format recognized by the LDAP-enabled directory servers. For example: <b>cn=manager</b> . Must be different from the <i>search-base</i> name and must be in a format supported by the server. Required when creating a new server.
<i>super_password</i>	The super-user password recognized by the LDAP-enabled directory servers. The password may be clear text or hexadecimal format. Required when creating a new server.
<b>prompt-password</b>	This option enters the super-user password in a obscured format rather than as clear text. When this option is selected, press the Enter key. A password prompt appears asking for the super-user password. Re-enter the password and only if both the passwords match, the command is accepted. Password provided in this mode is not displayed on the CLI as text.
<i>salt</i>	The input given through 'salt' will be used to add randomness to the encryption of the key. The maximum length of the salt is 15 characters and must be in clear text format. By default, the system time will be taken as default salt value.
<i>hash-salt</i>	The salt value for which the input must be in an encrypted format. The maximum length of the hash-salt should not exceed 64 characters.
<i>search_base</i>	The search base recognized by the LDAP-enabled directory servers. For example, <b>o=company</b> or <b>c=country</b> . Must be different from the <i>dn_name</i> . Required when creating a new server.
<i>retries</i>	The number of retries the switch makes to the LDAP server to authenticate a user before trying the backup server.
<i>seconds</i>	The timeout in seconds for server replies to authentication requests from the switch.
<b>ssl</b>	Enables Transport Layer Security (TLS) between the switch and the LDAP server.

<b>no ssl</b>	Disables Transport Layer Security (TLS) between the switch and the LDAP server.
<i>port</i>	The port number for the primary LDAP server and any backup server. Must match the port number configured on the server.
<i>name</i>	The name of the VRF to be used to access the server.

## Defaults

parameter	default
<i>port</i>	389 (SSL disabled) 636 (SSL enabled)
<i>retries</i>	3
<i>seconds</i>	2
<b>ssl   no ssl</b>	<b>no ssl</b>

## Platforms Supported

OmniSwitch 2260, 2360

## Usage Guidelines

- The *dn\_name* must be different from the *search\_base* name.
- Use the **no** form of the command to remove an LDAP server from the configuration. Only one server may be removed at a time.
- The port number configured on the switch must match the port number configured for the server.
- If 'salt' and 'hash-salt' parameters are configured at a time, hash-salt value is given priority over salt.
- The special character '!' and pure intergers will not be accepted as a valid input for both salt and hashesalt.
- If you want to provide special characters in salt value, give it in between "" double quotes.
- The input given through 'salt' and 'hash-salt' is encrypted and will be displayed as 'hash-salt' in 'show configuration snapshot' command.
- Backward compatibility for 'salt' and 'hash-salt' is not supported. In case of an accidental downgrade, boot.cfg error is generated for that particular configuration, and re-configuration is required.
- LDAP server can be configured on any VRF instance or the default VRF instance. However, all the LDAP servers must reside on the same VRF instance.

## Examples

```
-> aaa ldap-server topanga5 host 10.10.3.4 dn cn=manager password tpub base c=us
retransmit 4
-> aaa ldap-server omnivista host 1.2.3.4 dn "cn=DirMgr, o=alcatel.com" password
somepass base "ou=People, o=alcatel.com" vrf-name ldap_vrf
-> no aaa ldap-server topanga5

-> aaa ldap-server topanga5 host 10.10.3.4 dn cn=manager prompt-password base c=us
```



```
retransmit 4
Enter Password: ******
Confirm Password: ******
```

```
-> aaa ldap-server L1 host 10.10.10.5 dn cn=manager password tpub base c=us salt
mysalt
```

## Release History

Release 5.1; command was introduced.

## Related Commands

<a href="#">show aaa server</a>	Displays information about AAA servers.
<a href="#">aaa authentication</a>	Specifies the AAA servers to be used for authenticated switch access.
<a href="#">aaa accounting session</a>	Specifies the accounting servers to be used for Authenticated Switch Access.

## MIB Objects

```
aaaServerTable
  aaasProtocol
  aaasHostName
  aaasIpAddress
  aaasHostName2
  aaasIpAddress2
  aaasLdapPort
  aaasLdapDn
  aaasLdapPasswd
  aaasLdapSearchBase
  aaasLdapServType
  aaasRetries
  aaasTimeout
  aaasLdapEnableSsl
  aaasVrfName
  aaasLdapSaltHash
  aaasLdapPasswdHash
```

---

## aaa authentication

Configures the interface for Authenticated Switch Access and specifies the server(s) to be used. This type of authentication gives users access to manage the switch.

**aaa authentication** {console | telnet | ftp | http | snmp | ssh | default} *server1* [*server2...*] [local]

**no aaa authentication** [console | telnet | ftp | http | snmp | ssh | default]

---

### Syntax Definitions

<b>console</b>	Configures Authenticated Switch Access through the console port.
<b>telnet</b>	Configures Authenticated Switch Access for any port used for Telnet.
<b>ftp</b>	Configures Authenticated Switch Access for any port used for FTP.
<b>http</b>	Configures Authenticated Switch Access for any port used for Web-based management.
<b>snmp</b>	Configures Authenticated Switch Access for any port used for SNMP.
<b>ssh</b>	Configures Authenticated Switch Access for any port used for Secure Shell.
<b>default</b>	Configures Authenticated Switch Access for any port using any service ( <b>telnet</b> , <b>ftp</b> , etc.). Note that SNMP access is enabled only if an LDAP or local server is specified with the command.
<i>server1</i>	The name of the authentication server used for Authenticated Switch Access. At least one server is required. The server may be a RADIUS, TACACS+, LDAP, or the local user database. RADIUS, TACACS+, and LDAP server names are set up through the <b>aaa radius-server</b> , <b>aaa tacacs+-server</b> , and <b>aaa ldap-server</b> commands.
<i>server2...</i>	The names of backup servers for Authenticated Switch Access. Up to 3 backups may be specified (including <b>local</b> ). These backups are only used if <i>server1</i> becomes unavailable. They are polled in the order they are listed in this command. The first available server becomes the authentication server.
<b>local</b>	Specifies that the local user database will be a backup for the authentication servers. If you want to use the local user database as the only authentication server, specify <b>local</b> for <i>server1</i> .

### Defaults

- At switch startup, Authenticated Switch Access is available through console port via the local database. Authentication for other management interfaces (Telnet, FTP, etc.) is disabled.
- The default user on the switch is **admin**, and **switch** is the password.
- Remote authentication is not supported on secondary CMMs or Slave chassis. Use local authentication on secondary CMMs and Slave chassis.

### Platforms Supported

OmniSwitch 2260, 2360

## Usage Guidelines

- The server type may be RADIUS, TACACS+, LDAP, or the local user database. Up to 4 servers may be configured for an interface type; at least one is required. Each server name should be separated by a space.
- The switch uses *only the first available server* in the list to check for user information. For example, if *server1* is not available, the switch will poll *server2*. If user information is not found on the first available server, the authentication request will fail.
- RADIUS, TACACS+, and LDAP servers may each have an additional backup specified through the [aaa radius-server](#), [aaa tacacs+-server](#), and [aaa ldap-server](#) commands.
- If the local switch database will be used as the only authentication server, specify **local** for *server1*. If **local** is specified as a backup server, it should be entered last in the list of servers. The local user database is always available if the switch is up.
- Only LDAP or the local database may be used for authenticated SNMP management.
- If Secure Shell (**ssh**) is enabled, Telnet and FTP should be disabled.

## Examples

```
-> aaa authentication telnet pubs1
-> no aaa authentication telnet
-> aaa authentication default pubs2 pubs3
```

## Release History

Release 5.1; command was introduced.

## Related Commands

<a href="#">aaa radius-server</a>	Configures or modifies a RADIUS server for Authenticated Switch Access.
<a href="#">aaa ldap-server</a>	Configures or modifies an LDAP server for Authenticated Switch Access.
<a href="#">user</a>	Configures user information for the local database on the switch.
<a href="#">show aaa server</a>	Displays information about servers configured for Authenticated Switch Access.

## MIB Objects

```
aaaAuthSatable
  aaatsInterface
  aaasName
  aaatsName1
  aaatsName2
  aaatsName3
  aaatsName4
```

---

## aaa console admin-only

Enables or disables the user restriction for all users except the user “admin” from accessing the switch through the secure console session.

**aaa console admin-only {enable | disable}**

---

### Syntax Definitions

<b>enable</b>	Restricts all users from accessing the switch through the secure console session except the user “admin”. Only user “admin” can access the switch through the secure console session.
<b>disable</b>	Disables the user restrictions.

### Defaults

By default, console admin-only is disabled.

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

Enable this feature to restrict all users except user “admin” from accessing the switch through the secure console session.

### Examples

```
-> aaa console admin-only enable
-> aaa console admin-only disable
```

### Release History

Release 5.1; command introduced.

### Related Commands

**user** Configures user information for the local database on the switch.

### MIB Objects

aaaAsaAccessConsoleAdminOnly

---

## aaa authentication default

Sets the authenticated switch access type to the default server setting.

**aaa authentication {console | telnet | ftp | http | snmp | ssh} default**

---

### Syntax Definitions

<b>console</b>	Configures the default Authenticated Switch Access server setting for the console port.
<b>telnet</b>	Configures the default Authenticated Switch Access server setting for Telnet.
<b>ftp</b>	Configures the default Authenticated Switch Access server setting for FTP.
<b>http</b>	Configures the default Authenticated Switch Access server setting for Web-based management.
<b>snmp</b>	Configures the default Authenticated Switch Access server setting for any port used for SNMP.
<b>ssh</b>	Configures the default Authenticated Switch Access server setting for any port used for Secure Shell.

### Defaults

By default, the default Authenticated Switch Access server setting does not include any servers.

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

Use the **aaa authentication** command to set the default servers.

### Examples

```
-> aaa authentication telnet default
-> aaa authentication default default
```

### Release History

Release 5.1; command was introduced.

## Related Commands

<a href="#">aaa radius-server</a>	Configures or modifies a RADIUS server for Authenticated Switch Access.
<a href="#">aaa tacacs+-server</a>	Configures or modifies an LDAP server for Authenticated Switch Access.
<a href="#">user</a>	Configures user information for the local database on the switch.
<a href="#">show aaa server</a>	Displays information about servers configured for Authenticated Switch Access.

## MIB Objects

```
aaaAuthSTable  
  aaatsName1  
  aaatsName2  
  aaatsName3  
  aaatsName4
```

---

## aaa accounting session

Configures an accounting server or servers for authenticated switch sessions. Accounting servers keep track of network resources (time, packets, bytes, etc.) and user activity.

**aaa accounting session** *server1* [*server2...*] [**local**]

**no accounting session**

---

### Syntax Definitions

<i>server1</i>	The name of the RADIUS, TACACS+, or LDAP server used for accounting of authenticated switch sessions. At least one server is required. RADIUS, TACACS+, and LDAP server names are set up through the <a href="#">aaa radius-server</a> , <a href="#">aaa tacacs+-server</a> , and <a href="#">aaa ldap-server</a> commands.
<i>server2...</i>	The names of backup servers. Up to 3 backups may be specified (including <b>local</b> ); each server name should be separated by a space. These backups are only used if <i>server1</i> becomes unavailable. They are polled in the order they are listed in this command. The first available server becomes the accounting server.
<b>local</b>	Local accounting is done through the Switching Logging feature on the switch.

### Defaults

Accounting is disabled by default.

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- Use the **no** form of the command to disable accounting for Authenticated Switch Access.
- Up to 4 accounting servers (total) may be specified. At least one server is required. Each server name should be separated by a space.
- The servers may be RADIUS, TACACS+, LDAP servers, and/or the local Switch Logging facility.
- If **local** is specified as *server1*, the switch will **only** use the local Switching Logging facility for accounting.
- If **local** is specified as a backup, it should be entered last in the list of servers. The Switch Logging facility is always available if the switch is up.
- The switch uses **only the first available server** in the list for accounting. For example, if *server1* is not available, the switch will use *server2*.
- RADIUS, TACACS+, and LDAP servers may each have an additional backup specified through the [aaa radius-server](#), [aaa tacacs+-server](#), and [aaa ldap-server](#) commands.

## Examples

```
-> aaa accounting session ldap1 radius2 local  
-> no aaa accounting session
```

## Release History

Release 5.1; command was introduced.

## Related Commands

### [show aaa accounting](#)

Displays information about accounting servers configured for Authenticated Switch Access.

## MIB Objects

```
aaaAcctsaTable  
  aaacsName1  
  aaacsName2  
  aaacsName3  
  aaacsName4
```

---



## aaa accounting command

Enables or disables the server for command accounting. Accounting servers keep track of network resources (time, packets, bytes, etc.) and user activity.

**aaa accounting command** *server1* [*server2...*] [**local**]

**no accounting command**

---

### Syntax Definitions

<i>server1</i>	The name of the TACACS+ server used for command accounting. At least one server is required. TACACS+ server names are set up through the <a href="#">aaa tacacs+-server</a> commands.
<i>server2...</i>	The names of TACACS+ backup servers. Up to 3 backups may be specified; each server name should be separated by a space. These backups are only used if <i>server1</i> becomes unavailable. They are polled in the order they are listed in this command. The first available server becomes the accounting server.
<b>local</b>	Local accounting is done through the Switching Logging feature on the switch.

### Defaults

Accounting is disabled by default.

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- Use the **no** form of the command to disable command accounting.
- Up to 4 accounting servers (total) may be specified. At least one server is required. Each server name should be separated by a space.
- The servers can be only TACACS+ servers.
- The switch uses **only the first available server** in the list for accounting. For example, if *server1* is not available, the switch will use *server2*.
- TACACS+ server may each have an additional backup specified through the [aaa tacacs+-server](#) command.

### Examples

```
-> aaa accounting command tacacs1 tacacs2 tacacs3  
-> no aaa accounting command
```

### Release History

Release 5.1; command was introduced.

## Related Commands

### [show aaa accounting](#)

Displays information about accounting servers configured for Authenticated Switch Access.

## MIB Objects

```
aaaAcctCmdTable  
  aaacmdSrvName1  
  aaacmdSrvName2  
  aaacmdSrvName3  
  aaacmdSrvName4
```

---

## aaa device-authentication

Configures the switch to use RADIUS servers for 802.1X, MAC, and Captive Portal device authentication.

```
aaa device-authentication {802.1x | mac | captive-portal} server1 [server2] [server3] [server4]
```

```
no device-authentication {802.1x | mac | captive-portal}
```

---

### Syntax Definitions

<b>802.1x</b>	Use the specified RADIUS server to authenticate 802.1X users.
<b>mac</b>	Use the specified RADIUS server for MAC authentication.
<b>captive-portal</b>	Use the specified RADIUS server for Captive Portal authentication.
<i>server1</i>	The name of the RADIUS authentication server to use for the specified type of authentication. ( <i>Note that only RADIUS servers are supported for these types of authentication.</i> ) At least one server is required. RADIUS server names are configured through the <a href="#">aaa radius-server</a> command.
<i>server2...server4</i>	The names of backup servers used for authentication. Up to 3 backups may be specified; include a space between each server name. These backups are only used if <i>server1</i> becomes unavailable. They are polled in the order they are listed in this command. The first available server becomes the authentication server.

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- Use the **no** form of this command to remove a RADIUS server assignment for a specific authentication type.
- Up to 4 RADIUS servers (total) may be specified. At least one server is required. Each server name should be separated by a space.
- The switch uses **only the first available server** in the list to check for user information. For example, if *server1* is not available, the switch will poll *server2*. If user information is not found on the first available server, the authentication request will fail.
- RADIUS servers may each have an additional backup specified through the **aaa radius-server** command.
- Configuring the RADIUS servers to use for 802.1X, MAC, and Captive Portal authentication is required to support authentication and classification of devices connected to Universal Network Profile (UNP) ports.

## Examples

```
-> aaa device-authentication 802.1x rad1
-> aaa device-authentication 802.1x rad1 rad2
-> no aaa device-authentication 802.1x

-> aaa device-authentication mac rad1
-> aaa device-authentication mac rad1 rad2
-> no aaa device authentication mac

-> aaa device-authentication captive-portal rad1
-> aaa device-authentication captive-portal rad1 rad2
-> no aaa device-authentication captive-portal
```

## Release History

Release 5.1; command introduced.

## Related Commands

<a href="#">aaa radius-server</a>	Configures or modifies a RADIUS server for authenticated switch access or device authentication.
<a href="#">unp port-type</a>	Enables or disables UNP port-based access control on a port.
<a href="#">show aaa device-authentication</a>	Displays a list of RADIUS servers assigned to provide 802.1X or MAC authentication.

## MIB Objects

```
AaaAuthDATable
  aaaDaName1
  aaaDaName2
  aaaDaName3
  aaaDaName4
```

---

## aaa accounting

Configures RADIUS server accounting or local Switch Logging (syslog) accounting for 802.1X, MAC, and Captive Portal authenticated device sessions. Accounting servers keep track of network resources (time, packets, bytes, etc.) and user activity.

```
aaa accounting {802.1x | mac | captive-portal} {server1 [server2...]} | syslog ip_address [port udp_port]}
```

```
no accounting {802.1x | mac | captive-portal}
```

---

### Syntax Definitions

<b>802.1x</b>	Enables the specified RADIUS or syslog server to log accounting of 802.1X authenticated sessions.
<b>mac</b>	Enables the specified RADIUS or syslog server to log accounting for MAC authenticated sessions.
<b>captive-portal</b>	Enables the specified RADIUS or syslog server to log accounting for Captive Portal authenticated sessions.
<i>server1</i>	The name of the RADIUS server used for accounting of authenticated switch sessions. At least one server is required. RADIUS server names are configured through the <a href="#">aaa radius-server</a> command.
<i>server2...</i>	The names of backup servers. Up to 3 backups may be specified; each server name should be separated by a space. These backups are only used if <i>server1</i> becomes unavailable. They are polled in the order they are listed in this command. The first available server becomes the accounting server.
<i>ip_address</i>	The IP network address for syslog accounting.
<i>udp_port</i>	The UDP port number for syslog accounting.

### Defaults

By default, no RADIUS server or syslog accounting is configured for the switch.

parameter	default
<i>udp_port</i>	514

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- Use the **no** form of the command to disable accounting for device authentication sessions.
- Up to 4 RADIUS accounting servers (total) may be specified. At least one server is required. Each server name should be separated by a space.
- The switch uses **only the first available server** in the list for accounting. For example, if *server1* is not available, the switch will use *server2*.

- Accounting with the local syslog facility is not allowed if RADIUS accounting is already configured. In other words, configure either RADIUS *or* syslog accounting.
- RADIUS servers may each have an additional backup specified through the [aaa radius-server](#) command.

## Examples

```
-> aaa accounting 802.1x rad1
-> aaa accounting 802.1x rad1 rad2 rad3 rad4
-> aaa accounting 802.1x syslog 10.135.67.99 port 8000
-> no aaa accounting 802.1x

-> aaa accounting mac rad1
-> aaa accounting mac rad1 rad2
-> aaa accounting mac syslog 10.135.67.99 port 8000
-> no aaa accounting mac

-> aaa accounting captive-portal rad1
-> aaa accounting captive-portal rad1 rad2 rad3
-> aaa accounting captive-portal syslog 10.135.67.99 port 8000
-> no aaa accounting captive-portal
```

## Release History

Release 5.1; command introduced.

## Related Commands

[show aaa accounting](#)                      Displays the accounting server configuration for the switch.

## MIB Objects

```
aaaAcctDATable
  aaacdInterface
  aaacdName1
  aaacdName2
  aaacdName3
  aaacdName4
  aaacdSyslogIPAddrType
  aaacdSyslogIPAddr
  aaacdSyslogUdpPort
```

---

## aaa accounting radius calling-station-id

Configures the RADIUS Calling-Station-Id attribute for the specified accounting session type.

```
aaa accounting {802.1x | mac | captive-portal} radius calling-station-id {mac-address | ip-address}
```

---

### Syntax Definitions

<b>802.1x</b>	Configures the attribute for 802.1X accounting sessions.
<b>mac</b>	Configures the attribute for MAC accounting sessions.
<b>captive-portal</b>	Configures the attribute for Captive Portal accounting sessions.
<b>mac-address</b>	Sets the Calling Station ID to the MAC address of the user.
<b>ip-address</b>	Sets the Calling Station ID to the IP address of the user.

### Defaults

By default, the RADIUS Calling -Station-Id attribute value is set to the MAC address of the user.

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- Configuring the Calling-Station-Id attribute is not allowed if the accounting server configuration is set to use local Switch Logging (syslog) for the specified accounting session type (802.1x, MAC, or Captive Portal).
- The Calling Station ID attribute is defined in a RADIUS Accounting-Request message that is sent to the RADIUS accounting server.

### Examples

```
-> aaa accounting 802.1x radius calling-station-id ip-address
-> no aaa accounting 802.1x radius calling-station-id ip-address
-> aaa accounting 802.1x radius calling-station-id mac-address

-> aaa accounting mac radius calling-station-id ip-address
-> no aaa accounting mac radius calling-station-id ip-address
-> aaa accounting mac radius calling-station-id mac-address

-> aaa accounting captive-portal radius calling-station-id ip-address
-> no aaa accounting onex radius calling-station-id ip-address
-> aaa accounting captive-portal radius calling-station-id mac-address
```

### Release History

Release 5.1; command introduced.

## Related Commands

[show aaa accounting](#)

Displays the AAA accounting configuration.

## MIB Objects

aaaAcctDatable

    aaacdInterface

    aaacdCallingStationId

---



## aaa 802.1x re-authentication

Configures the automatic re-authentication of authenticated 802.1X users.

```
aaa 802.1x re-authentication {enable | disable | interval seconds | trust-radius {enable | disable}}
```

---

### Syntax Definitions

<b>enable</b>	Enables re-authentication of 802.1X users.
<b>disable</b>	Disables re-authentication of 802.1X users.
<i>seconds</i>	The amount of time the switch waits before triggering re-authentication of 802.1X users. The valid range is 600–7200 seconds.
<b>trust-radius enable</b>	Directs the switch to use the Session-Timeout attribute value for the re-authentication time interval. This attribute is returned from the RADIUS server in an Accept-Accept message.
<b>trust-radius disable</b>	Directs the switch to use the locally configured re-authentication time interval value.

### Defaults

By default, 802.1X re-authentication is disabled for the switch. When re-authentication is enabled, the following default values apply:

parameter	default
<i>seconds</i>	3600
<b>trust-radius enable   disable</b>	disable

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- The re-authentication time interval is triggered when 802.1X re-authentication is enabled.
- When the re-authentication time interval is changed, the new value does not apply to existing authenticated 802.1X users until the user is flushed out or when the user is authenticated again. Any new 802.1X users are re-authenticated based on the current time interval setting.
- When the trust RADIUS option is enabled, the Session-Timeout attribute value received from the RADIUS server overrides the locally configured value for the switch.
- AAA profile settings for 802.1x re-authentication take precedence over global 802.1x re-authentication settings configured with this command. For example, if the global trust RADIUS option is enabled and the AAA profile trust RADIUS option is disabled (the default), the trust RADIUS status is disabled on the UNP port when the AAA profile is assigned to that port.

## Examples

```
-> aaa 802.1x re-authentication enable
-> aaa 802.1x re-authentication enable interval 7200
-> aaa 802.1x re-authentication enable trust-radius enable
-> aaa 802.1x re-authentication enable interval 7200 trust-radius enable
-> aaa 802.1x re-authentication interval 7200 trust-radius disable
-> aaa 802.1x re-authentication disable
```

## Release History

Release 5.1; command introduced.

## Related Commands

[show aaa config](#) Displays the global AAA parameter configuration for 802.1X sessions.

## MIB Objects

```
alaAaaAuthConfig
  alaAaaOnexReAuthStatus
  alaAaaOnexReAuthIntrvl
  alaAaaOnexReAuthTrustRadStatus
```

---

## aaa interim-interval

Configures the amount of time between each interim accounting update for any given session.

```
aaa {802.1x | mac | captive-portal} interim-interval seconds [trust-radius {enable | disable}]
```

---

### Syntax Definitions

<b>802.1x</b>	Configures the interim interval value for 802.1X accounting sessions.
<b>mac</b>	Configures the interim interval value for MAC accounting sessions.
<b>captive-portal</b>	Configures the interim interval value for Captive Portal accounting sessions.
<i>seconds</i>	The amount of time between each interim accounting update. The valid range is 60–1200 seconds.
<b>trust-radius enable</b>	Directs the switch to use the Acct-Interim-Interval attribute value for the interim time interval. This attribute is returned from the RADIUS server in an Accept-Accept message.
<b>trust-radius disable</b>	Directs the switch to use the locally configured interim time interval value.

### Defaults

By default, the accounting interim interval value is set to 600 seconds.

parameter	default
trust-radius enable   disable	disable

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- When the trust RADIUS option is enabled, the accounting interim interval value received from the RADIUS server overrides the locally configured value for the switch.
- When the accounting interim interval is changed, the new value does not apply to existing authenticated users until the user is flushed out or when the user is authenticated again.

### Examples

```
-> aaa 802.1x interim-interval 1200
-> aaa 802.1x interim-interval 1200 trust-radius enable
-> aaa 802.1x interim-interval 1200 trust-radius disable

-> aaa mac interim-interval 1200
-> aaa mac interim-interval 1200 trust-radius enable
-> aaa mac interim-interval 1200 trust-radius disable

-> aaa captive-portal interim-interval 1200
```

```
-> aaa captive-portal interim-interval 1200 trust-radius enable
-> aaa captive-portal interim-interval 1200 trust-radius disable
```

## Release History

Release 5.1; command introduced.

## Related Commands

### [show aaa config](#)

Displays the global AAA parameter configuration for device authentication and accounting sessions.

## MIB Objects

```
alaAaaAuthConfig
  alaAaaOnexIntrmIntrvl
  alaAaaOnexIntmIntvlTrstRadSts
  alaAaaMacIntrmIntrvl
  alaAaaMacIntmIntvlTrstRadStatus
  alaAaaCpIntrmIntrvl
  alaAaaCpIntmIntvlTrstRadStatus
```

---

## aaa session-timeout

Configures whether or not an authenticated user is automatically logged out of the network based on a session timeout value.

**aaa {mac | captive-portal} session-timeout {enable | disable} [interval *seconds*] [trust-radius {enable | disable}]**

---

### Syntax Definitions

<b>mac</b>	Configures the session timeout parameter for authenticated MAC users.
<b>captive-portal</b>	Configures the session timeout parameter for authenticated Captive Portal users.
<b>session-timeout enable</b>	Enables the session timeout timer for authenticated user sessions.
<b>session-timeout disable</b>	Disables the session timeout timer for authenticated user sessions.
<i>seconds</i>	The session timeout value. The valid range is 12000–86400 seconds.
<b>trust-radius enable</b>	Directs the switch to use the Session-Timeout attribute returned from the RADIUS server in an Accept-Accept message.
<b>trust-radius disable</b>	Directs the switch to use the locally configured timeout interval value.

### Defaults

By default, the session timer is disabled for the switch.

parameter	default
<i>seconds</i>	43200 seconds (12 hours)
<b>trust-radius enable   disable</b>	disable

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- The session timeout parameter is configurable only for MAC and Captive Portal authentication sessions. When 802.1x re-authentication is enabled, the session timeout is set to 43200 seconds by default.
- The timeout interval is triggered when the session timeout parameter is enabled for the switch.
- When the trust RADIUS option is enabled, the timeout interval value received from the RADIUS server overrides the locally configured value for the switch.
- When the session timeout interval is changed, the new value does not apply to existing authenticated users until the user is flushed out or when the user is authenticated again.
- When the session timeout value is reached, the authenticated users are logged out and the MAC address for each logged out user device is flushed.

## Examples

```
-> aaa mac session-timeout enable interval 13000
-> aaa mac session-timeout enable interval 14000 trust-radius enable
-> aaa mac session-timeout disable

-> aaa captive-portal session-timeout enable interval 13000
-> aaa captive-portal session-timeout enable interval 14000 trust-radius enable
-> aaa captive-portal session-timeout disable
```

## Release History

Release 5.1; command introduced.

## Related Commands

### [show aaa config](#)

Displays the global AAA parameter configuration for device authentication and accounting sessions.

## MIB Objects

```
alaAaaAuthConfig
  alaAaaMacSessTimeoutStatus
  alaAaaMacSessTimeoutIntrvl
  alaAaaMacSessTimeoutTrstRadStatus
  alaAaaCpSessTimeoutStatus
  alaAaaCpSessTimeoutIntrvl
  alaAaaCpSsTmotTrstRadStatus
```

---

## aaa session console

Enables or disables switch access through the console port of the switch.

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

---

### Syntax Definitions

<b>enable</b>	Enables the switch access through the console port through the CLI shell.
<b>disable</b>	Disables the switch access through the console port through the CLI shell.

### Defaults

---

parameter	default
enable   disable	enable

---

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- It is recommended to create a back-up of the configuration file before using this command. Contact customer support to recover the switch.
- Before disabling the CLI console shell, configuration for telnet or SSH access with proper user privilege must be made.
- When the CLI console shell is disabled, the switch log output to the console is also disabled.
- When the CLI console shell is disabled, the switch can be accessed through SSH or telnet or WebView session.
- The command can be stored to the configuration file using **write memory**.
- If the console access is disabled through configuration (on both working and certified directory) and the telnet/SSH/WebView session is also not available to the switch, contact customer support to recover the switch.

---

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

---

- In a virtual chassis, the command must be used only on the master chassis; the console on master and all slaves will be disabled/enabled accordingly.

### Examples

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

## Release History

Release 5.1; command introduced.

## Related Commands

**show aaa session console config** Displays Session Manager information, such as banner file name, session timeout value, and default prompt value.

## MIB Objects

```
alaAaaConsoleAccessConfig  
  alaAaaConsoleAccessAdminState
```

---



## aaa inactivity-logout

Configures whether or not an authenticated user is automatically logged out of the network after a specific period of inactivity.

```
aaa {mac | captive-portal} inactivity-logout {enable | disable} [interval seconds]
```

---

### Syntax Definitions

<b>mac</b>	Configures the inactivity logout timer for authenticated MAC users.
<b>captive-portal</b>	Configures the inactivity logout timer for authenticated Captive Portal users.
<b>enable</b>	Enables the inactivity logout timer for the specified authentication type.
<b>disable</b>	Disables the inactivity logout timer for the specified authentication type.
<i>seconds</i>	The inactivity logout time. The valid range is 60–1200 seconds, or enter 0 to indicate that an authenticated user should never be logged out.

### Defaults

By default, the inactivity logout timer is disabled for the switch.

---

<b>parameter</b>	<b>default</b>
seconds	600 seconds

---

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- The inactivity logout timer is configurable only for MAC and Captive Portal authentication sessions.
- The timer is triggered when the inactivity logout parameter is enabled for the switch.
- Make sure the configured inactivity logout time is set to a value greater than the MAC address aging time for the switch.
- If a specific time is configured for the inactivity logout timer, the user is *not* logged out of the network even if the MAC address for the user device ages out before the inactivity logout timer value expires.
- Setting the inactivity logout time to zero helps prevent silent devices from getting automatically logged out; the silent device will always remain logged in.
- When the inactivity logout time is changed, the new value does not apply to existing authenticated users until the user is flushed out or when the user is authenticated again.
- If a user undergoes MAC authentication and then secondary Captive Portal authentication, the higher of the two inactivity logout timer values is applied to the device.

## Examples

```
-> aaa mac inactivity-logout enable
-> aaa mac inactivity-logout enable interval 600
-> aaa mac inactivity-logout enable interval 0
-> aaa mac inactivity-logout disable

-> aaa captive-portal inactivity-logout enable
-> aaa captive-portal inactivity-logout enable interval 600
-> aaa captive-portal inactivity-logout enable interval 0
-> aaa captive-portal inactivity-logout disable
```

## Release History

Release 5.1; command introduced.

## Related Commands

### [show aaa config](#)

Displays the global AAA parameter configuration for device authentication and accounting sessions.

## MIB Objects

```
alaAaaAuthConfig
  alaAaaMacInActLogoutStatus
  alaAaaMacInActLogoutIntrvl
  alaAaaCpInActLogoutStatus
  alaAaaCpInActLogoutIntrvl
```

---

## aaa radius nas-port-id

Configures the RADIUS client NAS-Port attribute for authentication and accounting sessions.

```
aaa radius nas-port-id {user-string string | default}
```

---

### Syntax Definitions

<i>string</i>	A text string (up to 31 characters) used to define a NAS-Port identifier for the NAS-Port attribute.
<b>default</b>	Sets the NAS-Port attribute value to the chassis/slot/port of the user.

### Defaults

By default, the NAS-Port attribute is set to the user port (chassis/slot/port).

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

The NAS-Port attribute value specified with this command is used in Account-Request messages and in Accounting-Request messages.

### Examples

```
-> aaa radius nas-port-id default
-> aaa radius nas-port-id user-string nasport
```

### Release History

Release 5.1; command introduced.

### Related Commands

[show aaa radius config](#) Displays the global RADIUS client attribute configuration.

### MIB Objects

```
alaAaaClientAttrGroup
  alaAaaRadNasPortId
```

---

## aaa radius nas-identifier

Configures the RADIUS client NAS-Identifier attribute for authentication and accounting sessions.

```
aaa radius nas-identifier {user-string string | default}
```

---

### Syntax Definitions

<i>string</i>	A text string (up to 31 characters) used to identify the switch (RADIUS client) in the NAS-Identifier attribute.
<b>default</b>	Sets the NAS-Identifier attribute to the system name of the switch.

### Defaults

By default, the NAS-Identifier attribute is set to the system name of the switch.

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

The NAS-Identifier attribute value specified with this command is used in both Account-Request and Accounting-Request messages.

### Examples

```
-> aaa radius nas-identifier default
-> aaa radius nas-identifier user-string os2260
```

### Release History

Release 5.1; command introduced.

### Related Commands

[show aaa radius config](#) Displays the global RADIUS client attribute configuration.

### MIB Objects

```
alaAaaClientAttrGroup
  alaAaaRadNasIdentifier
```

---

## aaa radius nas-ip-address

Configure the RADIUS client NAS IP address attribute for the outgoing RADIUS packets.

```
aaa radius nas-ip-address {default | local-ip [ip_address]}
```

---

### Syntax Definitions

<b>default</b>	Sets the NAS IP address attribute value to the source IP address of the interface used to send the RADIUS packet. In OmniVista Cirrus it will be the VPN IP address.
<b>local-ip</b>	Sets the NAS IP address attribute value with the DHCP-Client interface IP address as the device identifier.
<i>ip_address</i>	The IPv4 address for NAS IP address attribute in RADIUS packets.

### Defaults

By default, the value of NAS IP address is default.

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- The NAS IP address attribute value configured will be used in all Authentication-Request messages and in Accounting-Request messages.
- If the Local IP is configured without the optional IP address, then the NAS IP address attribute value will be the DHCP-Client interface IP address.
- If there is no DHCP IP address configured on the switch, then NAS IP address attribute will contain the IP address as per the default behavior.
- If Local IP option is configured with an IP address, then this configured IP address value will be used in the NAS IP address attribute.

### Examples

```
-> aaa radius nas-ip-address default
-> aaa radius nas-ip-address local-ip
-> aaa radius nas-ip-address local-ip 12.12.12.12
```

### Release History

Release 5.1; command introduced.

## Related Commands

[show aaa radius config](#) Displays the global AAA attribute values.

## MIB Objects

```
alaAaaClientAttrGroup
  alaAaaRadNasIpAddressMode
  alaAaaRadNasIpAddressType
  alaAaaRadNasIpAddress
```

---

## aaa radius mac-format

Configures the MAC address format to use in the specified RADIUS client attributes.

```
aaa radius mac-format {username | password | calling-station-id | called-station-id} delimiter {char | none} case {uppercase | lowercase}
```

---

### Syntax Definitions

<b>username</b>	Configures the MAC address format for the User-Name attribute.
<b>password</b>	Configures the MAC address format for the User-Password attribute.
<b>calling-station-id</b>	Configures the MAC address format for the Calling-Station-Id attribute.
<b>called-station-id</b>	Configures the MAC address format for the Called-Station-Id attribute.
<i>char</i>	The delimiter character to use to separate the octets within a MAC address. The valid characters are a space (“ ”), a hyphen (“-”), or a colon (“:”). For example, “e8 e7 32 a4 63 23”, “e8-e7-32-a4-63-23”, or “e8:e7:32:a4:63:23”.
<b>none</b>	No delimiter is used in the MAC address format.
<b>uppercase</b>	Uses uppercase characters in the MAC address format.
<b>lowercase</b>	Uses lowercase characters in the MAC address format.

### Defaults

By default, no delimiter is used and the MAC address characters are in uppercase.

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- The MAC address format configured for the User-Name and User-Password attributes is only applied for MAC authentication and accounting, where these attributes are set to the MAC address of the user. The configured format is not applied for 802.1X or Captive Portal authentication and accounting.
- The MAC address format configured for the Called-Station-Id and Calling-Station-Id attributes is applied for MAC, 802.1X, and Captive Portal authentication and accounting sessions when these attributes are set to a MAC address value.
- The Called-Station-Id attribute is set to the base MAC address of the switch.
- The Calling-Station-ID attribute is configurable and can be set to the MAC address or IP address of the user.

### Examples

```
-> aaa radius mac-format username delimiter none case lowercase
-> aaa radius mac-format username delimiter ":" case lowercase

-> aaa radius mac-format password delimiter none case lowercase
-> aaa radius mac-format password delimiter ":" case lowercase
```

```
-> aaa radius mac-format calling-station-id delimiter none case lowercase
-> aaa radius mac-format calling-station-id delimiter ":" case lowercase

-> aaa radius mac-format called-station-id delimiter none case lowercase
-> aaa radius mac-format called-station-id delimiter ":" case lowercase
```

## Release History

Release 5.1; command introduced.

## Related Commands

<a href="#">aaa accounting radius calling-station-id</a>	Sets the Calling-Station-Id attribute to the MAC address or IP address of the user for accounting sessions.
<a href="#">show aaa radius config</a>	Displays the global RADIUS client attribute configuration.

## MIB Objects

```
alaAaaRadiusClientGlobalAttr
  alaAaaRadiusUserNameDelimiter
  alaAaaRadiusUserNameCase
  alaAaaRadiusPasswordDelimiter
  alaAaaRadiusPasswordCase
  alaAaaRadCallnStnIdDelim
  alaAaaRadiusCallingStationIdCase
  alaAaaRadCalldStnIdDelim
  alaAaaRadiusCalledStationIdCase
```

---



## aaa profile

Configures an AAA profile that is used to define and apply specific AAA parameter values to Universal Network Profile (UNP) Edge ports, link aggregates, or an Access Guardian Captive Portal profile. This section describes the base command (**aaa profile *profile\_name***) along with the other command keywords that are used to configure AAA parameter values that are applied when the profile is assigned to a UNP port or link aggregate.

**aaa profile** *profile\_name*

```
[device-authentication {802.1x | mac | captive-portal} server1 [server2] [server3] [server4]]
[accounting {802.1x | mac | captive-portal} {server1 [server2...]} | syslog ip_address
 [port udp_port]]]
[accounting {802.1x | mac | captive-portal} radius calling-station-id {mac-address | ip-address}]
[802.1x re-authentication {enable | disable} [interval seconds] [trust-radius {enable | disable}]]
[{802.1x | mac | captive-portal} interim-interval seconds [trust-radius {enable | disable}]]
[{mac | captive-portal} session-timeout {enable | disable} [interval seconds] [trust-radius
 {enable | disable}]]
[{mac | captive-portal} inactivity-logout {enable | disable} [interval seconds]]
[radius nas-port-id {user-string string | default}]
[radius nas-identifier {user-string string | default}]
[radius nas-ip-address {default | local-ip [ip_address]}]
[radius mac-format {username | password | calling-station-id | called-station-id} delimiter
 {char | none} case {uppercase | lowercase}]
```

**no aaa profile** *profile\_name*

---

### Syntax Definitions

*profile\_name* The name to associate with the AAA configuration profile.

### Defaults

The AAA profile parameters are set to the same default values that are set when the explicit AAA command is used to configure the parameter value. See the **show aaa profile** command output example in the “Examples” section of this command page to determine default values for AAA profile parameters.

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- Use the **no** form of this command to remove the AAA profile from the switch configuration.
- Creating the template name with the base command (**aaa profile *profile\_name***) is required before attempting to configure profile parameter values.
- When an AAA profile is assigned to a UNP port, the parameter values defined in the profile will override any existing global AAA configuration for users authenticating on that port.

- When an AAA profile is assigned to a Captive Portal profile, the parameters values defined in the AAA profile will override any existing global AAA configuration for users authenticated through the Captive Portal profile configuration.
- For more information about specific AAA parameter values, refer to the following explicit AAA configuration commands for each profile parameter option:

AAA Profile Parameter	Explicit Port Configuration Command
[device-authentication {802.1x   mac   captive-portal} <i>server1</i> [ <i>server2</i> ] [ <i>server3</i> ] [ <i>server4</i> ]]	<b>aaa device-authentication</b>
[accounting {802.1x   mac   captive-portal} { <i>server1</i> [ <i>server2...</i> ]   syslog <i>ip_address</i> [ <i>port udp_port</i> ]}]	<b>aaa accounting</b>
[accounting {802.1x   mac   captive-portal} radius calling-station-id { <i>mac-address</i>   <i>ip-address</i> }]	<b>aaa accounting radius calling-station-id</b>
[802.1x re-authentication {enable   disable} [interval <i>seconds</i> ] [trust-radius {enable   disable}]]	<b>aaa 802.1x re-authentication</b>
[{802.1x   mac   captive-portal} interim-interval <i>seconds</i> [trust-radius {enable   disable}]]	<b>aaa interim-interval</b>
[{mac   captive-portal} session-timeout {enable   disable} [interval <i>seconds</i> ] [trust-radius {enable   disable}]]	<b>aaa session-timeout</b>
[{mac   captive-portal} inactivity-logout {enable   disable} [interval <i>seconds</i> ]]	<b>aaa inactivity-logout</b>
[radius nas-port-id { <i>user-string string</i>   default}]	<b>aaa radius nas-port-id</b>
[radius nas-identifier { <i>user-string string</i>   default}]	<b>aaa radius nas-identifier</b>
[radius nas-ip-address {default   local-ip [ <i>ip_address</i> ]}]	<b>aaa radius nas-ip-address</b>
[radius mac-format { <i>username</i>   <i>password</i>   calling-station-id   called-station-id} delimiter { <i>char</i>   none} case {uppercase   lowercase}]	<b>aaa radius mac-format</b>

## Examples

```

-> aaa profile prof1
-> no aaa profile prof1

-> aaa profile ap-1 device-authentication mac rad1 rad2
-> aaa profile ap-1 device-authentication 802.1x serv1 serv2 serv3 serv4
-> aaa profile ap-2 device-authentication captive-portal rad3 rad4
-> no aaa profile ap-2 device-authentication captive-portal

-> aaa profile ap-1 accounting 802.1x rad1 rad2 rad3
-> aaa profile ap-1 accounting mac rad1 rad2
-> aaa profile ap-1 accounting captive-portal syslog 10.135.67.99 port 8000
-> no aaa profile ap-1 accounting captive-portal

-> aaa profile ap-1 802.1x re-authentication enable trust-radius enable
-> aaa profile ap-1 802.1x re-authentication enable interval 700
-> aaa profile ap-1 802.1x re-authentication interval 700 trust-radius disable
-> aaa profile ap-1 802.1x re-authentication disable

```

```
-> aaa profile ap-1 mac inactivity-logout enable
-> aaa profile ap-1 mac inactivity-logout enable interval 600
-> aaa profile ap-1 mac inactivity-logout disable

-> aaa profile ap-1 captive-portal inactivity-logout enable
-> aaa profile ap-1 captive-portal inactivity-logout enable interval 600
-> aaa profile ap-1 captive-portal inactivity-logout disable

-> aaa profile abc radius nas-ip-address default
-> aaa profile abc radius nas-ip-address local-ip
-> aaa profile abc radius nas-ip-address local-ip 192.165.1
```

The following **show aaa profile** command output example shows the default values applied when the AAA profile is created:

```
-> show aaa profile ap-2

AAA profile name = ap-2
Authentication type = mac
  Session Timeout:
    Status           = disable,
    Interval (sec)   = 43200,
    Trust Radius     = disable

  Inactivity Timeout:
    Status           = disable,
    Interval (sec)   = 600

  Accounting Interim:
    Interval (sec)   = 600,
    Trust Radius     = disable

Authentication type = 802.1x
  Re-Authentication Timeout:
    Status           = disable,
    Interval (sec)   = 3600,
    Trust Radius     = disable

  Accounting Interim:
    Interval (sec)   = 600,
    Trust Radius     = disable

Authentication type = captive-portal
  Session Timeout:
    Status           = disable,
    Interval (sec)   = 43200,
    Trust Radius     = disable

  Inactivity Timeout:
    Status           = disable,
    Interval (sec)   = 600

  Accounting Interim:
    Interval (sec)   = 600,
    Trust Radius     = disable

RADIUS client attributes:
  NAS port id       = default,
```

```

NAS identifier      = default,
NAS IP address     = default,
  MAC format delimiter:
    Username        = none,   UserNameCase = uppercase,
    Password        = none,   PasswordCase = uppercase,
    calling station id = none, ClgStaIdCase = uppercase,
    called station id  = none, CldStaIdCase = uppercase

```

## Release History

Release 5.1; command introduced.

## Related Commands

<a href="#">unp aaa-profile</a>	Assigns an AAA profile to a UNP Edge port.
<a href="#">captive-portal-profile</a>	Assigns an AAA profile to a Captive Portal profile.
<a href="#">show aaa profile</a>	Displays the AAA profile configuration.

## MIB Objects

```

alaAaaProfTable
  alaAaaProfOnexReAuthSts
  alaAaaProfOnexReAuthIntrvl
  alaAaaProfOnexReAuthTrstRadSts
  alaAaaProfOnexIntrmIntrvl
  alaAaaProfOnexIntmItvlTstRadSts
  alaAaaProfMacIntrmIntrvl
  alaAaaProfMacIntmItvlTrstRadSts
  alaAaaProfMacSessTimeoutSts
  alaAaaProfMacSessTimeoutIntrvl
  alaAaaProfMacSessTmoutTrstRadSts
  alaAaaProfMacInActLogoutSts
  alaAaaProfMacInActLogoutIntrvl
  alaAaaProfCpSessTimeoutSts
  alaAaaProfCpSessTimeoutIntrvl
  alaAaaProfCpSessTmotTrstRadSts
  alaAaaProfCpInActLogoutSts
  alaAaaProfCpInActLogoutIntrvl
  alaAaaProfCpIntrmIntrvl
  alaAaaProfCpItrmIntlTrstRadSts
  alaAaaProfRadNasPortId
  alaAaaProfRadNasIdentifier
  alaAaaProfRadUserNameDelim
  alaAaaProfRadPasswrddelimit
  alaAaaProfRadCallnStnIdDelim
  alaAaaProfRadCalldStnIdDelim
  alaAaaProfRadUserNameCase
  alaAaaProfRadPasswordCase
  alaAaaProfRadCallnStnIdCase
  alaAaaProfRadCalldStnIdCase
  alaAaaRadNasIpAddressMode
  alaAaaRadNasIpAddressType
  alaAaaRadNasIpAddress

```

## user

Configures or modifies user entries in the local user database. Use the **no** form of the command to remove the user from the local database.

**user** *username*

{**password** *password* | **password-prompt**}

[**expiration** {*day* | *date*}]

[**read-only** | **read-write** [*families...* | *domains...*] **all** | **none** | **all-except** [*families* | *domains...*]]]

[**no snmp** | **no auth** | **sha** | **md5** | **sha+des** | **md5+des** | **sha+aes** | **sha224** | **sha256**]

[**console-only** {**enable** | **disable**}]

[**priv-password** *password* | **prompt-priv-password**]

**no user** *username*

---

### Syntax Definitions

<i>username</i>	The name of the user. Used for logging into the switch. Required to create a new user entry or for modifying a user. Maximum 63 characters.
<i>password</i>	The user's password in clear text or hexadecimal (corresponding to encrypted form). Required to create a new user entry. Maximum 30 characters.
<b>password-prompt</b>	This option allows to enter the password in a obscured format rather than as clear text. Select this option with the 'user' command to configure the password for the user. When this option is selected, a password prompt appears and the password can be provided. Password needs to be re-entered, and only if both the passwords match, command is accepted. The password provided in this mode is not displayed on the CLI as text.
<i>day</i>	The number of days before this user's current password expires. The range is 1 to 150 days.
<i>date</i>	The date (in the format <i>mm/dd/yyyy hh:mm</i> ) that the user's current password will expire.
<b>read-only</b>	Specifies that the user will have read-only access to the switch.
<b>read-write</b>	Specifies that the user will have read-write access to the switch.
<i>families</i>	Determines the command families available to the user on the switch. Each command family should be separated by a space. Command families are subsets of domains.
<i>domains</i>	Determines the command domains available to the user on the switch. Each domain should be separated by a space.
<b>all</b>	Specifies that all command families and domains are available to the user.
<b>none</b>	Specifies that no command families or domains are available to the user.
<b>all-except</b>	Specifies that functional privileges for families or domains followed by 'all-except' are disabled to the user.
<b>no snmp</b>	Denies the specified user SNMP access to the switch.

<b>no auth</b>	Specifies that the user has SNMP access without any required SNMP authentication and encryption protocol.
<b>sha</b>	Specifies that the SHA authentication algorithm should be used for authenticating SNMP PDU for the user.
<b>md5</b>	Specifies that the MD5 authentication algorithm should be used for authenticating SNMP PDU for the user.
<b>sha+des</b>	Specifies that the SHA authentication algorithm and DES encryption standard should be used for authenticating and encrypting SNMP PDU for the user.
<b>md5+des</b>	Specifies that the MD5 authentication algorithm and the DES encryption standard should be used for authenticating and encrypting SNMP PDU for the user.
<b>sha+aes</b>	Specifies that the SHA authentication algorithm and AES encryption standard is used for authenticating and encrypting SNMP PDU for the user.
<b>sha224</b>	Specifies that the SHA224 authentication algorithm used for storing the user passwords.
<b>sha256</b>	Specifies that the SHA256 authentication algorithm used for storing the user passwords.
<b>console-only enable</b>	Enables console only access for the user <i>admin</i> .
<b>console-only disable</b>	Disables console only access for the user <i>admin</i> .
<b>priv-password</b>	Separate password that is used for SNMPv3 encryption. (8-30 characters)
<b>prompt-priv-password</b>	This option allows to enter the privacy password in a obscured format rather than as clear text. When this option is selected, press the Enter key. Select this option with the ‘user’ command to configure the privacy password for the user. When this option is selected, a password prompt appears and the privacy password can be provided. Password needs to be re-entered, and only if both the passwords match, command is accepted. The password provided in this mode is not displayed on the CLI as text.

## Defaults

- By default, if a user is created without indicating the read and write privileges and SNMP access, the user will be given privileges based on the *default user account*. The **default** user account may be modified.
- By default, the password will be encrypted using SHA for all non SNMP users.
- For SNMP users without authentication, password will be encrypted with SHA.
- For SNMP users with authentication, it will be encrypted with the authentication method set for the user. If user is created with MD5, then it will be still encrypted with MD5.
- Users created with SHA2 authentication algorithm cannot be used for SNMP authentication.

## Platforms Supported

OmniSwitch 2260, 2360

## Usage Guidelines

- At least one user with SHA/MD5 authentication and/or DES encryption must be configured on the switch for SNMPv3 communication with OmniVista.
- Note that the exclamation point ‘!’ is not a valid password character. In addition, specifying an asterisk (\*) as one or more characters in a password is allowed as long as every character is not an asterisk. For example, **password \*\*123456\*\*** is allowed; **password \*\*\*\*\*** is not allowed.
- Some special characters are interpreted as a Linux shell variable by the switch when being used in a password. They can still be used in a password but they must be escaped (‘\’). For example, to use the ‘\$’ as part of a password the following should be entered:

```
-> user test password test\$1234
```

this password will be interpreted as *test\$1234*.

- An alternative method is to use the **password-prompt** parameter when using special characters in a password. The **password-prompt** parameter exits the Linux shell and special characters are no longer interpreted as shell variables. The following characters are the majority of characters considered special characters by the switch [ " " (white space), \$, "", \#, [], >, <, |, ;, {, }, (, ~, `].
- A password expiration for the user’s current password may be configured with the **expiration** option. However, if the password is changed, or the global password expiration setting is configured with the **user password-expiration** command, the user’s password expiration will be configured with the global expiration setting.
- When modifying a user’s SNMP access, the user password must be re-entered (or a new one configured). This is required because the hash algorithm used to save the password in the switch depends on the SNMP authentication level.
- At initial startup, the default user on the switch is **admin** with a password of **switch**. The switch will not recreate this user at any successive startup as long as there exists at least one user defined with write access to all commands. (Note that if password expiration is configured for the **admin** user, or configured globally through the **user password-expiration** command, when the **admin** user’s password expires, the **admin** user will have access only through the console port.)
- New users or updated user settings are saved *automatically*.
- The priv-password token is accepted only when SNMP level with encryption is configured for the user. If SNMP level with encryption is not selected and **priv-password** is configured, then CLI command is rejected with error.
- If priv-password is not configured for the user with encryption SNMP level, then the user password parameter is used for priv-password (both for authentication/encryption).
- Password policy is not applicable for the new optional parameter **priv-password**.
- For authenticating switch access through other access types such as telnet, FTP, SSH the existing user password will be used irrespective of whether **priv-password** is configured or not.
- When the SNMP level for an existing user with priv-password configured is changed from one encryption level to another encryption level, then the previously configured priv-password will not be used with the new SNMP level. Priv-password needs to be configured again when SNMP level is changed for an existing user.

## Examples

```
-> user techpubs password writer_pass read-only config
-> user techpubs password-prompt
Enter Password: *****
Confirm Password: *****

-> user techpubs password writer_pass read-write all sha256
```

The following example creates a user with read-write privileges for all families except aaa.

```
-> user techpubs password writer_pass read-write all-except aaa

-> no user techpubs

-> user snmpv3user password pass1pass1 priv-password priv1priv1 read-write all
sha+aes

-> user snmpv3user password pass1pass1 prompt-priv-password
Enter Priv-Password: *****
Confirm Priv-Password: *****
```

## Release History

Release 5.1; command introduced.

## Related Commands

<a href="#">password</a>	Configures the current user's password.
<a href="#">show user</a>	Displays information about users configured in the local database on the switch.

## MIB Objects

```
aaaUserTable
  aaauPassword
  aaauReadRight
  aaauWriteRight
  aaauSnmpLevel
  aaauSnmpAuthKey
  aaauPasswordExpirationDate
```

---



## password

Configures the current user's password.

**password**

---

### Syntax Definitions

N/A

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- If the **snapshot** command is used to capture the switch configuration, the text of the password is not displayed in the file. Instead an authentication key is included in the file.
- A new password cannot be identical to the current password; it cannot be identical to any of the three passwords that preceded the current password.
- Note that the exclamation point (!) is not a valid password character. In addition, specifying an asterisk (\*) as one or more characters in a password is allowed as long as every character is not an asterisk. For example, **password \*\*123456\*\*** is allowed; **password \*\*\*\*\*** is not allowed.
- Password settings are saved *automatically*.

### Examples

```
-> password
enter old password: *****
enter new password: *****
reenter new password: *****
->
```

### Release History

Release 5.1; command was introduced.

## Related Commands

### **user**

Configures entries in the local user database. May be used by a system administrator to change any user's password in addition to configuring user privileges.

## MIB Objects

```
aaaUserTable  
  aaauPassword  
  aaauOldPassword
```

---

## user password-size min

Configures the minimum number of characters required when configuring a user password.

**user password-size min** *size*

---

### Syntax Definitions

*size* The number of characters required when configuring a user password through the **password** command or when setting up a user password through the **user** command. The range is 1 to 14 characters.

### Defaults

parameter	default
<i>size</i>	6

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

N/A.

### Examples

```
-> user password-size min 9
```

### Release History

Release 5.1; command was introduced.

### Related Commands

[user](#) Configures entries in the local user database. May be used by a system administrator to change any user's password in addition to configuring user privileges.

[show user password-policy](#) Displays the global password policy configuration for the switch.

### MIB Objects

aaaAsaConfig  
aaaAsaPasswordSizeMin

---

## user password-expiration

Configures an expiration date for all user passwords stored locally on the switch or disables password expiration.

```
user password-expiration {day | disable}
```

---

### Syntax Definitions

<i>day</i>	The number of days before locally configured user passwords will expire. The range is 1 to 150 days.
<b>disable</b>	Disables password expiration for users configured locally on the switch.

### Defaults

---

parameter	default
<i>day</i>   <b>disable</b>	<b>disable</b>

---

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- The **user password-expiration** command sets a default password expiration for users configured locally on the switch.
- Password expiration may be configured on a per-user basis through the **user** command; the user setting overrides the **user password-expiration** setting until the user password is changed or the **user password-expiration** command is entered again.

### Examples

```
-> user password-expiration 2  
-> user password-expiration disable
```

### Release History

Release 5.1; command was introduced.

## Related Commands

### [user](#)

Configures entries in the local user database. May be used by a system administrator to change any user's password in addition to configuring user privileges.

### [show user password-policy](#)

Displays the global password policy configuration for the switch.

## MIB Objects

aaaAsaConfig

aaaAsaDefaultPasswordExpirationInDays

---

## user password-policy cannot-contain-username

Specifies whether or not a user can configure a password that contains the username for the account.

`user password-policy cannot-contain-username {enable | disable}`

---

### Syntax Definitions

<b>enable</b>	Does not allow the password to contain the username.
<b>disable</b>	Allows the password to contain the username.

### Defaults

---

parameter	default
enable   disable	disable

---

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- The status of this function is specified as part of a global password policy that is applied to all passwords when they are created or modified.
- When this function is enabled, a check is done at the time the password is created or modified to ensure that the username is not specified as part of the password text.

### Examples

```
-> user password-policy cannot-contain-username enable
-> user password-policy cannot-contain-username disable
```

### Release History

Release 5.1; command was introduced.

### Related Commands

[show user password-policy](#) Displays the global password policy configuration for the switch.

### MIB Objects

```
aaaAsaConfig
  aaaAsaPasswordContainUserName
```

---

## user password-policy min-uppercase

Configures the minimum number of uppercase English characters required for a valid password.

**user password-policy min-uppercase** *number*

---

### Syntax Definitions

*number* The minimum number of uppercase characters. The valid range is 0–7.

### Defaults

parameter	default
<i>number</i>	0

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- Specify **0** with this command to disable the minimum uppercase character requirement.
- The minimum number of uppercase characters is specified as part of a global password policy that is applied to all passwords when they are created or modified.

### Examples

```
-> user password-policy min-uppercase 2  
-> user password-policy min-uppercase 0
```

### Release History

Release 5.1; command was introduced.

### Related Commands

**show user password-policy** Displays the global password policy configuration for the switch.

### MIB Objects

```
aaaAsaConfig  
aaaAsaPasswordMinUpperCase
```

---

## user password-policy min-lowercase

Configures the minimum number of lowercase English characters required for a valid password.

**user password-policy min-lowercase** *number*

---

### Syntax Definitions

*number* The minimum number of uppercase characters. The valid range is 0–7.

### Defaults

parameter	default
<i>number</i>	0

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- Specify **0** with this command to disable the minimum lowercase character requirement.
- The minimum number of lowercase characters is specified as part of a global password policy that is applied to all passwords when they are created or modified.

### Examples

```
-> user password-policy min-lowercase 2
-> user password-policy min-lowercase 0
```

### Release History

Release 5.1; command was introduced.

### Related Commands

**show user password-policy** Displays the global password policy configuration for the switch.

### MIB Objects

```
aaaAsaConfig
  aaaAsaPasswordMinLowerCase
```

---



## user password-policy min-digit

Configures the minimum number of base-10 digits required for a valid password.

**user password-policy min-digit** *number*

---

### Syntax Definitions

*number* The minimum number of uppercase characters. The valid range is 0–7.

### Defaults

parameter	default
<i>number</i>	0

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- Specify **0** with this command to disable the minimum number of digits requirement.
- The minimum number of digits requirement is specified as part of a global password policy that is applied to all passwords when they are created or modified.

### Examples

```
-> user password-policy min-digit 2
-> user password-policy min-digit 0
```

### Release History

Release 5.1; command was introduced.

### Related Commands

**show user password-policy** Displays the global password policy configuration for the switch.

### MIB Objects

```
aaaAsaConfig
  aaaAsaPasswordMinDigit
```

---

## user password-policy min-nonalpha

Configures the minimum number of non-alphanumeric characters (symbols) required for a valid password.

**user password-policy min-nonalpha** *number*

---

### Syntax Definitions

*number* The minimum number of non-alphanumeric characters. The valid range is 0–7.

### Defaults

parameter	default
<i>number</i>	0

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- Specify **0** with this command to disable the minimum non-alphanumeric character requirement.
- The minimum number of non-alphanumeric characters is specified as part of a global password policy that is applied to all passwords when they are created or modified.

### Examples

```
-> user password-policy min-nonalpha 2  
-> user password-policy min-nonalpha 0
```

### Release History

Release 5.1; command was introduced.

### Related Commands

**show user password-policy** Displays the global password policy configuration for the switch.

### MIB Objects

```
aaaAsaConfig  
aaaAsaPasswordMinNonAlpha
```

---

## user password-history

Configures the maximum number of old passwords to retain in the password history.

**user password-history** *number*

---

### Syntax Definitions

*number* The maximum number of old passwords to retain. The range is 0–24.

### Defaults

parameter	default
<i>number</i>	4

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- Specify **0** with this command to disable the password history function.
- The user is prevented from specifying any passwords that are recorded in the password history and fall within the range configured through this command.
- The password history value is specified as part of a global password policy that is applied to all passwords when they are created or modified.

### Examples

```
-> user password-history 2
-> user password-history 0
```

### Release History

Release 5.1; command was introduced.

### Related Commands

[show user password-policy](#) Displays the global password policy configuration for the switch.

### MIB Objects

```
aaaAsaConfig
  aaaAsaPasswordHistory
```

---

## user password-min-age

Configures the minimum number of days during which a user is prevented from changing a password.

`user password-min-age days`

---

### Syntax Definitions

*days* The number of days to use as the minimum age of the password. The range is 0–150.

### Defaults

parameter	default
<i>days</i>	0

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- Specify **0** with this command to disable the minimum number of days requirement.
- Configure the minimum age of a password with a value that is less than the value configured for the password expiration.
- The password minimum age value is specified as part of a global password policy that is applied to all passwords when they are created or modified.

### Examples

```
-> user password-min-age 7
-> user password-min-age 0
```

### Release History

Release 5.1; command was introduced.

### Related Commands

[show user password-policy](#) Displays the global password policy configuration for the switch.

### MIB Objects

```
aaaAsaConfig
  aaaAsaPasswordMinAge
```

---

## user lockout-window

Configures a moving period of time (observation window) during which failed login attempts are counted to determine if the number of failed attempts has exceeded the number of allowed attempts. The number of failed login attempts is decremented by the number of failed attempts that age beyond the observation window time period.

**user lockout-window** *minutes*

---

### Syntax Definitions

*minutes*                      The number of minutes the observation window remains active. The range is 0–99999.

### Defaults

parameter	default
<i>minutes</i>	0

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- This command is only available to the **admin** user because the **admin** user account is the only account protected from any type of lockout attempt.
- Specify **0** with this command to disable the observation window function. This means that failed login attempts will never age out; the number of failed attempts is never decremented.
- Do not configure an observation window time period that is greater than the lockout duration time period.
- If the number of failed login attempts exceeds the number of failed attempts allowed before the observation window time expires, then the user account is locked out of the switch.
- The observation window time period is a global lockout setting that is applied to all passwords configured on the switch.
- Lockout settings are saved *automatically*.

### Examples

```
-> user lockout-window 500  
-> user lockout-window 0
```

### Release History

Release 5.1; command was introduced.

## Related Commands

<a href="#">user lockout-duration</a>	Configures the amount of time a user account remains locked out of the switch.
<a href="#">user lockout-threshold</a>	Configures the number of failed password attempts allowed before the user account is locked out of the switch.
<a href="#">user lockout unlock</a>	Manually locks or unlocks a user account on the switch.
<a href="#">show user lockout-setting</a>	Displays the global user lockout settings for the switch.

## MIB Objects

```
aaaAsaConfig  
  aaaAsaLockoutWindow
```

---

## user lockout-threshold

Configures the number of failed password login attempts allowed during a certain period of time (observation window). If the number of failed attempts exceeds the lockout threshold number before the observation window period expires, the user account is locked out.

**user lockout-threshold** *number*

---

### Syntax Definitions

*number*    The number of failed login attempts allowed. The range is 0–999.

### Defaults

parameter	default
<i>number</i>	0

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- This command is only available to the **admin** user because the **admin** user account is the only account protected from any type of lockout attempt.
- If the lockout threshold is set to zero (the default), there is no limit to the number of failed login attempts allowed.
- A user account remains locked out for the length of the lockout duration time period; at the end of this time, the account is automatically unlocked.
- If the lockout duration time period is set to zero, only the **admin** user or a user with read/write AAA privileges can unlock a locked user account. An account is unlocked by changing the user account password or with the [user lockout unlock](#) command.
- The lockout threshold time period is a global lockout setting that is applied to all passwords configured on the switch.
- Lockout settings are saved *automatically*; that is, these settings do not require the [write memory](#) or [configuration snapshot](#) command to save user settings over a reboot.

### Examples

```
-> user lockout-threshold 3
-> user lockout-threshold 0
```

### Release History

Release 5.1; command was introduced.

## Related Commands

<a href="#">user lockout-window</a>	Configures a window of time during which failed login attempts are counted to determine if the number of failed attempts has exceeded the number of allowed attempts.
<a href="#">user lockout-duration</a>	Configures the length of time a user account remains locked out of the switch.
<a href="#">user lockout unlock</a>	Manually locks or unlocks a user account on the switch.
<a href="#">show user lockout-setting</a>	Displays the global user lockout settings for the switch.

## MIB Objects

```
aaaAsaConfig  
  aaaAsaLockoutThreshold
```

---



## user lockout-duration

Configures the length of time a user account remains locked out of the switch. At the end of this time period, the user account is automatically unlocked.

**user lockout-duration** *minutes*

---

### Syntax Definitions

*minutes* The number of minutes the user account remains locked out. The range is 0–99999.

### Defaults

parameter	default
<i>minutes</i>	0

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- This command is only available to the **admin** user because the **admin** user account is the only account protected from any type of lockout attempt.
- Note that if the lockout duration time period is set to zero (the default), then locked user accounts are never automatically unlocked.
- Only the **admin** user or a user with read/write AAA privileges can unlock a locked user account when the lockout duration time is set to zero. An account is unlocked by changing the user password or with the **user lockout unlock** command.
- Do not configure a lockout duration time period that is less than the amount of time configured for the observation window.
- The lockout duration time period is a global lockout setting that is applied to all passwords configured on the switch.
- Lockout settings are saved *automatically*; that is, these settings do not require the **write memory** or **configuration snapshot** command to save user settings over a reboot.

### Examples

```
-> user lockout-duration 60
-> user lockout-duration 0
```

### Release History

Release 5.1; command was introduced.

## Related Commands

<a href="#">user lockout-window</a>	Configures a window of time during which failed login attempts are counted to determine if the number of failed attempts has exceeded the number of allowed attempts,
<a href="#">user lockout-threshold</a>	Configures the number of failed password attempts allowed before the user account is locked out of the switch.
<a href="#">user lockout unlock</a>	Manually locks or unlocks a user account on the switch.
<a href="#">show user lockout-setting</a>	Displays the global user lockout settings for the switch.

## MIB Objects

```
aaaAsaConfig  
  aaaAsaLockoutDuration
```

---

## user lockout unlock

Manually locks or unlocks a user account on the switch.

```
user username {lockout | unlock}
```

---

### Syntax Definitions

<i>username</i>	The username of the account to lock or unlock.
<b>lockout</b>	Locks the user account out of the switch.
<b>unlock</b>	Unlocks a locked user account.

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- This command is only available to the **admin** user or a user with read/write AAA privileges.
- The **admin** user account is protected from any type of lockout attempt.
- User lockouts and unlocks are saved *automatically*.

### Examples

```
-> user j_smith lockout  
-> user j_smith unlock
```

### Release History

Release 5.1; command was introduced.

### Related Commands

<a href="#">show user</a>	Displays information about all users or a particular user configured in the local user database on the switch.
<a href="#">show user lockout-setting</a>	Displays the global user lockout settings for the switch.

### MIB Objects

```
aaaUserTable  
    aaauPasswordLockoutEnable
```

---

## show aaa server

Displays information about a particular AAA server or AAA servers.

**show aaa server** [*server\_name*]

---

### Syntax Definitions

*server\_name*                      The server name, which is defined through the **aaa radius-server**, **aaa tacacs+-server**, or **aaa ldap-server** commands.

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

If a server name is not included with this command, information for all of the servers is displayed.

### Examples

```
-> show aaa server
Server name = ldap2
  Server type           = LDAP,
  Host name 1          = ors40535,
  Retry number         = 3,
  Timeout (sec)       = 2,
  Port                 = 389,
  Domain name         = manager,
  Search base         = c=us,
  VRF                  = default
Server name = rad1
  Server type           = RADIUS,
  IP Address 1         = 10.10.2.1,
  IP Address 2         = 10.10.3.5,
  Retry number         = 3,
  Timeout (sec)       = 2,
  Authentication port = 1645,
  Accounting port     = 1646
  SSL enable           = TRUE,
  VRF                  = default
Health Check          = ENABLED,
Primary Server:
  Status               = DOWN,
  Uptime               = -,
  Downtime             = -,
  Down to UP transitions = 0,
Backup Server :
  Status               = DOWN,
  Uptime               = -,
  Downtime             = -,
```

```

        Down to UP transitions = 0
Server name = Tpub1
  Server type           = TACACS+,
  IP Address 1         = 10.10.5.1,
  Port                 = 3,
  Timeout (sec)       = 2,
  Encryption enabled   = no
  VRF                  = default

-> show aaa server rad1
Server name = rad1
  Server type           = RADIUS,
  IP Address 1         = 10.10.2.1,
  IP Address 2         = 10.10.3.5,
  Retry number         = 3,
  Timeout (sec)       = 2,
  Authentication port  = 1645,
  Accounting port      = 1646,
  SSL enable           = TRUE,
  VRF                  = default
Health Check           = ENABLED,
Primary Server:
  Status               = DOWN,
  Uptime               = -,
  Downtime             = -,
  Down to UP transitions = 0,
Backup Server :
  Status               = DOWN,
  Uptime               = -,
  Downtime             = -,
  Down to UP transitions = 0

-> show aaa server ldap2
Server name = ldap2
  Server type           = LDAP,
  Host name 1           = ors40535,
  Retry number         = 3,
  Timeout (in sec)     = 2,
  Port                 = 389,
  Domain name          = manager,
  Search base           = c=us,
  VRF                  = default

```

### ***output definitions***

<b>Server name</b>	The name of the server. A RADIUS, TACACS+ or LDAP server name is defined through the <b>aaa radius-server</b> , <b>aaa tacacs+-server</b> , and <b>aaa ldap-server</b> commands respectively.
<b>Server type</b>	The type of server (LDAP, TACACS+, or RADIUS).
<b>Host name</b>	The name of the primary LDAP, TACACS+, or RADIUS host.
<b>IP address</b>	The IP address of the server.
<b>Retry number</b>	The number of retries the switch makes to authenticate a user before trying the backup server.
<b>Timeout</b>	The timeout for server replies to authentication requests.
<b>Port</b>	The port number for the primary LDAP or TACACS+ server.

*output definitions*


---

<b>Encryption enabled</b>	The status of the encryption.
<b>Domain name</b>	The super-user or administrative distinguished name in the format recognized by the LDAP-enabled directory servers.
<b>Search base</b>	The search base recognized by the LDAP-enabled directory servers.
<b>Authentication port</b>	The UDP destination port for authentication requests.
<b>Accounting port</b>	The UDP destination port for accounting requests.
<b>SSL enable</b>	The SSL enable field is displayed for the RADIUS server only when the SSL is enabled for RADIUS server.
<b>VRF</b>	Name of the VRF associated with the server.
<b>Health Check</b>	Whether a health check session is enabled or disabled for the RADIUS server.
<b>Primary Server</b>	The operational status, up time, down time, and the number of transitions from down to up for the primary RADIUS server. This field displays information gathered when RADIUS health check is enabled for the server.
<b>Backup Server</b>	The operational status, up time, down time, and the number of transitions from down to up for the back-up RADIUS server. This field displays information gathered when RADIUS health check is enabled for the server.

---

**Release History**

Release 5.1; command was introduced.

**Related Commands**

<b>aaa radius-server</b>	Configures or modifies a RADIUS server for Authenticated Switch Access.
<b>aaa ldap-server</b>	Configures or modifies an LDAP server for Authenticated Switch Access.
<b>aaa tacacs+-server</b>	Configures or modifies an TACACS+ server for Authenticated Switch Access.
<b>aaa radius-server health-check</b>	Defines the RADIUS server health check configuration for a specific RADIUS server.
<b>show aaa radius health-check-config</b>	Displays the RADIUS server health check configuration.

**MIB Objects**

aaaServerTable

- aaasName
- aaasHostName
- aaasIpAddress
- aaasIpv6Address
- aaasHostName2
- aaasIpAddress2
- aaasIpv6Address2
- aaasRadKey
- aaasRetries
- aaasTimeout
- aaasRadAuthPort
- aaasRadAcctPort
- aaasProtocol
- aaasTacacsKey
- aaasTacacsPort
- aaasLdapPort
- aaasLdapDn
- aaasLdapPasswd
- aaasLdapSearchBase
- aaasLdapServType
- aaasLdapEnableSsl
- aaasRadEnableSsl
- aaasVRFName
- aaasRadHealthCheck

---

## show aaa server statistics

Displays the authorization, authentication, accounting, and BYOD statistics for the specified RADIUS server.

**show aaa server** *server\_name* **statistics**

---

### Syntax Definitions

*server\_name*                                      The name of the RADIUS server for which statistics will be displayed.

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- This command applies only to RADIUS servers known to the switch (servers are identified through the [aaa radius-server](#) command).
- All statistics displayed for authorization, authentication, and accounting are displayed as an aggregate of the primary and back-up RADIUS server; separate statistics are not displayed for the primary server and the back-up server.
- Use the [aaa radius-server clear-statistics](#) command to reset all the statistics counters to zero.

### Examples

```
-> show aaa server rad2 statistics
Statistics for rad2:
Authorization:
  Total No of Access-Request      : 2
  Total No of Access-Response    : 2
  Total No of Timedout Request   : 0
  Min RTT of Access Req/Res     usec: 938
  Avg RTT of Access Req/Res     usec: 1087
  Max RTT of Access Req/Res     usec: 1237
  Last RTT of Access Req/Res    usec: 1237
Authentication:
  Total No of Access-Request      : 1
  Total No of Access-Response    : 1
  Total No of Access-Accept      : 1
  Total No of Access-Reject      : 0
  Total No of Access-Challenge   : 0
  Total No of Timedout Request   : 0
  Min RTT of Access Req/Res     usec: 1176
  Avg RTT of Access Req/Res     usec: 1176
  Max RTT of Access Req/Res     usec: 1176
  Last RTT of Access Req/Res    usec: 1176
Accounting:
  Total No of Acct-Request       : 2
```



```

Total No of Acct-Response      : 2
Total No of Timedout Request   : 0
Min RTT of Acct Req/Res       usec: 76657
Avg RTT of Acct Req/Res       usec: 80182
Max RTT of Acct Req/Res       usec: 83708
Last RTT of Acct Req/Res      usec: 83708
BYOD:
Total No of COA Request        : 0
Total No of COA ACK Sent       : 0
Total No of COA NACK Sent      : 0
Total No of DM Request         : 0
Total No of DM ACK Sent        : 0
Total No of DM NACK Sent       : 0

Time of last statistics clear   : Thu Feb  1 18:09:06 2018

-> show aaa server auth-serv1 statistics
ERROR: Statistics are supported only for RADIUS servers

```

### *output definitions*

---

<b>Authorization</b>	The statistics information displayed for authorization.
<b>Total No of Access-Request</b>	The total number of authorization access requests sent to the server.
<b>Total No of Access-Response</b>	The total number of authorization access responses received from the server.
<b>Total No of Timedout Request</b>	The total number of authorization access requests that timed out.
<b>Min RTT of Access Req/Res</b>	The minimum RTT of authorization access requests or responses for the last seven days.
<b>Avg RTT of Access Req/Res</b>	The average RTT of authorization access requests or responses for the last seven days.
<b>Max RTT of Access Req/Res</b>	The maximum RTT of authorization access requests or responses for the last seven days.
<b>Last RTT of Access Req/Res</b>	The last RTT of authorization access requests or responses.
<b>Authentication</b>	The statistics information displayed for authentication.
<b>Total No of Access-Request</b>	The total number of authentication access requests sent to the server.
<b>Total No of Access-Response</b>	The total number of authentication access responses received from the server.
<b>Total No of Access-Accept</b>	The total number of authentication access accepts received from the server.
<b>Total No of Access-Reject</b>	The total number of authentication access rejects received from the server.
<b>Total No of Access-Challenge</b>	The total number of authentication access challenges received from the server.
<b>Total No of Timedout Request</b>	The total number of authentication access requests that timed out.
<b>Min RTT of Access Req/Res</b>	The minimum RTT of authentication access requests or responses for the last seven days.
<b>Avg RTT of Access Req/Res</b>	The average RTT of authentication access requests or responses for the last seven days.

*output definitions*


---

<b>Max RTT of Access Req/Res</b>	The maximum RTT of authentication access requests or responses for the last seven days.
<b>Last RTT of Access Req/Res</b>	The last RTT of authentication access requests or responses.
<b>Accounting</b>	The statistics information displayed for accounting.
<b>Total No of Acct -Request</b>	The total number of accounting access requests sent to the server.
<b>Total No of Acct -Response</b>	The total number of accounting access responses received from the server.
<b>Total No of Timedout Request</b>	The total number of accounting access requests that timed out.
<b>Min RTT of Acct Req/Res</b>	The minimum RTT of accounting access requests or responses for the last seven days.
<b>Avg RTT of Acct Req/Res</b>	The average RTT of accounting access requests or responses for the last seven days.
<b>Max RTT of Acct Req/Res</b>	The maximum RTT of accounting access requests or responses for the last seven days.
<b>Last RTT of Acct Req/Res</b>	Displays the last RTT of accounting access requests or responses.
<b>BYOD</b>	Displays the BYOD statistics.
<b>Total No of COA Request</b>	The total number of Change of Authorization (CoA) requests received from the server.
<b>Total No of COA ACK Sent</b>	The total number of CoA-ACKs sent to the server.
<b>Total No of COA NACK Sent</b>	The total number of CoA-NACKs sent to the server.
<b>Total No of DM Request</b>	The total number of disconnect request messages received from the server.
<b>Total No of DM ACK Sent</b>	Displays the total number of disconnect ACKs sent to the server.
<b>Total No of DM NACK Sent</b>	Displays the total number of disconnect NACKs sent to the server.
<b>Time of last statistics clear</b>	The date and time the AAA statistics were last cleared for the server.

---

**Release History**

Release 5.1; command introduced.

**Related Commands**

<b>aaa radius-server</b>	Configures or modifies a RADIUS server for Authenticated Switch Access.
<b>aaa radius-server health-check</b>	Enables or disables a RADIUS server health check.
<b>aaa radius-server clear-statistics</b>	Clears statistics collected for the specified RADIUS server.

**MIB Objects**

```
aaaAuthorServerStatsTable
  aaaAuthorStatsAccessReq
  aaaAuthorStatsAccessRes
  aaaAuthorStatsTimedOutReq
  aaaAuthorStatsCountRtt
  aaaAuthorStatsSumRtt
  aaaAuthorStatsMinRtt
  aaaAuthorStatsMaxRtt
  aaaAuthorStatsAvgRtt
  aaaAuthorStatsLastRtt

aaaAuthServerStatsTable
  aaaAuthStatsAccessReq
  aaaAuthStatsAccessRes
  aaaAuthStatsAccessAccept
  aaaAuthStatsAccessReject
  aaaAuthStatsAccessChal
  aaaAuthStatsTimedOutReq
  aaaAuthStatsCountRtt
  aaaAuthStatsSumRtt
  aaaAuthStatsMinRtt
  aaaAuthStatsMaxRtt
  aaaAuthStatsAvgRtt
  aaaAuthStatsLastRtt

aaaAcctServerStatsTable
  aaaAcctStatsAccessReq
  aaaAcctStatsAccessRes
  aaaAcctStatsTimedOutReq
  aaaAcctStatsCountRtt
  aaaAcctStatsSumRtt
  aaaAcctStatsMinRtt
  aaaAcctStatsMaxRtt
  aaaAcctStatsAvgRtt
  aaaAcctStatsLastRtt

aaaByodServerStatsTable
  aaaByodStatsCoaReq
  aaaByodStatsCoaAck
  aaaByodStatsCoaNack
  aaaByodStatsDmReq
  aaaByodStatsDmAck
  aaaByodStatsDmNack
```

---

## aaa radius-server clear-statistics

Clears the AAA statistics collected for the specified RADIUS server.

```
aaa radius-server server_name clear-statistics
```

---

### Syntax Definitions

<i>server_name</i>	The name of the RADIUS server on which the AAA statistics will be cleared.
--------------------	--

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

Use the [show aaa server statistics](#) command to display the statistics collected for the specified server.

### Examples

```
-> aaa radius-server rad1 clear-statistics  
-> aaa radius-server rad2 clear-statistics
```

### Release History

Release 5.1; command introduced.

### Related Commands

<a href="#">aaa radius-server</a>	Configures or modifies a RADIUS server for Authenticated Switch Access and device authentication.
<a href="#">aaa radius-server health-check</a>	Enables or disables a RADIUS server health check with the specified parameters.
<a href="#">show aaa server statistics</a>	Displays authorization, authentication, accounting, and BYOD statistics collected for a RADIUS server.

### MIB Objects

```
aaaServerTable  
  aaasHostName  
  aaasClearStats
```

---

## show aaa authentication

Displays information about the current authenticated switch session.

**show aaa authentication**

---

### Syntax Definitions

N/A

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

Use the **show aaa authentication** command to display authentication information about switch management services (Telnet, FTP, console port, Secure Shell, etc.).

### Examples

```
-> show aaa authentication
Service type = Default
  1st authentication server = RadiusServer
  2nd authentication server = local
Service type = Console
  1st authentication server = local
Service type = Telnet
  Authentication = Use Default,
  1st authentication server = RadiusServer
  2nd authentication server = local
Service type = FTP
  Authentication = Use Default,
  1st authentication server = RadiusServer
  2nd authentication server = local
Service type = Http
  Authentication = Use Default,
  1st authentication server = RadiusServer
  2nd authentication server = local
Service type = Snmp
  Authentication = Use Default,
  1st authentication server = RadiusServer
  2nd authentication server = local
Service type = Ssh
  Authentication = Use Default,
  1st authentication server = TacacsServer
  2nd authentication server = local
```

*output definitions*

---

<b>Authentication</b>	Displays <b>denied</b> if the management interface is disabled. Displays <b>Use Default</b> if the management interface is configured to use the default configuration.
<b>1st authentication server</b>	The first server to be polled for authentication information.
<b>2nd authentication server</b>	The next server to be polled for authentication information.

---

**Release History**

Release 5.1; command was introduced.

**Related Commands**

[aaa authentication](#) Configures the interface for Authenticated Switch Access and specifies the server(s) to be used.

**MIB Objects**

```
aaaAuthSatable
  aaatsName1
  aaatsName2
  aaatsName3
  aaatsName4
```

---

## show aaa device-authentication

Displays a list of RADIUS servers assigned to provide 802.1X, MAC, or Captive Portal authentication.

**show aaa device-authentication** [**802.1x** | **mac** | **captive-portal**]

---

### Syntax Definitions

<b>802.1x</b>	Displays the servers used for 802.1X authentication.
<b>mac</b>	Displays the servers used for MAC authentication.
<b>captive-portal</b>	Uses the servers used for Captive Portal authentication.

### Defaults

By default, all assigned servers are displayed.

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

Use the optional **802.1x**, **mac**, or **captive-portal** parameters to display the servers assigned to provide the specified type of authentication.

### Examples

```
-> show aaa device-authentication
Authentication type = mac
  Authentication Server:
    1st authentication server = cppm,
    2nd authentication server = rad1
    3rd authentication server = rad2,
    4th authentication server = rad3

Authentication type = 802.1x
  Authentication Server:
    1st authentication server = cppm,
    2nd authentication server = rad1

Authentication type = captive-portal
  Authentication Server:
    1st authentication server = cppm,
    2nd authentication server = rad1
```

### output definitions

---

<b>Authentication type</b>	The type of authentication the server is assigned to provide ( <b>802.1x</b> , <b>mac</b> , or <b>captive-portal</b> )
<b>1st authentication server</b>	The first server to be polled for authentication information. Any backup servers are also displayed on subsequent lines.

---

## Release History

Release 5.1; command introduced.

## Related Commands

### [aaa device-authentication](#)

Configures the RADIUS server to use for 802.1X or MAC authentication.

## MIB Objects

AaaAuthMACTable

aaaDaName1

aaaDaName2

aaaDaName3

aaaDaName4

---



## show aaa accounting

Displays information about accounting servers configured for authenticated switch access and device authentication sessions. Accounting servers keep track of network resources (time, packets, bytes, etc.) and user activity.

**show aaa accounting [802.1x | mac | captive-portal]**

---

### Syntax Definitions

<b>802.1x</b>	Displays the RADIUS or syslog server used to log accounting for 802.1X authenticated sessions.
<b>mac</b>	Displays the RADIUS or syslog server used to log accounting for MAC authenticated sessions.
<b>captive-portal</b>	Displays the RADIUS or syslog server to log accounting for Captive Portal authenticated sessions.

### Defaults

By default, the accounting server configuration is displayed for TACACS+ commands and management sessions (Telnet, FTP, console port, HTTP, or SNMP).

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- Use the **802.1x**, **mac**, or **captive-portal** parameters to display the accounting server configuration for a specific type of device authentication.
- If no parameters are entered with this command, the accounting server configuration for authentication sessions and TACACS+ commands is displayed.

### Examples

```
-> show aaa accounting mac
Accounting type = mac
  Accounting Server:
    1st Acct Server = rad1,
    2nd Acct Server = rad2

-> show aaa accounting 802.1x
Accounting type = 802.1x
  Syslog Acct Server:
    IP Address = 135.254.163.110,
    UDP port   = 514

-> show aaa accounting captive-portal
Accounting type = captive-portal
  Syslog Acct Server:
    IP Address = 135.254.163.110,
    UDP port   = 514
```

```
-> show aaa accounting
Session (telnet, ftp, ...)
  1st accounting server = rad1
Command accounting server
  1st accounting server = server1
```

## Release History

Release 5.1; command was introduced.

## Related Commands

<a href="#">aaa accounting session</a>	Configures an accounting server for authenticated switch access sessions.
<a href="#">aaa accounting command</a>	Enables or disables the TACACS+ server for command accounting
<a href="#">aaa accounting</a>	Configures RADIUS server accounting or local Switch Logging (syslog) accounting for device authentication sessions.

## MIB Objects

```
aaaAcctDatable
  aaacdInterface
  aaacdName1
  aaacdName2
  aaacdName3
  aaacdName4
  aaacdSyslogIPAddrType
  aaacdSyslogIPAddr
  aaacdSyslogUdpPort
  aaacdRowStatus
```

---

## show aaa config

Displays the AAA parameter configuration for 802.1X, MAC, and Captive Portal sessions.

```
show aaa {802.1x | mac | captive-portal} config
```

---

### Syntax Definitions

<b>802.1x</b>	Displays the parameter configuration for 802.1X authenticated sessions.
<b>mac</b>	Displays the parameter configuration for MAC authenticated sessions.
<b>captive-portal</b>	Displays the parameter configuration for Captive Portal authenticated sessions.

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

Use the **802.1x**, **mac**, or **captive-portal** parameters to display the parameter configuration for a specific type of device authentication.

### Examples

```
-> show aaa 802.1x config
Authentication type = 802.1x
  Re-Authentication Timeout:
    Status                = enable,
    Interval (sec)        = 3600,
    Trust Radius           = disable

  Accounting Interim:
    Interval (sec)        = 600,
    Trust Radius           = disable

-> show aaa mac config
Authentication type = mac
  Session Timeout:
    Status                = disable,
    Interval (sec)        = 43200,
    Trust Radius           = disable

  Inactivity Timeout:
    Status                = disable,
    Interval (sec)        = 600

  Accounting Interim:
    Interval (sec)        = 600,
    Trust Radius           = disable
```

```

-> show aaa captive-portal config
Authentication type = captive-portal
  Session Timeout:
    Status                = disable,
    Interval (sec)        = 43200,
    Trust Radius           = disable

  Inactivity Timeout:
    Status                = disable,
    Interval (sec)        = 600

  Accounting Interim:
    Interval (sec)        = 600,
    Trust Radius           = disable

```

### *output definitions*

---

<b>Authentication type</b>	The type of authentication ( <b>802.1x</b> , <b>mac</b> , or <b>captive-portal</b> ).
<b>Session Timeout</b>	The parameter values for the AAA session timeout parameter. Does not apply to 802.1X authentication. Configured through the <b>aaa session-timeout</b> command.
<b>Inactivity Logout</b>	The parameter values for the AAA inactivity logout parameter. Does not apply to 802.1X authentication. Configured through the <b>aaa inactivity-logout</b> command.
<b>Accounting Interim</b>	The parameter values for the AAA accounting interim parameter. Configured through the <b>aaa interim-interval</b> command.
<b>Re-authentication Timeout</b>	The parameter values for the AAA 802.1X re-authentication timeout parameter. Does not apply to MAC or Captive Portal authentication. Configured through the <b>aaa 802.1x re-authentication</b> command.

---

### **Release History**

Release 5.1; command introduced.

### **Related Commands**

<b>show aaa device-authentication</b>	Displays the device authentication server configuration.
<b>show aaa accounting</b>	Displays the accounting server configuration.
<b>show aaa profile</b>	Displays the AAA parameter profile configuration.

## MIB Objects

```
alaAaaAuthConfig
  alaAaa8021XReAuthStatus
  alaAaa8021XReAuthIntrvl
  alaAaa8021XReAuthTrstRadStatus
  alaAaa8021XIntrmIntrvl
  alaAaa8021XIntmIntvlTrstRadStus
  alaAaaMacIntrmIntrvl
  alaAaaMacIntmIntvlTrstRadStatus
  alaAaaMacSessTimeoutStatus
  alaAaaMacSessTimeoutIntrvl
  alaAaaMacSesTimeoutTrstRadStatus
  alaAaaMacInActLogoutStatus
  alaAaaMacInActLogoutIntrvl
  alaAaaCpIntrmIntrvl
  alaAaaCpIntmIntvlTrstRadStatus
  alaAaaCpSessTimeoutStatus
  alaAaaCpSessTimeoutIntrvl
  alaAaaCpSsTmotTrstRadStatus
  alaAaaCpInActLogoutStatus
  alaAaaCpInActLogoutIntrvl
```

---

## show aaa radius config

Displays the global AAA attribute values and MAC address format.

**show aaa radius config**

---

### Syntax Definitions

N/A

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

The MAC address format determines the delimiter character used between MAC address octets and whether or not characters are in uppercase or lowercase. This format is applied only when the RADIUS attribute value is set to a MAC address.

### Examples

```
-> show aaa radius config
RADIUS client attributes:
  NAS port id           = default,
  NAS identifier        = default
  NAS IP address        = default
  MAC format delimiter:
    Username            = none, UserNameCase = uppercase,
    Password            = none, PasswordCase = uppercase,
    calling station id  = none, ClgStaIdCase = uppercase,
    called station id   = none, CldStaIdCase = uppercase
Unp Profile Precedence = Filter-Id
```

#### *output definitions*

---

<b>NAS port id</b>	The RADIUS client NAS-Port attribute for authentication and accounting sessions.
<b>NAS identifier</b>	The RADIUS client NAS-Identifier attribute for authentication and accounting sessions.
<b>NAS IP address</b>	The RADIUS client NAS-IP address attribute for authentication and accounting sessions.
<b>MAC format delimiter</b>	The MAC address format used in the specified RADIUS client attributes.
<b>UNP Profile Precedence</b>	The UNP profile precedence: <b>Filter-ID</b> or <b>Tunnel-Private-Group-ID</b>

---

## Release History

Release 5.1; command introduced.

## Related Commands

<a href="#">show aaa device-authentication</a>	Displays the device authentication server configuration.
<a href="#">show aaa accounting</a>	Displays the accounting server configuration.
<a href="#">show aaa profile</a>	Displays the AAA parameter profile configuration.
<a href="#">aaa radius nas-ip-address</a>	Configure the RADIUS client NAS IP address attribute for the outgoing RADIUS packets.

## MIB Objects

```
alaAaaAuthConfig
  alaAaa8021XReAuthStatus
  alaAaa8021XReAuthIntrvl
  alaAaa8021XReAuthTrustRadStatus
  alaAaa8021XIntrmIntrvl
  alaAaa8021XIntmIntvlTrstRadStus
  alaAaaMacIntrmIntrvl
  alaAaaMacIntmIntvlTrstRadStatus
  alaAaaMacSessTimeoutStatus
  alaAaaMacSessTimeoutIntrvl
  alaAaaMacSesTimeoutTrstRadStatus
  alaAaaMacInActLogoutStatus
  alaAaaMacInActLogoutIntrvl
  alaAaaCpIntrmIntrvl
  alaAaaCpIntmIntvlTrstRadStatus
  alaAaaCpSessTimeoutStatus
  alaAaaCpSessTimeoutIntrvl
  alaAaaCpSsTmotTrstRadStatus
  alaAaaCpInActLogoutStatus
  alaAaaCpInActLogoutIntrvl
```

---

## show aaa radius health-check-config

Displays the RADIUS server health check configuration for each RADIUS server.

**show aaa radius health-check-config**

---

### Syntax Definitions

N/A

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

This command displays the health check configuration for all RADIUS servers defined on the switch.

### Examples

```
-> show aaa radius health-check-config
  Server      Health      Polling      Failover      Username
  Name        Check       Interval     Status
  -----+-----+-----+-----+-----
RAD1          DISABLED    60           DISABLED      alcatel
RAD2          ENABLED     90           ENABLED      alcatel
```

### *output definitions*

---

<b>Server Name</b>	The name of the RADIUS server.
<b>Health Check</b>	The operational status of the RADIUS health check feature for the server.
<b>Polling Interval</b>	The configured polling interval for the RADIUS server.
<b>Failover Status</b>	The status of the failover operation. When enabled, the re-authentication of users assigned to the authentication server down profile is triggered when the RADIUS server comes back up before the authentication server down timeout value expires).
<b>Username</b>	The configured user name for RADIUS server polling.

---

### Release History

Release 5.1; command introduced.



## Related Commands

**aaa radius-server health-check**

Configures RADIUS health check for the specified RADIUS server.

## MIB Objects

```
aaaServerTable
  aaasHostName
  aaasRadHealthCheck
  aaasRadPollingInterval
  aaasRadFailover
  aaasRadUsername
```

---

## show aaa profile

Displays the AAA profile configuration.

**show aaa profile** [*profile\_name*]

---

### Syntax Definitions

*profile\_name*                      The name of an existing AAA profile.

### Defaults

By default, all profiles are displayed.

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

Enter an AAA profile name with this command to display information about a specific profile.

### Examples

```
-> show aaa profile ap2
```

```
AAA profile name = ap2
Authentication type = mac
  Authentication Server:
    1st Auth Server   = rad1,
    2nd Auth Server   = rad2

  Accounting Server:
    1st Accnt Server  = rad1,
    2nd Accnt Server  = rad2

  Session Timeout:
    Status             = disable,
    Interval (sec)     = 43200,
    Trust Radius       = disable

  Inactivity Timeout:
    Status             = disable,
    Interval (sec)     = 600

  Accounting Interim:
    Interval (sec)     = 600,
    Trust Radius       = disable

Authentication type = 802.1x
  Re-Authentication Timeout:
    Status             = disable,
    Interval (sec)     = 3600,
    Trust Radius       = disable
```

```

Accounting Interim:
  Interval (sec)      = 600,
  Trust Radius       = disable

Authentication type = captive-portal
Session Timeout:
  Status              = disable,
  Interval (sec)     = 43200,
  Trust Radius       = disable

Inactivity Timeout:
  Status              = disable,
  Interval (sec)     = 600

Accounting Interim:
  Interval (sec)     = 600,
  Trust Radius       = disable

RADIUS client attributes:
  NAS port id        = default,
  NAS identifier     = default,
  NAS ip address     = default,
  MAC format delimiter:
  Username           = none, UserNameCase = uppercase,
  Password           = none, PasswordCase = uppercase,
  calling station id = none, ClgStaIdCase = uppercase,
  called station id  = none, CldStaIdCase = uppercase

```

### *output definitions*

<b>Authentication type</b>	The type of authentication ( <b>802.1x</b> , <b>mac</b> , or <b>captive-portal</b> ) configured through the profile.
<b>Session Timeout</b>	The profile values defined for the AAA session timeout parameter. Does not apply to 802.1X authentication.
<b>Inactivity Logout</b>	The profile values defined for the AAA inactivity logout parameter. Does not apply to 802.1X authentication.
<b>Accounting Interim</b>	The profile values defined for the AAA accounting interim parameter.
<b>Re-authentication Timeout</b>	The profile values defined for the AAA re-authentication timeout parameter. Does not apply to MAC or Captive Portal authentication.
<b>RADIUS client attributes</b>	The profile values defined for the NAS-Port, NAS-Port-Identifier and the NAS-IP address attributes and the format to use when the specified attribute value is set to a MAC address.

## Release History

Release 5.1; command introduced.

## Related Commands

[aaa profile](#) Configures an AAA profile.

**MIB Objects**

```
alaAaaProfTable
  alaAaaProfOnexReAuthSts
  alaAaaProfOnexReAuthIntrvl
  alaAaaProfOnexReAuthTrstRadSts
  alaAaaProfOnexIntrmIntrvl
  alaAaaProfOnexIntmItvlTstRadSts
  alaAaaProfMacIntrmIntrvl
  alaAaaProfMacIntmItvlTrstRadSts
  alaAaaProfMacSessTimeoutSts
  alaAaaProfMacSessTimeoutIntrvl
  alaAaaProfMacSessTmoutTrstRadSts
  alaAaaProfMacInActLogoutSts
  alaAaaProfMacInActLogoutIntrvl
  alaAaaProfCpSessTimeoutSts
  alaAaaProfCpSessTimeoutIntrvl
  alaAaaProfCpSessTmotTrstRadSts
  alaAaaProfCpInActLogoutSts
  alaAaaProfCpInActLogoutIntrvl
  alaAaaProfCpIntrmIntrvl
  alaAaaProfCpItrmIntlTrstRadSts
  alaAaaProfRadNasPortId
  alaAaaProfRadNasIdentifier
  alaAaaProfRadUserNameDelim
  alaAaaProfRadPasswrdDelim
  alaAaaProfRadCallnStnIdDelim
  alaAaaProfRadCalldStnIdDelim
  alaAaaProfRadUserNameCase
  alaAaaProfRadPasswordCase
  alaAaaProfRadCallnStnIdCase
  alaAaaProfRadCalldStnIdCase
```

---

## show aaa session console config

Displays the current administrative state of the session console configuration.

**show aaa session console config**

---

### Syntax Definitions

N/A

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

N/A

### Examples

```
-> show aaa session console config
Console access admin-state: disabled
```

### Release History

Release 5.1; command introduced.

### Related Commands

<a href="#">aaa session console</a>	Enables or disables switch access through the console port of the switch
-------------------------------------	--

### MIB Objects

N/A

---

## show user

Displays information about all users or a particular user configured in the local user database on the switch.

**show user** [*username*]

---

### Syntax Definitions

*username*                                      The name of the user. Used for logging into the switch.

### Defaults

By default, all users are displayed if the *username* parameter is not specified with this command.

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

Use this command to display information about read/write access and partitioned management access (domains and families).

### Examples

```
-> show user
User name = Customer1,
  Password expiration      = 10/27/2010 11:01 (30 days from now),
  Password allow to be modified date   = 9/30/2010 10:59 (3 days from now),
  Account lockout         = Yes (Automatically unlocked after 19 minute(s)from now),
  Password bad attempts   = 3,
  Read Only for domains   = None,
  Read/Write for domains  = Admin System Physical Layer2 Services policy Security ,
  Read/Write for families = ip rip ospf bgp vrrp ip-routing ipx ipmr ipms ,
  Snmp allowed            = YES,
  Snmp authentication     = SHA,
  Snmp encryption        = DES
User name = admin,
  Password expiration      = 10/27/2010 11:01 (30 days from now),
  Password allow to be modified date   = 9/30/2010 10:59 (3 days from now),
  Account lockout         = None,
  Password bad attempts   = 0,
  Read Only for domains   = None,
  Read/Write for domains  = All ,
  Snmp allowed            = NO
```

*output definitions*

User name	The user name for this account.
Password expiration	The date and time on which the password will expire. This field only displays if the password expiration is configured specifically for a user, or a default password expiration is configured globally on the switch through the <b>user password-expiration</b> command. (Note that the date/time are based on the switch's default system date/time or the system date/time configured through the <b>system date</b> and <b>system time</b> commands.)
Password allow to be modified date	The earliest date and time on which the user may change the password. Configured through the <b>user password-min-age</b> command.
Account lockout	Indicates if the user account is locked out ( <b>Yes</b> or <b>No</b> ) and how many minutes remain until the user account is automatically unlocked. If no remaining time is displayed, the <b>admin</b> user or a user with admin privileges must manually unlock the account. Configured through the <b>user lockout-duration</b> and <b>user lockout unlock</b> commands.
Password bad attempts	The number of failed password login attempts for this user account.
<b>Read Only for domains</b>	The command domains available with the user's read-only access. See the table on the next page for a listing of valid domains.
<b>Read/Write for domains</b>	The command domains available with the user's read-write access. See the table on the next page for a listing of valid domains.
<b>Read Only for families</b>	The command families available with the user's read-only access. See the table on the next page for a listing of valid families.
<b>Read/Write for families</b>	The command families available with the user's read-write access. See the table on the next page for a listing of valid families.
Snmp allowed	Indicates whether or not the user is authorized to use SNMP ( <b>YES</b> or <b>NO</b> ). SNMP is allowed for the user account when SNMP authentication is specified for the account.
Snmp authentication	The level of SNMP authentication, if any, configured for the user. This field only displays if the user is authorized to use SNMP.
Snmp encryption	The level of SNMP encryption, if any, configured for the user. This field only displays if the user is authorized to use SNMP.

Possible values for command domains and families are listed here:

<b>Domain</b>	<b>Corresponding Families</b>
domain-admin	file telnet dshell debug
domain-system	system aip snmp rmon webmgt config
domain-physical	chassis module interface pmm health
domain-network	ip rip ospf bgp vrrp ip-routing ipx ipmr ipms
domain-layer2	vlan bridge stp 802.1q linkagg ip-helper
domain-service	dns
domain-policy	qos policy slb
domain-security	session avlan aaa

## Release History

Release 5.1; command was introduced.

## Related Commands

<a href="#">user</a>	Configures user entries in the local user database.
<a href="#">show user password-policy</a>	Displays the global password policy configuration for the switch.
<a href="#">show user lockout-setting</a>	Displays the global user lockout settings for the switch.

## MIB Objects

```
aaaUserTable
  aaauUserName
  aaauPasswordExpirationDate
  aaauPasswordExpirationInMinute
  aaauPasswordAllowModifyDate
  aaauPasswordLockoutEnable
  aaauBadAttempts
  aaauReadRight1
  aaauReadRight2
  aaauWriteRight1
  aaauWriteRight2
  aaauSnmpLevel
  aaauSnmpAuthkey
```

---



## show user password-policy

Displays the global password settings configured for the switch.

**show user password-policy**

---

### Syntax Definitions

N/A

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

The password policy contains parameter values that define configuration requirements for all passwords that are created on the switch. Use this command to display the current parameter values for the password policy.

### Examples

```
-> show user password-policy
Password Policy:
Contain username flag: Enable
Minimum number of English uppercase characters: 6
Minimum number of English lowercase characters: 4
Minimum number of base-10 digit: 2
Minimum number of non-alphanumeric: 3
Minimum size: 8
Password history: 4
Password minimum age: 20 (days)
Password expiration: 40 (days)
```

#### *output definitions*

<b>Contain username flag</b>	Indicates if the username is included with the password check ( <b>Enable</b> or <b>Disable</b> ). Configured through the <b>user password-policy cannot-contain-username</b> command.
<b>Minimum number of English uppercase characters</b>	The minimum number of uppercase characters required in a password. Configured through the <b>user password-policy min-uppercase</b> command.
<b>Minimum number of English lowercase characters</b>	The minimum number of lowercase characters required in a password. Configured through the <b>user password-policy min-lowercase</b> .
<b>Minimum number of base-10 digit</b>	The minimum number of digits required in a password. Configured through the <b>user password-policy min-digit</b> command.

*output definitions*


---

<b>Minimum number of non-alphanumeric</b>	The minimum number of non-alphanumeric characters required in a password. Configured through the <b>user password-policy min-nonalpha</b> command.
<b>Minimum size</b>	The minimum number of characters required for the password size. Configured through the <b>user password-size min</b> command.
<b>Password history</b>	The maximum number of old passwords retained in the password history. Configured through the <b>user password-history</b> command.
<b>Password minimum age</b>	The number of days a password is protected from any modification. Configured through the <b>user password-min-age</b> command.
<b>Password expiration</b>	The default expiration date applied to all passwords. Configured through the <b>user password-expiration</b> command.

---

**Release History**

Release 5.1; command was introduced.

**Related Commands**

**show user password-policy** Displays the expiration date for passwords configured for user accounts stored on the switch.

**MIB Objects**

```

aaaAsaConfig
  aaaAsaPasswordContainUserName
  aaaAsaPasswordMinUpperCase
  aaaAsaPasswordMinLowerCase
  aaaAsaPasswordMinDigit
  aaaAsaPasswordMinNonAlpha
  aaaAsaPasswordHistory
  aaaAsaPasswordMinAge
  aaaAsaPasswordSizeMin
  aaaAsaDefaultPasswordExpirationInDays

```

---

## show user lockout-setting

Displays the global user lockout settings for the switch.

**show user lockout-setting**

---

### Syntax Definitions

N/A

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

The global lockout settings include parameter values that determine the length of a user observation window, the amount of time a locked user remains locked, and the number of failed password login attempts allowed.

### Examples

```
-> show user lockout-setting
Lockout Setting:
Observation window: 30 (minutes)
Duration: 200 (minutes)
Threshold: 20
```

#### *output definitions*

---

<b>Observation window</b>	The amount of time, in minutes, during which the number of failed password login attempts are counted. Configured through the <b>user lockout-window</b> command.
<b>Duration</b>	The amount of time, in minutes, that a locked user account remains locked out of the switch. Configured through the <b>user lockout-duration</b> command.
<b>Threshold</b>	The maximum number of failed password login attempts allowed before the user is locked out of the switch. Configured through the <b>user lockout-threshold</b> command.

---

### Release History

Release 5.1; command was introduced.

## Related Commands

[user lockout unlock](#)

Manually locks or unlocks a user account on the switch.

[show user](#)

Displays information about all users or a particular user configured in the local user database on the switch.

## MIB Objects

aaaAsaConfig

aaaAsaLockoutWindow

aaaAsaLockoutDuration

aaaAsaLockoutThreshold

---

## show aaa priv hexa

Displays hexadecimal values for command domains/families. Useful for determining how to express command families in hexadecimal; hexadecimal values are used in configuring user privileges in attributes on an external LDAP or RADIUS authentication server.

**show aaa priv hexa** [*domain or family*]

---

### Syntax Definitions

*domain or family*

The CLI command domain or particular command family for which you want to display hexadecimal values. See table in Usage Guidelines.

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- Valid values for the family parameter are listed in the Corresponding Families column of the following table:

Domain	Corresponding Families
<b>domain-admin</b>	<b>file telnet dshell debug</b>
<b>domain-system</b>	<b>system aip snmp rmon webmgt config</b>
<b>domain-physical</b>	<b>chassis module interface pmm health</b>
<b>domain-network</b>	<b>ip rip ospf bgp vrrp ip-routing ipx ipmr ipms</b>
<b>domain-layer2</b>	<b>vlan bridge stp 802.1q linkagg ip-helper</b>
<b>domain-service</b>	<b>dns</b>
<b>domain-policy</b>	<b>qos policy slb</b>
<b>domain-security</b>	<b>session avlan aaa</b>

- Note that some command families may not be supported depending on the hardware platform you are running.
- If you do not specify a command family, hexadecimal values for all commands sets will display.

## Examples

```

-> show aaa priv hexa
file           = 0x00000001 0x00000000,
telnet        = 0x00000008 0x00000000,
dshell        = 0x00000020 0x00000000,
debug         = 0x00000040 0x00000000,
domain-admin  = 0x00000069 0x00000000,

system        = 0x00000080 0x00000000,
aip           = 0x00000100 0x00000000,
snmp          = 0x00000200 0x00000000,
rmon          = 0x00000400 0x00000000,
webmgmt       = 0x00000800 0x00000000,
config        = 0x00001000 0x00000000,
domain-system = 0x00001F80 0x00000000,

chassis       = 0x00002000 0x00000000,
module        = 0x00004000 0x00000000,
interface     = 0x00008000 0x00000000,
pmm           = 0x00010000 0x00000000,
health        = 0x00040000 0x00000000,
domain-physical = 0x0005E000 0x00000000,

ip            = 0x00080000 0x00000000,
rip           = 0x00100000 0x00000000,
ospf          = 0x00200000 0x00000000,
bgp           = 0x00400000 0x00000000,
vrrp          = 0x00800000 0x00000000,
ip-routing    = 0x01000000 0x00000000,
ipx           = 0x02000000 0x00000000,
ipmr          = 0x04000000 0x00000000,
ipms          = 0x08000000 0x00000000,
domain-network = 0x0FF80000 0x00000000,

vlan          = 0x10000000 0x00000000,
bridge        = 0x20000000 0x00000000,
stp           = 0x40000000 0x00000000,
802.1q        = 0x80000000 0x00000000,
linkagg       = 0x00000000 0x00000001,
ip-helper     = 0x00000000 0x00000002,
domain-layer2 = 0xF0000000 0x00000003,

dns           = 0x00000000 0x00000010,
domain-service = 0x00000000 0x00000010,

qos           = 0x00000000 0x00000020,
policy        = 0x00000000 0x00000040,
slb           = 0x00000000 0x00000080,
domain-policy = 0x00000000 0x000000E0,

session       = 0x00000000 0x00000100,
avlan         = 0x00000000 0x00000400,
aaa           = 0x00000000 0x00000800,
domain-security = 0x00000000 0x00000D00

-> show aaa priv hexa rip
0x00100000 0x00000000

```

## Release History

Release 5.1; command was introduced.

## Related Commands

[user](#)

Configures or modifies user entries in the local user database.

## MIB Objects

N/A

---

## aaa switch-access ip-lockout-threshold

Configures the threshold value for failed login attempts from an IP address after which the IP address will be banned from switch access.

**aaa switch-access ip-lockout-threshold** *number*

---

### Syntax Definitions

*number* Set the threshold value for login attempts in the range 0 –999.

### Defaults

parameter	default
<i>number</i>	6

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- The command is applicable only if ASA enhanced mode is enabled.
- Set the IP threshold value to '0' to disable the IP lockout thresholds.
- IP address is permanently blocked/banned if the number of authentication failures from a particular IP reaches IP lockout threshold limit within two times of the user lockout window.
- Only the switch access will be restricted from the banned IP address. Any IP packet (with monitored port number) destined to a switch IP interfaces will be discarded. IP packets normally bridged/routed by the switch will not be discarded.
- A maximum of 128 IP addresses can be added to the banned list. When the maximum limit has reached, oldest entry from the list is removed to accommodate the new entries.
- User lockout window ([user lockout-window](#)) is applicable for IP lockout threshold as well.
- IP lockout threshold shall share the same window as user lockout window, and by default, IP lockout threshold shall be two times that of user lockout window. Since user lockout is giving more priority, the IP lockout threshold must be greater than the user lockout threshold value.
- The IP address will remain blocked until it is released using the command [aaa switch-access banned-ip release](#).

### Example

```
-> aaa switch-access ip-lockout-threshold 2
```

### Release History

Release 5.1; command was introduced.



## Related Commands

**show aaa switch-access ip-lockout-threshold**

Displays the lockout threshold configured for the remote IP addresses.

## MIB Objects

aaaAsaConfig

aaaAsaAccessIpLockoutThreshold

---

## aaa switch-access banned-ip release

Releases the banned IP addresses that are blocked due to failed login attempts.

```
aaa switch-access banned-ip {all | ip_address} release
```

---

### Syntax Definitions

<b>all</b>	Release all banned IP addresses from the banned list.
<i>ip_address</i>	Release a specific IP address from the banned list.

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

The IP addresses are banned if the failed login count reaches IP lockout threshold limit.

### Example

```
-> aaa switch-access banned-ip all release  
-> aaa switch-access banned-ip 100.2.45.56 release
```

### Release History

Release 5.1; command was introduced.

### Related Commands

<a href="#">show aaa switch-access banned-ip</a>	Displays the list of banned ip addresses.
--	---

### MIB Objects

```
aaaSwitchAccessBannedIpTable  
  aaaSwitchAccessBannedIpAddress  
  aaaSwitchAccessBannedIpRowStatus
```

---

## aaa switch-access priv-mask

Configure the functional privileges mask for the switch access based on the access type on top of the user privilege.

```
aaa switch-access priv-mask {console | telnet | ssh | http | https} {read-only | read-write} [families... | domains...] all | none | all-except [families...]
```

---

### Syntax Definitions

<b>read-only</b>	Specifies that the user will have read-only access to the switch through a specific access type.
<b>read-write</b>	Specifies that the user will have read-write access to the switch through a specific access type.
<i>families</i>	Determines the command families available to the user on the switch for a specific access type. Each command family should be separated by a space. Command families are subsets of domains. See <i>Usage Guidelines</i> for more details.
<i>domains</i>	Determines the command domains available to the user on the switch for a specific access type. Each domain should be separated by a space. See the <i>Usage Guidelines</i> for more details.
<b>all</b>	Specifies that all command families and domains are available to the user for a specific access type.
<b>none</b>	Specifies that no command families or domains are available to the user for a specific access type.
<b>all-except</b>	Specifies that functional privileges for families followed by 'all-except' are disabled for a specific access type.

### Defaults

By default, the access types are enabled with read-write privileges for all the families.

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- The command is applicable only when ASA enhanced mode is enabled.
- The access privileges for the SSH, TELNET, Console, HTTP, HTTPS can be defined.
- Possible values for domains and families are listed in the table here:

Domain	Corresponding Families
domain-admin	file telnet debug
domain-system	system aip snmp rmon webmgt config
domain-physical	chassis module interface pmm health

domain-network	ip rip ospf bgp vrrp ip-routing ipmr ipms
domain-layer2	vlan bridge stp 802.1q linkagg ip-helper
domain-service	dns
domain-policy	qos policy slb
domain-security	session avlan aaa
domain-mpls	mpls
domain-datacenter	fips, auto-fabric
domain-afn	sip-snooping, dpi, app-mon

### Example

```
-> aaa switch-access priv-mask ssh read-only webmgt vrrp vrf vlan uddl
-> aaa switch-access priv-mask telnet read-write tftp-client telnet system stp ssh
-> aaa switch-access priv-mask ssh read-only all-except vlan
-> aaa switch-access priv-mask telnet read-write all-except ip
```

If privileges for specific families need to be applied, then remove the existing privilege using the **no** command, and re-apply the required family privilege.

```
-> no aaa switch-access priv-mask telnet read-write all
-> aaa switch-access priv-mask telnet read-write vlan aaa
```

### Release History

Release 5.1; command was introduced.

### Related Commands

[show aaa switch-access priv-mask](#) Displays the privilege details for the access types.

### MIB Objects

```
aaaSwitchAccessPrivMaskTable
  aaaSwitchAccessType
  aaaSwitchAccessReadRight1
  aaaSwitchAccessReadRight2
  aaaSwitchAccessReadRight3
  aaaSwitchAccessReadRight4
  aaaSwitchAccessWriteRight1
  aaaSwitchAccessWriteRight2
  aaaSwitchAccessWriteRight3
  aaaSwitchAccessWriteRight4
```

## aaa switch-access management-stations admin-state

Enables or disables the IP management station feature in a switch.

```
aaa switch-access management-stations admin-state {enable | disable}
```

---

### Syntax Definitions

<b>enable</b>	Enables the IP management station feature in the switch.
<b>disable</b>	Disables the IP management station feature in the switch.

### Defaults

The IP management station feature is disabled by default.

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- The command is applicable only when ASA enhanced mode is enabled.
- When the IP management station is disabled, switch access from any IP address shall be allowed. If there is a login failure (based on the **ip-lockout threshold** value), the IP address will be banned/ blocked and added to the banned IP address list.
- When the IP management station is enabled, the switch access will be allowed only from those IPs configured in the management station list and only if those are not in banned list.
- It is recommended to enable this command from console since this may terminate the existing session, if enabled through telnet or SSH.

### Example

```
-> aaa switch-access management stations admin-state enable  
-> aaa switch-access management stations admin-state disable
```

### Release History

Release 5.1.R2; command introduced.

## show aaa switch-access ip-lockout-threshold

Displays the IP lockout threshold value.

```
show aaa switch-access ip-lockout-threshold
```

---

### Syntax Definitions

N/A

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

N/A

### Example

```
-> show aaa switch-access ip-lockout-threshold  
ip Lockout Threshold = 6
```

### *output definitions*

---

<b>IP lockout threshold</b>	The IP lockout threshold value.
-----------------------------	---------------------------------

---

### Release History

Release 5.1; command was introduced.

### Related Commands

[aaa switch-access ip-lockout-threshold](#) Configures the threshold for failed login attempts from an IP address after which the IP address will be banned from switch access.

### MIB Objects

```
aaaAsaConfig  
  aaaAsaAccessIpLockoutThreshold
```

---

## show aaa switch-access banned-ip

Displays the list of banned IP addresses.

**show aaa switch-access banned-ip**

---

### Syntax Definitions

N/A

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

N/A

### Example

```
-> show aaa switch-access banned-ip
  S. No      Banned IP address
|-----+-----|
   1         100.15.5.21
   2         100.15.5.22
```

### *output definitions*

---

<b>Banned IP address</b>	The banned IP address blocked due to failed login attempts.
--------------------------	---

---

### Release History

Release 5.1; command was introduced.

### Related Commands

[aaa switch-access banned-ip release](#) Releases the banned IP addresses that are blocked due to failed login attempts.

### MIB Objects

aaaSwitchAccessBannedIpTable  
aaaSwitchAccessBannedIpAddress

---

## show aaa switch-access priv-mask

Displays the privilege details for the access types.

**show aaa switch-access priv-mask**

---

### Syntax Definitions

N/A

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

N/A

### Examples

```
-> show aaa switch-access priv-mask
Interface Type = CONSOLE,
  Read Only for domains   = All ,
  Read/Write for domains  = All
Interface Type = TELNET,
  Read Only for domains   = All ,
  Read/Write for domains  = All
Interface Type = SSH,
  Read Only for domains   = All ,
  Read/Write for domains  = All
Interface Type = HTTP,
  Read Only for domains   = All ,
  Read/Write for domains  = All
Interface Type = HTTPS,
  Read Only for domains   = All ,
  Read/Write for domains  = All
```

#### *output definitions*

---

<b>Interface Type</b>	The interface type.
<b>Read Only for domains</b>	Read-only privileges for the domains.
<b>Read/Write for domains</b>	Read-write privileges for the domains.

---

### Release History

Release 5.1; command was introduced.



## Related Commands

**aaa switch-access priv-mask** Configure the functional privileges for a particular access type.

## MIB Objects

```
aaaSwitchAccessPrivMaskTable  
  aaaSwitchAccessType  
  aaaSwitchAccessReadRight1  
  aaaSwitchAccessReadRight2  
  aaaSwitchAccessReadRight3  
  aaaSwitchAccessReadRight4  
  aaaSwitchAccessWriteRight1  
  aaaSwitchAccessWriteRight2  
  aaaSwitchAccessWriteRight3  
  aaaSwitchAccessWriteRight4
```

---

## aaa certificate update-ca-certificate

Updates the CA-bundle with the custom CA server certificate provided by CA.

**aaa certificate update-ca-certificate** *ca\_file*

---

### Syntax Definitions

*ca\_file*                      The custom CA server certificate (in PEM format) provided by the CA.

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- The custom CA server certificate should be copied in PEM format to the **/flash/switch/cert.d** directory via SFTP.
- This command appends the existing CA bundle (**certs.pem**) and the custom CA server certificate provided as input.
- The update of custom CA server certificates needs to be done before corresponding server configurations are done on the switch. If the update is done post server configuration, then a switch reboot needs to be done for the changes to take effect.

### Examples

```
-> aaa certificate update-ca-certificate ca.pem
```

### Release History

Release 5.1; command introduced.

### Related Commands

[aaa certificate update-crl](#)              Updates the CRL list with the custom CRL provided by CA.

### MIB Objects

N/A

---

## aaa certificate update-crl

Updates the CRL list with the custom CRL provided by CA.

```
aaa certificate update-crl crl_file
```

---

### Syntax Definitions

*crl\_file*                      The custom CRL file (in PEM format) provided by the CA.

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- The custom CRL file should be copied in PEM format to the **/flash/switch/cert.d** directory via SFTP.
- This command appends the existing CRL file (**crl.pem**) and the custom CRL provided as input.
- The update of the custom CRL needs to be done before corresponding server configurations are done on the switch. If the update is done post server configuration, then a switch reboot needs to be done for the changes to take effect.

### Examples

```
-> aaa certificate update-crl crl.pem
```

### Release History

Release 5.1; command introduced.

### Related Commands

[aaa certificate update-ca-certificate](#)                      Updates the CA-bundle with the custom CA server certificate provided by CA.

### MIB Objects

N/A

---

## aaa certificate generate-rsa-key key-file

Generates the RSA 2048 bit key with the file name provided as input.

```
aaa certificate generate-rsa-key key-file key_file
```

---

### Syntax Definitions

*key\_file*                      The name of the key file under which the RSA 2048 bit key is stored.

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

Generates RSA 2048 bit key in **/flash/switch/cert.d** directory with the file name as the input key file.

### Examples

```
-> aaa certificate generate-rsa-key key-file myCliPrivate.key
```

### Release History

Release 5.1; command introduced.

### Related Commands

<a href="#">aaa certificate generate-self-signed</a>	Generates the X.509 self-signed certificate for TLS client authentication.
<a href="#">aaa certificate view</a>	Displays the contents of the X.509 certificate.
<a href="#">aaa certificate delete</a>	Deletes the X.509 certificate.

### MIB Objects

N/A

---

## aaa certificate generate-self-signed

Generates the X.509 self-signed certificate for TLS client authentication.

```
aaa certificate generate-self-signed {cert_file} key {key_file} [days valid_period] {CN common_name}  
{ON org_name} {OU org_unit} {L locality} {ST state} {C country}
```

---

### Syntax Definitions

<i>cert_file</i>	The name of the X.509 certificate file to be created.
<i>key_file</i>	The name of the key file under which the RSA 2048 bit key is stored.
<i>valid_period</i>	Validity period (in days) of the X.509 certificate.
<i>common_name</i>	Common Name used in X.509 certificate.
<i>org_name</i>	The Organization Name used in X.509 certificate.
<i>org_unit</i>	The Organization Unit used in X.509 certificate.
<i>locality</i>	The Locality used in X.509 certificate.
<i>state</i>	The State used in X.509 certificate.
<i>country</i>	The Country used in X.509 certificate.

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- This command generates the file in `/flash/switch/cert.d` directory.
- Default values will be taken for all other optional parameters while generating the X.509 certificate.
- The X.509 certificate needs to be done before corresponding server configurations are done on the switch. If the certificate is created post server configuration, then a switch reboot needs to be done for the changes to take effect.

### Examples

```
-> aaa certificate generate-self-signed myCliCert.pem key clientkey.key days 3650  
cn client.ale.com on ALE ou ESD l BAN st KAR c IN
```

### Release History

Release 5.1; command introduced.

## Related Commands

**aaa certificate generate-rsa-key key-file** Generates the RSA 2048 bit key with the file name provided as input.

**aaa certificate view** Displays the contents of the X.509 certificate.

**aaa certificate delete** Deletes the X.509 certificate.

## MIB Objects

N/A

---

## aaa certificate view

Displays the contents of the X.509 certificate.

**aaa certificate view** *cert\_file*

---

### Syntax Definitions

*cert\_file*                      The X.509 certificate file (in PEM format) to be displayed.

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

N/A

### Examples

```
-> aaa certificate view clientcert.pem
```

```
Certificate:
```

```
  Data:
```

```
    Version: 3 (0x2)
```

```
    Serial Number:
```

```
      cf:8f:11:63:23:d4:28:f6
```

```
  Signature Algorithm: sha256WithRSAEncryption
```

```
    Issuer: CN=client.ale.com , O=ale , OU=esd , L=bn , ST=kar , C=in
```

```
  Validity
```

```
    Not Before: Jan  3 23:09:07 2014 GMT
```

```
    Not After : Jan  1 23:09:07 2024 GMT
```

```
  Subject: CN=client.ale.com , O=ale , OU=esd , L=bn , ST=kar , C=in
```

```
  Subject Public Key Info:
```

```
    Public Key Algorithm: rsaEncryption
```

```
    Public-Key: (2048 bit)
```

```
    Modulus:
```

```
      00:cc:72:7a:12:d3:66:16:8f:9f:22:59:d1:7a:05:
```

```
      03:1f:bf:51:93:21:8d:95:74:18:88:78:71:62:1f:
```

```
      09:04:2c:ce:dc:0a:2f:b6:88:76:ca:9d:1a:f4:73:
```

```
      88:54:96:e8:84:95:81:3c:81:75:c4:47:db:44:a7:
```

```
      aa:1a:75:5d:3d:b0:82:a5:7c:b8:5e:5d:f3:50:81:
```

```
      1b:62:a1:04:2b:55:c4:2e:9b:8a:48:e0:3a:e0:be:
```

```
      55:a3:3b:56:ca:5c:11:14:77:36:54:35:41:4e:40:
```

```
      e6:8b:8c:50:2f:65:ad:da:04:f9:36:8d:8a:68:5f:
```

```
      ba:a0:71:32:7b:fb:b8:95:3b:d0:bb:ac:d0:bd:db:
```

```
      70:29:08:00:3a:96:5e:0c:f0:0f:45:0d:35:78:60:
```

```
      05:0d:b2:d0:14:1d:08:2a:39:13:eb:6e:58:3b:09:
```

```
      8b:ae:47:18:3e:22:25:2e:2a:91:a6:84:21:85:e4:
```

```
      05:88:8b:bf:6b:6f:a5:0c:3f:17:94:a0:3f:56:d7:
```

```
      f6:95:b6:33:ce:5b:7b:39:57:1d:62:e0:e7:8c:3e:
```

```
      4f:64:ac:19:68:14:c3:af:ee:f2:fa:6e:70:c1:23:
```

```

10:0c:72:ad:a8:87:94:a8:99:52:db:b6:13:b4:ec:
5e:64:b9:89:1a:8a:ce:c3:db:db:5e:69:c0:4e:43:
22:5b
Exponent: 65537 (0x10001)
X509v3 extensions:
X509v3 Subject Key Identifier:
64:09:19:62:F8:14:FE:ED:A5:B7:9F:C6:BA:8F:B0:30:3C:B2:7F:96
X509v3 Authority Key Identifier:
keyid:64:09:19:62:F8:14:FE:ED:A5:B7:9F:C6:BA:8F:B0:30:3C:B2:7F:96

X509v3 Basic Constraints:
CA:TRUE
Signature Algorithm: sha256WithRSAEncryption
48:d8:ad:86:06:61:c9:20:67:d0:b3:b2:67:87:b9:01:49:8f:
8b:9b:df:5b:fd:b2:7c:1f:38:d1:e8:73:13:29:1a:68:7a:ae:
d8:56:73:e8:48:06:d8:6a:7f:46:2b:08:fc:f4:fb:21:60:f6:
b9:c9:13:93:71:1b:7f:9c:18:b0:ce:3f:12:b1:e6:b9:8f:ce:
9f:4e:87:83:21:e2:be:0a:89:be:19:b3:16:14:e3:c0:b4:94:
e7:12:c0:fe:c8:fe:2c:f0:0c:72:5c:6c:8f:17:b5:0d:25:e4:
7e:12:1e:38:d7:5f:7b:0d:b2:aa:bb:d7:66:33:3f:49:ee:ef:
14:c0:c2:d8:74:3c:1a:35:f4:3a:53:2a:1c:88:6b:e9:20:cb:
72:b2:1a:83:0c:93:df:3d:75:c4:cb:c8:ab:57:1a:dc:13:bc:
a9:d5:8d:64:2c:bb:56:3a:54:c4:e4:c3:77:85:3d:ff:21:f5:
d8:48:35:e0:e5:07:d7:fd:04:7c:fe:d2:b8:3c:dd:38:e6:57:
fc:e2:95:a2:b7:bd:57:d0:a3:68:b2:c1:2e:43:44:25:29:86:
7c:d0:d0:87:93:fa:78:e8:af:59:d7:d7:e2:19:33:28:33:b9:
8f:cc:c7:2b:60:a6:9c:e3:3f:e9:c6:06:58:e0:f5:08:a7:bc:
88:81:5b:87
-----BEGIN CERTIFICATE-----
MIIDlzCCAn+gAwIBAgIJAM+PEWmj1Cj2MA0GCSqGSIb3DQEBCwUAMGIXGDAWBGNV
BAMMD2NsaWVudC5hbGUuY29tIDENMASGAlUECgwEYWxlIDENMASGAlUECwweZXXNk
IDEMMAoGAlUEBwwDYm4gMQ0wCwYDVQQIDARrYXlIgmQswCQYDVQQGEWJpbjAeFw0x
NDAxMDMyMzA5MDdaFw0yNDAxMDEyMzA5MDdaMGIXGDAWBGNVBAMMD2NsaWVudC5h
bGUuY29tIDENMASGAlUECgwEYWxlIDENMASGAlUECwweZXXNkIDEMMAoGAlUEBwwD
Ym4gMQ0wCwYDVQQIDARrYXlIgmQswCQYDVQQGEWJpbjCCASIdDQYJKoZIhvcNAQEB
BQADggEPADCCAQoCggEBAMxyehLTZhaPnyJZ0XoFAx+/UZMhjZV0GIh4cWIFCQQs
ztwKL7aIdsqdGvRziFSW6ISVgTyBdcRH20Snqhp1XT2wgqV8uF5d81CBG2KhBctV
xC6bikjgOuCVaM7VspcERR3N1Q1QU5A5ouMUC9lrdoE+TanimhfucBxmVn7uJU7
0Lus0L3bcCkIADqWXgzwd0UNNXhgBQ2y0BQdCCo5E+tuWDsJi65HGD4iJS4qkaaE
IYXkBYiLv2tvpQw/F5SgP1bX9pW2M85bez1XHWLg54w+T2SsGWgUw6/u8vpucMEj
EAxyraiHlKiZUtu2E7TsXmS5iRqKzsPb215pwE5DIlsCAwEAAANQME4wHQYDVR0O
BBYEFgQJGWL4FP7tpbefxrpPsDA8sn+WMB8GAlUdIwQYMBaAFgQJGWL4FP7tpbef
xrpPsDA8sn+WMAwGAlUdEwQFMAMBAF8wDQYJKoZIhvcNAQELBQADggEBAEjYrYYG
YckgZ9CzsmeHuQFJj4ub31v9snwfONHocxMpGmh6rthWc+hIBthqf0YrCPz0+yFg
9rnJE5NxBG3+cGLDOPxKx5rmPzp90h4Mh4r4Kib4ZsxyU48C0lOcSwP7I/izwDHJc
bI8XtQ015H4SHjjXX3sNsqq712YzP0nu7xTAwth0PBol9DpTKhyIa+kgy3KyGoMM
k989dcTLyKtXGtwTvKnVjWQsulY6VMTkw3eFPf8h9dhIneDlB9f9BHz+0rg83Tjm
V/zilaK3vVfQo2iywS5DRcUphnzQ0IeT+njorlnX1+IZMygzuy/MxytgppzjP+nG
Bljg9QinvIiBW4c=
-----END CERTIFICATE-----

```

## Release History

Release 5.1; command introduced.



## Related Commands

[aaa certificate generate-self-signed](#)

Generates the X.509 self-signed certificate for TLS client authentication.

[aaa certificate delete](#)

Deletes the X.509 certificate.

## MIB Objects

N/A

---

## aaa certificate verify ca-certificate

Verifies the contents of the X.509 certificate.

**aaa certificate verify ca-certificate** *cert\_file* **certificate** *cert\_file*

---

### Syntax Definitions

*ca\_cert\_file*                    The X.509 certificate file (in PEM format) to be displayed.  
*cert\_file*                        The X.509 certificate file (in PEM format) to be displayed.

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

N/A

### Examples

```
-> aaa certificate verify ca-certificate ca_cert certificate cert_file
```

### Release History

Release 5.1; command introduced.

### Related Commands

[aaa certificate generate-self-signed](#)      Generates the X.509 self-signed certificate for TLS client authentication.  
[aaa certificate delete](#)                      Deletes the X.509 certificate.

### MIB Objects

N/A

---

## aaa certificate delete

Deletes the X.509 certificate.

**aaa certificate delete** *cert\_file*

---

### Syntax Definitions

*cert\_file*                      The X.509 certificate file (in PEM format) to be deleted.

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

N/A

### Examples

```
-> aaa certificate delete clientcert.pem
```

### Release History

Release 5.1; command introduced.

### Related Commands

[aaa certificate generate-self-signed](#)      Generates the X.509 self-signed certificate for TLS client authentication.

[aaa certificate view](#)                      Displays the contents of the X.509 certificate.

### MIB Objects

N/A

---

## aaa certificate generate-csr

Generates the CSR (Certificate Signing Request) to be sent to get a CA signed certificate for TLS client authentication.

```
aaa certificate generate-csr {csr_file} key {key_file} [dn domain_name] {CN common_name} {ON org_name} {OU org_unit} {L locality} {ST state} {C country}
```

---

### Syntax Definitions

<i>csr_file</i>	The name of the CSR certificate file to be created.
<i>key_file</i>	The name of the key file under which the RSA 2048 bit key is stored.
<i>domain_name</i>	Domain name to be used in the CSR.
<i>common_name</i>	Common Name used in X.509 certificate.
<i>org_name</i>	The Organization Name used in X.509 certificate.
<i>org_unit</i>	The Organization Unit used in X.509 certificate.
<i>locality</i>	The Locality used in X.509 certificate.
<i>state</i>	The State used in X.509 certificate.
<i>country</i>	The Country used in X.509 certificate.

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- Generates <csr\_file>.pem file in **/flash/switch** directory. The <csr\_file>.pem file created should be sent to CA signing authority to get the CA certificate.
- Default values will be taken for all other optional parameters while generating the CSR.
- The CSR needs to be created, sent to CA authority and the corresponding CA certificate (obtained from CA authority) should be uploaded to the **/flash/switch** directory before corresponding server configurations are done on the switch. If the CA certificate is uploaded post server configuration, then a switch reboot needs to be done for the changes to take effect.

### Examples

```
-> aaa certificate generate-csr myCliCert.pem key clientkey.key days 3650 cn client.ale.com on ALE ou ESD l BAN st KAR c IN
```

### Release History

Release 5.1; command introduced.

**Related Commands**[aaa certificate view](#)

Displays the contents of the X.509 certificate.

**MIB Objects**N/A

---

# 20 Access Guardian Commands

Access Guardian refers to a set of OmniSwitch security functions that work together to provide a dynamic, proactive network security solution. This chapter provides information about the commands that are used to configure the following Access Guardian features through the Command Line Interface (CLI):

- **Universal Network Profile (UNP)**—Access Guardian is configured and applied through the framework of the UNP feature. UNP is enabled on switch ports to activate Access Guardian functionality that is used to authenticate and classify users into UNP profiles. Each profile is mapped to a VLAN ID or Service Access Point (SAP) to which the user is dynamically assigned. Specific UNP port configurations help to simplify and easily replicate the same configuration across multiple ports.
- **Bring Your Own Device (BYOD) - OmniSwitch / UPAM or ClearPass Integration:** The OmniSwitch leverages Access Guardian functionality along with the OmniVista Unified Policy Access Manager (UPAM) or the ClearPass Policy Manager (CPPM) to provide an overall BYOD solution.
  - Configurable UNP port and profile attributes are used to redirect traffic from the OmniSwitch to the UPAM or CPPM server.

For commands used to configure device authentication, authorization, and accounting parameters that are used to support Access Guardian functionality, see [“Chapter 19, “AAA Commands.”](#)

For commands used to configure Learned Port Security (LPS), which is used by Access Guardian to help ensure that only certain devices are allowed to connect to the switch, see [“Chapter 21, “Learned Port Security Commands.”](#)

MIB information for the UNP commands is as follows:

*Filename:* ALCATEL-IND1-DA-MIB.mib  
*Module:* alcatelIND1DaMIB

*Filename:* ALCATEL-IND1-UDP-RELAY-MIB.mib  
*Module:* alcatelIND1UDPRelayMIB

A summary of the available commands is listed here:

---

**UNP Global Configuration Commands**

**unp auth-server-down**  
**unp auth-server-down-timeout**  
**unp redirect port-bounce**  
**unp redirect pause-timer**  
**unp redirect proxy-server-port**  
**unp redirect server**  
**unp redirect allowed-name**  
**unp 802.1x-pass-through**  
**unp ipv6-drop**  
**unp ap-mode**  
**unp user flush**  
**show unp global configuration**  
**show unp user**  
**show unp user status**  
**show unp user details**

---

**UNP Profile Commands**

**unp profile**  
**unp profile captive-portal-authentication**  
**unp profile captive-portal-profile**  
**unp profile maximum-ingress-bandwidth**  
**unp profile maximum-egress-bandwidth**  
**unp profile maximum-ingress-depth**  
**unp profile maximum-egress-depth**  
**unp profile map vlan**  
**show unp profile**  
**show unp profile map**

---

**UNP Port Commands**

**unp port-type**  
**unp redirect port-bounce**  
**unp 802.1x-authentication**  
**unp 802.1x-authentication pass-alternate**  
**unp 802.1x-authentication tx-period**  
**unp 802.1x-authentication supp-timeout**  
**unp 802.1x-authentication max-req**  
**unp 802.1x-authentication bypass-8021x**  
**unp 802.1x-authentication failure-policy**  
**unp mac-authentication**  
**unp mac-authentication pass-alternate**  
**unp mac-authentication allow-eap**  
**unp classification**  
**unp default-profile**  
**unp aaa-profile**  
**unp port port-template**  
**unp direction**  
**unp admin-state**  
**unp vlan**  
**unp port ap-mode**  
**show unp port config**  
**show unp port bandwidth**  
**show unp port 802.1x statistics**  
**show unp port configured-vlans**

---

**UNP Port Template Commands**

**unp port-template**  
**show unp port-template**

---

**Classification Rule Commands**

**unp classification lldp med-endpoint**  
**show unp classification lldp-rule**

---

**Captive Portal Commands**

**captive-portal mode**  
**captive-portal name**  
**captive-portal ip-address**  
**captive-portal success-redirect-url**  
**captive-portal proxy-server-port**  
**captive-portal retry-count**  
**captive-portal authentication-pass**  
**captive-portal authentication-pass domain**  
**captive-portal-profile**  
**captive-portal customization**  
**show captive-portal configuration**  
**show captive-portal profile-names**

---



## unp auth-server-down

Configures a UNP profile to which a device is classified if authentication fails because the RADIUS server is unreachable.

```
unp auth-server-down {profile1 profile_name [profile2 profile_name] [profile3 profile_name]}
```

```
no unp auth-server-down [profile1] [profile2] [profile3]
```

---

### Syntax Definitions

*profile\_name*                      The name of an existing profile to which the device is assigned when the authentication server is unreachable.

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- Use the **no** form of this command to remove an authentication server down UNP profile.
- When a device is classified into the specified profile, a configurable authentication down timer is started for that device. When the timer runs out, the authentication process is performed again. If authentication fails again, the device is classified back into the authentication server down profile. The switch will repeat this process until the device authentication is completed.
- Configuring an authentication server down UNP is highly recommended when MAC or 802.1X authentication is enabled on any UNP port or link aggregate. This is because after a switch reload, the traffic from devices connected to UNP ports and link aggregates reaches the switch and triggers the authentication process before route convergence has completed and the server can be reached.
  - If an authentication server down UNP is configured, devices are temporarily learned in that profile and authentication is automatically attempted again after the timeout period expires. This allows time for the server to become reachable from the switch after a reload.
  - If an authentication server down UNP is not configured, devices are learned as filtering and will remain in that state. There is no further attempt to authenticate these devices again.
- If the authentication server down UNP is removed, the authentication server down timer is also removed.
- Up to three different profile names are configurable as authentication server down UNP profiles. The profile applied to the traffic is based on the order of precedence and mapping of each profile. For example:
  - Profiles mapped to a VLAN are applied only to device traffic received on UNP bridge ports.
  - Profiles mapped to a service (SPB, VXLAN, or static) are only applied to device traffic received on UNP access ports.
  - When multiple profiles are configured, each profile is checked in the order of precedence (**profile1** first, **profile2** second, and **profile3** third) to determine which profile is applied to the device traffic.

- Configuring both a VLAN profile and a service profile ensures that an authentication server down UNP is available for device traffic received on both types of UNP ports (bridge and access).

### Examples

```
-> unp auth-server-down profile1 unp1-vlan
-> no unp auth-server-down profile1
-> unp auth-server-down profile1 unp1-vlan profile2 unp2-vxlan
-> no unp auth-server-down profile1 profile2
```

### Release History

Release 5.1; command was introduced.

### Related Commands

**unp auth-server-down-timeout** Configures the value for the authentication server down timer.

**show unp global configuration** Displays the profiles designated as the authentication server down UNP for the switch.

### MIB Objects

```
alaDaUNPGlobalConfiguration
  alaDaUNPAuthServerDownUnp
```

---

## unp auth-server-down-timeout

Configures the authentication server down timer value. This timer value is applied to devices that are learned in the authentication server down UNP.

**unp auth-server-down-timeout** *seconds*

**no unp auth-server-down-timeout**

---

### Syntax Definitions

*seconds*

The number of seconds the authentication server down timer is active. The valid range is 10–1000 seconds.

### Defaults

By default, the timeout value is set to 60 seconds.

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- Use the **no** form of this command to set the timer value back to the default value (60 seconds).
- When this timer expires, devices learned in the authentication server down UNP are cleared from that UNP. The authentication and classification process is attempted again.
- When the authentication server down UNP is removed, the authentication server down timer is also cleared.

### Examples

```
-> unp auth-server-down-timeout 500
-> unp auth-server-down-timeout 120
-> no unp auth-server-down-timeout
```

### Release History

Release 5.1; command was introduced.

## Related Commands

- unp auth-server-down** Configures a UNP to which a device is classified if MAC or 802.1X authentication fails because the RADIUS server is not reachable.
- show unp global configuration** Displays the authentication server down timeout value for the switch.

## MIB Objects

alaDaUNPGlobalConfiguration

alaDaUNPAuthServerDownTimeout

---

## unp redirect pause-timer

Configures the global pause timer value for the switch. Use this command to configure the amount of time the switch filters traffic from a non-suppliant (non-802.1X device) on a UNP port. This is done to allow enough time for the switch to clear the authentication state of the non-suppliant, at which time the device is re-authenticated.

**unp redirect pause-timer** *seconds*

**no redirect pause-timer**

---

### Syntax Definitions

*seconds*                                      The pause timer value. The valid range is 60–65535

### Defaults

By default, the pause timer is set to zero.

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- Use the **no** form of this command to reset the pause time back to the default (timer no set).
- The pause timer is triggered when a Change of Authorization (COA) request is received that requires a VLAN change for a non-suppliant (non-802.1X device) *and* the port bounce action is not triggered for the device.
- During the pause time period, it is expected that the DHCP lease of the client IP in the old VLAN will expire and the client device will re-initiate DHCP resulting in new authentication and a UNP VLAN assignment.
- This command is used when configuring the switch to interact with the Unified Policy Access Manager (UPAM) or the ClearPass Policy Manager (CPPM) as part of the OmniSwitch Bring Your Own Devices (BYOD) solution.

### Examples

```
-> unp redirect pause-timer 180  
-> no unp redirect pause-timer
```

### Release History

Release 5.1; command was introduced.

## Related Commands

- unp redirect port-bounce**      Configures the port bounce action for a port or globally for the switch.
- unp redirect proxy-server-port**      Configures the HTTP proxy port number to use for redirection.
- unp redirect allowed-name**      Configures a list of additional IP addresses to which a host can access.
- unp redirect server**      Configures an IP network address to allow HTTP traffic redirection.
- show unp global configuration**      Displays the global UNP parameter settings for the switch.

## MIB Objects

alaDaUNPGlobalConfiguration

alaDaUNPRedirectPauseTimer

---

## unp redirect proxy-server-port

Configures the HTTP proxy port number to use for redirection to the Unified Policy Access Manager (UPAM) or the ClearPass Policy Manager (CPPM) server.

**unp redirect proxy-server-port** *proxy\_port*

**no unp redirect proxy-server-port**

---

### Syntax Definitions

*proxy\_port* The HTTP proxy port number. The valid range is 1024–49151.

### Defaults

By default, the redirect proxy port number is set to 8080 (traps HTTP 80, 8080, and 443).

### Platforms Supported

Not supported in this release.

### Usage Guidelines

- Use the **no** form of this command to set the proxy port number back to the default (8080).
- Configuring the switch to interact with the UPAM or CPPM is done as part of the OmniSwitch implementation of the Bring Your Own Devices (BYOD) solution.

### Examples

```
-> unp redirect proxy-server-port 8887
-> no unp redirect proxy-server-port
```

### Release History

Release 5.1; command was introduced.

### Related Commands

<a href="#">unp redirect port-bounce</a>	Configures the port bounce action for a port or globally for the switch.
<a href="#">unp redirect pause-timer</a>	Configures the global pause timer value for the switch.
<a href="#">unp redirect allowed-name</a>	Configures a list of additional IP addresses to which a host can access.
<a href="#">unp redirect server</a>	Configures an IP network address to allow HTTP traffic redirection.
<a href="#">show unp global configuration</a>	Displays the global UNP parameter settings for the switch.

### MIB Objects

```
alaDaUNPGlobalConfiguration
alaDaUNPRedirectServerIP
```

---

## unp redirect server

Configures an IP network address or a Fully Qualified Domain Name (FQDN) to allow redirection of HTTP traffic to the Unified Policy Access Manager (UPAM) server or the ClearPass Policy Manager (CPPM) server. Specify the address or domain name that is associated with the dynamic URL returned from the UPAM or CPPM server.

```
unp redirect server {ip_address | domain_name}
```

```
no unp redirect server
```

---

### Syntax Definitions

<i>ip_address</i>	The IPv4 network address (e.g., 171.15.0.0) to which HTTP traffic is redirected.
<i>domain_name</i>	An FQDN (e.g., upam.com) to which HTTP traffic is redirected.

### Defaults

By default, no redirect server IP address or FQDN is specified.

### Platforms Supported

Not supported in this release.

### Usage Guidelines

- Use the **no** form of this command to remove the redirect server IP or FQDN from the switch configuration.
- If the redirect server IP address or FQDN does not match the UPAM or CPPM server configuration, then redirection to the URL will not work. This provides additional security.
- Configuring the switch to interact with UPAM or CPPM is done as part of the OmniSwitch implementation of the Bring Your Own Devices (BYOD) solution.

### Examples

```
-> unp redirect server 10.0.0.20
-> no unp redirect server
-> unp redirect server upam.com
-> no unp redirect server
```

### Release History

Release 5.1; command was introduced.



## Related Commands

- unp redirect port-bounce** Configures the port bounce action for a port or globally for the switch.
- unp redirect pause-timer** Configures the global pause timer value for the switch
- unp redirect proxy-server-port** Configures the HTTP proxy port number to use for redirection.
- unp redirect allowed-name** Configures a list of additional IP addresses to which a host can access.
- show unp global configuration** Displays the global UNP configuration for the switch.

## MIB Objects

```
alaDaUNPGlobalConfiguration  
  alaDaUNPRedirectServerIPType  
  alaDaUNPRedirectServerIP
```

---

## unp redirect allowed-name

Configures a list of additional IP addresses to which a host can access. This allows traffic to reach additional subnets other than that of the Unified Policy Access Manager (UPAM) server or the ClearPass Policy Manager (CPPM) server.

**unp redirect allowed-name** *name* **ip-address** *ip\_address* **ip-mask** *ip\_mask*

**no unp redirect allowed-name** *name*

---

### Syntax Definitions

<i>name</i>	Specify a name to assign to the allowed IP network address.
<i>ip_address</i>	An IPv4 network address (e.g., 10.0.0.0, 171.15.0.0, 196.190.254.0).
<i>ip_mask</i>	The IP subnet mask for the allowed IP network address.

### Defaults

By default, no allowed IP addresses are configured.

### Platforms Supported

Not supported in this release.

### Usage Guidelines

- Use the **no** form of this command to remove an IP address from the allowed list.
- Explicitly configure and append the allowed IP list to the built-in "restrictedPolicylist" policy list.

### Examples

```
-> unp redirect allowed-name server2 ip-address 10.0.0.20 ip-mask 255.0.0.0  
-> no unp redirect allowed-name server2
```

### Release History

Release 5.1; command was introduced.

## Related Commands

- unp redirect port-bounce** Configures the port bounce action for a port or globally for the switch.
- unp redirect pause-timer** Configures the global pause timer value for the switch
- unp redirect proxy-server-port** Configures the HTTP proxy port number to use for redirection.
- unp redirect server** Configures an IP network address to allow HTTP traffic redirection.
- show unp global configuration** Displays the global UNP configuration for the switch.

## MIB Objects

```
alaDaUNPRedirectAllowedServerTable  
  alaDaUNPRedirectAllowedServerName  
  alaDaUNPRedirectAllowedServerIP  
  alaDaUNPRedirectAllowedMaskIP
```

---

## unp 802.1x-pass-through

Configures the global status of 802.1x pass through for the switch. When this functionality is enabled, 802.1x packets from supplicants attempting to authenticate are not processed on the local switch. Instead, the packets are passed along to another switch for authentication.

**unp 802.1x-pass-through**

**no unp 802.1x-pass-through**

---

### Syntax Definitions

N/A

### Defaults

By default, 802.1x pass through is disabled for the switch.

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- Use the **no** form of this command to disable 802.1x pass through for the switch.
- Enabling 802.1x pass through on a switch that has an existing UNP or LPS configuration is not recommended. This functionality is intended for a local or intermediate switch when the supplicant device requires authentication through an upstream switch.
- If 802.1x pass through is enabled on a switch that has an existing UNP or LPS configuration, consider the following:
  - 802.1x authentication, 802.1x authentication bypass, and MAC authentication allow EAP functionality is not supported on UNP ports.
  - The initial frame for unknown 802.1x traffic is learned on the switch. If the frame is learned in the forwarding mode, subsequent frames with the same source MAC address are passed through to the next switch. If the frame is learned in the filtering mode, subsequent frames with the same source MAC address are dropped and not passed through.

### Examples

```
-> unp 802.1x-pass-through  
-> no unp 802.1x-pass-through
```

### Release History

Release 5.1; command introduced.

## Related Commands

**show unp global configuration** Displays the status of 802.1x pass through for the switch.

## MIB Objects

alaDaUNPGlobalConfiguration  
alaDaUNP8021XPassThrough

---

## unp ipv6-drop

Configures whether IPv6 packets received on UNP ports are learned or dropped. When this functionality is enabled, IPv6 packets are dropped by UNP on the local switch.

**unp ipv6-drop**

**no unp ipv6-drop**

---

### Syntax Definitions

N/A

### Defaults

By default, IPv6 packet drop is disabled. IPv6 packets are learned and processed by UNP.

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

Use the **no** form of this command to disable IPv6 packet drop for the switch.

### Examples

```
-> unp ipv6-drop  
-> no unp ipv6-drop
```

### Release History

Release 5.1; command was introduced.

### Related Commands

[show unp global configuration](#) Displays the status of IPv6 packet drop for the switch.

### MIB Objects

```
alaDaUNPGlobalConfiguration  
alaDaUNPIPv6Drop
```

---

## unp ap-mode

Configures the global status of the Access Point (AP) mode. The global AP mode status determines the default AP mode status that is applied when a port or link aggregate is configured as a UNP bridge port. For example, if the global status is disabled, the port-level status defaults to disabled; if the global status is enabled, the port-level status defaults to enabled.

```
unp ap-mode {enable | disable}{secure [enable | disable]}
```

---

### Syntax Definitions

<b>enable</b>	Sets the AP mode default status to enabled.
<b>disable</b>	Sets the AP mode default status to disabled.
<b>secure</b>	Sets the secure ap-mode configuration.

### Defaults

By default, the AP mode is enabled for the switch.

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- Changing the global AP mode status at any given time is allowed but does not change the port-level status set for any existing UNP bridge ports. If the AP mode is disabled for the port, it remains disabled after the global status change; if the AP mode is enabled for the port, it remains enabled after the global status change and any devices or clients learned on the port are not disrupted.
- To change the AP mode status for a specific UNP bridge port, use the **unp port ap-mode** command.
- Use **secure** parameter to enable or disable the secure ap-mode.

### Examples

```
-> unp ap-mode disable
-> unp ap-mode enable
-> unp ap-mode enable secure enable
-> unp ap-mode enable secure disable
```

### Release History

Release 5.1; command introduced.

Release 5.1R2; **secure** parameter added

## Related Commands

- unp port ap-mode** Configures AP mode functionality for a UNP bridge port.
- show unp global configuration** Displays the status of UNP Layer 3 learning for the switch.

## MIB Objects

```
alaDaUNPGlobalConfiguration  
  alaDaUNPAPMode  
  alaDaUNPPortApModeSecurity
```

---



## unp user flush

Performs a MAC address flush of Access Guardian users (devices learned on UNP ports) based on the specified port, link aggregate, authentication type, or MAC address.

**unp user flush** [**port** *chassis/slot/port1[-port2]* | **linkagg** *agg\_id[-agg\_id2]*] [**service-id** *service\_id*] [**authentication-type** {**mac** | **802.1x** | **none**}] [**profile** *profile\_name*] [**mac-address** *mac\_address*]

---

### Syntax Definitions

<i>chassis</i>	The chassis identifier.
<i>slot/port[-port2]</i>	The slot and port number (3/1). Use a hyphen to specify a range of ports (3/1-8).
<i>agg_id[-agg_id2]</i>	Link aggregate ID number. Use a hyphen to specify a range of link aggregate IDs (10-15).
<i>service_id</i>	<i>This parameter is not supported in this release.</i>
<b>mac</b>	Clears only the MAC authenticated users.
<b>802.1x</b>	Clears only the 802.1X authenticated users.
<b>none</b>	Clears only the users that have not been authenticated.
<i>mac_address</i>	A MAC address (e.g., 00:00:39:59:f1:0c).
<i>profile_name</i>	The name of an existing UNP profile.

### Defaults

By default, all MAC addresses learned on all UNP ports are flushed.

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- Use the **port** or **linkagg** parameter to flush users on a specific port or link aggregate.
- Use the **authentication-type** parameter with the **mac**, **802.1x**, or **none** options to flush users that were authenticated (MAC or 802.1X) or users that were not authenticated.
- Use the **mac-address** parameter to flush a specific device.
- Use the **profile** parameter to flush all users associated with the specified profile name. Combine this parameter with the **mac-address** parameter to flush a specific user associated with the specified profile name.

### Examples

```
-> unp user flush
-> unp user flush port 1/1/6
-> unp user flush linkagg 10
-> unp user flush authentication-type mac
-> unp user flush mac-address 00:11:22:33:44:55
```

```
-> unp user flush profile unp1-vlan  
-> unp user flush profile unp1-vlan mac-address 00:da:95:11:22:01
```

## Release History

Release 5.1; command was introduced.

## Related Commands

[show unp user](#) Displays information about the devices learned on a UNP port.

## MIB Objects

```
alaDaUNPUserFlushTable  
  alaDaUNPUserFlushIndex  
  alaDaUNPUserFlushComplete  
  alaDaUNPUserFlushAuthType  
  alaDaUNPUserFlushMacAddress  
  alaDaUNPUserFlushProfile  
  alaDaUNPUserFlushPortStart  
  alaDaUNPUserFlushPortEnd
```

---

## unp profile

Configures a classification profile that is used to provide role-based access to the switch. This type of profile determines the VLAN or service a device can join and applies any additional profile-defined attributes to the device.

When a profile is created with this command, the base command (**unp profile *profile\_name***) may be used with other command keywords to define attributes for the specified profile. These keywords are listed here and described as separate commands later in this chapter. In addition, some keywords have a **no** form to remove the parameter or return it to its default.

```
unp profile profile_name
  [qos-policy-list list_name]
  [location-policy policy_name]
  [period-policy policy_name]
  [captive-portal-authentication]
  [captive-portal-profile profile_name]
  [maximum ingress-bandwidth bps[k | m]]
  [maximum egress-bandwidth bps[k | m]]
  [maximum ingress-depth bps]
  [maximum egress-depth bps]
```

```
no unp profile profile_name
```

---

### Syntax Definitions

*profile\_name*                      The name to assign to the UNP classification profile.

### Defaults

When a profile is created without specifying any parameter values, the profile parameters are set to the following default values:

parameter	default
<b>qos-policy-list</b>	No list assigned
<b>location-policy</b>	No policy assigned
<b>period-policy</b>	No policy assigned
<b>captive-portal-authentication</b>	disabled
<b>captive-portal-profile</b>	No profile assigned
<b>maximum ingress-bandwidth <i>bps</i>[k   m]</b>	None
<b>maximum egress-bandwidth <i>bps</i>[k   m]</b>	None
<b>maximum ingress-depth <i>bps</i></b>	None
<b>maximum egress-depth <i>bps</i></b>	None

### Platforms Supported

OmniSwitch 2260, 2360

## Usage Guidelines

- Use the **no** form of this command to remove a profile from the switch configuration.
- Profiles are applied only to traffic received on UNP bridge ports or link aggregates.
- After a profile is created, use the **unp profile map** command to map the profile to a VLAN.
  - The profile is used to classify traffic received on UNP bridge ports.
- Any configuration change to a profile will flush all MAC addresses learned on that profile.

## Examples

```
-> unp profile unp-profl
-> no unp profile unp-profl
```

## Release History

Release 5.1; command was introduced.

## Related Commands

<b>unp profile captive-portal-authentication</b>	Configures the status of Captive Portal authentication for the specified profile.
<b>unp profile captive-portal-profile</b>	Assigns a Captive Portal configuration to the specified profile.
<b>unp profile maximum-ingress-bandwidth</b>	Configures a maximum ingress bandwidth value that is applied to UNP ports associated with the specified profile.
<b>unp profile maximum-egress-bandwidth</b>	Configures a maximum egress bandwidth value that is applied to UNP ports associated with the specified profile.
<b>unp profile maximum-ingress-depth</b>	Configures a maximum ingress depth value that is applied to UNP ports associated with the specified profile.
<b>unp profile maximum-egress-depth</b>	Configures a maximum egress depth value that is applied to UNP ports associated with the specified profile.
<b>show unp profile</b>	Displays the profile configuration for the switch.

## MIB Objects

```
alaDaUNPProfileTable
    alaDaUNPProfileName
```

---

## unp profile captive-portal-authentication

Configures the status of Captive Portal (CP) authentication for the specified UNP profile. When enabled, the Captive Portal authentication process is triggered for devices classified into the profile.

**unp profile *profile\_name* captive-portal-authentication**

**no unp profile *profile\_name* captive-portal-authentication**

---

### Syntax Definitions

*profile\_name*                      The name of a UNP profile.

### Defaults

By default, Captive Portal authentication is disabled for the profile.

### Platforms Supported

Not supported in this release.

### Usage Guidelines

- Use the **no** form of this command to disable Captive Portal authentication for the profile configuration.
- When CP authentication is enabled, the UNP user is assigned an implicit CP pre-login role to facilitate the CP authentication process with the configured CP RADIUS server.
- The CP profile associated with the UNP profile defines the CP RADIUS server to use for the CP authentication process. If a CP profile is not associated with the UNP profile, then the server defined in the global CP configuration for the switch is used instead.
- If CP authentication for the device is successful, the user role is automatically changed according to the CP pass policy list returned from the RADIUS server if it is the highest precedence role known for the user.
- If CP authentication for the device fails, the user role will be changed to the last known highest precedence role for the user.
- When successful CP authentication results in assigning the UNP user to a different profile, CP authentication does not need to be enabled for that profile. For example, if the user is initially assigned to a “Guest” profile and successful CP authentication assigns the user to the “Admin” profile, CP authentication must be enabled on the “Guest” profile but does not have to be enabled on the “Admin” profile.
- When CP authentication is disabled for the profile, BYOD redirection is automatically made available to devices assigned to the profile. When CP authentication is enabled, CP is enforced and BYOD redirection is not available.

### Examples

```
-> unp profile unp-profl captive-portal-authentication
-> no unp profile unp-profl captive-portal-authentication
```

## Release History

Release 5.1; command was introduced.

## Related Commands

### [unp profile](#)

Configures a UNP profile. This type of profile is applied to traffic learned on UNP ports and link aggregates.

### [show unp profile](#)

Displays the profile configuration for the switch.

## MIB Objects

alaDaUNPProfileTable

    alaDaUNPProfileName

    alaDaUNPProfileCPortalAuthentication

---

## unp profile captive-portal-profile

Configures the Captive Portal (CP) profile attribute for the specified profile. Use this command to assign the name of an existing CP profile to a profile. This type of profile defines a CP configuration that is applied to devices when CP authentication is enabled for the profile.

```
unp profile profile_name captive-portal-profile cp_profile_name
```

```
no unp profile profile_name captive-portal-profile
```

---

### Syntax Definitions

<i>profile_name</i>	The name of a UNP profile.
<i>cp_profile_name</i>	The name of an existing UNP Captive Portal profile.

### Defaults

By default, no CP profile is assigned to a profile.

### Platforms Supported

Not supported in this release.

### Usage Guidelines

- Use the **no** form of this command to remove the CP profile name from the profile configuration.
- The CP profile name specified with this command must already exist in the switch configuration.
- The configuration defined in the CP profile overrides the global CP configuration for the switch.

### Examples

```
-> unp profile unp-prof1 captive-portal-profile cp-prof  
-> no unp profile unp-prof1 captive-portal-profile
```

### Release History

Release 5.1; command was introduced.

## Related Commands

<a href="#">unp profile</a>	Configures a UNP profile. This type of profile is applied to traffic learned on UNP ports and link aggregates.
<a href="#">captive-portal-profile</a>	Configures a Captive Portal profile.
<a href="#">show unp profile</a>	Displays the profile configuration for the switch.

## MIB Objects

```
alaDaUNPProfileTable  
  alaDaUNPProfileName  
  alaDaUNPProfileCPortalProfile
```

---



## unp profile maximum-ingress-bandwidth

Configures the maximum bandwidth limit allocated for ingress traffic on UNP ports assigned to the specified profile.

```
unp profile profile_name maximum-ingress-bandwidth bps[k | m]
```

```
no unp profile profile_name maximum-ingress-bandwidth
```

---

### Syntax Definitions

<i>profile_name</i>	The name of a UNP profile.
<i>bps</i> [k   m]	The maximum amount of bandwidth, in bits-per-second. The valid range is 0–10485760. The value may be entered as an integer (for example, <b>10</b> ) or with abbreviated units (for example, <b>10k</b> , <b>5m</b> ).

### Defaults

By default, the maximum ingress bandwidth value is not defined for the profile.

### Platforms Supported

Not supported in this release.

### Usage Guidelines

- Use the **no** form of this command to remove the maximum ingress bandwidth value for the specified profile. If a maximum ingress depth value is set for the same profile, then both the maximum ingress bandwidth and depth values must be removed together (on the same command line).
- If the maximum ingress bandwidth value is specified as an integer without an abbreviated unit designation, the value is applied in Kbps by default. For example, if the number **10** is specified, **10K** is the value applied.
- If the maximum ingress bandwidth value is set to zero, then all ingress traffic is allowed on the UNP port.
- The maximum ingress bandwidth, egress bandwidth, and depth values are applied to the port of a user device that is classified into the specified profile.
  - If multiple user devices are classified into different profiles but learned on the same UNP port, the bandwidth parameter values obtained for the last user learned are applied on the port. Parameter values applied through previously learned users are overwritten.
  - Bandwidth parameter values are *not* applied to UNP link aggregates that are assigned to the profile.

### Examples

```
-> unp profile unp-prof1 maximum-ingress-bandwidth 100
-> unp profile unp-prof1 maximum-ingress-bandwidth 10m
-> no unp profile unp-prof1 maximum-ingress-bandwidth

-> unp profile unp-prof1 maximum-ingress-bandwidth 100
-> unp profile unp-prof1 maximum-ingress-depth 50
-> no unp profile unp-prof1 maximum-ingress-bandwidth maximum-ingress-depth
```

## Release History

Release 5.1; command not supported.

## Related Commands

<a href="#">unp profile</a>	Configures a UNP profile. This type of profile is applied to traffic learned on UNP ports and link aggregates.
<a href="#">unp profile maximum-ingress-depth</a>	Configures how much the traffic can burst over the maximum ingress bandwidth rate.
<a href="#">show unp profile</a>	Displays the profile configuration for the switch.
<a href="#">show unp port bandwidth</a>	Displays the bandwidth parameter values applied to a UNP port or link aggregate.

## MIB Objects

```
alaDaUNPProfileTable  
  alaDaUNPProfileName  
  alaDaUNPProfileMaxIngressBandwidth
```

---

## unp profile maximum-egress-bandwidth

Configures the maximum bandwidth limit allocated for egress traffic on UNP ports assigned to the specified profile.

```
unp profile profile_name maximum-egress-bandwidth bps[k | m]
```

```
no unp profile profile_name maximum-egress-bandwidth
```

---

### Syntax Definitions

<i>profile_name</i>	The name of a UNP profile.
<i>bps</i> [k   m]	The maximum amount of bandwidth, in bits-per-second. The valid range is 0–10485760. The value may be entered as an integer (for example, <b>10</b> ) or with abbreviated units (for example, <b>10k</b> , <b>5m</b> ).

### Defaults

By default, the maximum egress bandwidth value is not defined for the profile.

### Platforms Supported

Not supported in this release.

### Usage Guidelines

- Use the **no** form of this command to remove the maximum egress bandwidth value for the specified profile. If a maximum egress depth value is set for the same profile, then both the maximum egress bandwidth and depth values must be removed together (on the same command line).
- If the maximum egress bandwidth value is specified as an integer without an abbreviated unit designation, the value is applied in Kbps by default. For example, if the number **10** is specified, **10K** is the value applied.
- If the maximum egress bandwidth value is set to zero, then all egress traffic is allowed on the UNP port.
- The maximum ingress bandwidth, egress bandwidth, and depth values are applied to the port of a user device that is classified into the specified profile.
  - If multiple user devices are classified into different profiles but learned on the same UNP port, the bandwidth parameter values obtained for the last user learned are applied on the port. Parameter values applied through previously learned users are overwritten.
  - Bandwidth parameter values are *not* applied to UNP link aggregates that are assigned to the profile.

### Examples

```
-> unp profile unp-prof1 maximum-egress-bandwidth 100
-> unp profile unp-prof1 maximum-egress-bandwidth 10m
-> no unp profile unp-prof1 maximum-egress-bandwidth

-> unp profile unp-prof1 maximum-egress-bandwidth 100
-> unp profile unp-prof1 maximum-egress-depth 50
-> no unp profile unp-prof1 maximum-egress-bandwidth maximum-egress-depth
```

## Release History

Release 5.1; command not supported.

## Related Commands

<a href="#">unp profile</a>	Configures a UNP profile. This type of profile is applied to traffic learned on UNP ports and link aggregates.
<a href="#">unp profile maximum-egress-depth</a>	Configures how much the traffic can burst over the maximum egress bandwidth rate.
<a href="#">show unp profile</a>	Displays the profile configuration for the switch.
<a href="#">show unp port bandwidth</a>	Displays the bandwidth parameter values applied to a UNP port or link aggregate.

## MIB Objects

```
alaDaUNPProfileTable  
  alaDaUNPProfileName  
  alaDaUNPProfileMaxEgressBandwidth
```

---

## unp profile maximum-ingress-depth

Configures the maximum ingress queue depth or bucket size assigned to each port that is associated with the specified UNP profile. The depth value is configured in bytes and is used for traffic metering. The queue depth or bucket size determines the amount of buffers allocated to the UNP port. When the queue or bucket size is reached, the switch starts dropping packets.

```
unp profile profile_name maximum-ingress-depth bytes
```

```
no unp profile profile_name maximum-ingress-depth
```

---

### Syntax Definitions

<i>profile_name</i>	The name of a UNP profile.
<i>bytes</i>	The maximum ingress depth value in bytes. The valid range is 0–16384.

### Defaults

By default, the maximum ingress depth value is determined by dividing the maximum ingress bandwidth value by 25. If the result of this calculation is 0 or 1, then 2K is used as the ingress depth value.

### Platforms Supported

Not supported in this release.

### Usage Guidelines

- Use the **no** form of this command to remove the maximum ingress depth value from the profile.
- The maximum ingress depth value is configured in conjunction with the maximum ingress bandwidth parameter. When the ingress depth value is reached, the switch starts to drop packets.
- Configure the maximum ingress bandwidth rate (**unp profile maximum-ingress-bandwidth**) before attempting to set the maximum ingress depth value.
- The maximum ingress bandwidth and depth values are applied to the port of a user device that is classified into the specified profile.
  - If multiple user devices are classified into different profiles but learned on the same UNP port, the bandwidth parameter values obtained for the last user learned are applied on the port. Parameter values applied through previously learned users are overwritten.
  - Bandwidth parameter values are *not* applied to UNP link aggregates that are assigned to the profile.

### Examples

```
-> unp profile unp-prof1 maximum-ingress-bandwidth 10
-> unp profile unp-prof1 maximum-ingress-depth 5
-> no unp profile unp-prof1 maximum-ingress-depth
```

### Release History

Release 5.1; command not supported.

## Related Commands

<b>unp profile</b>	Configures a UNP profile. This type of profile is applied to traffic learned on UNP ports and link aggregates.
<b>unp profile maximum-ingress-bandwidth</b>	Configures the maximum bandwidth limit allocated for ingress traffic on UNP ports assigned to the specified profile.
<b>show unp profile</b>	Displays the profile configuration for the switch.
<b>show unp port bandwidth</b>	Displays the bandwidth parameter values applied to a UNP port or link aggregate.

## MIB Objects

```
alaDaUNPProfileTable  
  alaDaUNPProfileName  
  alaDaUNPProfileMaxIngressDepth
```

---

## unp profile maximum-egress-depth

Configures the maximum ingress queue depth or bucket size assigned to each port that is associated with the specified UNP profile. The depth value is configured in bytes and is used for traffic metering. The queue depth or bucket size determines the amount of buffers allocated to the UNP port. When the queue or bucket size is reached, the switch starts dropping packets.

**unp profile** *profile\_name* **maximum-egress-depth** *bytes*

**no unp profile** *profile\_name* **maximum-egress-depth**

---

### Syntax Definitions

<i>profile_name</i>	The name of a UNP profile.
<i>bytes</i>	The maximum egress depth value in bytes. The valid range is 0–16384.

### Defaults

By default, the maximum egress depth value is determined by dividing the maximum ingress bandwidth value by 25. If the result of this calculation is 0 or 1, then 2K is used as the ingress depth value.

### Platforms Supported

Not supported in this release.

### Usage Guidelines

- Use the **no** form of this command to remove the maximum egress depth value from the profile.
- The maximum egress depth value is configured in conjunction with the maximum egress bandwidth parameter. When the egress depth value is reached, the switch starts to drop packets.
- Configure the maximum egress bandwidth rate (**unp profile maximum-egress-bandwidth**) before attempting to set the maximum egress depth value.
- The maximum egress bandwidth and depth values are applied to the port of a user device that is classified into the specified profile.
  - If multiple user devices are classified into different profiles but learned on the same UNP port, the bandwidth parameter values obtained for the last user learned are applied on the port. Parameter values applied through previously learned users are overwritten.
  - Bandwidth parameter values are *not* applied to UNP link aggregates that are assigned to the profile.

### Examples

```
-> unp profile unp-prof1 maximum-egress-bandwidth 10
-> unp profile unp-prof1 maximum-egress-depth 5
-> no unp profile unp-prof1 maximum-egress-depth
```

### Release History

Release 5.1; command not supported.

## Related Commands

<b>unp profile</b>	Configures a UNP profile. This type of profile is applied to traffic learned on UNP ports and link aggregates.
<b>unp profile maximum-egress-bandwidth</b>	Configures the maximum bandwidth limit allocated for egress traffic on UNP ports assigned to the specified UNP profile.
<b>show unp profile</b>	Displays the profile configuration for the switch.
<b>show unp port bandwidth</b>	Displays the bandwidth parameter values applied to a UNP port or link aggregate.

## MIB Objects

```
alaDaUNPProfileTable  
  alaDaUNPProfileName  
  alaDaUNPProfileMaxEgressDepth
```

---



## unp profile map vlan

Configures the mapping of a standard VLAN to a UNP profile. When a device is assigned to a profile through authentication or classification, the device and the port on which the device was learned are dynamically assigned to the VLAN that is mapped to the profile.

```
unp profile profile_name map vlan vlan_id
```

---

### Syntax Definitions

<i>profile_name</i>	The name of an existing UNP profile.
<i>vlan_id</i>	The VLAN ID number to associate with the specified profile name. Devices assigned to the profile are assigned to the associated VLAN.

### Defaults

By default, no mapping configuration is applied to a profile.

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- Removing a VLAN mapping configuration requires deleting the entire profile from the switch configuration (**no unp profile *profile\_name***).
- The VLAN associated with a profile must already exist in the switch configuration.
- Configuring a new VLAN mapping for a profile will overwrite the existing VLAN mapping for that profile. Any change to the mapping configuration of the profile will flush all MAC addresses learned on that profile.
- If a profile is mapped to a VLAN, then the profile is applied to traffic received on UNP bridge ports.

### Examples

```
-> unp profile unp1-vlan map vlan 10  
-> no unp profile unp1-vlan
```

### Release History

Release 5.1; command was introduced.

## Related Commands

**unp profile**

Configures a UNP profile.

**show unp profile map**

Displays the VLAN or service mapping configuration assigned to a UNP profile.

## MIB Objects

alaDaUNPProfileTable

    alaDaUNPProfileName

alaDaUNPProfileMapVlanTable

    alaDaUNPProfileMapVlanVlanID

---

## unp port-type

Configures UNP functionality for the specified port or link aggregate. This includes configuring the UNP port type (bridge). Traffic received on a UNP bridge port is classified using VLAN profiles and port attributes.

```
unp {port chassis/slot/port1[-port2] | linkagg agg_id1[-agg_id2]} port-type {bridge}
```

```
no unp {port chassis/slot/port1[-port2] | linkagg agg_id1[-agg_id2]}
```

---

### Syntax Definitions

<i>chassis</i>	The chassis identifier.
<i>slot/port1</i> [- <i>port</i> ]	The slot and port number (3/1). Use a hyphen to specify a range of ports (3/1-8).
<i>agg_id1</i> [- <i>agg_id2</i> ]	The link aggregate ID number. Use a hyphen to specify a range of link aggregate ID numbers (5-10).
<b>bridge</b>	Configures the specified port or link aggregate as a standard bridge port. This port type is used for classifying traffic into VLAN-based profiles.

### Defaults

By default, UNP is disabled on all ports and link aggregates.

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- Use the **no** form of this command to remove the UNP configuration from a port or link aggregate.
- Any configuration change to a UNP-enabled port will flush all MAC addresses learned on that port. This applies only to CLI commands used to configure UNP port parameters.
- Only one UNP port type is configurable for a specific port or link aggregate.
- There is no limit to the number of switch ports that can have UNP enabled.
- Enabling UNP is *not* supported on the following switch ports:
  - 802.1q-tagged ports.
  - Port Mirroring destination ports (MTP).
  - STP ports.
  - Ports on which a static MAC address is configured.
  - Ports on which dynamic Source Learning is disabled.
- UNP and Learned Port Security (LPS) are supported on the same port with the following conditions:
  - LPS is not supported on link aggregates.

- The LPS learning window is set globally but not on a per-port basis. So the window applies to all UNP ports.
  - When LPS is enabled or disabled on a UNP bridge port (LPS is not supported on UNP access ports), MAC addresses already learned on that port are flushed.
  - Configuring a static MAC address is not allowed on a UNP port unless LPS is also enabled on the same port.
  - When both LPS and UNP are enabled on the same port, UNP first authenticates and classifies any MAC addresses received, then LPS rules are applied. If a MAC address violates any of the LPS rules for the port, the address may get filtered or the port violated even if UNP initially determined the address was valid. In other words, LPS rules take precedence over UNP to determine if a MAC address is bridged or filtered on the port.
  - If UNP classifies a MAC address as learning but LPS learns the address as filtering, an untagged packet will show as filtering in the default VLAN for the port and a tagged packet MAC will show as filtering in the specific tagged VLAN.
  - When a MAC address is filtered by LPS, the **show unp user** command will display “LPS-Blocked” as the classification source for that MAC address.
- UNP ports support both tagged and untagged packets. If the VLAN ID of a tagged packet matches the VLAN associated with a UNP into which the packet was classified, the packet is learned as forwarding and a tagged VLAN-port association is created. However, if the VLAN ID tag does not match the VLAN ID associated with the profile, the packet is filtered.
  - UNP bridge ports support single-tagged and double-tagged packets with the following conditions:
    - Double-tagged packets are treated the same as single-tagged packets in that UNP will only use the outer VLAN tag to determine how the packet is processed on the UNP bridge port.

## Examples

```
-> unp port 1/1-3 port-type bridge
-> no unp port 1/1
-> unp linkagg 8 port-type bridge
-> no unp linkagg 8
```

## Release History

Release 5.1; command was introduced.

## Related Commands

<b>unp admin-state</b>	Configures the administrative status of the UNP configuration for the specified port or link aggregate.
<b>unp profile</b>	Configures a UNP profile that is used to classify traffic received on UNP ports.
<b>show unp port</b>	Displays the UNP configuration for the port.

## MIB Objects

```
alaDaUNPPortTable
  alaDaUNPPortIfIndex
  alaDaUNPPortType
```

## unp redirect port-bounce

Enables or disables the port bounce action on the specified UNP bridge port or globally on all UNP bridge ports. When enabled, a port bounce is triggered upon receipt of a RADIUS Change of Authorization (COA) or a Disconnect request (DM) message from a redirection server to enforce a user role or terminate a user session.

```
unp {port chassis/slot/port1[-port2] | linkagg agg_id[-agg_id2]} redirect port-bounce
```

```
no unp {port chassis/slot/port1[-port2] | linkagg agg_id[-agg_id2]} redirect port-bounce
```

```
unp redirect port-bounce {enable | disable}
```

---

### Syntax Definitions

<i>chassis/slot/port</i> [-port2]	The chassis ID, slot, and port number (3/1/1) for a specific UNP bridge port. Use a hyphen to specify a range of ports (3/1/1-8).
<i>agg_id</i> [-agg_id2]	The link aggregate ID number for a specific UNP bridge link aggregate. Use a hyphen to specify a range of link aggregate IDs (10-15).
<b>enable</b>	Globally enables the port bounce function for all UNP bridge ports.
<b>disable</b>	Globally disables the port bounce function for all UNP bridge ports.

### Defaults

By default, port bounce is disabled on all UNP bridge ports.

### Platforms Supported

Not supported in this release.

### Usage Guidelines

- Use the **port** or **linkagg** parameter to enable port bounce for a specific UNP bridge port or link aggregate. Use the **no** form of this command to disable port bounce for a specific UNP bridge port or link aggregate. Note that port bounce is not supported on UNP access ports.
- Use the **enable** or **disable** parameters to globally enable or disable the port bounce status for all UNP bridge ports or link aggregates on the entire switch.
- This command applies only to ports and link aggregates configured as UNP bridge ports; this command does not apply to UNP access ports.
- The port bounce action only applies to a MAC authenticated non-suppliant (non-802.1X device). If the device is a suppliant (802.1X device), then an EAP-Fail frame is sent instead. In both cases, re-authentication is triggered for both types of devices.
- The port-level setting of the port bounce action overrides the global setting for the switch. The following table indicates when a port is toggled based on the status of port bounce at the global and port level:

Global Port Bounce	Per-Port Bounce	Action
Enabled	Disabled	Port is not toggled
Enabled	Enabled	Port is toggled
Disabled	Enabled	Port is toggled
Disabled	Disabled	Port is not toggled

- This command is used when configuring the switch to interact with the Unified Policy Access Manager (UPAM) or the ClearPass Policy Manager (CPPM) as part of the OmniSwitch Bring Your Own Devices (BYOD) solution.

## Examples

Port-level configuration example:

```
-> unp port 1/1/6 redirect port-bounce
-> no unp port 1/1/6 redirect port-bounce
```

Global configuration example:

```
-> unp redirect port-bounce enable
-> unp redirect port-bounce disable
```

## Release History

Release 5.1; command was introduced.

## Related Commands

<a href="#">unp port-type</a>	Configures UNP functionality on a port or link aggregate.
<a href="#">unp redirect pause-timer</a>	Configures the global pause timer value for the switch
<a href="#">unp redirect proxy-server-port</a>	Configures the HTTP proxy port number to use for redirection.
<a href="#">unp redirect server</a>	Configures an IP network address to allow HTTP traffic redirection.
<a href="#">unp redirect allowed-name</a>	Configures a list of additional IP addresses to which a host can access.
<a href="#">show unp port</a>	Displays the UNP configuration for the port.
<a href="#">show unp global configuration</a>	Displays the profile designated as the authentication server down UNP for the switch.

## MIB Objects

```
alaDaUNPPortTable
  alaDaUNPPortIfIndex
  alaDaUNPPortRedirectPortBounce
alaDaUNPGlobalConfiguration
  alaDaUNPRedirectPortBounce
```

## unp 802.1x-authentication

Configures the status of 802.1X authentication for the specified UNP port. Enable this functionality to invoke 802.1X-based authentication for devices connected to the UNP port.

**unp {port chassis/slot/port1[-port2] | linkagg agg\_id[-agg\_id2]} 802.1x-authentication**

**no unp {port chassis/slot/port1[-port2] | linkagg agg\_id[-agg\_id2]} 802.1x-authentication**

---

### Syntax Definitions

<i>chassis</i>	The chassis identifier.
<i>slot/port[-port2]</i>	The slot and port number (3/1). Use a hyphen to specify a range of ports (3/1-8).
<i>agg_id[-agg_id2]</i>	Link aggregate ID number. Use a hyphen to specify a range of link aggregate IDs (10-15).

### Defaults

By default, 802.1X authentication is enabled on UNP ports.

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- Use the **no** form of this command to disable 802.1X authentication on a UNP port or link aggregate.
- This command is only allowed on UNP-enabled ports and link aggregates.
- If a range of ports or link aggregates is specified with this command, any non-UNP ports or aggregates within the range are skipped.
- An option exists to classify a device into an alternate UNP in the event successful 802.1X authentication does not return a UNP name. See the [unp 802.1x-authentication pass-alternate](#) command.
- If UNP MAC authentication, 802.1X authentication, and classification (see [unp classification](#) and [unp mac-authentication](#)) are disabled on the UNP port, all MAC addresses received on that port are blocked unless a default UNP is configured.
- Configuring an authentication server down UNP (see [unp auth-server-down](#)) is highly recommended when MAC or 802.1X authentication is enabled on VLAN bridge or SPB access ports or aggregates. This is because after a switch reload, traffic from devices connected to these types of ports and aggregates reaches the switch and triggers the authentication process before route convergence has completed and the server can be reached.
  - If an authentication server down UNP is configured, devices are temporarily learned in that profile and authentication is automatically attempted again after the timeout period expires. This allows time for the server to become reachable from the switch after a reload.
  - If an authentication server down UNP is not configured, devices are learned as filtering and will remain in that state. There is no further attempt to authenticate these devices again.

- The authentication server down functionality is *not* supported on VXLAN access ports or aggregates.

## Examples

```
-> unp port 1/1/5 802.1x-authentication
-> no unp port 1/1/5 802.1x-authentication

-> unp port 1/1/10-15 802.1x-authentication
-> no unp port 1/1/10-15 802.1x-authentication

-> unp linkagg 10 802.1x-authentication
-> no unp linkagg 20 802.1x-authentication

-> unp linkagg 10-50 802.1x-authentication
-> no unp linkagg 10-50 802.1x-authentication
```

## Release History

Release 5.1; command was introduced.

## Related Commands

<a href="#">unp port-type</a>	Configures UNP functionality on a port or link aggregate.
<a href="#">unp 802.1x-authentication pass-alternate</a>	Assigns the device to another profile when successful 802.1X authentication does not return a UNP name.
<a href="#">unp mac-authentication</a>	Configures the MAC authentication status for the UNP port.
<a href="#">unp classification</a>	Configures the classification status for the UNP port.
<a href="#">unp auth-server-down</a>	Configures an authentication server down UNP for the switch.
<a href="#">show unp port</a>	Displays the UNP configuration for the port.

## MIB Objects

```
alaDaUNPPortTable
  alaDaUNPPortIfIndex
  alaDaUNPPort8021XAuthStatus
```

---



## unp 802.1x-authentication pass-alternate

Configures the name of an existing UNP to use as an alternate profile. A device is assigned to the alternate profile when successful 802.1X authentication does not return the name of a profile.

```
unp {port chassis/slot/port1[-port2] | linkagg agg_id[-agg_id2]} 802.1x-authentication pass-alternate profile_name
```

```
no unp {port chassis/slot/port1[-port2] | linkagg agg_id} 802.1X-authentication pass-alternate
```

---

### Syntax Definitions

<i>chassis</i>	The chassis identifier.
<i>slot/port[-port2]</i>	The slot and port number (3/1). Use a hyphen to specify a range of ports (3/1-8).
<i>agg_id[-agg_id2]</i>	Link aggregate ID number. Use a hyphen to specify a range of link aggregate IDs (10-15).
<i>profile_name</i>	The name of an existing VLAN, SPB, or VXLAN profile.

### Defaults

By default, no alternate UNP is configured.

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- Use the **no** form of this command to remove the alternate profile from the UNP port configuration.
- This command is only allowed on UNP-enabled ports and link aggregates.
- If a range of ports or link aggregates is specified with this command, any non-UNP ports or aggregates within the range are skipped.
- The profile name specified with this command must already exist in the switch configuration.

### Examples

```
-> unp port 1/1/1 802.1x-authentication pass-alternate Finance
-> unp port 1/1/1-3 802.1x-authentication pass-alternate CustomerA
-> no unp port 1/1/1-3 802.1x-authentication pass-alternate

-> unp linkagg 5 802.1x-authentication pass-alternate AltUNP
-> unp linkagg 10-15 802.1x-authentication pass-alternate CustomerB
-> no linkagg 5 mac-authentication pass-alternate
```

### Release History

Release 5.1; command was introduced.

## Related Commands

<b>unp profile</b>	Configures a UNP profile that is used to classify traffic received on UNP ports.
<b>unp port-type</b>	Configures UNP functionality on a port or link aggregate.
<b>unp 802.1x-authentication</b>	Configures the 802.1X authentication status for the UNP port.
<b>show unp port</b>	Displays the UNP port parameter configuration.

## MIB Objects

```
alaDaUNPPortTable  
  alaDaUNPPortIfIndex  
  alaDaUNPPort8021XPassAltProfileName
```

---

## unp 802.1x-authentication tx-period

Configures the 802.1X authentication re-transmission time interval for the specified UNP port.

```
unp {port chassis/slot/port1[-port2] | linkagg agg_id[-agg_id2]} 802.1x-authentication tx-period  
seconds
```

```
no unp {port chassis/slot/port1[-port2] | linkagg agg_id[-agg_id2]} 802.1x-authentication tx-period
```

---

### Syntax Definitions

<i>chassis</i>	The chassis identifier.
<i>slot/port[-port2]</i>	The slot and port number (3/1). Use a hyphen to specify a range of ports (3/1-8).
<i>agg_id[-agg_id2]</i>	Link aggregate ID number. Use a hyphen to specify a range of link aggregate IDs (10-15).
<i>seconds</i>	The amount of time before an EAP Request Identity is retransmitted. The valid range is 1–60 seconds.

### Defaults

By default, the retransmission period is set to 30 seconds.

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- Use the **no** form of this command to set the re-transmission time interval back to the default value of 30 seconds.
- The re-transmission time period only applies to UNP ports on which 802.1X authentication is enabled.
- If a range of ports is specified with this command, any non-UNP ports within the range are skipped.

### Examples

```
-> unp port 1/1/5 802.1x-authentication tx-period 60  
-> unp port 1/1/6-10 802.1x-authentication tx-period 20  
-> no unp port 1/1/5 802.1x-authentication tx-period  
  
-> unp linkagg 10 802.1x-authentication tx-period 60  
-> unp linkagg 20-25 802.1x-authentication tx-period 20  
-> no unp linkagg 10 802.1x-authentication tx-period
```

### Release History

Release 5.1; command was introduced.

## Related Commands

<b>unp port-type</b>	Configures UNP functionality on a port or link aggregate.
<b>unp 802.1x-authentication</b>	Configures the 802.1X authentication status for the UNP port.
<b>show unp port</b>	Displays the UNP configuration for the port.

## MIB Objects

```
alaDaUNPPortTable  
  alaDaUNPPort8021XTxPeriod
```

---

## unp 802.1x-authentication supp-timeout

Configures the 802.1X authentication supplicant timeout for the specified UNP port. This value is the amount of time the switch will wait before timing out an 802.1X user that is attempting to authenticate.

**unp** {port *chassis/slot/port1[-port2]* | linkagg *agg\_id[-agg\_id2]*} **802.1x-authentication supp-timeout** *seconds*

**no unp** {port *chassis/slot/port1[-port2]* | linkagg *agg\_id[-agg\_id2]*} **802.1x-authentication supp-timeout**

---

### Syntax Definitions

<i>chassis</i>	The chassis identifier.
<i>slot/port[-port2]</i>	The slot and port number (3/1). Use a hyphen to specify a range of ports (3/1-8).
<i>agg_id[-agg_id2]</i>	Link aggregate ID number. Use a hyphen to specify a range of link aggregate IDs (10-15)
<i>seconds</i>	The timeout value. The valid range is 1–120 seconds.

### Defaults

By default, the supplicant timeout value is set to 30 seconds.

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- Use the **no** form of this command to set the supplicant timeout back to the default value of 30 seconds.
- Increase the supplicant timeout value if the authentication process requires additional steps by the user (for example, entering a challenge).
- The supplicant timeout is applied only to 802.1X users connected to a UNP port on which 802.1X authentication is enabled.
- If a range of ports is specified with this command, any non-UNP ports within the range are skipped.

### Examples

```
-> unp port 1/1/5 802.1x-authentication supp-timeout 10
-> unp port 1/1/10-15 802.1x-authentication supp-timeout 60
-> no unp port 1/1/5 802.1x-authentication supp-timeout

-> unp linkagg 10 802.1x-authentication supp-timeout 40
-> unp linkagg 2-5 802.1x-authentication supp-timeout 40
-> no unp linkagg 10 802.1x-authentication supp-timeout
```

### Release History

Release 5.1; command was introduced.

## Related Commands

<a href="#">unp port-type</a>	Configures UNP functionality on a port or link aggregate.
<a href="#">unp 802.1x-authentication</a>	Configures the 802.1X authentication status for the UNP port.
<a href="#">show unp port</a>	Displays the UNP configuration for the port.

## MIB Objects

alaDaUNPPortTable  
alaDaUNPPort8021XSuppTimeOut

---

## unp 802.1x-authentication max-req

Configures the maximum number of times the switch will retransmit a request for authentication information (request identity, password, challenge) to an 802.1X user on the specified UNP port.

```
unp {port chassis/slot/port1[-port2] | linkagg agg_id[-agg_id2]} 802.1x-authentication max-req max_req
```

```
no unp {port chassis/slot/port1[-port2] | linkagg agg_id[-agg_id2]} 802.1x-authentication max-req
```

---

### Syntax Definitions

<i>chassis</i>	The chassis identifier.
<i>slot/port[-port2]</i>	The slot and port number (3/1). Use a hyphen to specify a range of ports (3/1-8).
<i>agg_id[-agg_id2]</i>	Link aggregate ID number. Use a hyphen to specify a range of link aggregate IDs (10-15).
<i>max_req</i>	The maximum number of times information requests are retransmitted. The valid range is 1–3.

### Defaults

By default, the maximum number of requests is set to two.

### Platforms Supported

Not supported in this release.

### Usage Guidelines

- Use the **no** form of this command to set the maximum number of times information requests are retransmitted back to the default value of two.
- The 802.1X requests are transmitted, up to the maximum number allowed, until the authentication session is shut down based on the supplicant timeout value configured for the 802.1X port.
- The maximum number of requests is applied only to 802.1X users connected to a UNP port on which 802.1X authentication is enabled.
- If a range of ports or link aggregates is specified with this command, any non-UNP ports within the range are skipped.

### Examples

```
-> unp port 1/1/5 802.1x-authentication max-req 10
-> unp port 1/1/10-15 802.1x-authentication max-req 5
-> no unp port 1/1/5 802.1x-authentication max-req

-> unp linkagg 10 802.1x-authentication max-req 10
-> unp linkagg 2-5 802.1x-authentication max-req 5
-> no unp linkagg 10 802.1x-authentication max-req
```

## Release History

Release 5.1; command was introduced.

## Related Commands

<a href="#">unp 802.1x-authentication supp-timeout</a>	Configures the number of seconds before the switch will time out an 802.1X user that is attempting to authenticate.
<a href="#">unp port-type</a>	Configures UNP functionality on a port or link aggregate.
<a href="#">unp 802.1x-authentication</a>	Configures the 802.1X authentication status for the UNP port.
<a href="#">show unp port</a>	Displays the UNP configuration for the port.

## MIB Objects

alaDaUNPPortTable  
alaDaUNPPort8021XMaxReq

---



## unp 802.1x-authentication bypass-8021x

Configures whether the 802.1X authentication process is bypassed on the specified UNP port. When enabled, the 802.1X device authentication process is skipped; only MAC authentication or rule-based classification is applied to device traffic on the UNP port.

```
unp {port chassis/slot/port1[-port2] | linkagg agg_id[-agg_id2]} 802.1x-authentication bypass-8021x
```

```
no unp {port chassis/slot/port1[-port2] | linkagg agg_id[-agg_id2]} 802.1x-authentication bypass-8021x
```

---

### Syntax Definitions

<i>chassis</i>	The chassis identifier.
<i>slot/port[-port2]</i>	The slot and port number (3/1). Use a hyphen to specify a range of ports (3/1-8).
<i>agg_id[-agg_id2]</i>	Link aggregate ID number. Use a hyphen to specify a range of link aggregate IDs (10-15).

### Defaults

By default, 801.1X authentication bypass is disabled on the UNP port; 802.1X authentication is attempted first.

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- This command is only allowed on UNP-enabled ports and link aggregates.
- Enabling 802.1X authentication bypass is not allowed on UNP ports that are configured with an 802.1X authentication failure policy.

### Examples

```
-> unp port 1/1/5 802.1x-authentication bypass-8021x
-> no unp port 1/1/5 802.1x-authentication bypass-8021x
-> unp port 1/1/10-15 802.1x-authentication bypass-8021x
-> no unp port 1/1/10-15 802.1x-authentication bypass-8021x

-> unp linkagg 10 802.1x-authentication bypass-8021x
-> no unp linkagg 10 802.1x-authentication bypass-8021x
-> unp linkagg 2-5 802.1x-authentication bypass-8021x
-> no unp linkagg 2-5 802.1x-authentication bypass-8021x
```

### Release History

Release 5.1; command was introduced.

## Related Commands

<b>unp port-type</b>	Configures UNP functionality on a port or link aggregate.
<b>unp 802.1x-authentication</b>	Configures the 802.1X authentication status for the UNP port.
<b>unp mac-authentication allow-eap</b>	Configures whether or not subsequent 802.1X authentication is attempted based on the MAC authentication results.
<b>show unp port</b>	Displays the UNP configuration for the port.

## MIB Objects

alaDaUNPPortTable  
alaDaUNPPort8021XBypassStatus

---

## unp 802.1x-authentication failure-policy

Configures whether the switch attempts subsequent MAC authentication for a device after the initial 802.1X authentication process fails.

```
unp {port chassis/slot/port1[-port2] | linkagg agg_id[-agg_id2]} 802.1x-authentication failure-policy {mac}
```

```
no unp {port chassis/slot/port1[-port2] | linkagg agg_id[-agg_id2]} 802.1x-authentication failure-policy
```

---

### Syntax Definitions

<i>chassis</i>	The chassis identifier.
<i>slot/port[-port2]</i>	The slot and port number (3/1). Use a hyphen to specify a range of ports (3/1-8).
<i>agg_id[-agg_id2]</i>	Link aggregate ID number. Use a hyphen to specify a range of link aggregate IDs (10-15).
<b>mac</b>	Perform MAC authentication if 802.1X authentication fails.

### Defaults

By default, device classification is performed after the initial 802.1X authentication process fails.

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- Configuring the 802.1X authentication failure policy is not allowed on UNP ports on which 802.1X authentication bypass is enabled.
- Device classification (the default) is performed based on the classification options configured for the UNP port.

### Examples

```
-> unp port 1/1/5 802.1x-authentication failure-policy mac
-> no unp port 1/1/10-15 802.1x-authentication failure-policy

-> unp linkagg 10 802.1x-authentication failure-policy mac
-> no unp linkagg 2-5 802.1x-authentication failure-policy
```

### Release History

Release 5.1; command was introduced.

## Related Commands

<b>unp port-type</b>	Configures UNP functionality on a port or link aggregate.
<b>unp 802.1x-authentication</b>	Configures the 802.1X authentication status for the UNP port.
<b>unp 802.1x-authentication bypass-8021x</b>	Configures the 802.1X bypass operation status for the UNP port.
<b>show unp port</b>	Displays the UNP configuration for the port.

## MIB Objects

alaDaUNPPortTable  
alaDaUNPPort8021XFailurePolicy

---

## unp mac-authentication

Configures the status of MAC authentication for the specified UNP port. Enable this functionality to invoke MAC-based authentication for devices connected to the UNP port.

**unp** {port *chassis/slot/port1[-port2]* | linkagg *agg\_id[-agg\_id2]*} **mac-authentication**

**no unp** {port *chassis/slot/port1[-port2]* | linkagg *agg\_id[-agg\_id2]*} **mac-authentication**

---

### Syntax Definitions

<i>chassis</i>	The chassis identifier.
<i>slot/port[-port2]</i>	The slot and port number (3/1). Use a hyphen to specify a range of ports (3/1-8).
<i>agg_id[-agg_id2]</i>	The link aggregate ID number. Use a hyphen to specify a range of IDs (10-20).

### Defaults

By default, MAC authentication is enabled.

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- Use the **no** form of this command to disable MAC authentication on a UNP port or link aggregate.
- This command is only allowed on UNP-enabled ports (both bridge and access port types).
- MAC-based authentication is supported only through a RADIUS server.
- An option exists to classify a device into an alternate UNP in the event successful MAC authentication does not return a UNP name.
- If MAC authentication fails, any classification rules configured for the UNP port are applied.
- If UNP MAC authentication, 802.1X authentication, and classification (see [unp classification](#) and [unp 802.1x-authentication](#)) are disabled on the UNP port, all MAC addresses received on that port are blocked unless a default UNP is configured and/or trust VLAN tag is enabled for the port.
- Configuring an authentication server down UNP (see [unp auth-server-down](#)) is highly recommended when MAC or 802.1X authentication is enabled on VLAN bridge or SPB access ports or aggregates. This is because after a switch reload, traffic from devices connected to these types of ports and aggregates reaches the switch and triggers the authentication process before route convergence has completed and the server can be reached.
  - If an authentication server down UNP is configured, devices are temporarily learned in that profile and authentication is automatically attempted again after the timeout period expires. This allows time for the server to become reachable from the switch after a reload.

- If an authentication server down UNP is not configured, devices are learned as filtering and will remain in that state. There is no further attempt to authenticate these devices again.
- The authentication server down functionality is *not* supported on VXLAN access ports or aggregates.

## Examples

```
-> unp port 1/1 mac-authentication
-> no unp port 1/1 mac-authentication
-> unp linkagg 2 mac-authentication
-> no unp linkagg 2 mac-authentication
```

## Release History

Release 5.1; command was introduced.

## Related Commands

<a href="#">unp port-type</a>	Configures UNP functionality on a port or link aggregate.
<a href="#">unp mac-authentication pass-alternate</a>	Assigns the device to another VLAN-based or service-based UNP when successful MAC authentication does not return a UNP name.
<a href="#">unp classification</a>	Configures the classification status for the UNP port.
<a href="#">show unp port</a>	Displays the UNP configuration for the port.

## MIB Objects

```
alaDaUNPPortTable
  alaDaUNPPortIfIndex
  alaDaUNPPortMacAuthFlag
```

---

## unp mac-authentication pass-alternate

Configures the name of an existing VLAN-based or service-based UNP to use as an alternate profile. A device is assigned to the alternate profile when successful MAC authentication does not return a UNP name.

```
unp {port chassis/slot/port1[-port2] | linkagg agg_id[-agg_id2]} mac-authentication pass-alternate profile_name
```

```
no unp {port chassis/slot/port1[-port2] | linkagg agg_id[-agg_id2]} mac-authentication pass-alternate
```

---

### Syntax Definitions

<i>chassis</i>	The chassis identifier.
<i>slot/port[-port2]</i>	The slot and port number (3/1). Use a hyphen to specify a range of ports (3/1-8).
<i>agg_id[-agg_id2]</i>	The link aggregate ID number. Use a hyphen to specify a range of IDs (10-20).
<i>profile_name</i>	The name of an existing VLAN, SPB, or VXLAN profile.

### Defaults

By default, no alternate UNP is configured.

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- Use the **no** form of this command to remove the alternate profile from the UNP port configuration.
- Service-based profiles classify traffic received on UNP access ports; VLAN-based profiles classify traffic received on UNP bridge ports. Make sure the specified port is of the correct type for the specified profile.
- The UNP name specified with this command must already exist in the switch configuration.

### Examples

```
-> unp port 1/1 mac-authentication pass-alternate Finance
-> unp port 1/1-3 mac-authentication pass-alternate CustomerA
-> unp port 1/4-10 mac-authentication pass-alternate CustomerC
-> no unp port 1/1-3 mac-authentication pass-alternate

-> unp linkagg 5 mac-authentication pass-alternate AltUNP
-> unp linkagg 1-5 mac-authentication pass-alternate CustomerB
-> unp linkagg 10-12 mac-authentication pass-alternate CustomerD
-> no linkagg 5 mac-authentication pass-alternate
```

### Release History

Release 5.1; command was introduced.

## Related Commands

<b>unp profile</b>	Configures a UNP profile that is used to classify traffic received on UNP ports.
<b>unp port-type</b>	Configures UNP functionality on a port or link aggregate.
<b>unp mac-authentication</b>	Configures the MAC authentication status for the UNP port.
<b>show unp port</b>	Displays the UNP port parameter configuration.

## MIB Objects

```
alaDaUNPPortTable  
  alaDaUNPPortIfIndex  
  alaDaUNPPortPassAltProfileName
```

---



## unp mac-authentication allow-eap

Configures whether the switch attempts subsequent 802.1X authentication for a device connected to a UNP port on which 802.1X authentication bypass is enabled. When 802.1X bypass is enabled on the port, MAC authentication is performed first on any device connected to that port. This command specifies the conditions under which 802.1X authentication is performed or bypassed after the initial MAC authentication process.

```
unp {port chassis/slot/port1[-port2] | linkagg agg_id[-agg_id2]} mac-authentication allow-eap {pass | fail | noauth}
```

```
no unp {port chassis/slot/port1[-port2] | linkagg agg_id[-agg_id2]} mac-authentication allow-eap
```

---

### Syntax Definitions

<i>chassis</i>	The chassis identifier.
<i>slot/port[-port2]</i>	The slot and port number (3/1). Use a hyphen to specify a range of ports (3/1-8).
<i>agg_id[-agg_id2]</i>	Link aggregate ID number. Use a hyphen to specify a range of link aggregate IDs (10-15).
<b>pass</b>	Perform 802.1X (EAP frame) authentication if the device passes MAC authentication.
<b>fail</b>	Perform 802.1X (EAP frame) authentication if the device fails MAC authentication.
<b>noauth</b>	Perform 802.1X (EAP frame) authentication if MAC authentication is not configured on the UNP port.

### Defaults

By default, the allow 802.1X authentication option is not set.

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- Use the **no** form of this command to set the allow 802.1X authentication option back to the default value of none (option is not set).
- The port specified with this command must also have 802.1X bypass enabled (see the [unp 802.1x-authentication bypass-8021x](#) command). If bypass is not enabled, the option configured with this command does not apply.
- This command is only allowed on UNP-enabled ports and link aggregates.

### Examples

```
-> unp port 1/1/5 mac-authentication allow-eap pass
-> unp port 1/1/10-15 mac-authentication allow-eap fail
-> no unp port 1/1/5 mac-authentication allow-eap
```

```
-> unp linkagg 10 mac-authentication allow-eap noauth
-> unp linkagg 2-5 mac-authentication allow-eap none
-> no unp linkagg 10 mac-authentication allow-eap
```

## Release History

Release 5.1; command was introduced.

## Related Commands

<a href="#">unp port-type</a>	Configures UNP functionality on a port or link aggregate.
<a href="#">unp 802.1x-authentication bypass-8021x</a>	Configures the 802.1X bypass operation status for the UNP port.
<a href="#">show unp port</a>	Displays the UNP configuration for the port.

## MIB Objects

```
alaDaUNPPortTable
  alaDaUNPPortMacAllowEap
```

---

## unp classification

Configures the classification status for the specified UNP port. When classification is enabled but authentication is disabled or fails, UNP classification rules (such as MAC address, MAC address range, IP network address, or VLAN tag) are applied to the traffic received on the UNP port.

**unp** {port *chassis/slot/port1*[-*port2*] | linkagg *agg\_id*[-*agg\_id2*]} **classification**

**no unp** {port *chassis/slot/port1*[-*port2*] | linkagg *agg\_id*[-*agg\_id2*]} **classification**

---

### Syntax Definitions

<i>chassis</i>	The chassis identifier.
<i>slot/port</i> [- <i>port2</i> ]	The slot and port number (3/1). Use a hyphen to specify a range of ports (3/1-8).
<i>agg_id</i> [- <i>agg_id2</i> ]	The link aggregate ID number. Use a hyphen to specify a range of link aggregate ID numbers (10-20).

### Defaults

By default, classification is enabled on the UNP port.

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- Use the **no** form of this command to disable the classification status for a UNP port or link aggregate.
- This command is allowed only on UNP-enabled ports (both bridge and access ports).
- UNP classification rules are applied if authentication is disabled on the port, is enabled on the port but the RADIUS server is not configured, or the authentication method fails.
- If untagged device traffic does not match any of the classification rules, the device is assigned to the default UNP configured for the port.
- If tagged device traffic does not match any of the classification rules, the device is classified based on the VLAN tag of the traffic if a VLAN matching the tag exists in the switch configuration.
- If all of the UNP authentication methods *and* UNP classification are disabled for the UNP port, then all MAC addresses received on that port are blocked unless a default VLAN is specified and/or trust VLAN tag is enabled for the port.

- When classification is enabled for the port, UNP classification rules are applied in the following order of precedence:
  - MAC address + VLAN tag
  - MAC address
  - MAC address range + VLAN tag
  - MAC address range
  - IP address + VLAN tag
  - IP address
  - VLAN tag

## Examples

```
-> unp port 1/1 classification
-> no unp port 1/1 classification
-> unp port 1/1-4 classification
ERROR: Port 1/3 is not a unp-port
-> unp linkagg 5 classification
-> no unp linkagg 5 classification
```

## Release History

Release 5.1; command was introduced.

## Related Commands

- show unp classification lldp-rule**      Displays the UNP classification rule configuration for the switch.
- show unp port**                      Displays the UNP configuration for the port.

## MIB Objects

```
alaDaUNPPortTable
  alaDaUNPPortIfIndex
  alaDaUNPPortClassificationFlag
```

---

## unp default-profile

Configures the name of an existing UNP classification profile to serve as the default UNP for the specified UNP port or link aggregate.

```
unp {port chassis/slot/port1[-port2] | linkagg agg_id[-agg_id2]} default-profile profile_name
```

```
no unp {port chassis/slot/port1[-port2] | linkagg agg_id} default-profile
```

---

### Syntax Definitions

<i>chassis</i>	The chassis identifier when running in virtual chassis mode.
<i>slot/port</i> [- <i>port2</i> ]	The slot and port number (3/1) of a UNP-enabled port. Use a hyphen to specify a range of ports (3/1-8).
<i>agg_id</i> [- <i>agg_id2</i> ]	The link aggregate ID number. Use a hyphen to specify a range of IDs (10-20).
<i>profile_name</i>	The name of an existing UNP classification profile.

### Defaults

By default, there is no default profile configured for UNP ports or link aggregates.

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- Use the **no** form of the command to remove the default UNP from the port configuration.
- This command is allowed only on UNP-enabled ports.
- The UNP classification profile specified with this command must already exist in the switch configuration.
- The default UNP is used to classify devices on the port when one of the following conditions occur:
  - UNP authentication and classification are not enabled on the port.
  - MAC authentication fails.
  - Device traffic does not match any UNP classification rules.
  - Untagged device traffic is not classified.

### Examples

```
-> unp port 1/1 default-profile Sales
-> no unp port 1/1 default-profile
-> unp port 1/1-4 default-profile Sales
ERROR: Port 1/2 is not a unp port
ERROR: Port 1/3 is not a unp port
```

```
-> unp port 1/1 default-profile BAD-UNP
ERROR: UNP doesn't exist
-> no unp port 1/1-4 default-profile
-> unp linkagg 5 default-profile VM1-Server1
-> no unp linkagg 5 default-profile
```

## Release History

Release 5.1; command was introduced.

## Related Commands

<a href="#">unp profile</a>	Configures a UNP profile that is used to classify traffic received on UNP ports.
<a href="#">unp port-type</a>	Configures the status of UNP functionality on the port.
<a href="#">show unp port</a>	Displays the UNP configuration for the port.

## MIB Objects

```
alaDaUNPPortTable
  alaDaUNPPortIfIndex
  alaDaUNPPortDefaultProfileName
```

---

## unp aaa-profile

Assigns the name of an existing authentication, authorization, and accounting (AAA) profile to the specified UNP port or link aggregate. This type of profile defines AAA configuration options (such as RADIUS servers and RADIUS client attributes) that are applied to device traffic received on the UNP port to which the profile is assigned.

```
unp {port chassis/slot/port1[-port2] | linkagg agg_id[-agg_id2]} aaa-profile profile_name
```

```
no unp {port chassis/slot/port1[-port2] | linkagg agg_id[-agg_id2]} aaa-profile
```

---

### Syntax Definitions

<i>chassis/slot/port[-port2]</i>	The chassis ID, slot, and port number (3/1/1) for a specific UNP port. Use a hyphen to specify a range of ports (3/1/1-8).
<i>agg_id[-agg_id2]</i>	The link aggregate ID number. Use a hyphen to specify a range of link aggregate IDs (10-15).
<i>profile_name</i>	The name of an existing AAA profile.

### Defaults

By default, there is no AAA profile assigned to UNP ports or link aggregates. The global AAA configuration for the switch is applied.

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- Use the **no** form of the command to remove the AAA profile from the port configuration.
- The AAA profile specified with this command must already exist in the switch configuration.
- AAA profiles are configured using the [aaa profile](#) command.

### Examples

```
-> unp port 1/1/5 aaa-profile A1
-> no unp port 1/1/5 aaa-profile

-> unp port 1/1/1-5 aaa-profile A2
-> no unp port 1/1/1-5 aaa-profile

-> unp linkagg 10 aaa-profile A3
-> no unp linkagg 10 aaa-profile
```

### Release History

Release 5.1; command was introduced.

## Related Commands

**unp port-type**

Configures UNP functionality for the specified port or link aggregate.

**aaa profile**

Configures an AAA configuration profile.

**show unp port**

Displays the UNP configuration for the port.

## MIB Objects

alaDaUNPPortTable

alaDaUNPPortIfIndex

alaDaUNPPortAaaProfile

---



## unp port port-template

Assigns the name of an existing port template to the specified UNP port or link aggregate. A port template defines UNP port configuration options (such as the type of authentication, classification status, a default profile) that are applied to the UNP port to which the template is assigned.

**unp** {port *chassis/slot/port1[-port2]* | linkagg *agg\_id[-agg\_id2]*} port-template *template\_name*

**no unp** {port *chassis/slot/port1[-port2]* | linkagg *agg\_id[-agg\_id2]*} port-template

---

### Syntax Definitions

<i>chassis/slot/port1[-port2]</i>	The chassis ID, slot, and port number (3/1/1) for a specific UNP port. Use a hyphen to specify a range of ports (3/1/1-8).
<i>agg_id[-agg_id2]</i>	The link aggregate ID number. Use a hyphen to specify a range of link aggregate IDs (10-15).
<i>template_name</i>	The name of an existing port template.

### Defaults

By default, the “bridgeDefaultPortTemplate” port template is assigned to UNP bridge ports.

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- Use the **no** form of the command to remove the port template from the port configuration.
- When a custom template is removed from a UNP port, the port reverts back to using the default template to define UNP port parameter options.
- The port template specified with this command must already exist in the switch configuration.
- When a port template is applied to a UNP port, the parameter values defined in the template will override any existing UNP port configuration. In addition, any attempt to explicitly configure a port that is associated with a template is not allowed.

### Examples

```
-> unp port 1/1/5 port-template up1
-> unp port 1/1/1-5 port-template up2
-> no unp port 1/1/5 port-template
-> no unp port 1/1/1-5 port-template

-> unp linkagg 10 port-template up3
-> unp linkagg 10-50 port-template up4
-> no unp linkagg 10 port-template
-> no unp linkagg 10-50 port-template
```

```
-> unp port 1/1/5 802.1x-authentication
ERROR: Port Template already enforced on port, please remove it for manual config
on Port
```

## Release History

Release 5.1; command was introduced.

## Related Commands

<a href="#">unp port-type</a>	Configures the UNP status and port type for the specified port or link aggregate.
<a href="#">unp port-template</a>	Configures a port template.
<a href="#">show unp port config</a>	Displays the UNP configuration for the port.

## MIB Objects

```
alaDaUNPPortTable
  alaDaUNPPortIfIndex
  alaDaUNPPortPortTemplate
```

---

## unp direction

Configures whether network access control is applied to both incoming and outgoing traffic or only applied to incoming traffic on the specified UNP bridge port or link aggregate.

```
unp {port chassis/slot/port1[-port2] | linkagg agg_id[-agg_id2]} direction {both | in}
```

```
no unp {port chassis/slot/port1[-port2] | linkagg agg_id[-agg_id2]} direction
```

---

### Syntax Definitions

<i>chassis</i>	The chassis identifier.
<i>slot/port[-port2]</i>	The slot and port number (3/1). Use a hyphen to specify a range of ports (3/1-8).
<i>agg_id[-agg_id2]</i>	Link aggregate ID number. Use a hyphen to specify a range of link aggregate IDs (10-15).
<b>both</b>	Enables bidirectional network access control on the specified port or link aggregate.
<b>in</b>	Enables network access control for incoming traffic only on the specified port or link aggregate.

### Defaults

By default, bidirectional network access control is enabled on the port.

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- Use the **no** form of this command to set the network access control direction to the default (**both**).
- When the port control direction is set to **both**, egress broadcast, unknown unicast, and multicast traffic is blocked on the UNP port.
- When the port control direction is set to **in**, egress broadcast, unknown unicast, and multicast traffic is allowed on the UNP port.
- This command applies only to ports and link aggregates configured as UNP bridge ports; this command does not apply to UNP access ports.

### Examples

```
-> unp port 1/1/5 direction in
-> unp port 1/1/10-15 direction both
-> no unp port 1/1/10-15 direction

-> unp linkagg 10 direction in
-> unp linkagg 2-5 direction both
-> no unp linkagg 2-5 direction
```

## Release History

Release 5.1; command was introduced.

## Related Commands

<a href="#">unp port-type</a>	Configures UNP functionality on a port or link aggregate.
<a href="#">unp 802.1x-authentication</a>	Configures the 802.1X authentication status for the UNP port.
<a href="#">show unp port</a>	Displays the UNP configuration for the port.

## MIB Objects

```
alaDaUNPPortTable  
alaDaUNPPortAdminControlledDirections
```

---

## unp admin-state

Enables or disables the UNP configuration for a port or link aggregate.

```
unp {port {chassis/slot/port1[-port2] | linkagg agg_id1[-agg_id2]} admin-state {enable | disable}}
```

---

### Syntax Definitions

<i>chassis</i>	The chassis identifier.
<i>slot/port[-port]</i>	The slot and port number (3/1). Use a hyphen to specify a range of ports (3/1-8).
<i>agg_id1[-agg_id2]</i>	The link aggregate ID number. Use a hyphen to specify a range of link aggregate ID numbers (5-10).
<b>enable</b>	Activates the UNP configuration for the UNP port or link aggregate. UNP functionality is applied to traffic received on the UNP port or link aggregate.
<b>disable</b>	Disables the UNP configuration for the UNP port or link aggregate. UNP functionality is not applied to traffic received on the UNP port or link aggregate.

### Defaults

By default, UNP is administratively enabled at the time UNP functionality is configured for the port or link aggregate.

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

When UNP functionality is disabled, the UNP configuration for the port or link aggregate is retained but is not applied to traffic received on the port or link aggregate.

### Examples

```
-> unp port 1/1 admin-state disable
-> unp port 1/2-5 admin-state disable
-> unp port 1/1 admin-state enable
-> unp linkagg 5 admin-state disable
-> unp linkagg 8-10 admin-state disable
-> unp linkagg t admin-state enable
```

### Release History

Release 5.1; command was introduced.

## Related Commands

**unp port-type**

Configures UNP functionality for the specified port or link aggregate.

**show unp port**

Displays the UNP configuration for the port.

## MIB Objects

alaDaUNPPortTable

    alaDaUNPPortIfIndex

    alaDaUNPPortAdminState

---

## unp vlan

Configures an untagged or tagged VLAN-port association between the specified UNP bridge port and VLAN ID. This type of static VLAN assignment is particularly useful when connecting silent devices to UNP bridge ports.

**unp** {port *chassis/slot/port1[-port2]* | linkagg *agg\_id[-agg\_id2]*} **vlan** *vlan\_id* [-*vlan\_id2*] [**tagged**]

**no unp** {port *chassis/slot/port1[-port2]* | linkagg *agg\_id[-agg\_id2]*} **vlan** *vlan\_id* [-*vlan\_id2*]

---

### Syntax Definitions

<i>chassis/slot/port[-port2]</i>	The chassis ID, slot, and port number (3/1/1) for a specific UNP bridge port. Use a hyphen to specify a range of ports (3/1/1-8).
<i>agg_id[-agg_id2]</i>	Link aggregate ID number. Use a hyphen to specify a range of link aggregate IDs (10-15).
<i>vlan_id</i> [- <i>vlan_id2</i> ]	The VLAN ID to assign to the UNP port. Use a hyphen to specify a range of VLAN IDs.
<b>tagged</b>	Configures a tagged VLAN association for the UNP bridge port.

### Defaults

By default, no VLAN associations are configured for UNP bridge ports.

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- Use the **no** form of this command to remove a VLAN association from the UNP port configuration. The **tagged** keyword is not required to remove a tagged VLAN association.
- This command applies only to ports and link aggregates configured as UNP bridge ports; this command does not apply to UNP access ports.
- When the **tagged** parameter option is not specified, the VLAN-port association created is untagged.
- Configuring a UNP port or link aggregate with an untagged *and* tagged VLAN-port association is allowed as long as the untagged and tagged VLANs are different (for example, **unp port 1/4/45 vlan 100** and **unp port 1/4/45 vlan 200 tagged**).
- When this command is used to assign a VLAN to a UNP bridge port, the port goes into a forwarding state for egress traffic associated with the VLANs assigned to the port. This automatically occurs even when there is no MAC address learned on the UNP port in the assigned VLANs and regardless of the direction value (in or both) set for the port.

### Examples

```
-> unp port 1/1/5 vlan 500
-> unp port 1/1/5 vlan 600 tagged
-> unp port 1/1/10 vlan 100-105
-> unp port 1/1/10 vlan 200-205 tagged
```

```
-> no unp port 1/1/5 vlan 500
-> no unp port 1/1/5 vlan 600
-> no unp port 1/1/10 vlan 100-105
-> no unp port 1/1/10 vlan 200-205

-> unp linkagg 10 vlan 500
-> unp linkagg 10 vlan 600 tagged
-> unp linkagg 20 vlan 100-105
-> unp linkagg 20 vlan 200-205 tagged
-> no unp linkagg 10 vlan 500
-> no unp linkagg 10 vlan 600
-> no unp linkagg 20 vlan 100-105
-> no unp linkagg 20 vlan 200-205
```

## Release History

Release 5.1; command introduced.

## Related Commands

### [unp port-type](#)

Configures UNP functionality on a port or link aggregate.

### [show unp port configured-vlans](#)

Displays the VLAN assignments configured for UNP bridge ports or link aggregates.

## MIB Objects

alaDaUNPPortVlanTable

alaDaUNPPortVlanVID

---



## unp port ap-mode

Configures the status of the Access Point (AP) mode for the specified UNP bridge port or link aggregate.

**unp** {port *chassis/slot/port*[-*port2*] | linkagg *agg\_id*[-*agg\_id2*]} **ap-mode** {**secure**}

**no unp** {port *chassis/slot/port*[-*port2*] | linkagg *agg\_id*[-*agg\_id2*]} **ap-mode** {**secure**}

---

### Syntax Definitions

<i>chassis/slot/port</i> [- <i>port2</i> ]	The chassis ID, slot, and port number (3/1/1) for a specific UNP bridge port. Use a hyphen to specify a range of ports (3/1/1-8).
<i>agg_id</i> [- <i>agg_id2</i> ]	The link aggregate ID number for a specific UNP link aggregate. Use a hyphen to specify a range of link aggregate IDs (10-15).
<b>secure</b>	Set the secure ap-mode configuration on port enabled or disabled.

### Defaults

By default, the AP mode status for the port or link aggregate is set to the global AP mode status when UNP is enabled on the port or link aggregate. For example, if the global status is disabled, the port-level status is initially disabled. Secure ap-mode is disabled by default.

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- When the AP mode is enabled on the specified UNP bridge port and an AP device is detected on that port, the following actions are triggered to automatically change the operational status of the specified options (the operational status overrides the configured status):
  - The transmission of LLDP Port VLAN ID and AP Location TLVs is operationally enabled on the UNP bridge port.
  - The trust tag status for the UNP bridge port is operationally enabled.
  - The global status for dynamic VLAN configuration is operationally enabled for the switch.
- If the UNP AP mode is not enabled, the detection, learning, and management of connected OmniAccess Stellar AP devices may not occur as expected.
- AP mode functionality is not supported on UNP access ports or Learned Port Security (LPS) ports.

### Examples

```
-> unp port 1/1/6 ap-mode
-> unp linkagg 10 ap-mode
-> no unp port 1/1/6 ap-mode
-> no unp linkagg 10 ap-mode
-> unp port 1/1/1 ap-mode secure
-> no unp port 1/1/1 ap-mode secure
```

## Release History

Release 5.1; command was introduced.  
Release 5.1R2; **secure** parameter added

## Related Commands

**unp ap-mode** Configures the global AP mode status.  
**show unp port config** Displays the UNP configuration for the port.  
**show unp global configuration** Displays the status of UNP Layer 3 learning for the switch.

## MIB Objects

```
alaDaUNPPortTable  
  alaDaUNPPortApMode  
  alaDaUNPPortApModeSecurity
```

---

## unp port-template

Configures a UNP port template that is used to apply a pre-defined port configuration to a UNP port or link aggregate. Using a port template to configure UNP functionality on a port or link aggregate avoids having to configure each parameter with a separate CLI command. Applying a template configures all port-based parameters with a single CLI command.

This section describes the base command (**unp port-template**) along with optional command keywords that are used to configure port parameter values that are applied when the template is assigned to a UNP port or link aggregate. Optional keywords are listed separately but can be entered in combination on the same command line. Use the **no** form for the keywords to change a specific parameter value for the template.

There is one default port template: “bridgeDefaultPortTemplate” (applied to UNP bridge ports). These template defines a default set of port parameter values that are applied at the time a port or link aggregate is configured as a UNP bridge. The default template cannot be deleted, but the template parameter values are configurable through this command.

**unp port-template** *{template\_name | bridgeDefaultPortTemplate*

**[802.1x-authentication]**

**[802.1x-authentication pass-alternate** *profile\_name*]

**[mac-authentication]**

**[mac-authentication pass-alternate** *profile\_name*]

**[classification]**

**[default-profile** *profile\_name*]

**[aaa-profile** *profile\_name*]

**[redirect port-bounce]**

**[direction {in | both}]**

**[802.1x-authentication tx-period** *seconds*]

**[802.1x-authentication supp-timeout** *seconds*]

**[802.1x-authentication max-req** *max\_req*]

**[802.1x-authentication bypass-802.1x]**

**[802.1x-authentication failure-policy {mac}]**

**[mac-authentication allow-eap {pass | fail | noauth}]**

**[admin-state {enable | disable}]**

**[vlan** *vlan\_id* [-*vlan\_id2*] **[tagged]**

**[ap-mode]{secure}**

**no unp port-template** *template\_name* **[802.1x-authentication | 802.1x authentication pass-alternate | mac-authentication | mac-authentication pass-alternate | ...]**

---

### Syntax Definitions

*template\_name* The name to associate with the UNP port template.

**bridgeDefaultPortTemplate** The name of the default port template applied to UNP bridge ports.

## Defaults

The following table contains the default values for the system-defined port templates (“bridgeDefaultPortTemplate”):

parameter	system-defined port template values
<b>802.1x-authentication</b>	enabled
<b>802.1x-authentication pass-alternate</b> <i>profile_name</i>	none
<b>mac-authentication</b>	enabled
<b>mac-authentication pass-alternate</b> <i>profile_name</i>	none
<b>classification</b>	enabled
<b>default-profile</b> <i>profile_name</i>	none
<b>aaa-profile</b> <i>profile_name</i>	none
<b>redirect port-bounce</b>	disabled
<b>direction</b> {in   both}	both
<b>802.1x-authentication tx-period</b> <i>seconds</i>	30
<b>802.1x-authentication supp-timeout</b> <i>seconds</i>	30
<b>802.1x-authentication max-req</b> <i>max_req</i>	2
<b>802.1x-authentication bypass</b>	disabled
<b>802.1x-authentication failure-policy</b> {mac}	default
<b>mac-authentication allow-eap</b> {pass   fail   noauth}	none
<b>admin state</b> {enable   disable}	enabled
<b>vlan</b> <i>vlan_id</i> [- <i>vlan_id2</i> ] [tagged]	none
<b>ap-mode</b>	enabled
<b>ap-mode secure</b>	disabled

## Platforms Supported

OmniSwitch 2260, 2360

## Usage Guidelines

- Use the **no** form of this command to remove a port template from the switch configuration.
- To change the value of a specific port template parameter, specify the parameter keyword with this command. For example, **no unp port-template port1 mac-authentication**, **unp port-template port1 domain 2**, or **unp port-template port1 default-profile defprofl**. The new parameter values are applied to all UNP ports to which the template is assigned.
- If the name of the template does not exist when this command is used to modify a port parameter, the switch will automatically create a new template using the name specified. For example, the **unp port-**

**template port1 mac-authentication** command will create the “port1” template if it does not already exist in the switch configuration.

- When a port template is applied to a UNP port, the parameter values defined in the template will override any existing UNP port configuration. In addition, any attempt to explicitly configure a port that is associated with a template is not allowed.
- For more information about specific port parameter values, refer to the following explicit UNP port configuration commands for each template parameter:

Port Template Parameter	Explicit Port Configuration Command
<b>[802.1x-authentication]</b>	<b>unp 802.1x-authentication</b>
<b>[802.1x-authentication pass-alternate <i>profile_name</i>]</b>	<b>unp 802.1x-authentication pass-alternate</b>
<b>[mac-authentication]</b>	<b>unp mac-authentication</b>
<b>[mac-authentication pass-alternate <i>profile_name</i>]</b>	<b>unp mac-authentication pass-alternate</b>
<b>[classification]</b>	<b>unp classification</b>
<b>[default-profile <i>profile_name</i>]</b>	<b>unp default-profile</b>
<b>[aaa-profile <i>profile_name</i>]</b>	<b>unp aaa-profile</b>
<b>[redirect port-bounce]</b>	<b>unp redirect port-bounce</b>
<b>[direction {in   both}]</b>	<b>unp direction</b>
<b>[802.1x-authentication tx-period <i>seconds</i>]</b>	<b>unp 802.1x-authentication tx-period</b>
<b>[802.1x-authentication supp-timeout <i>seconds</i>]</b>	<b>unp 802.1x-authentication supp-timeout</b>
<b>[802.1x-authentication max-req <i>max_req</i>]</b>	<b>unp 802.1x-authentication max-req</b>
<b>[802.1x-authentication bypass]</b>	<b>unp 802.1x-authentication bypass-8021x</b>
<b>[802.1x-authentication failure-policy {mac}]</b>	<b>unp 802.1x-authentication failure-policy</b>
<b>[mac-authentication allow-eap {pass   fail   noauth}]</b>	<b>unp mac-authentication allow-eap</b>
<b>[admin-state {enable   disable}]</b>	<b>unp admin-state</b>
<b>[vlan <i>vlan_id</i> [-<i>vlan_id2</i>] [tagged]]</b>	<b>unp vlan</b>
<b>[ap-mode]</b>	<b>unp port ap-mode</b>

## Examples

```
-> unp port-template port1
-> unp port-template port1 mac-authentication
-> unp port-template port1 mac-authentication pass-alternate unp1
-> unp port-template port1 classification
-> no unp port-template port1 mac-authentication
-> no unp port-template port1
-> unp port-template port2 802.1x-authentication
-> unp port-template port2 classification
-> no unp port-template port2 classification
-> no unp port-template port2
-> unp port-template pt1 ap-mode secure
-> no unp port-template pt1 ap-mode secure
```

## Release History

Release 5.1; command was introduced.

Release 5.1R2; **secure** parameter added

## Related Commands

<b>unp port port-template</b>	Assigns a port configuration template to a UNP port.
<b>show unp port config</b>	Displays the UNP configuration for the port, including the name of the port template associated with the port, if any.
<b>show unp port-template</b>	Displays the port template configuration.

## MIB Objects

```

alaDaUNPPortTemplateTable
  alaDaUNPPortTemplateName
  alaDaUNPPortTemplateAdminState
  alaDaUNPPortTemplateDirection
  alaDaUNPPortTemplateDomainID
  alaDaUNPPortTemplateClassification
  alaDaUNPPortTemplateTrustTag
  alaDaUNPPortTemplateDynamicService
  alaDaUNPPortTemplateDefaultProfile
  alaDaUNPPortTemplateAAAProfile
  alaDaUNPPortTemplateRedirectPortBounce
  alaDaUNPPortTemplate8021XAuth
  alaDaUNPPortTemplate8021XAuthPassAlternate
  alaDaUNPPortTemplate8021XAuthBypass
  alaDaUNPPortTemplate8021XAuthFailPolicy
  alaDaUNPPortTemplate8021XAuthTxPeriod
  alaDaUNPPortTemplate8021XAuthSuppTimeout
  alaDaUNPPortTemplate8021XAuthMaxReq
  alaDaUNPPortTemplateMACAuth
  alaDaUNPPortTemplateMACAuthPassAlternate
  alaDaUNPPortTemplateMACAuthAllowEAP
  alaDaUNPPortTemplateForceL3Learning
  alaDaUNPPortTemplateForceL3LearningPortBounce
  alaDaUNPPortTemplateL2Profile
  alaDaUNPPortTemplateApMode
  alaDaUNPPortTemplateApModeSecurity
alaDaUNPPortTemplateVlanTable
  alaDaUNPPortTemplateVlanVID
alaDaUNPPortTemplateProfileTable
  alaDaUNPPortTemplateProfile

```

---

## unp classification lldp med-endpoint

Defines a Link Layer Discovery Protocol (LLDP) classification rule for the specified UNP profile. This rule is used specifically for IP phones and OmniAccess Stellar Access Point (AP) devices.

```
unp classification lldp med-endpoint {ip-phone | access-point} {profile1 profile_name [profile2
profile_name] [profile3 profile_name]}
```

```
no unp classification lldp med-endpoint {ip-phone | access-point} [profile1] [profile2] [profile3]
```

---

### Syntax Definitions

<b>ip-phone</b>	When LLDP TLVs from an IP phone are detected, apply the specified profile to the IP phone.
<b>access-point</b>	When LLDP TLVs from an OmniAccess Stellar AP are detected, apply the specified profile to the AP device.
<i>profile_name</i>	The name of an existing UNP profile.

### Defaults

By default, no classification rules are defined for a UNP profile.

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- Use the **no** form of this command to remove the rule or one or more of the associated profiles. When a classification rule is removed or modified, all MAC addresses classified with that rule are flushed.
- There is a built-in LLDP classification rule for access points that is assigned to a built-in profile named “defaultWLANProfile”. This rule facilitates the automatic detection and classification of OmniAccess Stellar APs that are connected to UNP bridge ports. Consider the following regarding the built-in LLDP access point rule:
  - The rule cannot be removed from the switch configuration. However, the profile designation for the rule can be changed.
  - The rule does not appear in the configuration snapshot for the switch unless the profile assignment for the rule was changed.
  - When Stellar APs are detected, they are classified and assigned to the VLAN that is mapped to the built-in “defaultWLANProfile”. This VLAN serves as the management VLAN for untagged AP traffic.
- Adding a UNP classification rule to the switch configuration does not cause a MAC address flush.
- Up to three different profile names are configurable for a classification rule. The profile applied to matching traffic is based on the order of precedence and mapping of each profile. For example:
  - Profiles mapped to a VLAN are applied only to matching traffic received on UNP bridge ports.
  - When a classification rule is configured with multiple profiles and traffic received on a UNP port matches the rule, each profile is checked in the order of precedence (**profile1** first, **profile2** second, and **profile3** third) to determine which profile is applied to the matching traffic.

## Examples

```
-> unp classification lldp med-endpoint ip-phone profile1 unp1-vlan profile2 unp2-  
vlan  
-> no unp classification lldp med-endpoint ip-phone profile2  
-> no unp classification lldp med-endpoint ip-phone  
  
-> unp classification lldp med-endpoint access-point profile1 defaultWLANProfile  
-> no unp classification lldp med-endpoint access-point  
ERROR: BUILT-IN Access-Point LLDP Rule cannot be deleted
```

## Release History

Release 5.1; command was introduced.

## Related Commands

<a href="#">unp classification</a>	Configures the classification status for the UNP port. Rules are not applied when classification is disabled for the port.
<a href="#">unp profile</a>	Configures a UNP profile.
<a href="#">show unp classification lldp-rule</a>	Displays the UNP LLDP classification rule configuration.

## MIB Objects

```
alaDaUNPEndPoinRuleTable  
alaDaUNPEndPoinRuleId  
alaDaUNPEndPoinProfile1  
alaDaUNPEndPoinProfile2  
alaDaUNPEndPoinProfile3
```

---



## captive-portal mode

Configures the Captive Portal mode of operation.

**captive-portal mode** {**internal** | **internal dhcp** [**ip-lease-time** *seconds*] [**ip-renew-time** *seconds*] [**ip-rebinding-time** *seconds*] | **external**}

**no captive-portal mode internal**

---

### Syntax Definitions

<b>internal</b>	Internal Captive Portal (Web server is on the switch. A VLAN change requires a port bounce).
<b>internal dhcp</b>	Internal DHCP Captive Portal (Web server is on the switch. IP address from Captive Portal subnet is leased to the client; VLAN change does not require a port bounce).
<b>ip-lease-time</b> <i>seconds</i>	The amount of time an IP address is leased to a client. The valid range is 20–120 seconds.
<b>ip-renew-time</b> <i>seconds</i>	The amount of time until a client with a leased IP address attempts to renew the leased IP address.
<b>ip-rebinding-time</b> <i>seconds</i>	The amount of time until a client attempts to obtain a new leased IP address (occurs when renew attempts fail).
<b>external</b>	Not supported; an external Captive Portal operation is provided through the OmniSwitch Bring Your Own Device (BYOD) solution.

### Defaults

By default, the mode is set to internal Captive Portal. When the internal DHCP Captive Portal mode is selected without specifying any optional parameter values, the following default values are set:

parameter	default
<b>ip-lease-time</b>	30 seconds
<b>ip-renew-time</b>	15 seconds
<b>ip-rebinding-time</b>	26 seconds

### Platforms Supported

Not supported in this release.

### Usage Guidelines

- Use the **no** form of this command to revert the Captive Portal mode back to the default internal mode (no internal DHCP functionality).
- Only the internal and internal DHCP Captive Portal modes (Web server on the switch) are configurable for the switch. An external Captive Portal operation is provided through interaction with the Unified Policy Access Manager (UPAM) or the ClearPass Policy Manager (CPPM) as part of the OmniSwitch BYOD solution.

- When a device is classified into a UNP profile that has the Captive Portal authentication attribute enabled, the device is placed into a Captive Portal pre-login state. The Captive Portal mode determines how a device in the pre-login state obtains an IP address, the necessary DNS information, and whether a port bounce is required after a VLAN change.
  - If the internal Captive Portal mode (the default) is active, the device can directly contact a DHCP server to get an IP address and DNS information. A port bounce action is required if the initial VLAN assignment for the device is changed.
  - If the internal DHCP Captive Portal mode is active, the switch provides basic DHCP functionality to assign the device an IP address with a short-term lease from the Captive Portal subnet (10.123.0.0) and provide the necessary DNS information. A port bounce action is not required if the initial VLAN assignment for the device is changed.
- Consider the following when changing the internal DHCP parameter values:
  - The **ip-renew-time** is 50% of the **ip-lease-time**.
  - The **ip-rebinding-time** is 87.5% of the **ip-lease-time**.
  - When only the **ip-lease-time** is changed, the **ip-renew-time** and **ip-rebinding-time** are automatically recalculated based on the noted percentages.
  - Make sure the **ip-renew-time** specified is less than the **ip-rebinding-time**.
  - Make sure the **ip-rebinding-time** specified falls between the **ip-renew-time** and **ip-lease-time**.

## Examples

```
-> captive-portal mode internal-dhcp
-> captive-portal mode internal-dhcp ip-lease-time 120
-> captive-portal mode internal
-> no captive-portal mode internal
```

## Release History

Release 5.1; command introduced.

## Related Commands

**show captive-portal configuration** Displays the global Captive Portal configuration for the switch.

## MIB Objects

```
alaDaCPortalGlobalConfig
  alaDaCPortalMode
  alaDaCPortalDHCPLeaseTime
  alaDaCPortalDHCPRenewTime
  alaDaCPortalDHCPRebindingTime
```

---

## captive-portal name

Configures an IP address or Fully Qualified Domain Name (FQDN) as a redirect URL to use for Captive Portal.

**captive-portal name** *{ip\_address | domain\_name}*

**no captive-portal name**

---

### Syntax Definitions

<i>ip_address</i>	The IPv4 network address (e.g., 171.15.0.0) to which HTTP traffic is redirected.
<i>domain_name</i>	An FQDN (up to 32 characters) to which HTTP traffic is redirected.

### Defaults

By default, the Captive Portal redirect name is set to “captive-portal.com”.

### Platforms Supported

Not supported in this release.

### Usage Guidelines

- Use the **no** form of this command to revert the URL name back to the default “captive-portal.com”.
- Use this command to change the Captive Portal redirect URL name to match the common name (cn) used by the public certificate on the switch. Matching these two names prevents a certificate warning message caused when these names do not match.

---

**Note.** Do not preface the redirect URL domain name with **https://**; the switch automatically adds **https://** to the beginning of the domain name.

---

- When a device is classified into a UNP profile that has the Captive Portal authentication attribute enabled, the device is placed into a Captive Portal pre-login state. In this state, the device can contact a DHCP server to get an IP address and get the DNS server address.
- Initial HTTP requests received from a user device are responded to with the Captive Portal redirect name. The user device contacts the DNS server to resolve the redirect name and receives the Captive Portal IP address. Requests are then sent to the Captive Portal IP address that is mapped internally to the OmniSwitch web server, which then presents login Web pages to the user device.
- Make sure the DNS server configuration reflects the same Captive Portal name and IP address that is configured for the OmniSwitch.

### Examples

```
-> captive-portal name cert-name
-> captive-portal name "20.2.2.1"
-> no captive-portal name
```

## Release History

Release 5.1; command was introduced.

## Related Commands

<a href="#">captive-portal ip-address</a>	Configures the internal Captive Portal IP address for the switch.
<a href="#">show captive-portal configuration</a>	Displays the global Captive Portal configuration for the switch.

## MIB Objects

```
alaDaCPortalGlobalConfig  
  alaDaCPortalRedirectUrlName
```

---

## captive-portal ip-address

Configures the internal Captive Portal IP address for the switch.

**captive-portal ip-address** *ip\_address*

---

### Syntax Definitions

*ip\_address* IPv4 network address (e.g., 10.0.0.0, 171.15.0.0, 196.190.254.0).

### Defaults

By default, the internal Captive Portal IP address is set to 10.123.0.1.

### Platforms Supported

Not supported in this release.

### Usage Guidelines

- If the default 10.123.0.0 subnet is already in use, then use this command to change the Captive Portal IP address to another 10.x.0.0 subnet (only the second octet of the Captive Portal IP address can be changed).
- When a device is classified into a UNP profile that has the Captive Portal authentication attribute enabled, the device is placed into a Captive Portal pre-login role. In this state, the device can contact a DHCP server to get an IP address and get the DNS server address.
- Initial HTTP requests received from a user device are responded to with the Captive Portal redirect name. The user device contacts the DNS server to resolve the redirect URL name and receives the Captive Portal IP address. Requests are then sent to the Captive Portal IP address that is mapped internally to the OmniSwitch web server, which then presents login web pages to the user device.
- Make sure the DNS server configuration reflects the same Captive Portal name and IP address that is configured for the OmniSwitch.

### Examples

```
-> captive-portal ip-address 10.255.0.20
```

### Release History

Release 5.1; command was introduced.

## Related Commands

### **captive-portal name**

Configures the name of the redirect URL that is used for accessing a public certificate.

### **show captive-portal configuration**

Displays the global Captive Portal configuration for the switch.

## MIB Objects

alaDaCPortalGlobalConfig

alaDaCPortalIpAddress

---

## captive-portal success-redirect-url

Configures the URL of a specific site to which a user is redirected after a successful Captive Portal authentication.

**captive-portal success-redirect-url** *redirect\_url*

**no captive-portal success-redirect-url**

---

### Syntax Definitions

*redirect\_url*                      The redirect URL (up to 63 characters).

### Defaults

By default, no success redirect URL is configured.

### Platforms Supported

Not supported in this release.

### Usage Guidelines

Use the **no** form of this command to remove the success redirect URL from the Captive Portal global configuration.

### Examples

```
-> captive-portal success-redirect-url http://server-1.com/pass.html
-> no captive-portal success-redirect-url
```

### Release History

Release 5.1; command was introduced.

### Related Commands

[show captive-portal configuration](#)                      Displays the global Captive Portal configuration for the switch.

### MIB Objects

```
alaDaCPortalGlobalConfig
  alaDaCPortalSuccRedirectUrl
```

---

## captive-portal proxy-server-port

Configures the proxy server port to use for Captive Portal.

**captive-portal proxy-server-port** *proxy\_port*

**no captive-portal proxy-server-port**

---

### Syntax Definitions

*proxy\_port* The HTTP proxy port number. The valid range is 1024–49151.

### Defaults

By default, the proxy server port number is set to 8080.

### Platforms Supported

Not supported in this release.

### Usage Guidelines

- Use the **no** form of this command to set the proxy port number back to the default (8080).
- This command overwrites the existing proxy port number for the switch.
- The proxy port number only requires changing if the proxy port used is not 80 or 8080.

### Examples

```
-> captive-portal proxy-server-port 1200
-> no captive-portal proxy-server-port
```

### Release History

Release 5.1; command was introduced.

### Related Commands

[show captive-portal configuration](#) Displays the global Captive Portal configuration for the switch.

### MIB Objects

```
alaDaCPortalGlobalConfig
  alaDaCPortalProxyPort
```

---



## **captive-portal retry-count**

Configures the number of times a device can try to login before Captive Portal determines that authentication for that device has failed.

**captive-portal retry-count** *retries*

---

### **Syntax Definitions**

*retries*                              The number of login attempts allowed. The valid range is 1–99.

### **Defaults**

By default, the retry count is set to 3.

### **Platforms Supported**

Not supported in this release.

### **Usage Guidelines**

No access page is sent to devices that exceed the number of login retries allowed.

### **Examples**

```
-> captive-portal retry-count 5
```

### **Release History**

Release 5.1; command was introduced.

### **Related Commands**

[show captive-portal configuration](#)                      Displays the global Captive Portal configuration for the switch.

### **MIB Objects**

```
alaDaCPortalGlobalConfig  
  alaDaCPortalRetryCnt
```

---

## captive-portal authentication-pass

Configures a global authentication pass policy. This type of policy is applied to all devices successfully authenticated through the Captive Portal process. Each policy can specify a QoS policy list and UNP profile name to assign to the authenticated devices.

```
captive-portal authentication-pass {policy-list list_name | profile profile_name | profile-change {enable | disable}}
```

```
no captive-portal authentication-pass {policy-list | profile}
```

---

### Syntax Definitions

<i>list_name</i>	The name of a QoS policy list to apply to the authenticated user device.
<i>profile_name</i>	The name of an existing UNP profile.
<b>enable</b>	Enables the profile change operation. Authenticated devices are assigned to the specified profile name.
<b>disable</b>	Disables the profile change operation. Authenticated devices are not assigned to a new profile.

### Defaults

By default, no policy list name or UNP profile name is specified for the global Captive Portal configuration.

### Platforms Supported

Not supported in this release.

### Usage Guidelines

- Use the **no** form of this command to remove the Captive Portal authentication pass policy from the global Captive Portal configuration.
- When the **profile-change** parameter is enabled, the profile initially assigned to the Captive Portal users is changed to the profile derived through successful Captive Portal authentication. The QoS policy list associated with the new profile is applied to the authenticated users.
- When a profile change occurs, the new profile may assign a different VLAN to the authenticated device. This new VLAN assignment is functional only after a port bounce or pause timer operation is completed. Existing Bring Your Own Device (BYOD) global commands are leveraged to configure the port bounce and pause timer values.
- If the new UNP profile assigned also has Captive Portal authentication enabled, the process is not started again. The results from the initial Captive Portal authentication process are used instead.
- When the **profile-change** parameter is disabled, the QoS policy list name returned from the RADIUS server or the list name specified with this command is applied instead.
- The QoS policy list to apply to Captive Portal authenticated devices is derived through one of the following methods:
  - The policy list name returned from the RADIUS server.

- The policy list name specified with this command for the global Captive Portal configuration.
- The policy list name associated with the UNP profile returned from the RADIUS server.
- The policy list name associated with the UNP profile specified with this command for the global Captive Portal configuration.
- A policy list name or a UNP profile name returned from the RADIUS server takes precedence over the policy list name or UNP profile name configured through this command.

## Examples

```
-> captive-portal authentication-pass policy-list list1
-> captive-portal authentication-pass profile unpl-vlan profile-change enable
-> captive-portal authentication-pass profile-change disable
-> no captive-portal authentication-pass policy-list
-> no captive-portal authentication-pass profile
```

## Release History

Release 5.1; command was introduced.

## Related Commands

[captive-portal authentication-pass domain](#) Configures a domain specific authentication pass policy to determine the QoS policy list or UNP profile name to apply to authenticated devices. This type of policy overrides the global Captive Portal configuration.

[show captive-portal configuration](#) Displays the global Captive Portal configuration for the switch.

## MIB Objects

```
alaDaCPortalGlobalConfig
  alaDaCPortalPolicyListName
  alaDaCPortalUNPProfile
  alaDaCPortalUNPProfileChange
```

---

## captive-portal authentication-pass domain

Configures a domain specific authentication pass policy. This type of policy is applied to all devices within the specified domain that were successfully authenticated through the Captive Portal process.

**captive-portal authentication-pass realm {prefix | suffix} domain *domain\_name* {policy-list *list\_name* | profile *profile\_name* | profile-change {enable | disable}}**

**no captive-portal authentication-pass [realm {prefix | suffix} domain *domain\_name*]**

---

### Syntax Definitions

<b>prefix</b>	Specifies a prefix domain name (for example, <i>domain_name</i> /user).
<b>suffix</b>	Specifies a suffix domain name (for example, user@ <i>domain_name</i> )
<i>domain_name</i>	The domain name for the user device.
<i>list_name</i>	The name of a QoS policy list to apply to the authenticated user device.
<i>profile_name</i>	The name of an existing UNP profile.
<b>enable</b>	Enables the profile change operation. Authenticated devices are assigned to the specified profile name.
<b>disable</b>	Disables the profile change operation. Authenticated devices are not assigned to a new profile.

### Defaults

By default, no domain specific authentication pass policy is configured for the Captive Portal process.

### Platforms Supported

Not supported in this release.

### Usage Guidelines

- Use the **no** form of this command to remove the domain specific authentication pass policy from the Captive Portal configuration.
- Use the **realm prefix domain** or **realm suffix domain** parameter to apply the authentication policy list or UNP profile based on the domain name of the Captive Portal authenticated user device.
- If the **profile-change** parameter is enabled, the profile initially assigned to the Captive Portal user is changed to the profile derived through successful Captive Portal authentication. The QoS policy list associated with the new profile is then applied to the authenticated users.
- When a profile change occurs, the new profile may assign a different VLAN to the authenticated device. This new VLAN assignment is functional only after a port bounce or pause timer operation is completed. Existing Bring Your Own Device (BYOD) global commands are leveraged to configure the port bounce and pause timer values.
- If the new profile assigned to the user also has Captive Portal authentication enabled, the process is not started again. The results from the initial Captive Portal authentication process are used instead.

- If the **profile-change** parameter is disabled, then the QoS policy list name returned from the RADIUS server or the list name specified through the global (non-domain specific) Captive Portal configuration is applied.
- The QoS policy list to apply to Captive Portal authenticated devices is derived through one of the following methods:
  - The policy list name returned from the RADIUS server.
  - The policy list name specified with this command or through the global Captive Portal configuration.
  - The policy list name associated with the UNP profile returned from the RADIUS server.
  - The policy list name associated with the UNP profile specified with this command or through the global Captive Portal configuration.
- A policy list name or a UNP profile name returned from the RADIUS server takes precedence over the policy list name or UNP profile name configured through this command.

## Examples

```
-> captive-portal authentication-pass realm prefix domain asia-pacific policy-list
list2
-> captive-portal authentication-pass realm suffix domain north-america profile
unp2 profile-change enable
-> no captive-portal authentication-pass realm suffix domain north-america
```

## Release History

Release 5.1; command was introduced.

## Related Commands

- |  |  |
|--|--|
| <a href="#">captive-portal authentication-pass</a> | Configures a global authentication pass policy. This type of policy is applied to all devices successfully authenticated through the Captive Portal process. |
| <a href="#">show captive-portal configuration</a>  | Displays the global Captive Portal configuration for the switch.   |

## MIB Objects

```
alaDaCPortalAuthPassTable
  alaDaCPortalAuthDomainName
  alaDaCPortalAuthRealm
  alaDaCPortalAuthPolicyListName
  alaDaCPortalAuthRowStatus
  alaDaCPortalAuthUNPProfile
  alaDaCPortalAuthUNPProfileChange
```

---

## captive-portal-profile

Configures a Captive Portal profile that is assigned to a UNP profile. This type of profile defines Captive Portal configuration options that are applied to devices classified into the assigned UNP profile. This command page describes the base command (**captive-portal-profile** *profile\_name*) along with the other command keywords that are used to configure profile attributes.

```
captive-portal-profile profile_name  
  [aaa-profile aaa_profile_name]  
  [success-redirect-url redirect_url]  
  [retry-count retries]  
  [authentication-pass [realm {prefix | suffix} domain domain_name] {policy-list list_name | profile  
  profile_name | profile-change {enable | disable}}
```

```
no captive-portal-profile profile_name
```

---

### Syntax Definitions

<i>profile_name</i>	The name to assign to the Captive Portal profile (up to 32 characters).
<i>aaa_profile_name</i>	The name of an authentication, authorization, and accounting (AAA) profile to associate with the Captive Portal profile.
<i>redirect_url</i>	A URL (up to 63 characters) to which user devices are redirected after successful Captive Portal authentication.
<i>retries</i>	The number of login attempts allowed. The range is 1–99.
<b>realm prefix</b>	Specifies a prefix domain name (for example, <i>domain_name</i> /user).
<b>realm suffix</b>	Specifies a suffix domain name (for example, user@ <i>domain_name</i> ).
<i>domain_name</i>	The domain name for the user device.
<i>list_name</i>	The name of a QoS policy list to apply to the authenticated user device.
<i>profile_name</i>	The name of an existing UNP profile.
<b>enable</b>	Enables the profile change operation. Authenticated devices are assigned to the specified profile name.
<b>disable</b>	Disables the profile change operation. Authenticated devices are not assigned to a new profile.

## Defaults

parameter	default
<i>aaa_profile_name</i>	none
<i>redirect_url</i>	none
<i>retries</i>	3
<b>realm prefix   suffix</b>	none
<i>domain_name</i>	none
<i>list_name</i>	none
<i>profile_name</i>	none
<b>enable   disable</b>	disabled

## Platforms Supported

Not supported in this release.

## Usage Guidelines

- Use the **no** form of this command to remove the Captive Portal profile from the switch configuration.
- Creating a Captive Portal profile name with the base command (**captive-portal-profile** *profile\_name*) is not required to configure a profile attribute value. If the profile name does not exist, the switch will automatically create the name specified when the attribute is configured. For example, the **unp captive-portal-profile cp-profl retry-count 5** command will create the “cp-profl” profile if it does not already exist in the switch configuration.
- When a Captive Portal profile is applied to a UNP profile, the parameter values defined in the profile override the global Captive Portal parameter values configured for the switch.
- A Captive Portal profile is applied only when Captive Portal authentication is enabled for the UNP profile. If there is no Captive Portal profile associated with a UNP profile, then the global Captive Portal configuration is applied.
- Assigning an AAA profile to a Captive Portal profile defines specific AAA configuration options (such as RADIUS servers and RADIUS client attributes) that are used for Captive Portal authentication. If there is no AAA profile assigned, then the global AAA configuration is used.
- AAA profiles are configured using the **aaa profile** command.

## Examples

```
-> captive-portal-profile cp-p1
-> captive-portal-profile cp-p1 aaa-profile aaa_p1
-> captive-portal-profile cp-p1 authentication-pass realm prefix domain asia-
pacific policy-list list1
-> no captive-portal-profile cp-p1 aaa-profile aaa_p1
-> no captive-portal-profile cp-p1

-> captive-portal-profile cp-p2 retry-count 5
-> captive-portal-profile cp-p2 authentication-pass profile ep-1
-> captive-portal-profile cp-p2 authentication-pass profile-change enable
-> captive-portal-profile cp-p2 success-redirect-url http://server-1.com/pass.html
```

```
-> captive-portal-profile cp-p2 authentication-pass profile-change disable
-> no captive-portal-profile cp-p2 authentication-pass profile
-> no captive-portal-profile cp-p2
```

## Release History

Release 5.1; command was introduced.

## Related Commands

<a href="#">unp profile captive-portal-profile</a>	Assigns a Captive Portal profile to a UNP profile.
<a href="#">aaa profile</a>	Configures an AAA configuration profile.
<a href="#">show captive-portal profile-names</a>	Displays the Captive Portal profile configuration for the switch.

## MIB Objects

```
alaDaCPortalProfTable
  alaDaCPortalProfName
  alaDaCPortalProfSuccRedirectUrl
  alaDaCPortalProfRetryCnt
  alaDaCPortalProfAuthPolicyListName
  alaDaCPortalProfAaaProf
  alaDaCPortalProfUNPProfile
  alaDaCPortalProfUNPProfileChange
alaDaCPortalProfDomainTable
  alaDaCPortalProfDomainAuthDomainName
  alaDaCPortalProfDomainAuthPolicyListName
  alaDaCPortalProfDomainAuthRealm
  alaDaCPortalProfDomainUNPProfile
  alaDaCPortalProfDomainUNPProfileChange
```

---



## captive-portal customization

Enables or disables the use of custom Web pages for Captive Portal authentication. When customization is enabled, Captive Portal presents Web pages stored in the “/flash/switch/captive\_portal/custom\_files/” directory on the switch. When customization is disabled, Captive Portal presents Web pages stored in the “/flash/switch/captive\_portal/release\_files/” directory on the switch.

**captive-portal customization {enable | disable}**

---

### Syntax Definitions

<b>enable</b>	Displays custom web pages for Captive Portal authentication.
<b>disable</b>	Displays default web pages for Captive Portal authentication.

### Defaults

By default, the web pages provided on the switch are displayed.

### Platforms Supported

Not supported in this release.

### Usage Guidelines

- To create custom Web pages, create a folder in the same path as the “release\_files” folder and name the new folder “custom\_files” (for example “/flash/switch/captive\_portal/custom\_files/”). Next, copy the “assets” and “templates” folders found under “/flash/switch/captive\_portal/release\_files/” to the “custom\_files” folder. Modify the contents in the copied folders to create custom Web pages.
- The “release\_files” folder is overwritten each time the switch reboots, so **DO NOT** modify the files in this folder for custom use.
- The folders "assets" and "templates" under the /flash/switch/captive\_portal/custom\_files/ directory are used to create and display Web pages to Captive Portal users when the switch reboots or at runtime when Captive Portal customization is enabled for the switch, if the “custom\_files” folder exists.
- Anything in the custom "assets" folder is statically served by the internal Web server on the switch whenever they are requested. These pages are typically .css files, javascript files, or the acceptable use policy and are linked to files in the custom "templates" folder.
- The custom "templates" folder contains the Web pages that are dynamically served to users depending on the Captive Portal state of each user. The file names in this folder must not be changed. The login form field names and form action in these pages must not be changed. The variables in these pages, as denoted by "<?=\$(name)?>", are substituted in place by the internal Web server.

### Examples

```
-> captive-portal customization enable
-> captive-portal customization disable
```

### Release History

Release 5.1; command was introduced.

**Related Commands****show captive-portal  
configuration**

Displays the global Captive Portal configuration for the switch.

**MIB Objects**`alaDaCPortalGlobalConfig  
alaDaCPortalCustomization`

---

## show captive-portal configuration

Displays the global Captive Portal parameter settings configured for the switch.

### show captive-portal configuration

---

#### Syntax Definitions

N/A

#### Defaults

N/A

#### Platforms Supported

Not supported in this release.

#### Usage Guidelines

- Currently only the internal Captive Portal mode (Web server on the switch) is configurable for the switch. An external Captive Portal operation is provided through interaction with the Unified Policy Access Manager (UPAM) or the ClearPass Policy Manager (CPPM) as part of the OmniSwitch BYOD solution.
- The parameter values configured and applied through a Captive Portal profile override any values set through the global Captive Portal configuration. A Captive Portal profile is associated with a UNP profile and is applied to devices classified into that profile.

#### Examples

```
-> show captive-portal configuration
Captive Portal Global Configuration:
```

```
Captive Portal Mode                = Internal
DHCP Parameters:
  DHCP Lease Time                   = 30
  DHCP Renew Time                   = 15
  DHCP Rebinding Time               = 26
Captive Portal IP address           = 10.123.0.1
Captive Portal Redirect String      = captive-portal.com
Captive Portal Success Redirect URL =
Captive Portal Proxy Server Port    = 8080
Captive Portal Retry Count          = 3
Captive Portal Global Auth Policy List=
Captive Portal Page Customization   = Disable
Captive Portal Profile Name         =
Captive Portal Profile Change       = Disable
Domain Specific Policy Lists:
  Domain      | Realm | Policy List | Profile Name | Profile Change
  -----|-----|-----|-----|-----
na01          | Suffix | qos-bw1    | unp1-vlan   | Enable
na02          | Prefix | qos-bw2    | unp2-vlan   | Enable
```

*output definitions*


---

<b>Captive Portal Mode</b>	The Captive Portal mode of operation. Only the internal and internal DHCP modes (Web server on the OmniSwitch) are supported at this time. Configured through the <b>captive-portal mode</b> command.
<b>DHCP Parameters:</b>	A list of DHCP parameter values that are applied when the internal DHCP mode is active. These fields display “N/A” when the internal DHCP mode is not active. Configured through the <b>captive-portal mode</b> command.
<b>DHCP Lease Time</b>	The amount of time an IP address is leased to a DHCP client.
<b>DHCP Renew Time</b>	The amount of time, in seconds, until an attempt is made to renew the leased IP address (50% of the DHCP Lease Time).
<b>DHCP Rebinding Time</b>	The amount of time until an attempt is made to obtain a new IP leased address (87.5% of the DHCP Lease Time).
<b>Captive Portal IP address</b>	The internal Captive Portal IP address for the switch. Configured through the <b>captive-portal ip-address</b> command.
<b>Captive Portal Redirect String</b>	The name of the redirect URL that is used for accessing a public certificate. Configured through the <b>captive-portal name</b> command.
<b>Captive Portal Success Redirect URL</b>	The URL of a specific site to which a user is redirected after a successful Captive Portal authentication. Configured through the <b>captive-portal success-redirect-url</b> command.
<b>Captive Portal Proxy Server Port</b>	The proxy server port to use for Captive Portal. Configured through the <b>captive-portal proxy-server-port</b> command.
<b>Captive Portal Retry Count</b>	The number of times a device can try to login before Captive Portal determines that authentication for that device has failed. Configured through the <b>captive-portal retry-count</b> command.
<b>Captive Portal Global Auth Policy List</b>	The name of a QoS policy list for the global Captive Portal configuration. The specified list is applied to each device that passes Captive Portal authentication. Configured through the <b>captive-portal authentication-pass</b> command.
<b>Captive Portal Page Customization</b>	Whether or not ( <b>Enable</b> or <b>Disable</b> ) customized Captive Portal pages are presented to the user.
<b>Captive Portal Profile Name</b>	The name of a UNP profile for the global Captive Portal configuration. The specified profile is only applied to Captive Portal authenticated devices when the Captive Portal profile change option is enabled. Configured through the <b>captive-portal authentication-pass</b> command.
<b>Captive Portal Profile Change</b>	The status of profile change ( <b>Enable</b> or <b>Disable</b> ). When enabled, the profile initially assigned to the Captive Portal user is changed to the profile specified through the Captive Portal profile name option. Configured through the <b>captive-portal authentication-pass</b> command.
<b>Domain Specific Policy Lists:</b>	A list of Captive Portal domain specific policies. The policy list is applied when the domain for a Captive Portal authenticated device matches the domain criteria associated with the list. Domain specific policies take precedence over the global Captive Portal settings.
<b>Domain</b>	The domain name associated with a domain specific policy. Configured through the <b>captive-portal authentication-pass domain</b> command.

---

*output definitions*

---

<b>Realm</b>	The realm of the domain name ( <b>prefix</b> or <b>suffix</b> ) associated with a domain specific policy. The realm identifies the domain name as a prefix ( <i>domain-name/user</i> ) or as a suffix ( <i>user@domain-name</i> ). Configured through the <b>captive-portal authentication-pass domain</b> command.
<b>Policy List</b>	The name of the QoS policy list that is applied when the domain of a Captive Portal authenticated user device matches the domain criteria associated with the list name. Configured through the <b>captive-portal authentication-pass domain</b> command.
<b>Profile Name</b>	The name of the UNP profile that is applied when the domain of a Captive Portal authenticated user device matches the domain criteria associated with the profile name. Configured through the <b>captive-portal authentication-pass domain</b> command.
<b>Profile Change</b>	The status of profile change ( <b>Enable</b> or <b>Disable</b> ) for the associated domain name. When enabled, the initial profile assigned to the Captive Portal device is changed to the profile specified through the profile change option associated with the domain name. Configured through the <b>captive-portal authentication-pass domain</b> command.

---

**Release History**

Release 5.1; command was introduced.

**Related Commands**

**show captive-portal profile-names** Displays the Captive Portal profile configuration for the switch.

**MIB Objects**

```
alaDaCPortalGlobalConfig
  alaDaCPortalMode
  alaDaCPortalDHCPLeaseTime
  alaDaCPortalDHCPRenewTime
  alaDaCPortalDHCPRebindingTime
  alaDaCPortalIpAddress
  alaDaCPortalRedirectUrlName
  alaDaCPortalSuccRedirectUrl
  alaDaCPortalProxyPort
  alaDaCPortalRetryCnt
  alaDaCPortalPolicyListName
  alaDaCPortalCustomization
  alaDaCPortalUNPPProfile
  alaDaCPortalUNPPProfileChange
alaDaCPortalAuthPassTable
  alaDaCPortalAuthDomainName
  alaDaCPortalAuthRealm
  alaDaCPortalAuthPolicyListName
  alaDaCPortalAuthRowStatus
  alaDaCPortalAuthUNPPProfile
  alaDaCPortalAuthUNPPProfileChange
```

---

## show captive-portal profile-names

Displays the Captive Portal profile configuration for the switch. The parameter values configured and applied through a Captive Portal profile override any values set through the global Captive Portal configuration.

**show captive-portal {profile-names | profile-name *profile\_name* configuration}**

---

### Syntax Definitions

**profile-names** Displays a list of configured Captive Portal profiles.

**profile-name *profile\_name* configuration** Displays the Captive Portal parameter configuration for the specified profile name.

### Defaults

N/A

### Platforms Supported

Not supported in this release.

### Usage Guidelines

Currently only the internal Captive Portal mode (Web server on the switch) is configurable for the switch. An external Captive Portal operation is provided through interaction with the Unified Policy Access Manager (UPAM) or the ClearPass Policy Manager (CPPM) as part of the OmniSwitch BYOD solution.

### Examples

```
-> show captive-portal profile-names
```

```

      Captive Portal Profile Names
-----
1. cpl
2. cp2
3. cp3

```

```
-> show captive-portal profile-name cpl configuration
```

```

Captive Portal Profile cpl Configuration:
  Captive Portal Mode                = Internal
  Captive Portal AAA Profile Name     =
  Captive Portal Success Redirect URL =
  Captive Portal Retry Count         = 3
  Captive Portal Global Auth Policy List =
  Captive Portal Profile Name         =
  Captive Portal Profile Change       = Disable
Domain Specific Policy Lists:
  Domain      | Realm | Policy List | Profile Name | Profile
              |      |            |              | Change
-----|-----|-----|-----|-----
na01          | Suffix | qos-bw1    | unp1-vlan   | Enable
na02          | Prefix | qos-bw2    | unp2-vlan   | Enable

```

*output definitions*


---

<b>Captive Portal Mode</b>	The Captive Portal mode of operation. Only internal mode (Web server on the OmniSwitch) is supported at this time.
<b>Captive Portal AAA Profile Name</b>	The name of an authentication, authorization, and accounting (AAA) profile associated with the Captive Portal profile.
<b>Captive Portal Success Redirect URL</b>	The URL of a specific site to which a user is redirected after a successful Captive Portal authentication.
<b>Captive Portal Retry Count</b>	The number of times a device can try to login before Captive Portal determines that authentication for that device has failed.
<b>Captive Portal Global Auth Policy List</b>	The name of a QoS policy list for the global Captive Portal configuration. The specified list is applied to each device that passes Captive Portal authentication.
<b>Captive Portal Profile Name</b>	The name of a UNP profile for the global Captive Portal configuration. The specified profile is only applied to Captive Portal authenticated devices when the Captive Portal profile change option is enabled.
<b>Captive Portal Profile Change</b>	The status of profile change ( <b>Enable</b> or <b>Disable</b> ). When enabled, the profile initially assigned to the Captive Portal user is changed to the profile specified through the Captive Portal profile name option.
<b>Domain Specific Policy Lists:</b>	A list of Captive Portal domain specific policies. The policy list is applied when the domain for a Captive Portal authenticated device matches the domain criteria associated with the list. Domain specific policies take precedence over the global Captive Portal settings.
<b>Domain</b>	The domain name associated with a domain specific policy.
<b>Realm</b>	The realm of the domain name ( <b>prefix</b> or <b>suffix</b> ) associated with a domain specific policy. The realm identifies the domain name as a prefix ( <i>domain-name/user</i> ) or as a suffix ( <i>user@domain-name</i> ).
<b>Policy List</b>	The name of the QoS policy list that is applied when the domain of a Captive Portal authenticated user device matches the domain criteria associated with the list name.
<b>Profile Name</b>	The name of the UNP profile that is applied when the domain of a Captive Portal authenticated user device matches the domain criteria associated with the profile name.
<b>Profile Change</b>	The status of profile change ( <b>Enable</b> or <b>Disable</b> ) for the associated domain name. When enabled, the initial profile assigned to the Captive Portal device is changed to the profile specified through the profile change option associated with the domain name.

---

**Release History**

Release 5.1; command was introduced.



## Related Commands

[captive-portal-profile](#)

Configures a Captive Portal profile.

[show captive-portal configuration](#)

Displays the global Captive Portal parameter settings configured for the switch

## MIB Objects

```
alaDaCPortalProfTable  
  alaDaCPortalProfName  
  alaDaCPortalProfSuccRedirectUrl  
  alaDaCPortalProfRetryCnt  
  alaDaCPortalProfAuthPolicyListName  
  alaDaCPortalProfAaaProf  
  alaDaCPortalProfUNPProfile  
  alaDaCPortalProfUNPProfileChange
```

---

## show unip profile

Displays the UNP profile configuration for the switch.

**show unip profile** [*profile\_name*]

---

### Syntax Definitions

*profile\_name*                      The name of the UNP to display.

### Defaults

By default, the configuration for all profiles is displayed.

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- Enter a UNP profile name with this command to display information for a specific profile.
- Use the [show unip profile map](#) command to display the VLAN that is mapped to the UNP profile.

### Examples

```
-> show unip profile
Profile Name: unip1-vlan
  Qos Policy      = -,
  Location Policy = -,
  Period Policy   = -,
  CP Profile      = guest-profile,
  CP State        = Dis,
  Authen Flag     = Dis,
  Mobile Tag      = Dis,
  SAA Profile     = -,
  Ingress BW      = -,
  Egress BW       = -,
  Ingress Depth   = -,
  Egress Depth    = -,
  Inact Interval  = 10,
  Mac-Mobility    = Dis
  Kerberos Auth   = Dis
```

```
Profile Name: defaultWLANProfile
  Qos Policy      = -,
  Location Policy = -,
  Period Policy   = -,
  CP Profile      = -,
  CP State        = Dis,
  Authen Flag     = Dis,
  Mobile Tag      = Dis,
  SAA Profile     = -,
  Ingress BW      = -,
  Egress BW       = -,
```

```
Ingress Depth = -,
Egress Depth = -,
Inact Interval = 10,
Mac-Mobility = Dis
```

Total Profile Count: 2

```
-> show unip profile unip1-vlan
Profile Name: unip1-vlan
  Qos Policy = -,
  Location Policy = -,
  Period Policy = -,
  CP Profile = guest-profile,
  CP State = Dis,
  Authen Flag = Dis,
  Mobile Tag = Dis,
  SAA Profile = -,
  Ingress BW = -,
  Egress BW = -,
  Ingress Depth = -,
  Egress Depth = -,
  Inact Interval = 10
  Mac-Mobility = Dis
  Kerberos Auth = Dis
```

### *output definitions*

<b>Profile Name</b>	The name of the UNP profile. Configured through the <b>unip profile</b> command.
<b>QoS Policy</b>	<i>Not supported in this release.</i>
<b>Location Policy</b>	<i>Not supported in this release.</i>
<b>Period Policy</b>	<i>Not supported in this release.</i>
<b>CP Profile</b>	The name of the Captive Portal (CP) profile assigned to the UNP profile. A CP profile defines a CP configuration that is applied to devices when CP authentication is enabled for the UNP profile. Configured through the <b>unip profile captive-portal-profile</b> command.
<b>CP State</b>	The CP authentication status ( <b>Ena</b> or <b>Dis</b> ) for the UNP profile. Indicates whether CP authentication is triggered for devices classified into the profile. Configured through the <b>unip profile captive-portal-authentication</b> command.
<b>Authen Flag</b>	<i>Not supported in this release.</i>
<b>Mobile Tag</b>	<i>Not supported in this release.</i>
<b>SAA Profile</b>	<i>Not supported in this release.</i>
<b>Ingress BW</b>	<i>Not supported in this release.</i>
<b>Egress BW</b>	<i>Not supported in this release.</i>
<b>Ingress Depth</b>	<i>Not supported in this release.</i>
<b>Egress Depth</b>	<i>Not supported in this release.</i>
<b>Inact Interval</b>	<i>Not supported in this release.</i>
<b>Mac-Mobility</b>	<i>Not supported in this release.</i>
<b>Kerberos Auth</b>	<i>Not supported in this release.</i>

## Release History

Release 5.1; command was introduced.

## Related Commands

- |  |   |
|--|---|
| <b>show unp classification lldp-rule</b> | Displays the UNP classification rule configuration for the switch.  |
| <b>show unp global configuration</b>     | Displays the UNP global parameter values configured for the switch. |
| <b>show unp port</b>                     | Displays the UNP configuration for the port.                        |
| <b>show unp user</b>                     | Displays information about the devices learned on a UNP port.       |

## MIB Objects

```
alaDaUNPProfileTable  
  alaDaUNPProfileName  
  alaDaUNPProfileCPortalAuthentication  
  alaDaUNPProfileRedirect  
  alaDaUNPProfileCPortalProfile
```

---

## show unprofile map

Displays the VLAN, mapping configuration assigned to a UNP profile.

```
show unprofile [profile_name] map {vlan}
```

---

### Syntax Definitions

*profile\_name*                      The name of the UNP to display.  
**vlan**                                Displays the VLAN mapping configuration for a UNP profile.

### Defaults

By default, the VLAN, mapping configuration for all profiles is displayed.

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- Enter a UNP profile name with this command to display the mapping information for a specific profile.
- Only one VLAN is mapped to a profile at any given time.

### Examples

```
-> show unprofile map vlan
Profile Name                      Vlan-Id
-----+-----
unp1-vlan                         300
unp2-vlan                         301
unp3-vlan                         500
unp4-vlan                         501
```

Total Profile Vlan-Map Count: 4

```
-> show unprofile unp2-vlan map vlan
Profile Name                      Vlan-Id
-----+-----
unp2-vlan                         301
```

### Release History

Release 5.1; command was introduced.

### Related Commands

[unprofile map vlan](#)                      Configures the mapping of a standard VLAN to a UNP profile.

## MIB Objects

```
alaDaUNPProfileTable
  alaDaUNPProfileName
alaDaUNPProfileMapVlanTable
  alaDaUNPProfileMapVlanVlanID
alaDaUNPProfileMapSpbTable
  alaDaUNPProfileMapSpbEncapVal
  alaDaUNPProfileMapSpbIsid
  alaDaUNPProfileMapSpbBVlan
  alaDaUNPProfileMapSpbMulticastMode
  alaDaUNPProfileMapSpbVlanXlation
alaDaUNPProfileMapVxlanTable
  alaDaUNPProfileMapVxlanEncapVal
  alaDaUNPProfileMapVxlanVnid
  alaDaUNPProfileMapVxlanFarEndIPList
  alaDaUNPProfileMapVxlanMulticastIPAddressType
  alaDaUNPProfileMapVxlanMulticastIPAddress
  alaDaUNPProfileMapVxlanVlanXlation
  alaDaUNPProfileMapVxlanMulticastMode
alaDaUNPProfileMapL2GreTable
  alaDaUNPProfileMapL2GreEncapVal
  alaDaUNPProfileMapL2GreVpnid
  alaDaUNPProfileMapL2GreFarEndIPAddressType
  alaDaUNPProfileMapL2GreFarEndIPAddress
  alaDaUNPProfileMapL2GreFarEndIPList
  alaDaUNPProfileMapL2GrePortIsolation
  alaDaUNPProfileMapL2GreVlanXlation
alaDaUNPProfileMapStaticTable
  alaDaUNPProfileMapStaticEncapVal
  alaDaUNPProfileMapStaticServiceID
```

---

## show unip global configuration

Displays the switch configuration for the global Universal Network Profile (UNP) parameter settings.

### show unip global configuration

---

#### Syntax Definitions

N/A

#### Defaults

N/A

#### Platforms Supported

OmniSwitch 2260, 2360

#### Usage Guidelines

- UNP global parameter settings determine specific actions related to the following:
  - Whether or not devices attempting to authenticate are assigned to a temporary profile if the authentication server is unreachable.
  - Interaction with the Unified Policy Access Manager (UPAM) or the ClearPass Policy Manager (CPPM) as part of the OmniSwitch Bring Your Own Devices (BYOD) solution.
- A hyphen, “-”, indicates that a value has not been configured for the global UNP parameter.

#### Examples

```
-> show unip global configuration
Dynamic Vlan Configuration      = Disabled,
Dynamic Profile Configuration  = Disabled,
Auth Server Down Profile1     = -,
Auth Server Down Profile2     = -,
Auth Server Down Profile3     = -,
Auth Server Down Voice Profile1 = -,
Auth Server Down Voice Profile2 = -,
Auth Server Down Voice Profile3 = -,
Auth Server Down Port Bounce  = Disabled
Auth Server Down Timeout      = 60,
Redirect Port Bounce          = Enabled,
Redirect Pause Timer          = -
Redirect http proxy-port      = 8080
Redirect Server FQDN          = cppm.abc.com
Redirect Server IP            = 10.135.20.50
Allowed IP                    = -
Force L3-Learning            = Disabled
Force L3-Learning Port Bounce = Enabled
802.1x Pass Through Mode     = Disabled
AP Mode                       = Enabled
Secure AP Mode               = Disabled
System-default service-mod    = 512
System-default service-base   = 10000000
```

```

System-default Multicast-Mode      = Headend
System-default Vlan-Xlation        = Enabled
System-default Multicast-Group     = 239.0.0.0
System-default far-end-ip-list     = -
IPv6 Drop Packets                  = Disabled,
Delayed Learning Interval          = 0,
Global Mac-Mobility                = Disabled,

```

### *output definitions*

---

<b>Dynamic Vlan Configuration</b>	<i>Not supported in this release.</i>
<b>Dynamic Profile Configuration</b>	<i>Not supported in this release.</i>
<b>Auth Server Down Profile1</b> <b>Auth Server Down Profile2</b> <b>Auth Server Down Profile3</b>	The name of a UNP that a device is assigned to in the event the RADIUS server is unreachable. Up to three different profile names are configurable as authentication server down UNP profiles. Configured through the <b>unip auth-server-down</b> command.
<b>Auth Server Down Voice Profile1</b> <b>Auth Server Down Voice Profile2</b> <b>Auth Server Down Voice Profile3</b>	<i>Not supported in this release.</i>
<b>Auth Server Down Port Bounce</b>	<i>Not supported in this release.</i>
<b>Auth Server Down Timeout</b>	The amount of time, in seconds, that devices remain assigned to the authentication server down UNP. Configured through the <b>unip auth-server-down-timeout</b> command.
<b>Redirect Port Bounce</b>	The status ( <b>Enabled</b> or <b>Disabled</b> ) of the port bounce operation for non-suppliant devices. Configured through the <b>unip redirect port-bounce</b> command.
<b>Redirect Pause Timer</b>	The amount of time, in seconds, the switch pauses to clear all device authentication states and trigger re-authentication. Configured through the <b>unip redirect pause-timer</b> command.
<b>Redirect http proxy-port</b>	The HTTP proxy port number to use for redirection to a server. Configured through the <b>unip redirect proxy-server-port</b> command.
<b>Redirect Server FQDN</b>	The Fully Qualified Domain Name of a redirection server. Configured through the <b>unip redirect server</b> command. This field is blank if an IP address was configured for the redirect server.
<b>Redirect Server IP</b>	The IP network address of a redirection server. Configured through the <b>unip redirect server</b> command. If an FQDN was configured for the redirect server, then the resolved IP address for that domain will appear in this field.
<b>Allowed IP</b>	A list of IP addresses to which a host can access additional servers. Configured through the <b>unip redirect allowed-name</b> command.
<b>Force L3-Learning</b>	<i>Not supported in this release.</i>
<b>Force L3-Learning Port Bounce</b>	<i>Not supported in this release.</i>
<b>802.1x Pass Through Mode</b>	Whether a supplicant device is authenticated locally ( <b>Enabled</b> ) or passed through to another switch for authentication ( <b>Disabled</b> ). Configured through the <b>unip 802.1x-pass-through</b> command.
<b>AP Mode</b>	The status ( <b>Enabled</b> or <b>Disabled</b> ) of the Access Point (AP) mode. This mode is enabled to support the detection of connected OmniAccess Stellar AP devices. Configured through the <b>unip ap-mode</b> command.



*output definitions*


---

<b>System-default service-mod</b>	<i>Not supported in this release.</i>
<b>System-default service-base</b>	<i>Not supported in this release.</i>
<b>System-default Multicast-Mode</b>	<i>Not supported in this release..</i>
<b>System-default Vlan-Xlation</b>	<i>Not supported in this release.</i>
<b>System-default Multicast-Group</b>	<i>Not supported in this release.</i>
<b>System-default far-end-ip-list</b>	<i>Not supported in this release.</i>
<b>IPv6 Drop Packets</b>	The status ( <b>Enabled</b> or <b>Disabled</b> ) of IPv6 packet drop on UNP ports. Configured through the <b>unnp ipv6-drop</b> command.
<b>Delayed Learning Interval</b>	<i>Not supported in this release.</i>
<b>Global Mac-Mobility</b>	<i>Not supported in this release.</i>

---

**Release History**

Release 5.1; command was introduced.

**Related Commands**

<b>show unnp profile</b>	Displays the UNP configuration for the switch.
<b>show unnp port</b>	Displays the UNP configuration for the port.
<b>show unnp user</b>	Displays information about the devices learned on a UNP port.

**MIB Objects**

```

alaDaUNPGlobalConfiguration
  alaDaUNPDynamicVlanConfigFlag
  alaDaUNPDynamicProfileConfigFlag
  alaDaUNPAuthServerDownProfile1
  alaDaUNPAuthServerDownProfile2
  alaDaUNPAuthServerDownProfile3
  alaDaUNPAuthServerDownTimeout
  alaDaUNPRedirectPortBounce
  alaDaUNPRedirectPauseTimer
  alaDaUNPRedirectProxyServerPort
  alaDaUNPRedirectServerIPType
  alaDaUNPRedirectServerIP
  alaDaUNPForceL3Learning
  alaDaUNP8021XPassThrough
  alaDaUNPApMode
  alaDaUNPServiceModule
  alaDaUNPServiceBase
  alaDaUNPServiceMulticastMode
  alaDaUNPServiceVlanXlation
  alaDaUNPServiceMulticastGroup
  alaDaUNPServiceFarEndIpList
  alaDaUNPIPv6Drop
  alaDaUNPDelayLearning
  alaDaUNPMacMobility

```

```
alaDaUNPRedirectAllowedServerTable
  alaDaUNPRedirectAllowedServerIPType
  alaDaUNPRedirectAllowedServerIP
  alaDaUNPRedirectAllowedMaskIPType
  alaDaUNPRedirectAllowedMaskIP
```

---

## show unip classification lldp-rule

Displays the UNP Link Layer Discovery Protocol (LLDP) classification rule configuration for the switch. An LLDP classification rule is used specifically for IP phones and OmniAccess Stellar Access Point (AP) devices.

**show unip classification lldp-rule**

---

### Syntax Definitions

N/A

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

The output display includes a built-in LLDP classification rule for access points that is assigned to a built-in profile named “defaultWLANProfile”. This rule cannot be removed from the switch configuration, but the profile designation for the rule can be changed.

### Examples

```
-> show unip classification lldp-rule
```

MED Endpoint	Profile1 Name	Profile2 Name	Profile3 Name
IP-Phone	unpl-vlan	-	-
Access-Point	defaultWLANProfile	-	-

Total LLDP Rule Count: 2

#### *output definitions*

##### **MED Endpoint**

The LLDP Media Endpoint Device to match for this profile rule (**IP-Phone** or **Access-Point**). Configured through the **unip classification lldp med-endpoint** command.

##### **Profile1, Profile2, Profile3**

The name of the UNP profile to which the rule is applied. Configured through the **unip profile** command.

### Release History

Release 5.1; command was introduced.

**Related Commands****show unip profile**

Displays the UNP configuration for the switch.

**show unip port**

Displays the UNP configuration for the port.

**show unip user**

Displays information about the devices learned on a UNP port.

**MIB Objects**N/A

---

## show unp port

Displays the UNP configuration for the port. Includes only ports and link aggregates on which UNP is enabled.

```
show unp {port [chassis/slot/port1[-port2]] | linkagg [agg_id[-agg_id2]]} [type {bridge}]
```

---

### Syntax Definitions

<i>chassis</i>	The chassis identifier.
<i>slot/port[-port2]</i>	The slot and port number (3/1). Use a hyphen to specify a range of ports (3/1-8).
<i>agg_id[-agg_id2]</i>	Link aggregate ID. Use a hyphen to specify a range of link aggregate IDs (10-15).
<b>bridge</b>	Displays only UNP bridge ports.

### Defaults

By default, configuration information for all UNP ports or link aggregates is displayed.

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- Enter a port or link aggregate ID number to display information specific to the port or link aggregate.
- Specify a UNP port type (**bridge**) to display information only for that type of UNP port.

### Examples

```
-> show unp port
Port  Port  Type  802.1x  Mac      Class.  Default  802.1X  MAC  Trust-Tag
      Domain Auth  Auth
-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+
1/16   1 Bridge Disabled Disabled Enabled  unp-1001  -      -      Disabled
1/17   0 Bridge Disabled Disabled Disabled unp-1001  -      -      Disabled
1/36   5 Bridge Enabled  Enabled  Disabled DefUnp    1XProf1 MacPAS  Enabled

-> show unp port 1/17
Port  Port  Type  802.1x  Mac      Class.  Default  802.1X  MAC  Trust-Tag
      Domain Auth  Auth
-----+-----+-----+-----+-----+-----+-----+-----+-----+
1/17   0 Bridge Disabled Disabled Disabled unp-1001  -      -      Disabled
```

```

-> show unip linkagg type bridge
LagID Port      Type      802.1x  Mac      Class.  Default  802.1X  MAC      Trust-Tag
      Domain      Auth      Auth
-----+-----+-----+-----+-----+-----+-----+-----+-----+-----
10          0 Bridge Disabled Disabled Enabled  unip-1001  -        -        Disabled
15          0 Bridge Disabled Disabled Disabled unip-1001  -        -        Disabled

-> show unip port 2/1/9 config
Port 2/1/9
  Port-Type                = Access,
  802.1x authentication    = Enabled,
  802.1x Pass Alternate Profile = -,
  802.1x Bypass            = Disabled,
  802.1x failure-policy    = default,
  Mac-auth allow-eap       = -,
  Mac authentication       = Enabled,
  Mac Pass Alternate Profile = -,
  Classification           = Enabled,
  Trust-tag                = Disabled,
  Default Profile          = -,
  Port Domain Num         = 0,
  AAA Profile              = -,
  Port Template            = -,
  Admin State              = Enabled,
  Dynamic Service          = spb,
  PVLAN Port Type         = -,
  Force L3-Learning        = Disabled,
  Force L3-Learning Port Bounce = Disabled,
  AP Mode                  = Enabled,
  Secure AP Mode           = Enabled,
  802.1x Parameters:
    Tx-Period              = 30,
    Supp-Timeout           = 30,
    Max-req                 = 2,

```

### output definitions

<b>Port/LagID</b>	The port or link aggregate on which UNP is enabled. Configured through the <b>unip port-type</b> command.
<b>Port Domain</b>	<i>Not supported in this release.</i>
<b>Type</b>	The type of UNP port ( <b>Bridge</b> ). UNP bridge ports classify traffic into VLAN profiles; Configured through the <b>unip port-type</b> command.
<b>802.1x Auth</b>	The status of 802.1X authentication ( <b>Enabled</b> or <b>Disabled</b> ) for the UNP port or link aggregate. Configured through the <b>unip 802.1x-authentication</b> command.
<b>Mac Auth</b>	The status of MAC authentication ( <b>Enabled</b> or <b>Disabled</b> ) for the UNP port or link aggregate. Configured through the <b>unip mac-authentication</b> command.
<b>Class.</b>	The status of classification ( <b>Enabled</b> or <b>Disabled</b> ) for the UNP port or link aggregate. Configured through the <b>unip classification</b> command.
<b>Default</b>	The name of the default UNP assigned to the port or link aggregate. Configured through the <b>unip default-profile</b> command.
<b>802.1X Pass-Alt</b>	The name of the 802.1X authentication pass alternate UNP assigned to the port or link aggregate. Configured through the <b>unip 802.1x-authentication pass-alternate</b> command.

*output definitions*

---

<b>MAC Pass-Alt</b>	The name of the MAC authentication pass alternate UNP assigned to the port or link aggregate. Configured through the <b>unp mac-authentication pass-alternate</b> command.
<b>Trust-Tag</b>	<i>Not supported in this release.</i>

---

**Release History**

Release 5.1; command was introduced.

Release 5.1R2; **secure** parameter added

**Related Commands**

<b>show unp profile</b>	Displays the UNP configuration for the switch.
<b>show unp port config</b>	Displays detailed configuration information for UNP ports and link aggregates.
<b>show unp user</b>	Displays information about the devices learned on a UNP port.

**MIB Objects**

```
alaDaUNPPortTable  
  alaDaUNPPortIfIndex  
  alaDaUNPPortDomainID  
  alaDaUNPPortType  
  alaDaUNPPort8021XAuthStatus  
  alaDaUNPPortMacAuthFlag  
  alaDaUNPPortClassificationFlag  
  alaDaUNPPortDefaultProfileName  
  alaDaUNPPortPassAltProfileName  
  alaDaUNPPortPassAltProfileName  
  alaDaUNPPortTrustTagStatus
```

---



## show unnp port config

Displays detailed configuration information for UNP ports and link aggregates.

**show unnp {port [*chassis/slot/port1*[-*port2*]] | linkagg [*agg\_id*[-*agg\_id2*]]} config**

---

### Syntax Definitions

<i>chassis</i>	The chassis identifier.
<i>slot/port</i> [- <i>port2</i> ]	The slot and port number (3/1). Use a hyphen to specify a range of ports (3/1-8).
<i>agg_id</i> [- <i>agg_id2</i> ]	Link aggregate ID. Use a hyphen to specify a range of link aggregates IDs (10-15).

### Defaults

By default, configuration information for all ports or link aggregates is displayed.

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

Use the **port** or **linkagg** parameter to display information for a specific port or link aggregate ID.

### Examples

```
-> show unnp port 1/1/10 config
Port 1/1/10
  Port-Type = BRIDGE,
  Redirect Port Bounce = Disabled,
  802.1x authentication = Enabled,
  802.1x Pass Alternate Profile = -,
  802.1x Bypass = Disabled,
  802.1x failure-policy = default,
  Mac-auth allow-eap = -,
  Mac authentication = Enabled,
  Mac Pass Alternate Profile = -,
  Classification = Enabled,
  Trust-tag = Enabled,
  Default Profile = -,
  Port Domain Num = 0,
  AAA Profile = -,
  Port Template = bridgeDefaultPortTemplate,
  Port Control Direction = Both,
  Egress Flooding = Not Allowed,
  Admin State = Enabled,
  Dynamic Service = -,
  PVLAN Port Type = -,
  Force L3-Learning = Disabled,
  Force L3-Learning Port Bounce = Enabled,
  AP Mode = Enabled,
  802.1x Parameters:
```

```

Tx-Period          = 30,
Supp-Timeout       = 30,
Max-req            = 2

-> show unnp linkagg 12 config
Linkagg ID 0/12
  Port-Type          = Bridge,
  Redirect Port Bounce = Disabled,
  802.1x authentication = Enabled,
  802.1x Pass Alternate Profile = -,
  802.1x Bypass      = Disabled,
  802.1x failure-policy = default,
  Mac-auth allow-eap = -,
  Mac authentication = Enabled,
  Mac Pass Alternate Profile = -,
  Classification     = Enabled,
  Trust-tag          = Enabled,
  Default Profile    = -,
  Port Domain Num    = 0,
  AAA Profile        = -,
  Port Template      = bridgeDefaultPortTemplate,
  Port Control Direction = Both,
  Egress Flooding    = Not Allowed,
  Admin State        = Enabled,
  Dynamic Service    = -,
  Force L3-Learning = Disabled,
  Force L3-Learning Port Bounce = Enabled,
  AP Mode            = Enabled,
  802.1x Parameters:
    Tx-Period          = 30,
    Supp-Timeout       = 30,
    Max-reqmeout      = 2

```

### output definitions

<b>Port or Linkagg ID</b>	The port or link aggregate on which UNP is enabled. Configured through the <b>unnp port-type</b> command. A “0” indicates the port is a link aggregate (for example, 0/12 is link aggregate ID 12).
<b>Port Type</b>	The type of UNP port ( <b>Bridge</b> ).
<b>Redirect Port Bounce</b>	The status of the port bounce operation ( <b>Enabled</b> or <b>Disabled</b> ) for the UNP port or link aggregate. Configured through the <b>unnp redirect port-bounce</b> command. This field applies only to UNP bridge ports and link aggregates.
<b>802.1x Authentication</b>	The 802.1X authentication status ( <b>Enabled</b> or <b>Disabled</b> ) for the UNP port or link aggregate. Configured through the <b>unnp 802.1x-authentication</b> command.
<b>802.1x Pass Alternate Profile</b>	The name of the 802.1X authentication pass alternate profile assigned to the port or link aggregate. Configured through the <b>unnp 802.1x-authentication pass-alternate</b> command
<b>802.1x Bypass</b>	The status of 802.1X bypass ( <b>Enabled</b> or <b>Disabled</b> ).
<b>802.1x failure-policy</b>	Whether the switch attempts subsequent MAC authentication for a device after the initial 802.1X authentication process fails ( <b>default</b> = no MAC authentication or <b>mac-authentication</b> ).

*output definitions*

<b>Mac-auth allow-eap</b>	Indicates the conditions under which 802.1X authentication is performed or bypassed based on the initial MAC authentication process ( <b>pass</b> = MAC authentication passes, <b>fail</b> = if MAC authentication fails, <b>noauth</b> = no MAC authentication, or <b>none</b> = do not attempt 802.1X authentication). This parameter option only applies to a UNP port or link aggregate on which 802.1X authentication bypass is enabled. Configured through the <b>unnp mac-authentication allow-eap</b> command.
<b>Mac Authentication</b>	The MAC authentication status ( <b>Enabled</b> or <b>Disabled</b> ) for the UNP port or link aggregate. Configured through the <b>unnp mac-authentication</b> command.
<b>Mac Pass Alternate Profile</b>	The name of the MAC authentication pass alternate profile assigned to the port or link aggregate. Configured through the <b>unnp mac-authentication pass-alternate</b> command.
<b>Classification</b>	The classification status ( <b>Enabled</b> or <b>Disabled</b> ) for the UNP port or link aggregate. Configured through the <b>unnp classification</b> command.
<b>Trust-Tag</b>	<i>Not supported in this release.</i>
<b>Default Profile</b>	The name of the default UNP profile assigned to the UNP port or link aggregate. Configured through the <b>unnp default-profile</b> command.
<b>Port Domain Name</b>	<i>Creating and assigning port domain IDs is not supported in this release.</i>
<b>AAA Profile</b>	The name of an AAA profile assigned to the UNP port or link aggregate. Configured through the <b>unnp aaa-profile</b> command.
<b>Port Template</b>	The name of a port template assigned to the UNP port or link aggregate. A port template defines and saves UNP port configuration options (such as the type of authentication, classification status, a default profile). Configured through the <b>unnp port port-template</b> command.
<b>Port Control Direction</b>	Whether 802.1X access control is applied to ingress and egress traffic ( <b>both</b> ) or just ingress traffic ( <b>in</b> ). Configured through the <b>unnp direction</b> command. This field applies only to UNP bridge ports and link aggregates.
<b>Egress Flooding</b>	Indicates whether egress broadcast, unknown unicast, and multicast traffic is blocked ( <b>Not Allowed</b> ) or unblocked ( <b>Allowed</b> ) on the UNP port. The value displayed in this field is based on the port control direction setting for the port ( <b>both</b> = Not Allowed; <b>in</b> = Allowed). This field is displayed only for UNP bridge ports and link aggregates.
<b>Admin State</b>	The administrative status ( <b>Enabled</b> or <b>Disabled</b> ) for the UNP port or link aggregate. Configured through the <b>unnp admin-state</b> command.
<b>Dynamic Service</b>	<i>Not supported in this release.</i>
<b>PVLAN Port Type</b>	<i>Not supported in this release.</i>
<b>Force L3-Learning</b>	<i>Not supported in this release.</i>
<b>Force L3-Learning Port Bounce</b>	<i>Not supported in this release.</i>
<b>AP Mode</b>	The Access Point mode status ( <b>Enabled</b> or <b>Disabled</b> ) for the UNP port or link aggregate. Configured through the <b>unnp port ap-mode</b> command. This field applies only to UNP bridge ports and link aggregates.

*output definitions*


---

<b>802.1x Tx-Period</b>	The amount of time, in seconds, before an EAP Request Identity is retransmitted. Configured through the <b>unnp 802.1x-authentication tx-period</b> command.
<b>802.1x Supp-Timeout</b>	The amount of time, in seconds, the switch waits before timing out an 802.1X user (supplicant) that is attempting to authenticate. Configured through the <b>unnp 802.1x-authentication supp-timeout</b> command.
<b>802.1x Max-Req</b>	The maximum number of times the switch will retransmit a request for authentication information. Configured through the <b>unnp 802.1x-authentication max-req</b> command.

---

**Release History**

Release 5.1; command was introduced.

**Related Commands**

<b>show unnp port</b>	Displays the UNP port configuration for the switch.
<b>show unnp profile</b>	Displays the UNP configuration for the switch.
<b>show unnp user</b>	Displays information about the devices learned on a UNP port.

**MIB Objects**

alaDaUNPPortTable

```

alaDaUNPPortIfIndex
alaDaUNPPortDefaultProfileName
alaDaUNPPortPassAltProfileName
alaDaUNPPortMacAuthFlag
alaDaUNPPortClassificationFlag
alaDaUNPPortTrustTagStatus
alaDaUNPPortType
alaDaUNPPort8021XAuthStatus
alaDaUNPPort8021XTxPeriod
alaDaUNPPort8021XSuppTimeOut
alaDaUNPPort8021XMaxReq
alaDaUNPPortAaaProfile
alaDaUNPPortRedirectPortBounce
alaDaUNPPort8021XFailurePolicy
alaDaUNPPort8021XBypassStatus
alaDaUNPPortMacAllowEap
alaDaUNPPortAdminControlledDirections
alaDaUNPPortAdminControlledOperDirections
alaDaUNPPort8021XPassAltProfileName
alaDaUNPPortPortTemplateName
alaDaUNPPortDomainID
alaDaUNPPortAdminState
alaDaUNPPortDynamicService
alaDaUNPPortPVlanPortType
alaDaUNPPortL2Profile
alaDaUNPPortApMode

```

---

## show unip port bandwidth

Displays the bandwidth parameter values applied to a UNP port or link aggregate.

**show unip {port chassis/slot/port1[-port2] | linkagg agg\_id[-agg\_id2]} bandwidth**

---

### Syntax Definitions

*chassis/slot/port*[-port2] The chassis ID, slot, and port number (3/1/1) for a specific port. Use a hyphen to specify a range of ports (3/1/1-8).

*agg\_id*[-agg\_id2] Link aggregate ID. Use a hyphen to specify a range of link aggregate IDs (10-15).

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- Use the **port** or **linkagg** parameter to display information for a specific port or link aggregate ID.
- Bandwidth parameter values are not applied to UNP link aggregates that are assigned to the profile. As a result, this command will always show the bandwidth parameter values as not set for link aggregates.
- The profile name is obtained through local classification or returned from the RADIUS server.
- The source from which the bandwidth parameter values was last updated is also included in the display information. The source updates are based on the following conditions:
  - User-configured QoS bandwidth policies are applied after the port is classified into the profile.

### Examples

The following example shows the default display of UNP rate limit parameters when no users are learned on the UNP port:

```
-> show unip port 1/1/11 bandwidth
Port  Port  Type  Max Ingress Ingress BW Ingr BW  Max Egress Egress BW Egress BW Max Ingress Max Egress
   Domain  Bandwidth  Source  profile  Bandwidth Source  profile  Depth  Depth
-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+
1/1/11 0      Bridge  0          UNP      -        0          -        0          0          0          0
```

The following example shows the UNP rate limit parameters that are applied when user devices are assigned to a UNP profile that specifies bandwidth parameter values:

```
-> show unip port 1/1/11 bandwidth
Port  Port  Type  Max Ingress Ingress BW Ingr BW  Max Egress Egress BW Egress BW Max Ingress Max Egress
   Domain  Bandwidth  Source  profile  Bandwidth Source  profile  Depth  Depth
-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+
1/1/11 0      Bridge 50.0M      UNP      Ingress50 30.0M     UNP      Egress30  0          0
```

The following example shows the rate limit parameter values that are applied when QoS policies override the bandwidth parameter values that were applied through UNP profile settings:

```
-> qos port 1/1/11 maximum ingress-bandwidth 60M maximum egress-bandwidth 60M
-> show unip port 1/1/11 bandwidth
Port  Port  Type  Max Ingress Ingress BW Ingr BW  Max Egress Egress BW Egress BW Max Ingress Max Egress
  Domain Bandwidth Source profile Bandwidth Source profile Depth Depth
-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----
1/1/11 0      Bridge 60.0M      QoS      -      60.0M     QoS      -      0      0
```

### output definitions

<b>Port</b>	The port or link aggregate on which UNP is enabled. A “0” indicates the port is a link aggregate (for example, 0/11 is link aggregate ID 11). Configured through the <b>unip port-type</b> command.
<b>Port Domain</b>	<i>Creating and assigning port domain IDs is not supported in this release.</i>
<b>Type</b>	The type of UNP port ( <b>Bridge</b> ). Configured through the <b>unip port-type</b> command.
<b>Max Ingress Bandwidth</b>	The maximum ingress bandwidth value applied to the UNP port.
<b>Ingress BW Source</b>	The source from which the maximum ingress bandwidth value was updated on the port ( <b>QoS</b> ).
<b>Ingr BW Profile</b>	<i>Not supported in this release.</i>
<b>Max Egress Bandwidth</b>	The maximum egress bandwidth value applied to the UNP port.
<b>Egress BW Source</b>	The source from which the maximum egress bandwidth value was updated on the port ( <b>QoS</b> ).
<b>Egress BW Profile</b>	<i>Not supported in this release.</i>
<b>Max Ingress Depth</b>	The maximum ingress depth value that is applied to the UNP port. This value determines how much the traffic can burst over the maximum ingress bandwidth rate.
<b>Max Egress Depth</b>	The maximum egress depth value that is applied to the UNP port. This value determines how much the traffic can burst over the maximum egress bandwidth rate.

### Release History

Release 5.1; command introduced.

### Related Commands

<b>show unip port</b>	Displays the UNP port configuration for the switch.
<b>show unip profile</b>	Displays the UNP profile configuration for the switch.

### MIB Objects

```
alaDaUNPPortTable
  alaDaUNPPortIfIndex
  alaDaUNPPortDomainID
  alaDaUNPPortType
  alaDaUNPPortMaxIngressBw
  alaDaUNPPortMaxIngressBwSource
  alaDaUNPPortMaxEgressBw
  alaDaUNPPortMaxEgressBwSource
```

```
alaDaUNPPortMaxIngressDepth  
alaDaUNPPortMaxEgressDepth  
alaDaUNPPortIngressSourceProfile  
alaDaUNPPortEgressSourceProfile
```

---

## show unip port 802.1x statistics

Displays 802.1X statistics for a UNP port or link aggregate on which 802.1X authentication is enabled.

**show unip {port *chassis/slot/port1*[-*port2*] | linkagg *agg\_id*[-*agg\_id2*]} 802.1x statistics**

---

### Syntax Definitions

<i>chassis</i>	The chassis identifier.
<i>slot/port</i> [- <i>port2</i> ]	The slot and port number (3/1). Use a hyphen to specify a range of ports (3/1-8).
<i>agg_id</i> [- <i>agg_id2</i> ]	Link aggregate ID. Use a hyphen to specify a range of link aggregates IDs (10-15).

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

Use the **port** or **linkagg** parameter to display information for a specific UNP port or link aggregate ID.

### Examples

```
-> show unip port 1/1/13 802.1x statistics
Port 1/1
  Mac-address=00:00:00:00:00:01,
  Vlan=0,
  Rx EAP Frames=0,
  Tx EAP Frames=0,
  Rx EAP Logoff Frames=0,
  Tx EAP Request Frames=0,
  Tx EAP Request ID Frames=0,
  Rx EAP Response Frames=0,
  Rx EAP Response ID Frames=0,
  Rx EAP Start Frames=0,
  Rx Invalid EAP Frames=0,
  Rx Length Error EAP Frames=0,
  Last EAP Frame Version=0,
  Last EAP Frame Version=0,
  Last EAP Source=00:00:00:00:00:00
```



```
-> show unip linkagg 20 802.1x statistics
Linkagg ID 0/10
  Mac-address=00:00:00:00:00:01,
  Vlan=0,
  Rx EAP Frames=0,
  Tx EAP Frames=0,
  Rx EAP Logoff Frames=0,
  Tx EAP Request Frames=0,
  Tx EAP Request ID Frames=0,
  Rx EAP Response Frames=0,
  Rx EAP Response ID Frames=0,
  Rx EAP Start Frames=0,
  Rx Invalid EAP Frames=0,
  Rx Length Error EAP Frames=0,
  Last EAP Frame Version=0,
  Last EAP Frame Version=0,
  Last EAP Source=00:00:00:00:00:00
```

## Release History

Release 5.1; command was introduced.

## Related Commands

[show unip port](#)

Displays the UNP port configuration for the switch.

[show unip user](#)

Displays information about the devices learned on a UNP port.

## MIB Objects

N/A

---

## show unip port configured-vlans

Displays the VLANs assigned to UNP bridge ports or link aggregates.

**show unip {port [*chassis/slot/port1*[-*port2*]] | linkagg [*agg\_id*[-*agg\_id2*]} configured-vlans**

---

### Syntax Definitions

*chassis/slot/port*[-*port2*]      The chassis ID, slot, and port number (3/1/1) for a specific UNP bridge port. Use a hyphen to specify a range of ports (3/1/1-8).

*agg\_id*[-*agg\_id2*]      Link aggregate ID for a specific UNP bridge link aggregate. Use a hyphen to specify a range of link aggregate IDs (10-15).

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- Use the **port** or **linkagg** parameter to display information for a specific UNP bridge port or link aggregate ID.
- If the **port** or **linkagg** parameter is used without specifying an individual port, a range of ports, or link aggregate ID, then the configured VLAN information for all UNP ports and link aggregates is displayed.
- The “Type” field indicates if the VLAN assignment is untagged (unpUntag) or tagged (unpQtag).

### Examples

```
-> show unip port configured-vlans
Port      Vlan    Type
-----+-----+-----
0/10      500     unpUntag
0/10      501     unpUntag
1/1/10    600     unpQtag
1/1/11    601     unpUntag
1/1/11    602     unpQtag
1/1/11    603     unpQtag

-> show unip port 1/1/11 configured-vlans
Port      Vlan    Type
-----+-----+-----
1/1/11    601     unpUntag
1/1/11    602     unpQtag
1/1/11    603     unpQtag
```

```
-> show unip linkagg configured-vlans
```

```
LagId   Vlan   Type
-----+-----+-----
0/10    500   unipUntag
0/10    501   unipQtag
0/100   100   unipQtag
0/100   101   unipUntag
0/101   200   unipQtag
0/101   201   unipQtag
```

```
-> show unip linkagg 100 configured-vlans
```

```
LagId   Vlan   Type
-----+-----+-----
0/100   100   unipQtag
0/100   101   unipUntag
```

## Release History

Release 5.1; command introduced.

## Related Commands

[unip vlan](#)

Configures VLAN assignments for UNP bridge ports.

[show unip port](#)

Displays the UNP port and link aggregate configuration for the switch.

## MIB Objects

alaDaUNPPortVlanTable

alaDaUNPPortVlanVID

---

## show unnp port-template

Displays the port template configuration for the switch.

**show unnp port-template** [*template\_name*] [**config** | **configured-vlans** | **profile**]

---

### Syntax Definitions

<i>template_name</i>	The name of the UNP port template to display.
<b>config</b>	Displays additional details about the parameter configuration for the template.
<b>configured-vlans</b>	Displays the VLAN IDs that the specified template assigns to a UNP port.

### Defaults

By default, displays a summary of the configuration information for all port templates.

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- Enter a template name with this command to display information for a specific port template.
- Use the **config** option with this command to display the full configuration for each template.
- Use the **configured-vlans** option with this command to display the VLAN IDs that a port template will statically assign to a UNP bridge port when the template is applied on the port. Configuring a static VLAN-port association (VPA) applies only to UNP bridge ports.

### Examples

```
-> show unnp port-template
      802.1x
Template Name      802.1x  Pass-Alt Profile Mac-Auth Pass-Alt Profile Redirect
-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+
unp-port1         Enabled  1xPass          Disabled  -         Disabled  Disabled  Disabled
unp-port2         Disabled -              Enabled   macPass   Disabled  Enabled   Enabled
bridgeDefaultPortTemplate Enabled -              Enabled   -         Disabled  Enabled   Enabled

Total Port-Template Count: 4

-> show unnp port-template unp-port2
      802.1x
Template Name      802.1x  Pass-Alt Profile Mac-Auth Pass-Alt Profile Redirect
-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+
unp-port2         Disabled -              Enabled   macPass   Disabled  Enabled   Enabled
```

```
-> show unp port-template bridgeDefaultPortTemplate
Template Name      802.1x      Pass-Alt Profile Mac-Auth Pass-Alt Profile Port-Bounce Class. Trust-Tag
-----+-----+-----+-----+-----+-----+-----+-----
bridgeDefaultPortTemplate Enabled -          Enabled -          Disabled Enabled Enabled
```

```
-> show unp port-template port-2 config
```

```
Port Template: unp-port2 config
 802.1x Authentication = Disabled,
 802.1x Pass Alternate Profile = -,
 Mac Authentication = Enabled,
 Mac-Auth Pass Alternate Profile = macPass,
 Classification = Enabled,
 Trust-tag = Enabled,
 Default Profile = -,
 Port Domain Number = 0,
 AAA-Profile = ,
 Redirect Port Bounce = Disabled,
 Port Control Direction = Both,
 802.1x Tx-Period = 0,
 802.1x Supp-Timeout = 0,
 802.1x Max-Req = 2,
 802.1x Bypass = Disabled,
 802.1x failure-policy = default,
 Mac-auth allow-eap = -,
 Force L3-Learning = Disabled
 Force L3-Learning Port Bounce = Disabled
 Admin State = Enabled,
 Dynamic Service = -,
 AP Mode = Enabled,
```

```
-> show unp port-template bridgeDefaultPortTemplate config
```

```
Port Template: bridgeDefaultPortTemplate
 802.1x Authentication = Enabled,
 802.1x Pass Alternate Profile = -,
 Mac Authentication = Enabled,
 Mac-Auth Pass Alternate Profile = -,
 Classification = Enabled,
 Trust-tag = Disabled,
 Default Profile = -,
 Port Domain Num = 0,
 Redirect Port Bounce = Disabled,
 AAA Profile = -,
 Port Control Direction = Both,
 802.1x Tx-Period = 30,
 802.1x Supp-Timeout = 30,
 802.1x Max-Req = 2,
 802.1x Bypass = Disabled,
 802.1x failure-policy = default,
 Mac-auth allow-eap = -,
 Force L3-Learning = Disabled
 Force L3-Learning Port Bounce = Enabled
 Admin State = Enabled,
 AP Mode = Enabled,
```

*output definitions*


---

<b>Port Template</b>	The name of the port template. By default, the “bridgeDefaultPortTemplate” is assigned to UNP bridge ports.
<b>802.1x Authentication</b>	The 802.1X authentication status ( <b>Enabled</b> or <b>Disabled</b> ).
<b>802.1x Pass Alternate Profile</b>	The name of an alternate profile for devices that pass 802.1X authentication.
<b>Mac Authentication</b>	The MAC authentication status ( <b>Enabled</b> or <b>Disabled</b> ).
<b>Mac-Auth Pass Alternate Profile</b>	The name of an alternate profile for devices that pass MAC authentication.
<b>Classification</b>	The classification status ( <b>Enabled</b> or <b>Disabled</b> ).
<b>Trust-Tag</b>	<i>Not supported in this release.</i>
<b>Default Profile</b>	The name of a default profile for devices that are not classified by any other classification methods.
<b>Port Domain Num</b>	The domain ID number assignment for the UNP port. <i>Creating and assigning domain IDs is not supported.</i>
<b>Redirect Port Bounce</b>	The status of port bounce ( <b>Enabled</b> or <b>Disabled</b> ) for BYOD registration and authorization. This parameter is only configurable on UNP bridge ports.
<b>AAA Profile</b>	The name of an AAA profile to apply to the port.
<b>Port Control Direction</b>	Whether 802.1X access control is applied to ingress and egress traffic ( <b>both</b> ) or just ingress traffic ( <b>in</b> ). This parameter is only configurable on UNP bridge ports.
<b>802.1x Tx-Period</b>	The amount of time, in seconds, before an EAP Request Identity is retransmitted.
<b>802.1x Supp-Timeout</b>	The amount of time, in seconds, the switch will wait before timing out an 802.1X user that is attempting to authenticate.
<b>802.1x Max-Req</b>	The maximum number of times the switch will retransmit a request for authentication information.
<b>802.1x Bypass</b>	The status of 802.1X bypass ( <b>Enabled</b> or <b>Disabled</b> ).
<b>802.1x failure-policy</b>	Whether the switch attempts subsequent MAC authentication for a device after the initial 802.1X authentication process fails ( <b>default</b> = no MAC authentication is attempted or <b>mac-authentication</b> ).
<b>Mac-auth allow-eap</b>	The conditions under which 802.1X authentication is performed or bypassed based on the initial MAC authentication process ( <b>pass</b> = if MAC authentication passes, <b>fail</b> = if MAC authentication fails, or <b>noauth</b> = if MAC authentication is not configured). This parameter option only applies to UNP ports on which 802.1X authentication bypass is enabled.
<b>Force L3-Learning</b>	<i>Not supported in this release.</i>
<b>Force L3-Learning Port Bounce</b>	<i>Not supported in this release.</i>
<b>Admin State</b>	The administrative status of the UNP port configuration ( <b>Enabled</b> or <b>Disabled</b> ).

*output definitions*


---

<b>Dynamic Service</b>	<i>Not supported in this release.</i>
<b>AP Mode</b>	The status of Access Point (AP) mode functionality ( <b>Enabled</b> or <b>Disabled</b> ). This parameter is only configurable on UNP bridge ports.

---

```
-> show unnp port-template unnp-pt1 configured-vlans
Template Name          Vlan  Type
-----+-----+-----
unnp-pt1              200   unnpUntag
unnp-pt1              201   unnpQtag
```

*output definitions*


---

<b>Template Name</b>	The name of a UNP port template.
<b>VLAN</b>	The VLAN IDs that are assigned to a UNP bridge port when the template is applied to the port.
<b>Type</b>	Indicates if the VLAN assignment is untagged ( <b>unnpUntag</b> ) or tagged ( <b>unnpQtag</b> ).

---

```
-> show unnp port-template unnp-port1 profile
Template Name          Profile
-----+-----
unnp-port1            static-spb1
                     static-spb2
```

*output definitions*


---

<b>Template Name</b>	The name of a UNP port template.
<b>Profile</b>	The name of UNP service profiles that are statically assigned to a UNP port when the template is applied to the port.

---

**Release History**

Release 5.1; command introduced.

**Related Commands**

<b>unnp port-template</b>	Configures UNP port parameter values for a port template.
<b>unnp port port-template</b>	Assigns a port configuration template to a UNP port.
<b>show unnp port config</b>	Displays the full UNP configuration for a port, including the name of a port template that is associated with the port.

## MIB Objects

```
alaDaUNPPortTemplateTable
  alaDaUNPPortTemplateName
  alaDaUNPPortTemplateAdminState
  alaDaUNPPortTemplateDirection
  alaDaUNPPortTemplateDomainID
  alaDaUNPPortTemplateClassification
  alaDaUNPPortTemplateTrustTag
  alaDaUNPPortTemplateDynamicService
  alaDaUNPPortTemplateDefaultProfile
  alaDaUNPPortTemplateAAAProfile
  alaDaUNPPortTemplateRedirectPortBounce
  alaDaUNPPortTemplate8021XAuth
  alaDaUNPPortTemplate8021XAuthPassAlternate
  alaDaUNPPortTemplate8021XAuthBypass
  alaDaUNPPortTemplate8021XAuthFailPolicy
  alaDaUNPPortTemplate8021XAuthTxPeriod
  alaDaUNPPortTemplate8021XAuthSuppTimeout
  alaDaUNPPortTemplate8021XAuthMaxReq
  alaDaUNPPortTemplateMACAuth
  alaDaUNPPortTemplateMACAuthPassAlternate
  alaDaUNPPortTemplateMACAuthAllowEAP
  alaDaUNPPortTemplateForceL3Learning
  alaDaUNPPortTemplateForceL3LearningPortBounce
  alaDaUNPPortTemplateL2Profile
  alaDaUNPPortTemplateApMode
alaDaUNPPortTemplateVlanTable
  alaDaUNPPortTemplateVlanVID
alaDaUNPPortTemplateProfileTable
  alaDaUNPPortTemplateProfile
```

---



## show unp user

Displays information about the MAC addresses learned on a UNP port or link aggregate.

```
show unp user [port chassis/slot/port[-port2] | linkagg agg_id[-agg_id2]] [profile profile_name]
[authentication-type {none | mac | 802.1x}] [mac-address mac_address] [count]
```

---

### Syntax Definitions

<i>chassis</i>	The chassis identifier.
<i>slot/port[-port2]</i>	The slot and port number (3/1). Use a hyphen to specify a range of ports (3/1-8). This parameter displays all UNP users learned on the specified port number.
<i>agg_id[-agg_id2]</i>	Link aggregate ID number. Use a hyphen to specify a range of link aggregate IDs (10-15). This parameter displays all UNP users learned on the specified link aggregate ID.
<i>profile_name</i>	The name of an existing UNP profile. This parameter displays all UNP users associated with the specified profile name.
<b>none</b>	Displays all UNP users that did not undergo the authentication process.
<b>mac</b>	Displays all UNP users that were authenticated through the MAC authentication process.
<b>802.1x</b>	Displays all UNP users that were authenticated through the 802.1X authentication process.
<i>mac_address</i>	A source MAC address. This parameter displays the UNP user device with the specified source MAC address.
<b>count</b>	Displays the number of UNP users learned on the switch.

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- Use the optional parameters provided with this command to filter the output display results. In addition, some parameters can be combined to further narrow the display results. For example:
  - Combine the **port** or **linkagg** parameter with the **profile** parameter option to display users learned on the port or link aggregate that are classified into the specified profile.
  - Combine the **port** or **linkagg** parameter with the **authentication-type** parameter option to display users on the port or link aggregate that were authenticated with the specified authentication type.
- The “Username” field displays the user name that was entered to authenticate an 802.1X user device or the user name that was entered to successfully authenticate a user device through the Captive Portal process. However, if a user device first undergoes 802.1X authentication and then undergoes successful Captive Portal authentication, the user name entered during the Captive Portal process is displayed in this field.

## Examples

```
-> show unip user count
Total users: 6
```

```
-> show unip user
```

Port	Username	Mac address	User IP	Vlan	Profile	Type	Status
1/1/1	00:00:00:00:00:01	00:00:00:00:00:01	1.1.1.1	10	unp-1	Bridge	Active
1/1/2	00:00:00:00:00:02	00:00:00:00:00:02	1.1.1.2	11	unp-2	Bridge	Active
1/1/3	guest_user	00:00:00:00:00:04	1.1.1.4	20	unp-guest	Bridge	Active
1/1/7	00:00:00:00:00:07	00:00:00:00:00:07	1.1.1.7	11	unp-emp	Bridge	Active
0/10	Employee-001	00:00:00:00:00:03	1.1.1.3	12	unp-emp	Bridge	Active
0/12	00:00:00:00:00:14	00:00:00:00:00:14	1.1.2.4	20	unp-7	Bridge	Active

```
Total users : 6
```

### output definitions

<b>Port</b>	The port or link aggregate on which the MAC address was learned. A “0” indicates the UNP port is a link aggregate (e.g., 0/10 refers to link aggregate ID 10).
<b>Username</b>	Displays either a source MAC address or a Captive Portal user name for the learned user device.
<b>MAC address</b>	The MAC address of the user device. This field and the <b>Username</b> field may contain the same MAC address, depending on how the user device was authenticated.
<b>User IP</b>	The IP network address of the user device.
<b>Vlan</b>	The UNP VLAN ID to which the user device was assigned. This only applies for users authenticated into VLAN profiles.
<b>Profile</b>	The name of the UNP profile to which the user device was assigned.
<b>Type</b>	The type of UNP port on which the device was learned ( <b>Bridge</b> ).
<b>Status</b>	The status of the device: <ul style="list-style-type: none"> <li>• <b>In progress</b>—device learning is in progress.</li> <li>• <b>Active</b>—device is learned in forwarding state.</li> <li>• <b>Block</b>—device is learned in filtering state.</li> </ul>

```
-> show unip user port 1/1/3
```

Port	Username	Mac address	User IP	Vlan	Profile	Auth	Role
1/1/3	guest_user	00:00:00:00:00:04	1.1.1.4	20	unp-guest	8021X	Guest

```
Total users : 1
```

```
-> show unip user linkagg 10
```

Port	Username	Mac address	User		Profile	Auth	Role
			IP	Vlan			
0/10	Employee-001	00:00:00:00:00:03	1.1.1.3	12	unp-emp	8021X	Employee

```
Total users : 1
```

```
-> show unip user profile unp-emp
```

Port	Username	Mac address	User		Profile	Auth	Role
			IP	Vlan			
1/1/7	00:00:00:00:00:07	00:00:00:00:00:07	1.1.1.7	11	unp-emp	MAC	Employee
0/10	Employee-001	00:00:00:00:00:03	1.1.1.3	12	unp-emp	8021X	Employee

```
Total users : 2
```

```
-> show unip user authentication-type mac
```

Port	Username	Mac address	User		Profile	Auth	Role
			IP	Vlan			
1/1/7	00:00:00:00:00:07	00:00:00:00:00:07	1.1.1.7	11	unp-emp	MAC	Employee
0/12	00:00:00:00:00:14	00:00:00:00:00:14	1.1.2.4	20	unp-7	MAC	Employee

```
Total users : 2
```

### output definitions

<b>Port</b>	The port or link aggregate on which the MAC address was learned. A “0” indicates the UNP port is a link aggregate (e.g., 0/10 refers to link aggregate ID 10).
<b>Username</b>	Displays either a source MAC address or a Captive Portal user name for the learned user device.
<b>MAC address</b>	The MAC address of the user device. This field and the <b>Username</b> field may contain the same MAC address, depending on how the user device was authenticated.
<b>User IP</b>	The IP network address of the user device.
<b>Vlan</b>	The UNP VLAN ID to which the user device was assigned. This only applies for users authenticated into VLAN profiles.
<b>Profile</b>	The name of the UNP profile to which the user device was assigned.
<b>Auth</b>	The type of authentication applied to the user ( <b>none</b> , <b>mac</b> , or <b>802.1X</b> ).
<b>Role</b>	The user role (QoS policy list) applied to the user device.

### Release History

Release 5.1; command was introduced.

**Related Commands**

<a href="#">show unip user status</a>	Displays information about the authentication and validation status of users learned on UNP ports.
<a href="#">show unip user details</a>	Displays detailed information about user devices learned on UNP ports.
<a href="#">unip user flush</a>	Performs a MAC address flush of Access Guardian users (devices learned on UNP ports).
<a href="#">show unip profile</a>	Displays the UNP configuration for the switch.
<a href="#">show unip port</a>	Displays the UNP configuration for the port.

**MIB Objects**N/A

---

## show unp user status

Displays the status of the authentication and validation process for MAC addresses learned on a UNP port or link aggregate.

```
show unp user status [port chassis/slot/port[-port2] | linkagg agg_id[-agg_id2] [profile profile_name]
[authentication-type {none | mac | 802.1x}] [mac-address mac_address]
```

---

### Syntax Definitions

<i>chassis</i>	The chassis identifier.
<i>slot/port[-port2]</i>	The slot and port number (3/1). Use a hyphen to specify a range of ports (3/1-8).
<i>agg_id[-agg_id2]</i>	Link aggregate ID. Use a hyphen to specify a range of link aggregate IDs (10-15).
<i>profile_name</i>	The name of an existing UNP profile.
<b>none</b>	Displays users that did not undergo the authentication process.
<b>mac</b>	Displays users that were authenticated through MAC authentication.
<b>802.1x</b>	Displays users that were authenticated through 802.1X authentication.
<i>mac_address</i>	The user device MAC address.

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

Use the optional parameters provided with this command to filter the output display results. In addition, some parameters can be combined to further narrow the display results. For example:

- Combine the **port** or **linkagg** parameter with the **profile** parameter option to display users learned on the port or link aggregate that are classified into the specified profile.
- Combine the **port** or **linkagg** parameter with the **authentication-type** parameter option to display users on the port or link aggregate that were authenticated with the specified authentication type.

## Examples

```
-> show unip user status port 1/1/1
```

Port	Mac address	Profile Name	Profile Source	Authentication Type	Status	Role Name	Role Source	CP	Redirect	Restricted Access
1/1/1	00:00:00:00:00:05	Prf1	Radius	8021x	Passed	emp1	Profile	Y	-	-

```
Total users : 1
```

```
-> show unip user status linkagg 100
```

Port	Mac address	Profile Name	Profile Source	Authentication Type	Status	Role Name	Role Source	CP	Redirect	Restricted Access
0/100	00:00:00:00:00:06	Prf3	Radius	8021x	Passed	emp1	Profile	Y	-	-

```
Total users : 1
```

```
-> show unip user status authentication type mac
```

Port	Mac address	Profile Name	Profile Source	Authentication Type	Status	Role Name	Role Source	CP	Redirect	Restricted Access
1/1/2	00:00:00:00:00:15	Prf2	Alt	MAC	Passed	emp2	Profile	Y	-	-

```
Total users : 1
```

### output definitions

<b>Port</b>	The port or link aggregate on which the MAC address was learned. A “0” indicates the UNP port is a link aggregate (e.g., 0/10 refers to link aggregate ID 10).
<b>MAC address</b>	The MAC address of the user device.
<b>Profile Name</b>	The name of the UNP to which the user device was assigned.
<b>Profile Source</b>	The source of the profile assignment (e.g., Radius, Alt).
<b>Authentication Type</b>	The type of authentication applied to the user ( <b>none</b> , <b>mac</b> , or <b>802.1X</b> ).
<b>Authentication Status</b>	The authentication status for the device.
<b>Role Name</b>	The name of the user role applied to the user device.
<b>Role Source</b>	The source of the user role applied to the user device.
<b>CP</b>	Indicates if the device was authenticated through Captive Portal.
<b>Redirect</b>	The redirection status.
<b>Restricted Access</b>	Whether or not access is restricted for the user.

### Release History

Release 5.1; command was introduced.

**Related Commands**[show unip user](#)

Displays information about users learned on a UNP ports.

[show unip user details](#)

Displays detailed information about users learned on a UNP ports.

[show unip port](#)

Displays the UNP configuration for the port.

**MIB Objects**N/A

---

## show unp user details

Displays additional details about the MAC addresses learned on a UNP port or link aggregate.

```
show unp user details [port chassis/slot/port[-port2] | linkagg agg_id[-agg_id2]] [profile profile_name]
[authentication-type {none | mac | 802.1x}] [mac-address mac_address]
```

---

### Syntax Definitions

<i>chassis</i>	The chassis identifier.
<i>slot/port[-port2]</i>	The slot and port number (3/1). Use a hyphen to specify a range of ports (3/1-8). This parameter displays all UNP users learned on the specified port number.
<i>agg_id[-agg_id2]</i>	Link aggregate ID number. Use a hyphen to specify a range of link aggregate IDs (10-15). This parameter displays all UNP users learned on the specified link aggregate ID.
<i>profile_name</i>	The name of an existing UNP profile. This parameter displays all UNP users associated with the specified profile name.
<b>none</b>	Displays all UNP users that did not undergo the authentication process.
<b>mac</b>	Displays all UNP users that were authenticated through the MAC authentication process.
<b>802.1x</b>	Displays all UNP users that were authenticated through the 802.1X authentication process.
<i>mac_address</i>	A source MAC address. This parameter displays the UNP user device with the specified source MAC address.

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- Use the optional parameters provided with this command to filter the output display results. In addition, some parameters can be combined to further narrow the display results. For example:
  - Combine the **port** or **linkagg** parameter with the **profile** parameter option to display users learned on the port or link aggregate that are classified into the specified profile.
  - Combine the **port** or **linkagg** parameter with the **authentication-type** parameter option to display users on the port or link aggregate that were authenticated with the specified authentication type.
- The “User Name” field displays the user name that was entered to authenticate an 802.1X user device or the user name that was entered to successfully authenticate a user device through the Captive Portal process. However, if a user device first undergoes 802.1X authentication and then undergoes successful Captive Portal authentication, the user name entered during the Captive Portal process is displayed in this field.



## Examples

```
-> show unp user details port 1/1/10
```

```
Port: 1/1/10
  MAC-Address: 00:00:00:00:00:01
Access Timestamp      : 04/01/1970 18:45:26,
User Name             : guest1,
IP-address            : 10.0.0.1,
Vlan                  : 10,
Authentication Type   : 802.1X,
Authentication Status : Authenticated,
Authentication Failure Reason : -,
Authentication Retry Count : -,
Authentication Server IP Used = 10.135.62.129,
Authentication Server Used   = radl,
Server Reply-Message        = -,
Profile                     : Employee,
Profile Source               : RADIUS Server Profile,
Profile From Auth Server    : Employee,
Classification profile rule : -,
Role                        : Employee,
Role Source                  : Profile,
User role rule               : -,
Restricted Access            : No,
Location Policy Status      : Passed,
Time Policy Status          : Passed,
Captive-Portal Status      : -,
Redirect Url                 : -,
SIP Call Type               = Not in a call,
SIP Media Type               = None,
Applications                 = None
```

```
  MAC-Address: 00:00:00:00:00:02
Access Timestamp      : 06/01/1989 20:45:26,
User Name             : guest2,
IP-address            : 20.0.0.1,
Vlan                  : 20,
Authentication Type   : MAC,
Authentication Status : Authenticated,
Authentication Failure Reason : -,
Authentication Retry Count : -,
Authentication Server IP Used = 10.135.62.129,
Authentication Server Used   = radl,
Server Reply-Message        = -,
Profile                     : Contractor,
Profile Source               : RADIUS Server Profile,
Profile From Auth Server    : Contractor,
Classification profile rule : -,
Role                        : Contractor,
Role Source                  : Profile,
User role rule               : -,
Restricted Access            : No,
Location Policy Status      : Passed,
Time Policy Status          : Passed,
Captive-Portal Status      : Passed,
Redirect Url                 : -,
SIP Call Type               = Normal Call,
SIP Media Type               = Video,
```

```
Applications                = None

-> show unip user details linkagg 100
Port: 0/100
  MAC-Address: 00:00:00:00:00:03
Access Timestamp           : 02/01/2013 20:45:26,
User Name                  : guest3,
IP-address                 : 30.0.0.1,
Vlan                       : 30,
Authentication Type       : MAC,
Authentication Status     : Authenticated,
Authentication Failure Reason : -,
Authentication Retry Count : -,
Authentication Server IP Used = 10.135.62.129,
Authentication Server Used = radl,
Server Reply-Message      = -,
Profile                   : Contractor,
Profile Source            : Auth - Pass - Default UNP,
Profile From Auth Server  : Employee [Not Configured],
Classification profile rule : -,
Role                      : Contractor,
Role Source               : Profile,
User role rule            : -,
Restricted Access         : No,
Location Policy Status    : Passed,
Time Policy Status        : Passed,
Captive-Portal Status    : Passed,
Redirect Url              : -,
SIP Call Type             = Not in a call,
SIP Media Type            = None,
Applications              = ;Facebook;rediff;
```

*output definitions*


---

<b>Port</b>	The UNP port or link aggregate on which the device was learned.
<b>Mac-address</b>	The MAC address of the device.
<b>Access Timestamp</b>	The date and time the device was learned.
<b>User Name</b>	The MAC address of the user.
<b>IP-Address</b>	The IP network address of the device.
<b>Vlan</b>	The VLAN ID number for the VLAN in which the device was learned.
<b>Authentication Type</b>	The type of authentication used ( <b>Mac-Authentication</b> or <b>802.1x-Authentication</b> ).
<b>Authentication Status</b>	The status of the authentication process ( <b>blank “-”, Authenticated, Failed, or In Progress</b> ).
<b>Authentication Failure Reason</b>	The reason authentication failed.
<b>Authentication Retry Count</b>	The number of times authentication has been attempted.
<b>Authentication Server IP Used</b>	The IP address of the authentication server.
<b>Authentication Server Used</b>	The name of the authentication server used.
<b>Server Reply-Message</b>	Reply message from the authentication server.
<b>Profile</b>	The name of the UNP profile to which the user was assigned.
<b>Profile Source</b>	The source of the profile (returned from the server or assigned through the UNP process on the switch).
<b>Profile From Auth Server</b>	The name of the UNP profile returned from the authentication server.
<b>Classification profile rule</b>	The rule that resulted in the device classification into the UNP profile.
<b>Redirect Url</b>	The URL to which the device is redirected upon classification.
<b>SIP Call Type</b>	The Session Initiation Protocol (SIP) call type status for a non-suppliant (non-802.1X) device.
<b>SIP Media Type</b>	The SIP media type status for a non-suppliant device.
<b>Applications</b>	The applications a non-suppliant device is running.

---

**Release History**

Release 5.1; command was introduced.

**Related Commands**

<a href="#">show unip user status</a>	Displays information about the authentication and validation status of users learned on UNP ports.
<a href="#">unip user flush</a>	Performs a MAC address flush of Access Guardian users (devices learned on UNP ports).
<a href="#">show unip profile</a>	Displays the UNP configuration for the switch.
<a href="#">show unip port</a>	Displays the UNP configuration for the port.

**MIB Objects**

N/A

---

# 21 Learned Port Security Commands

Learned Port Security (LPS) provides a mechanism for controlling network device communication on one or more switch ports. Configurable LPS parameters allow the user to restrict source learning on a port to:

- A maximum number of learned source MAC addresses.
- A specific amount of time in which source MAC addresses are learned.
- An individual learned source MAC address.
- A range of learned source MAC addresses.

This chapter includes descriptions of the CLI commands used to define LPS parameters and display information about the current LPS configuration.

MIB information for Learned Port Security commands is as follows:

*Filename:* ALCATEL-IND1-LPS-MIB.mib  
*Module:* alcatelIND1LearnedPortSecurityMIB

A summary of the available commands is listed here:

---

**port-security**  
**port-security learning-window**  
**port-security convert-to-static**  
**port-security mac**  
**port-security maximum**  
**port-security port max-filtering**  
**port-security mac-range**  
**port-security port violation**  
**port-security learn-trap-threshold**  
**show port-security**  
**show port-security mac-range**  
**show port-security learning-window**

---

## port-security

Enables or disables Learned Port Security (LPS) on the switch port(s). When LPS is enabled, only devices that have a source MAC address that complies with LPS restrictions are learned on the port(s).

**port-security** {**port** *chassis/slot/port[-port2]* | **chassis**} [**admin-state** {**enable** | **disable** | **locked**}]

**no port-security port** *chassis/slot/port[-port2]*

---

### Syntax Definitions

<i>chassis</i>	The chassis identifier.
<i>slot/port[-port2]</i>	The slot and port number (3/1). Use a hyphen to specify a range of ports (3/1-8).
<b>chassis</b>	Specifies all LPS ports.
<b>enable</b>	Administratively enables LPS on the specified port(s).
<b>disable</b>	Administratively disables LPS on the specified port(s). All bridged and filtered MAC addresses are cleared, but the static MAC address and LPS configuration for the port is retained. Learning is unrestricted.
<b>locked</b>	Administratively disables all learning on the port. Existing MAC addresses are retained but no additional learning of addresses, except for static MAC addresses, is allowed.

### Defaults

By default, LPS functionality is disabled on all ports.

The following default value applies if the **admin-state** parameter is *not* specified with this command:

parameter	default
<b>admin-state</b>	<b>enable</b>

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- Use the **no** form of this command to remove the LPS configuration from the specified port *and* clear all MAC addresses learned on the port. Note that the **chassis** parameter is not supported when using the **no** form of this command.
- The **admin-state disable** option disables LPS on the port but does not clear the LPS configuration.
- Use the **chassis** parameter to administratively disable or enable all active LPS ports with one command. This option does not apply to ports on which LPS was not previously enabled.
- LPS is supported on Ethernet fixed and 802.1Q-tagged ports. However, LPS is *not* supported on ports that are configured as service access ports.

- LPS is not supported on link aggregates, 802.1Q tagged (trunked) link aggregates, or link aggregate member ports.
- Note that when LPS is enabled on an active port, all MAC addresses previously learned on that port are cleared from the source learning MAC address table.
- LPS is also supported on ports that have Universal Network Profile (UNP) functionality enabled, with the following conditions:
  - When LPS is enabled or disabled on a UNP bridge port (LPS is not supported on UNP access ports), MAC addresses already learned on that port are flushed.
  - UNP authentication and classification is applied first, then LPS rules.
  - If UNP classifies a MAC address as forwarding but LPS learns the address as filtering, an untagged packet will show as filtering in the default VLAN for the port and a tagged packet MAC will show as filtering in the specific tagged VLAN.
  - When a MAC address is filtered by LPS, the **show unp user status** command will display “LPS-B” as the profile classification source for that MAC address.
- LPS allows for the configuration of the following source MAC address learning restrictions:
  - A source learning time limit window to specify the length of time learning is allowed on a port.
  - A maximum number of bridged and filtered MAC addresses allowed on a specific port
  - A list of MAC addresses (individual or range of addresses) allowed on a port.
  - How a port handles traffic that is unauthorized.

## Examples

```
-> port-security port 4/8 admin-state enable
-> port-security port 2/1-10 admin-state enable
-> port-security chassis admin-state disable
-> no port-security port 1/1-12
```

## Release History

Release 5.1; command introduced.

## Related Commands

<b>port-security mac-range</b>	Configures a list of authorized MAC addresses by defining a range of addresses allowed on the port.
<b>port-security maximum</b>	Specifies the maximum number of source MAC addresses that an LPS port(s) is allowed to learn.
<b>port-security learning-window</b>	Configures the amount of time, in minutes, to allow source learning on all LPS ports.
<b>port-security port violation</b>	Selects the method for handling traffic that does not comply with LPS restrictions for the specified port(s).

## MIB Objects

```
learnedPortSecurityTable
  lpsAdminStatus
```

## port-security learning-window

Configures the amount of time, in minutes, to allow source learning on all LPS ports. This LPS parameter applies to the entire switch, so when the time limit expires, source learning of *new* MAC addresses is stopped on all LPS ports. Only authorized MAC addresses are allowed to be associated on LPS ports after this timer expires. This command also enables or disables the conversion of dynamic MAC addresses to static MAC addresses on LPS ports.

**port-security learning-window** *minutes* [**convert-to-static** {**enable** | **disable**}] [**no-aging** {**enable** | **disable**}] [**mac-move** {**enable** | **disable**}] [**learn-as-static** {**enable** | **disable**}] [**boot-up** {**enable** | **disable**}]

**no port-security learning-window**

---

### Syntax Definitions

<i>minutes</i>	The number of minutes during which LPS allows source learning across all LPS ports. This amount of time defines the LPS learning window. The valid range is 0–2880. When this value is set to zero, the learning window time is set to infinity (no source learning time restriction on LPS ports).
<b>convert-to-static enable</b>	Enables the <b>convert-to-static</b> option for the learning window. Dynamically learned bridged (not filtered) MAC addresses are automatically converted to static addresses when the learning window closes. This option is automatically disabled when the LPS learning window is set to infinity (zero).
<b>convert-to-static disable</b>	Disables the <b>convert-to-static</b> option for the learning window. Dynamically learned bridged MAC addresses are not converted to static addresses and will start to age out when the learning window closes.
<b>no-aging enable</b>	Enables the <b>no-aging</b> option for the learning window. Dynamically learned bridged MAC addresses are learned as <i>pseudo-static</i> MACs, which do not age out but are not saved in the switch configuration. MAC movement is not allowed for pseudo-static MAC addresses unless the <b>mac-move</b> option is also enabled.
<b>no-aging disable</b>	Disables the <b>no-aging</b> option for the learning window. MAC addresses are learned as dynamic addresses that will age out.
<b>mac-move enable</b>	Enables the <b>mac-move</b> option. Allows a pseudo-static MAC address to move to a different port in the same VLAN without getting dropped. The <b>mac-move</b> option is used with the <b>no-aging</b> option to allow MAC movement for pseudo-static MAC addresses.
<b>mac-move disable</b>	Disables the <b>mac-move</b> option. If the <b>no-aging</b> option is enabled, MAC movement for pseudo-static MAC addresses is not allowed. Frames from a duplicate pseudo-static MAC address are dropped.
<b>learn-as-static enable</b>	Enables the <b>learn-as-static</b> option for the learning window. Dynamically learned bridged MAC addresses are converted to permanent static MAC addresses during the learning window time (even if the <b>convert-to-static</b> option is disabled). MAC movement is allowed for the permanent static MAC addresses. This option and the <b>no-aging</b> option are mutually exclusive.

<b>learn-as-static disable</b>	Disables the <b>learn-as-static</b> option for the learning window. Dynamically learned bridged MAC addresses are not converted to permanent static MAC addresses during the learning window time.
<b>boot-up enable</b>	Enables the automatic start of the LPS learning window timer when the switch restarts.
<b>boot-up disable</b>	Disables the automatic start of the LPS learning window timer when the switch restarts.

## Defaults

By default, the LPS source learning time limit is not set for the switch; the learning window defaults to infinity (source learning is not limited to a specific time frame).

parameter	default
<b>convert-to-static</b>	<b>disable</b>
<b>no-aging</b>	<b>disable</b>
<b>mac-move</b>	<b>disable</b>
<b>learn-as-static</b>	<b>disable</b>
<b>boot-up</b>	<b>enable</b>

## Platforms Supported

OmniSwitch 2260, 2360

## Usage Guidelines

- Use the **no** form of this command to clear the learning window time (no learning window time limit is applied to the port).
- The LPS source learning time window is started and/or reset each time the **port-security learning-window** command is issued or when the **port-security learning-window boot-up** option is enabled and the switch restarts.
- Setting the LPS learning window time to 0 (zero) configures an infinite source learning time period for all LPS ports. The learning of MAC addresses on LPS ports never times out.
- When the LPS learning window time is set to zero, all options except the **convert-to-static** option are still valid. For example, the **no-aging** option setting still applies.
- After the LPS learning window time expires, MAC addresses are learned as filtered addresses until the maximum number of filtered MAC addresses allowed for the LPS port is reached. For example, if the maximum number of bridged MAC addresses allowed is set to 30 and the learning window expires when the port has only learned 15, the port is still allowed to learn an additional 15 filtered MAC addresses.
- Enabling the **no-aging** option triggers the following LPS learning window behavior:
  - All new bridged MAC addresses are learned as pseudo-static MAC addresses during the learning window time period. Pseudo-static addresses do not age out but are not saved to the switch configuration.
  - MAC movement is not allowed for pseudo-static MAC addresses unless the **mac-move** option is also enabled. The **mac-move** status (enabled or disabled) applies only to the **no-aging** option.



- Enabling the **mac-move** option is not allowed unless the **no-aging** option is also enabled. When the **mac-move** option is enabled, disabling the **no-aging** option is *not* allowed.
- When the learning window starts, any MAC addresses that were learned prior to the learning window time period are retained as dynamic addresses; they are not converted to pseudo-static MAC addresses.
- The **learn-as-static** and **no-aging** options are mutually exclusive; if both are enabled, then the **learn-as-static** option takes precedence.
- If the **convert-to-static** option is enabled, then all dynamic bridged and pseudo-static MAC addresses are converted to static MAC addresses when the learning window closes. Static MAC addresses do not age out and are saved to the switch configuration.

---

**Note.** When UNP is enabled on any one LPS port, the **convert-to-static**, **no-aging**, and **boot-up** parameter options are not supported on *all* LPS-enabled ports. This is because the learning window configuration is global and applies to all LPS ports.

---

## Examples

```
-> port-security learning-window 25
-> port-security learning-window 2 convert-to-static enable
-> port-security learning-window 60 no-aging enable mac-move enable
-> port-security learning-window 0 learn-as-static enable
-> port-security learning-window 500 boot-up disable
-> port-security learning-window 2 convert-to-static enable no-aging enable
-> port-security learning-window 2 no-aging enable convert-to-static enable boot-up
enable learn-as-static enable mac-move enable
-> no port-security learning-window
```

## Release History

Release 5.1; command introduced.

## Related Commands

<a href="#">port-security</a>	Enables or disables Learned Port Security (LPS) on the switch port(s).
<a href="#">port-security maximum</a>	Specifies the maximum number of source MAC addresses that an LPS port(s) is allowed to learn.
<a href="#">port-security port max-filtering</a>	Configures the maximum number of MAC addresses that can be filtered on the LPS port.
<a href="#">port-security port violation</a>	Selects the method for handling traffic that does not comply with LPS restrictions for the specified port.
<a href="#">show port-security learning-window</a>	Displays the source learning window configuration.

**MIB Objects**

```
learnedPortSecurityGlobalGroup  
  lpsLearningWindowTime  
  lpsLearningWindowTimeWithStaticConversion  
  lpsLearningWindowNoAging  
  lpsLearningWindowBootupStatus  
  lpsLearningWindowLearnAsStatic,  
  lpsLearningWindowPseudoMacMove
```

---

## port-security convert-to-static

Converts all MAC addresses dynamically learned on the LPS port(s) to static MAC addresses. This command does not apply to MAC addresses that are filtered.

**port-security** {**port** *chassis/slot/port[-port2]* | **chassis**} **convert-to-static**

---

### Syntax Definitions

<i>chassis</i>	The chassis identifier.
<i>slot/port[-port2]</i>	The slot and port number (3/1). Use a hyphen to specify a range of ports (3/1-8).
<b>chassis</b>	Specifies all the LPS ports on the chassis.

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- Converting dynamic MAC addresses to static MAC addresses is not supported on Universal Network Profile (UNP) ports.
- You can stop the aging out of dynamic MAC addresses on the LPS port(s) by converting them to static MAC addresses.
- The number of converted static MAC addresses cannot exceed the maximum number of MAC addresses allowed on the port(s).

---

**Note.** The **port-security convert-to-static** command is not supported on UNP ports.

---

### Examples

```
-> port-security port 4/8 convert-to-static  
-> port-security chassis convert-to-static
```

### Release History

Release 5.1; command was introduced.

**Related Commands****port-security**

Enables or disables Learned Port Security (LPS) on the switch port(s).

**port-security maximum**

Specifies the maximum number of source MAC addresses that an LPS port(s) is allowed to learn.

**MIB Objects**

learnedPortSecurityGlobalGroup

lpsConvertToStatic

---

## port-security mac

Configures a static MAC address on the specified LPS port. This command also enables LPS on the specified port, if LPS is not already active on the port.

```
port-security port chassis/slot/port[-port2] mac mac_address [vlan vlan_id]
```

```
no port-security port chassis/slot/port[-port2] mac [all | mac_address] [vlan vlan_id]
```

---

### Syntax Definitions

<i>chassis</i>	The chassis identifier.
<i>slot/port[-port2]</i>	The slot and port number (3/1). Use a hyphen to specify a range of ports (3/1-8).
<i>mac_address</i>	MAC address to configure as a static MAC address on the specified LPS port (for example, 00:20:95:00:10:2A).
<i>vlan</i>	The VLAN ID to associate with the specified LPS port.

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- Use the **no** form of this command to remove a specific static MAC address or all of the static MAC addresses configured on the specified LPS port. Note that even when all statically configured MAC addresses are removed, LPS remains active on the port.
- A VLAN-port association (VPS) must exist between the specified VLAN and the LPS port. If no VLAN ID is specified with this command, the default VLAN for the LPS port is used.
- The following conditions will display an error or warning message:
  - A VLAN ID is specified that is not associated with the LPS port:
  - An attempt is made to configure a MAC address more than once on the same LPS port with the same VLAN association.
  - A duplicate MAC address is configured on different LPS ports.
- Configuring a multicast MAC address, an all zero MAC address, or a broadcast MAC address is not allowed with this command.
- Use this command instead of the **mac-learning static mac-address** command to create a static MAC address on an LPS port.

### Examples

```
-> port-security port 1/1/20 mac 00:20:95:00:fa:5c
-> port-security port 1/1/1-15 mac 00:da:95:00:00:10
-> no port-security port 1/1/20 mac 00:20:95:00:fa:5c
```

```
-> no port-security port 1/1/1-15 mac 00:da:95:00:00:10

-> port-security port 1/1/20 mac 00:2a:95:11:22:10 vlan 200
ERROR: Vlan 200 is not valid on this port

-> port-security port 1/1/20 mac 00:2a:95:11:22:10 vlan 200
-> port-security port 1/1/20 mac 00:2a:95:11:22:10 vlan 200
ERROR: Mac 00:2a:95:11:22:10 ALREADY exists on Vlan 200 for port 1/1/20

-> port-security port 1/1/20 mac 00:2a:95:11:22:10 vlan 200
-> port-security port 1/1/21 mac 00:2a:95:11:22:10 vlan 200
WARNING: LPS Static MAC 00:2a:95:11:22:10 already exists on vlan 200 on a different
port
```

## Release History

Release 5.1; command introduced.

## Related Commands

<a href="#">port-security</a>	Enables or disables Learned Port Security (LPS) on the switch port(s).
<a href="#">port-security learning-window</a>	Configures the amount of time in minutes to allow source learning on all LPS ports.
<a href="#">port-security maximum</a>	Specifies the maximum number of source MAC addresses that an LPS port(s) is allowed to learn.
<a href="#">port-security port max-filtering</a>	Configures the maximum number of MAC addresses that can be filtered on the LPS port.
<a href="#">port-security port violation</a>	Selects the method for handling traffic that does not comply with LPS restrictions for the specified port.
<a href="#">show port-security</a>	Displays Learned Port Security (LPS) configuration and table entries.

## MIB Objects

```
learnedPortSecurityAgL2MacAddressTable
  lpsAgL2MacAddress
  lpsAgL2VlanId
  lpsAgL2MacAddressRowStatus
```

---

## port-security maximum

Specifies the maximum number of bridged MAC addresses that an LPS port(s) is allowed to learn.

**port-security port *chassis/slot/port[-port2]* maximum *number***

---

### Syntax Definitions

<i>chassis</i>	The chassis identifier.
<i>slot/port[-port2]</i>	The slot and port number (3/1). Use a hyphen to specify a range of ports (3/1-8).
<i>number</i>	The number of source MAC addresses that are allowed on this port. The valid range is 1–1000.

### Defaults

By default, the number of MAC addresses allowed is set to 1.

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- Any additional source MAC addresses received that exceed the maximum number of bridged addresses allowed are filtered on the port, regardless of the LPS learning window time limit. Once the number of filtered MAC addresses reaches the maximum number of filtered addresses allowed, the port violation mode is applied.
- Note that source learning of configured authorized MAC addresses is still allowed after the LPS time limit has expired; however, all learning is stopped if the number of MAC addresses learned meets or exceeds the maximum number of addresses allowed, even if the LPS time limit has not expired.

### Examples

```
-> port-security port 2/14 maximum 25
-> port-security port 4/10-15 maximum 100
```

### Release History

Release 5.1; command introduced.

## Related Commands

<a href="#">port-security</a>	Enables or disables Learned Port Security (LPS) on the switch port(s).
<a href="#">port-security learning-window</a>	Configures the amount of time in minutes to allow source learning on all LPS ports.
<a href="#">port-security learn-trap-threshold</a>	Configures the number of bridged MAC addresses to learn before sending a SNMP trap.
<a href="#">port-security port violation</a>	Selects the method for handling traffic that does not comply with LPS restrictions for the specified port.

## MIB Objects

learnedPortSecurityTable  
lpsMaxMacNum

---



## port-security learn-trap-threshold

Configures the number of bridged MAC addresses to learn before sending a SNMP trap.

**port-security port *chassis/slot/port[-port2]* learn-trap-threshold *number***

---

### Syntax Definitions

<i>chassis</i>	The chassis identifier.
<i>slot/port[-port2]</i>	The slot and port number (3/1). Use a hyphen to specify a range of ports (3/1-8).
<i>number</i>	The number of bridged MAC addresses to learn before sending a trap. The valid range is 0–1000.

### Defaults

By default, the number of bridged MAC addresses to learn before sending a trap is set to the same value as the maximum number of bridged MAC addresses allowed.

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- When the number of bridged MAC addresses learned on the port matches the specified threshold amount, a trap is sent for every bridged MAC address learned thereafter.
- Sending a trap when this threshold is reached provides notification of newly learned bridged MAC addresses. Trap contents includes identifying information about the MAC, such as the address itself, the corresponding IP address, switch identification, and the slot and port number on which the MAC was learned.
- If this threshold value is set to zero, a trap is sent for every MAC address learned on the LPS port.

### Examples

```
-> port-security port 1/10 learn-trap-threshold 6  
-> port-security port 1/10-13 learn-trap-threshold 18
```

### Release History

Release 5.1; command introduced.

**Related Commands****port-security maximum**

Configures the maximum number of source MAC addresses that an LPS port is allowed to learn.

**show port-security**

Displays Learned Port Security (LPS) configuration and table entries.

**MIB Objects**

learnedPortSecurityTable

lpsLearnTrapThreshold

---

## port-security port max-filtering

Configures the maximum number of MAC addresses that can be filtered on the LPS port(s).

```
port-security port chassis/slot/port[-port2] max-filtering number
```

---

### Syntax Definitions

<i>chassis</i>	The chassis identifier.
<i>slot/port[-port2]</i>	The slot and port number (3/1). Use a hyphen to specify a range of ports (3/1-8).
<i>number</i>	The maximum number of filtered MAC addresses that are allowed on this port. The valid range is 0–100.

### Defaults

By default, the maximum number of MAC addresses that can be filtered on an LPS port is 5.

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- When the number of filtered MAC addresses learned on the port reaches the maximum, the violation mode (restrict, discard, or shutdown) configured for the port is applied.
- Any additional source MAC addresses received that exceed the maximum number of bridged addresses allowed are filtered on the port, regardless of the LPS learning window time limit. Once the number of filtered MAC addresses reaches the maximum number of filtered addresses allowed, the port violation mode is applied.
- Even after the LPS learning window time expires, MAC addresses are learned as filtered addresses until the maximum number of filtered MAC addresses allowed for the LPS port is reached. For example, if the maximum number of MAC addresses allowed is set to 30 and the learning window expires when the port has only learned 15, the port is still allowed to learn an additional 15 filtered MAC addresses.

### Examples

```
-> port-security port 1/10 max-filtering 6  
-> port-security port 1/10-13 max-filtering 18
```

### Release History

Release 5.1; command introduced.

## Related Commands

<b>port-security maximum</b>	Specifies the maximum number of source MAC addresses that an LPS port(s) is allowed to learn.
<b>port-security learning-window</b>	Configures the amount of time in minutes to allow source learning on all LPS ports.
<b>port-security port violation</b>	Selects the method for handling traffic that does not comply with LPS restrictions for the specified port.
<b>show port-security</b>	Displays Learned Port Security (LPS) configuration and table entries.

## MIB Objects

learnedPortSecurityTable  
lpsMaxFilteredMacNum

---

## port-security mac-range

Configures a list of authorized MAC addresses by defining a range of addresses allowed on the port. This command also enables LPS on the specified port, if LPS is not already active on the port.

**port-security port chassis/slot/port[-port2] mac-range [low mac\_address | high mac\_address]**

**no port-security port chassis/slot/port[-port2] mac-range [low mac\_address]**

---

### Syntax Definitions

<i>chassis/slot/port[-port2]</i>	The chassis, slot and port number (1/1/1). Use a hyphen to specify a range of ports (1/1/1-8).
<b>low mac_address</b>	MAC address that defines the low end of a range of MACs (for example, 00:20:95:00:10:2A).
<b>high mac_address</b>	MAC address that defines the high end of a range of MACs (for example, 00:20:95:00:10:2F).

### Defaults

parameter	default
<b>high mac_address</b>	ff:ff:ff:ff:ff:ff
<b>low mac_address</b>	00:00:00:00:00:00

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- By default, each LPS port is set to a range of 00:00:00:00:00:00–ff:ff:ff:ff:ff:ff, which includes all MAC addresses.
- Source MAC addresses received on an LPS port that fall within the authorized range are allowed on the port. An additional entry is made in the LPS table for each of these learned addresses.
- Any additional source MAC addresses received that do not match the configured authorized addresses are not allowed (filtered) on the port, regardless of the LPS learning window time limit or the maximum number of bridged addresses allowed. Once the number of filtered MAC addresses reaches the maximum number of filtered addresses allowed, the port violation mode is applied.
- Configuring more than one MAC address range per port is supported. When attempting to configure multiple MAC address ranges on the same port, consider the following:
  - A maximum of eight multiple MAC address ranges can be configured per port.
  - On a newly configured LPS port, the first user configured MAC range would overwrite the default MAC range.
  - A MAC range cannot overlap with another MAC range configured for the port.
  - Modifying a MAC range is allowed only if the lower MAC address is not changed and the defined new range does not overlap with the existing range. To modify the lower MAC address, the existing

range must be deleted before adding the new range.

- When modifying a MAC range, the new range must match or accommodate any existing static MACs on the port, else an error will be thrown indicating some static MACs exist on the port that fall outside the new/resultant MAC range being configured. (Note: It is required to flush such static MACs on the port, if user needs to configure the new MAC range, which was not accommodating the static MACs).
  - When the MAC range size is increased, all the dynamic filtering MACs on the port would be flushed.
  - When the MAC range size is reduced, any existing dynamic forwarding MACs learned on the port would be flushed if they fall outside any MAC ranges configured on the port at that point of time.
  - All the dynamic filtering MACs learned on the port would be flushed.
- Use the **no** form of this command to delete the configured MAC range.
  - The default MAC range is automatically applied when all the configured MAC ranges for the port are deleted.
  - The default MAC range on the port cannot be deleted.

## Examples

```
-> port-security port 1/5/11-15 mac-range low 00:da:95:00:00:10 high
00:da:95:00:00:1f
-> port-security port 1/1/5 mac-range low 00:01:01:22:22:56 high 00:01:01:22:22:67
-> port-security port 1/1/5 mac-range low 00:01:01:22:33:56 high 00:01:01:22:33:67
-> port-security port 1/1/5 mac-range low 00:01:01:22:44:56 high 00:01:01:22:44:67
-> port-security port 1/1/5 mac-range low 00:01:22:22:11:56 high 00:01:22:22:11:67
-> port-security port 1/1/5 mac-range low 00:01:22:22:22:56 high 00:01:22:22:22:67
-> port-security port 1/1/5 mac-range low 00:01:22:22:33:56 high 00:01:22:22:33:67
-> port-security port 1/1/5 mac-range low 00:01:22:22:44:56 high 00:01:22:22:44:67
-> port-security port 1/1/5 mac-range low 00:01:22:22:55:56 high 00:01:22:22:55:67
-> no port-security port 1/1/5 mac-range low 00:01:01:22:33:56
```

## Release History

Release 5.1; command introduced.

## Related Commands

<b>port-security</b>	Enables or disables Learned Port Security (LPS) on the switch port(s).
<b>port-security learning-window</b>	Configures the amount of time in minutes to allow source learning on all LPS ports.
<b>port-security maximum</b>	Specifies the maximum number of source MAC addresses that an LPS port(s) is allowed to learn.
<b>port-security port max-filtering</b>	Configures the maximum number of MAC addresses that can be filtered on the LPS port.
<b>port-security port violation</b>	Selects the method for handling traffic that does not comply with LPS restrictions for the specified port.
<b>show port-security</b>	Displays the LPS configuration and table entries.
<b>show port-security mac-range</b>	Displays the MAC ranges configured on the LPS ports.

## MIB Objects

```
learnedPortSecurityTable
  lpsLoMacRange
  lpsHiMacRange
  lpsRowStatus
learnedPortSecurityL2MacRangeTable
  lpsL2LowMacAddress
  lpsL2HighMacAddress
```

---

## port-security port violation

Selects the method for handling traffic that does not comply with LPS restrictions for the specified port(s).

**port-security port *chassis/slot/port[-port2]* violation {shutdown | restrict | discard}**

---

### Syntax Definitions

<i>chassis</i>	The chassis identifier.
<i>slot/port[-port2]</i>	The slot and port number (3/1). Use a hyphen to specify a range of ports (3/1-8).
<b>shutdown</b>	The port is administratively disabled when the port receives unauthorized traffic. No further traffic is allowed on the port.
<b>restrict</b>	Filters (blocks) unauthorized traffic but allows traffic that complies with LPS restrictions to forward on the port. The port remains administratively enabled.
<b>discard</b>	Disables learning on the port when unauthorized traffic is received or the configured maximum number of MAC addresses is reached. The port remains administratively enabled.

### Defaults

By default, the security violation mode is set to **restrict** when LPS is enabled on the port.

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- When a traffic violation occurs on an LPS port, a notice is sent to the switch log.
- If the violation mode is set to **restrict**, unauthorized source MAC addresses are not learned in the LPS table, but they are recorded in the source learning MAC address table with a filtered operational status. This allows the user to view MAC addresses attempting unauthorized access to the LPS port.

### Examples

```
-> port-security port 2/14 violation restrict
-> port-security port 4/10-15 violation shutdown
-> port-security port 1/37 violation discard
```

### Release History

Release 5.1; command introduced.



**Related Commands**

<a href="#">port-security</a>	Enables or disables Learned Port Security (LPS) on the switch port(s).
<a href="#">clear interfaces</a>	Clears all port violations; allows the port to resume normal operation without a manual reset of the port or module.
<a href="#">show port-security</a>	Displays Learned Port Security (LPS) configuration and table entries.

**MIB Objects**

learnedPortSecurityTable  
lpsViolationOption

---

## show port-security

Displays the Learned Port Security (LPS) configuration and table entries.

```
show port-security {port [chassis/slot/port[-port2] | slot chassis/slot}
```

---

### Syntax Definitions

<i>chassis</i>	The chassis identifier.
<i>slot/port</i> [- <i>port2</i> ]	The slot and port number (3/1). Use a hyphen to specify a range of ports (3/1-8).
<i>slot</i>	Enter the slot number for a module to specify that the command should include all ports on that module (for example, 6 specifies all ports on the module found in slot 6 of the switch chassis).

### Defaults

By default, all ports with an LPS configuration are displayed.

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- Displays ports that have an LPS configuration, even if LPS is disabled on the port.
- Use the **port** parameter with this command to display the LPS configuration for a specific port or a range of ports.
- Use the **slot** parameter with this command to display the LPS configuration for all the ports on a specific slot.
- In addition, MAC addresses learned on the LPS enabled port that are within the specified MAC address range appear as a separate entries in the LPS table as dynamic MAC type addresses.
- The MAC Type field is blank if an authorized MAC address range is configured for the LPS port.

### Examples

```
-> show port-security port 1/1/20
Legend: Mac Address: * = address not valid,
          Mac Address: & = duplicate static address,

Port: 1/1/20
Admin-State      :          ENABLED,
Operation Mode   :          ENABLED,
Max MAC bridged  :          3,
Trap Threshold   :          1,
Violation        :          RESTRICT
Max MAC filtered :          5,
Violating MAC    :          NULL
```

MAC	VLAN	MAC TYPE	OPERATION
00:11:22:22:22:21	1	STATIC	bridging
00:11:22:22:22:22	1	STATIC	bridging
00:11:22:22:22:23	1	PSEUDO-STATIC	bridging

### output definitions

<b>Port</b>	The module slot number and the physical port number on that module.
<b>Admin-State</b>	The LPS administrative state for the port ( <b>Enabled</b> , <b>Disabled</b> , or <b>Locked</b> ). Configured through the <a href="#">port-security</a> command.
<b>Operation Mode</b>	The LPS operational mode for the port ( <b>Enabled</b> , <b>Disabled</b> , <b>Restricted</b> , <b>Shutdown</b> , <b>Discard</b> , <b>Locked</b> , or <b>Filtered-only</b> ).
<b>Max MAC bridged</b>	The maximum number of bridged MAC addresses that are allowed on this port. Configured through the <a href="#">port-security maximum</a> command.
<b>Trap Threshold</b>	The number of bridged MACs to learn before sending a trap. After this number is reached, a trap is sent out for every MAC learned thereafter. If <b>disabled</b> is displayed in this field, the trap threshold is not in force. Configured through the <a href="#">port-security learn-trap-threshold</a> command.
<b>Violation</b>	The security violation mode for the port ( <b>restrict</b> , <b>shutdown</b> , or <b>discard</b> ). Configured through the <a href="#">port-security port violation</a> command.
<b>Max MAC filtered</b>	The maximum number of filtered MAC addresses that the LPS port can learn. Configured through the <a href="#">port-security port max-filtering</a> command.
<b>Violating MAC</b>	The MAC Address that caused the violation on this port.
<b>MAC</b>	The MAC address learned dynamically or configured statically on the LPS port. Static MAC addresses configured through the <a href="#">port-security mac</a> command.
<b>VLAN</b>	The VLAN to which the LPS port belongs.
<b>MAC TYPE</b>	Indicates if the MAC address was dynamically learned or statically configured as an authorized MAC address for the port.
<b>OPERATION</b>	The operational status of the MAC address ( <b>bridging</b> or <b>filtering</b> ).

### Release History

Release 5.1; command introduced.

### Related Commands

[show port-security learning-window](#) Displays the amount of time during which source learning can occur on all LPS ports.

### MIB Objects

```
learnedPortSecurityTable
  lpsAdminStatus
  lpsOperStatus
  lpsMaxMacNum
```

```
lpsLearnTrapThreshold
lpsViolationOption
lpsMaxFilteredMacNum
lpsLoMacRange
lpsHiMacRange
lpsViolatingMac
lpsRelease
learnedPortSecurityAgL2MacAddressTable
  lpsAgL2MacAddress
  lpsAgL2VlanId
  lpsAgL2MacAddressLearnType
```

---

## show port-security mac-range

Displays the MAC range configured on the Learned Port Security (LPS) ports.

**show port-security [port chassis/slot/port[-port2]] mac-range**

---

### Syntax Definitions

*chassis/slot/port[-port2]*      The chassis, slot and port number (1/1/1). Use a hyphen to specify a range of ports (1/1/1-8).

### Defaults

By default, all the LPS ports configured with MAC range are displayed.

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

Specify the chassis, slot, and port to view the MAC range configured for the specific port.

### Examples

```
-> show port-security port 1/1/4 mac-range
Port: 1/1/4:
      Low MAC Range                High MAC Range
-----+-----
00:00:00:00:00:00                00:00:00:00:00:10
00:00:00:44:00:01                00:00:00:66:ff:ff
```

```
-> show port-security mac-range
Port: 1/1/2:
      Low MAC Range                High MAC Range
-----+-----
00:00:00:00:00:01                00:00:00:00:00:20
00:00:00:00:55:01                00:00:00:00:55:ff
00:00:00:66:00:01                00:00:00:99:ff:ff
```

```
Port: 1/1/4:
      Low MAC Range                High MAC Range
-----+-----
00:00:00:00:00:00                00:00:00:00:00:10
00:00:00:44:00:01                00:00:00:66:ff:ff
```

### output definitions

---

<b>Port</b>	The chassis slot number and the physical port number on that chassis.
<b>Low MAC Range</b>	MAC address that defines the lower end of a MAC address range. Configured through the <b>port-security mac-range</b> command.
<b>High MAC Range</b>	MAC address that defines the higher end of a MAC address range. Configured through the <b>port-security mac-range</b> command.

---

## Release History

Release 5.1; command introduced.

## Related Commands

[port-security mac-range](#)

Configures a list of authorized MAC addresses by defining a range of addresses allowed on the port.

## MIB Objects

learnedPortSecurityL2MacRangeTable

lpsL2LowMacAddress

lpsL2HighMacAddress

---

## show port-security brief

Displays the LPS port configuration for all the LPS ports.

**show port-security brief**

---

### Syntax Definitions

N/A

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- The LPS port parameter values are displayed even if the LPS is disabled on the port.
- The operation mode displayed for the LPS port is based on a combination of the existing administrative status and the operational status of the port, the result of which is one of the following values:
  - Enabled
  - Restricted (only when the administrative status is enabled)
  - Shutdown (only when the administrative status is enabled)
  - Discard (only when the administrative status is enabled)
  - Disabled
  - Locked
  - Filtered\_only

### Examples

```
-> show port-security brief
Slot/      Max      Max      Nb Macs  Nb Macs  Nb Macs  Nb Macs
Port  Operation Mode  Bridge  Filter  Dyn Br  Dyn Fltr  Static Br  Static Fltr
-----+-----+-----+-----+-----+-----+-----+-----
1/1  ENABLED          5      100      5       10        0         0
1/2  ENABLED          5      100      0       10        5         0
1/3  RESTRICTED       5      100      5      100        0         0
1/4  SHUTDOWN         5      100      -        -         -         0
1/5  DISABLED         5      100      -        -         -         0
1/6  LOCKED           5      100      -        -         3         0
```

#### *output definitions*

---

<b>Slot/Port</b>	The slot number for the module and the physical port number on that module (e.g., 1/2 specifies port 2 on slot 1).
<b>Operation Mode</b>	Displays the status of the LPS port.

*output definitions*


---

<b>Max Bridge</b>	The maximum number of bridged MAC addresses that are allowed on the LPS port. Configured through the <b>port-security maximum</b> command.
<b>Max Filter</b>	The maximum number of filtered MAC addresses that the LPS port can learn. Configured through the <b>port-security port max-filtering</b> command.
<b>Nb Macs Dyn Br</b>	Total number of bridged MAC addresses learned on the LPS port.
<b>Nb Macs Dyn Fltr</b>	Total number of filtered MAC addresses learned on the LPS port.
<b>Nb Macs Static Br</b>	Total number of bridged static MAC addresses (configured static and MAC addresses learned as pseudo-static) on the LPS port.
<b>Nb Macs Static Fltr</b>	Total number of filtered static MAC addresses configured on the LPS port.

---

**Release History**

Release 5.1; command was introduced.

**Related Commands**

**show port-security** Displays the LPS configuration and table entries for individual LPS ports.

**MIB Objects**

```
learnedPortSecurityTable
  lpsMaxMacNum
  lpsMaxFilteredMacNum
  lpsMaxStaticMacNum
  lpsOperStatus
  lpsAdminStatus
```

---



## show port-security learning-window

Displays the source learning window configuration.

**show port-security learning-window**

---

### Syntax Definitions

N/A

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- The source learning time limit is a switch-wide parameter that applies to all ports that have LPS enabled.
- If the learning window time is not set, then no source learning time limit is applied to LPS ports.
- Even after the LPS learning window time expires, dynamic MAC addresses are learned as filtered addresses until the maximum number of filtered MAC addresses allowed for the LPS port is reached. For example, if the maximum number of bridged MAC addresses allowed is set to 30 and the learning window expires when the port has only learned 15, the port is still allowed to learn an additional 15 filtered MAC addresses.

### Examples

```
-> show port-security learning-window
Learning-Window           = 2 min,
Convert-to-static         = DISABLE,
No Aging                  = DISABLE,
Boot Up                   = ENABLE,
Remaining Learning Window = 120 sec
Learn As Static           = ENABLE,
Mac Move                  = DISABLE,
```

### *output definitions*

---

#### **Learning-Window**

The configured amount of time during which the LPS port can learn new MAC addresses. This value of this field is set to **INFINITY** when the learning time window is set to zero (no source learning time restriction on LPS ports).

#### **Convert-to-static**

Indicates whether or not dynamic bridged or pseudo-static MACs are converted to static MACs (**ENABLED** or **DISABLED**). This option is always disabled when the LPS learning window is set to infinity (zero).

*output definitions*


---

<b>No Aging</b>	Indicates whether or not bridged MAC addresses are learned as pseudo-static MAC addresses, which do not age out during the LPS learning window time period ( <b>DISABLED</b> or <b>ENABLED</b> ).
<b>Boot Up</b>	Indicates whether or not the LPS learning window automatically starts when the switch boots up ( <b>enabled</b> or <b>disabled</b> ).
<b>Learn As Static</b>	Indicates whether or not dynamic MAC addresses are automatically learned as static MAC addresses during the LPS learning window time period. The <b>Learn As Static</b> and <b>No Aging</b> learning window options are mutually exclusive.
<b>Mac Move</b>	Indicates whether or not pseudo-static MAC addresses are allowed to move to a different port in the same VLAN during the LPS learning window time period. The <b>Mac Move</b> learning window option applies only when the <b>No Aging</b> option is enabled.
<b>Remaining Learning Window</b>	The remaining amount of time during which the LPS port can learn MAC addresses. If the learning time window is set to <b>INFINITY</b> (zero), this field does not display in the show command output.

---

**Release History**

Release 5.1; command introduced.

**Related Commands**

<a href="#">port-security learning-window</a>	Configures the learning window parameters that are applied to all LPS ports.
<a href="#">show port-security</a>	Displays the LPS configuration and table entries for individual LPS ports.

**MIB Objects**

```

learnedPortSecurityGlobalGroup
  lpsLearningWindowTime
  lpsLearningWindowTimeWithStaticConversion
  lpsLearningWindowNoAging
  lpsLearningWindowBootupStatus
  lpsLearningWindowLearnAsStatic,
  lpsLearningWindowPseudoMacMove
  lpsLearningWindowTimeRemaining

```

---



# 22 Port Mapping Commands

Port Mapping is a security feature that controls communication between peer users. Each session comprises of a session ID and a set of user ports and/or a set of network ports. The user ports within a session cannot communicate with each other and can only communicate through network ports. In a port mapping session with user port set A and network port set B, ports in set A can communicate with ports in set B only. If set B is empty, the ports in set A can communicate with the rest of the ports in the system.

A port mapping session can be configured in a unidirectional or bidirectional mode. In the unidirectional mode, the network ports can communicate with each other within the same session. In the bidirectional mode, the network ports cannot communicate with each other. Network ports of a unidirectional port mapping session can be shared with other unidirectional sessions, but cannot be shared with any session that is configured in bidirectional mode. Network ports of different sessions can communicate with each other.

MIB information for the Port Mapping commands is as follows:

*Filename:* ALCATEL-IND1-PORT-MAPPING.mib  
*Module:* alcatelIND1PortMappingMIB

A summary of the available commands is listed here:

---

**port-mapping user-port network-port**  
**port-mapping** (configures port mapping status and direction)  
**port-mapping unidirectional bidirectional**  
**port-mapping unknown-unicast-flooding**  
**port-mapping dynamic-proxy-arp**  
**show port-mapping status**  
**show port-mapping**  
**show ip dynamic-proxy-arp**

---

## port-mapping user-port network-port

Creates a port mapping session with the user ports, network ports, or both user ports and network ports. Use the **no** form of the command to delete ports or a link aggregate group from a session.

```
port-mapping session_id [user-port {slot chassis/slot | chassis/slot/port[-port2]} | linkagg agg_id]  
[network-port {slot chassis/slot | chassis/slot/port[-port2]} | linkagg agg_id]
```

```
no port-mapping session_id [user-port {slot chassis/slot | chassis/slot/port[-port2]} | linkagg agg_id]  
[network-port {slot chassis/slot | chassis/slot/port[-port2]} | linkagg agg_id]
```

---

### Syntax Definitions

<i>session_id</i>	The port mapping session ID.
<b>user-port</b>	Specifies a user port of the mapping session.
<b>network-port</b>	Specifies a network port of the mapping session.
<i>chassis</i>	The chassis identifier.
<i>slot</i>	The slot number to be assigned to the mapping session.
<i>slot/port[-port2]</i>	The slot and port number to assign to the mapping session. Use a hyphen to specify a range of ports (1/5-10).
<i>agg_id</i>	The link aggregate ID number to assign to the mapping session.

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- User ports that are part of one session cannot communicate with each other. The user ports can communicate only through network ports of the session to the other elements of the system.
- User ports can be part of only one port mapping session.
- An aggregable port of a link aggregation group cannot be a mapped port and a mapped port cannot be an aggregable port of a link aggregation group.
- A mirrored port cannot be a mapped port and a mapped port cannot be a mirrored port.

### Examples

```
-> port-mapping 3 user-port 2/3 network-port 6/4  
-> port-mapping 4 user-port 2/5-8  
-> port-mapping 5 user-port 2/3 network-port slot 3  
-> no port-mapping 5 user-port 2/3  
-> no port-mapping 6 network-port linkagg 7
```

## Release History

Release 5.1.R2; command introduced.

## Related Commands

<a href="#">port-mapping</a>	Enables, disables, or deletes a port mapping session.
<a href="#">port-mapping unidirectional bidirectional</a>	Configures the direction of a port mapping session.
<a href="#">port-mapping unknown- unicast-flooding</a>	Enables or disables flooding of unknown unicast traffic from all ports to user ports for a particular session.
<a href="#">show port-mapping</a>	Displays the configuration of one or more port mapping sessions.

## MIB Objects

```
PortMappingSessionTable
  pmapSessionNumber
portMappingTable
  pmapPortIfindex
  pmapPortType
```

---

## port-mapping

Enables, disables, or deletes a port mapping session.

**port-mapping** *session\_id* {**enable** | **disable**}

**no port-mapping** *session\_id*

---

### Syntax Definitions

<i>session_id</i>	The port mapping session ID.
<b>enable</b>	Enables a port mapping session.
<b>disable</b>	Disables a port mapping session.

### Defaults

---

parameter	default
<b>enable</b>   <b>disable</b>	<b>disable</b>

---

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

To be enabled, a session should have a minimum of two ports.

### Examples

```
-> port-mapping 3 enable
-> port-mapping 4 disable
-> no port-mapping 5
```

### Release History

Release 5.1.R2; command introduced.

## Related Commands

<b>port-mapping user-port network-port</b>	Creates a port mapping session with or without the user ports, network ports, or both.
<b>port-mapping unidirectional bidirectional</b>	Configures the direction of a port mapping session.
<b>show port-mapping status</b>	Displays the status of one or more port mapping sessions.
<b>show port-mapping</b>	Displays the configuration of one or more port mapping sessions.

## MIB Objects

```
PortMappingSessionTable  
  pmapSessionNumber  
  pmapSessionStatus
```

---



## port-mapping unidirectional bidirectional

Configures the direction of a port mapping session.

**port-mapping** *session\_id* [**unidirectional** | **bidirectional**]

---

### Syntax Definitions

<i>session_id</i>	The port mapping session ID.
<b>unidirectional</b>	Specifies unidirectional port mapping.
<b>bidirectional</b>	Specifies bidirectional port mapping.

### Defaults

parameter	default
<b>enable</b>   <b>disable</b>	<b>enable</b>
<b>unidirectional</b>   <b>bidirectional</b>	<b>bidirectional</b>

### Platform Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- In the bidirectional mode, the network ports of a session cannot communicate with each other. Also, the network ports of that session cannot be a part of a network port set of another session.
- In the unidirectional mode, the network ports of a session can communicate with each other. Also, the network ports of that session can be part of a network port set of another session that is in the unidirectional mode.
- To change the directional mode of an active session with network ports, delete the network ports of the session, change the direction, and recreate the network ports.

### Examples

```
-> port-mapping 5 enable unidirectional
-> port-mapping 5 disable unidirectional
-> port-mapping 6 enable bidirectional
-> port-mapping 5 disable bidirectional
```

### Release History

Release 5.1.R2; command introduced.

## Related Commands

**port-mapping user-port  
network-port**

Creates a port mapping session with or without the user ports, network ports or both.

**port-mapping**

Enables, disables, or deletes a port mapping session.

**show port-mapping**

Displays the configuration of one or more port mapping sessions.

## MIB Objects

PortMappingSessionTable

    PmapSessionNumber

    PmapSessionDirection

---

## port-mapping unknown-unicast-flooding

Enables or disables flooding of unicast traffic from all the switch ports to the user ports related to a particular session.

**port-mapping *session\_id* unknown-unicast-flooding {enable | disable}**

---

### Syntax Definitions

<i>session_id</i>	The port mapping session ID.
<b>enable</b>	Enables the flooding of unknown unicast traffic from all ports to the user ports for a particular session.
<b>disable</b>	Disables the flooding of unknown unicast traffic from all ports to the user ports for a particular session.

### Defaults

---

parameter	default
<b>enable   disable</b>	<b>enable</b>

---

### Platform Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- Configuring unknown unicast flooding creates a new port mapping session if there is no existing session.
- When a link aggregate is configured as a user port, the unknown unicast flooding configuration is applied to all the member ports of the aggregate.

### Examples

```
-> port-mapping 1 unknown-unicast-flooding enable
-> port-mapping 2 unknown-unicast-flooding disable
```

### Release History

Release 5.1.R2; command introduced.

## Related Commands

<b>port-mapping user-port network-port</b>	Creates a port mapping session with or without the user ports, network ports or both.
<b>port-mapping</b>	Enables, disables, or deletes a port mapping session.
<b>show port-mapping</b>	Displays the configuration of one or more port mapping sessions.
<b>show port-mapping status</b>	Displays the status of one or more port mapping sessions.

## MIB Objects

portMappingSessionTable  
pmapSessionUnknownUnicastFloodStatus

---

## port-mapping dynamic-proxy-arp

Enables or disables the dynamic proxy ARP functionality for the port mapping session.

```
port-mapping session_id dynamic-proxy-arp {enable | disable}
```

---

### Syntax Definitions

<i>session_id</i>	The port mapping session for which the dynamic proxy ARP status is enabled or disabled.
<b>enable</b>	Enables the dynamic proxy ARP status.
<b>disable</b>	Disables the dynamic proxy ARP status.

### Defaults

---

parameter	default
enable   disable	disable

---

### Platforms Supported

Not supported in this release.

### Usage Guidelines

- Clients must be connected to the user-ports and the head end routers connected to the network-ports of the port mapping session for dynamic proxy ARP to function properly.
- DHCP snooping must be enabled for dynamic proxy ARP to function.
- Using dynamic proxy ARP in conjunction with DHCP snooping allows for the configuration of the MAC Forced Forwarding feature.
- When dynamic proxy ARP is enabled, port-group allocation will be triggered. The TCAM manager will respond as success if the port-group allocation is a success. If QoS is already using the port-groups, the TCAM manager will respond with a failure and an error is displayed.
- Dynamic proxy ARP can be enabled on only two port-groups. If QoS is already using the port-groups, an error message is displayed.

### Examples

```
-> port-mapping 1 dynamic-proxy-arp enable  
-> port-mapping 1 dynamic-proxy-arp disable
```

### Release History

Release 5.1R1; command was introduced.

## Related Commands

<b>port-mapping user-port network-port</b>	Creates a port mapping session with or without the user ports, network ports or both.
<b>port-mapping</b>	Enables, disables, or deletes a port mapping session.
<b>show port-mapping</b>	Displays the configuration of one or more port mapping session.
<b>show port-mapping status</b>	Displays the status of one or more port mapping session.
<b>show ip dynamic-proxy-arp</b>	Displays the ARPs learned through dynamic proxy.

## MIB Objects

portMappingSessionTable  
pmapSessionDynProxyARP

---

## show port-mapping status

Displays the status of one or more port mapping sessions.

**show port-mapping** [*session\_id*] status

---

### Syntax definitions

*session\_id*                      The port mapping session ID.

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

If you do not specify the port mapping session ID, then the status of all the port mapping sessions are displayed.

### Examples

-> show port-mapping status

SessionID	Direction	Status	Unknown Unicast	DPA Status
1	bi	disable	flood	enable
1	bi	enable	drop	disable
2	bi	disable	flood	disable

### output definitions

---

<b>SessionID</b>	Displays the port mapping session ID.
<b>Direction</b>	Displays the direction of a port mapping session.
<b>Status</b>	Displays status of a port mapping session.
<b>Unknown Unicast</b>	Whether unknown unicast traffic is dropped or flooded from all the switch ports to the user ports related to the port mapping session
<b>DPA Status</b>	Displays the status of Dynamic Proxy ARP for the port mapping session. <i>This functionality is not supported.</i>

---

### Release History

Release 5.1.R2; command introduced.

## Related Commands

**port-mapping user-port  
network-port**

Creates a port mapping session with or without the user ports, network ports, or both.

**port-mapping**

Enables, disables, or deletes a port mapping session.

## MIB Objects

PortMappingSessionTable

  PmapSessionNumber

  PmapSessionDirection

  pmapSessionStatus

  pmapSessionUnknownUnicastFloodStatus

  pmapSessionDynProxyARP

---



## show port-mapping

Displays the configuration of one or more port mapping sessions.

```
show port-mapping [session_id]
```

---

### Syntax Definitions

*session\_id*                      The port mapping session ID.

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

If you do not specify the port mapping session ID, then the user port and network port information are displayed for all the port mapping sessions active on the switch.

### Examples

```
-> show port-mapping 3
```

SessionID	USR-PORT	NETWORK-PORT
1	1/2	1/3
1	1/6	
1	1/7	

#### *output definitions*

---

<b>SessionID</b>	Displays the port mapping session ID.
<b>USR-PORT</b>	Displays the set of user ports of a port mapping session.
<b>NETWORK-PORT</b>	Displays the set of network ports of a port mapping session.

---

### Release History

Release 5.1.R2; command introduced.

## Related Commands

**port-mapping user-port  
network-port**

Creates a port mapping session with or without the user ports, network ports, or both.

**port-mapping**

Enables, disables, or deletes a port mapping session.

## MIB Objects

PortMappingSessionTable

    PmapSessionNumber

PortMappingTable

    pmapPortIfindex

    pmapPortType

---

## show ip dynamic-proxy-arp

Displays the ARPs learned through dynamic proxy.

**show ip dynamic-proxy-arp**

---

### Syntax definitions

N/A

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- This command shows the information related to the router IP.
- To view the output, dynamic proxy must be enabled on the port mapping session, DHCP snooping must be enabled on the VLAN.

### Examples

```
-> show ip dynamic-proxy-arp
```

Router IP Addr	Hardware Addr	Vlan	Interface
10.20.35.3	e9:ca:ab:e3:23:4c	500	1/1/23

### *output definitions*

---

<b>Router IP Addr</b>	Displays the IP address of the router learned through option-3 in DHCPACK message.
<b>Hardware Addr</b>	Displays the MAC address of the router.
<b>Vlan</b>	Displays the VLAN associated with the router.
<b>Interface</b>	The exact interface on which the router IP was learned.

---

### Release History

Release 5.1.R2; command introduced.

## Related Commands

**port-mapping dynamic-proxy-arp** Enables or disables the dynamic proxy ARP functionality for the port mapping session.

## MIB Objects

```
alaIpNetToMediaDpaIp  
alaIpNetToMediaDpaPhysAddress  
alaIpNetToMediaDpaChassisId  
alaIpNetToMediaDpaSlot  
alaIpNetToMediaDpaPort
```

---



# 23 Port Mirroring and Monitoring Commands

The Port Mirroring and Port Monitoring features are primarily used as diagnostic tools.

The Port Mirroring feature allows you to have all the inbound and outbound traffic of an Ethernet port sent to another port on the switch. When you enable port mirroring, the active, or “mirrored,” port transmits and receives network traffic normally and the “mirroring” port receives a copy of all transmit and receive traffic to the active port. You can connect an RMON probe or network analysis device to the mirroring port to see an exact duplication of traffic on the mirrored port without disrupting network traffic to and from the mirrored port.

The Port Monitoring feature allows you to capture and examine the data traffic to and from a monitored Ethernet port.

MIB information for the Port Mirroring commands is as follows:

*Filename:* ALCATEL-IND1-PORT-MIRRORING-MONITORING-MIB.mib  
*Module:* alcatelIND1PortMirrorMonitoringMIB

The following table summarizes the available commands:

<b>Port Mirroring Commands</b>	<a href="#">port-mirroring source destination</a> <a href="#">port-mirroring</a> <a href="#">show port-mirroring status</a>
<b>Port Monitoring Commands</b>	<a href="#">port-monitoring source</a> <a href="#">port-monitoring</a> <a href="#">show port-monitoring status</a> <a href="#">show port-monitoring file</a>

## port-mirroring source destination

Defines the port to mirror and the port that is to receive data from the mirrored port. Also, enables or disables remote port mirroring.

**port-mirroring** *port\_mirror\_sessionid* **source** {**port** *chassis/slot/port[-port2]*} **destination** {**port** *chassis/slot/port[-port2]* | **linkagg** *linkagg[-linkagg2]*} [**rpmir-vlan** *vlan\_id*] [**bidirectional** |**inport** |**outport**] [**unblocked-vlan** *vlan\_id*] [**tag-remove**] [**enable** | **disable**]

**port-mirroring** *port\_mirror\_sessionid* **no source** {**port** *chassis/slot/port[-port2]*} [*chassis/slot/port[-port2]*...]

**port-mirroring** *port\_mirror\_sessionid* **no destination** {**port** *chassis/slot/port[-port2]*} [*chassis/slot/port[-port2]*...] | **linkagg** *linkagg[-linkagg2]* [*linkagg[-linkagg2]*...]

---

### Syntax Definitions

<i>port_mirror_sessionid</i>	Mirroring session identifier.
<b>source</b>	Specifies source port, or range of ports desired to be mirrored.
<b>destination</b>	Specifies the destination port or linkagg that receives all the mirrored packets.
<i>chassis</i>	The chassis identifier.
<i>slot/port[-port2]</i>	The slot and port number. Use a hyphen to specify a range of ports.
<i>linkagg[-linkagg2]</i>	The destination link aggregate. Use a hyphen to specify a range.
<b>rpmir-vlan</b> <i>vlan_id</i>	Specifies a reserved VLAN to carry the mirroring traffic. Use this parameter to configure remote port mirroring. See “Usage Guidelines - Remote Port Mirroring” below for more information.
<b>bidirectional</b>	Specifies bidirectional port mirroring.
<b>inport</b>	Specifies incoming unidirectional port mirroring.
<b>outport</b>	Specifies outgoing unidirectional port mirroring.
<b>unblocked-vlan</b> <i>vlan_id</i>	Specifies the VLAN that is to be protected from Spanning Tree changes when port mirroring is active. Ports in this VLAN remain unblocked.
<b>tag-remove</b>	Removes the VLAN tag on mirrored traffic that egresses out of the destination mirroring ports.
<b>enable</b>	Enables port mirroring status.
<b>disable</b>	Disables port mirroring status.

### Defaults

parameter	default
<b>bidirectional</b>   <b>inport</b>   <b>outport</b>	<b>bidirectional</b>
<b>enable</b>   <b>disable</b>	<b>disable</b>

### Platforms Supported

OmniSwitch 2260, 2360

## Usage Guidelines

- Port mirroring cannot be configured on an AppMon enabled port.
- You can configure a port mirroring and a port monitoring session on the same network interface module.
- A mirroring port can not be assigned to a tagged VLAN port.
- When a port is configured as a mirroring port, it does not belong to any VLAN. Inbound traffic to the mirroring port is dropped since it does not belong to any VLAN.
- To mirror traffic from SAP port to destination port, explicitly create a VLAN same as the SAP VLAN.
- Spanning tree is disabled by default on a mirroring port.
- Port mirroring is not supported on logical link aggregate ports. However, it is supported on individual ports that are members of a link aggregate..
- Use the **port mirroring source destination** command to define the mirrored port and enable port mirroring status. Use the **port mirroring** command to enable the port mirroring session.
- Specify the *vlan id* number of the mirroring port that is to remain **unblocked** when the command is executed. The **unblocked** VLAN becomes the default VLAN for the mirroring port. This VLAN handles the inbound traffic for the mirroring port. Spanning Tree remains disabled on the unblocked VLAN.
- A maximum of 128 source mirroring ports can be configured. In case of mirroring to LACP Link Aggregate, only the first 8 aggregable ports will be used for mirroring.
- Unblocked VLAN and RPMIR configuration cannot co-exist in the same port mirroring session.
- A port/link aggregate which is to be configured as a mirroring destination should have no prior configuration on it, for example, a MVRP enabled port/link aggregate cannot be configured as a mirroring destination. The only exception to this rule is that a port can be a untagged or a tagged member of a standard VLAN.
- Any protocol/feature configurations on existing mirroring destinations would fail. All such configuration attempts would result in an error. The only exception to this is that if a mirroring destination is part of a mirroring session which has remote port mirroring VLAN configured (RPMIR VLAN) then such a destination can be made a tagged and/or untagged member of standard VLAN(s).
- Use the **tag remove** option to remove the VLAN tag on mirrored traffic that egresses out of destination mirroring ports. For double tagged mirrored packet, this option removes the outer VLAN tag.
- RPMIR and **tag remove** configuration is mutually exclusive and hence cannot co-exist in the same port mirroring session.

## Usage Guidelines - Remote Port Mirroring

- Use the **rpmir-vlan** parameter and VLAN ID with this command to configure remote port mirroring and to assign the VLAN ID for remote port mirroring.
- The VLAN ID assigned for remote port mirroring cannot be assigned to a general port mirroring port.
- There must not be any physical loop present in the remote port mirroring VLAN.
- Source learning must be disabled or overridden on the ports belonging to the remote port mirroring VLAN on intermediate and destination switches.



- The QoS redirect feature can be used to override source learning.
- The **mac-learning** command can also be used to disable learning on the RPMIR VLAN ID.
- VLAN 1 cannot be configured as the RPMIR VLAN.
- When mirroring configuration is removed from a mirroring destination, the port/link aggregate is made an untagged member of VLAN 1. The only exception to this is when the destination is in a mirroring session with RPMIR configuration.

## Examples

```
-> port-mirroring 6 source port 1/2/2 destination port 1/1/3
-> port-mirroring 6 destination port 1/1/3 rpmir-vlan 7
-> port-mirroring 6 no source port 1/2/2

-> port-mirroring 7 source port 1/2/3 destination linkagg 3 unblocked-vlan 750
-> port-mirroring 7 source port 1/2/3 output

-> port-mirroring 7 source port 1/2/3 destination linkagg 3 tag-remove

-> port-mirroring 9 source port 1/1/23 destination port 1/1/24
-> port-mirroring 9 disable
```

## Release History

Release 5.1; command introduced.

## Related Commands

<a href="#">port-mirroring</a>	Enables, disables, or deletes a port mirroring session.
<a href="#">show port-mirroring status</a>	Displays the status of mirrored ports. This value may be enabled or disabled.

## MIB Objects

```
mirrorTable
  mirrorMirroringIfindex
  mirrorDirection
  mirrorStatus
  mirrorUnblockedVLAN
  mirrorRowStatus
  mirrorDirection
  mirrorSessOperStatus
  mirrorTaggedVLAN
  mirrorDstTagRemove
```

---

## port-mirroring

Enables, disables, or deletes a port mirroring session.

**port-mirroring** *port\_mirror\_sessionid* {**enable** | **disable**}

**no port-mirroring** *port\_mirror\_sessionid*

---

### Syntax Definitions

<i>port_mirror_sessionid</i>	Mirroring session identifier.
<b>enable</b>	Enables port mirroring.
<b>disable</b>	Disables port mirroring.

### Defaults

---

parameter	default
<b>enable</b>   <b>disable</b>	<b>disable</b>

---

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- Use the **no** form of this command to delete a port mirroring session.
- Use the [port-mirroring source destination](#) command to specify the mirrored ports and destination port. before using this command to enable or disable port mirroring activity for the particular port mirroring session.

### Examples

```
-> port-mirroring 6 enable
-> port-mirroring 6 disable
-> no port-mirroring 6
```

### Release History

Release 5.1; command introduced.

## Related Commands

**port-mirroring source destination**

Defines a port to mirror and the port that is to receive data from the mirrored port, and enables or disables port mirroring status.

**show port-mirroring status**

Displays the status of mirrored ports. This value may be enabled or disabled.

## MIB Objects

mirrorTable

mirrorMirroringIfindex

mirrorTaggedVLAN

mirrorStatus

---

## port-monitoring source

Configures a port monitoring session.

```
port-monitoring port_monitor_sessionid source port chassis/slot/port[-port2] [file filename [size filesize] | no file | overwrite {on | off}] [inport | outport | bidirectional] [timeout seconds] [enable | disable] [capture-type {full | brief}]
```

```
port-monitoring port_monitor_sessionid no source port chassis/slot/port[-port2]
```

---

### Syntax Definitions

<i>port_monitor_sessionid</i>	Monitoring session identifier.
<i>chassis</i>	The chassis identifier.
<i>slot/port[-port2]</i>	The slot and port number. Use a hyphen to specify a range of ports.
<i>filename</i>	Specifies a file name and pathname for capturing information related to the monitoring session (for example, <b>/flash/port2.enc</b> ).
<i>filesize</i>	Specifies the size of the file in 64K byte increments. For example, a value of 3 would specify a size of (3 x 64K) bytes.
<b>no file</b>	<i>This option is not supported at this time.</i>
<b>on</b>	Specifies that capturing of data packets into the port monitoring file continues and old information is overwritten if the total data exceeds the specified file size.
<b>off</b>	Specifies that capturing of data packets into the port monitoring file is stopped when the maximum file size is reached.
<b>inport</b>	Specifies incoming unidirectional port monitoring.
<b>outport</b>	Specifies outgoing unidirectional port monitoring.
<i>seconds</i>	Specifies the number of seconds after which the session is disabled.
<b>enable</b>	Enables the port monitoring status.
<b>disable</b>	Disables the port monitoring status.
<b>full</b>	Captures port monitoring information in detail.
<b>brief</b>	Captures only the concise port monitoring data transmitted.

## Defaults

parameter	default
<i>filesize</i>	1
<b>on   off</b>	<b>on</b>
<b>bidirectional   inport   outport</b>	<b>bidirectional</b>
<i>seconds</i>	0
<b>enable   disable</b>	<b>disable</b>
<b>capture-type</b>	<b>brief</b>

## Platforms Supported

OmniSwitch 2260, 2360

## Usage Guidelines

- Port monitoring cannot be configured on an AppMon enabled port.
- You can configure a port mirroring and a port monitoring session on the same NI.
- If the port monitoring capture-type is set to **brief**, the first 64 bytes of the traffic is captured. If the port-monitoring capture-type is set to **full**, the entire packet is captured.
- By default, a file called **pmonitor.enc** is created in the **/flash** directory when you configure and enable a port monitoring session. Use the **file** option to create a user-specified file.
- The **/flash** directory is the default and the only directory used to capture the port monitoring files.
- The format of the file created is compliant with the ENC file format (Network General Sniffer Network Analyzer Format).
- By default, the recent frames overwrite the older frames in a port monitoring file if the total data exceeds the specified file size. Use the **overwrite off** option to prevent this from occurring.

## Examples

```
-> port-monitoring 6 source port 1/2/3
-> port-monitoring 6 source port 1/2/3 file /flash/user_port size 2 enable
-> port-monitoring 6 source port 1/2/3 file /flash/user_port capture-type full
-> port-monitoring 10 source port 1/4/22-30
-> port-monitoring 10 no source port 1/4/30
```

## Release History

Release 5.1; command introduced.

## Related Commands

<a href="#">port-monitoring</a>	Disables, pauses, resumes, or deletes a port monitoring session.
<a href="#">show port-monitoring status</a>	Displays the port monitoring status.
<a href="#">show port-monitoring file</a>	Displays the port monitoring data.

## MIB Objects

```
monitorTable
  monitor
  monitorSessionNumber
  monitorIfindex
  monitorFileStatus
  monitorFileName
  monitorFileSize
  monitorScreenStatus
  monitorScreenLine
  monitorCaptureType
  monitorTrafficType
  monitorStatus
  monitorFileOverWrite
  monitorDirection
  monitorTimeout
```

---

## port-monitoring

Disables, pauses, resume, or deletes an existing port monitoring session.

**port-monitoring** *port\_monitor\_sessionid* {**disable** | **pause** | **resume**}

**no port-monitoring** *port\_monitor\_sessionid*

---

### Syntax Definitions

<i>port_monitor_sessionid</i>	Monitoring session identifier.
<b>disable</b>	Disables the port monitoring session.
<b>pause</b>	Pauses the port monitoring session.
<b>resumes</b>	Resumes the port monitoring session.

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

Use the **no** form of this command to delete a port monitoring session.

### Examples

```
-> port-monitoring 6 pause
-> port-monitoring 6 disable
-> port-monitoring 6 resume
-> no port-monitoring 6
```

### Release History

Release 5.1; command introduced.

### Related Commands

<a href="#">port-monitoring</a>	Configures a port monitoring session.
<a href="#">show port-monitoring status</a>	Displays the port monitoring status.

### MIB Objects

```
monitorTable
  monitorSessionNumber
  monitorScreenStatus
```

---

## show port-mirroring status

Displays the status of mirrored ports.

**show port-mirroring status** [*port\_mirror\_sessionid*]

---

### Syntax Definitions

*port\_mirror\_sessionid*                      Mirroring session identifier.

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

If a port mirroring session identifier is not specified with this command, then all port mirroring sessions are displayed.

### Examples

```
-> show port-mirroring status
Session      Mirror      Mirror      Unblocked   RPMIR      Config      Oper
  Destination Direction   Vlan        Vlan        Status      Status
-----+-----+-----+-----+-----+-----+-----
    1.      1/1/11      bidirectional  NONE        NONE        Enable      on
-----+-----+-----+-----+-----+-----+-----
                Mirror
                Source
-----+-----+-----+-----+-----+-----+-----
    1.      1/1/2       bidirectional   -            -            Enable      On
    1.      1/1/3       bidirectional   -            -            Enable      On
    1.      1/1/4       bidirectional   -            -            Enable      On
    1.      1/1/5       bidirectional   -            -            Enable      On
```

#### *output definitions*

---

<b>Session</b>	The port mirroring session identifier.
<b>Mirror Destination</b>	The location of the mirrored port.
<b>Mirror Direction</b>	The direction of the mirroring or mirrored port, which can be <b>bidirectional</b> (the default), <b>inport</b> , or <b>outport</b> .
<b>Unblocked VLAN</b>	The mirroring VLAN ID number.
<b>RPMIR VLAN</b>	The reserved VLAN to carry the mirroring traffic.
<b>Config Status</b>	The configuration status of the session.
<b>Oper Status</b>	The current status of the mirroring or mirrored port.
<b>Mirror Source</b>	The location of the mirroring port.

---



## Release History

Release 5.1; command introduced.

## Related Commands

[port-mirroring](#)

Enables, disables, or deletes a port mirroring session.

[port-mirroring source destination](#)

Defines a port to mirror and a port that receives data from the mirrored port, and enables or disables port mirroring status.

## MIB Objects

mirrorTable

mirrorMirroringIfindex

mirrorMirroredIfindex

mirrorDirection

mirrorStatus

mirrorSessionNumber

mirrorSessOperStatus

mirrorSrcStatus

mirrorSrcDirection

mirrorSrcRowStatus

mirrorSrcOperStatus

mirrorUnblockedVLAN

---

## show port-monitoring status

Displays port monitoring status.

**show port-monitoring status** [*port\_monitor\_sessionid*]

---

### Syntax Definitions

*port\_monitor\_sessionid*            Monitoring session identifier.

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

If a port monitoring session identifier is not specified with this command, then all port monitoring sessions are displayed.

### Examples

-> show port-monitoring status

```

Sess Mon. Mon. Over Oper. Admin Capt. Max. File
      Src Dir  write Stat  Stat  Type  Size  Name
-----+-----+-----+-----+-----+-----+-----+-----
  1.  1/1/2  Out  OFF   OFF  OFF  Brief   64K  /flash/pm.enc

```

### output definitions

---

<b>Sess</b>	<b>Session</b> - The port monitoring session identifier.
<b>Mon. Src</b>	<b>Monitor Source</b> - The source ports that are monitored.
<b>Mon Dir</b>	<b>Monitor Direction</b> - The direction of the monitoring session, which can be <b>bidirectional</b> (the default), <b>inport</b> , or <b>outport</b> .
<b>Overwrite</b>	Whether files created by a port monitoring session can be overwritten. The default is ON.
<b>Oper Stat</b>	<b>Operating Status</b> - The current operating status of the port monitoring session (on/off).
<b>Admin Stat</b>	<b>Admin Status</b> - The current administrative status of the port monitoring session (on/off).
<b>Capt Type</b>	<b>Capture type:</b> <b>Brief</b> - captures only 64 bytes of data per traffic data packet. <b>Full</b> - captures the entire packet.
<b>Max Size</b>	<b>Maximum Size</b> - The maximum size of the port monitoring file.
<b>File Name</b>	The name of the port monitoring file.

---

## Release History

Release 5.1; command introduced.

## Related Commands

<a href="#">port-monitoring source</a>	Configures a port monitoring session.
<a href="#">port-monitoring</a>	Disables, pauses, resumes, or deletes a port monitoring session.
<a href="#">show port-monitoring file</a>	Displays port monitoring data.

## MIB Objects

```
monitorTable
  monitorSessionNumber
  monitorIfindex
  monitorStatus
  monitorFileStatus
  monitorFileName
  monitorFileSize
  monitorScreenStatus
  monitorScreenLine
  monitorTrafficType
  monitorDirection
  monitorTimeout
  monitorCaptureType
  monitorFileOverWrite
  monitorDirection
```

---

## show port-monitoring file

Displays port monitoring data.

**show port-monitoring file** *port\_monitor\_sessionid*

---

### Syntax Definitions

*port\_monitor\_sessionid*            Monitoring session identifier.

### Defaults

A single line from the captured packet is displayed.

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

Only a single line from the captured packet is displayed, even though the full packet is captured. To view the entire packet, download the file and view it using compatible network analyzer tool.

### Examples

-> show port-monitoring file 1

Destination	Source	Type	Data
01:80:C2:00:00:00	00:20:DA:8F:92:C6	BPDU	00:26:42:42:03:00:00:00:00:00
00:20:DA:C7:2D:D6	08:00:20:95:F3:89	UDP	08:00:45:00:00:6B:FE:4A:40:00
00:20:DA:A3:89:F6	08:00:20:95:F3:89	UDP	08:00:45:00:00:6B:CF:89:40:00
00:20:DA:BF:5B:76	08:00:20:95:F3:89	UDP	08:00:45:00:00:6B:CF:85:40:00
00:20:DA:A3:89:F6	08:00:20:95:F3:89	UDP	08:00:45:00:00:6B:CF:8A:40:00
00:20:DA:BF:5B:76	08:00:20:95:F3:89	UDP	08:00:45:00:00:6B:CF:86:40:00
00:20:DA:A3:89:F6	08:00:20:95:F3:89	UDP	08:00:45:00:00:6B:CF:8B:40:00
01:80:C2:00:00:00	00:20:DA:8F:92:C6	BPDU	00:26:42:42:03:00:00:00:00:00
00:20:DA:BF:5B:76	08:00:20:95:F3:89	UDP	08:00:45:00:00:6B:CF:87:40:00

#### *output definitions*

---

<b>Destination</b>	The destination MAC address of the packet.
<b>Source</b>	The source MAC address of the packet.
<b>Type</b>	The type of packet.
<b>Data</b>	The packet displayed in hexadecimal format.

---

### Release History

Release 5.1; command introduced.

## Related Commands

<a href="#">port-monitoring source</a>	Configures a port monitoring session.
<a href="#">port-monitoring</a>	Disables, pauses, resumes, or deletes a port monitoring session.
<a href="#">show port-monitoring status</a>	Displays the port monitoring status.

## MIB Objects

```
monitorTable  
  monitorSessionNumber  
  monitorIfindex  
  monitorTrafficType  
  monitorFileStatus  
  monitorFileName  
  monitorFileSize  
  monitorScreenStatus  
  monitorScreenLine
```

---

# 24 sFlow Commands

sFlow is a network monitoring technology that gives visibility in to the activity of the network, by providing network usage information. It provides the data required to effectively control and manage the network usage. sFlow is a sampling technology that meets the requirements for a network traffic monitoring solution.

sFlow provides a network-wide view of usage and active routes. It is used for measuring network traffic, collecting, storing, and analyzing the traffic data. As it is scalable, that doesn't add significant network load. sFlow is an industry standard with many vendors delivering products with this support. Some of the applications of the sFlow data include:

- Detecting, diagnosing, and fixing network problems
- Real-time congestion management
- Detecting unauthorized network activity
- Usage accounting and billing
- Understanding application mix
- Route profiling and peer optimization
- Capacity planning

sFlow is a sampling technology embedded within switches/routers. It provides the ability to monitor the traffic flows. It requires an sFlow agent software process running as part of the switch software and a sFlow collector which receives and analyses the monitored data. The sFlow collector makes use of SNMP to communicate with an sFlow agent in order to configure sFlow monitoring on the device (switch).

An sFlow agent running on the switch/router combines interface counters and traffic flow (packet) samples, preferably, on all the interfaces into sFlow datagrams that are sent across the network to an sFlow collector.

Packet sampling on the switch/router is typically performed by the switching/routing ASICs, providing wire-speed performance. In this case, an sFlow agent does very little processing, by packaging data into sFlow datagrams that are immediately sent on network. This minimizes the memory and CPU utilization by the sFlow agent.

MIB information for the sFlow commands is as follows:

*Filename:* ALCATEL-IND1-PORT-MIRRORING-MONITORING-MIB.mib  
*Module:* alcatelIND1PortMirrorMonitoringMIB

*Filename:* SFLOW-MIB.MIB.mib  
*Module:* sFlow

A summary of the available commands is listed here:

---

**sflow agent**  
**sflow receiver**  
**sflow sampler**  
**sflow poller**  
**show sflow agent**  
**show sflow receiver**  
**show sflow sampler**  
**show sflow poller**

---

## sflow agent

Configures a specific sFlow agent IP address.

**sflow agent ip** *ip\_address*

**no sflow agent ip** *ip\_address*

---

### Syntax Definitions

*ip\_address*                      The sFlow agent IP address.

### Defaults

parameter	default
<i>ip-address</i>	0.0.0.0

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- Use the **no** form of this command to delete the IP address.
- If no IP address is configured, 0.0.0.0 is used.
- If no IP address is configured but the Loopback0 address is configured, the Loopback0 address is used.

### Examples

```
-> sflow agent ip 192.165.1  
-> no sflow agent ip 192.165.1
```

### Release History

Release 5.2R2; command was introduced.

### Related Commands

[show sflow agent](#)                      Displays the agent table.

### MIB Objects

```
mirmonSFlowObjects  
  alasFlowAgentConfigType  
  alasFlowAgentAddressType  
  alasFlowAgentAddress
```

---



## sflow receiver

Sets the destination hosts where the sFlow datagrams are sent out. If there are multiple destinations, then each destination has an instance of the receiver. All these receivers are attached to the sFlow manager instance and to an associated sampler/poller.

**sflow receiver** *receiver\_index* {**name** *string* | **timeout** {*seconds* | **forever**} | **address** {*ip\_address* | *ipv6\_address* | *domain\_name*} | **udp-port** *port* | **packet-size** *size* **version** *num* | **release**}

---

### Syntax Definitions

<i>receiver_index</i>	The receiver index number.
<i>string</i>	The name.
<i>seconds</i>   <b>forever</b>	Specifies the timeout value.
<i>ip_address</i>	Specifies the 32-bit IPv4 address.
<i>ipv6_address</i>	Specifies the 128-bit IPv6 address.
<i>domain_name</i>	Specifies a Fully Qualified Domain Name (FQDN). The domain name can be up to 255 characters in length.
<i>port</i>	Specifies the UDP (destination) port.
<i>size</i>	Specifies the maximum number of data bytes (size) that can be sent.
<i>num</i>	Specifies the version number.

### Defaults

parameter	default
<i>string</i>	empty
<i>seconds</i>	0
<i>ip_address</i>	0.0.0.0(ipv4)
<i>port</i>	6343
<i>size</i>	1400
<i>version num</i>	5

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- Use the **release** parameter at the end of the command to delete a receiver.
- Use the *domain\_name* option to specify an FQDN instead of an IPv4 or IPv6 address. The switch will then resolve the domain name to an IP address. Make sure the specified domain name maps to a valid and reachable address. If the address is not valid or cannot be reached, then flow and counter samples may not be sent out of the sFlow agent as expected.

- After the IPv4 or IPv6 address for the specified domain name is determined, a refresh is triggered every 30 seconds. If the mapping of the domain name to an IP address changes before the next refresh, both flow and counter samples are not sent to the new address until the next refresh occurs.

## Examples

```
-> sflow receiver 1 name Golden Rcvr1 address 198.206.181.3
-> sflow receiver 1 name Golden Rcvr1 address upam.omnivista.com
-> sflow receiver 1 release
```

## Release History

Release 5.2R2; command was introduced.

## Related Commands

[show sflow receiver](#)                      Displays the receiver table.

## MIB Objects

```
sFlowRcvrTable
  sFlowRcvrIndex
  sFlowRcvrOwner
  sFlowRcvrTimeout
  sFlowRcvrMaximumDatagramSize
  sFlowRcvrAddressType
  sFlowRcvrAddress
  sFlowRcvrPort
  sFlowRcvrDatagramVersion
```

---

## sflow sampler

Gets the hardware sampled from Q-dispatcher and fills up the sampler part of the UDP datagram.

```
sflow sampler num port chassis/slot/port[-port] {receiver receiver_index | rate value | sample-hdr-size size}
```

```
no sflow sampler num port [chassis_id]/slot/port[-port]
```

---

### Syntax Definitions

<i>num</i>	Specifies the instance ID.
<i>chassis</i>	The chassis identifier.
<i>slot/port</i> [- <i>port</i> ]	The slot and port number (3/1). Use a hyphen to specify a range of ports (3/1-5).
<i>receiver_index</i>	Specifies the receiver index.
<i>value</i>	Specifies the rate value for packet sampling.
<i>size</i>	Specifies the maximum number of bytes (size) that can be copied from a sampled packet.

### Defaults

parameter	default
<i>receiver_index</i>	0
<i>value</i>	0
<i>size</i>	128

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- Use the **no** form of this command to delete a sampler.
- A sampling rate of 1 counts all packets. A sampling rate of 0 disables sampling.

### Examples

```
-> sflow sampler 1 port 1/2/1 receiver 1 rate 5 sample-hdr-size 64
-> no sflow sampler 1 port 1/2/1-5
```

### Release History

Release 5.2R2; command was introduced.

## Related Commands

**show sflow sampler** Displays the sampler table.

## MIB Objects

```
sFlowFsTable  
  sFlowFsDataSource  
  sFlowFsInstance  
  sFlowFsReceiver  
  sFlowFsPacketSamplingRate  
  sFlowFsMaximumHeaderSize
```

---

## sflow poller

Gets counter samples from ethernet driver and fills up the counter part of the UDP datagram.

**sflow poller** *num port chassis/slot/port[-port] {receiver receiver\_index | interval value}*

**no sflow poller** *num port [chassis\_id/slot/port[-port]]*

---

### Syntax Definitions

<i>num</i>	Specifies the instance ID.
<i>chassis</i>	The chassis identifier.
<i>slot/port[-port]</i>	The slot and port number (3/1). Use a hyphen to specify a range of ports (3/1-5).
<i>receiver_index</i>	Specifies the receiver index.
<i>value</i>	Specifies the maximum number of seconds between successive samples (interval value).

### Defaults

parameter	default
<i>receiver_index</i>	0
<i>value</i>	0

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

Use the **no** form of this command to delete a poller.

### Examples

```
-> sflow poller 1 port 1/1/1 receiver 2 interval 20
-> sflow poller 1 port 1/2/6-10 receiver 1 interval 30
-> no sflow poller 1 port 1/2/6-10
```

### Release History

Release 5.2R2; command was introduced.

### Related Commands

**show sflow poller** Displays the poller table.

**MIB Objects**`sFlowCpTable``sFlowCpDataSource``sFlowCpInstance``sFlowCpReceiver``sFlowCpInterval`

---

## show sflow agent

Displays the sFlow agent table.

**show sflow agent**

---

### Syntax Definitions

N/A

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- It is necessary to execute the **ip interface** command to make a loopback0 IP address as the fixed primary address of the switch to avoid interface changes, which might need the collector software to be restarted for it to communicate using the new agent IP address. Normally, the primary IP address could change depending on the IP interface going up/down. Therefore, the sFlow agent always needs to send a fixed IP address in the datagram.
- The loopback address should be an IP interface configured on the switch.

### Examples

```
-> ip interface loopback0 address 198.206.181.100
-> show sflow agent
Agent Version = 1.3; Alcatel; 6.1.1
Agent IP      = 127.0.0.1
```

#### *output definitions*

---

<b>Agent Version</b>	Identifies the version which includes the MIB version, organization name, and the specific software build of the agent.
<b>Agent address</b>	IP address associated with the agent. Configured through the <b>sflow agent</b> command.

---

### Release History

Release 5.2R2; command was introduced.

### Related Commands

**show sflow receiver**                      Displays the receiver table.

**MIB Objects**

sFlowAgent

sFlowVersion

sFlowAgentAddressType

  sFlowAgentAddress

---



## show sflow receiver

Displays the sFlow receiver table.

**show sflow receiver** [*num*]

---

### Syntax Definitions

*num* Specifies the receiver index.

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

N/A

### Examples

```
-> show sflow receiver
Receiver 1
Name      = Golden
Address   = IP_V4  198.206.181.3
UDP Port  = 6343
Timeout   = 65535
Packet Size= 1400
DatagramVer= 5
```

```
-> show sflow receiver

Receiver 1
Name      = Golden
Address   = Domain Name  upam.omnivista.com IP_V4  198.206.181.3
UDP Port  = 6343
Timeout   = 65535
Packet Size= 1400
DatagramVer= 5
```

### *output definitions*

---

<b>Name</b>	Name of the entry to claim.
<b>Address</b>	IP address of the sFlow collector. If a receiver address was configured as a domain name, then both the domain name and IP address for that domain are displayed. If the domain name did not translate to a valid IP address, a hyphen is displayed instead of an address.
<b>UDP Port</b>	Destination port for sFlow datagrams.
<b>Timeout</b>	Time remaining before the sampler is released and stops sampling.

***output definitions***

---

<b>Packet size</b>	Maximum number of data bytes that can be sent in a single sample datagram.
<b>Datagram ver</b>	Version of sFlow datagrams that should be sent.

---

**Release History**

Release 5.2R2; command was introduced.

**Related Commands**

[sflow receiver](#) Sets the destination hosts where the sFlow datagrams are sent out.

**MIB Objects**

sFlowRcvrTable  
sFlowRcvrIndex

---

## show sflow sampler

Displays the sFlow sampler table.

**show sflow sampler** [*num*]

---

### Syntax Definitions

*num* Specifies the instance ID.

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

N/A.

### Examples

-> show sflow sampler

Instance	Interface	Receiver	Sample-rate	Sample-hdr-size
1	2/1/1	1	2048	128
1	2/1/2	1	2048	128
1	2/1/3	1	2048	128
1	2/1/4	1	2048	128
1	2/1/5	1	2048	128

### *output definitions*

---

<b>Instance</b>	Instance for the flow sampler.
<b>Interface</b>	Interface used for the flow sampler.
<b>Receiver</b>	Receiver associated with the flow sampler.
<b>Sample-rate</b>	Statistical sampling rate for packet sampling from the source.
<b>Sample-hdr-size</b>	Maximum number of bytes that should be copied from a sampled packet.

---

### Release History

Release 5.2R2; command was introduced.

**Related Commands****sflow sampler**

Gets hardware sampled from Q-dispatcher.

**MIB Objects**

sFlowFsTable

sFlowFsInstance

---

## show sflow poller

Displays the sFlow poller table.

**show sflow poller** [*num*]

---

### Syntax Definitions

*num* Specifies the instance ID.

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

N/A

### Examples

```
-> show sflow poller
Instance  Interface      Receiver  Interval (Secs)
-----
          1          2/1/6         1          30
          1          2/1/7         1          30
          1          2/1/8         1          30
          1          2/1/9         1          30
          1          2/1/10        1          30
```

#### *output definitions*

---

<b>Instance</b>	Instance for the counter poller.
<b>Interface</b>	Interface used for the counter poller.
<b>Receiver</b>	Receiver associated with the counter poller.
<b>Interval</b>	The maximum number of seconds between successive samples of the counters associated with the data source.

---

### Release History

Release 5.2R2; command was introduced.

**Related Commands**

**sflow poller** Gets counter samples.

**MIB Objects**

sFlowCpTable

sFlowCpInstance

---

# 25 RMON Commands

Remote Network Monitoring (RMON) probes can be used to monitor, manage, and compile statistical data about network traffic from designated active ports in a LAN segment without negatively impacting network performance. This feature supports basic RMON 4 group implementation compliant with RFC 2819 (Remote Network Monitoring Management Information Base), but does not support RMON 10 group or RMON 2. This chapter includes descriptions of RMON commands used to enable or disable individual (or a group of a certain flavor type) RMON probes, show a list of (or individual) RMON probes and show a list of (or individual) RMON logged events.

MIB information for the RMON commands is as follows:

*Filename:* RMON-MIB.mib  
*Module:* rmonMibModule

The following table summarizes the available commands:

---

**rmon probes**  
**show rmon probes**  
**show rmon events**

---

## rmon probes

This command enables or disables types of RMON probes.

```
rmon probes {stats | history | alarm} [entry_number] {enable | disable}
```

---

### Syntax Definitions

<b>stats</b>	Ethernet Statistics Table probe entries.
<b>history</b>	History Control Table probe entries.
<b>alarm</b>	Alarm Table probe entries.
<i>entry_number</i>	The entry number in the list of probes ( <i>optional</i> ).
<b>enable</b>	Enables the RMON probe.
<b>disable</b>	Disables the RMON probe.

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- Network activity on subnetworks attached to the RMON probe can be monitored by NMS applications.
- RMON will not monitor activities on the CMM onboard Ethernet Management port.

### Examples

```
-> rmon probes stats 4012 enable
-> rmon probes history 10240 disable
-> rmon probes alarm 11235 enable
-> rmon probes stats enable
-> rmon probes history disable
-> rmon probes alarm enable
```

### Release History

Release 5.1; command was introduced.



## Related Commands

[show rmon probes](#)

Displays a list of RMON probes or a single RMON probe.

[show rmon events](#)

Displays a list of RMON logged events or a single RMON event.

## MIB Objects

ETHERSTATSTABLE

etherStatsStatus

HISTORYCONTROLTABLE

historyControlStatus

ALARMTABLE

alarmStatus

---

## show rmon probes

Displays a list of RMON probes or a single RMON probe.

**show rmon probes** [**stats** | **history** | **alarm**] [*entry\_number*]

---

### Syntax Definitions

<b>stats</b>	Ethernet Statistics Table probe entries.
<b>history</b>	History Control Table probe entries.
<b>alarm</b>	Alarm Table probe entries.
<i>entry_number</i>	The entry number in the list of probes ( <i>optional</i> ).

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- To display a list of current probes, omit the *entry-number* from the command line.
- To display statistics for a particular probe, include the probe's *entry\_number* in the command line.
- The **show rmon probes** command displays the following information: Entry number, Slot/Port, Flavor (whether the probe type is Ethernet, History or Alarm), Status (Active or Inactive), Duration (time since the last change in status, in hours/minutes) and System Resources (the amount of memory allocated to this probe).
- The **show rmon probes entry-number** command displays the following information: Probe's Owner (probe type and location), Slot/Port, Entry number, Flavor (whether the probe type is Ethernet, History or Alarm), Status (Active or Inactive), Time since the last change in status (hours/minutes), and System Resources (the amount of memory allocated to this probe). Displayed statistics may vary, depending on whether the probe type is Ethernet, History or Alarm.

### Examples

```
-> show rmon probes stats
```

Entry	Chassis/ Slot/Port	Flavor	Status	Duration	System Resources
1026	1/1/26	Ethernet	Active	71:49:41	301 bytes
1025	1/1/25	Ethernet	Active	71:49:20	301 bytes
1001	1/1/1	Ethernet	Active	71:48:05	300 bytes

-> show rmon probes history

Entry	Chassis/ Slot/Port	Flavor	Status	Duration	System Resources
1	1/1/26	History	Active	71:50:08	5471 bytes
2	1/1/25	History	Active	71:49:47	5471 bytes
3	1/1/1	History	Active	71:48:32	5470 bytes
4	1/1/22	History	Active	71:48:30	5471 bytes
5	1/1/23	History	Active	71:48:30	5471 bytes

-> show rmon probes alarm

Entry	Slot/Port	Flavor	Status	Duration	System Resources
11235	1/4/8	Alarm	Active	00:07:00	835 bytes

-> show rmon probes 4005

Probe's Owner: Switch Auto Probe on Chassis 1, Slot 4, Port 5, ifindex 4005  
 Entry 4005  
 Flavor = Ethernet, Status = Active,  
 Time = 48 hrs 54 mins,  
 System Resources (bytes) = 301

-> show rmon probes history 30562

Probe's Owner: Switch Auto Probe on Chassis 8, Slot 1, Port 29  
 History Control Buckets Requested = 50,  
 History Control Buckets Granted = 50,  
 History Control Interval = 30 seconds,  
 History Sample Index = 287  
 Entry 9  
 Flavor = History, Status = Active,  
 Time = 71 hrs 48 mins,  
 System Resources (bytes) = 5471

-> show rmon probes alarm 11235

Probe's Owner:  
 Alarm Rising Threshold = 5  
 Alarm Falling Threshold = 0  
 Alarm Rising Event Index = 26020  
 Alarm Falling Event Index = 0  
 Alarm Interval = 10 seconds  
 Alarm Sample Type = delta value  
 Alarm Startup Alarm = rising alarm  
 Alarm Variable = 1.3.6.1.2.1.16.1.1.1.5.4008  
 Entry 11235  
 Flavor = Alarm, Status = Active  
 Time = 48 hrs 48 mins,  
 System Resources (bytes) = 1677

*output definitions*


---

<b>Probe's Owner</b>	Description and interface (location) of the probe.
<b>Slot/Port</b>	The Slot/Port number (interface) that this probe is monitoring.
<b>Entry</b>	The Entry number in the list of probes.
<b>Flavor</b>	Whether the probe type is Ethernet, History, or Alarm.
<b>Status</b>	The status of the probe— <b>Creating</b> (the probe is under creation), <b>Active</b> (the probe is Active), or <b>Inactive</b> (the probe is inactive).
<b>Duration</b>	Elapsed time (hours/minutes/seconds) since the last change in status.
<b>System Resources</b>	Amount of memory that has been allocated to this probe.

---

**Release History**

Release 5.1; command was introduced.

**Related Commands**

<a href="#">rmon probes</a>	Enables or disables types of RMON probes.
<a href="#">show rmon events</a>	Displays RMON logged events.

**MIB Objects**

```
ETHERSTATSTABLE
    etherStatsIndex
HISTORYCONTROLTABLE
    historyControlIndex
ALARMTABLE
    alarmIndex
```

---

## show rmon events

Displays RMON events (actions that take place based on alarm conditions detected by the RMON probe).

**show rmon events** [*entry\_number*]

---

### Syntax Definitions

*entry\_number*                      The entry number in the list of probes (*optional*).

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- To display a list of logged events, omit the *entry\_number* from the command line.
- To display statistics for a particular event, include the *entry\_number* in the command line.
- The **show rmon events** command displays the following information for all RMON Logged Events: Entry number, Time (hours/minutes/seconds) since the last change in status and Description (nature of the event).
- The **show rmon events** *entry\_number* command displays the following information for a particular RMON Logged Event: Entry number, Time (hours/minutes/seconds) since the last change in status and Description (nature of the event).

### Examples

```
-> show rmon events
```

Entry	Time	Description
1	00:08:00	etherStatsPkts.4008: [Falling trap] "Falling Event"
2	00:26:00	etherStatsCollisions.2008: "Rising Event"

```
-> show rmon events 2
```

Entry	Time	Description
2	00:26:00	etherStatsCollisions.2008: "Rising Event"

### output definitions

---

<b>Entry</b>	The entry number in the list of probes.
<b>Time</b>	Time (hours, minutes, and seconds) since the last change in status.
<b>Description</b>	Description of the Alarm condition detected by the probe.

---

## Release History

Release 5.1; command was introduced.

## Related Commands

[rmon probes](#)

Enables or disables types of RMON probes.

[show rmon probes](#)

Displays RMON probes or a single RMON probe.

## MIB Objects

EVENTTABLE

eventIndex

---

# 26 Switch Logging Commands

This chapter includes descriptions for Switch Logging commands. These commands are used to configure parameters for the Switch Logging utility.

MIB information for the system commands is as follows:

*Filename:* ALCATEL-IND1-SYSTEM-MIB.mib  
*Module:* alcatelIND1SystemMIB

A summary of the available commands is listed here.

---

**swlog**  
**swlog syslog-facility-id**  
**swlog appid**  
**swlog output**  
**swlog output flash-file-size**  
**swlog advanced**  
**swlog size-trap-threshold**  
**swlog clear**  
**show log swlog**  
**show swlog**  
**swlog console level**  
**show log events**  
**show log events output**

---

## swlog

Enables or disables switch logging. Switch logging allows you to view a history of various switch activities in a text format.

**swlog** {**enable** | **disable** | **preamble** | **hash-time-limit** *seconds* | **duplicate-detect** | **console level** *num* }

**no swlog** [**preamble** | **duplicate-detect**]

---

### Syntax Definitions

<b>enable</b>	Enables the switch logging functionality.
<b>disable</b>	Disables the switch logging functionality.
<b>preamble</b>	Enables or disables the display of the preamble to the console.
<b>hash-time-limit</b> <i>seconds</i>	Configures the amount of elapsed time for an entry to no longer be considered a duplicate entry.
<b>duplicate-detect</b>	Enables or disables the duplicate detection capability.
<b>console level</b> <i>num</i>	The severity level filter keyword or numeric value for the application ID. (see table for <a href="#">swlog appid</a> command).

### Defaults

parameter	default
<b>enable</b>   <b>disable</b>	<b>enable</b>
<b>preamble</b>	<b>enable</b>
<b>hash-time-limit</b> <i>num</i>	<b>60 seconds</b>
<b>duplicate-detect</b>	<b>enable</b>
<b>console level</b> <i>num</i>	<b>6 (info)</b>

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- Use the **no** form of the command to enable or disable the **preamble** and **duplicate-detect** setting.
- The syslog preamble includes the level, appid, and timestamp that precedes the actual log messages.
- If duplicate entries are received within the configured **hash-time-limit**, only a single entry will be logged along with the number of times duplicated.
- Use the [swlog console level](#) command to set the switch logs of different levels to be displayed on the console.



## Examples

```
-> swlog enable
-> swlog hash-time-limit 30
-> no swlog preamble
```

## Release History

Release 5.1; command was introduced.

## Related Commands

<a href="#">swlog appid</a>	Defines the level at which switch logging information will be filtered for the specified application.
<a href="#">swlog output</a>	Enables or disables switch logging output to the console, file, or data socket.
<a href="#">show log swlog</a>	Displays stored switch logging information from flash.
<a href="#">show swlog</a>	Displays switch logging information.
<a href="#">swlog console level</a>	Allows to set the switch logs of different levels to be displayed on the console. All application events of defined level and lower are displayed on the console.

## MIB Objects

```
systemSwitchLogging
  systemSwitchLoggingEnable
  systemSwitchLoggingPreamble
  systemSwitchLoggingHashAgeLimit
  systemSwitchLoggingDuplicateDetect
  systemSwitchLoggingConsoleLevel
  systemSwitchLoggingGmtTime
```

---

## swlog syslog-facility-id

Specifies a facility ID that switch logging includes in the priority (PRI) section of the event message.

**swlog syslog-facility-id** {*facility\_id* | *num*}

---

### Syntax Definitions

<i>facility_id</i>	A facility identification keyword. Current facility IDs are listed in the table below.
<i>num</i>	A numerical equivalent value for the facility ID. The range is 0–23. Current numeric equivalent values are listed in the table below.

---

### Supported Facility IDs with Numerical Equivalents

kernel - 0	NTP - 12
user - 1	log-audit - 13
mail - 2	log-alert - 14
system - 3	clock2 - 15
sec-auth1-2	local0 - 16
syslog - 5	local1 - 17
lptr - 6	local2 - 18
net-news - 7	local3 - 19
UUCP - 8	local4 - 20
clock1 - 9	local5 - 21
sec-auth2 - 10	local6 - 22
FTP - 11	local7 - 23

### Defaults

parameter	default
<i>facility_id</i>	local0
<i>num</i>	16

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

Use the ID name (**system**) or the numeric equivalent to specify the facility ID.

### Examples

```
-> swlog syslog-facility-id system
-> swlog syslog-facility-id 3
-> swlog syslog-facility-id user
-> swlog syslog-facility-id 1
```

## Release History

Release 5.1; command introduced.

## Related Commands

<a href="#">swlog</a>	Enables or disables switch logging.
<a href="#">show log swlog</a>	Displays stored switch logging information from flash.
<a href="#">show swlog</a>	Displays switch logging information.

## MIB Objects

systemSwitchLogging  
systemSwitchLoggingSysLogFacilityId

---

## swlog appid

Defines the level at which switch logging information will be filtered for the specified application. All application events of the defined level and lower are captured.

**swlog appid** {all | *string*} {library {all | *string*} | subapp {all | *num*} | exclude {all | *num*}} {disable | enable | level {*level* | *num*}}

---

### Syntax Definitions

<i>string</i>	An application or library identification keyword. Enter a question mark (?) on the command line to get a list of application or library IDs.
<b>subapp</b> <i>num</i>	A numerical equivalent value for the subapp ID. Enter a question mark (?) on the command line to get a list of subapp IDs.
<b>exclude</b> <i>num</i>	A numerical equivalent value for the subapp ID. Enter a question mark (?) on the command line to get a list of subapp IDs.
<b>disable</b>	Disables the logging of the associated application.
<b>enable</b>	Enables the logging of the associated application.
<b>level</b> <i>level</i>   <i>num</i>	The severity level filter keyword or numerical equivalent value for the application ID ( <i>see table below</i> ). All switch logging messages of the specified level and lower will be captured. The severity level is a value assigned to the relative severity of the switch logging message. A lower value indicates messages that are more severe, a higher value indicates messages that are less severe.

Supported Levels	Numeric Equivalents	Description
<b>off</b>	<b>0</b>	Disabled
<b>alarm</b>	<b>1</b>	Highest severity. The system is about to crash and reboot.
<b>error</b>	<b>2</b>	System functionality is reduced.
<b>alert</b>	<b>3</b>	A violation has occurred.
<b>warning</b>	<b>4</b>	A unexpected, non-critical event has occurred.
<b>event</b>	<b>5</b>	A clear readable customer event.
<b>info</b>	<b>6</b>	Any other non-debug message (default).
<b>debug1</b>	<b>7</b>	A normal event debug message.
<b>debug2</b>	<b>8</b>	A debug-specific message.
<b>debug3</b>	<b>9</b>	All debug messages.

### Defaults

Default severity level is **info**.

### Platforms Supported

OmniSwitch 2260, 2360

## Usage Guidelines

- Use the **show swlog appid** command to display available registered applications.
- Specify the **event** severity level keyword to define the new event level at which switch logging information will be filtered for the specified application.

## Examples

```
-> swlog appid all subid all enable
-> swlog appid mvrpNi subapp 1 level 8
-> swlog appid all supapp all level event
-> swlog appid all library all level event
-> swlog appid all exclude all level event
-> show swlog appid mvrpNi
```

```
Application Name           : mvrpNi,
```

```
SubAppl ID Sub Application Name  Level           VRF Level
-----+-----+-----+-----+-----+-----+-----
          1 main                   error          VRF 1-64 info
```

```
-> swlog appid ?
^
ALL <string>
SWLOG PMD ChassisSupervisor flashManager MIP_GATEWAY
ConfigManager capManCmm vc_licManager vcmCmm SSTYPE SSAPP mrvld
capManSig fabric portMgrCmm vfcM intfCmm dafcCmm linkAggCmm
VlanMgrCmm ipmscmm pvlanCmm isis_spb_0 isisVc stpCmm AGCMM slCmm
mirMonSFlowCmm ipv4 ipv6 ipsecSys ipsec tcamCmm qosCmm vstkCmm
eoamCmm erpCmm NTP udpRelay remoteConfig AAA havlanCmm SES rmon
WEBVIEW trapmgr radCli ldapClientCmm tacClientCmm healthCmm
svcCmm lldpCmm udldCmm mpls saaCmm SNMP csEventMonitor
bfdcmm mvrpCmm dhcp6r messageService dhcpv6Srv dhcpSrv grm
bcdcmm lpCmm DG_CMM qmrCmm iprm_0 vrrp_0 ospf_0 flashManagerNI
capManNi vcmNi portMgrNi bcd vfcn intfNi dafcNi linkAggNi
VlanMgrNi stpNi erpNi vstkNi fdbmgr1 slNi healthNi ipni ip6ni
mirMonSFlowNi tcamni qosNi ipmsni svcNi lldpNi udldNi
bfdni mvrpNi AGNI DG_NI nipktrly loamNi eoamNi fdbmgr4 lpNi
fdbmgr3
```

```
-> swlog appid udprelay library ?
^
ALL <string>
plApi cslib pmdlib reactor capManLib SMAL BRUT
mcipc vfcLib vcmLib SysServices portmgrlibcmm
tcamlibcmm esmLib ipms_client ipmc_idx
mirApiLibCMM ipcmmLib qos mpls score routemap
```

```
-> swlog appid udprelay subapp ?
^
ALL <num> <string>
1=main 2=dhcp-snooping 3=tcam
```

```
-> swlog appid udprelay exclude ?
^
ALL <num> <string>
1=main 2=dhcp-snooping 3=tcam
```

## Release History

Release 5.1; command was introduced.

## Related Commands

<b>swlog</b>	Enables or disables switch logging.
<b>swlog output</b>	Enables or disables switch logging output to the console, file, or data socket.
<b>show log swlog</b>	Displays stored switch logging information from flash.
<b>show swlog</b>	Displays switch logging information.
<b>swlog console level</b>	Allows to set the switch logs of different levels to be displayed on the console. All application events of defined level and lower are displayed on the console.

## MIB Objects

```
systemSwitchLogging
  systemSwitchLoggingAppName
  systemSwitchLoggingLibraryName
  systemSwitchLoggingLevel
```

---

## swlog output

Enables or disables switch logging output to the console, file, data socket (remote session), or external syslog server.

```
swlog output {tty {enable | disable} | console | flash | socket {ip_address | ipv6Address | domain_name}
[tls] [remote command-log] [vrf-name name]}
```

```
no swlog output {console | flash | socket {ip_address | ipv6Address | domain_name}}
```

---

### Syntax Definitions

<b>tty enable</b>	Enables switch logging to a connected Telnet session.
<b>tty disable</b>	Disables switch logging to a connected Telnet session.
<b>console</b>	Specifies console output. When enabled, switch logging output is printed to the user console.
<b>flash</b>	Specifies /flash file output. When enabled, switch logging output is printed to a file in the switch's /flash file system.
<b>socket</b>	Specifies data socket output. When enabled, switch logging output is printed to a remote session.
<i>ip_address</i>	The IPv4 address for the remote session host.
<i>ipv6Address</i>	The IPv6 address for the remote session host.
<i>domain_name</i>	A Fully Qualified Domain Name (FQDN) for the remote session host. Specify a domain name up to 128 characters in length.
<b>tls</b>	Enables or disables syslog over TLS.
<b>remote command-log</b>	Enables command logging to a remote session host.
<i>name</i>	Specifies the VRF to be used to access the remote syslog server.

### Defaults

parameter	default
console   flash   socket	flash and console

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- Use the **no** form of this command to disable one or more configured output IP addresses.
- This command can also be used on the secondary CMM.
- Use the **socket** keyword to send output to a syslog server, followed by the IP address or FQDN of the remote host. Up to 12 servers can be configured. When an FQDN is specified, the switch will resolve the domain name to an IP address. Make sure the domain name maps to a valid and reachable IP address.

- Syslog over TLS:
  - Remote command log will not work when syslog over TLS is enabled.
  - VRF cannot be used to access the syslog server when syslog over TLS is enabled.
  - Dying Gasp syslog messages are not captured in syslog over TLS.
  - Use the **no** form of the command to disable syslog over TLS.
- VRF name must either be 'default' or a pre-defined VRF (user-defined).

## Examples

```
-> swlog output console
-> no swlog output flash
-> swlog output socket 14.1.1.1
-> swlog output socket 14.1.1.1 remote command-log
-> swlog output socket 14.1.1.1 vrf-name vrf1
-> no swlog output socket 14.1.1.1

-> swlog output socket upam.omnivista.com
-> swlog output socket upam.omnivista.com remote command-log
-> swlog output socket upam.omnivista.com vrf-name vrf1
-> no swlog output socket upam.omnivista.com
-> swlog output socket opendaylight.com
ERROR: DNS lookup failed, unknown host opendaylight.com
-> swlog output socket 192.168.120.140 tls
-> swlog output socket 2001::1 tls
-> no swlog output socket 2001::1
```

## Release History

Release 5.1; command was introduced.

## Related Commands

<a href="#">swlog</a>	Enables or disables switch logging.
<a href="#">swlog appid</a>	Defines the level at which switch logging information will be filtered for the specified application.
<a href="#">show log swlog</a>	Displays stored switch logging information from flash.
<a href="#">show swlog</a>	Displays switch logging information.



## MIB Objects

```
systemSwitchLogging
  systemSwitchLoggingTty
  systemSwitchLoggingFlash
  systemSwitchLoggingSocket
  systemSwitchLoggingSocketIpAddr
  systemSwitchLoggingConsole
systemSwitchLoggingHostTable
  systemSwitchLoggingHostIpAddr
  systemSwitchLoggingHostPort
  systemSwitchLoggingHostStatus
  systemSwitchLoggingHostUserCommandHost
  systemSwitchLoggingHostVrfName
systemSwitchLoggingHostDnTable
  systemSwitchLoggingHostDnName
  systemSwitchLoggingHostDnPort
  systemSwitchLoggingHostDnUserCommandHost
  systemSwitchLoggingHostDnVrfName
  systemSwitchLoggingHostDnStatus
  systemSwitchLoggingHostTls
```

---



## swlog advanced

Enable or disable switch logging in RFC5424 format.

**swlog advanced** {enable | disable}

---

### Syntax Definitions

**enable** Enable switch logging in RFC5424 format.  
**disable** Disable switch logging in RFC5424 format.

### Defaults

parameter	default
enable   disable	disable

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- By default, the switch logs the messages in BSD syslog format (RFC3164) to files and remote syslog servers.
- When switch logging RFC5424 format is enabled, the old RFC3164 syslog messages are reformatted to comply with the RFC5424 before writing to files or sending to remote syslog servers.

### Examples

```
-> swlog advanced enable  
-> swlog advanced disable
```

### Release History

Release 5.1; command introduced.

### Related Commands

[show swlog](#) Displays switch logging information.

### MIB Objects

systemSwitchLoggingSyslogProtocol

---

## swlog size-trap-threshold

Configures the threshold limit of the storage space used for swlog record storage. When the storage reaches the configured threshold limit a notification is displayed in the swlog message.

**swlog size-trap-threshold** *threshold*

---

### Syntax Definitions

*threshold* The percentage of storage space to be set as threshold limit. The valid range is 50–90.

### Defaults

parameter	default
<i>threshold</i>	90

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- Use this command to configure the threshold limit of the storage space used for swlog record storage.
- Use the [swlog clear](#) command to clear the files that store switch logging data.

### Examples

```
-> swlog size-trap-threshold 90
```

### Release History

Release 5.1; command introduced.

### Related Commands

<a href="#">swlog clear</a>	Clears the files that store switch logging data.
<a href="#">show log swlog</a>	Displays stored switch logging information from flash.
<a href="#">show swlog</a>	Displays switch logging information.

### MIB Objects

systemSwitchLoggingSizeTrapThreshold

---

## swlog clear

Clears the files that store switch logging data.

**swlog clear [all]**

---

### Syntax Definitions

**all** Clears all the contents of the switch log file.

### Defaults

By default, the contents of the switch log file is cleared but the event logs are retained.

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- Use this command when the switch logging display is too long due to some of the data being old or out of date.
- This command can also be used on the secondary CMM.
- To clear all the contents including the event log use the “**all**” parameter with swlog clear command.

### Examples

```
-> swlog clear  
-> swlog clear all
```

### Release History

Release 5.1; command was introduced.

### Related Commands

<a href="#">swlog output</a>	Enables or disables switch logging output to the console, file, or data socket.
<a href="#">show log swlog</a>	Displays stored switch logging information from flash.
<a href="#">show swlog</a>	Displays switch logging information.

### MIB Objects

```
systemSwitchLogging  
  systemSwitchLoggingClear
```

---

## show log swlog

Displays stored switch logging information.

**show log swlog**

**show log swlog [timestamp *mm/dd/yyyy hh:mm:ss*] [slot *num*]**

---

### Syntax Definitions

*mm/dd/yyyy hh:mm:ss*

Specify the starting time for the switch logging information to be displayed. Use the format *mm/dd/yyyy hh:mm:ss* where *mm* represents the month, *dd* is the day, *yyyy* is the year, *hh* is the hour, *mm* is the minutes and *ss* is the seconds. Use four digits to specify the year.

*num*

The slot number to display the logging information for. *Currently not supported.*

### Default

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- When the switch logging display is too long, you may use the **swlog advanced** command to clear all of the switch logging information.
- The use of **grep** and the **timestamp** parameter can be used to filter the log files.
- When the switch is in ASA enhanced mode, both user name and password is prompted to view the SWLOG data using **show log swlog** command. Only those users who provide the valid ASA credentials are allowed to view the data.

### Examples

```
-> show log swlog timestamp 09/30/2011 13:27:00
Displaying file contents for '/flash/swlog.6'
Displaying file contents for '/flash/swlog.5'
<output truncated>
```

```
Sep 30 13:27:16 Chassis local0.info swlogd: ChassisSupervisor fan & temp Mgr
info(5) Alert: PS1 airFlow unknown yet- duplicated 5 times!
```

```
-> show log swlog | grep ChassisSupervisor
Displaying file contents for '/flash/swlog.6'
Displaying file contents for '/flash/swlog.5'
<output truncated>
```

```
Sep 28 13:25:15 Chassis local0.info swlogd: ChassisSupervisor fan & temp Mgr
info(5) Alert: PS1 airFlow unknown yet- duplicated 5 times!
```

```
Sep 30 13:26:16 Chassis local0.info swlogd: ChassisSupervisor fan & temp Mgr
info(5) Alert: PS1 airFlow unknown yet- duplicated 5 times!
```

```
Sep 30 13:27:16 Chassis local0.info swlogd: ChassisSupervisor fan & temp Mgr
info(5) Alert: PS1 airFlow unknown yet- duplicated 5 times!
```

When the switch is in ASA enhanced mode, both user name and password is prompted to view the SWLOG data using **show log swlog** command.

```
-> show log swlog
Username: test
Password:  *****
```

**show log swlog | grep error** and **show log swlog | grep more** commands are not supported in enhanced mode.

## Release History

Release 5.1; command was introduced.

## Related Commands

<a href="#">swlog</a>	Enables or disables switch logging.
<a href="#">swlog appid</a>	Adds or removes a filter level for a specified subsystem.
<a href="#">swlog output</a>	Enables or disables switch logging output to the console, file, or data socket.
<a href="#">swlog advanced</a>	Clears the files that store switch logging data.
<a href="#">show swlog</a>	Displays switch logging information.

## MIB Objects

N/A

---

## show swlog

Displays switch logging information (for example, switch logging status, log devices, application IDs with non-default severity level settings).

**show swlog [library | appid {all | string} | dying-gasp-station]**

---

### Syntax Definitions

<b>library</b>	Displays the entire library for all application IDs.
<i>string</i>	The name of the application ID to display. Enter a question mark (?) on the command line to get a list of application IDs.
<b>dying gasp-station</b>	Displays switch logging information for Dying Gasp entries.

### Defaults

By default, the switch logging configuration for the switch is displayed.

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

This command can also be used on the secondary CMM.

### Examples

```
-> show swlog
Operational Status           : Running,
File Size per file           : 1250 Kbytes,
Log Device 1                  : console flash socket,
Log Device 2                  : ipaddr 10.2.2.1 remote command-log,
Syslog FacilityID            : local0(16),
Hash Table entries age limit : 60 seconds,
Switch Log Preamble          : Enabled,
Switch Log Debug              : Disabled,
Switch Log Duplicate Detection : Enabled,
Console Display Level         : debug1,
RFC5424 Format Logging        : Enabled,
Swlog Threshold               : 90 percent
Syslog over TLS               : Enabled

-> show swlog appid udprelay
Operational Status           : Running,
File Size per file           : 1500 Kbytes,
Log Device 1                  : console flash,
Log Device 2                  : upam.omnivista.com remote command-log,
Syslog FacilityID            : local0(16),
Hash Table entries age limit : 60 seconds,
Switch Log Preamble          : Enabled,
Switch Log Debug              : Disabled,
Switch Log Duplicate Detection : Enabled,
Console Display Level         : debug1,
```



```

RFC5424 Format Logging          : Disabled,
Application Name(id)           : udpRelay(38),
SubAppl ID Sub Application Name Level          VRF Level
-----+-----+-----+-----+-----+-----
      1 main                    info      VRF  1-1024 info
      2 dhcp-snooping           info      VRF  1-1024 info
      3 tcam                    info      VRF  1-1024 info

-> show swlog dying-gasp-station
Operational Status             : Running,
Log Device                     : console flash,
Log Device                     : ipaddr 10.2.2.1 remote command-log,
Syslog FacilityID             : local0(16)

```

**output definitions**

<b>Operational Status</b>	Displays whether switch logging is enabled or disabled.
<b>File Size per file</b>	The maximum file size of the switch log file.
<b>Log Device</b>	Which devices are the switch log messages being sent to.
<b>Log Device</b>	Which devices are the switch log messages being sent to.
<b>Syslog FacilityID</b>	The Facility ID value that is included in the priority (PRI) section of the event messages.
<b>Hash Table entries age limit</b>	The elapsed time for duplicate entries.
<b>Switch Log Preamble</b>	Status of displaying message preamble on console.
<b>Switch Log Debug</b>	Status of swlog debug.
<b>Switch Log Duplicate Detection</b>	Status of duplicate detection.
<b>Console Display Level</b>	The console severity level.
<b>RFC5424 Format Logging</b>	Displays if switch logging in RFC5424 format is enabled or disabled.
<b>Swlog Threshold</b>	Displays the configured threshold limit for swlog record storage.
<b>Syslog over TLS</b>	Displays the operational status of syslog over TLS.
<b>Application Name(id)</b>	The subsystem information for the Application ID.

```

-> show swlog appid ?
      ^
      ALL <string>
      SWLOG PMD ChassisSupervisor flashManager MIP_GATEWAY
      ConfigManager capManCmm vc_licManager vcmCmm SSTYPE SSAPP
      mrvld capManSig fabric portMgrCmm vfcM intfCmm dafcCmm
      linkAggCmm VlanMgrCmm ipmscmm pvlanCmm isis_spb_0 isisVc
      stpCmm AGCMM slCmm mirMonSFlowCmm ipv4 ipv6 ipsecSys ipsec
      tcamCmm qosCmm vstkCmm eoamCmm erpCmm NTP udpRelay
      remoteConfig AAA havlanCmm SES rmon WEBVIEW trapmgr radCli
      ldapClientCmm tacClientCmm healthCmm svcCmm lldpCmm udldCmm
      mpls saaCmm SNMP csEventMonitor bfdcmm mvrpCmm
      dhcp6r messageService dhcpv6Srv dhcpSrv grm bdcmm lpCmm
      DG_CMM qmrCmm iprm_0 vrrp_0 ospf_0 flashManagerNI capManNi
      vcmNi portMgrNi bcd vfcn intfNi dafcNi linkAggNi VlanMgrNi
      stpNi erpNi vstkNi fdbmgr1 slNi healthNi ipni ip6ni
      mirMonSFlowNi tcamni qosNi ipmsni svcNi lldpNi udldNi
      bfdni mvrpNi AGNI DG_NI nipktrly loamNi eoamNi fdbmgr4 lpNi
      fdbmgr3

```

## Release History

Release 5.1; command was introduced.

## Related Commands

<b>swlog</b>	Enables or disables switch logging.
<b>swlog syslog-facility-id</b>	Configures the value of the facility ID that switch logging includes in the priority (PRI) section of the event message.
<b>swlog appid</b>	Defines the level at which switch logging information will be filtered for the specified application.
<b>swlog output</b>	Enables or disables switch logging output to the console, file, or data socket.
<b>swlog output flash-file-size</b>	Configures the size of the switch logging file.
<b>swlog size-trap-threshold</b>	Configures the threshold limit of the storage space used for swlog record storage.
<b>show log swlog</b>	Displays stored switch logging information from flash.
<b>show log events</b>	Displays customer event logs on the switch.
<b>show log events output</b>	Captures all event log to a specified file name on the switch.

## MIB Objects

```

systemSwitchLogging
  systemSwitchLoggingEnable
  systemSwitchLoggingPreamble
  systemSwitchLoggingHashAgeLimit
  systemSwitchLoggingDuplicateDetect
  systemSwitchLoggingConsoleLevel
  systemSwitchLoggingGmtTime
  systemSwitchLoggingSysLogFacilityId
  systemSwitchLoggingAppName
  systemSwitchLoggingLibraryName
  systemSwitchLoggingLevel
  systemSwitchLoggingTty
  systemSwitchLoggingFlash
  systemSwitchLoggingSocket
  systemSwitchLoggingSocketIpAddr
  systemSwitchLoggingConsole
  systemSwitchLoggingFileSize
  systemSwitchLoggingSyslogProtocol
  systemSwitchLoggingSizeTrapThreshold
systemSwitchLoggingHostTable
  systemSwitchLoggingHostIpAddr
  systemSwitchLoggingHostPort
  systemSwitchLoggingHostStatus
  systemSwitchLoggingHostUserCommandHost
  systemSwitchLoggingHostVrfName
  systemSwitchLoggingHostTls
systemSwitchLoggingDgHostTable
  systemSwitchLoggingDgHostIndex
  systemSwitchLoggingDgHostIpType
  systemSwitchLoggingDgHostIpAddr

```

## swlog console level

Allows to set the switch logs of different levels to be displayed on the console. All application events of defined level and lower are displayed on the console.

**swlog console level** {*num* | **alarm** | **alert** | **debug1** | **debug2** | **debug3** | **error** | **info** | **off** | **warning** }

---

### Syntax Definitions

<b>console level</b> <i>num</i>	The severity level filter keyword or numeric value for the application ID. (see table for <a href="#">swlog appid</a> command).
<b>alarm</b>	Sets the log level to display highest severity. (The system is about to crash and reboot)
<b>alert</b>	Sets the log level to display on console when a violation has occurred.
<b>debug1</b>	Sets the log level to display normal event debug message to be displayed on console.
<b>debug2</b>	Sets the log level to display a debug-specific message to be displayed on console.
<b>debug3</b>	Sets the log level to display all debug messages on the console.
<b>error</b>	Sets the log level to display on console when system functionality is reduced.
<b>info</b>	Sets the log level to display any other non-debug message on the console.
<b>off</b>	Sets the log level as disabled. No logs are displayed on the console.
<b>warning</b>	Sets the log level to display on console when an unexpected, non-critical event has occurred.

### Defaults

parameter	default
console level <i>num</i>	6 (info)

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- Use the [show swlog](#) command to display the console display level.

### Examples

```
-> swlog console level 5
-> swlog console level info
```

### Release History

Release 5.1; command was introduced.

## Related Commands

<b>swlog appid</b>	Defines the level at which switch logging information will be filtered for the specified application.
<b>swlog output</b>	Enables or disables switch logging output to the console, file, or data socket.
<b>show log swlog</b>	Displays stored switch logging information from flash.
<b>show swlog</b>	Displays switch logging information.
<b>show log events</b>	Displays customer event logs on the switch.
<b>show log events output</b>	Captures all event log to a specified file name on the switch.

## MIB Objects

```
systemSwitchLogging  
  systemSwitchLoggingConsoleLevel
```

---

## show log events

Displays customer event logs on the switch.

**show log events**

---

### Syntax Definitions

N/A

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

Use this command to display customer event logs.

### Examples

```
-> show log events
2019 Apr 28 19:17: 8.83 : CMM : ChassisSupervisor : chassisTrapsAlert - CERTIFY w/
FLASH SYNCHRO process started
2019 Apr 28 19:17:32.697 : CMM : ChassisSupervisor : chassisTrapsAlert - CERTIFY
process completed successfully
2019 Apr 28 19:21:33.154 : CMM : ChassisSupervisor : chassisTrapsAlert - ACTIVATE
process scheduled
2019 Apr 28 19:21:57.462 : CMM : ChassisSupervisor : System Reboot
2019 Apr 28 19:25:25.302 : CMM : ChassisSupervisor : chassisTrapsAlert - Power
supply is OK
2019 Apr 28 19:25:25.303 : CMM : ChassisSupervisor : The switch was restarted by
the user
2019 Apr 28 19:25:25.304 : CMM : ChassisSupervisor : chassisTrapsAlert - CMM
startup completed
```

### *output definitions*

---

The log output is in the following format:

<SWLOG\_TIMESTAMP> : <CMM>/<NI> : <MODULE\_NAME> : <LOG\_DESCRIPTION>

---

### Release History

Release 5.1; command was introduced.

**Related Commands****show log events output**

Captures all event log to a specified file name on the switch.

**swlog output**

Enables or disables switch logging output to the console, file, or data socket.

**show log swlog**

Displays stored switch logging information from flash.

**show swlog**

Displays switch logging information.

**MIB Objects**N/A

---

## show log events output

Captures all event log to a specified file name on the switch.

`show log events output filename`

---

### Syntax Definitions

N/A

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- Use this command to capture all event log to a filename.
- All the logs related to customer events will be appended “CUSTLOG” to the prefix to differentiate events from normal debug logs.

### Examples

```
-> show log events output /flash/myevents
```

### Release History

Release 5.1; command was introduced.

### Related Commands

<a href="#">show log events</a>	Displays customer event logs on the switch.
<a href="#">swlog output</a>	Enables or disables switch logging output to the console, file, or data socket.
<a href="#">show log swlog</a>	Displays stored switch logging information from flash.
<a href="#">show swlog</a>	Displays switch logging information.

### MIB Objects

N/A

---





# 27 Health Monitoring Commands

The Health Monitoring function monitors the consumable resources of the switch (for example, bandwidth usage, CPU usage) and provides a single integrated resource for a Network Management System (NMS). This function monitors the switch, and at fixed intervals, collects the current values for each resource being monitored. Users specify resource threshold limits and traps are sent to an NMS if a value falls above or below a user-specified threshold.

The Health Monitoring commands comply with RFC1212.

MIB information for the Health Monitoring commands is as follows:

*Filename:* ALCATEL-IND1-HEALTH-MIB.mib  
*Module:* alcatelIND1HealthMonitorMIB

A summary of the available commands is listed here:

---

**health threshold**  
**health interval**  
**show health configuration**  
**show health**  
**show health all**

---

## health threshold

Configures thresholds for input traffic (RX), output/input traffic (TX/RX), memory usage, CPU usage, and flash usage.

Input traffic, output/input traffic, memory usage, and CPU usage thresholds specify the maximum percentage for each resource that may be consumed before a trap is sent to the user.

**health threshold** {*rx percent* | *txrx percent* | **memory percent** | **cpu percent** | **flash percent**}

---

### Syntax Definitions

<b>rx</b>	Specifies the maximum input (RX) traffic threshold.
<b>txrx</b>	Specifies the maximum output/input (TX/RX) traffic threshold.
<b>memory</b>	Specifies the maximum RAM memory usage threshold.
<b>cpu</b>	Specifies the maximum CPU usage threshold.
<b>flash</b>	Specifies the maximum flash usage threshold.
<i>percent</i>	The new threshold value, in percent, for the corresponding resource ( <b>rx</b> , <b>txrx</b> , <b>memory</b> , <b>cpu</b> , <b>flash</b> ). The valid range is 1–100.

### Defaults

---

<b>parameter</b>	<b>default</b>
<i>percentage</i>	80

---

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- When a resource falls back below the configured threshold, an additional trap is sent to the user. This indicates that the resource is no longer operating beyond its configured threshold limit.
- Changing a threshold value sets the value for all levels of the switch (the switch, module, and port). You cannot set different threshold values for each level.
- For detailed information on each threshold type, refer to [page 27-5](#).
- To view the current health threshold values, use the [show health configuration](#) command.

## Examples

```
-> health threshold rx 85
-> health threshold txrx 55
-> health threshold memory 95
-> health threshold cpu 85
```

## Release History

Release 5.1; command introduced.

## Related Commands

[show health configuration](#)      Displays the current health threshold settings.

## MIB Objects

```
HealthThreshInfo
  healthThreshDeviceRxLimit
  healthThreshDeviceTxRxLimit
  healthThreshDeviceMemoryLimit
  healthThreshDeviceCpuLimit
  healthThreshFlashLimit
```

---

## health interval

Configures the sampling interval between health statistics checks. The sampling interval is the time interval between polls of the consumable resources of the switch to see if it is performing within set thresholds.

**health interval** *seconds*

---

### Syntax Definitions

*seconds* Sampling interval (in seconds). Valid entries are 10, 12, 15, 20, 30.

### Defaults

parameter	default
<i>seconds</i>	10

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

Decreasing the polling interval may impact switch performance.

### Examples

```
-> health interval 20
```

### Release History

Release 5.1; command introduced.

### Related Commands

[show health](#) Displays the current health sampling interval.

### MIB Objects

HealthThreshInfo  
healthSamplingInterval

---

## show health configuration

Displays current health configuration settings.

**show health configuration**

---

### Syntax Definitions

N/A

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

N/A

### Examples

```
-> show health configuration
Rx Threshold                = 80,
TxRx Threshold              = 80,
CPU Threshold               = 80,
Memory Threshold           = 80,
Flash Threshold             = 80,
Sampling Interval (Secs)    = 10
```

### *output definitions*

---

#### **Rx Threshold**

The current device input (RX) threshold. This value displays the maximum percentage of total bandwidth allowed for *incoming traffic* on the switch. The total bandwidth is defined as the Ethernet port capacity for all NI modules currently operating in the switch, in Mbps. For example, a chassis with 48 100Base-T Ethernet ports installed has a total bandwidth of 4800 Mbps. The default value is 80 percent and can be changed using the [health threshold](#) command.

#### **TxRx Threshold**

The current device output/input (TX/RX) threshold. This value displays the maximum percentage of total bandwidth allowed for *all incoming and outgoing traffic*. As with the RX threshold described above, the total bandwidth is defined as the Ethernet port capacity for all the NI modules currently operating in the switch, in Mbps. The default value is 80 percent and can be changed using the [health threshold](#) command.

#### **CPU Threshold**

Displays the current CPU usage threshold. CPU usage refers to the total amount of CPU processor capacity currently used by switch applications. The default value is 80 percent and can be changed using the [health threshold](#) command.

**output definitions (continued)**

---

<b>Memory Threshold</b>	Displays the current memory usage threshold. Memory usage refers to the total amount of RAM memory currently used by switch applications. The default value is 80 percent and can be changed using the <b>health threshold</b> command.
<b>Flash Threshold</b>	Displays the current flash usage threshold. The default value is 80 percent and can be changed using the <b>health threshold</b> command.
<b>Sampling Interval</b>	Displays the sampling interval time period in seconds. Sampling interval can be changed using the <b>health interval</b> command.

---

**Release History**

Release 5.1; command introduced.

**Related Commands**

<b>health threshold</b>	Configures thresholds for input traffic (RX), output/input traffic (TX/RX), memory usage and CPU usage.
<b>health interval</b>	Configures the sampling interval between health statistics checks.

**MIB Objects**

```
HealthThreshInfo
  healthThreshDeviceRxLimit
  healthThreshDeviceTxRxLimit
  healthThreshDeviceMemoryLimit
  healthThreshDeviceCpuLimit
```

---

## show health

Displays the health statistics for the switch. Statistics are displayed as percentages of total resource capacity and represent data taken from the last sampling interval.

**show health** [*port chassis/slot/port* | *slot chassis/slot*[-*slot2*]] [*statistics*]

---

### Syntax Definitions

<i>chassis</i>	The chassis identifier.
<i>slot/port</i>	To view a specific port, enter the slot and port number (3/1) along with the <b>port</b> keyword (port 3/1).
<i>slot</i> [- <i>slot2</i> ]	To view a series of slots, enter the range of slot numbers along with the <b>slot</b> keyword (1-10).
<i>statistics</i>	Optional command syntax. It displays the same information as the <b>show health</b> command.

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

If no slot or port information is specified, the aggregate health statistics for all ports is displayed.

### Examples

```
-> show health
CMM                Current    1 Min    1 Hr    1 Day
Resources          Avg      Avg      Avg      Avg
-----+-----+-----+-----+-----
CPU                0        0        0        0
Memory            30       30       24       24
```

```
-> show health port 1/1/24
Port 1/1/24      Limit  Current  1 Min    1 Hr    1 Day
Resources        Avg     Avg      Avg      Avg
-----+-----+-----+-----+-----
Receive          80     01       01       01       01
Transmit/Receive 80     01       01       01       01
```

### output definitions

---

<b>Receive</b>	Traffic received by the switch.
<b>Transmit/Receive</b>	Traffic transmitted and received by the switch.
<b>Memory</b>	Switch memory.
<b>CPU</b>	Switch CPU.

*output definitions (continued)*


---

<b>Limit</b>	Currently configured device threshold levels.
<b>Curr</b>	Current device bandwidth usage.
<b>1 Min Avg</b>	Average device bandwidth usage over a 1-minute period.
<b>1 Hr Avg</b>	Average device bandwidth usage over a 1-hour period.
<b>1 Hr Max</b>	Maximum device bandwidth usage over a 1-hour period (the maximum of the 1 minute averages).

---

**Release History**

Release 5.1; command introduced.

**Related Commands**

[show health all](#) Displays health statistics for a specified resource on *all* NIs currently operating in the chassis.

**MIB Objects**

```
healthModuleTable
  healthModuleSlot
  healthModuleRxLatest
  healthModuleRx1MinAvg
  healthModuleRx1HrAvg
  healthModuleRx1HrMax
  healthModuleRxTxLatest
  healthModuleRxTx1MinAvg
  healthModuleRxTx1HrAvg
  healthModuleRxTx1HrMax
  healthModuleMemoryLatest
  healthModuleMemory1MinAvg
  healthModuleMemory1HrAvg
  healthModuleMemory1HrMax
  healthModuleCpuLatest
  healthModuleCpu1MinAvg
  healthModuleCpu1HrAvg
  healthModuleCpu1HrMax
```

---



## show health all

Displays health statistics for a specified resource on all *active NI modules* installed in the chassis.

**show health all {memory | cpu | rx | txrx}**

---

### Syntax Definitions

<b>memory</b>	Displays the RAM memory health statistics for all active NI modules in the switch.
<b>cpu</b>	Displays the CPU health statistics for all active NI modules.
<b>rx</b>	Displays the health statistics for traffic <i>received</i> on all active NI modules.
<b>txrx</b>	Displays the health statistics for traffic both <i>transmitted and received</i> on all active NI modules.

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

N/A

### Examples

```
-> show health all memory
```

```
* - current value exceeds threshold
```

Memory	Curr	1 Min Avg	1 Hr Avg	1 Hr Max
01	40	40	40	40
02	40	40	40	40
03	40	40	40	40
04	40	40	40	40
05	40	40	40	40
06	40	40	40	40
07	40	40	40	40
13	40	40	40	40

*output definitions*


---

<b>Memory (Cpu, TXX, RX)</b>	A list of all currently-active NI modules (i.e., active slots) on the switch. The column header corresponds with the resource keyword entered. For example, if <b>show health all cpu</b> is entered, <b>Cpu</b> is used as the column header.
<b>Curr</b>	Current usage of the resource on the corresponding slot, in percent (the amount of the total resource bandwidth actually being used by the switch applications).
<b>1 Min Avg</b>	Average usage of the resource on the corresponding slot over a one minute period.
<b>1 Hr Avg</b>	Average usage of the resource on the corresponding slot over a one hour period.
<b>1 Hr Max</b>	The highest average hourly usage for the resource on the corresponding slot.

---

**Release History**

Release 5.1; command introduced.

**Related Commands**

<a href="#">show health</a>	Displays the health statistics for the switch.
<a href="#">health threshold</a>	Configures thresholds for input traffic (RX), output/input traffic (TX/RX), memory usage, and CPU usage.

**MIB Objects**

```
healthModuleTable
  healthModuleSlot
  healthModuleRxLatest
  healthModuleRx1MinAvg
  healthModuleRx1HrAvg
  healthModuleRx1HrMax
  healthModuleRxTxLatest
  healthModuleRxTx1MinAvg
  healthModuleRxTx1HrAvg
  healthModuleRxTx1HrMax
  healthModuleMemoryLatest
  healthModuleMemory1MinAvg
  healthModuleMemory1HrAvg
  healthModuleMemory1HrMax
  healthModuleCpuLatest
  healthModuleCpu1MinAvg
  healthModuleCpu1HrAvg
  healthModuleCpu1HrMax
```

---

# 28 CMM Commands

The Chassis Management Module (CMM) CLI commands permit you to manage switch software files on the CMM.

MIB information for the CMM commands is as follows:

*Filename:* ALCATEL-IND1-CHASSIS-MIB.mib  
*Module:* alcatelIND1ChassisMIB

*Filename:* ALCATEL-IND1-CONFIG-MGR-MIB DEFINITIONS.mib  
*Module:* alcatelIND1ConfigMgrMIB

A summary of available commands is listed here:

---

**reload secondary**  
**reload all**  
**reload from**  
**write memory**  
**reload chassis-id**  
**copy certified**  
**copy running certified**  
**modify running-directory**  
**show running-directory**  
**show reload**  
**show microcode**  
**usb**  
**usb backup admin-state**  
**usb auto-copy**  
**mount**  
**umount**  
**show usb statistics**  
**auto-config-abort**  
**image integrity check**  
**image integrity get-key**

---

## reload secondary

Reloads the secondary CMM from the *certified* directory.

**reload** [*chassis-id chassis*] **secondary** [*in* [*hours:*] *minutes* | *at* *hour:minute* [*month day* | *day month*]]

**reload secondary cancel**

---

### Syntax Definitions

<i>chassis</i>	The chassis identifier.
<i>in</i> [ <i>hours:</i> ] <i>minutes</i>	Optional syntax. Schedules a reload of the software to take effect in the time. The time can be specified in minutes or hours and minutes within the next 24 hours.
<i>at</i> <i>hour:minute</i>	Optional syntax. Schedules a reload of the software to take place at the specified time using a 24-hour clock. If you do not specify the month and day, the reload takes place at the specified time on the current day provided the specified time is later than the time when the CLI command is issued. If the specified time is earlier than the current time, the reload takes place on the following day.
<i>month day</i>   <i>day month</i>	The name of the month and the number of the day for the scheduled reload. Specify a month name and the day number. See examples below for further explanation.
<b>cancel</b>	Cancels a pending time delayed reboot.

### Defaults

N/A

### Platforms Supported

Not supported in this release.

### Usage Guidelines

- Can be issued from both primary or secondary CMM.
- Reloads the secondary CMM only, the Primary CMM remains operational.

### Examples

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

### Release History

Release 5.1; command not supported.

## Related Commands

**reload from** Reloads both CMMs from the specified directory.

## MIB Objects

```
chasEntPhysicalTable
  csEntPhysicalIndex
  chasEntPhysAdminStatus
chasControlRedundantTable
  chasControlDelayedRebootTimer
```

---

## reload all

Reloads both Chassis Management Modules (CMMs) from the *certified* directory.

**reload** [**chassis-id** *chassis*] **all** [**in** [*hours:*] *minutes* | **at** *hour:minute* [*month day* | *day month*]]

**reload all cancel**

---

### Syntax Definitions

<i>chassis</i>	The chassis identifier.
<b>in</b> [ <i>hours:</i> ] <i>minutes</i>	Optional syntax. Schedules a reload of all modules to take effect in the specified minutes or hours and minutes within the next 24 hours.
<b>at</b> <i>hour:minute</i>	Optional syntax. Schedules a reload of all modules to take place at the specified time using a 24-hour clock. If you do not specify the month and day, the reload takes place at the specified time on the current day provided the specified time is later than the time when the CLI command is issued. If the specified time is earlier than the current time, the reload takes place on the following day.
<i>month day</i>   <i>day month</i>	The name of the month and the number of the day for the scheduled reload. Specify a month name and the day number. It is unimportant if the month or day is first. See examples below for further explanation.
<b>cancel</b>	Cancels a pending time delayed reload.

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

Can be issued from the Primary CMM only.

### Examples

```
-> reload all
-> reload all in 1:30
-> reload all at 12:00 july 25
```

### Release History

Release 5.1; command introduced.

## Related Commands

### [reload chassis-id](#)

Reloads the specified chassis ID when running in virtual chassis mode.

## MIB Objects

chasEntPhysicalTable

    chasEntPhysAdminStatus

chasGlobalControl

    chasGlobalControlDelayedResetAll

---

## reload from

Reloads both CMMs from the specified directory. There is no CMM failover during this reboot, causing a loss of switch functionality during the reboot. All the NIs and the secondary CMM will reload.

**reload** [**chassis-id** *chassis*] **from** *image\_dir* {**rollback-timeout** *minutes* | **no rollback-timeout** [**in** [*hours:*] *minutes* | **at** *hour:minute*] [**redundancy-time** *minutes*]}

---

### Syntax Definitions

<i>chassis</i>	The chassis identifier when running in virtual chassis mode.
<i>image_dir</i>	The directory that contains the image files to be loaded onto the switch.
<b>rollback-timeout</b> <i>minutes</i>	Sets a timeout period, in minutes. The switch immediately reboots from the specified directory. At the end of this time period, the switch automatically reboots again from the <i>certified</i> directory. The valid range of rollback timeout minutes is 1–15.
<b>no rollback-timeout</b>	Specifies no timeout to rollback. If the command is issued with this keyword, then the switch continues to run from the specified directory until manually rebooted.
<b>in</b> [ <i>hours:</i> ] <i>minutes</i>	Optional syntax. Schedules a reload of the to take effect in the specified minutes or hours and minutes within the next 24 hours.
<b>at</b> <i>hour:minute</i>	Optional syntax. Schedules a reload to take place at the specified time using a 24-hour clock. If you do not specify the month and day, the reload takes place at the specified time on the current day provided the specified time is later than the time when the CLI command is issued. If the specified time is earlier than the current time, the reload takes place on the following day.
<b>redundancy-time</b> <i>minutes</i>	Specifies the time period in minutes that the switch must run without failure. If a failure occurs within this time period, the switch will reboot from the <i>certified</i> directory.

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- Can be issued from Primary CMM only.
- This command is used to reload the switch from the specified directory.
- A file verification will be performed before rebooting to ensure all necessary files are present and valid. An error message will be displayed describing any issues found.
- The image directory reload takes place immediately unless a time frame is set using the **in** or **at** keywords.



- If a rollback-timeout is set, the switch reboots again after the set number of minutes, from the **certified** directory. The reboot can be halted by issuing a cancel order as described in the **reload all** command.
- If the **redundnacy-time** parameter is entered, any reboot of the Primary CMM prior to the redundancy timer expiring will cause the switch to reboot. If the Primary CMM reboots after the redundancy timer expires, the secondary CMM will take over without a reboot.

## Examples

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

## Release History

Release 5.1; command introduced.

## Related Commands

**reload all** Reboots both CMMs from the *certified* directory.

## MIB Objects

```
chasControlModuleTable
  chasControl
  chasControlVersionMngt
  chasControlActivateTimeout
  chasControlRedundancyTime
  chasControlDelayedActivateTimer
  chasControlWorkingVersion
  chasControlNextRunningVersion
```

---

## reload chassis-id

Reloads the specified chassis ID when running in virtual chassis mode.

**reload chassis-id** *chassis* [**all**] [**in** [*hours:*] *minutes* | **at** *hour:minute* [*month day* | *day month*]]

**reload chassis-id cancel**

---

### Syntax Definitions

<i>chassis</i>	The chassis identifier.
<b>in</b> [ <i>hours:</i> ] <i>minutes</i>	Optional syntax. Schedules a reload of the software to take effect in the time. The time can be specified in minutes or hours and minutes within the next 24 hours.
<b>at</b> <i>hour:minute</i>	Optional syntax. Schedules a reload of the software to take place at the specified time using a 24-hour clock. If you do not specify the month and day, the reload takes place at the specified time on the current day provided the specified time is later than the time when the CLI command is issued. If the specified time is earlier than the current time, the reload takes place on the following day.
<i>month day</i>   <i>day month</i>	The name of the month and the number of the day for the scheduled reload. Specify a month name and the day number. See examples below for further explanation.
<b>cancel</b>	Cancels a pending time delayed reboot.

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- Can be issued from both primary or secondary CMM.
- Reloads the secondary CMM only, the Primary CMM remains operational.

### Examples

```
-> reload chassis-id 1
-> reload chassis-id 1 in 15:25
-> reload chassis-id 1 at 15:25 august 10
-> reload chassis-id 1 at 15:25 10 august
-> reload chassis-id 1 cancel
```

### Release History

Release 5.1; command introduced.

## Related Commands

**reload from** Reloads both CMMs from the specified directory.

## MIB Objects

```
chasEntPhysicalTable
  csEntPhysicalIndex
  chasEntPhysAdminStatus
chasControlRedundantTable
  chasControlDelayedRebootTimer
```

---

## copy certified

Copies the contents of the *certified* directory to the specified directory.

**copy certified** *image\_dir* [**make-running-directory**]

---

### Syntax Definitions

*image\_dir*

The directory that the contents of the *certified* directory will be copied to.

**make-running-directory**

Makes the destination directory the new RUNNING DIRECTORY after the configuration is copied.

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- Using the **make-running-directory** parameter changes the RUNNING DIRECTORY allowing changes to be saved using the **write memory** command.
- This command does not delete any extra files in the target directory.
- This command does not affect the synchronization status of the running configuration.
- To synchronize the running and saved configuration, use the **write memory** command.

### Examples

```
-> copy certified mydir  
-> copy certified mydir make-running-directory
```

### Release History

Release 5.1; command introduced.

### Related Commands

[write memory](#)

Copies the current configuration (RAM) to the RUNNING DIRECTORY on the primary CMM.

### MIB Objects

```
chasControlModuleTable  
  chasControlVersionMngt  
  chasControlWorkingVersion
```

---

## write memory

Copies the current configuration (RAM) to the RUNNING DIRECTORY on the primary CMM.

**write memory** [**flash-synchro**]

---

### Syntax Definitions

**flash-synchro** Synchronizes the primary and secondary CMM.

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- This command is used to copy the changes performed using the CLI commands from the running configuration (RAM) to the RUNNING DIRECTORY.
- The **flash-synchro** keyword synchronizes the files between the primary and secondary CMMs by overwriting the contents of the secondary CMM *certified* directory with the contents of the primary CMM certified directory.
- This command is only valid if the switch isn't running from the *certified* directory. Use the [show running-directory](#) command to check where the switch is running from.
- During flash synchronization configuration changes may time out causing error messages to be displayed. Once the synchronization is complete configuration changes can resume.

### Examples

```
-> write memory
```

### Release History

Release 5.1; command introduced.

### Related Commands

[show running-directory](#) Shows the current state of version and configuration management for a CMM.

### MIB Objects

```
configManager  
  configWriteMemory
```

---

## copy running certified

Copies the current RUNNING DIRECTORY configuration to the *certified* directory on both CMMs.

**copy running certified [flash-synchro]**

---

### Syntax Definitions

**flash-synchro** Synchronizes the primary and secondary CMM.

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- This command is used to overwrite the contents of the *certified* directory with the configuration from the RUNNING DIRECTORY. This should only be done if the running configuration has been verified.
- This command only synchronizes the image and configuration files in the RUNNING DIRECTORY, no other directories, such as the **switch** or **network** directories, are synchronized.
- The **flash-synchro** keyword synchronizes the files between the primary and secondary CMMs by overwriting the contents of the secondary CMM *certified* directory with the contents of the primary CMM *certified* directory.
- If there is not enough free space, the copy attempt fails and an error message is generated.
- This command does not work if the switch is running from the *certified* directory. To view where the switch is running from, see the [show running-directory](#) command.
- This command may take up to two minutes to complete.

### Examples

```
-> copy running certified
```

### Release History

Release 5.1; command introduced.

## Related Commands

### [show running-directory](#)

Shows the current state of version and configuration management for a CMM.

## MIB Objects

```
chasControlModuleTable
  chasControlVersionMngt
  chasControlWorkingVersion
```

---

## modify running-directory

Changes the RUNNING DIRECTORY to the specified directory.

**modify running-directory** *image\_dir*

---

### Syntax Definitions

*image\_dir*

The directory name to become the new RUNNING DIRECTORY.

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

Use this command to change the RUNNING DIRECTORY and allow configuration changes to be saved to the new RUNNING DIRECTORY.

### Examples

```
-> modify running-directory user-config1  
-> write memory
```

### Release History

Release 5.1; command introduced.

### Related Commands

[write memory](#)

Copies the running primary RAM version of the CMM software to the RUNNING DIRECTORY.

### MIB Objects

```
chasControlModuleTable  
    CurrentRunningVersion
```

---



## show running-directory

Shows the current state of version and configuration management for a CMM.

**show running-directory**

---

### Syntax Definitions

N/A

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- Once a switch boots up and is running, it runs either from the *working*, *certified*, or a *user-defined* directory. If the switch is running from the *certified* directory, changes made to the RUNNING CONFIGURATION using CLI commands, cannot be saved.
- Depending on the switch configuration there may be a small delay before the information is displayed.

### Examples

```
-> show running-directory
```

```
CONFIGURATION STATUS
  Running CMM           : PRIMARY,
  CMM Mode              : MONO CMM,
  Current CMM Slot     : A,
  Running configuration : CERTIFIED,
  Certify/Restore Status : CERTIFIED,
SYNCHRONIZATION STATUS
  Flash Between CMMs   : SYNCHRONIZED
  Running Configuration : SYNCHRONIZED
BOOT STATUS
  Machine State        : SHUTDOWN
```

### *output definitions*

---

<b>Running CMM</b>	The CMM currently controlling the switch, either PRIMARY or SECONDARY.
<b>CMM Mode</b>	Whether there are one or two CMMs installed or Virtual Chassis mode.
<b>Current CMM Slot</b>	The slot of the primary CMM, A or B.
<b>Running Configuration</b>	The current RUNNING DIRECTORY.
<b>Certify/Restore Status</b>	Indicates if the CMM has been certified.

*output definitions (continued)*


---

<b>Flash Between CMMs</b>	<b>SYNCHRONIZED:</b> Flash between CMMs is identical. <b>NOT SYNCHRONIZED:</b> Flash between CMMs is not identical.
<b>Running Configuration</b>	<b>SYNCHRONIZED:</b> RUNNING CONFIGURATION has been saved to the RUNNING DIRECTORY. <b>NOT SYNCHRONIZED:</b> RUNNING CONFIGURATION has not been saved to the RUNNING DIRECTORY.
<b>Machine State</b>	<b>SHUTDOWN</b> - When in VC mode, this indicates the chassis has shutdown due to the 'virtual-chassis shutdown' command or when the chassis has shutdown due to a VC error. It is only displayed if the chassis is in the shutdown state.

---

**Release History**

Release 5.1; command introduced.

**Related Commands**

**reload all** Reboots the switch.

**MIB Objects**

```

chasControlModuleTable
  chasControlSynchronizationStatus
  chasControlCertifyStatus
  chasControlRunningVersion
chasEntPhysicalTable
  chasEntPhysOperStatus
  entPhysicalIndex
chasControlReloadTable
  chasControlReloadStatus

```

---

## show reload

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

**show reload** [[*chassis-id chassis*] [*status | all status*]]

---

### Syntax Definitions

<i>chassis</i>	The chassis identifier.
<b>status</b>	Displays whether or not either of the CMMs are scheduled for a reload.
<b>all status</b>	Displays whether or all the modules are scheduled for a reload.

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- It is possible to preset a reboot on a CMM by using the **reload** command. If this is done, use the **show reload** command to see when the next scheduled reboot is going to occur.
- If the **reload from** command is used, and a rollback timeout is set, the rollback occurs and is shown using the **show reload** command.

### Examples

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

### Release History

Release 5.1; command introduced.

### Related Commands

<b>reload secondary</b>	Reboots the primary or secondary CMM to its startup software configuration.
<b>reload from</b>	Immediate primary CMM reboot to the specified software configuration without secondary CMM takeover.

**MIB Objects**

chasControlModuleTable

    chasControlDelayedActivateTimer

chasGlobalControl

    chasGlobalControlDelayedResetAll

---

## show microcode

Displays microcode versions installed on the switch.

**show microcode** [**working** | **certified** | **loaded** | **issu** | *image\_dir*]

---

### Syntax Definitions

<b>working</b>	Specifies the <i>working</i> directory.
<b>certified</b>	The chassis identifier when running in virtual chassis mode.
<b>loaded</b>	Specifies the loaded (i.e., currently-active) microcode versions.
<b>issu</b>	Specifies the <i>issu</i> directory.
<i>image_dir</i>	Specifies the <i>user-defined</i> directory.

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

If no additional parameters are entered microcode information for the RUNNING CONFIGURATION is displayed.

### Examples

```
-> show microcode
    /flash/working
    Package           Release           Size           Description
-----+-----+-----+-----
Aros.img             5.1.80.R01       62818640      Alcatel-Lucent OS
```

#### *output definitions*

---

<b>Package</b>	File name.
<b>Release</b>	Version number.
<b>Size</b>	File size.
<b>Description</b>	File description.

---

### Release History

Release 5.1; command introduced.

## Related Commands

### **usb**

Displays the archive history for microcode versions installed on the switch.

## MIB Objects

N/A

---

## usb

Enables access to the device connected to the USB port.

**usb** {enable | disable}

---

### Syntax Definitions

N/A

### Defaults

parameter	default
enable   disable	disable

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

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

### Examples

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

### Release History

Release 5.1; command was introduced.

**Related Commands****MIB Objects****usb auto-copy**

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

**usb backup admin-state**

Enables or disables USB backup on the switch.

**MIB Objects**

systemServices

systemServicesUsbEnable

---



## usb backup admin-state

Enables or disables USB backup on the switch.

```
usb backup admin-state {enable | disable} [key string | hash-key string]
```

---

### Syntax Definitions

<b>enable</b>	Enables Administrative control to USB backup on the switch
<b>disable</b>	Disables Administrative control to USB backup on the switch
<b>key</b>	Keyword which will be used for encryption.
<b>hash-key</b>	Keyword which will be decrypted and then used for encryption.

### Defaults

---

parameter	default
enable   disable	disable

---

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- When this command is enabled, the images and configuration from certified and running directories are copied into */uflash/2260/certified* and */uflash/2260/running* directories.
- When **write memory** is executed and backup is enabled, the configuration files and images from */flash/running-directory* are copied to */uflash/2260/running-directory name*
- When **usb backup admin-state** is enabled and **copy running certified** and **write memory flash-synchro** commands are executed, the configuration and images from */flash/certified* will be copied to */uflash/2260/certified*.
- Back-up cannot be enabled if auto-copy is enabled and auto-copy cannot be enabled if back-up is enabled. So only one of these features can be enabled at any given time.

### Examples

```
-> usb backup admin-state enable
-> usb backup admin-state disable
-> usb backup admin-state enable key "abc12345"
-> usb backup admin-state enable hash-key "a05234d"
```

### Release History

Release 5.1; command was introduced.

## Related Commands

### **usb auto-copy**

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

### **usb**

Enables access to the device connected to the USB interface.

## MIB Objects

```
systemServices
  systemServicesUsbBackupAdminState
  systemServicesUsbBackupKey
  systemServicesUsbBackupHashkey
```

---

## usb auto-copy

Allows the image files from the USB device to be automatically copied to the switch immediately after the USB device is connected.

**usb auto-copy** {enable | disable} **copy-config** {enable| disable} [**key** *string* | **hash-key** *string* ]

---

### Syntax Definitions

<b>enable</b>	Enables Administrative control to USB auto copy on the switch
<b>disable</b>	Disables Administrative control to USB auto copy on the switch
<b>key</b>	Keyword which will be used for encryption.
<b>hash-key</b>	Keyword which will be decrypted and then used for encryption.

### Defaults

parameter	default
<b>enable   disable</b>	<b>disable</b>

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- If the automatic copy is successful the switch will automatically reboot.
- The USB device must contain the proper file structure and image files mentioned below and the USB root directory must contain a signature file named *aossignature*. The *aossignature* file can be a blank text file transferred to the switch.
- This operation will enable all of the image files from the */uflash/2260/working* or */uflash/2260/working* directory to be copied to the */flash/working* directory.
- If the auto-copy is successful, the auto-copy feature will be disabled before rebooting the switch and must be re-enabled by the administrator for the next auto-copy process to execute. This will prevent running the same auto-copy multiple times.
- If **copy-config** is enabled, configuration files will also be copied in addition to image files to the */flash/working* directory from */uflash/2260/working* directory.
- Back-up cannot be enabled if auto-copy is enabled and auto-copy cannot be enabled if back-up is enabled. So only one of these features can be enabled at any given time.

### Examples

```
-> usb auto-copy enable copy-config enable
-> usb auto-copy enable copy-config disable
-> usb auto-copy enable copy-config enable key "abc12345"
-> usb auto-copy enable copy-config enable hash-key "a05234d"
```

## Release History

Release 5.1; command was introduced.

## Related Commands

- |  |  |
|--|--|
| <a href="#">usb</a>                    | Enables access to the device connected to the USB interface. |
| <a href="#">usb backup admin-state</a> | Enables or disables USB backup on the switch.                |

## MIB Objects

```
systemServices
  systemServicesUsbCopyConfig
  systemServicesUsbBackupKey
  systemServicesUsbBackupHashkey
```

---

## mount

Mounts a USB device on /uflash.

```
mount [/uflash]
```

---

### Syntax Definitions

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

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

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

### Examples

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

### Release History

Release 5.1; command was introduced.

### Related Commands

**umount**                      Unmounts the /uflash file system from AOS.

### MIB Objects

```
systemServicesAction  
  systemServicesArg1
```

---



## show usb statistics

Displays the status USB setting and features.

**show usb statistics**

---

### Syntax Definitions

N/A

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

N/A

### Examples

```
-> show usb statistics
Filesystem          1K-blocks      Used Available Use% Mounted on
/dev/sdb1           500732         261216    239516   52% /vroot/uflash
  Host scsi6: usb-storage
    Vendor: Alcatel-Lucent
    Product: USB
  Serial Number: AA04012700031693
    Protocol: Transparent SCSI
    Transport: Bulk
      usb: enabled
usb auto-copy: disable
auto-copy in progress: No
```

### *output definitions*

---

<b>usb</b>	Status of USB device interface.
<b>usb auto-copy</b>	Status of USB auto-copy feature.
<b>auto-copy in progress</b>	Is the switch currently in the process of performing an auto-upgrade.

---

### Release History

Release 5.1; command was introduced.

## Related Commands

<b>usb</b>	Enables access to the device connected to the USB interface.
<b>usb auto-copy</b>	Allows backup files from the USB device to be automatically copied to the switch immediately after the USB device is connected.
<b>mount</b>	Mounts the /uflash file system.

## MIB Objects

```
systemServices
  systemServicesUsbEnable
  systemServicesUsbAutoCopyEnable
  systemServicesUsbDisasterRecoveryEnable
```

---



## auto-config-abort

Aborts the Automatic Remote Configuration download process.

**auto-config-abort**

---

### Syntax Definitions

N/A

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

Use this command to stop the Automatic Remote Configuration download process.

### Examples

```
-> auto-config-abort
```

### Release History

Release 5.1; command was introduced.

### Related Commands

N/A

### MIB Objects

N/A

---

## image integrity check

Verifies whether the SHA256 hash key of an image file located in the specified directory matches the SHA256 hash key in the specified key file.

**image integrity check** *image\_dir* **key-file** *filename*

---

### Syntax Definitions

<i>image_dir</i>	The directory on the switch that contains the image file to verify. Enter the name of the directory in “/flash” or include the full path (for example, “working” or “/flash/working”).
<i>filename</i>	The name of the file that contains the key for the image file in the specified directory. Enter the name of the key file or include the full path (for example, “hash.txt” or “/flash/hash.txt”).

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- If the name of the key file is specified without the directory path, the switch will look for the key file in the same directory specified for the image file.
- The following format is used to store the hash key values in the key file:  
Aros.img:f0ff173eff38e43e0598663da2185a363fcba5bd407201d7537d0a6b9f58670e

### Example

```
-> image integrity get-key working
This operation may take several minutes...
```

Image Name	SHA256 Key
Aros.img	fb02e7689a060ff7ec301919e683f5a211c9a5e723f06b3a2652f96e07cffbeb"

### Release History

Release 5.1; command introduced.

**Related Commands****image integrity get-key**

Calculates and displays the SHA256 key for image files.

**MIB Objects**

```
systemServicesAction  
systemServicesArg1  
systemServicesArg2
```

---

## image integrity get-key

Displays the SHA256 hash key of the image present in the specified location.

**image integrity get-key** *image\_dir*

---

### Syntax Definitions

*image\_dir*                      The directory on the switch that contains the image file. Enter the name of the directory in “/flash” or include the full path (for example, “working” or “/flash/working”).

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- When this command is entered, the SHA256 hash of the image files in the specified directory is calculated and displayed. It can be manually verified against the hash provided in the file.
- To store the hash key value in a text file that can be used with the **image file integrity check** command, use the following format:  
Aros.img:f0ff173eff38e43e0598663da2185a363fcba5bd407201d7537d0a6b9f58670e

### Example

```
-> image integrity get-key /working
This operation may take several minutes...
```

```
Image Name                      SHA256 Key
-----+-----
Aros.img                      c64d6b23312a6f9c4b99642b31ed0e87e600bce58d6fdd089d09e1f8077bd208
```

```
-> image integrity get-key /flash/certified
This operation may take several minutes...
```

```
Image Name                      SHA256 Key
-----+-----
Aros.img                      3d4d488a73eb798325bacb5793ef0d67bdf377527278a6732270d3a4801bb44b
```

### Release History

Release 5.1; command introduced.

**Related Commands****image integrity check**

Verifies the SHA256 hash key for the image file matches the key specified in a text file.

**MIB Objects**

```
systemServicesAction  
systemServicesArg1  
systemServicesArg2
```

---



# 29 Chassis Management and Monitoring Commands

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

---

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

---

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

*Filename:* ALCATEL-IND1-CHASSIS-MIB.mib  
*Module:* alcatelIND1ChassisMIB

*Filename:* ALCATEL-IND1-SYSTEM-MIB.mib  
*Module:* alcatelIND1SystemMIB

*Filename:* ALCATEL-IND1-CAPMAN-MIB.mib  
*Module:* alcatelIND1CapManMIB

A summary of available commands is listed here:

---

<b>Management Commands</b>	<code>system contact</code> <code>system name</code> <code>system location</code> <code>system date</code> <code>system time</code> <code>system timezone</code> <code>system daylight-savings-time</code> <code>update uboot</code> <code>update fpga-cpld</code>
<b>Monitoring Commands</b>	<code>show system</code> <code>show hardware-info</code> <code>show chassis</code> <code>show cmm</code> <code>show slot</code> <code>show module</code> <code>show module long</code> <code>show module status</code> <code>show powersupply</code> <code>show fan</code> <code>show temperature</code> <code>show me</code> <code>show tcam utilization</code> <code>show tcam utilization detail</code> <code>show tcam app-groups</code> <code>show pmd-files</code> <code>show tech-support</code> <code>show mac-range</code> (command moved here from Chassis MAC Server).

---



## system contact

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

**system contact** *text\_string*

---

### Syntax Definitions

*text\_string*

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

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

N/A

### Examples

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

### Release History

Release 5.1; command introduced.

### Related Commands

<a href="#">system name</a>	Modifies the current system name of the switch.
<a href="#">system location</a>	Specifies the current physical location of the switch.
<a href="#">show system</a>	Displays the basic system information for the switch.

### MIB Objects

```
system
  systemContact
```

---

## system name

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

**system name** *text\_string*

---

### Syntax Definitions

*text\_string*

The new system name. The system name can range from 1 to 32 characters in length. No spaces are allowed in the system name.

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

Spaces are not allowed in the system name.

### Examples

```
-> system name OmniSwitch-2260
```

### Release History

Release 5.1; command introduced.

### Related Commands

[system contact](#)

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

[system location](#)

Specifies the current physical location of the switch.

[show system](#)

Displays the basic system information for the switch.

### MIB Objects

system

systemName

---

## system location

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

**system location** *text\_string*

---

### Syntax Definitions

*text\_string*

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

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

N/A

### Examples

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

### Release History

Release 5.1; command introduced.

### Related Commands

[system contact](#)

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

[system name](#)

Modifies the current system name of the switch.

[show system](#)

Displays the basic system information for the switch.

### MIB Objects

```
system  
  systemLocation
```

---

## system date

Displays or modifies the current system date on the switch.

**system date** [*mm/dd/yyyy*]

---

### Syntax Definitions

*mm/dd/yyyy*

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

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- If you do not specify a new system date in the command line, the current system date is displayed.
- For more information on setting time zone parameters (for example, Daylight Savings Time), refer to the [system timezone command on page 29-8](#).

### Examples

```
-> system date 08/08/2010
-> system date
08/08/2010
```

### Release History

Release 5.1; command introduced.

### Related Commands

[system time](#)

Displays or modifies the current system time on the switch.

[system timezone](#)

Displays or modifies the time zone for the switch.

### MIB Objects

systemServices

systemServicesDate

---

## system time

Displays or modifies the switch current system time.

**system time** [*hh:mm:ss*]

---

### Syntax Definitions

*hh:mm:ss*

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

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- If you do not specify a new system time in the command line, the current system time is displayed.
- Setting the year to 1970 is not supported. The system interprets 1970 as meaning the internal clock has never been set and will reset to the year 2014.

### Examples

```
-> system time 14:30:00
-> system time
14:30:08
```

### Release History

Release 5.1; command introduced.

### Related Commands

[system date](#)

Displays or modifies the current system date on the switch.

[system timezone](#)

Displays or modifies the time zone for the switch.

### MIB Objects

```
systemServices
  systemServicesTime
```

---

## system timezone

Displays or modifies the time zone for the switch.

**system timezone** [*timezone\_abbrev*]

---

### Syntax Definitions

*timezone\_abbrev*

Specifies a time zone for the switch and sets the system clock to run on UTC. If you specify a time zone abbreviation, the hours offset from UTC is automatically calculated by the switch.

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- The configuration must be saved after changing the timezone.
- To display the current time zone for the switch, enter the syntax **system timezone**.
- If the configured timezone supports DST it is automatically enabled and cannot be disabled.
- If the configured timezone does not support DST it is automatically disabled and cannot be enabled.

### Examples

```
-> system timezone mst
```

### Release History

Release 5.1; command introduced.

### Related Commands

[system date](#)

Displays or modifies the current system date on the switch.

[system time](#)

Displays or modifies the current system time on the switch.

**MIB Objects**

systemServices

- systemServicesTimezone
- systemServicesTimezoneStartWeek
- systemServicesTimezoneStartDay
- systemServicesTimezoneStartMonth
- systemServicesTimezoneStartTime
- systemServicesTimezoneOffset
- systemServicesTimezoneEndWeek
- systemServicesTimezoneEndDay
- systemServicesTimezoneEndMonth
- systemServicesTimezoneEndTime
- systemServicesEnabledST

---

## system daylight-savings-time

Displays the Daylight Savings Time (DST) setting for the configured timezone.

`system daylight-savings-time [enable | disable]`

---

### Syntax Definitions

`enable | disable`                      `enable`

### Defaults

parameter	default
Timezone supports DST	enabled
Timezone does not support DST	disabled

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- If the configured timezone supports DST it is automatically enabled.
- If the configured timezone does not support DST it is automatically disabled.

### Examples

```
-> system daylight-savings-time
Daylight Savings Time (DST) is ENABLED.
```

### Release History

Release 5.1; command introduced.

### Related Commands

<a href="#">system time</a>	Displays or modifies the current system time on the switch.
<a href="#">system timezone</a>	Displays or modifies the timezone for the switch.
<a href="#">system date</a>	Displays or modifies the current system date on the switch.

### MIB Objects

```
systemServices
  systemServicesTimezone
  systemServicesEnabledDST
```

---



## update uboot

Updates the uboot versions of the CMM or NIs. Refer to the Release Notes and/or any available Upgrade Instructions for the new release before performing this type of update on the switch.

```
update uboot {cmm slot | ni {all | slot} file filename}
```

---

### Syntax Definitions

<b>cmm</b>	Specifies that the update is performed for the Chassis Management Module (CMM).
<b>all</b>	Specifies that the update is performed for all slots within a chassis.
<i>slot</i>	Specifies the slot number of the module within a chassis.
<i>filename</i>	Specifies the path and name of the upgrade file.

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

Note that when performing an update, it is important that the correct update file is used. Specifying the wrong file may impact the operation of the switch.

### Examples

```
-> update uboot ni all file 9999.tar.gz  
-> update uboot cmm 1 file /flash/temp/9999.tar.gz
```

### Release History

Release 5.1; command introduced.

### Related Commands

**reload from** Reloads both CMMs from the specified directory.

### MIB Objects

```
systemServices  
  systemServicesArg1  
  systemServicesAction
```

---

## update fpga-cpld

Updates the FPGA/CPLD versions of the CMM or NIs. Refer to the Release Notes and/or any available Upgrade Instructions for the new release before performing this type of update on the switch.

```
update fpga-cpld {cmm {chassis/cmm |all} | ni {chassis/ni | daughter num} file filename}
```

---

### Syntax Definitions

<b>cmm</b>	Specifies that the update is performed for the Chassis Management Module (CMM).
<b>daughter</b>	Specifies the number of the daughter board on the NI module.
<i>ni</i>	Specifies the slot number of the module within a chassis.
<i>filename</i>	Specifies the path and name of the upgrade file.

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- Note that when performing an update, it is important that the correct update file is used. Specifying the wrong file may impact the operation of the switch.
- When updating CMMs with the **all** option an “fpga\_kit” file must be used. If upgrading a CMM using the *chassis/cmm* option, a “vme” file must be used.

### Examples

```
-> update fpga-cpld ni 4 file 9999.vme
-> update fpga-cpld cmm 1/1 file /flash/CPLD_V11.vme
-> update fpga-cpld cmm all file fpga_kit_4960
```

### Release History

Release 5.1; command introduced.5.1

### Related Commands

**reload from** Reloads both CMMs from the specified directory.

### MIB Objects

```
systemServices
  systemServicesArg1
  systemServicesAction
```

---

## show system

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

**show system**

---

### Syntax Definitions

N/A

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

N/A

### Examples

```
-> show system
```

```
System:
```

```
Description: Alcatel-Lucent Enterprise OS2260-24 5.1.80.R01 GA, July 09, 2021.,
Object ID: 1.3.6.1.4.1.6486.803.1.1.2.1.1.1.3,
Up Time: 1 days 13 hours 58 minutes and 50 seconds,
Contact: Alcatel-Lucent Enterprise, https://www.al-enterprise.com,
Name: OS2260,
Location: Unknown,
Services: 78,
Date & Time: WED JUL 14 2021 02:45:11 (UTC)
```

```
Flash Space:
```

```
Primary CMM:
Available (bytes): 233091072,
Comments : None
```

### *output definitions*

---

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

*output definitions (continued)*


---

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

---

**Release History**

Release 5.1; command introduced.

**Related Commands**

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

**MIB Objects**

```
system
  systemContact
  systemName
  systemLocation
```

---

## show hardware-info

Displays the current system hardware information. Includes CPU, flash, RAM, U-boot and FPGA information.

**show hardware info**

---

### Syntax Definitions

N/A

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

N/A

### Examples

```
-> show hardware-info
Chassis 1
CPU Manufacturer      : Realtek
CPU Model             : MIPS
Flash Manufacturer   : KIOXIA
Flash size            : 461062144 bytes
RAM Manufacturer     : Winbond
RAM size              : 1016936kB
FPGA Manufacturer    : Gowin
FPGA version          : 0.7
U-Boot Version        : 5.1.1.R02
Power Supplies Present : 1
NIs Present           : 1,-
```

### *output definitions*

---

<b>CPU Manufacturer</b>	The manufacturer of the CPU used on the CMM.
<b>CPU Model</b>	The model of the CPU on the CMM.
<b>Flash Manufacturer</b>	The manufacturer of the flash memory used on the CMM.
<b>Flash size</b>	The total amount of flash memory (file space) on the CMM. This field specifies the total flash memory size only and does not indicate the amount of memory free or memory used.
<b>RAM Manufacturer</b>	The manufacturer of the RAM memory used on the CMM.
<b>RAM size</b>	The total amount of RAM memory on the CMM. This field specifies the total RAM memory only and does not indicate the amount of memory free or memory used.

---

*output definitions (continued)*

---

<b>FPGA Manufacturer</b>	The Manufacturer of the FPGA on the CMM.
<b>FPGA Version</b>	The version of the FPGA on the CMM.
<b>U-Boot Version</b>	The version of the U-boot on the CMM.
<b>Power Supplies Present</b>	The number of power supplies in the chassis.
<b>NIs Present</b>	The number of NIs in the chassis.

---

**Release History**

Release 5.1; command introduced.

**Related Commands**

<a href="#">show chassis</a>	Displays the basic configuration and status information for the switch chassis.
<a href="#">show cmm</a>	Displays the basic hardware and status information for CMM modules running in the chassis.

**MIB Objects**

```
systemVcHardwareGroup
  systemVcHardwareCpuVendor
  systemVcHardwareCpuModel
  systemVcHardwareFlashMfg
  systemVcHardwareFlashSize
  systemVcHardwareMemoryMfg
  systemVcHardwareMemorySize
  systemVcHardwareFpga1Version
  systemVcHardwareFpga2Version
  systemVcHardwareUbootVersion
  systemVcHardwarePowerSuppliesPresent
  systemVcHardwareNisPresent
  systemVcHardwareCFMsPresent
```

---

## show chassis

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

**show chassis**

---

### Syntax Definitions

N/A

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

N/A

### Examples

```
-> show chassis
Local Chassis ID 1 (Master)
  Model Name:          OS2260-24,
  Module Type:        0x80062101,
  Description:        Chassis,
  Part Number:        7-90,
  Hardware Revision:  002,
  Serial Number:      WKC20380012P,
  Manufacture Date:   Sep 24 2020,
  Admin Status:       POWER ON,
  Operational Status: UP,
  Number Of Resets:   1720,
  MAC Address:        00:e0:b1:c7:f4:31"
```

### *output definitions*

---

<b>Model Name</b>	The factory-set model name for the switch. This field cannot be modified.
<b>Description</b>	The factory-set description for the switch. This field cannot be modified.
<b>Part Number</b>	The part number for the chassis.
<b>Hardware Revision</b>	The hardware revision level for the chassis.
<b>Serial Number</b>	The serial number for the chassis.
<b>Manufacture Date</b>	The date the chassis was manufactured.
<b>Admin Status</b>	The current power status of the chassis. Chassis information is obtained from a running CMM. Hence the value is always POWER ON.

---

*output definitions (continued)*

---

<b>Operational Status</b>	The current operational status of the chassis.
<b>Free Slots</b>	The number of free slots available for NIs.
<b>Power Left</b>	The power remaining for additional NIs.
<b>Number of Resets</b>	The number of times the CMM has been reset (reloaded or rebooted) since the last cold boot of the switch.
<b>MAC Address</b>	The base MAC address of the chassis.

---

**Release History**

Release 5.1; command introduced.

**Related Commands**

<a href="#">show hardware-info</a>	Displays the current system hardware information.
<a href="#">show powersupply</a>	Displays the hardware information and current status for chassis power supplies.
<a href="#">show fan</a>	Displays the current operating status of chassis fans.

**MIB Objects**

```
chasChassisTable
  chasFreeSlots
  chasPowerLeft
```

---



## show cmm

Displays basic hardware and status information for the CMM modules in a standalone switch.

**show cmm** [*slot*]

---

### Syntax Definitions

*slot* Specifies the CMM by slot number or letter.

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

On chassis-based switches, a CMM installed in the left CMM slot position is defined as CMM-A. A CMM installed in the right position is CMM-B.

### Examples

```
-> show cmm
Chassis ID 1 Module in slot CMM-A
  Model Name:           OS2260-24,
  Module Type:          0x80062101,
  Description:          24G 4SFP,
  Part Number:          7-90,
  Hardware Revision:    002,
  Serial Number:        WKC20380012P,
  Manufacture Date:     Sep 24 2020,
  FPGA - Physical 1:    0.5,
  Admin Status:         POWER ON,
  Operational Status:   UP,
  Max Power:            0,
  CPU Model Type:       RTL 9300,
  MAC Address:          00:e0:b1:c7:f4:31,
```

### *output definitions*

---

<b>Model Name</b>	The model name of the switch.
<b>Model Type</b>	A unique module ID specific to the type of module.
<b>Description</b>	A factory-defined description of the associated board.
<b>Part Number</b>	The part number for the board.
<b>Hardware Revision</b>	The hardware revision level for the board.
<b>Serial Number</b>	The serial number for the board.
<b>Manufacture Date</b>	The date the board was manufactured.

---

*output definitions (continued)*

---

<b>FPGA - Control</b>	FPGA version.
<b>FPGA - Power</b>	FPGA version
<b>Admin Status</b>	The current power status of the CMM. Information is obtained from a running CMM. Hence the value is always POWER ON.
<b>Operational Status</b>	The current operational status of the CMM.
<b>Max Power</b>	The maximum power for the CMM.
<b>CPU Model Type</b>	The CPU Model type.
<b>MAC Address</b>	The MAC address assigned to the chassis.
<b>Coreboot Version</b>	The boot version number for the CMM.

---

**Release History**

Release 5.1; command introduced.

**Related Commands**

<a href="#">show chassis</a>	Displays the basic configuration and status information for the switch chassis.
<a href="#">show slot</a>	Displays the basic hardware and status information for Network Interface (NI) modules currently installed in the switch.
<a href="#">show module</a>	Displays the basic information for either a specified module or all the modules installed in the chassis.
<a href="#">show module long</a>	Displays the detailed information for either a specified module or all modules installed in the chassis.
<a href="#">show module status</a>	Displays the basic status information for either a specified module or all modules installed in the chassis.

**MIB Objects**

N/A

---

## show slot

Displays the basic hardware and status information for Network Interface (NI) modules currently installed in the chassis.

**show slot** [*slot*]

---

### Syntax Definitions

*slot* The slot number for a specific NI module installed in the chassis. If no slot number is specified, information for all the NI modules is displayed.

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

When this command is entered from the secondary CMM, the Operational and Admin Status for NIs will display as 'UNKNOWN'.

### Examples

```
-> show slot
Module in chassis 1 slot 1
  Model Name:           OS2260-24,
  Module Type:          0x80062101,
  Description:          24G 4SFP,
  Part Number:          7-90,
  Hardware Revision:    002,
  Serial Number:        WKC20380012P,
  Manufacture Date:     Sep 24 2020,
  FPGA - Physical 1:    0.5,
  Admin Status:         POWER ON,
  Operational Status:   UP,
  Max Power:            0,
  CPU Model Type:       RTL 9300,
  MAC Address:          00:e0:b1:c7:e4:24,
  UBOOT Version:        5.1.4.R01"
```

*output definitions*


---

<b>Model Name</b>	The NI module name. For example, OS9-GNI-C24 indicates a twenty four-port 10/100/1000BaseT Ethernet module.
<b>Description</b>	A general description of the NI. For example, 24pt 10/100/1000BaseT Mod indicates a twenty four-port 10/100/1000BaseT Ethernet module.
<b>Part Number</b>	The part number for the NI.
<b>Hardware Revision</b>	The hardware revision level for the NI.
<b>Serial Number</b>	The serial number for the NI printed circuit board (PCB).
<b>Manufacture Date</b>	The date the NI was manufactured.
<b>FPGA - Physical 1</b>	The FPGA versions.
<b>Admin Status</b>	The current power status of the NI. Options include POWER ON or POWER OFF.
<b>Operational Status</b>	The operational status of the NI. Options include UP or DOWN. The operational status can be DOWN while the power status is on, indicating a possible software issue.
<b>Max Power</b>	The current power consumption for the module.
<b>CPU Model Type</b>	The CPU model type.
<b>MAC Address</b>	The MAC address assigned to the NI.
<b>UBOOT Version</b>	UBOOT version of the NI.

---

**Release History**

Release 5.1; command introduced.

**Related Commands**

<a href="#">show module</a>	Displays the basic information for either a specified module or all modules installed in the chassis.
<a href="#">show module long</a>	Displays the detailed information for either a specified module or all modules installed in the chassis.
<a href="#">show module status</a>	Displays the basic status information for either a specified module or all modules installed in the chassis.

**MIB Objects**

chasEntPhysOperStatus

---

## show module

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

**show module** [*slot*]

---

### Syntax Definitions

*slot* The slot number or CMM letter for a specific module installed in the chassis. If no slot number is specified, information for all modules is displayed.

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

N/A

### Examples

-> show module

Slot	Part-Number	Serial #	HW Rev	Mfg Date	Model Name
CMM-A	902271-10	E23L9059	002	JUN 08 2004	OS10-CPM
SLOT-1	902271-10	E23L9059	002	JUN 08 2004	OS10-GNI-C48

### output definitions

---

<b>Slot</b>	The chassis slot position of the module.
<b>Part-Number</b>	The part number for the module.
<b>Serial #</b>	The serial number for the module.
<b>Rev</b>	The hardware revision level for the module.
<b>Date</b>	The date the module was manufactured.
<b>Model Name</b>	The descriptive name for the module.

---

### Release History

Release 5.1; command introduced.

**Related Commands****show module long**

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

**show module status**

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

**MIB Objects**

N/A

---

## show module long

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

**show module long** [*slot*]

---

### Syntax Definitions

*slot* The slot number or CMM letter for a specific module installed in the chassis. If no slot number is specified, information for all modules is displayed.

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

N/A

### Examples

```
-> show module long 1
Module in chassis 1 slot 1
  Model Name:           OS2260-24,
  Module Type:         0x80062101,
  Description:         24G 4SFP,
  Part Number:         7-90,
  Hardware Revision:   002,
  Serial Number:       WKC20380012P,
  Manufacture Date:    Sep 24 2020,
  FPGA - Physical 1:   0.5,
  Admin Status:        POWER ON,
  Operational Status:  UP,
  Max Power:           0,
  CPU Model Type:      RTL 9300,
  MAC Address:         00:e0:b1:c7:e4:24,
  UBOOT Version:      5.1.4.R01,
```

---

*output definitions*

---

<b>Model Name</b>	The NI module name.
<b>Description</b>	A general description of the NI.
<b>Part Number</b>	The part number for the NI.
<b>Hardware Revision</b>	The hardware revision level for the NI.
<b>Serial Number</b>	The serial number for the NI printed circuit board (PCB).
<b>Manufacture Date</b>	The date the NI was manufactured.
<b>FPGA - Physical 1</b>	The FPGA versions.
<b>Admin Status</b>	The current power status of the module. Options include POWER ON or POWER OFF.
<b>Operational Status</b>	The operational status of the module. Options include UP or DOWN. The operational status can be DOWN while the power status is on, indicating a possible software issue.
<b>Max Power</b>	The maximum power consumption for the module.
<b>CPU Model Type</b>	The CPU model type.
<b>MAC Address</b>	The MAC address assigned to the module.
<b>UBOOT Version</b>	UBOOT version of the module.

---

**Release History**

Release 5.1; command introduced.

**Related Commands**

<a href="#">show module</a>	Displays the basic information for either a specified module or all modules installed in the chassis.
<a href="#">show module status</a>	Displays the basic status information for either a specified module or all modules installed in the chassis.

**MIB Objects**

N/A

---



## show module status

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

**show module status** [*slot*]

---

### Syntax Definitions

*slot* The slot number or CMM letter for a specific module installed in the chassis. If no slot number is specified, information for all modules is displayed.

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

When this command is entered from the secondary CMM, the Operational and Admin Status for NIs will display as 'UNKNOWN'.

### Examples

```
-> show module status
      Operational
Chassis/Slot  Status      Admin-Status      MAC
-----+-----+-----+-----
 1/CMM-A      UP          POWER ON          00:e0:b1:c7:f4:31
 1/SLOT-1     UP          POWER ON          00:e0:b1:c7:e4:24
```

### output definitions

---

<b>Slot</b>	The chassis slot position of the module. For detailed slot numbering information, refer to the “Chassis and Power Supplies” chapter of the <i>Hardware User Guide</i> . Refer to <a href="#">page 29-19</a> for additional information on CMM callouts.
<b>Operational Status</b>	The operational status of the module. Options include UP or DOWN. For NI and secondary CMM modules, the operational status can be DOWN while the power status is on, indicating a possible software issue.
<b>Admin-Status</b>	The current power status of the module. Options include POWER ON or POWER OFF.
<b>Firmware Rev</b>	The firmware version for module ASICs.
<b>MAC</b>	For the CMM, the base chassis MAC address is displayed. For NI modules, the MAC address for the corresponding NI is displayed.

---

## Release History

Release 5.1; command introduced.

## Related Commands

### [show module](#)

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

### [show module long](#)

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

## MIB Objects

N/A

---

## show powersupply

Displays the hardware information and current status for chassis power supplies.

**show powersupply** [*slot*]

---

### Syntax Definitions

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

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

N/A

### Examples

```
-> show powersupply
```

Chassis/PS	Total Power	PS Type	Status	Location
1/1	550	AC	UP	Internal

```
-> show powersupply 1
```

```
Module in slot PS-1
  Model Name:          (APD)NW-550B01-AAAF,
  Module Type:         0x0,
  Description:         ALE Internal,
  Part Number:         ,
  Hardware Revision:   ,
  Serial Number:       ,
  Manufacture Date:    Thu Jan  1 00:00:00 1970,
  Operational Status:  UP,
  Power Provision:     550W
```

### Release History

Release 5.1; command introduced.

**Related Commands****show chassis**

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

**MIB Objects**

N/A

---

## show fan

Displays the current operating status of chassis fans.

**show fan** [*slot*]

---

### Syntax Definitions

*slot* Specifies the slot number of the fantray.

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guideline

N/A

### Examples

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

### output definitions

---

<b>Chassis/Tray</b>	The chassis/tray ID.
<b>Fan</b>	The fan number describing the fan position.
<b>Status/Functional</b>	The current operational status of the corresponding fan.
<b>Speed</b>	The speed of the fan.
<b>Airflow</b>	-

---

### Release History

Release 5.1; command introduced.

**Related Commands****show temperature**

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

**MIB Objects**

N/A

---

## show temperature

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

**show temperature** [**fabric** *[index]* | **slot** *[index]* | **fantray** *[index]* | **cmm** *[index | cmm\_letter]* | **chassis-id** *chassis*]

---

### Syntax Definitions

<i>index</i>	Specifies the index number.
<i>cmm_letter</i>	Specifies the CMM letter.
<i>chassis</i>	The ID number of the chassis.

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- This command displays the internal operating temperature, not the ambient temperature, of the current operating chassis as well as current temperature threshold settings.
- Refer to the appropriate *Hardware Users Guide* for detailed information about temperature thresholds for a specific OmniSwitch model.

### Examples

```
-> show temperature
Chassis/Device | Current | Range | Danger | Thresh | Status
-----+-----+-----+-----+-----+-----
1/CMMA         | 48      | -45 to 93 | 98     | 93     | UNDER THRESHOLD
```

#### output definitions

---

<b>Chassis/Device</b>	The device being measured (CMM, Fabric, or NI)
<b>Current</b>	The current CPU temperature in Celsius.
<b>Range</b>	The supported threshold range.
<b>Danger</b>	The danger threshold value. This value is based on the switch model and is not configurable.
<b>Thresh</b>	The warning temperature threshold, in degrees Celsius. If the switch reaches or exceeds this temperature, the primary switch or CMM TEMP LED displays amber and a warning is sent to the user.
<b>Status</b>	Whether the current temperature has reached the threshold.

---

## Release History

Release 5.1; command introduced.

## Related Commands

### [show fan](#)

Shows the hardware information and current status for the chassis fans.

## MIB Objects

chasChassisTable

  chasHardwareBoardTemp

  chasHardwareCpuTemp

  chasTempRange

  chasTempThreshold

  chasDangerTempThreshold

---



## show me

Executes an LED blink pattern for 10 seconds that is used by the USB adapter with Bluetooth technology to identify the connected switch.

show me

---

### Syntax Definitions

N/A

### Defaults

N/A

### Platforms Supported

Not supported in this release.

### Usage Guideline

Use this command in a virtual chassis to identify which switch currently has USB adapter with Bluetooth technology connectivity.

### Examples

```
-> show me
The Chassis ID LED will blink for 10 seconds.
```

### Release History

Release 5.1; command not supported.

### Related Commands

N/A

### MIB Objects

N/A

---

## show tcam utilization

Displays runtime information about the Ternary Content Addressable Memory (TCAM) utilization for each stage of each TCAM on each slot of the switch.

**show tcam utilization** [*chassis/slot*] [*chassis/slot/tcam*]

---

### Syntax Definitions

*chassis/slot* A chassis ID and slot number. Use this parameter to display TCAM utilization for a specific slot.

*chassis/slot/tcam* A chassis ID, slot, and TCAM number. Use this parameter to display utilization for a specific TCAM.

### Defaults

By default, TCAM utilization is displayed for the entire switch.

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- The utilization is represented in terms of the minimum-sized entry supported by the TCAM.
- This command replaces the **show qos slice** command on the supported OmniSwitch platforms listed above; the **show qos slice** command, however, is still available on the other OmniSwitch platforms.

### Examples

```
-> show tcam utilization
```

Legend:

C/S/T = Chassis/Slot/TCAM

PI = Pre-Ingress

I = Ingress

E = Egress

C/S/T	Stage	Min- entry- size	Reserved min-key- entries	Total min-key- entries	Utilization percentage
1/1/1	PI	10	8448	12288	68%
1/1/1	I	10	9924	18432	53%
1/1/1	E	10	768	6144	12%
1/3/1	PI	10	8448	12288	68%
1/3/1	I	10	9924	18432	53%
1/3/1	E	10	768	6144	12%
1/3/2	PI	10	8448	12288	68%
1/3/2	I	10	9924	18432	53%
1/3/2	E	10	768	6144	12%
1/3/3	PI	10	8448	12288	68%
1/3/3	I	10	9924	18432	53%

1/3/3	E	10	768	6144	12%
1/3/4	PI	10	8448	12288	68%
1/3/4	I	10	9924	18432	53%
1/3/4	E	10	768	6144	12%
1/3/5	PI	10	8448	12288	68%
1/3/5	I	10	9924	18432	53%
1/3/5	E	10	768	6144	12%
1/3/6	PI	10	8448	12288	68%
1/3/6	I	10	9924	18432	53%
1/3/6	E	10	768	6144	12%
1/4/1	PI	10	8448	12288	68%
1/4/1	I	10	16068	23040	69%
1/4/1	E	10	768	1536	50%

-> show tcam utilization 1/4

Legend:

C/S/T = Chassis/Slot/TCAM

PI = Pre-Ingress

I = Ingress

E = Egress

C/S/T	Stage	Min- entry- size	Reserved min-key- entries	Total min-key- entries	Utilization percentage
1/4/1	PI	10	8448	12288	68%
1/4/1	I	10	16068	23040	69%
1/4/1	E	10	768	1536	50%

## Release History

Release 5.1; command introduced.

## Related Commands

[show tcam utilization detail](#) Displays additional TCAM usage information, such as application usage.

## MIB Objects

```
alaTcamUtilTable
  alaTcamChassis
  alaTcamSlot
  alaTcamIndex
  alaTcamStage
  alaTcamEntrySize
  alaTcamUsedEntries
  alaTcamTotalEntries
  alaTcamPercentUsed
```

## show tcam utilization detail

Displays the Ternary Content Addressable Memory (TCAM) utilization of each application (or application group) for each stage of each TCAM on each slot of the switch.

**show tcam utilization** [*chassis/slot*] [*chassis/slot/tcam*] **detail**

---

### Syntax Definitions

*chassis/slot* A chassis ID and slot number. Use this parameter to display TCAM utilization for a specific slot.

*chassis/slot/tcam* A chassis ID, slot, and TCAM number. Use this parameter to display utilization for a specific TCAM.

### Defaults

By default, the detailed TCAM utilization is displayed for the entire switch.

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

The utilization is represented in terms of the minimum-sized entry supported by the TCAM.

### Examples

```
-> show tcam utilization detail
```

Legend:

C/S/T = Chassis/Slot/TCAM  
 PI = Pre-Ingress  
 I = Ingress  
 E = Egress

C/S/T	App Group Name	App Name	Resource Name	Stage	Entry Size	Used Entries	Reserved Entries	Available Entries
1/1/1	SYSPRE	-	System PreIngress	PI	30	48	256	208
1/1/1	TTI	-	System TTI	PI	30	0	2048	2048
1/1/1	TUNNEL_SVC	-	Tunnel Services PreIngress	PI	30	0	512	512
1/1/1	SYSHI	-	System High	I	30	134	256	122
1/1/1	SYSLO	-	System Low	I	60	76	256	180
1/1/1	TUNNEL_SVC	-	Tunnel Services Ingress	I	10	0	2052	2052
1/1/1	-	QOS		I	60	0	512	512
1/1/1	-	UDPRLY	UDP_RLY_ISF	I	60	0	256	256
1/1/1	-	ETHOAM		I	30	0	64	64
1/1/1	-	PVLAN	PVLAN1	I	30	0	256	256
1/1/1	-	PVLAN	PVLAN2	E	30	0	256	256
1/3/1	SYSPRE	System	PreIngress	PI	30	48	256	208
1/3/1	TTI	-	System TTI	PI	30	0	2048	2048
1/3/1	TUNNEL_SVC	-	Tunnel Services PreIngress	PI	30	0	512	512
1/3/1	SYSHI	-	System High	I	30	134	256	122
1/3/1	SYSLO	-	System Low	I	60	76	256	180
1/3/1	TUNNEL_SVC	-	Tunnel Services Ingress	I	10	0	2052	2052

```

1/3/1 -          QOS                I      60      0      512      512
1/3/1 -          UDPRLY UDP_RLY_ISF    I      60      0      256      256
1/3/1 -          ETHOAM               I      30      0       64       64
1/3/1 -          PVLAN PVLAN1         I      30      0      256      256
1/3/1 -          PVLAN PVLAN2         E      30      0      256      256
1/4/1 SYSPRE    -      System PreIngress  PI     30     48      256      208
1/4/1 TTI       -      System TTI          PI     30      0     2048     2048
1/4/1 TUNNEL_SVC -      Tunnel Services PreIngress PI     30      0      512      512
1/4/1 SYSHI     -      System High        I      60     134     256      122
1/4/1 SYSLO     -      System Low         I      60     76      256      180
1/4/1 TUNNEL_SVC -      Tunnel Services Ingress  I     10      0     2052     2052
1/4/1 -          QOS                I     120      0      512      512
1/4/1 -          UDPRLY UDP_RLY_ISF    I     120      0      256      256
1/4/1 -          ETHOAM               I      30      0       64       64
1/4/1 -          PVLAN PVLAN1         I      60      0      256      256
1/4/1 -          PVLAN PVLAN2         E      30      0      256      256

```

```
-> show tcam utilization 1/4/1 detail
```

Legend:

C/S/T = Chassis/Slot/TCAM

PI = Pre-Ingress

I = Ingress

E = Egress

C/S/T	App Group Name	App Name	Resource Name	Stage	Entry Size	Used Entries	Reserved Entries	Available Entries
1/4/1	SYSPRE	-	System PreIngress	PI	30	48	256	208
1/4/1	TTI	-	System TTI	PI	30	0	2048	2048
1/4/1	TUNNEL_SVC	-	Tunnel Services PreIngress	PI	30	0	512	512
1/4/1	SYSHI	-	System High	I	60	134	256	122
1/4/1	SYSLO	-	System Low	I	60	76	256	180
1/4/1	TUNNEL_SVC	-	Tunnel Services Ingress	I	10	0	2052	2052
1/4/1	-	QOS		I	120	0	512	512
1/4/1	-	UDPRLY UDP_RLY_ISF		I	120	0	256	256
1/4/1	-	ETHOAM		I	30	0	64	64
1/4/1	-	PVLAN PVLAN1		I	60	0	256	256
1/4/1	-	PVLAN PVLAN2		E	30	0	256	256

## Release History

Release 5.1; command introduced.

## Related Commands

### [show tcam utilization](#)

Displays runtime information about the TCAM utilization.

### [show tcam app-groups](#)

Displays the application groups and the applications that belong to each group within the context of TCAM utilization

**MIB Objects**

```
alaTcamDetailedUtilTable
  alaTcamDTableChassis
  alaTcamDTableSlot
  alaTcamDTableTCAMIndex
  alaTcamDTableStage
  alaTcamDTableGResourceId
  alaTcamDTableEntrySize
  alaTcamDTableUsedEntries
  alaTcamDTableReservedEntries
  alaTcamDTableAvailableEntries
  alaTcamDTableAppGroupName
  alaTcamDTableAppName
  alaTcamDTableResourceName
```

---

## show tcam app-groups

Displays the application groups and the applications that belong to each group within the context of Ternary Content Addressable Memory (TCAM) utilization.

**show tcam app-groups**

---

### Syntax Definitions

N/A

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

N/A

### Examples

```
-> show tcam app-groups
```

App-Group Name	App Name
SYSPRE	-
SYSHI	-
SYSLO	-
TTI	-
TUNNEL_SVC	-
TUNNEL_SVC	-
SYSEGR	-
EGR_SVC_PORT	-
-	IPV6
-	QOS
-	PVLAN
-	PVLAN
-	AG

### Release History

Release 5.1; command introduced.

### Related Commands

[show tcam utilization detail](#) Displays additional TCAM usage information, such as application usage.

[show tcam utilization](#) Displays runtime information about the TCAM utilization.

**MIB Objects**

```
alaTcamDetailedUtilTable
  alaTcamDTableChassis
  alaTcamDTableSlot
  alaTcamDTableTCAMIndex
  alaTcamDTableAppGroupName
  alaTcamDTableAppName
```

---



## show pmd-files

Displays a list of PMD files generated on the switch.

**show pmd-files**

---

### Syntax Definitions

N/A

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

N/A

### Examples

```
-> show pmd-files
```

```
##### PMD files (Chassis 1 /flash/pmd) #####
```

```
pmd-capmanc-06.10.2014-15.24.49  
pmd-agCmm-01.21.2016-15.07.32  
pmd-agCmm-01.21.2016-15.08.09  
pmd-capmanc-07.23.2016-14.28.25  
pmd-07.23.2016-14.39.24  
pmd-capmanc-2016.07.23-14.42.42p  
pmd-bcd2-07.13.2017-11.22.28  
pmd-bcd2-2017.07.26-15.02.12p
```

```
8 PMD files found
```

### Release History

Release 5.1; command introduced.

### Related Commands

[show chassis](#)

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

### MIB Objects

N/A

---

## show tech-support

Creates a log or tar file gathering important switch information that can be used by technical support.

```
show tech-support [layer2 | layer3 | eng [complete]]
```

---

### Syntax Definitions

<b>layer2</b>	Gathers layer 2 switch configuration information.
<b>layer3</b>	Gathers layer 3 switch configuration information.
<b>eng [complete]</b>	Gathers all relevant switch information from flash such as log files, configuration files, directories and creates an archive file with all the information.

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- Running the command with no parameters creates a **tech\_support.log** file.
- The **layer2** parameter creates a **tech\_support\_layer2.log** file.
- The **layer3** parameter creates a **tech\_support\_layer3.log** file.
- The **eng** parameter creates a **tech\_support\_eng.tar** file. The **complete** parameter creates a **tech\_support\_complete.tar** file with information from all switches in a VC along with the log files.

### Examples

```
-> show tech-support
-> show tech-support layer2
-> show tech-support layer3
-> show tech-support eng
-> show tech-support eng complete
```

### Release History

Release 5.1; command introduced.

**Related Commands****show chassis**

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

**MIB Objects**

N/A

---

## show mac-range

Displays the MAC range table.

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

---

### Syntax Definitions

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

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

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

### Examples

-> show mac range

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

#### *output definitions*

---

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

---

### Release History

Release 5.1; command introduced.

## Related Commands

### [show chassis](#)

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

## MIB Objects

```
chasMacAddressRangeTable
  chasMacRangeIndex
  chasGlobalLocal
  chasMacAddressStart
  chasMacAddressCount
  chasMacRowStatus
```

---



# 30 Network Time Protocol Commands

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

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

The MIB information for NTP is as follows:

*Filename:* ALCATEL-IND1-NTP-MIB.mib  
*Module:* alcatelIND1NTPMIB

A summary of available commands is listed here:

---

- [ntp server](#)
- [ntp client](#)
- [ntp broadcast](#)
- [ntp broadcast-client](#)
- [ntp broadcast-delay](#)
- [ntp key](#)
- [ntp key load](#)
- [ntp authenticate](#)
- [ntp interface](#)
- [ntp max-associations](#)
- [ntp broadcast](#)
- [ntp peer](#)
- [ntp vrf-name](#)
- [show ntp status](#)
- [show ntp client](#)
- [show ntp client server-list](#)
- [show ntp server client-list](#)
- [show ntp server status](#)
- [show ntp keys](#)
- [show ntp peers](#)
- [show ntp server disabled-interfaces](#)

---

## ntp server

Specifies an NTP server from which the switch will receive updates.

**ntp server** {*ip\_address* | *server\_name*} [**key** *key\_id* | | **minpoll** *poll* | **maxpoll** *poll* | **version** *version* | **prefer** | **burst** | **iburst** | **preempt**]

**no ntp server** *ip\_address*

---

### Syntax Definitions

<i>ip_address</i>	The IP address of the NTP server to be added or deleted to the client's server list.
<i>server_name</i>	Fully qualified NTP server domain name.
<i>key_id</i>	The key identification number that corresponds to the specified NTP server. The value ranges from 0 to 65534. 0 can be used to unconfigure the key ID.
<b>minpoll</b> <i>poll</i>	It specifies the minimum polling interval for NTP messages, in seconds. This number is determined by raising 2 to the power of the number entered. Therefore, if 4 were entered, the minimum poll time would be 16 seconds ( $2^4 = 16$ ). The minimum poll interval defaults to 6 (64 s), but can be decreased by the minpoll option to a lower limit of 3 (8 s) and an upper limit of 17 (36.4h).
<b>maxpoll</b> <i>poll</i>	It specifies the maximum polling interval for NTP messages, in seconds. This number is determined by raising 2 to the power of the number entered. Therefore, if 4 were entered, the maximum poll time would be 16 seconds ( $2^4 = 16$ ). The maximum poll interval defaults to 10 (1,024 s), but can be increased by the maxpoll option to an upper limit of 17 (36.4 h) and a lower limit of 3 (8 s). The maxpoll must not be less than the minpoll value.
<i>version</i>	The version of NTP being used. This will be 1, 2, 3, or 4.
<b>prefer</b>	Marks this server as the preferred server. A preferred server's timestamp will be used before another server.
<b>burst</b>	Enables burst mode. The burst mode allows the exchange of eight NTP messages (instead of one) when the server is reachable and at each poll interval to achieve faster synchronization. The spacing between the first and the second packet is 16 seconds to allow a modem call to complete, while the spacing between the remaining packets is 2 seconds.
<b>iburst</b>	Enables initial burst (iburst) mode. The iburst mode allows immediate exchange of eight NTP messages (instead of one) when the server is unreachable and at each poll interval, to achieve faster initial synchronization acquisition. The spacing between the packets is 16 seconds to allow a modem call to complete. Once the server is reachable, the spacing between the packets is 2 seconds.
<b>preempt</b>	Enables the preemption mode for the server rather than the default persistent.



## Defaults

Parameter	Default
<i>version</i>	4
<b>minpoll</b> <i>poll</i>	6
<b>maxpoll</b> <i>poll</i>	10
<b>prefer</b>	not preferred
<b>burst</b>	no burst
<b>iburst</b>	no iburst

## Platforms Supported

OmniSwitch 2260, 2360

## Usage Guidelines

- Use the **no** form of this command to clear an NTP server from the list of configured servers.
- To configure NTP in the client mode you must first define the NTP servers. Up to 12 NTP servers may be defined.
- Either an IP address or domain name for the specified server can be entered.
- The NTP key identification is an integer. It corresponds to an MD5 authentication key contained in an authentication file (.txt) located on the server. This file must be on both the server and the local switch, and match, for authentication to work. Enter the key identification using the **key** keyword if the server is set to MD5 authentication.
- An authentication key is composed of a 32-bit integer and 32-byte string of characters. The integer format is hexadecimal. For an NTP message to be authenticated the NTP client authentication key must match the key configured at the NTP server. This means the authentication keys must be distributed in advance of configuring the NTP client. If authentication is disabled but authentication key is present, the association will still be unauthenticated.
- Use the **version** keyword to set the correct version of NTP.
- Use the **minpoll** keyword to set the minimum poll time for the server. This number is determined by raising 2 to the power of the number entered. Therefore, if 4 were entered, the minimum poll time would be 16 seconds ( $2^4 = 16$ ). The client will poll the server for a time update when the **minpoll** time is exceeded.
- Use the **maxpoll** keyword to specifies the maximum polling interval for NTP messages. This number is determined by raising 2 to the power of the number entered. The maximum poll interval defaults to 10 (1,024 s), but can be increased by the maxpoll option to an upper limit of 17 (36.4 h) and a lower limit of 3 (8 s). The maxpoll must not be less than the minpoll value.
- NTP authentication must be disabled before adding or removing an NTP server.
- Burst mode of operation improves timekeeping quality with the server command and iburst mode of operation is designed to speed the initial synchronization acquisition with the server command.
- When preempt is enabled, the specified server is marked unavailable for selection if any error (authentication failure) is detected on a connection between the local device and reference clock. The

server is marked available for selection if no other connections are available and no error is detected on the connection between the local device and reference clock.

## Examples

```
-> ntp server 1.1.1.1
-> ntp server 0.pool.ntp.org
-> ntp server 1.1.1.1 key 1
-> ntp server 1.1.1.1 version 4
-> ntp server 0.pool.ntp.org minpoll 5
-> ntp server 0.pool.ntp.org maxpoll 6
-> ntp server 1.1.1.1 burst
-> ntp server 1.1.1.1 iburst
-> ntp server 1.1.1.1 preempt
-> no ntp server 1.1.1.1
```

## Release History

Release 5.1; command was introduced.

## Related Commands

<a href="#">ntp client</a>	Enables or disables NTP operation on the switch.
<a href="#">show ntp client server-list</a>	Displays a list of the servers with which the NTP client synchronizes.
<a href="#">show ntp server status</a>	Displays the basic server information for a specific NTP server or a list of NTP servers.

## MIB Objects

```
alaNtpConfig
  aalaNtpPeerIpAddress
  alaNtpPeerType
  alaNtpPeerAuth
  alaNtpPeerVersion
  alaNtpPeerMinpoll
  alaNtpPeerPrefer
  alaNtpPeerAdminalaNtpPeerName
  alaNtpPeerBurst
  alaNtpPeerIBurst
  alaNtpPeerPreempt
  alaNtpPeerMaxpoll
```

---

## ntp client

Enables or disables NTP time synchronization discipline.

**ntp client admin-state {enable | disable}**

---

### Syntax Definitions

<b>enable</b>	Enables NTP.
<b>disable</b>	Disables NTP.

### Defaults

NTP protocol is disabled by default.

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- Use this command to enable or disable NTP. Before NTP can be enabled, an NTP server must be specified using the [ntp server](#) command. Up to 12 NTP servers may be defined.
- It is not necessary to specify an NTP server if the NTP client will only receive time updates from NTP broadcast servers.
- NTP client will not synchronize with an unsynchronized NTP server (Stratum 16).

### Examples

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

### Release History

Release 5.1; command was introduced.

### Related Commands

[ntp server](#) Specifies an NTP server from which the switch will receive updates.

### MIB Objects

alaNtpEnable

---

## ntp broadcast-client

Enables or disables the NTP client to receive time updates from NTP broadcast servers.

**ntp broadcast-client** {enable | disable}

---

### Syntax Definitions

<b>enable</b>	Enables the client broadcast mode.
<b>disable</b>	Disables the client broadcast mode.

### Defaults

Broadcast mode is disabled by default.

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

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

### Examples

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

### Release History

Release 5.1; command was introduced.

### Related Commands

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

### MIB Objects

alaNtpBroadcastEnable

---

## ntp broadcast-delay

Sets the broadcast delay time in microseconds of received NTP broadcast messages.

**ntp broadcast-delay** *microseconds*

---

### Syntax Definitions

*microseconds*                      The number of microseconds for the broadcast delay.

### Defaults

parameter	default
<i>microseconds</i>	4000

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

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

### Examples

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

### Release History

Release 5.1; command was introduced.

### Related Commands

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

### MIB Objects

alaNtpBroadcastDelay

---

## ntp key

Labels the specified authentication key identification as trusted or untrusted.

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

---

### Syntax Definitions

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

### Defaults

By default, all authentication key are untrusted.

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- Authentication keys are stored in a key file and loaded into memory when the switch boots. The keys loaded into memory are not trusted until this command is used. The location of the file containing set of generated authentication keys is /flash/network/ntp.keys.
- Once the keys are loaded into software (on boot up of the switch), they must be activated by being labeled as trusted. A trusted key will authenticate with a server that requires authentication as long as the key matches the server key.
- New keys must be added manually to the key file. A newly added key will not be loaded into the switch software until the **ntp key load** command is issued, or the switch is rebooted.
- An authentication key is composed of a 32-bit integer and 32-byte string of characters. The integer format is hexadecimal. For an NTP message to be authenticated the NTP client authentication key must match the key configured at the NTP server. This means the authentication keys must be distributed in advance of configuring the NTP client. If authentication is disabled but authentication key is present, the association will still be unauthenticated.
- By default all keys read from the ntp.conf key file are untrusted therefore keys must be set to 'trusted' status to allow NTP to use the key for authentication.

### Examples

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

### Release History

Release 5.1; command was introduced.

**Related Commands**

**ntp key** Sets the public key the switch uses when authenticating with the specified NTP server.

**ntp client** Enables or disables NTP operation on the switch.

**MIB Objects**

```
alaNtpAccessKeyIdTable  
  alaNtpAccessKeyIdKeyId  
  alaNtpAccessKeyIdTrust
```

---

## ntp key load

Loads the current key file into memory.

**ntp key load**

---

### Syntax Definitions

N/A

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- This command reloads the key file into the switch memory. This allows for new keys in the key file to be added to the list of keys the switch can use for authentication.
- Newly added keys must be labeled as **trusted** with the **ntp key** command before being used for authentication.
- By default, all authentication keys are untrusted therefore reloading a key file will change any current trusted keys to untrusted status.
- The file ntp.keys is used during the establishment of a set of authentication keys that are used by the NTP protocol. The location of this file is fixed in directory /flash/network.

### Examples

```
-> ntp key load
```

### Release History

Release 5.1; command was introduced.

### Related Commands

- |                   |   |
|-------------------|---|
| <b>ntp key</b>    | Labels the specified authentication key identification as trusted or untrusted. |
| <b>ntp server</b> | Specifies an NTP server from which this switch will receive updates.            |

### MIB Objects

alaNtpAccessRereadkeyFile

---



## ntp authenticate

Enables or disables the authentication on a configured NTP server.

**ntp authenticate {enable | disable}**

---

### Syntax Definitions

<b>enable</b>	Enables authentication for NTP server.
<b>disable</b>	Disables authentication for NTP server.

### Defaults

By default, NTP authentication is disabled.

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- Use this command to enable or disable authentication for NTP server.
- Before NTP authentication is enabled, NTP operation should be enabled by using **ntp client** command.
- Before enabling the NTP operation, NTP server must be specified using the **ntp server** command.
- NTP authentication must be disabled before adding or removing an NTP server.

### Examples

```
-> ntp authenticate enable  
-> ntp authenticate disable
```

### Release History

Release 5.1; command was introduced.

### Related Commands

**show ntp status** Displays the information about the current NTP status.

### MIB Objects

alaNtpAuthenticate

---

## ntp interface

Enables or Disables NTP server functionality for an interface.

```
ntp interface {interface_ip} {enable | disable}
```

---

### Syntax Definitions

<i>interface_ip</i>	IP address of an interface on which NTP server functionality is to be disabled.
<b>enable</b>	Enables NTP server functionality on an interface.
<b>disable</b>	Disables NTP sever functionality on an interface.

### Defaults

By default, NTP server functionality is enabled on all the interfaces.

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- Use this command to enable or disable the incoming NTP request.
- Disabling the NTP server functionality drops the NTP request on an interface and synchronization information is not sent out.

### Examples

```
-> ntp interface 10.10.10.1 disable  
-> ntp interface 10.10.10.1 enable
```

### Release History

Release 5.1; command was introduced.

### Related Commands

[show ntp status](#) Displays current NTP status.

### MIB Objects

```
alaNtpAccessRestrictedTable  
  alaNtpAccessRestrictedIpAddress
```

---

## ntp max-associations

Configures the maximum number of associations on the switch.

**ntp max-associations** *number*

---

### Syntax Definitions

*number* Maximum no of client/server and peer associations. Integer value ranging from 0 to 512.

### Defaults

By default, 32 associations are allowed on the switch.

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- Use this command to restrict the number of client/server and peer association.
- The command can be used to change the default value of 32 to any value between 0 to 512.
- The command protects the switch from overwhelming with the NTP requests. When the limit is reached, trap is sent to indicate the switch.

### Examples

```
-> ntp max-associations 20
```

### Release History

Release 5.1; command was introduced.

### Related Commands

[show ntp status](#) Displays current NTP status.

### MIB Objects

```
alaNtpConfig  
  alaNtpMaxAssociation
```

---

## ntp broadcast

Enables NTP to broadcast synchronized information to all the clients in the subnet in the configured interval.

```
ntp broadcast {broadcast_addr} [version version] [minpoll poll_interval]
```

```
no ntp broadcast {broadcast_addr}
```

---

### Syntax Definitions

<i>broadcast_addr</i>	Subnet for which broadcast updates are regularly sent.
<i>version</i>	NTP version on which the broadcast updates are sent out on the subnet for the clients. Value is 3 or 4.
<i>poll_interval</i>	Polling interval for NTP broadcast message. This value is measured in seconds.

### Defaults

Parameter	Default
<i>version</i>	4
<i>poll_interval</i>	6

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- Use this command to configure NTP to act in broadcast server mode.
- Use the **no** form of this command to remove the configured broadcast servers. This also disables NTP synchronization information being sent for that broadcast subset.
- The NTP broadcast address needs to be defined to enable NTP broadcast mode. A maximum of 3 broadcast addresses can be configured.
- Use the **version** keyword to set the correct version of NTP.
- Use the **minpoll** keyword to set the minimum poll time for the server. This number is determined by raising 2 to the power of the number entered.

### Examples

```
-> ntp broadcast 10.145.59.255 version 4 minpoll 5  
-> no ntp broadcast 10.145.59.255
```

### Release History

Release 5.1; command was introduced.

## Related Commands

**ntp broadcast**

Enables or disables the client's broadcast mode.

**ntp broadcast-delay**

Sets the broadcast delay time in microseconds

## MIB Objects

alaNtpPeerTable

  alaNtpPeerType

  alaNtpPeerVersion

  alaNtpPeerMinpoll

---

## ntp peer

Configures NTP to operate in the symmetric active peering mode. This also enables the establishment of an active symmetric association with the specified remote peer.

```
ntp peer {ip_address} [key key_id] [version version] [minpoll poll_interval]
```

```
no ntp peer {ip_address}
```

---

### Syntax Definitions

<i>ip_address</i>	IP address of the remote peer.
<i>key_id</i>	Authentication key for the remote peer.
<i>version</i>	NTP packet version to be used for the peer association.
<i>poll_interval</i>	Polling interval for NTP broadcast message. Poll interval which when expires, packets will be sent to the peer.

### Defaults

Parameter	Default
<i>version</i>	4
<i>poll_interval</i>	6

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- Use **no** form of this command to remove the peers that are configured to act in symmetric active mode. This command deletes the symmetric active association with the remote peer.
- Use the **version** keyword to set the correct version of NTP.
- Use the **minpoll** keyword to set the minimum poll time for the server. This number is determined by raising 2 to the power of the number entered.
- The command should not be used for b(Broadcast), m(Multicast) or r(Reference clock address 127.127.x.x).
- *ip-address* is the mandatory parameter to be entered in the command while key id is the optional parameter. If key id is not specified, then peering will not be authenticated.

### Examples

```
-> ntp peer 172.18.16.112  
-> no ntp peer 172.18.16.112
```

### Release History

Release 5.1; command was introduced.

## Related Commands

[show ntp peers](#)

Displays current NTP peer association.

## MIB Objects

alaNtpPeerTable

  alaNtpPeerType

  alaNtpPeerAuth

  alaNtpPeerVersion

  alaNtpPeerMinpoll

---





## show ntp status

Displays the information about the current NTP status.

**show ntp status**

---

### Syntax Definitions

N/A

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- This command displays the information about the status of NTP, which is configured along with other global configuration. See the Examples section for more information.
- If the source IP Configuration is done in default or no-loopback0 then the source ip-address will not be displayed in the output of the **show ntp status** command.

### Example

```
-> show ntp status
Current time:           Mon, Jan 21 2019  7:31:04.685 (UTC),
Last NTP update:      Mon, Jan 21 2019  7:30:10.160 (UTC),
Server reference:     10.10.10.10,
Client mode:          enabled,
Broadcast client mode: disabled,
Broadcast delay (microseconds): 4000,
Stratum:              4,
Maximum Associations Allowed: 32,
Authentication:      enabled,
VRF Name:             default
```

---

<b>Current time</b>	The current time for the NTP client.
<b>Last NTP update</b>	The time of the last synchronization with an NTP server.
<b>Server reference</b>	The source of the time signal, which is the address of the NTP server that provided the currently-used time update.
<b>Client mode</b>	Whether the NTP client software is enabled or disabled.
<b>Broadcast client mode</b>	What NTP mode the client is running in, either client or broadcast.
<b>Broadcast delay</b>	The number of microseconds in the advertised broadcast delay time. This field is absent if the client broadcast mode is disabled.
<b>Stratum</b>	The stratum of the server. The stratum number is the number of hops from a UTC time source.

---

<b>Maximum Associations Allowed</b>	Maximum association on the switch that restricts the number of client/server and peer association
<b>Authentication</b>	Whether Authentication is enabled or disabled
<b>VRF Name</b>	Name of the VRF.

---

## Release History

Release 5.1; command introduced.

## Related Command

<a href="#">ntp client</a>	Enables or disables NTP operation on the switch.
<a href="#">ntp server</a>	Specifies an NTP server from which the switch will receive updates
<a href="#">ntp max-associations</a>	Configures the maximum number of associations on the switch.
<a href="#">ntp broadcast</a>	Enables or disables the client's broadcast mode.
<a href="#">show ntp client</a>	Displays information about the current client NTP configuration.
<a href="#">show ntp client server-list</a>	Displays a list of the servers with which the NTP client synchronizes
<a href="#">show ntp server client-list</a>	Displays the basic server information for a specific NTP server or a list of NTP servers

## MIB Objects

```

alaNtpPeerListTable
  alaNtpPeerShowOriginateTime
  alaNtpPeerShowTransmitTime
  alaNtpEnable
  alaNtpBroadcastEnable
  alaNtpBroadcastDelay
  alaNtpPeerTests
  alaNtpPeerStratum
  alaNtpPeerTests
  alaNtpAuthenticate
  alaNtpSrcIpConfig
  alaNtpSrcTp
  alaIpNtpVrfName

```

---

## show ntp client

Displays information about the current client NTP configuration.

**show ntp client**

---

### Syntax Definitions

N/A

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

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

### Examples

```
-> show ntp client
Current time:                Mon, Jan 21 2019  7:31:12.505 (UTC),
Last NTP update:            Mon, Jan 21 2019  7:30:10.160 (UTC),
Server reference:           10.10.10.10,
Client mode:                 enabled,
Broadcast client mode:      disabled,
Broadcast delay (microseconds): 4000,
VRF Name:                   default
```

#### *output definitions*

---

<b>Current time</b>	The current time for the NTP client.
<b>Last NTP update</b>	The time of the last synchronization with an NTP server.
<b>Server reference</b>	The source of the time signal, which is the address of the NTP server that provided the currently-used time update.
<b>Client mode</b>	Whether the NTP client software is enabled or disabled.
<b>Broadcast client mode</b>	What NTP mode the client is running in, either client or broadcast.
<b>Broadcast delay</b>	The number of microseconds in the advertised broadcast delay time. This field is absent if the client broadcast mode is disabled.
<b>VRF Name</b>	Name of the VRF.

---

### Release History

Release 5.1; command was introduced.

**Related Command****ntp client**

Enables or disables NTP operation on the switch.

**MIB Objects**

```
alaNtpLocalInfo  
alaIpNtpVrfName
```

---

## show ntp client server-list

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

**show ntp client server-list**

---

### Syntax Definitions

N/A

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

Use this command to display tabular information on the current NTP client to server association status.

### Examples

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

Legends: + active peer, - passive peer, = client, \* current system peer,  
^ broadcast server, ' broadcast client

Mode	IP Address	Ver	Key	St	when	poll	reach	Delay	Offset	Disp
*	198.206.181.70	4	0	2	895	1024	377	0.167	0.323	0.016
=	198.206.181.123	4	0	16	591	1024	377	0.000	0.000	0.000

### output definitions

---

<b>Mode</b>	"+" indicates an active peer "-" indicates a pasive peer "=" indicates a client "*" indicates current system peer "^" indicates a broadcast server "'" indicates a broadcast client
<b>IP Address</b>	The server IP address.
<b>Ver</b>	The version of NTP the server is using. Versions 3 and 4 are valid.
<b>Key</b>	The NTP server's public key. This must be accurate and the same as the NTP server, or the client switch will not be able to synchronize with the NTP server. A zero (0) means there is no key entered.
<b>St</b>	The stratum of the server.
<b>When</b>	Number of seconds passed since last response from remote host.
<b>Poll</b>	Polling interval to the remote host in seconds.

*output definitions*

---

<b>Reach</b>	This is a shift register used to determine the reachability status of this peer. This register is displayed to the user in octal values instead of binary, decimal or even hex. The maximum value of an eight-bit binary number is 11111111, which is 377 in octal.
<b>Delay</b>	The delay received from the server in its timestamp.
<b>Offset</b>	The offset received from the server in its timestamp.
<b>Disp</b>	The dispersion value received from the server in its timestamp.

---

**Release History**

Release 5.1; command was introduced.

**Related Command**

**ntp client** Enables or disables NTP operation on the switch.

**MIB Objects**

alaNtpPeerListTable

---

## show ntp server client-list

Displays the information about the current NTP clients connected to the server.

**show ntp server client-list**

---

### Syntax Definitions

N/A

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

Use this command to display the tabular information on the current NTP client connected to the server (switch).

### Examples

```
-> show ntp server client-list
IP Address          Ver      Key
-----+-----+-----
172.23.0.201        4         0
10.255.24.121       4         0
```

### *output definitions*

---

<b>IP Address</b>	The client IP address.
<b>Ver</b>	The version of NTP the server is using. Versions 3 and 4 are valid.
<b>Key</b>	The NTP server's public key. This must be accurate and the same as the NTP server or the client switch will not be able to synchronize with the NTP server. A zero (0) means there is no key entered.

---

### Release History

Release 5.1; command was introduced.

**Related Command****show ntp status**

Displays information about the current client NTP configuration

**ntp client**

Enables or disables NTP operation on the switch.

**MIB Objects**

```
alaNtpClientListTable
  alaNtpPeerListAddress
  alaNtpPeerVersion
  alaNtpPeerAuth
```

---



## show ntp server status

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

**show ntp server status** [*ip\_address*]

---

### Syntax Definitions

*ip\_address*                      The IP address of the NTP server to be displayed.

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- This command displays information on the status of any or all configured NTP servers/peers.
- To display a specific server, enter the command with the server's IP address. To display all servers, enter the command with no server IP address.

### Examples

```
-> show ntp server status
IP address      = clock3.ovccirrus.com [123.108.200.124],
Host mode       = client,
Peer mode       = server,
Prefer          = no,
Version         = 4,
Key             = 0,
Stratum         = 2,
Minpoll        = 6 (64 seconds),
Maxpoll         = 10 (1024 seconds),
Poll            = 1024 seconds,
when            = 283 seconds,
Delay           = 0.016 seconds,
Offset          = -180.232 seconds,
Dispersion      = 7.945 seconds
Root distance   = 0.026,
Precision       = -14,
Reference IP    = 209.81.9.7,
Status          = configured : reachable : rejected,
Uptime count    = 1742 seconds,
Reachability    = 1,
Unreachable count = 0,
Stats reset count = 1680 seconds,
Packets sent    = 1,
Packets received = 1,
Duplicate packets = 0,
Bogus origin    = 0,
Bad authentication = 0,
```

```

Bad dispersion      = 0,

-> show ntp server status 198.206.181.139
IP address          = 198.206.181.139,
Host mode           = client,
Peer mode           = server,
Prefer              = no,
Version             = 4,
Key                 = 0,
Stratum             = 2,
Minpoll             = 6 (64 seconds),
Maxpoll             = 10 (1024 seconds),
Poll                = 1024 seconds,
when                = 283 seconds,
Delay               = 0.016 seconds,
Offset              = -180.232 seconds,
Dispersion          = 7.945 seconds
Root distance       = 0.026,
Precision           = -14,
Reference IP        = 209.81.9.7,
Status              = configured : reachable : rejected,
Uptime count        = 1742 seconds,
Reachability        = 1,
Unreachable count   = 0,
Stats reset count   = 1680 seconds,
Packets sent        = 1,
Packets received    = 1,
Duplicate packets   = 0,
Bogus origin        = 0,
Bad authentication  = 0,
Bad dispersion      = 0,
Last Event          = peer changed to reachable,

```

### *output definitions*

---

<b>IP address</b>	The server IP address.
<b>Host mode</b>	The host mode of this remote association.
<b>Peer mode</b>	The peer mode of this remote association.
<b>Prefer</b>	Whether this server is a preferred server or not. A preferred server is used to synchronize the client before a non-preferred server.
<b>Version</b>	The version of NTP the server is using. Versions 3 and 4 are valid.
<b>Key</b>	The NTP server's public key. This must be accurate and the same as the NTP server, or the client switch will not be able to synchronize with the NTP server. A zero (0) means there is no key entered.
<b>Stratum</b>	The stratum of the server. The stratum number is the number of hops from a UTC time source.
<b>Minpoll</b>	The minimum poll time. The client will poll the server for a time update every time this limit has been exceeded.
<b>Maxpoll</b>	The maximum poll time.
<b>When</b>	Number of seconds passed since last response from remote host.
<b>Poll</b>	Polling interval to the remote host in seconds.
<b>Delay</b>	The delay received from the server in its timestamp.

*output definitions (continued)*


---

<b>Offset</b>	The offset received from the server in its timestamp.
<b>Dispersion</b>	The dispersion value received from the server in its timestamp.
<b>Root distance</b>	The total round trip delay (in seconds) to the primary reference source.
<b>Precision</b>	The advertised precision of this association.
<b>Reference IP</b>	The IP address identifying the peer's primary reference source.
<b>Status</b>	The peer selection and association status.
<b>Uptime count</b>	The time period (in seconds) during which the local NTP server was associated with the switch.
<b>Reachability</b>	The reachability status of the peer.
<b>Unreachable count</b>	Number of times the NTP entity was unreachable.
<b>Stats reset count</b>	The time delay (in seconds) since the last time the local NTP server was restarted.
<b>Packets sent</b>	Number of packets sent.
<b>Packets received</b>	Number of packets received.
<b>Duplicate packets</b>	Number of duplicated packets received.
<b>Bogus origin</b>	Number of bogus packets.
<b>Bad authentication</b>	Number of NTP packets rejected for not meeting the authentication standards.
<b>Bad dispersion</b>	Number of bad dispersions.
<b>Last Event</b>	The last event.

---

**Release History**

Release 5.1; command was introduced.

**Related Command**

**ntp client** Enables or disables NTP operation on the switch.

**MIB Objects**

alaNtpPeerListTable  
 alaNtpPeerShowStatus

---

## show ntp keys

Displays information about all authentication keys.

**show ntp keys**

---

### Syntax Definitions

N/A

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

This command displays the information on the current set of trusted authentication keys.

### Examples

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

#### *output definitions*

---

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

---

### Release History

Release 5.1; command was introduced.

**Related Command**

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

**ntp key load** Loads the current key file into memory.

**MIB Objects**

alaNtpAccessKeyIdTable

---

## show ntp peers

Displays the information about the current status on the NTP peer association.

**show ntp peers**

---

### Syntax Definitions

N/A

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

Use this command to display the tabular information on the current NTP peer association status.

### Examples

```
-> show ntp peers
```

IP Address	Ver	Key	St	When	Poll	Reach	Delay	Offset	Disp
172.23.0.202	4	0	3	895	1024	377	0.300	0.404	0.0024
10.255.24.120	4	0	3	591	1024	377	0.016	0.250	0.0017

### output definitions

---

<b>IP Address</b>	Peer IP Address
<b>Ver</b>	The version of NTP the server is using. Versions 3 and 4 are valid.
<b>Key</b>	The NTP server's public key. This must be accurate and the same as the NTP server or the client switch will not be able to synchronize with the NTP server. A zero (0) means there is no key entered.
<b>St</b>	The stratum of the server.
<b>When</b>	Number of seconds passed since last response from remote host.
<b>Poll</b>	Polling interval to the remote host in seconds.
<b>Reach</b>	This is a shift register used to determine the reachability status of this peer. This register is displayed to the user in octal values instead of binary, decimal or even hex. The maximum value of an eight-bit binary number is 11111111, which is 377 in octal.
<b>Delay</b>	The delay received from the server in its timestamp.
<b>Offset</b>	The offset received from the server in its timestamp.
<b>Disp</b>	The dispersion value received from the server in its timestamp.

---

## Release History

Release 5.1; command was introduced.

## Related Command

[ntp client](#)

Enables or disables NTP operation on the switch.

[show ntp status](#)

Displays the information about the current NTP status.

[show ntp server status](#)

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

## MIB Objects

```
alaNtpPeerListTable  
  alaNtpPeerListAddress  
  alaNtpPeerVersion  
  alaNtpPeerAuth  
  alaNtpPeerStratum  
  alaNtpPeerListDelay  
  alaNtpPeerShowOffset  
  alaNtpPeerListDispersion
```

---

## show ntp server disabled-interfaces

Displays the ip addresses of the interfaces on which NTP server is not enabled.

**show ntp server disabled-interfaces**

---

### Syntax Definitions

N/A

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

This command displays ip interfaces on which currently NTP server functionality is disabled.

### Examples

```
-> show ntp server disabled-interfaces
IP Address
-----
172.23.0.202
10.255.24.120
```

### *output definitions*

---

IP Address	Peer IP Address
------------	-----------------

---

### Release History

Release 5.1; command was introduced.

### Related Command

[show ntp status](#)

Displays the information about the current NTP status.

[show ntp server status](#)

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

### MIB Objects

```
alaNtpAccessRestrictedTable
  alaNtpPeerListAddress
```

---



# 31 Session Management Commands

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

	OmniSwitch
<b>Telnet(v4)</b>	6
<b>FTP(v4)</b>	4
<b>SSH + SFTP(v4)</b>	8
<b>HTTP</b>	4

MIB information for commands in this chapter are as follows:

*Filename:* ALCATEL-IND1-SESSION-MGR-MIB.mib  
*Module:* alcatelIND1SessionMgrMIB

*Filename:* ALCATEL-IND1-SYSTEM-MIB.mib  
*Module:* alcatelIND1SystemMIB

*Filename:* ALCATEL-IND1-IP-MIB.mib  
*Module:* alcatelIND1IPMIB

A summary of the available commands is listed here:

---

**session login-attempt**  
**session login-timeout**  
**session banner**  
**session timeout**  
**session prompt**  
**session xon-xoff**  
**show prefix**  
**user profile save**  
**user profile reset**  
**history**  
**command-log**  
**kill**  
**exit**  
**who**  
**whoami**  
**show session config**  
**show session xon-xoff**  
**more**  
**telnet**  
**ssh**  
**ssh login-grace-time**  
**ssh enforce-pubkey-auth**  
**ssh strong-ciphers**  
**ssh strong-hmacs**  
**installsshkey**  
**revokesshkey**  
**show command-log status**  
**show telnet**  
**show ssh**

---

## session login-attempt

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

**session login-attempt** *integer*

---

### Syntax Definitions

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

### Defaults

Default is 3 login attempts.

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

N/A

### Examples

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

### Release History

Release 5.1; command was introduced.

### Related Commands

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

### MIB Objects

sessionMgr  
sessionLoginAttempt

---

## session login-timeout

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

**session login-timeout** *seconds*

---

### Syntax Definitions

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

### Defaults

Login timeout default is 55 seconds.

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

N/A

### Examples

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

### Release History

Release 5.1; command was introduced.

### Related Commands

- |                                       |   |
|---------------------------------------|---|
| <a href="#">show session config</a>   | Displays Session Manager information such as banner file name, session timeout value, default prompt value, login timer, and login attempt number.  |
| <a href="#">session login-attempt</a> | Sets or resets the number of times a user can attempt unsuccessfully to log into the switch before the TCP connection is closed.  |
| <a href="#">session timeout</a>       | Configures the inactivity timer for a CLI, HTTP (including WebView), or FTP interface. When the switch detects no user activity for this period of time, the user is logged off the switch. |

### MIB Objects

```
sessionMgr  
  sessionLoginTimeout
```

---

## session banner

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

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

```
no session {cli | ftp | http} banner
```

---

### Syntax Definitions

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

### Defaults

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

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- The **no session banner** command is used to disable a user defined session banner file from displaying when you log onto the switch.
- The **session banner** command is used to configure or modify the banner file *name*. You must use a text editor to edit the file containing the banner text.

### Examples

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

### Release History

Release 5.1; command was introduced.

## Related Commands

### [show session config](#)

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

## MIB Objects

SessionConfigTable

  SessionType

  SessionBannerFileName

---

## session timeout

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

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

---

### Syntax Definitions

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

### Defaults

---

parameter	default
<i>minutes</i>	4

---

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

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

### Examples

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

### Release History

Release 5.1; command was introduced.

### Related Commands

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

### MIB Objects

```
SessionConfigTable  
  SessionType  
  SessionInactivityTimerValue
```

---

## session prompt

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

**session prompt default** [*string*]

---

### Syntax Definitions

*string* Prompt string. Maximum length 31 characters.

### Defaults

parameter	default
<i>string</i>	->

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

The new prompt will not take effect until you log off and back onto the switch.

### Examples

```
-> session prompt default -->
```

### Release History

Release 5.1; command was introduced.

### Related Commands

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

### MIB Objects

```
SessionConfigTable  
  SessionType  
  sessionDefaultPromptString
```

---



## session xon-xoff

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

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

---

### Syntax Definitions

<b>enable</b>	Enables XON-XOFF on the console port.
<b>disable</b>	Disables XON-XOFF on the console port.

### Defaults

---

parameter	default
enable   disable	disable

---

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

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

### Examples

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

### Release History

Release 5.1; command was introduced.

### Related Commands

<a href="#">show session xon-xoff</a>	Displays whether the console port is enabled or disabled for XON-XOFF.
---------------------------------------	--

### MIB Objects

```
sessionXonXoffEnable
```

---

## show prefix

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

`show prefix`

---

### Syntax Definitions

N/A

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

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

### Examples

```
-> show prefix
```

### Release History

Release 5.1; command was introduced.

### Related Commands

[show prefix](#)

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

### MIB Objects

N/A

---

## user profile save

Saves the user account settings for prompts and the more mode screen setting. These settings will be automatically loaded when the user account logs on.

user profile save

---

### Syntax Definitions

N/A

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- Use this command to save prompt definitions and more mode screen settings for use in future login sessions for the current user account.
- Use the **user profile reset** command to set values to their factory defaults.

### Examples

```
-> user profile save
```

### Release History

Release 5.1; command was introduced.

### Related Commands

- |                                    |  |
|------------------------------------|--|
| <a href="#">show prefix</a>        | Defines substitute command text for the switch's CLI command keywords. |
| <a href="#">user profile reset</a> | Resets the alias, prompt and more values to their factory defaults.    |

### MIB Objects

N/A

---

## user profile reset

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

user profile reset

---

### Syntax Definitions

N/A

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

N/A

### Examples

```
-> user profile reset
```

### Release History

Release 5.1; command was introduced.

### Related Commands

#### [show prefix](#)

Defines substitute command text for the switch's CLI command keywords.

#### [user profile save](#)

Saves the user account settings for aliases, prompts and the more screen.

### MIB Objects

N/A

---



## !

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

!{! | *n*}

---

## Syntax Definitions

- !** Recalls the last command listed in the history buffer and displays that command at the CLI prompt.
- n*** Identifies a single command in the history buffer by number and displays that command at the CLI prompt.

## Defaults

N/A

## Platforms Supported

OmniSwitch 2260, 2360

## Usage Guidelines

- You can use the **history** command to list all commands in the history buffer, then use the **!*n*** syntax to issue a single command from the list.
- When you use **!*n*** or **!!** to recall a command in the history buffer list, you must press the Enter key to execute the command.

## Examples

```
-> history
1* show ip interface
2 show vlan
3 show arp
4 clear arp
->!2
show vlan
vlan  type  admin  oper  ip    mtu   name
-----+-----+-----+-----+-----+-----+-----
   1   std    Ena    Ena   Dis   1500  VLAN 1
  10   std    Ena    Ena   Ena   1500  VLAN 10
  12   std    Ena    Ena   Ena   1500  VLAN 12
  14   std    Ena    Ena   Ena   1500  VLAN 14
  30   vip    Ena    Ena   Ena   1500  VIP VLAN 30
  40   vip    Ena    Ena   Ena   1500  VIP VLAN 40
4094  mcm    Ena    Ena   Dis   9198  MCM IPC
```

## Release History

Release 5.1; command was introduced.

---

## Related Commands

### history

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

## MIB Objects

N/A

---

## command-log

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

**command-log** {enable | disable}

---

### Syntax Definitions

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

### Defaults

---

parameter	default
enable   disable	disable

---

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

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

### Examples

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

### Release History

Release 5.1; command was introduced.

### Related Commands

<a href="#">show command-log</a>	Displays the contents of the <b>command.log</b> file.
<a href="#">show command-log status</a>	Shows the current status of the command logging function (i.e., enabled or disabled).

### MIB Objects

sessionCliCommandLogEnable

---



## kill

Kills an active session. The command takes effect immediately.

**kill** *session\_number*

---

### Syntax Definitions

*session\_number*                      Number of the session you want to kill.

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

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

### Examples

```
-> kill 3
```

### Release History

Release 5.1; command was introduced.

### Related Commands

**who**                                      Displays all active login sessions (e.g., Console, Telnet, FTP, HTTP)

### MIB Objects

SessionMgr  
    sessionIndex  
    sessionRowStatus

---

## exit

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

exit

---

### Syntax Definitions

N/A

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

N/A

### Examples

```
-> exit
```

### Release History

Release 5.1; command was introduced.

### Related Commands

**kill** Kills an active session. The command takes effect immediately.

### MIB Objects

```
SessionMgr  
  sessionIndex  
  sessionRowStatus
```

---

## whoami

Displays the current user session.

**whoami**

---

### Syntax Definitions

N/A

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

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

### Examples

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

#### *output definitions*

---

<b>Session Number</b>	The session number assigned to the user.
<b>User name</b>	User name.
<b>Access type</b>	Type of access protocol used to connect to the switch.
<b>Access port</b>	Switch port used for access during this session.
<b>Ip Address</b>	User IP address.
<b>Read-only domains</b>	The command domains available with the user's read-only access.
<b>Read-only families</b>	The command families available with the user's read-only access.
<b>Read-Write domains</b>	The command domains available with the user's read-write access.
<b>Read-Write families</b>	The command families available with the user's read-write access.

---

### Release History

Release 5.1; command was introduced.

## Related Commands

**who**

Displays all active login sessions (e.g., Console, Telnet, FTP, HTTP).

**kill**

Kills another user's session.

## MIB Objects

SessionActive

```
sessionIndex  
sessionAccessType  
sessionPhysicalPort  
sessionUserName  
sessionUserReadPrivileges  
sessionUserWritePrivileges  
sessionUserProfileNumber  
sessionUserIpAddress  
sessionRowStatus
```

---

## who

Displays all active login sessions.

**who**

---

### Syntax Definitions

N/A

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

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

### Examples

```
-> who
Session number = 0
  User name   = (at login),
  Access type = console,
  Access port = Local,
  IP address  = 0.0.0.0,
  Read-only domains = None,
  Read-only families = ,
  Read-Write domains = None,
  Read-Write families = ,

Session number = 5
  User name   = admin,
  Access type = telnet,
  Access port = NI,
  IP address  = 128.251.17.176,
  Read-only domains = None,
  Read-only families = ,
  Read-Write domains = All ,
  Read-Write families = ,
```

### *output definitions*

---

<b>Session Number</b>	The session number assigned to the user.
<b>User name</b>	User name.
<b>Access type</b>	Type of access protocol used to connect to the switch.

*output definitions (continued)*


---

<b>Access port</b>	Switch port used for access during this session.
<b>Ip Address</b>	User IP address.
<b>Read-only domains</b>	The command domains available with the user's read-only access.
<b>Read-only families</b>	The command families available with the user's read-only access.
<b>Read-Write domains</b>	The command domains available with the user's read-write access.
<b>Read-Write families</b>	The command families available with the user's read-write access.

---

Possible values for command domains and families are listed here:

**Release History**

Release 5.1; command was introduced.

**Related Commands**

<b>whoami</b>	Displays current user session.
<b>kill</b>	Kills another user's session.

**MIB Objects**

```

SessionActive
  sessionIndex
  sessionAccessType
  sessionPhysicalPort
  sessionUserName
  sessionUserReadPrivileges
  sessionUserWritePrivileges
  sessionUserProfileNumber
  sessionUserIpAddress
  sessionRowStatus

```

---

## show session config

Displays session manager configuration information (e.g., default prompt, banner file name, inactivity timer, login timer, and login attempts).

**show session config**

---

### Syntax Definitions

N/A

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

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

### Examples

```
-> show session config
```

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

### *output definitions*

---

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

---

*output definitions (continued)*

---

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

---

**Release History**

Release 5.1; command was introduced.

**Related Commands**

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

**MIB Objects**

```
SessionConfigTable
  sessionType
  sessionBannerFileName
  sessionInactivityTimerValue
  sessionDefaultPromptString
```

---



## show session xon-xoff

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

```
show session xon-xoff
```

---

### Syntax Definitions

N/A

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

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

### Examples

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

### Release History

Release 5.1; command was introduced.

### Related Commands

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

### MIB Objects

```
sessionXonXoffEnable
```

---



## telnet

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

```
telnet {port [default | service_port] | admin-state [enable | disable] | ip_address}
```

---

### Syntax Definitions

<b>default</b>	Sets the port back to the default of 23.
<i>service_port</i>	The TCP service port number. Must be 23 or between 20000-20999.
<b>enable   disable</b>	Enables or disables telnet access.
<i>ip_address</i>	Specifies the IPv4 or IPv6 address for the Telnet session.

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

The default directory for Telnet is **/flash**.

### Examples

```
-> telnet port 20999
-> telnet admin-state disable
-> telnet 172.17.6.228
```

### Release History

Release 5.1; command introduced.

### Related Commands

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

**show telnet** Displays the current configuration specifying the ports the telnet daemons are listening on.

**MIB Objects**

SystemServices

- systemServicesArg1
- systemServicesAction
- alaIpTelnetAdminStatus

---

## ssh

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

```
ssh {port [default | service_port] | admin-state [enable | disable] | ip_address}
```

---

### Syntax Definitions

<b>default</b>	Sets the port back to the default of 22.
<i>service_port</i>	The TCP service port number. Must be 23 or between 20000-20999.
<b>enable   disable</b>	Enables or disables Secure Shell.
<i>ip_address</i>	Specifies the IPv4 or IPv6 address for the Secure Shell.

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

You must have a valid username and password for the specified host.

### Examples

```
-> ssh port 20000
-> ssh admin-state disable
-> ssh 172.155.11.211
login as:
```

### Release History

Release 5.1; command was introduced.

### Related Commands

<a href="#">telnet</a>	Invokes a Telnet session. A Telnet session is used to connect to a remote system or device.
<a href="#">ssh enforce-publickey-auth</a>	Invokes Secure Shellv6 on the switch. Secure Shellv6 is used to make a secured connection to an SSHv6 server.
<a href="#">show command-log</a>	Displays the status of Secure Shell, SCP/SFTP on the switch.
<a href="#">show ssh</a>	Displays the current configuration specifying the ports SSH daemons are listening on.

**MIB Objects**`alaIpSshConfig``alaIpSshAdminStatus``alaIpSshPort`

---

## ssh login-grace-time

Configures the duration in which the user has to enter a login password and authenticate for an SSH session.

`ssh login-grace-time seconds`

---

### Syntax Definitions

*seconds*                      The number of seconds for the grace time period. The range is 30–600.

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

By default, the login grace time period is set to 120 seconds.

### Examples

```
-> ssh login-grace-time 300
-> ssh login-grace-time 600
```

### Release History

Release 5.1; command was introduced.

### Related Commands

[show ssh](#)                      Displays the current SSH configuration for the switch.

### MIB Objects

```
alaIpSshConfig
  alaIpSshLoginGraceTime
```

---

## ssh enforce-pubkey-auth

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

```
ssh enforce-pubkey-auth {enable | disable}
```

---

### Syntax Definitions

<b>enable</b>	Enforces only SSH public key authentication.
<b>disable</b>	Enforces both SSH public key and password authentication.

### Defaults

---

parameter	default
enable   disable	disable

---

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

N/A

### Examples

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

### Release History

Release 5.1; command was introduced.

### Related Commands

<a href="#">telnet</a>	Invokes a Telnet session. A Telnet session is used to connect to a remote system or device.
------------------------	---

### MIB Objects

```
alaIpSshConfig  
  alaIpSshPubKeyEnforceAdminStatus
```

---



## ssh strong-ciphers

Enables or disables the enforcement of a Secure Shell (SSH) cipher configuration across a switch reboot.

`ssh strong-ciphers {enable | disable}`

---

### Syntax Definitions

<code>enable</code>	Enables the enforcement of an SSH cipher configuration.
<code>disable</code>	Disables the enforcement of an SSH cipher configuration.

### Defaults

---

parameter	default
<code>enable   disable</code>	<code>disable</code>

---

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

N/A

### Examples

```
-> ssh strong-ciphers enable
-> ssh strong-ciphers disable
```

### Release History

Release 5.1; command was introduced.

### Related Commands

[show ssh](#) Displays the current SSH configuration for the switch.

### MIB Objects

alaIpSshConfig  
alaIpSshStrongCiphersAdminStatus

---

## ssh strong-hmacs

Enables or disables the enforcement of a Secure Shell (SSH) HMAC configuration across a switch reboot.

```
ssh strong-hmacs {enable | disable}
```

---

### Syntax Definitions

<b>enable</b>	Enables the enforcement of an HMAC configuration.
<b>disable</b>	Disables the enforcement of an HMAC configuration.

### Defaults

parameter	default
enable   disable	disable

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- SSH HMAC refers to message authentication codes that use cryptographic hash functions.
- Enable strong-hmacs will enforce the use of “*hmac-sha1* , *hmac-sha2-256*, *hmac-sha2-512*” in ssh server.
- Disable will select default hmacs in the configuration.

### Examples

```
-> ssh strong-hmacs enable  
-> ssh strong-hmacs disable
```

### Release History

Release 5.1; command was introduced.

### Related Commands

[show ssh](#) Displays the current SSH configuration for the switch.

### MIB Objects

```
alaIpSshConfig  
  alaIpSshStrongHmacsAdminStatus
```

---

## installsshkey

Used to install the public key used for SSH onto the switch.

`installsshkey user path`

---

### Syntax Definitions

*user*                                      The user that the key will be associated with.  
*path*                                        The location of the key file.

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- Be sure the associated private key is stored on the client device.
- Verify that the user that will use SSH is a valid user name on the OmniSwitch.

### Examples

```
-> installsshkey new_ssh_user /flash/system/new_ssh_user_rsa.pub
```

### Release History

Release 5.1; command was introduced.

### Related Commands

[revokesshkey](#)                              Used to revoke a key from an SSH user.  
[show ssh](#)                                      Displays the current SSH configuration for the switch.

### MIB Objects

N/A

---

## revokesshkey

Used to revoke a key from an SSH user.

```
revokesshkey user remote-user
```

---

### Syntax Definitions

<i>user</i>	The local user name.
<i>remote-user</i>	The user on the remote client device.

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

N/A

### Examples

```
-> revokesshkey new_ssh_user remote_ssh_user@192.168.10.1
```

### Release History

Release 5.1; command was introduced.

### Related Commands

<a href="#">installsshkey</a>	Used to install the public key used for SSH onto the switch.
<a href="#">show ssh</a>	Displays the current SSH configuration for the switch.

### MIB Objects

N/A

---

## show command-log

Displays the contents of the **command.log** file. This file contains a record of all CLI commands executed on the switch since the command logging function was enabled. For more information on enabling and disabling command logging, refer to [page 31-16](#).

**show command-log**

---

### Syntax Definitions

N/A

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- The most recent commands are listed first.
- The command history is archived to the **command.log** file. If this file is removed, the command history will no longer be available. In addition, the **command.log** file has a 66,402 byte capacity. This capacity allows up to 100 commands; if the maximum capacity is reached, only the 100 most recent commands display.

### Examples

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

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

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

*output definitions*

---

<b>Command</b>	The exact syntax of the command, as entered by the user.
<b>UserName</b>	The name of the user session that entered the command. For more information on different user session names, refer to the <a href="#">user command on page 19-52</a> .
<b>Date</b>	The date and time, down to the second, when the command was entered.
<b>IpAddr</b>	The IP address of the terminal from which the command was entered.
<b>Result</b>	The outcome of the command entry. Options include <b>SUCCESS</b> and <b>ERROR</b> . For erroneous command entries, the same error details presented by the switch at the time the command was entered are also displayed in the log file.

---

**Release History**

Release 5.1; command was introduced.

**Related Commands**

<a href="#">command-log</a>	Enables or disables command logging on the switch.
<a href="#">show command-log status</a>	Shows the current status of the command logging function (i.e., enabled or disabled).

**MIB Objects**

sessionCliCommandLogEnable

---

## show command-log status

Shows the current status of the command logging function (i.e., enabled or disabled).

```
show command-log status
```

---

### Syntax Definitions

N/A

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

N/A

### Examples

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

### *output definitions*

---

<b>CLI command logging</b>	The current status of command logging on the switch. Options include <b>Disable</b> and <b>Enable</b> .
----------------------------	---

---

### Release History

Release 5.1; command was introduced.

### Related Commands

[command-log](#) Enables or disables command logging on the switch.

### MIB Objects

```
sessionCliCommandLogStatus
```

---

## show telnet

Displays the current configuration specifying the ports the telnet daemons are listening on.

`show telnet`

---

### Syntax Definitions

N/A

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

N/A

### Examples

```
show telnet
Telnet Admin-State = Enabled
Telnet Port = 23
```

### Release History

Release 5.1; command was introduced.

### Related Commands

[command-log](#) Enables or disables command logging on the switch.

### MIB Objects

```
alaIpTelnetAdminStatus
alaIpTelnetPort
```

---



## show ssh

Displays the current configuration specifying the ports on which the SSH daemons are listening.

**show ssh**

---

### Syntax Definitions

N/A

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

N/A

### Examples

```
show ssh
Ssh Admin-State = Enabled
Ssh Port = 22
Ssh Enforce-Pubkey-Auth = Disabled
Ssh Strong-Ciphers = Disabled
Ssh Strong-Hmacs = Disabled
Ssh login-grace-time = 600 seconds
```

### Release History

Release 5.1; command was introduced.

### Related Commands

[command-log](#) Enables or disables command logging on the switch.

### MIB Objects

```
alaIpSshConfig
  alaIpSshAdminStatus
  alaIpSshPort
  alaIpSshPubKeyEnforceAdminStatus
  alaIpSshStrongCiphersAdminStatus
  alaIpSshStrongHmacsAdminStatus
  alaIpSshLoginGraceTime
```

---



# 32 File Management Commands

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

MIB information for the system commands is listed here:

*Filename:* ALCATEL-IND1-SYSTEM-MIB.mib  
*Module:* alcatelIND1SystemMIB

*Filename:* ALCATEL-IND1-CHASSIS-MIB.mib  
*Module:* alcatelIND1ChassisMIB

A summary of the available commands is listed here:

---

<b>File System</b>	<b>cd</b> <b>pwd</b> <b>mkdir</b> <b>rmdir</b> <b>ls</b> <b>rm</b> <b>cp</b> <b>sep</b> <b>mv</b> <b>chmod</b> <b>freespace</b> <b>fck</b> <b>newfs</b>
<b>System Services</b>	<b>vi</b> <b>tty</b> <b>show tty</b> <b>tftp</b> <b>sftp</b> <b>ftp</b> <b>show ftp</b>

---

## cd

Changes the current working directory of the switch.

`cd [path]`

---

### Syntax Definitions

*path* Specifies the path to the working directory. If no path is specified, the current directory of the switch is changed to the higher directory level.

### Defaults

The default working directory of the switch is `/flash`.

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

Separate the multiple directory names that are part of the path with a slash (/).

### Examples

```
-> cd
-> cd /flash/certified
```

### Release History

Release 5.1; command introduced.

### Related Commands

<code>pwd</code>	Displays the current working directory of the switch.
<code>mkdir</code>	Creates a new directory.
<code>rmdir</code>	Deletes an existing directory.
<code>ls</code>	Displays the contents of a specified directory or the current working directory.
<code>rm</code>	Deletes the contents of a specified directory or the current working directory.

### MIB Objects

```
systemServices
  systemServicesWorkingDirectory
```

---

## pwd

Displays the current working directory of the switch.

pwd

---

### Syntax Definitions

N/A

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

The **pwd** command can also be used on the secondary CMM.

### Examples

```
-> pwd  
/flash
```

### Release History

Release 5.1; command introduced.

### Related Commands

<b>cd</b>	Changes the current working directory of the switch.
<b>mkdir</b>	Creates a new directory.
<b>rmdir</b>	Deletes an existing directory.
<b>ls</b>	Displays the contents of a specified directory or the current working directory.
<b>rm</b>	Deletes the contents of a specified directory or the current working directory.

### MIB Objects

```
systemServices  
  systemServicesWorkingDirectory
```

---

## mkdir

Creates a new directory.

```
mkdir [options] [path] /dirname
```

---

### Syntax Definitions

<i>options</i>	Use the '?' on the command line for a list of options.
<i>path</i>	The path or location in which the new directory is to be created. If no path name is specified, the new directory is created in the current directory.
<i>dirname</i>	A user-defined name for the new directory.

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- Separate the directory names that are part of the path with a slash (/). Refer to the examples below.
- The **mkdir** command can also be used on the secondary CMM.

### Examples

```
-> mkdir test_directory
-> mkdir flash/test_directory
-> mkdir
BusyBox v1.16.1 (2010-12-06 23:23:38 PST) multi-call binary.
```

```
Usage: mkdir [OPTIONS] DIRECTORY...
```

```
Create DIRECTORY
```

```
Options:
```

```
-m      Mode
-p      No error if exists; make parent directories as needed
```

### Release History

Release 5.1; command introduced.

## Related Commands

<b>cd</b>	Changes the current working directory of the switch.
<b>pwd</b>	Displays the current working directory of the switch.
<b>rmdir</b>	Deletes an existing directory.
<b>ls</b>	Displays the contents of a specified directory or the current working directory.
<b>rm</b>	Deletes the contents of a specified directory or the current working directory.

## MIB Objects

```
systemServices
  systemServicesArg1
  systemServicesAction
```

---

## rmdir

Deletes an existing directory.

**rmdir** [*options*] *dirname*

---

### Syntax Definitions

*options* Use the '?' on the command line for a list of options.  
*dirname* The name of the existing directory to be removed.

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- Separate the directory names that are part of the path with a slash (/). Refer to the examples below.
- This command can also be used on the secondary CMM.

### Examples

```
-> rmdir ./working
-> rmdir flash/working
-> rmdir ?
BusyBox v1.16.1 (2010-12-06 23:23:38 PST) multi-call binary.
```

Usage: rmdir [OPTIONS] DIRECTORY...

Remove DIRECTORY if it is empty

Options:

```
-p|--parents      Include parents
--ignore-fail-on-non-empty
```

### Release History

Release 5.1; command introduced.



## Related Commands

<code>cd</code>	Changes the current working directory of the switch.
<code>pwd</code>	Displays the current working directory of the switch.
<code>mkdir</code>	Creates a new directory.
<code>ls</code>	Displays the contents of a specified directory or the current working directory.

## MIB Objects

```
systemServices
  systemServicesArg1
  systemServicesAction
```

---

## ls

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

**ls** [*options*] [*path/filename*]

---

### Syntax Definitions

*options*                      Use the '?' on the command line for a list of options.  
*filename*                    Specifies the file or directory path.

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

Separate the multiple directory names that are part of the path with a slash (/).

### Examples

```
-> ls
-> ls -l /flash/certified
-> ls ?
BusyBox v1.16.1 (2010-12-06 23:23:38 PST) multi-call binary.
```

```
Usage: ls [-lAacCddeFfiLlnpRrSsTtuvwxXhk] [FILE]...
```

List directory contents

Options:

```
-l      List in a single column
-A      Don't list . and ..
-a      Don't hide entries starting with .
-C      List by columns
-c      With -l: sort by ctime
--color[={always,never,auto}]  Control coloring
-d      List directory entries instead of contents
-e      List full date and time
-F      Append indicator (one of */=@|) to entries
-i      List inode numbers
-l      Long listing format
-n      List numeric UIDs and GIDs instead of names
-p      Append indicator (one of */=@|) to entries
-L      List entries pointed to by symlinks
-R      Recurse
-r      Sort in reverse order
-S      Sort by file size
-s      List the size of each file, in blocks
-T N    Assume tabstop every N columns
```

-t With -l: sort by modification time  
-u With -l: sort by access time  
-v Sort by version  
-w N Assume the terminal is N columns wide  
-x List by lines  
-X Sort by extension  
-h List sizes in human readable format (1K 243M 2G)

## Release History

Release 5.1; command introduced.

## Related Commands

<b>cd</b>	Changes the current working directory of the switch.
<b>pwd</b>	Displays the current working directory of the switch.
<b>mkdir</b>	Creates a new directory.
<b>rmdir</b>	Deletes an existing directory.
<b>rm</b>	Displays the contents of a specified directory or the current working directory.

## MIB Objects

```
systemServices
  systemServicesArg1
  systemServicesAction
```

---

## rm

Permanently deletes an existing file.

```
rm [options] [path/filename]
```

---

### Syntax Definitions

<i>options</i>	Use the '?' on the command line for a list of options.
<i>filename</i>	Specifies the file or directory path.

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- Separate the multiple directory names that are part of the path with a slash (/). Refer to the examples below.
- Use care when deleting files. Depending on your switch and network configurations, specific configuration and image files must be present for your system to work properly.
- This command can also be used on the secondary CMM.

### Examples

```
-> rm test_config_file
-> rm flash/test_config_file
-> rm ?
BusyBox v1.16.1 (2010-12-06 23:23:38 PST) multi-call binary.
```

```
Usage: rm [OPTIONS] FILE...
```

```
Remove (unlink) FILEs
```

```
Options:
```

```
-i      Always prompt before removing
-f      Never prompt
-R, -r  Recurse
```

### Release History

Release 5.1; command introduced.

**Related Commands****cp**

Copies an existing file or directory.

**MIB Objects**

systemServices

systemServicesArg1

    systemServicesAction

---

## cp

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

`cp [options] source destination`

---

### Syntax Definitions

<i>options</i>	Use the '?' on the command line for a list of options.
<i>source</i>	The name of the existing file to be copied.
<i>destination</i>	The new user-defined file name for the resulting file copy. If you are copying a file to the same directory as the original, the file name for the copy must be different from the original.

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- You should verify that the **/flash** directory of your switch has enough available memory to hold the copies of the files and directories created.
- A file can be copied to a new directory location. Copy of a file can also be created in the same directory that contains the original file.
- Separate the multiple directory names that are part of the path with a slash (/). Refer to the examples below.
- This command can also be used on the secondary CMM.

### Examples

```
-> cp flash/snapshots/asc.1.snap flash/snapshot/snapshot_copy
-> cp flash/snapshots/asc.1.snap snapshot_copy
-> cp asc.1.snap flash/snapshot/snapshot_copy
-> cp asc.1.snap snapshot_copy
-> cp ?
BusyBox v1.16.1 (2010-12-06 23:23:38 PST) multi-call binary.
```

Usage: cp [OPTIONS] SOURCE DEST

Copy SOURCE to DEST, or multiple SOURCE(s) to DIRECTORY

Options:

<code>-a</code>	Same as <code>-dpR</code>
<code>-R, -r</code>	Recurse
<code>-d, -P</code>	Preserve symlinks (default if <code>-R</code> )
<code>-L</code>	Follow all symlinks

```
-H      Follow symlinks on command line
-p      Preserve file attributes if possible
-f      Force overwrite
-i      Prompt before overwrite
-l, -s  Create (sym)links
```

## Release History

Release 5.1; command introduced.

## Related Commands

[mv](#) Moves an existing file or directory to a new location.

## MIB Objects

```
systemServices
  systemServicesArg1
  systemServicesArg2
  systemServicesAction
```

---

## scp

Copies an existing file in a secure manner.

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

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

---

### Syntax Definitions

<i>options</i>	Use the '?' on the command line for a list of options.
<i>user_name@remote_ip_addr:</i>	The username along with the IPv4 or IPv6 address of the remote switch.
<i>path/</i>	Specifies the path containing the file to be copied and the path where the file will be copied.
<i>source</i>	The name of the file(s) to be copied.
<i>target</i>	The new user-defined file name for the resulting file copy.

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- This command will prompt you to enter the admin password, and the names and the path of the files being copied will be displayed.
- A file may be copied to a new location; you are not required to copy a file to the same directory that contains the original.
- Separate the multiple directory names that are part of the path with a slash (/). Refer to the examples below.

### Examples

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

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

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

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

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



```
Fetching /flash/working/K2os.img to /flash/working/K2os.img
Fetching /flash/working/Kadvrout.img to /flash/working/Kadvrout.img
Fetching /flash/working/Kbase.img to /flash/working/Kbase.img
Fetching /flash/working/Keni.img to /flash/working/Keni.img
Fetching /flash/working/Kos.img to /flash/working/Kos.img
Fetching /flash/working/Krelease.img to /flash/working/Krelease.img
Fetching /flash/working/Ksecu.img to /flash/working/Ksecu.img
Connection to 172.17.11.13 closed.
-> scp ?
usage: scp [-l246BCpqr] [-c cipher] [-F ssh_config] [-i identity_file]
          [-l limit] [-o ssh_option] [-P port] [-S program]
          [[user@]host1:]file1 ... [[user@]host2:]file2
```

## Release History

Release 5.1; command introduced.

## Related Commands

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

## MIB Objects

```
systemServices
  systemServicesArg1
  systemServicesArg2
  systemServicesAction
```

---

## mv

Moves an existing file or directory to a new location.

**mv** [*options*] *source destination*

---

### Syntax Definitions

<i>options</i>	Use the '?' on the command line for a list of options.
<i>source</i>	The name of the existing file to be copied.
<i>destination</i>	The new user-defined file name for the resulting file copy. If you are copying a file to the same directory as the original, the file name for the copy must be different from the original.

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- The **mv** command does not make a copy of the file or directory being moved. To copy a file or directory to the current path or to a new location, use the **cp** command.
- Separate the directory names and file names that are part of the path with a slash (/). Refer to the examples below.
- This command can also be used on the secondary CMM.

### Examples

```
-> mv flash/asc.1.snap flash/backup_files/asc.1.snap
-> mv ?
BusyBox v1.16.1 (2010-12-06 23:23:38 PST) multi-call binary.
```

```
Usage: mv [OPTIONS] SOURCE DEST
or: mv [OPTIONS] SOURCE... DIRECTORY
```

Rename SOURCE to DEST, or move SOURCE(s) to DIRECTORY

Options:

```
-f      Don't prompt before overwriting
-i      Interactive, prompt before overwrite
```

### Release History

Release 5.1; command introduced.

**Related Commands**

- rm** Renames an existing file or directory.  
**cp** Copies an existing file or directory.

**MIB Objects**

```
systemServices
  systemServicesArg1
  systemServicesArg2
  systemServicesAction
```

---

## chmod

Changes the write privileges for a specified file.

```
chmod {+w |-w} [path/]file
```

---

### Syntax Definitions

<code>+w</code>	Enables read-write privileges for the file.
<code>-w</code>	Disables write privileges for the file—i.e., the file becomes read-only.
<code>path/</code>	The path containing the file for which privileges are being changed.
<code>file</code>	The name of the file for which read-write privileges are being changed.

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

This command can also be used on the secondary CMM.

### Examples

```
-> chmod +w vlan.config  
-> chmod -w flash/backup_configs/vlan.config
```

### Release History

Release 5.1; command introduced.

### Related Commands

[freespace](#) Changes the write privileges for a specified file.

### MIB Objects

```
systemServices  
  systemServicesArg1  
  systemServicesAction
```

---

## freespace

Displays the amount of free space available in the **/flash** directory.

**freespace** [/flash | /uflash]

---

### Syntax Definitions

**/flash**

The amount of free space is shown for the **/flash** directory.

**/uflash**

The amount of free space is shown for the **/uflash** directory.

### Defaults

N/A

### Usage Guidelines

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Examples

```
-> freespace /flash
/flash 3143680 bytes free
```

```
-> freespace
/flash 3143680 bytes free
```

### Release History

Release 5.1; command introduced.

### Related Commands

[fsck](#)

Performs a file system check, including diagnostic information in the event of file corruption. If the **fsck** command detects a problem with the **/flash** file system, a message is displayed indicating the problem, along with any steps needed to resolve it.

### MIB Objects

SystemFileSystemTable

systemFileSystemFreespace

---

## fsck

Performs a file system check, including diagnostic information in the event of file corruption.

```
fsck /uflash {repair | no-repair}
```

---

### Syntax Definitions

<b>/uflash</b>	Indicates that the file system check will be performed on the <b>/uflash</b> directory.
<b>repair</b>	Attempt to repair any problems found.
<b>no-repair</b>	Do not attempt to repair any problems found.

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

This command provides the option to automatically repair errors.

### Examples

```
-> fsck /uflash repair
```

```
/uflash/ - disk check in progress ..  
/uflash/ - Volume is OK
```

```
total # of clusters: 14,773  
# of free clusters: 4,132  
# of bad clusters: 0  
total free space: 8,264 Kb  
max contiguous free space: 5,163,008 bytes  
# of files: 46  
# of folders: 3  
total bytes in files: 21,229 Kb  
# of lost chains: 0  
total bytes in lost chains: 0
```

### Release History

Release 5.1; command introduced.

## Related Commands

### **freespace**

Displays the amount of free space available in the **/flash** directory.

## MIB Objects

systemServices

    systemServicesArg1

    systemServicesAction

---

## newfs

Deletes the complete **/uflash** file system and all files within it, replacing it with a new, empty **/uflash** file system. Use this command when you want to reload all files in the file system or in the unlikely event that the **/uflash** file system becomes corrupt.

**newfs /uflash**

---

### Syntax Definitions

**/uflash** This indicates that the complete file system will be replaced.

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- It is recommended that you preserve all required image and configuration files by saving them to a remote host before executing the **newfs** command.
- Do not power-down the switch after running the **newfs** command until you reload all required image and configuration files.

### Examples

```
-> newfs /uflash
```

### Release History

Release 5.1; command introduced.

### Related Commands

N/A

### MIB Objects

```
systemServices  
  systemServicesArg1  
  systemServicesAction
```

---



## vi

Launches the switch's Vi text editor. The Vi file editor allows you to view or edit the contents of a specified text file.

**vi** [*options*] [*path*]/*filename*

---

### Syntax Definitions

<i>options</i>	Use the '?' on the command line for a list of options.
<i>path/</i>	The path (i.e., location) containing the file being viewed or edited. If no path is specified, the command assumes the current directory.
<i>filename</i>	The name of the existing file being viewed or edited.

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- Until you exit the switch's file editor, all keystrokes will be passed to the text editor rather than the switch's command line.
- This command can also be used on the secondary CMM.

### Examples

```
-> vi test_config_file
-> vi ?
BusyBox v1.16.1 (2010-12-06 23:23:38 PST) multi-call binary.
```

```
Usage: vi [OPTIONS] [FILE]...
```

```
Edit FILE
```

```
Options:
```

```
-c      Initial command to run ($EXINIT also available)
-R      Read-only
-H      Short help regarding available features
```

### Release History

Release 5.1; command introduced.

## Related Commands

`tty` Displays current TTY settings.

## MIB Objects

```
systemServices
  systemServicesTtyLines
  systemServicesTtyColumns
```

---

## tty

Specifies the number of lines and columns to be displayed on the terminal screen while the switch is in the edit file mode.

**tty** *lines columns*

---

### Syntax Definitions

*lines* The number of lines to be displayed on the terminal emulation screen for the current session. Values may range from 10 to 150.

*columns* The number of columns to be displayed for each line. One column is the same width as a single text character. Values may range from 20 to 150.

### Defaults

parameter	default
<i>lines</i>	24
<i>columns</i>	80

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- The number of lines and columns set with this command controls the screen size when the switch is editing or viewing a text file with the **vi** or **tftp** commands.
- The values set with this command do not control the CLI screen when the switch is operating in normal mode.
- This command can also be used on the secondary CMM.

### Examples

```
-> tty 10 60
```

### Release History

Release 5.1; command was introduced.

## Related Commands

**show tty** Displays current TTY settings.

## MIB Objects

```
systemServices
  systemServicesTtyLines
  systemServicesTtyColumns
```

---

## show tty

Displays current TTY settings.

```
show tty
```

---

### Syntax Definitions

N/A

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- Shows the settings made with the `tty` command.
- This command can also be used on the secondary CMM.

### Examples

```
-> show tty  
lines = 24, columns = 80
```

### Release History

Release 5.1; command introduced.

### Related Commands

`tty` Specifies the number of TTY lines and columns to be displayed.

### MIB Objects

```
systemServices  
  systemServicesTtyLines  
  systemServicesTtyColumns
```

---

## tftp

Starts a TFTP client session that enables a file transfer to an TFTP server.

**tftp** [*options*] *host* [*port*]

---

### Syntax Definitions

<i>options</i>	Enter a question mark (?) to get a list of options.
<i>host</i>	Specifies the IP address of the TFTP server.
<i>port</i>	Specifies the port for the TFTP transfer.

### Defaults

- If a path is not specified with the filename, the current path is used by default (for example, /flash).
- If a local filename is not specified, the remote filename is used by default.

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- The OmniSwitch supports TFTP client functionality only.
- A TFTP server has no provisions for user authentication.
- When downloading a file to the switch, the file size must not exceed the available flash space.

### Examples

```
-> tftp -g -l local_file -r remote_file 198.51.100.100
```

### Release History

Release 5.1; command was introduced.

### Related Commands

<b>cd</b>	Changes the current working directory of the switch.
<b>pwd</b>	Displays the current working directory of the switch.
<b>ls</b>	Displays the contents of a specified directory or the current working directory.

### MIB Objects

N/A

---

## sftp

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

**sftp** [*options*] {*ip\_address*}

---

### Syntax Definitions

*options* Enter a question mark (?) to get a list of options.  
*ip\_address* Specifies the IPv4 or IPv6 address for the SFTP session.

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- You must have a valid username and a password for the specified host.
- After logging in, SFTP commands are supported. Some of these commands are defined in the following table:

<b>cd path</b>	Change remote path to 'path'.
<b>lcd path</b>	Change local directory to 'path'.
<b>chmod mode path</b>	Change permissions of file 'path' to 'mode'.
<b>help</b>	Display command help information.
<b>get remote-path [local path]</b>	Download a file from the remote path to the local path.
<b>lls [path]</b>	Display local directory listing.
<b>ln oldpath newpath</b>	Creates a symbolic link (symlink) to the remote file.
<b>symlink oldpath newpath</b>	Creates a symbolic link (symlink) to the remote file.
<b>mkdir path</b>	Create local directory.
<b>lpwd</b>	Print local working directory.
<b>ls [path]</b>	Display remote directory listing.
<b>mkdir path</b>	Create remote directory.
<b>put local-path [remote-path]</b>	Upload file.
<b>pwd</b>	Display remote working directory.
<b>exit</b>	Quit the sftp mode.
<b>quit</b>	Exit the sftp mode.
<b>rename oldpath newpath</b>	Rename a remote file.

---

<b>rmdir path</b>	Remove remote directory.
<b>rm path</b>	Delete remote file.
<b>version</b>	Show the current SFTP version.
<b>?</b>	Synonym for help. Displays command help information.

---

## Examples

```
-> sftp 12.251.11.122
login as:
-> sftp
usage: sftp [-lCv] [-B buffer_size] [-b batchfile] [-F ssh_config]
          [-o ssh_option] [-P sftp_server_path] [-R num_requests]
          [-S program] [-s subsystem | sftp_server] host
sftp [[user@]host[:file [file]]]
sftp [[user@]host[:dir[/]]]
sftp -b batchfile [user@]host
```

## Release History

Release 5.1; command was introduced.

## Related Commands

**ftp** Starts an FTP session.

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

## MIB Objects

```
SystemServices
  systemServicesArg1
  systemServicesAction
```

---



## ftp

Starts an FTP session.

```
ftp {port [default | service_port] | admin-state [enable | disable] | ip_address}
```

```
ftp admin-state [enable | disable]
```

---

### Syntax Definitions

<b>default</b>	Sets the port back to the default of 21.
<i>service_port</i>	The TCP service port number. Must be 21 or between 20000-20999.
<b>enable   disable</b>	Enables or disables FTP access.
<i>ip_address</i>	Specifies the IPv4 address for the FTP session.

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- You must have a valid username and password for the specified host.
- The default FTP directory is **/flash**.

### Examples

```
-> ftp port 20000
-> ftp admin-state disable
-> ftp 172.17.6.228
```

### Release History

Release 5.1; command introduced.

### Related Commands

<b>cd</b>	Changes the current working directory of the switch.
<b>pwd</b>	Displays the current working directory of the switch.
<b>ls</b>	Displays the contents of a specified directory or the current working directory.

### MIB Objects

```
systemServices
  systemServicesArg1
  systemServicesAction
```

alaIpFtpAdminStatus

---

## show ftp

Displays the current FTP server settings like the port used for FTP, the FTP server's status.

show ftp

---

### Syntax Definitions

N/A

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

N/A

### Examples

```
-> show ftp
Ftp Admin-State = Enabled
Ftp Port = 21
```

### Release History

Release 5.1; command introduced.

### Related Commands

**ftp** Starts an FTP session.

### MIB Objects

```
alaIpFtpAdminStatus
alaIpFtpPort
```

---



# 33 Web Management Commands

The switch can be configured and monitored using WebView, which is a web-based device management tool. Web Management CLI commands allow you to enable/disable web-based management and configure certain WebView parameters, such as Secure Socket Layer (SSL).

MIB information for the Web Management commands is as follows:

*Filename:* ALCATEL-IND1-WEBMGT-MIB.mib  
*Module:* alcatelIND1WebMgtMIB

A summary of the available commands is listed here:

---

**webview server**  
**webview access**  
**webview force-ssl**  
**webview http-port**  
**webview https-port**  
**webview ssl-strong-ciphers**  
**webview wlan cluster-virtual-ip precedence**  
**webview wlan cluster-virtual-ip**  
**show webview**  
**show webview wlan config**

---

## webview server

Enables or disables the web management server on the switch.

**webview server {enable | disable}**

---

### Syntax Definitions

<i>name</i>	The name of the VRF.
<b>enable</b>	Enables the web management server on the switch.
<b>disable</b>	Disables the web management server on the switch.

### Defaults

---

<b>parameter</b>	<b>default</b>
WebView Server	Enabled

---

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

If the WebView Server is disabled, WebView Access is automatically disabled.

### Examples

```
-> webview server enable
-> webview server disable
```

### Release History

Release 5.1; command was introduced.

### Related Commands

<a href="#">webview access</a>	Enables/disables webview access on the switch.
<a href="#">show webview</a>	Displays web management configuration information.

### MIB Objects

```
alaIND1WebMgtConfigMIBGroup
  alaInd1WebMgtServerStatus
```

---

## webview access

Enables or disables web management access on the switch.

`webview access {enable | disable}`

---

### Syntax Definitions

<b>enable</b>	Enables the web management access on the switch.
<b>disable</b>	Disables the web management access on the switch.

### Defaults

---

parameter	default
WebView Access	Enabled

---

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

If Web Access is enabled, the WebView Server is automatically enabled.

### Examples

```
-> webview access enable
-> webview access disable
```

### Release History

Release 5.1; command was introduced.

### Related Commands

<a href="#">webview server</a>	Enables/disables the web server on the switch.
<a href="#">show webview</a>	Displays web management configuration information.

### MIB Objects

```
alaIND1WebMgtConfigMIBGroup
  alaInd1WebMgtAdminStatus
```

---

## webview force-ssl

Enables or Disables Force SSL on the switch. SSL is a protocol that establishes and maintains secure communication between SSL-enabled servers and clients.

**webview force-ssl {enable | disable}**

---

### Syntax Definitions

**enable** Enables the requirement to use SSL to access the switch when using WebView.

**disable** Disables the requirement to use SSL to access the switch when using WebView.

### Defaults

parameter	default
Force SSL	Enabled

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

The switch contains a self-signed certificate that may prompt a certificate warning.

### Examples

```
-> webview force-ssl enable
-> webview force-ssl disable
```

### Release History

Release 5.1; command was introduced.

### Related Commands

[webview access](#) Enables/disables webview access on the switch.

[show webview](#) Displays web management configuration information.

### MIB Objects

```
alaIND1WebMgtConfigMIBGroup
  alaInd1WebMgtSsl
```

---



## webview http-port

Changes the port number for the embedded web management server.

```
webview http-port {default | port port}
```

---

### Syntax Definitions

<b>default</b>	Restores the port to its default (80) value.
<i>port</i>	The desired port number for the embedded Web server. The number must be in the range 0 to 65535; well-known port numbers cannot be configured.

### Defaults

---

parameter	default
<i>port</i>	80

---

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

All WebView sessions must be terminated before entering this command.

### Examples

```
-> webview http-port port 1025
-> webview http-port default
```

### Release History

Release 5.1; command was introduced.

### Related Commands

<a href="#">webview access</a>	Enables/disables webview access on the switch.
<a href="#">show webview</a>	Displays web management configuration information.

### MIB Objects

```
alaIND1WebMgtConfigMIBGroup
  alaIND1WebMgtHttpPort
```

---

## webview https-port

Changes the default secure (HTTPS) port for the embedded web management server.

```
webview https-port {default | port port}
```

---

### Syntax Definitions

<b>default</b>	Restores the port to its default (443) value.
<i>port</i>	The desired HTTPS port number. The number must be in the range 0 to 65535; well-known port numbers cannot be configured.

### Defaults

parameter	default
<i>port</i>	443

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

All WebView sessions must be terminated before entering this command.

### Examples

```
-> webview https-port port 1026  
-> webview https https-port default
```

### Release History

Release 5.1; command was introduced.

### Related Commands

<a href="#">webview access</a>	Enables/disables webview access on the switch.
<a href="#">show webview</a>	Displays web management configuration information.

### MIB Objects

```
alaIND1WebMgtConfigMIBGroup  
  alaIND1WebMgtHttpsPort
```

---

## webview ssl-strong-ciphers

Enables or disables support of only SSL strong cipher algorithms in order to prevent client opening connections to the switch using weak algorithms.

```
webview ssl-strong-ciphers {enable | disable}
```

---

### Syntax Definitions

<b>enable</b>	Enables the strong cipher requirement.
<b>disable</b>	Disables the strong cipher requirement.

### Defaults

---

parameter	default
enable   disable	enable

---

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

When enabled the following algorithms will not be supported: RC4-SHA, RC4-MD5, ECDHE-RSA-RC4-SHA, IDEA-CBC-SHA, DES-CBC3-SHA, EDH-RSA-DES-CBC3-SHA, ECDHE-RSA-DES-CBC3-SHA, aNULL, eNULL, EXPORT, DES, MD5, PSK, RC4.

### Examples

```
-> webview ssl-strong-ciphers enable
-> webview ssl-strong-ciphers disable
```

### Release History

Release 5.1; command was introduced.

### Related Commands

<a href="#">webview access</a>	Enables/disables webview access on the switch.
<a href="#">show webview</a>	Displays web management configuration information.

### MIB Objects

```
alaIND1WebMgtConfigMIBGroup
  alaIND1WebMgtSSLStrongCiphers
```

---

## webview wlan cluster-virtual-ip precedence

Sets the preference for obtaining the cluster virtual IP address for WebView re-direct. The WLAN cluster virtual IP address can be obtained from LLDP or configured manually. The precedence allows to set the preference between the LLDP and manual configuration in case when both are available.

**webview wlan cluster-virtual-ip precedence {lldp | configured}**

---

### Syntax Definitions

<b>lldp</b>	The preference to obtain the WLAN cluster virtual IP address is set to LLDP.
<b>configured</b>	The preference to obtain the WLAN cluster virtual IP address is set to the manually configured WLAN cluster virtual IP address.

### Defaults

---

parameter	default
lldp   configured	lldp

---

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- Use this command to set the preference for obtaining the cluster virtual IP address for WebView re-direct.
- If more than one cluster virtual IP address is obtained through LLDP on the same port, the recently obtained IP is considered.
- If more than one cluster virtual IP is obtained through LLDP on different ports, the recently obtained IP is considered.
- If the precedence is set for LLDP obtained IP address, but there is no LLDP obtained cluster virtual IP address, then the manually configured cluster virtual IP address will be considered if configured.
- If the precedence is set for manually configured cluster virtual IP address, but there is no configured IP address present, then the LLDP obtained cluster virtual IP address will be considered if received.

### Examples

```
-> webview wlan cluster-virtual-ip precedence lldp
-> webview wlan cluster-virtual-ip precedence configured
```

### Release History

Release 5.1; command was introduced.

**Related Commands**

[show webview wlan config](#) Displays the AP cluster virtual IP configured on the switch.

**MIB Objects**

alaIND1WebMgtWlanIpPrecedence

---

## webview wlan cluster-virtual-ip

Configures the cluster virtual IP address of the Access Point (AP) in the switch. The WebView server on the switch redirects the URL to the AP (Virtual IP Address) URL when the WLAN Management is accessed from WebView.

**webview wlan cluster-virtual-ip** *virtual-ip-address-of-wlan-cluster*

---

### Syntax Definitions

*virtual-ip-address-of-wlan-cluster*      Virtual IP address (IPV4) of the AP cluster.

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

Use this command to configure the AP cluster virtual IP address to access the OAW-AP web interface from the webview.

### Examples

```
-> webview wlan cluster-virtual-ip 10.25.6.8
```

### Release History

Release 5.1; command was introduced.

### Related Commands

[show webview wlan config](#)      Displays the AP cluster virtual IP configured on the switch.

### MIB Objects

alaIND1WebMgtWlanConfiguredIpAddress

---

## show webview wlan config

Displays the cluster virtual IP precedence configuration, WLAN AP cluster virtual IP configured on the switch, and WLAN AP cluster virtual IP obtained through LLDP.

**show webview wlan config**

---

### Syntax Definitions

N/A

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

N/A

### Examples

```
-> show webview wlan config
WebView WLAN Cluster-Virtual-IP Precedence = LLDP
WebView WLAN Cluster-Virtual-IP configured address = 0.0.0.0
WebView WLAN Cluster-Virtual-IP LLDP address = 1.1.1.1
```

### *output definitions*

---

<b>WebView WLAN Cluster-Virtual-IP Precedence</b>	The precedence set for obtaining the cluster virtual IP address of the AP.
<b>WebView WLAN Cluster-Virtual-IP configured address</b>	The manually configured cluster virtual IP address.
<b>WebView WLAN Cluster-Virtual-IP LLDP address</b>	The cluster virtual IP address obtained from the LLDP packets.

---

### Release History

Release 5.1; command was introduced.

## Related Commands

- webview wlan cluster-virtual-ip precedence** Allows to set the preference for the choice of cluster virtual IP address for WebView re-direct.
- webview wlan cluster-virtual-ip** Configures the virtual IP address of the Access Point (AP) clusters in the switch.

## MIB Objects

```
alaIND1WebMgtWlanIpPrecedence
  alaIND1WebMgtWlanConfiguredIpAddressType
  alaIND1WebMgtWlanConfiguredIpAddress
  alaIND1WebMgtWlanLldpIpAddressType
  alaIND1WebMgtWlanLldpIpAddress
```

---



## show webview

Displays web management configuration information.

**show webview**

---

### Syntax Definitions

N/A

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

N/A

### Examples

```
-> show webview
```

```
WebView Server = Enabled  
WebView Access = Enabled  
WebView Force-SSL = Enabled  
WebView HTTPS-Port = 443  
WebView SSL-Strong-Ciphers = Enabled
```

### *output definitions*

---

<b>WebView Server</b>	Indicates whether web management server is enabled or disabled.
<b>WebView Access</b>	Indicates whether web management access is enabled or disabled.
<b>Force SSL</b>	Indicates whether Force SSL is enabled or disabled. If this is enabled it means that SSL is forced on an HTTP session and hence HTTPS protocol is negotiated between the client and server.
<b>Web Management Https Port</b>	The port configured for a secure HTTP connection (SSL enabled).
<b>Web SSL-Strong-Ciphers</b>	Indicates whether SSL strong cipher requirement is enabled or disabled.

---

### Release History

Release 5.1; command was introduced.

## Related Commands

<a href="#">webview server</a>	Enables/disables web management server on the switch.
<a href="#">webview access</a>	Enables/disables webview access on the switch.
<a href="#">webview force-ssl</a>	Enables/disables SSL on the switch.
<a href="#">webview ssl-strong-ciphers</a>	Enables/disables SSL strong ciphers on the switch.

## MIB Objects

```
alaIND1WebMgtConfigMIBGroup
  alaInd1WebMgtServerStatus
  alaInd1WebMgtAdminStatus
  alaInd1WebMgtSsl
  alaInd1WebMgtHttpsPort
  alaInd1WebMgtSSLStrongCiphers
```

---

# 34 Configuration File Manager Commands

The Configuration Manager feature allows you to configure your switch using an ASCII-based text file. CLI commands may be typed into a text document—referred to as a *configuration file*—and then uploaded and applied to the switch.

MIB information for the Configuration Manager commands is as follows:

*Filename:* ALCATEL-IND1-CONFIG-MGR-MIB.mib  
*Module:* alcatelIND1ConfigMgrMIB

A summary of the available commands is listed here:

---

**configuration apply**  
**configuration error-file-limit**  
**show configuration status**  
**configuration cancel**  
**configuration syntax-check**  
**configuration snapshot**  
**show configuration snapshot**  
**write terminal**

---

## configuration apply

Applies a configuration file to the switch. Files may be applied immediately or after a designated timer session. With the timer session option, files are applied either at a scheduled date and time or after a specified period of time (i.e., a countdown) has passed.

**configuration apply** *filename* [**at** *hh:mm month dd [year]*] | [**in** *hh[:mm]*] [**verbose**]

---

### Syntax Definitions

<i>filename</i>	The name of the configuration text file to be applied to the switch (e.g., <b>newfile1</b> ).
<b>at</b> <i>hh:mm {dd month   month dd} [year]</i>	Designates a timer session in which a configuration file is applied at a specified date and time in the future. Values for <i>hh</i> range from 00 through 23. Values for <i>mm</i> range from 00 through 59. Values for <i>dd</i> range from 01 through 31. Values for month range from january through december. The switch assumes either the current year or the next calendar year for month and day pairs that precede the current date.
<b>in</b> <i>hh[:mm]</i>	Designates a timer session in which the configuration file is applied after a specific amount of time (i.e., a countdown) has passed. Values for <i>hh</i> range from 00 through 23. Values for <i>mm</i> range from 00 through 59.
<b>verbose</b>	When verbose is entered, information is displayed on your workstation's console as each command in the configuration file is applied.

### Defaults

By default, **verbose** error checking is not performed.

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- The **configuration apply** command only applies settings to the running configuration. The **boot.cfg** file does not get overwritten.
- It is recommended that you check all configuration files for syntax errors before applying them to your switch.
- To schedule a timer session in which a file is applied at a specific date and time, enter **at** followed by the hour, minute, month, day, and year. The switch assumes either the current calendar year or the next calendar year for dates beginning January 1.
- To schedule a timer session in which a file is applied after a specific amount of time (i.e., a countdown) has passed, enter **in** followed by the number of hours and minutes.
- Verbose mode is not supported for timer sessions.
- The keyword, **authkey**, along with a related alpha-numeric text string, are automatically included in many snapshot files (e.g., **configuration snapshot all**). The text string following the **authkey** keyword

represents a login password that has been encrypted *twice*. (The first encryption occurs when a password is first created by a user; the second encryption occurs when a configuration snapshot is taken.) This dual encryption further enhances switch security. However, it is important to note that any configuration file (including a generated snapshot) that includes this dual-encrypted password information will result in an error whenever it is applied to the switch via the **configuration apply** command. This is a valid switch function and does not represent a significant problem. If an **authkey**-related error is the *only* error detected, simply remove all **authkey**-related syntax using a text editor. If a new password is required for the switch, include valid password syntax in the configuration file or immediately issue a new password by using the **password** command at the command prompt. For more information on passwords, refer to [page 19-56](#).

## Examples

```
-> configuration apply new_configuration at 12:00 15 november
-> configuration apply new_configuration at 12:00 november 15
-> configuration apply newfile1 in 01:30
-> configuration apply my_switch_config in 00:05
-> configuration apply asc.1.snap in 23:00
-> configuration apply aaa_config in 12
-> configuration apply vlan_config verbose
-> configuration apply vlan_config
...
```

---

**Note.** When the **configuration apply** command is entered *without at or in* syntax information, one or more dots “.” is displayed in the next line, immediately following the command line. This indicates command progress; each dot represents 256 text lines in the configuration file processed by the configuration apply mechanism.

---

## Release History

Release 5.1; command was introduced.

## Related Commands

**configuration syntax-check** Performs a syntax and authorization check of all CLI commands contained in a configuration file.

## MIB Objects

```
alcatelIND1ConfigMgrMIBObjects
  configFileName
  configFileMode
  configFileAction
  configTimerFileName
  configTimerFileTime
```

---

## configuration error-file-limit

Specifies the maximum number of configuration error files allowed in the switch's **/flash** directory. Error files are normally generated when a configuration file is applied to the switch. Error files are identified by their **.err** extension. When the maximum number of **.err** files is exceeded, any new error file will overwrite the **.err** file with the oldest timestamp.

**configuration error-file-limit** *number*

---

### Syntax Definitions

*number* Indicate the number of error files allowed in the **/flash** directory. The valid range is from 1 to 25 files.

### Defaults

parameter	default
<i>number</i>	1

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- When the error file limit is set to 1 (the default value), the next error file generated by the switch will replace the existing one.
- When the error file limit is set to a value greater than 1, when a new error file that exceeds the maximum limit is created, the switch will automatically remove the error file with the smallest timestamp.
- The error files generated by the switch have the **.err** extension.
- If you want to save an error file, you may change the file name so that it does not have the **.err** extension, or you can move it from the **/flash** directory.

### Examples

```
-> configuration error-file-limit 2
-> configuration error-file-limit 1
```

### Release History

Release 5.1; command was introduced.

**Related Commands**

**configuration apply** Applies a configuration file to the switch. Also used for scheduling a timer session for a configuration file.

**configuration cancel** Cancels a pending timer session for a configuration file.

**MIB Objects**

alcatelIND1ConfigMgrMIBObjects  
configErrorFileMaximum

---

## show configuration status

Displays whether there is a pending timer session scheduled for a configuration file and indicates whether the running configuration and the saved configuration files are *identical* or *different*. This command also displays the number of error files that will be held in the flash directory.

**show configuration status**

---

### Syntax Definitions

N/A

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- A timer session can be scheduled using the **configuration apply** command. For more information, refer to [page 34-2](#).
- The screen output **File configuration </path/filename>: scheduled at dd/mm hh:mm** indicates that a timer session has been scheduled for a later time.
- The output **No file configuration has been scheduled** indicates an idle timer session (i.e., no timer session has been scheduled for a configuration file).
- The output **File configuration is in progress** indicates that a file is currently being applied to the switch.
- The output **File configuration </path/filename>: completed with 2 errors** indicates that the named file was applied to the switch with two recorded errors.
- When the running and saved configurations are the same, the output **Running configuration and saved configuration are identical** will be displayed.
- When the running and saved configurations are the different, the output **Running configuration and saved configuration are different** will be displayed.
- To synchronize the running and saved configuration, use the **write memory** command.

### Examples

```
-> show configuration status
```

### Release History

Release 5.1; command was introduced.



## Related Commands

- configuration apply** Applies a configuration file to the switch. Also used for scheduling a timer session for a configuration file.
- configuration cancel** Cancels a pending timer session for a configuration file.
- configuration error-file-limit** Specifies the maximum number of configuration error files allowed in the switch's **/flash** directory.
- write memory** Copies the running configuration (RAM) to the working directory.

## MIB Objects

```
configTimerFileGroup  
  configTimerFileStatus
```

---

## configuration cancel

Cancels a pending timer session for a configuration file.

**configuration cancel**

---

### Syntax Definitions

N/A

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

N/A

### Examples

```
-> configuration cancel
```

### Release History

Release 5.1; command was introduced.

### Related Commands

- |   |  |
|---|--|
| <a href="#">configuration apply</a>       | Applies a configuration file to the switch. Also used for scheduling a timer session for a configuration file. |
| <a href="#">show configuration status</a> | Displays whether there is a pending timer session scheduled for a configuration file.                          |

### MIB Objects

```
configTimerFileGroup  
configTimerClear
```

---

## configuration syntax-check

Performs a syntax and authorization check of all CLI commands contained in a configuration file.

**configuration syntax-check** *path/filename* [**verbose**]

---

### Syntax Definitions

<i>path/filename</i>	The configuration file being checked for syntax and authorization errors. If a configuration file is located in another directory, be sure to specify the full path. For example, <b>/flash/working/asc.1.snap</b> .
<b>verbose</b>	When <b>verbose</b> is specified in the command line, all syntax contained in the configuration file is printed to the console, even if no error is detected. When <b>verbose</b> is <i>not</i> specified in the command line, cursory information (number of errors and error log file name) will be printed to the console <i>only if a syntax or configuration error is detected</i> .

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- When an error is detected, an error file (**.err**) is automatically generated by the switch. By default, this file is placed in the root **/flash** directory. To view the contents of a generated error file, use the **view** command. For example, **view asc.1.snap.1.err**.
- The syntax, **mac alloc**, is automatically included in many snapshot files (e.g., **configuration snapshot all**). All **mac alloc**-related syntax is valid *during switch boot up only* (i.e., it cannot be applied while the switch is in run-time operation). Because snapshot files are commonly used as configuration files, syntax checks may detect **mac alloc** syntax and issue an error (along with a generated **.err** file). This is a valid switch function and does not represent a significant problem. If a **mac alloc**-related error is the *only* error detected, simply remove the syntax using a text editor, then re-check the file using the **configuration syntax-check** command.
- It is recommended that you check all configuration files for syntax errors before applying them to your switch.

### Examples

```
-> configuration syntax-check vlan_file1
..
```

---

**Note.** When the **configuration syntax-check** command is entered, one or more dots “.” is displayed in the command output. This indicates command progress; each dot represents 256 text lines in the configuration file processed by the syntax check mechanism.

---

## Release History

Release 5.1; command was introduced.

## Related Commands

- |                                  |  |
|----------------------------------|--|
| <b>configuration apply</b>       | Applies a configuration file to the switch. Also used for scheduling a timer session for a configuration file. |
| <b>show configuration status</b> | Displays whether there is a pending timer session scheduled for a configuration file.                          |

## MIB Objects

```
configFileGroup
  configErrorFileName
  configErrorFileMaximum
  configFileMode
  configFileStatus
```

---

## configuration snapshot

Generates a snapshot file of the switch's non-default current running configuration. A snapshot can be generated for all current network features or for one or more specific network features. A snapshot is a single text file that can be viewed, edited, and reused as a configuration file.

**configuration snapshot** [*feature\_list* | **all**] [*path/filename*]

---

### Syntax Definitions

<i>feature_list</i>	The description for the network feature(s) to be included in the snapshot. You may enter more than one network feature in the command line. Enter a question mark (?) on the command line to get a list of features ( <b>configuration snapshot ?</b> ).
<b>all</b>	Includes all network features in the snapshot.
<i>path/filename</i>	A user-defined name for the resulting snapshot file. For example, <b>test_snmp_snap</b> . You may also enter a specific path for the resulting file. For example, the syntax <b>/flash/working/test_snmp_snap</b> places the <b>test_snmp_snap</b> file in the switch's <b>/flash/working</b> directory.

### Defaults

If a file name is not specified, the default file name **asc.#.snap** is used. Here, # indicates the order in which the default file is generated. For example, the first default file name to be generated is **asc.1.snap**, the second default file name to be generated is named **asc.2.snap**, etc. By default, all snapshot files are placed in the root **/flash** directory.

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- Only current, non-default configuration settings are written to the snapshot file.
- You may enter more than one network feature in the command line. Separate each network feature with a space and no comma. Network features may be entered in any order.
- The snapshot file is automatically placed in the root **/flash** directory unless otherwise specified.

### Examples

```
-> configuration snapshot all
-> configuration snapshot qos health aggregation new_file1
-> configuration snapshot snmp_snapshot snmp
-> configuration snapshot 802.1q

-> configuration snapshot ?
    ^
    ZEROCONF WEBMGT VRRP VM-SNOOPING VLAN VIRTUAL-CHASSIS
    VFC VCSP UDLD SYSTEM SVCMGR STP SPB-ISIS SNMP SLB SIP
    SESSION SECURITY SAA RIPNG RIP QOS QMR PVLAN PTP
    PPPOE-IA PORT-MAPPING PORT-MANAGER POLICY PMM OSPF3
```

```
OSPF OPENFLOW NTP NETSEC MVRP MULTI-CHASSIS MODULE
MACSEC LOOPBACK-DETECTION LLDP LINKAGG
LINK-FAULT-PROPAGATION LDP LANPOWER ISIS IPV6 IPSEC
IPMS IPMR IP-ROUTING IP-HELPER IP INTERFACE HEALTH
HA-VLAN FCOE ETHERNET-OAM ERP EFM-OAM DHL
DHCPV6-SERVER DHCPV6-RELAY DHCP-SNOOPING DHCP-SERVER
DHCP-MESSAGE-SERVICE DHCP-ACTIVE-LEASE-SERVICE
DEVICE-PROFILE DA-UNP CLOUD-AGENT CHASSIS CAPABILITY
BRIDGE BGP BFD AUTO-FABRIC APP-MONITORING
APP-FINGERPRINT ALL ALARM-MANAGER AAA
```

## Release History

Release 5.1; command was introduced.

## Related Commands

[show configuration snapshot](#) Displays the switch's current running configuration.

## MIB Objects

```
configManager
  configSnapshotFileName
  configSnapshotAction
  configSnapshotAllSelect
```

---

## show configuration snapshot

Displays the switch's current running configuration for all features or for the specified feature(s).

**show configuration snapshot** [*feature\_list*]

---

### Syntax Definitions

*feature\_list*

Specify the feature(s) for which you want to display the running configuration. List the features separated by a space with no comma. Enter a question mark (?) on the command line to get a list of features (**show configuration snapshot ?**).

### Defaults

By default, this command shows configuration information for *all* features.

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- Use this command to view the current configuration for any feature shown in the table.
- Configurations are listed below the name of each feature.
- Features with no current configuration show only the name of the feature.

### Examples

```
-> show configuration snapshot
-> show configuration snapshot aaa bridge
! Bridging :

! AAA :
aaa authentication default "local"
aaa authentication console "local"
user "public" read All write All no auth authkey 391b0e74dbd13973d703ccea4a8e30

-> show configuration snapshot ?
^
<cr> ZEROCONF WEBMGT VRRP VM-SNOOPING
VLAN VIRTUAL-CHASSIS VFC VCSP UDLD
SYSTEM SVCMGR STP SPB-ISIS SNMP SLB
SIP SESSION SECURITY SAA RIPNG RIP QOS
QMR PVLAN PPPOE-IA PORT-MAPPING
PORT-MANAGER POLICY PMM OSPF3 OSPF
OPENFLOW NTP NETSEC MVRP MULTI-CHASSIS
MODULE MACSEC LOOPBACK-DETECTION LLDP
LINKAGG LINK-FAULT-PROPAGATION LDP
LANPOWER ISIS IPV6 IPSEC IPMS IPMR
IP-ROUTING IP-HELPER IP INTERFACE
HEALTH HA-VLAN FCOE ETHERNET-OAM
ERP EFM-OAM DHL DHCPV6-SERVER
```

```
DHCPV6-RELAY DHCP-SNOOPING DHCP-SERVER
DHCP-MESSAGE-SERVICE
DHCP-ACTIVE-LEASE-SERVICE
DEVICE-PROFILE DA-UNP CLOUD-AGENT
CHASSIS CAPABILITY BRIDGE BGP BFD
AUTO-FABRIC APP-MONITORING
APP-FINGERPRINT ALL ALARM-MANAGER AAA
```

## Release History

Release 5.1; command was introduced.

## Related Commands

[write terminal](#) Displays the switch's current running configuration for all features.

## MIB Objects

```
configManager
  configSnapshotFileName
  configSnapshotAction
  configSnapshotAllSelect
```

---



## write terminal

Displays the switch's current running configuration for all features.

**write terminal**

---

### Syntax Definitions

N/A

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- Configurations are listed below the name of each feature.
- Features with no current configuration show only the name of the feature.

### Examples

```
-> write terminal
```

### Release History

Release 5.1; command was introduced.

### Related Commands

**show configuration snapshot** Displays the switch's current running configuration for all features or for the specified feature(s).

### MIB Objects

```
configManager  
  mib_configSnapshotAllSelect
```

---



# 35 SNMP Commands

This chapter includes descriptions for Trap Manager and SNMP Agent commands. The commands are used for configuring SNMP settings on the switch.

- SNMP station commands can create, modify, or delete an SNMP station. Also included is a show command for monitoring current SNMP station status.
- SNMP trap commands configure SNMP trap settings. Traps can be replayed and filtered. Also, test traps can be generated to verify that individual traps are being correctly handled by the Network Management Station (NMS). The SNMP trap commands set includes show commands for monitoring SNMP trap information.
- SNMP agent commands configure SNMP security levels on the switch. Also includes show commands for monitoring the current SNMP security status.

MIB information for SNMP Community commands is as follows:

*Filename:* SNMP-COMMUNITY-MIB.mib  
*Module:* snmpCommunityMIB

MIB information for Trap Manager commands is a follows:

*Filename* ALCATEL-IND1-TRAP-MGR-MIB.mib  
*Module:* alcatelIND1TrapMgrMIB

MIB information for SNMP Agent commands is a follows:

*Filename:* ALCATEL-IND1-SNMP-AGENT-MIB.mib  
*Module:* alcatelIND1SNMPAgentMIB

A summary of the available commands is listed here:

---

<b>SNMP station commands</b>	<b>snmp station</b> <b>show snmp station</b>
<b>SNMP engine ID commands</b>	<b>snmp snmp-engineid-type</b> <b>show snmp snmp-engineid</b>
<b>SNMP community map commands</b>	<b>snmp community-map</b> <b>snmp community-map mode</b> <b>show snmp community-map</b>
<b>SNMP security commands</b>	<b>snmp security</b> <b>snmp security tsm</b> <b>snmp tsm-map</b> <b>show snmp tsm-map</b> <b>show snmp security</b> <b>show snmp statistics</b> <b>show snmp mib-family</b>
<b>SNMP trap commands</b>	<b>snmp-trap absorption</b> <b>snmp-trap to-webview</b> <b>snmp-trap replay-ip</b> <b>snmp-trap filter-ip</b> <b>snmp authentication-trap</b> <b>show snmp-trap replay-ip</b> <b>show snmp-trap filter-ip</b> <b>show snmp authentication-trap</b> <b>show snmp-trap config</b>

---

## snmp station

Adds a new SNMP station; modifies or deletes an existing SNMP station.

**snmp station** {*ip\_address* | *ipv6\_address* | *domain\_name*} [{*port*] [*username*] [**v1** | **v2** | **v3** | **v3 tsm local-identity** *local\_string* **remote-identity** *remote\_string*] [**enable** | **disable**]

**no snmp station** {*ip\_address* | *ipv6\_address* | *domain\_name*}

---

### Syntax Definitions

<i>ip_address</i>	The IP address to which SNMP unicast traps will be sent.
<i>ipv6_address</i>	The IPv6 address to which SNMP unicast traps will be sent.
<i>domain_name</i>	A Fully Qualified Domain Name (FQDN) to which SNMP unicast traps will be sent. Specify a domain name up to 255 characters in length.
<i>port</i>	A UDP or TLSTCP destination port.
<i>username</i>	The user name on the switch or external server used to send traps to the SNMP station(s). The username specified here must match an existing user account name.
<b>v1</b>	Specifies that traps are sent using SNMP version 1.
<b>v2</b>	Specifies that traps are sent using SNMP version 2.
<b>v3</b>	Specifies that traps are sent using SNMP version 3.
<b>tsm</b>	The TSM security model for SNMP. The security model can be selected only for SNMP version 3.
<i>local_string</i>	The file name of the local certificate. To be configured when TSM mode is selected.
<i>remote_string</i>	The file name of the remote certificate. To be configured when TSM mode is selected.
<b>enable</b>	Enables the specified SNMP station.
<b>disable</b>	Disables the specified SNMP station.

### Defaults

parameter	default
<i>port</i>	162 (for UDP) 10162 (for TLSTCP)
<b>v1</b>   <b>v2</b>   <b>v3</b>	<b>v3</b>
<b>enable</b>   <b>disable</b>	<b>enable</b>

### Platforms Supported

OmniSwitch 2260, 2360

## Usage Guidelines

- Use the **no** form of the command to remove an existing SNMP station.
- When adding an SNMP station, specify an IP address or FQDN *plus username parameters*. For example, the syntax **snmp station 1.2.3.4** is not a valid command entry; however, **snmp station 1.2.3.4 username1** is a valid command entry.
- A maximum of 50 SNMP sessions can be established in the switch.
- When modifying an SNMP station, specify an IP address or FQDN *plus at least one additional parameter*. For example, the syntax **snmp station 1.2.3.4** is not a valid command entry; however, **snmp station 1.2.3.4 v2** is a valid command entry.
- When an FQDN is specified with this command, the switch will resolve the domain name to an IP address. Make sure the domain name maps to a valid and reachable IP address.
- When the SNMP station is enabled, the switch transmits traps to the specified IP or IPv6 address.
- For UDP the default port 162 is commonly used for traps; however, the destination port can be redefined to accommodate an SNMP station using a nonstandard port. The destination port specified must correspond with the UDP destination port configured at the receiving SNMP station(s).
- For TLSTCP the default port 10162 is commonly used for traps; however, the destination port can be redefined to accommodate an SNMP station using a nonstandard port. The destination port specified must correspond with the TLSTCP destination port configured at the receiving SNMP station(s).
- To send SNMP traps over TLS connection, the SNMP station needs to be configured with TSM user along with certificate identities.
- The `local_identity` and `remote_identity` are the names of certificate file. If the contents of local or remote certificates are changed, the updated certificates must be manually copied from master or primary to all secondaries and slaves. A reboot is required for the changes to be applied.
- When TSM security model is enabled, all the v1/v2/v3 USM requests and traps are discarded.
- When TSM security model is disabled, all v1/v2/v3 (USM and TSM) requests and traps are allowed.
- In TSM security model SNMP requests are supported over IPv4 transport only.

## Examples

```
-> snmp station 168.22.2.2 111 username2 v1 disable
-> snmp station 168.151.2.101 "test lab"
-> snmp station 170.1.2.3 username1 enable
-> snmp station 1.1.2.2 v2
-> no snmp station 2.2.2.2
-> snmp station 300::1 enable
-> no snmp station 300::1

-> snmp station upam.omnivista.com username2 v1 disable
-> snmp station upam.omnivista.com v2
-> no snmp station upam.omnivista.com
-> snmp station opendaylight.com enable v2 public
ERROR: DNS lookup failed, unknown host opendaylight.com
-> snmp station 168.22.1.1 joe v3 tsm local-identity aluSubagent.crt
remote-identity manager.crt enable
```

## Release History

Release 5.1; command was introduced.

## Related Commands

[show snmp station](#) Displays the current SNMP station information.

## MIB Objects

```
trapStationTable
  trapStationIP
  trapStationPort
  trapStationUser
  trapStationProtocol
  trapStationRowStatus
alaTrapInetStationTable
  alaTrapInetStationIPType
  alaTrapInetStationIP
  alaTrapInetStationPort
  alaTrapInetStationRowStatus
  alaTrapInetStationProtocol
  alaTrapInetStationUser
  alaTrapInetStationSecurityModel
  alaTrapInetStationLocalIdentity
  alaTrapInetStationRemoteIdentity
```

---

## show snmp station

Displays the current SNMP station status and details.

**show snmp station [details]**

---

### Syntax Definitions

N/A

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

N/A

### Examples

```
-> show snmp station
```

ipAddress/Port	status	protocol	user
199.199.100.200/8010	enable	v3	NMSuserV3MD5DES
199.199.101.201/111	disable	v2	NMSuserV3MD5
199.199.102.202/8002	enable	v1	NMSuserV3SHADES
199.199.103.203/8003	enable	v3	NMSuserV3SHADES
199.199.104.204/8004	enable	v3	NMSuserV3SHA

```
-> show snmp station details
```

```
ipAddress/port: 10.255.24.59/162,
  status:        disable,
  protocol:      v2,
  user:          public,

ipAddress/port: 135.115.207.36/162,
  status:        disable,
  protocol:      v2,
  user:          public,

ipAddress/port: localhost/10162,
  status:        disable,
  protocol:      v3,
  security model: tsm,
  user:          joecool,
  local identity: aluSubagent.crt,
  remote identity: manager.crt,

ipAddress/port: 10.255.24.57/162,
  status:        enable,
  protocol:      v1,
```



```
user:                public,
```

### *output definitions*

---

<b>IpAddress</b>	IP Address of the SNMP management station.
<b>Port</b>	Trap station port number (UDP, TLSTCP).
<b>status</b>	The Enabled/Disabled status of the SNMP management station.
<b>protocol</b>	The version of SNMP set for this management station.
<b>security model</b>	Displays the security model selected.
<b>user</b>	The user account name.
<b>local identity</b>	File name of local certificate used, TSM only. This is displayed only for SNMP version 3.
<b>remote identity</b>	File name of remote certificate used, TSM only. This is displayed only for SNMP version 3.

---

## Release History

Release 5.1; command was introduced.

## Related Commands

[snmp station](#) Adds a new SNMP station; modifies or deletes an existing SNMP station.

## MIB Objects

```
trapStationTable
  trapStationIP
  trapStationPort
  trapStationUser
  trapStationProtocol
  trapStationRowStatus
alaTrapInetStationTable
  alaTrapInetStationIPType
  alaTrapInetStationIP
  alaTrapInetStationPort
  alaTrapInetStationRowStatus
  alaTrapInetStationProtocol
  alaTrapInetStationUser
  alaTrapInetStationLocalIdentity
  alaTrapInetStationRemoteIdentity
```

---

## snmp snmp-engineid-type

Configures a unique engine ID for the OmniSwitch SNMP agent.

```
snmp snmp-engineid-type {text | mac-address | ipv4-address | ipv6-address} snmp-engineid  
{text_string | mac_address | ipv4_address | ipv6_address}
```

```
snmp snmp-engineid-type mac-address snmp-engineid default
```

---

### Syntax Definitions

<i>text_string</i>	A text string that will be converted to a hexadecimal value. The valid range is 1–27 characters.
<i>mac_address</i>	A specific MAC Address (for example, 00:00:39:59:f1:0c).
<i>ipv4_address</i>	An IPv4 address that will be converted to a hexadecimal value.
<i>ipv6_address</i>	An IPv6 address that will be converted to a hexadecimal value.

### Defaults

By default, the SNMP engine ID is set to the base MAC address for the switch appended to the enterprise value for OmniSwitch platforms (for example, if the enterprise value is “8000195603” and the switch base MAC address is “2c:fa:a2:13:e4:02”, then the default engine ID is set to “80001956032cfaa213e402”).

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- To set the engine ID back to the default value, specify the **mac-address** parameter and the **default** parameter with this command. For example, **snmp snmp-engineid-type mac-address snmp-engineid default**.
- Note that the **snmp-engineid** keyword is entered after the parameter that specifies the type of engine ID format to use and before the actual value that matches the specified parameter type. For example, if the **ipv4-address** parameter is specified, enter the IPv4 address value after the **snmp-engineid** keyword (**snmp snmp-engineid-type ipv4-address snmp-engineid 10.2.2.1**).
- When a text string, an IPv4 address, or an IPv6 address is specified, the value is automatically converted to a hexadecimal value that is then appended to the OmniSwitch enterprise value to form the SNMP engine ID for the switch.

### Examples

```
-> snmp snmp-engineid-type text snmp-engineid "test lab"  
-> snmp snmp-engineid-type mac-address snmp-engineid 00:2a:95:01:02:03  
-> snmp snmp-engineid-type ipv4-address snmp-engineid 168.22.2.2 111  
-> snmp snmp-engineid-type mac-address snmp-engineid default
```

### Release History

Release 5.1; command was introduced.

**Related Commands**

**show snmp snmp-engineid**      Displays the current SNMP engine ID information.

**MIB Objects**

snmpAgtEngineIdType  
snmpAgtEngineId

---

## show snmp snmp-engineid

Displays the current SNMP engine ID value for the switch.

```
show snmp snmp-engineid
```

---

### Syntax Definitions

N/A

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guideline

N/A

### Examples

```
-> show snmp snmp-engineid
snmp engineId type          snmp engineId
-----+-----
      default Mac              80001956032cfaa213e402
```

#### *output definitions*

---

<b>snmp engineId type</b>	The type of engine ID ( <b>default Mac, Text, Ipv4, or Ipv6</b> ).
<b>snmp engineId</b>	The SNMP engine ID value that uniquely identifies the OmniSwitch SNMP agent. This value is comprised of the OmniSwitch enterprise ID plus the configured SNMP engine ID value, in hexadecimal format.

---

### Release History

Release 5.1; command was introduced.

### Related Commands

[snmp snmp-engineid-type](#) Configures the type and value of the SNMP engine ID for the switch.

### MIB Objects

```
snmpAgtEngineIdType
snmpAgtEngineId
```

---

## snmp community-map

Configures and enables a community string on the switch and maps it to an existing user account name.

```
snmp community-map {[hash-key string | community_string] user useraccount_name} [enable | disable]
```

```
no snmp community-map community_string
```

---

### Syntax Definitions

<i>hash-key string</i>	The hashed format of a community string.
<i>community_string</i>	A community string in the form of a text string. This string must be between 1 and 32 characters.
<i>useraccount_name</i>	A user name in the form of a text string. This name must match a user login account name already configured on the switch or configured remotely on an external AAA server. This user name must be between 1 and 32 characters.
<b>enable</b>	Enables SNMP community string mapping.
<b>disable</b>	Disables SNMP community string mapping.

### Defaults

By default, SNMP community map authentication is enabled.

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- Community strings are stored in a hashed format in the ‘**show configuration snapshot snmp**’ output. To view community string mappings in plain-text use the **show snmp community-map** command.
- Community strings configured on the switch are used for v1 and v2c SNMP managers only.
- The user account name must be a current user account recognized by the switch. For a list of current user names use the **show user** command. To create a new user account, use the **user** command.
- There is one to one mapping between each community string and a user account name.
- Privileges attached to the community string are the ones inherited from the user account name that created it.
- The community-map mode must be enabled and the community string carried over each incoming v1 or v2c SNMP request must be mapped to a user account name in order to be processed by the SNMP agent.

### Examples

```
-> snmp community-map community1 user testname1  
-> snmp community-map community1 enable
```

## Release History

Release 5.1; command was introduced.

## Related Commands

**snmp community-map mode** Enables the local community strings database.

## MIB Objects

```
SNMPCommunityTable
  snmpCommunityIndex
  snmpCommunitySecurityName
  snmpCommunityStatus
```

---

## snmp community-map mode

Enables the local community strings database.

`snmp community-map mode {enable | disable}`

---

### Syntax Definitions

<b>enable</b>	Enables SNMP community map database.
<b>disable</b>	Disables SNMP community map database.

### Defaults

---

parameter	default
Community mode	disabled

---

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- The community-map mode must be enabled and the community string carried over each incoming v1 or v2c SNMP request must be mapped to a user account name with SNMP privileges in order to be processed by the SNMP agent.
- When enabled, mapping is contained in the local community strings database populated by using the [snmp community-map](#) command.

### Examples

```
-> snmp community-map mode enable  
-> snmp community-map mode disable
```

### Release History

Release 5.1; command was introduced.

### Related Commands

[snmp community-map](#) Configures and enables a community string on the switch and maps it to an existing user account name.

### MIB Objects

```
SNMPCommunityTable  
  snmpCommunityIndex  
  snmpCommunitySecurityName  
  snmpCommunityStatus
```

---

## show snmp community-map

Shows the local community strings database.

```
show snmp community-map
```

---

### Syntax Definitions

N/A

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guideline

N/A

### Examples

```
-> show snmp community-map
Community mode : enabled
```

```
status  community string          user name
-----+-----+-----
enabled test_string1              bb_username
enabled test_string2              rr_username
disabled test_string3             cc_username
disabled test_string4             jj_username
```

### *output definitions*

---

<b>Status</b>	The Enabled/Disabled status of the community string.
<b>Community String</b>	The text that defines the community string.
<b>User Name</b>	The user account name.

---

### Release History

Release 5.1; command was introduced.



**Related Commands****snmp community-map**

Configures and enables a community string on the switch and maps it to an existing user account name.

**MIB Objects**

N/A

---

## snmp security

Configures SNMP security settings.

**snmp security** {no-security | authentication set | authentication all | privacy set | privacy all | trap-only | tls {enable | disable}}

---

### Syntax Definitions

<b>no-security</b>	The switch will accept all SNMP v1, v2, and v3 requests.
<b>authentication set</b>	The switch will accept all requests <i>except</i> v1, v2, and non-authenticated v3 set requests. SNMP v1, v2, and non-authenticated v3 set requests will be rejected.
<b>authentication all</b>	The switch will accept all requests <i>except</i> v1, v2, and non-authenticated v3 get, get-next, and set requests. SNMP v1, v2, and non-authenticated v3 get, get-next, and set requests will be rejected.
<b>privacy set</b>	The switch will accept <i>only</i> authenticated SNMP v3 get, get-next and encrypted v3 set requests. All other requests will be rejected.
<b>privacy all</b>	The switch will accept only encrypted v3 get, get-next, and set requests. All other requests will be rejected.
<b>trap-only</b>	All SNMP get, get-next, and set requests will be rejected.
<b>tls enable   disable</b>	Unblocks (enable) or blocks (disable) the SNMP TLS port 10161.

### Defaults

parameter	default
security	privacy all
tls enable   disable	disable

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

Refer to the table below for a quick-reference list of security parameter and the SNMP request allowances for each parameter.

	v1 set v2 set v3 non-auth set	v1 get v2 get v3 non-auth get/ get-next	v3 auth set	v3 auth get/ get-next	v3 encryp set	v3 encryp get/ get-next
<b>no-security</b>	accepted	accepted	accepted	accepted	accepted	accepted
<b>authentication set</b>	rejected	accepted	accepted	accepted	accepted	accepted
<b>authentication all</b>	rejected	rejected	accepted	accepted	accepted	accepted
<b>privacy set</b>	rejected	rejected	rejected	accepted	accepted	accepted

---

	<b>v1 set v2 set v3 non-auth set</b>	<b>v1 get v2 get v3 non-auth get/ get-next</b>	<b>v3 auth set</b>	<b>v3 auth get/ get-next</b>	<b>v3 encryp set</b>	<b>v3 encryp get/ get-next</b>
<b>privacy all</b>	rejected	rejected	rejected	rejected	accepted	accepted
<b>trap-only</b>	rejected	rejected	rejected	rejected	rejected	rejected

## Examples

```
-> snmp security no-security
-> snmp security authentication set
-> snmp security authentication all
-> snmp security privacy set
-> snmp security trap-only
```

## Release History

Release 5.1; command was introduced.

## Related Commands

[show snmp security](#) Displays the current SNMP security status.

## MIB Objects

```
SNMPAgtConfig
  SnpAgtSecurityLevel
```

---

## snmp security tsm

Enables or disables TLS encryption for SNMP access.

**snmp security tsm [enable | disable]**

---

### Syntax Definitions

<b>enable</b>	Enables TLS encryption for SNMP access.
<b>disable</b>	Disables TLS encryption for SNMP access.

### Defaults

By default, the TLS encryption for SNMP access is disabled.

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- The TLS encryption can be enabled only for SNMP version 3.
- In Common Criteria mode (CC mode) TLS encryption for SNMP is enabled by default and cannot be disabled.

### Examples

```
-> snmp security tsm enable
-> snmp security tsm disable
```

### Release History

Release 5.1; command was introduced.

### Related Commands

[snmp tsm-map](#) Displays the current SNMP security status.

### MIB Objects

```
SNMPAgtConfig
  snmpAgtTsmAdminState
```

---

## snmp tsm-map

Allows to map a remote identity or certificate to a user in TSM mode.

```
snmp tsm-map remote-identity remote_string user user_string
```

---

### Syntax Definitions

<i>remote_string</i>	File name of remote certificate to be mapped with the user. This string must be between 1 and 128 characters.
<i>user_string</i>	The user name. This string must be between 1 and 32 characters.

### Defaults

N/A.

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- The remote identity mapping for user can be done only in TSM mode.
- The remote identity mapping can be done for only one user at a time. It cannot be mapped to multiple users. Mapping it to a different user will replace the existing user.
- If the content of remote certificate is changed, the updated certificate must be manually copied from master or primary to all secondaries and slaves. A reboot is required for the changes to be applied.

### Examples

```
-> snmp tsm-map remote-identity manager.crt user joe  
-> snmp security tsm disable
```

### Release History

Release 5.1; command was introduced.

### Related Commands

[show snmp tsm-map](#) Displays the current SNMP TSM remote identity mapping for a user.

### MIB Objects

```
alaSnmpTsmUserTable  
  alaSnmpTsmUserRemoteIdentity  
  alaSnmpTsmUserName
```

---

## show snmp tsm-map

Displays the current SNMP TSM remote identity mapping for a user.

```
show snmp tsm-map
```

---

### Syntax Definitions

N/A

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

Enter the specific file name of the remote certificate to view the mapping related to it.

### Examples

```
-> show snmp tsm-map
Remote Identity          User
-----+-----
manager.crt             adam

-> show snmp tsm-map manager.pem
Remote Identity          User
-----+-----
manager.pem             joecool
```

### *output definitions*

---

<b>Remote Identity</b>	Displays the file name of the remote certificate mapped to the user.
<b>User</b>	Displays the user name mapped to the remote identity.

---

### Release History

Release 5.1; command was introduced.

### Related Commands

[snmp tsm-map](#) Allows to map a remote identity or certificate to a user in TSM mode.

### MIB Objects

N/A

---

## show snmp security

Displays the current SNMP security status.

```
show snmp security [tsm]
```

---

### Syntax Definitions

N/A

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- Refer to the command on page [35-16](#) for descriptions of the five SNMP security states: no security, authentication set, authentication all, privacy set, privacy all, and trap only.
- Use the optional parameter **tsm** along with the command to display the configured SNMP TSM status.

### Examples

```
-> show snmp security
snmp security = no security
```

```
-> show snmp security
snmp security = authentication set
```

```
-> show snmp security
snmp security = authentication all
```

```
-> show snmp security
snmp security = privacy set
```

```
-> show snmp security
snmp security = privacy all
```

```
-> show snmp security
snmp security = trap only
```

```
-> show snmp security tsm
snmp security tsm = disable
```

### output definitions

---

<b>snmp security</b>	Displays the configured SNMP security level.
<b>snmp security tsm</b>	Displays the configured SNMP TLS encryption status.

---



## Release History

Release 5.1; command was introduced.

## Related Commands

[snmp security](#)

Configures the SNMP security settings.

[snmp security tsm](#)

Enables or disables TLS encryption for SNMP access.

## MIB Objects

N/A

---

## show snmp statistics

Displays the current SNMP statistics.

**show snmp statistics**

---

### Syntax Definitions

N/A

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

N/A

### Examples

```
-> show snmp statistics
From RFC1907
  snmpInPkts                = 801
  snmpOutPkts               = 800
  snmpInBadVersions         = 0
  snmpInBadCommunityNames  = 0
  snmpInBadCommunityUses   = 0
  snmpInASNParseErrs       = 0
  snmpEnableAuthenTraps    = disabled(2)
  snmpSilentDrops           = 0
  snmpProxyDrops           = 0
  snmpInTooBig              = 0
  snmpOutTooBig            = 0
  snmpInNoSuchNames        = 0
  snmpOutNoSuchNames       = 0
  snmpInBadValues          = 0
  snmpOutBadValues         = 0
  snmpInReadOnly           = 0
  snmpOutReadOnly          = 0
  snmpInGenErrs            = 0
  snmpOutGenErrs           = 0
  snmpInTotalReqVars       = 839
  snmpInTotalSetVars       = 7
  snmpInGetRequests        = 3
  snmpOutGetRequests       = 0
  snmpInGetNexts           = 787
  snmpOutGetNexts         = 0
  snmpInSetRequests        = 7
  snmpOutSetRequests       = 0
  snmpInGetResponses       = 0
  snmpOutGetResponses      = 798
```

```

snmpInTraps           = 0
snmpOutTraps          = 0
From RFC2572
snmpUnknownSecurityModels = 0
snmpInvalidMsgs       = 0
snmpUnknownPDUHandlers = 0
From RFC2573
snmpUnavailableContexts = 0
snmpUnknownContexts    = 1
From RFC2574
usmStatsUnsupportedSecLevels = 0
usmStatsNotInTimeWindows   = 1
usmStatsUnknownUserNames   = 1
usmStatsUnknownEngineIDs   = 0
usmStatsWrongDigests       = 0
usmStatsDecryptionErrors    = 0

```

***output definitions***


---

<b>From RFCxxxx</b>	Displays the RFC number that defines the SNMP MIB objects listed.
<b>MIB Objects</b>	Name of the MIB object listed as an SNMP statistic.
<b>= (integer)</b>	The number of times the MIB object has been reported to the SNMP management station since the last reset.

---

**Release History**

Release 5.1; command was introduced.

**Related Commands**

[snmp security](#) Configures the SNMP security settings.

**MIB Objects**

N/A

---

## show snmp mib-family

Displays SNMP MIB information. Information includes MIP ID number, MIB table name, and command family.

**show snmp mib-family** [*table\_name*]

---

### Syntax Definitions

*table\_name*                      The name of the MIB table to be displayed.

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- If a table name is not specified in the command syntax, all MIB table names will be displayed.
- If the command family is not valid for the entire MIB table, the command family will be displayed on a per-object basis.
- Table names are case-sensitive. Therefore, use the exact table names from the MIB database.

### Examples

```
-> show snmp mib-family trapStationTable
MIP ID   MIB TABLE NAME                               FAMILY
-----+-----+-----
 73733   trapStationTable                             snmp
```

### *output definitions*

---

<b>MIP ID</b>	Identification number for the MIP associated with this MIB Table.
<b>MIB Table Name</b>	Name of the MIB table.
<b>Family</b>	Command family to which this MIB table belongs.

---

### Release History

Release 5.1; command was introduced.

**Related Commands**

**show snmp-trap filter-ip** Displays the SNMP trap filter information.

**MIB Objects**

N/A

---

## snmp-trap absorption

Enables or disables the trap absorption function.

**snmp-trap absorption {enable | disable}**

---

### Syntax Definitions

<b>enable</b>	Enables SNMP trap absorption. When trap absorption is enabled, identical, repetitive traps sent by applications during a pre-configured time period will be absorbed, and therefore not sent to SNMP Manager stations configured on the switch.
<b>disable</b>	Disables SNMP trap absorption.

### Defaults

By default, trap absorption is enabled.

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

To view the current trap absorption status, use the **show snmp-trap config** command.

### Examples

```
-> snmp-trap absorption enable  
-> snmp-trap absorption disable
```

### Release History

Release 5.1; command was introduced.

### Related Commands

**show snmp-trap config** Displays the SNMP trap information. Information includes trap ID numbers and corresponding trap names and families.

### MIB Objects

```
trapFilterTable  
  trapAbsorption
```

---

## snmp-trap to-webview

Enables the forwarding of traps to WebView.

`snmp-trap to-webview {enable | disable}`

---

### Syntax Definitions

<b>enable</b>	Enables WebView forwarding. When WebView forwarding is enabled, all traps sent by switch applications are also forwarded to WebView. This allows a WebView session to retrieve the trap history log.
<b>disable</b>	Disables WebView forwarding.

### Defaults

By default, WebView forwarding is enabled.

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

To view the current WebView forwarding status, use the **show snmp-trap config** command.

### Examples

```
-> snmp-trap to-webview enable
-> snmp-trap to-webview disable
```

### Release History

Release 5.1; command was introduced.

### Related Commands

<a href="#">show snmp-trap config</a>	Displays the SNMP trap information, including the current status for trap absorption and WebView forwarding.
---------------------------------------	--

### MIB Objects

```
trapFilterTable
  trapToWebView
```

---

## snmp-trap replay-ip

Replays stored traps from the switch to a specified SNMP station. This command is used to replay (to resend) traps on demand. This is useful in the event when traps are lost in the network.

```
snmp-trap replay-ip {ip_address | ipv6_address | domain_name} [seq_id]
```

---

### Syntax Definitions

<i>ip_address</i>	The IP address for the SNMP station to which traps will be replayed from the switch.
<i>ipv6_address</i>	The IPv6 address for the SNMP station to which traps will be replayed from the switch.
<i>domain_name</i>	A Fully Qualified Domain Name (FQDN) for the SNMP station to which traps will be replayed. Specify a domain name up to 255 characters in length.
<i>seq_id</i>	The sequence number from which trap replay will begin. Each trap sent by the switch to an SNMP station has a sequence number. The sequence number reflects the order in which the trap was sent to the SNMP station. For example, the first trap sent to an SNMP station has a sequence number of 1; the second trap has a sequence number of 2, etc. If no sequence number is entered, all stored traps are replayed.

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- Use the [show snmp station](#) command on [page 35-6](#) to display the latest stored sequence number for each SNMP station.
- The switch replays traps in the same order that they were previously sent, beginning from the specified sequence number.
- When traps are replayed, the original dates on which the trap was issued, rather than the current dates are used.
- When an FQDN is specified with this command, the switch will resolve the domain name to an IP address. Make sure the domain name maps to a valid and reachable IP address.
- If the specified sequence number is lower than the oldest trap sequence number stored in the switch, the switch replays all stored traps.
- If the specified sequence number is equal to or greater than the oldest trap sequence number stored, the switch replays all stored traps from the specified sequence number up to the latest sequence number.
- If the specified sequence number is greater than the latest sequence number, no traps are replayed.



## Examples

```
-> snmp-trap replay-ip 172.12.2.100  
-> snmp-trap replay-ip 300::1  
-> snmp-trap replay-ip upam.omnivista.com
```

## Release History

Release 5.1; command was introduced.

## Related Commands

<a href="#">show snmp station</a>	Displays the current SNMP station status.
<a href="#">show snmp-trap replay-ip</a>	Displays the SNMP trap replay information.

## MIB Objects

```
trapStationTable  
  trapStationReplay  
  trapStationNextSeq  
alaTrapInetStationTable  
  alaTrapInetStationReplay  
  alaTrapInetStationNextSeq
```

---

## snmp-trap filter-ip

Enables or disables SNMP trap filtering. Trap filtering is used to determine whether a trap or group of traps will be sent from the switch to a specified SNMP station.

**snmp-trap filter-ip** {*ip\_address* | *ipv6\_address* | *domain\_name*} *trap\_id\_list*

**no snmp-trap filter-ip** {*ip\_address* | *ipv6\_address* | *domain\_name*} *trap\_id\_list*

---

### Syntax Definitions

<i>ip_address</i>	The IP address for the SNMP station for which trap filtering is enabled or disabled.
<i>ipv6_address</i>	The IPv6 address for the SNMP station for which trap filtering is enabled or disabled.
<i>domain_name</i>	A Fully Qualified Domain Name (FQDN) for the SNMP station for which trap filtering is enabled or disabled. Specify a domain name up to 255 characters in length.
<i>trap_id_list</i>	Specifies the trap(s) for which filtering is being enabled or disabled. Traps must be specified using the numeric trap ID. You can specify more than one trap in the command line; separate each trap ID with a space and no comma.

### Defaults

By default, SNMP trap filtering is disabled.

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- To *enable* trap filtering, use the syntax **snmp-trap filter-ip** *ip\_address* *trap\_id\_list*.
- To *disable* trap filtering, use the syntax **no snmp-trap filter-ip** *ip\_address* *trap\_id\_list*.
- When an FQDN is specified with this command, the switch will resolve the domain name to an IP address. Make sure the domain name maps to a valid and reachable IP address.
- When filtering is enabled, the specified trap(s) *will not* be sent to the SNMP station. When filtering is disabled, the specified traps *will* be sent to the SNMP station.
- To display a list of traps and their ID numbers, use the [show snmp-trap config](#) command.

### Examples

```
-> snmp-trap filter-ip 172.1.2.3 1
-> snmp-trap filter-ip 172.1.2.3 0 1 3 5
-> snmp-trap filter-ip 300::1 1 3 4
-> snmp-trap filter-ip upam.omnivista.com 1 3 5
-> no snmp-trap filter-ip 172.1.2.3 1
-> no snmp-trap filter-ip 172.1.2.3 0 1 3 5
```

```
-> no snmp-trap filter-ip 300::1 1 3
-> no snmp-trap filter-ip upam.omnivista.com 1 3 5
```

## Release History

Release 5.1; command was introduced.

## Related Commands

[show snmp-trap filter-ip](#)

Displays the current SNMP trap filter status.

[show snmp-trap config](#)

Displays the SNMP trap information, including trap ID numbers, trap names, command families, and absorption rate.

## MIB Objects

```
trapFilterTable
  trapFilterStatus
alaTrapInetFilterTable
  alaTrapInetFilterStatus
```

---

## snmp authentication-trap

Enables or disables SNMP authentication failure trap forwarding.

**snmp authentication-trap {enable | disable}**

---

### Syntax Definitions

<b>enable</b>	Enables authentication failure trap forwarding. When enabled, the standard authentication failure trap is sent each time an SNMP authentication failure is detected.
<b>disable</b>	Disables authentication failure trap forwarding.

### Defaults

By default, authentication failure trap forwarding is disabled.

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

N/A

### Examples

```
-> snmp authentication-trap enable
-> snmp authentication-trap disable
```

### Release History

Release 5.1; command was introduced.

### Related Commands

**show snmp authentication-trap** Displays the current authentication failure trap forwarding status.

### MIB Objects

```
snmpGroup
  snmpEnableAuthenTraps
```

---

## show snmp-trap replay-ip

Displays SNMP trap replay information.

```
show snmp-trap replay-ip
```

---

### Syntax Definitions

N/A

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

N/A

### Examples

```
-> show snmp-trap replay-ip
ipAddress      : oldest replay number
-----
199.199.101.200 :      1234
199.199.105.202 :       578
199.199.101.203 :     1638
199.199.101.204 :     2560
upam.omnivista.com:    1849
```

### *output definitions*

---

<b>IPAddress</b>	IP address or Fully Qualified Domain Name (FQDN) of the SNMP station manager that replayed the trap.
<b>Oldest Replay Number</b>	Number of the oldest replayed trap.

---

### Release History

Release 5.1; command was introduced.

### Related Commands

[snmp-trap replay-ip](#)               Replays stored traps from the switch to a specified SNMP station.

**MIB Objects**

trapStationTable

    trapStationReplay

    trapStationNextSeq

alaTrapInetStationTable

    alaTrapInetStationReplay

    alaTrapInetStationNextSeq

---

## show snmp-trap filter-ip

Displays the current SNMP trap filter status.

```
show snmp-trap filter-ip
```

---

### Syntax Definitions

N/A

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

To display a list of traps and their ID numbers, use the [show snmp-trap config](#) command.

### Examples

```
-> show snmp-trap filter-ip
ipAddress          trapId list
-----
199.199.101.200 : 0 1 2 3
199.199.101.201 : no filter
199.199.105.202 : 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14
                  15 16 17 18 19
199.199.101.203 : 20 22 30
199.199.101.204 : no filter
upam.omnivista.com : 1 3 5
```

#### *output definitions*

---

<b>IPAddress</b>	IP address or Fully Qualified Domain Name (FQDN) of the SNMP management station that recorded the traps.
<b>TrapId List</b>	Identification number for the traps being filtered.

---

### Release History

Release 5.1; command was introduced.

## Related Commands

[snmp-trap filter-ip](#)

Enables or disables SNMP trap filtering.

[show snmp-trap config](#)

Displays the SNMP trap information, including trap ID numbers, trap names, command families, and absorption rate.

## MIB Objects

trapFilterTable

  trapFilterEntry

alaTrapInetFilterTable

  alaTrapInetFilterStatus

---



## show snmp authentication-trap

Displays the current authentication failure trap forwarding status (i.e., enable or disable).

**show snmp authentication-trap**

---

### Syntax Definitions

N/A

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

N/A

### Examples

```
-> show snmp authentication-trap
snmp authentication trap = disable
```

### Release History

Release 5.1; command was introduced.

### Related Commands

[snmp authentication-trap](#) Enables or disables SNMP authentication failure trap forwarding.

### MIB Objects

```
sessionAuthenticationTrap
```

---

## show snmp-trap config

Displays SNMP trap information. Information includes trap ID numbers, trap names, command families, and absorption rate. This command also displays the Enabled/Disabled status of SNMP absorption and the Traps to WebView service.

**show snmp-trap config**

---

### Syntax Definitions

N/A

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

N/A

### Examples

```
-> show snmp-trap config
Absorption service : enabled
Traps to WebView : enabled
```

Id	trapName	family	absorption
0	coldStart	chassis	15 seconds
1	warmStart	chassis	15 seconds
2	linkDown	interface	15 seconds
3	linkUp	interface	15 seconds
4	authenticationFailure	snmp	15 seconds
5	entConfigChange	module	15 seconds
30	slPesudoCAMStatusTrap	bridge	15 seconds
31	slbTrapException	loadbalancing	15 seconds
32	slbTrapConfigChanged	loadbalancing	15 seconds
33	slbTrapOperStatus	loadbalancing	15 seconds
34	ifMauJabberTrap	interface	15 seconds
35	sessionAuthenticationTrap	session	15 seconds

### output definitions

---

<b>Id</b>	Identification number for the trap.
<b>Trap Name</b>	Name of the trap.
<b>Family</b>	Family to which the trap belongs.
<b>Absorption</b>	Time needed for the trap to process.

---

## Release History

Release 5.1; command was introduced.

## Related Commands

[show snmp mib-family](#)

Displays SNMP MIB information.

[snmp-trap absorption](#)

Enables or disables the trap absorption function.

[snmp-trap to-webview](#)

Enables or disables the forwarding of SNMP traps to WebView.

## MIB Objects

trapConfigTable

    trapConfigEntry

---



# 36 OmniVista Cirrus Commands

OmniVista Cirrus is a network management solution to deliver zero touch provisioning using cloud.

OmniVista Cirrus solution provides reduced costs, ease of devices provisioning and a unified wired/wireless management from the cloud. The solution also provides an ability to identify each device uniquely and provide a freemium/premium solution based on the user policy.

Deployment of OmniVista Cirrus provides easy to use management and monitoring tools in a network and the ability to manage the network using devices ranging from workstations to smart phones.

MIB information for the OmniVista Cirrus commands is as follows:

*Filename:* ALCATEL-IND1-SYSTEM-MIB.mib  
*Module:* alcatelIND1SystemMIB

A summary of the available commands is listed here.

---

**cloud-agent admin-state**  
**cloud-agent discovery-interval**  
**cloud-agent remove-inconsistent-certificate**  
**show cloud-agent status**  
**show cloud-agent vpn status**

---

## cloud-agent admin-state

Enables or disables OmniVista Cirrus functionality globally for the switch.

**cloud-agent admin-state** {enable | disable | disable force | restart}

---

### Syntax Definitions

<b>enable</b>	Enables OmniVista Cirrus for the switch.
<b>disable</b>	Disables OmniVista Cirrus for the switch.
<b>disable force</b>	Disables OmniVista Cirrus for the switch and disconnects from the VPN.
<b>restart</b>	Restart option implicitly triggers “ <b>disable force</b> ” followed by “ <b>enabled</b> ”.

### Defaults

By default, OmniVista Cirrus is globally enabled for the switch.

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- OmniVista Cirrus is globally enabled for the switch only when the switch boots up without a configuration file [*(vc)boot.cfg*] or the configuration file size is zero bytes.
- If the switch boots up with a configuration file, the feature is enabled only if the administrative state of OmniVista Cirrus is explicitly enabled using the **cloud-agent admin-state** command. Hence, the default value is disabled in this case.
- The switch must have access to the DHCP server in the customer network with zero configurations on the devices.
- If the OmniVista Cirrus administrative state is disabled at run-time, it will take effect only after a reboot.
- If the OmniVista Cirrus administrative state is enabled at run-time, it will immediately trigger call-home with the activation server, if a connection was not established prior to that.
- When the OmniVista Cirrus administrative state is disabled at run-time while the connection is in progress or established, it will not have any consequences on the switch. If **write memory** is issued, the switch will not call-home even if the switch reboots or has a takeover. However, if the discovery interval timer is running, the next call-home will be terminated.
- The restart option implicitly triggers the administrative states of **disable force** followed by **enabled**. This will enable a user to restart call-home from OmniVista Cirrus.
- If the switch is in an intermediate state (downloading an image from image server, pre-provisioning, write memory, flash syncro, call-home, etc.), the **cloud agent admin state disable force** will display an error message: “*OV Cloud agent is in progress. Please retry after some time.*”

## Examples

```
-> cloud-agent admin-state enable  
-> cloud-agent admin-state disable
```

## Release History

Release 5.1; command introduced.

## Related Commands

**cloud-agent discovery-interval** Configures the time interval after which the switch will call-home the activation server, in case of any fatal error.

**show cloud-agent status** Displays the OmniVista Cirrus status and parameters received from the DHCP and activation server.

## MIB Objects

```
ovCloudAgent  
  ovCloudAgentAdminState
```

---

## cloud-agent discovery-interval

Configures the time interval after which the switch will call-home to the activation server, in case of any error.

**cloud-agent discovery-interval** *minutes*

---

### Syntax Definitions

*minutes*                      The time interval to call-home after an error. The valid range is 2-3600 minutes.

### Defaults

By default, the discovery interval is set to 30 minutes.

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- Call-home with the activation server will be immediately triggered when OmniVista Cirrus administrative state is enabled at run-time, if a connection was not established prior to that.
- When the OmniVista Cirrus administrative state is disabled at run-time while the connection is in progress or in an established connection, it will not have any consequences on the switch. If **write memory** is issued, the switch will not call-home even if the switch reboots or has a takeover. However, if the discovery interval timer is running, the next call home will be terminated.
- When trying to connect to the openVPN server, if the connection is not established in 90 seconds, the switch will move to an error state and will call home after the expiry of the discovery interval.

### Examples

```
-> cloud-agent discovery-interval 60  
-> cloud-agent discovery-interval 90
```

### Release History

Release 5.1; command introduced.



**Related Commands****cloud-agent admin-state**

Enables or disables OmniVista Cirrus functionality globally for the switch.

**show cloud-agent status**

Displays the OmniVista Cirrus status and parameters received from the DHCP and activation server.

**MIB Objects**

ovCloudAgent

ovCloudAgentDiscoveryInterval

---

## cloud-agent remove-inconsistent-certificate

Removes the certificate received from the OmniVista Activation server on all units in the VC, if the certificate status is inconsistent.

**cloud-agent remove-inconsistent-certificate**

---

### Syntax Definitions

N/A

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- When this command is issued, a warning is generated: *"This command may render the switch incapable of connecting with OV-Cloud if not used with caution. Confirm (Y/N):"*
- If accepted by pressing (Y) and the certificate status is not inconsistent, an error message is displayed: *"Certificate status is Consistent. Cannot delete certificate."* The existing OmniVista Cirrus agent state machine will not be interrupted.

### Examples

```
-> cloud-agent remove-inconsistent-certificate
```

### Release History

Release 5.1; command introduced.

### Related Commands

<a href="#">cloud-agent admin-state</a>	Enables or disables OmniVista Cirrus functionality globally for the switch.
<a href="#">show cloud-agent status</a>	Displays the OmniVista Cirrus status and parameters received from the DHCP and activation server.

### MIB Objects

ovCloudAgent  
ovCloudAgentRemoveInconsistentCertificate

---

## show cloud-agent status

Displays the OmniVista Cirrus status and parameters received from the DHCP and activation server.

### show cloud-agent status

---

#### Syntax Definitions

N/A

#### Defaults

N/A

#### Platforms Supported

OmniSwitch 2260, 2360

#### Usage Guidelines

- The command **show cloud-agent status** will be valid only if call-home is enabled. Else, only the default values, if present, will be displayed.
- DHCP address, DHCP IP address mask, Gateway, Activation URL, Proxy URL, Proxy IP will be displayed based on the DHCP response parameters received.
- DNS server, DNS domain will be displayed with the current DNS configuration in the switch, if call-home is enabled.

#### Examples

```
-> show cloud-agent status
Admin State                : Enabled,
Activation Server State    : completeOK,
Device State               : DeviceManaged,
Error State                : None,
Cloud Group                : pmrb98earnoc10,
DHCP Address               : 135.254.171.88,
DHCP IP Address Mask      : 255.255.255.0,
Gateway                    : 135.254.171.1,
Activation Server          : activation.myovcloud.com:443,
NTP Server                 : 135.254.171.160,
DNS Server                 : 10.67.0.254,
DNS Domain                 : netaos.in,
Proxy Server               : 192.168.70.226:8000,
VPN Server                 : pmrb98earnoc10.tenant.vpn.dev.myovcloud.com:443,
Preprovision Server        : pmrb98earnoc10.tenant.ovd.dev.myovcloud.com:80,
OV tenant                  : pingram999.ov.dev.ovcirrus.com:443,
VPN DPD Time (sec)        : 0,
Image Server               : -,
Image Download Retry Count : -,
Discovery Interval (min)   : 30,
Time to next Call Home (sec) : -,
Call Home Timer Status     : Not-Running,
Discovery Retry Count      : 1
```

Certificate Status : Consistent

## Release History

Release 5.1; command introduced.

## Related Commands

- [cloud-agent admin-state](#) Enables or disables OmniVista Cirrus functionality globally for the switch.
- [show cloud-agent vpn status](#) Displays the OmniVista Cirrus VPN status.

## MIB Objects

ovCloudAgent  
  ovCloudAgentAdminState  
  ovCloudAgentDiscoveryInterval  
  ovCloudAgentDeviceState  
  ovCloudAgentTimeToNextCallhome

---

## show cloud-agent vpn status

Displays the OmniVista Cirrus VPN status.

**show cloud-agent vpn status**

---

### Syntax Definitions

N/A

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

N/A

### Examples

```
-> show cloud-agent vpn status
VPN status                : Connected,
VPN Assigned IP           : 10.8.0.4,
VPN DPD time (sec)       : 600
```

### output definitions

---

<b>VPN Status</b>	Refers to OmniVista Cirrus VPN status. The various VPN states are: <ul style="list-style-type: none"> <li>• <b>Connecting</b>—OpenVPN's initial state</li> <li>• <b>Wait</b>—Waiting for initial response from server</li> <li>• <b>Auth</b>—Authenticating with server</li> <li>• <b>Get_Config</b>—Downloading configuration options from server</li> <li>• <b>Assign_IP</b>—Assigning IP address to virtual network interface</li> <li>• <b>Add_Routes</b>—Adding routes to system</li> <li>• <b>Connected</b>—Initialization sequence completed</li> <li>• <b>Reconnecting</b>—A restart has occurred</li> <li>• <b>Exiting</b>—A graceful exit is in progress</li> </ul>
<b>VPN Assigned IP</b>	Displays the VPN server assigned IP for the VPN connection towards the OmniVista Cirrus.
<b>VPN DPD time (sec)</b>	Displays the VPN Dead Peer Detection (DPD) time value in seconds.

---

### Release History

Release 5.1; command introduced.

## Related Commands

### [cloud-agent admin-state](#)

Enables or disables OmniVista Cirrus functionality globally for the switch.

### [show cloud-agent status](#)

Displays the OmniVista Cirrus status and parameters received from the DHCP and activation server.

## MIB Objects

ovCloudAgent

    ovCloudAgentDeviceState

    ovCloudAgentVpnStatus

---

# 37 DNS Commands

A Domain Name System resolver is an internet service that translates host names into IP addresses. Every time you use a host name, a DNS service must resolve the name to an IP address. You can configure up to three domain name servers. If the primary DNS server does not know how to translate a particular host name, it asks the secondary DNS server (if specified). If this fails, it asks the third DNS server (if specified), until the correct IP address is returned (resolved). If all DNS servers have been queried and the name is still not resolved to an IP address, the DNS resolver will fail and issue an error message.

MIB information for the DNS commands is as follows:

*Filename:* ALCATEL-IND1-SYSTEM.mib  
*Module:* alcatelIND1SystemMIB

A summary of the available commands is listed here.

---

**ip domain-lookup**  
**ip name-server**  
**ipv6 name-server**  
**ip domain-name**  
**show dns**

---

## ip domain-lookup

Enables or disables the DNS resolver.

**ip domain-lookup**

**no ip domain-lookup**

---

### Syntax Definitions

N/A

### Defaults

By default, the DNS resolver is disabled.

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- Use the **no** form of this command to disable the DNS resolver.
- You must use the **ip domain-name** command to set a default domain name for your DNS resolver(s) and the **ip name-server** command to specify up to three DNS servers to query on host lookups.
- The **ip domain-lookup** command enables the DNS resolver.

### Examples

```
-> ip domain-lookup  
-> no ip domain-lookup
```

### Release History

Release 5.1; command was introduced.

### Related Commands

<a href="#">ip name-server</a>	Specifies the IP addresses of up to three servers to query on a host lookup.
<a href="#">ipv6 name-server</a>	Specifies the IPv6 addresses of up to three IPv6 DNS servers to query on a host lookup.
<a href="#">ip domain-name</a>	Sets or deletes the default domain name for DNS lookups.
<a href="#">show dns</a>	Displays the current DNS resolver configuration and status.

### MIB Objects

```
systemDNS  
  systemDNSEnableDnsResolver
```

---



## ip name-server

Specify the IP addresses of up to three servers to query on a host lookup.

```
ip name-server server_address1 [server_address2 [server_address3]]
```

---

### Syntax Definitions

<i>server_address1</i>	The IP address of the primary DNS server to query for host lookup. This is the only address that is required.
<i>server_address2</i>	The IP address of the secondary DNS server to query for host lookup. This server will be queried only if the desired host name or host IP address is not located by the primary DNS server. A second IP address is optional.
<i>server_address3</i>	The IP address of the DNS server with the lower priority. This server will be queried only if the desired host name or IP address is not located by the primary and secondary DNS servers. A third IP address is optional.

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- Configuration of the DNS resolver to resolve any host query requires that you first set the default domain name with the **ip domain-name** command and enable the DNS resolver function with the **ip domain-lookup** command before you specify the IP addresses of the DNS servers by using the **ip name-server** command.
- You can configure up to three IPv4 DNS servers and three IPv6 DNS servers in a switch.

### Examples

```
-> ip name-server 189.202.191.14 189.202.191.15 188.255.19.1  
-> ip name-server 10.255.11.66
```

### Release History

Release 5.1; command was introduced.

## Related Commands

[ip domain-lookup](#)

Enables or disables the DNS resolver.

[ip domain-name](#)

Sets or deletes the default domain name for DNS lookups.

[show dns](#)

Displays the current DNS resolver configuration and status.

## MIB Objects

systemDNS

  systemDNSNsAddr1

  systemDNSNsAddr2

  systemDNSNsAddr3

---

## ipv6 name-server

Specifies the IPv6 addresses of up to three IPv6 DNS servers to query on a host lookup.

```
ipv6 name-server server_ipv6_address1 [server_ipv6_address2 [server_ipv6_address3]]
```

---

### Syntax Definitions

<i>server_ipv6_address1</i>	The IPv6 address of the primary IPv6 DNS server to query for host lookup. Specifying the primary IPv6 DNS address is mandatory.
<i>server_ipv6_address2</i>	The IPv6 address of the secondary IPv6 DNS server to query for host lookup. This server will be queried only if the desired host name is not able to be resolved by the primary IPv6 DNS server. A second IPv6 address is optional.
<i>server_ipv6_address3</i>	The IPv6 address of the IPv6 DNS server with the lower priority. This server will be queried only if the desired host name is not able to be resolved by both the primary and secondary IPv6 DNS servers. A third IPv6 address is optional.

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

- Configuration of the DNS resolver to resolve any host query requires that you first set the default domain name with the **ip domain-name** command and enable the DNS resolver function with the **ip domain-lookup** command before you specify the IPv6 addresses of the IPv6 DNS servers by using the **ipv6 name-server** command.
- You cannot use multicast, loopback, link-local and unspecified IPv6 addresses for specifying IPv6 DNS servers.
- You can configure up to three IPv6 DNS servers and three IPv4 DNS servers in a switch.

### Examples

```
-> ipv6 name-server fec0::2d0:d3:f3fc  
-> ipv6 name-server fe2d::2c f302::3de1:1 f1bc::202:fd40:f3
```

### Release History

Release 5.1.R2; command introduced.

## Related Commands

[ip domain-lookup](#)

Enables or disables the DNS resolver.

[ip domain-name](#)

Sets or deletes the default domain name for DNS lookups.

[show dns](#)

Displays the current DNS resolver configuration and status.

## MIB Objects

systemDNS

systemDNSNsIPv6Addr1

systemDNSNsIPv6Addr2

systemDNSNsIPv6Addr3

---



## show dns

Displays the current DNS resolver configuration and status.

**show dns**

---

### Syntax Definitions

N/A

### Defaults

N/A

### Platforms Supported

OmniSwitch 2260, 2360

### Usage Guidelines

N/A

### Examples

```
-> show dns
Resolver is      : enabled
domainName      : company.com
IPv4 nameServer(s) : 189.202.191.14
                  : 189.202.191.15
                  : 188.255.19.1
```

### *output definitions*

---

<b>Resolver is</b>	Indicates whether the DNS resolver is enabled or disabled.
<b>domainName</b>	Indicates the default domain name assigned to the DNS lookups. This value is set using the <b>ip domain-name</b> command.
<b>IPv4 nameServer(s)</b>	Indicates the IP address(es) of the IPv4 DNS server(s). These addresses are set using the <b>ip name-server</b> command.

---

### Release History

Release 5.1; command was introduced.

## Related Commands

### **ip domain-lookup**

Enables or disables the DNS resolver.

### **ip name-server**

Specifies the IP addresses of up to three servers to query on a host lookup.

### **ip domain-name**

Sets or deletes the default domain name for DNS lookups.

## MIB Objects

systemDNS

systemDNSEnableDnsResolver

systemDNSDomainName

systemDNSNsAddr1

systemDNSNsAddr2

systemDNSNsAddr3

---

# A Software License and Copyright Statements

This appendix contains Alcatel-Lucent and third-party software vendor license and copyright statements.

## Alcatel-Lucent License Agreement

### ALE USA, Inc. SOFTWARE LICENSE AGREEMENT

---

**IMPORTANT.** Please read the terms and conditions of this license agreement carefully before opening this package.

---

**By opening this package, you accept and agree to the terms of this license agreement. If you are not willing to be bound by the terms of this license agreement, do not open this package. Please promptly return the product and any materials in unopened form to the place where you obtained it for a full refund.**

1. **License Grant.** This is a license, not a sales agreement, between you (the “Licensee”) and Alcatel-Lucent. Alcatel-Lucent hereby grants to Licensee, and Licensee accepts, a non-exclusive license to use program media and computer software contained therein (the “Licensed Files”) and the accompanying user documentation (collectively the “Licensed Materials”), only as authorized in this License Agreement. Licensee, subject to the terms of this License Agreement, may use one copy of the Licensed Files on the Licensee’s system. Licensee agrees not to assign, sublicense, transfer, pledge, lease, rent, or share their rights under this License Agreement. Licensee may retain the program media for backup purposes with retention of the copyright and other proprietary notices. Except as authorized under this paragraph, no copies of the Licensed Materials or any portions thereof may be made by Licensee and Licensee shall not modify, decompile, disassemble, reverse engineer, or otherwise attempt to derive the Source Code. Licensee is also advised that Alcatel-Lucent products contain embedded software known as firmware which resides in silicon. Licensee may not copy the firmware or transfer the firmware to another medium.

2. **ALE USA, Inc.’s Rights.** Licensee acknowledges and agrees that the Licensed Materials are the sole property of Alcatel-Lucent and its licensors (herein “its licensors”), protected by U.S. copyright law, trademark law, and are licensed on a right to use basis. Licensee further acknowledges and agrees that all rights, title, and interest in and to the Licensed Materials are and shall remain with Alcatel-Lucent and its licensors and that no such right, license, or interest shall be asserted with respect to such copyrights and trademarks. This License Agreement does not convey to Licensee an interest in or to the Licensed Materials, but only a limited right to use revocable in accordance with the terms of this License Agreement.



---

**3. Confidentiality.** Alcatel-Lucent considers the Licensed Files to contain valuable trade secrets of Alcatel-Lucent, the unauthorized disclosure of which could cause irreparable harm to Alcatel-Lucent. Except as expressly set forth herein, Licensee agrees to use reasonable efforts not to disclose the Licensed Files to any third party and not to use the Licensed Files other than for the purpose authorized by this License Agreement. This confidentiality obligation shall continue after any termination of this License Agreement.

**4. Indemnity.** Licensee agrees to indemnify, defend and hold Alcatel-Lucent harmless from any claim, lawsuit, legal proceeding, settlement or judgment (including without limitation Alcatel-Lucent's reasonable United States and local attorneys' and expert witnesses' fees and costs) arising out of or in connection with the unauthorized copying, marketing, performance or distribution of the Licensed Files.

**5. Limited Warranty.** Alcatel-Lucent warrants, for Licensee's benefit alone, that the program media shall, for a period of ninety (90) days from the date of commencement of this License Agreement (referred to as the Warranty Period), be free from defects in material and workmanship. Alcatel-Lucent further warrants, for Licensee benefit alone, that during the Warranty Period the Licensed Files shall operate substantially in accordance with the functional specifications in the User Guide. If during the Warranty Period, a defect in the Licensed Files appears, Licensee may return the Licensed Files to Alcatel-Lucent for either replacement or, if so elected by Alcatel-Lucent, refund of amounts paid by Licensee under this License Agreement. EXCEPT FOR THE WARRANTIES SET FORTH ABOVE, THE LICENSED MATERIALS ARE LICENSED "AS IS" AND ALE USA, Inc. AND ITS LICENSORS DISCLAIM ANY AND ALL OTHER WARRANTIES, WHETHER EXPRESS OR IMPLIED, INCLUDING (WITHOUT LIMITATION) ANY IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. SOME STATES DO NOT ALLOW THE EXCLUSION OF IMPLIED WARRANTIES SO THE ABOVE EXCLUSIONS MAY NOT APPLY TO LICENSEE. THIS WARRANTY GIVES THE LICENSEE SPECIFIC LEGAL RIGHTS. LICENSEE MAY ALSO HAVE OTHER RIGHTS WHICH VARY FROM STATE TO STATE.

**6. Limitation of Liability.** Alcatel-Lucent's cumulative liability to Licensee or any other party for any loss or damages resulting from any claims, demands, or actions arising out of or relating to this License Agreement shall not exceed the license fee paid to Alcatel-Lucent for the Licensed Materials. IN NO EVENT SHALL ALE USA, Inc. BE LIABLE FOR ANY INDIRECT, INCIDENTAL, CONSEQUENTIAL, SPECIAL, OR EXEMPLARY DAMAGES OR LOST PROFITS, EVEN IF ALE USA, Inc. HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES. SOME STATES DO NOT ALLOW THE LIMITATION OR EXCLUSION OF LIABILITY FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES, SO THE ABOVE LIMITATION OR EXCLUSION TO INCIDENTAL OR CONSEQUENTIAL DAMAGES MAY NOT APPLY TO LICENSEE.

**7. Export Control.** This product is subject to the jurisdiction of the United States. Licensee may not export or reexport the Licensed Files, without complying with all United States export laws and regulations, including but not limited to (i) obtaining prior authorization from the U.S. Department of Commerce if a validated export license is required, and (ii) obtaining "written assurances" from licensees, if required.

**8. Support and Maintenance.** Except as may be provided in a separate agreement between Alcatel-Lucent and Licensee, if any, Alcatel-Lucent is under no obligation to maintain or support the copies of the Licensed Files made and distributed hereunder and Alcatel-Lucent has no obligation to furnish Licensee with any further assistance, documentation or information of any nature or kind.

**9. Term.** This License Agreement is effective upon Licensee opening this package and shall continue until terminated. Licensee may terminate this License Agreement at any time by returning the Licensed Materials and all copies thereof and extracts therefrom to Alcatel-Lucent and certifying to Alcatel-Lucent in writing that all Licensed Materials and all copies thereof and extracts therefrom have been returned or erased by the memory of Licensee's computer or made non-readable. Alcatel-Lucent may terminate this License Agreement upon the breach by Licensee of any term hereof. Upon such termination by

---

Alcatel-Lucent, Licensee agrees to return to ALE USA, Inc. ALE USA, Inc. or destroy the Licensed Materials and all copies and portions thereof.

**10. Governing Law.** This License Agreement shall be construed and governed in accordance with the laws of the State of California.

**11. Severability.** Should any term of this License Agreement be declared void or unenforceable by any court of competent jurisdiction, such declaration shall have no effect on the remaining terms herein.

**12. No Waiver.** The failure of either party to enforce any rights granted hereunder or to take action against the other party in the event of any breach hereunder shall not be deemed a waiver by that party as to subsequent enforcement of rights or subsequent actions in the event of future breaches.

**13. Notes to United States Government Users.** Software and documentation are provided with restricted rights. Use, duplication or disclosure by the government is subject to (i) restrictions set forth in GSA ADP Schedule Contract with ALE USA, Inc.'s reseller(s), or (ii) restrictions set forth in subparagraph (c) (1) and (2) of 48 CFR 52.227-19, as applicable.

**14. Third Party Materials.** Licensee is notified that the Licensed Files contain third party software and materials licensed to ALE USA, Inc. by certain third party licensors. Some third party licensors (e.g., Wind River and their licensors with respect to the Run-Time Module) are third party beneficiaries to this License Agreement with full rights of enforcement. Please refer to the section entitled "[Third Party Licenses and Notices](#)" on page A-4 for the third party license and notice terms.

---

# Third Party Licenses and Notices

The licenses and notices related only to such third party software are set forth below:

## A. Booting and Debugging Non-Proprietary Software

A small, separate software portion aggregated with the core software in this product and primarily used for initial booting and debugging constitutes non-proprietary software, some of which may be obtained in source code format from ALE USA, Inc. for a limited period of time. ALE USA, Inc. will provide a machine-readable copy of the applicable non-proprietary software to any requester for a cost of copying, shipping and handling. This offer will expire 3 years from the date of the first shipment of this product.

## B. The OpenLDAP Public License: Version 2.8, 17 August 2003

Redistribution and use of this software and associated documentation (“Software”), with or without modification, are permitted provided that the following conditions are met:

- 1 Redistributions of source code must retain copyright statements and notices.
- 2 Redistributions in binary form must reproduce applicable copyright statements and notices, this list of conditions, and the following disclaimer in the documentation and/or other materials provided with the distribution.
- 3 Redistributions must contain a verbatim copy of this document.
- 4 The names and trademarks of the authors and copyright holders must not be used in advertising or otherwise to promote the sale, use or other dealing in this Software without specific, written prior permission.
- 5 Due credit should be given to the OpenLDAP Project.
- 6 The OpenLDAP Foundation may revise this license from time to time. Each revision is distinguished by a version number. You may use the Software under terms of this license revision or under the terms of any subsequent revision of the license.

THIS SOFTWARE IS PROVIDED BY THE OPENLDAP FOUNDATION AND CONTRIBUTORS “AS IS” AND ANY EXPRESSED OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE OPENLDAP FOUNDATION OR ITS CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

OpenLDAP is a trademark of the OpenLDAP Foundation.

Copyright 1999-2000 The OpenLDAP Foundation, Redwood City, California, USA. All Rights Reserved. Permission to copy and distributed verbatim copies of this document is granted.

---

## C. Linux

Linux is written and distributed under the GNU General Public License which means that its source code is freely-distributed and available to the general public.

## D. GNU GENERAL PUBLIC LICENSE: Version 2, June 1991

Copyright (C) 1989, 1991 Free Software Foundation, Inc. 675 Mass Ave, Cambridge, MA 02139, USA  
Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

### Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users. This General Public License applies to most of the Free Software Foundation's software and to any other program whose authors commit to using it. (Some other Free Software Foundation software is covered by the GNU Library General Public License instead.) You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs; and that you know you can do these things.

To protect your rights, we need to make restrictions that forbid anyone to deny you these rights or to ask you to surrender the rights. These restrictions translate to certain responsibilities for you if you distribute copies of the software, or if you modify it.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must give the recipients all the rights that you have. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

We protect your rights with two steps: (1) copyright the software, and (2) offer you this license which gives you legal permission to copy, distribute and/or modify the software.

Also, for each author's protection and ours, we want to make certain that everyone understands that there is no warranty for this free software. If the software is modified by someone else and passed on, we want its recipients to know that what they have is not the original, so that any problems introduced by others will not reflect on the original authors' reputations.

Finally, any free program is threatened constantly by software patents. We wish to avoid the danger that redistributors of a free program will individually obtain patent licenses, in effect making the program proprietary. To prevent this, we have made it clear that any patent must be licensed for everyone's free use or not licensed at all.

The precise terms and conditions for copying, distribution and modification follow.

### **GNU GENERAL PUBLIC LICENSE TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION**

**0** This License applies to any program or other work which contains a notice placed by the copyright holder saying it may be distributed under the terms of this General Public License. The "Program", below, refers to any such program or work, and a "work based on the Program" means either the Program or any derivative work under copyright law: that is to say, a work containing the Program or a portion of it, either

---

verbatim or with modifications and/or translated into another language. (Hereinafter, translation is included without limitation in the term “modification”.) Each licensee is addressed as “you”.

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running the Program is not restricted, and the output from the Program is covered only if its contents constitute a work based on the Program (independent of having been made by running the Program). Whether that is true depends on what the Program does.

**1** You may copy and distribute verbatim copies of the Program’s source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and give any other recipients of the Program a copy of this License along with the Program.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

**2** You may modify your copy or copies of the Program or any portion of it, thus forming a work based on the Program, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

**a** You must cause the modified files to carry prominent notices stating that you changed the files and the date of any change.

**b** You must cause any work that you distribute or publish, that in whole or in part contains or is derived from the Program or any part thereof, to be licensed as a whole at no charge to all third parties under the terms of this License.

**c** If the modified program normally reads commands interactively when run, you must cause it, when started running for such interactive use in the most ordinary way, to print or display an announcement including an appropriate copyright notice and a notice that there is no warranty (or else, saying that you provide a warranty) and that users may redistribute the program under these conditions, and telling the user how to view a copy of this License. (Exception: if the Program itself is interactive but does not normally print such an announcement, your work based on the Program is not required to print an announcement.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Program, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Program, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it. Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Program.

In addition, mere aggregation of another work not based on the Program with the Program (or with a work based on the Program) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

**3** You may copy and distribute the Program (or a work based on it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you also do one of the following:

**a** Accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,

---

**b** Accompany it with a written offer, valid for at least three years, to give any third party, for a charge no more than your cost of physically performing source distribution, a complete machine-readable copy of the corresponding source code, to be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,

**c** Accompany it with the information you received as to the offer to distribute corresponding source code. (This alternative is allowed only for noncommercial distribution and only if you received the program in object code or executable form with such an offer, in accord with Subsection b above.)

The source code for a work means the preferred form of the work for making modifications to it. For an executable work, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the executable. However, as a special exception, the source code distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

If distribution of executable or object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place counts as distribution of the source code, even though third parties are not compelled to copy the source along with the object code.

**4** You may not copy, modify, sublicense, or distribute the Program except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense or distribute the Program is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

**5** You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Program or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Program (or any work based on the Program), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Program or works based on it.

**6** Each time you redistribute the Program (or any work based on the Program), the recipient automatically receives a license from the original licensor to copy, distribute or modify the Program subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties to this License.

**7** If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Program at all. For example, if a patent license would not permit royalty-free redistribution of the Program by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Program.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system, which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on

---

consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

**8** If the distribution and/or use of the Program is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Program under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

**9** The Free Software Foundation may publish revised and/or new versions of the General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies a version number of this License which applies to it and “any later version”, you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of this License, you may choose any version ever published by the Free Software Foundation.

**10** If you wish to incorporate parts of the Program into other free programs whose distribution conditions are different, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

#### NO WARRANTY

**11** BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM “AS IS” WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

**12** IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

END OF TERMS AND CONDITIONS.

---

## Appendix: How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the “copyright” line and a pointer to where the full notice is found.

```
<one line to give the program's name and a brief idea of what it does.> Copyright (C)
19yy <name of author>
```

```
This program is free software; you can redistribute it and/or modify it under the terms of
the GNU General Public License as published by the Free Software Foundation; either
version 2 of the License, or (at your option) any later version.
```

```
This program is distributed in the hope that it will be useful, but WITHOUT ANY
WARRANTY; without even the implied warranty of MERCHANTABILITY or
FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License
for more details.
```

```
You should have received a copy of the GNU General Public License along with this
program; if not, write to the Free Software Foundation, Inc., 675 Mass Ave, Cambridge,
MA 02139, USA.
```

Also add information on how to contact you by electronic and paper mail.

If the program is interactive, make it output a short notice like this when it starts in an interactive mode:

```
Gnomovision version 69, Copyright (C) 19yy name of author Gnomovision comes with
ABSOLUTELY NO WARRANTY; for details type 'show w'. This is free software,
and you are welcome to redistribute it under certain conditions; type 'show c' for details.
```

The hypothetical commands ‘show w’ and ‘show c’ should show the appropriate parts of the General Public License. Of course, the commands you use may be called something other than ‘show w’ and ‘show c’; they could even be mouse-clicks or menu items--whatever suits your program.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a “copyright disclaimer” for the program, if necessary. Here is a sample; alter the names:

```
Yoyodyne, Inc., hereby disclaims all copyright interest in the program 'Gnomovision'
(which makes passes at compilers) written by James Hacker.
```

```
<signature of Ty Coon>, 1 April 1989
Ty Coon, President of Vice
```

This General Public License does not permit incorporating your program into proprietary programs. If your program is a subroutine library, you may consider it more useful to permit linking proprietary applications with the library. If this is what you want to do, use the GNU Library General Public License instead of this License.

URLWatch:

For notice when this page changes, fill in your email address.

Maintained by: Webmaster, Linux Online Inc.

Last modified: 09-Aug-2000 02:03AM.

Views since 16-Aug-2000: 177203.



---

Material copyright Linux Online Inc.  
Design and compilation copyright (c)1994-2002 Linux Online Inc.  
Linux is a registered trademark of Linus Torvalds  
Tux the Penguin, featured in our logo, was created by Larry Ewing  
Consult our privacy statement

URLWatch provided by URLWatch Services.  
All rights reserved.

## E. University of California

Provided with this product is certain TCP input and Telnet client software developed by the University of California, Berkeley.

Copyright (C) 1987. The Regents of the University of California. All rights reserved.

Redistribution and use in source and binary forms are permitted provided that the above copyright notice and this paragraph are duplicated in all such forms and that any documentation, advertising materials, and other materials related to such distribution and use acknowledge that the software was developed by the University of California, Berkeley. The name of the University may not be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED ``AS IS" AND WITHOUT ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, WITHOUT LIMITATION, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.

## F. Carnegie-Mellon University

Provided with this product is certain BOOTP Relay software developed by Carnegie-Mellon University.

## G. Random.c

PR 30872 B Kesner created May 5 2000

PR 30872 B Kesner June 16 2000 moved batch\_entropy\_process to own task iWhirlpool to make code more efficient

random.c -- A strong random number generator

Version 1.89, last modified 19-Sep-99

Copyright Theodore Ts'o, 1994, 1995, 1996, 1997, 1998, 1999. All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice, and the entire permission notice in its entirety, including the disclaimer of warranties.
2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
3. The name of the author may not be used to endorse or promote products derived from this software without specific prior written permission. ALTERNATIVELY, this product may be distributed under the terms of the GNU Public License, in which case the provisions of the GPL are required INSTEAD OF the

---

above restrictions. (This clause is necessary due to a potential bad interaction between the GPL and the restrictions contained in a BSD-style copyright.)

THIS SOFTWARE IS PROVIDED “AS IS” AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, ALL OF WHICH ARE HEREBY DISCLAIMED. IN NO EVENT SHALL THE AUTHOR BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF NOT ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

## **H. Apptitude, Inc.**

Provided with this product is certain network monitoring software (“MeterWorks/RMON”) licensed from Apptitude, Inc., whose copyright notice is as follows: Copyright (C) 1997-1999 by Apptitude, Inc. All Rights Reserved. Licensee is notified that Apptitude, Inc. (formerly, Technically Elite, Inc.), a California corporation with principal offices at 6330 San Ignacio Avenue, San Jose, California, is a third party beneficiary to the Software License Agreement. The provisions of the Software License Agreement as applied to MeterWorks/RMON are made expressly for the benefit of Apptitude, Inc., and are enforceable by Apptitude, Inc. in addition to ALE USA, Inc.. IN NO EVENT SHALL APPTITUDE, INC. OR ITS SUPPLIERS BE LIABLE FOR ANY DAMAGES, INCLUDING COSTS OF PROCUREMENT OF SUBSTITUTE PRODUCTS OR SERVICES, LOST PROFITS, OR ANY SPECIAL, INDIRECT, CONSEQUENTIAL OR INCIDENTAL DAMAGES, HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, ARISING IN ANY WAY OUT OF THIS AGREEMENT.

## **I. Agranat**

Provided with this product is certain web server software (“EMWEB PRODUCT”) licensed from Agranat Systems, Inc. (“Agranat”). Agranat has granted to ALE USA, Inc. certain warranties of performance, which warranties [or portion thereof] ALE USA, Inc. now extends to Licensee. IN NO EVENT, HOWEVER, SHALL AGRANAT BE LIABLE TO LICENSEE FOR ANY INDIRECT, SPECIAL, OR CONSEQUENTIAL DAMAGES OF LICENSEE OR A THIRD PARTY AGAINST LICENSEE ARISING OUT OF, OR IN CONNECTION WITH, THIS DISTRIBUTION OF EMWEB PRODUCT TO LICENSEE. In case of any termination of the Software License Agreement between ALE USA, Inc. and Licensee, Licensee shall immediately return the EMWEB Product and any back-up copy to ALE USA, Inc., and will certify to ALE USA, Inc. in writing that all EMWEB Product components and any copies of the software have been returned or erased by the memory of Licensee’s computer or made non-readable.

## **J. RSA Security Inc.**

Provided with this product is certain security software (“RSA Software”) licensed from RSA Security Inc. RSA SECURITY INC. PROVIDES RSA SOFTWARE “AS IS” WITHOUT ANY WARRANTY WHATSOEVER. RSA SECURITY INC. DISCLAIMS ALL WARRANTIES, EXPRESS, IMPLIED OR STATUTORY, AS TO ANY MATTER WHATSOEVER INCLUDING ALL IMPLIED WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NON-INFRINGEMENT OF THIRD PARTY RIGHTS.

---

## K. Sun Microsystems, Inc.

This product contains Coronado ASIC, which includes a component derived from designs licensed from Sun Microsystems, Inc.

## L. Wind River Systems, Inc.

Provided with this product is certain software (“Run-Time Module”) licensed from Wind River Systems, Inc. Licensee is prohibited from: (i) copying the Run-Time Module, except for archive purposes consistent with Licensee’s archive procedures; (ii) transferring the Run-Time Module to a third party apart from the product; (iii) modifying, decompiling, disassembling, reverse engineering or otherwise attempting to derive the source code of the Run-Time Module; (iv) exporting the Run-Time Module or underlying technology in contravention of applicable U.S. and foreign export laws and regulations; and (v) using the Run-Time Module other than in connection with operation of the product. In addition, please be advised that: (i) the Run-Time Module is licensed, not sold and that ALE USA, Inc. and its licensors retain ownership of all copies of the Run-Time Module; (ii) WIND RIVER DISCLAIMS ALL IMPLIED WARRANTIES, INCLUDING WITHOUT LIMITATION THE IMPLIED WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, (iii) The SOFTWARE LICENSE AGREEMENT EXCLUDES LIABILITY FOR ANY SPECIAL, INDIRECT, PUNITIVE, INCIDENTAL AND CONSEQUENTIAL DAMAGES; and (iv) any further distribution of the Run-Time Module shall be subject to the same restrictions set forth herein. With respect to the Run-Time Module, Wind River and its licensors are third party beneficiaries of the License Agreement and the provisions related to the Run-Time Module are made expressly for the benefit of, and are enforceable by, Wind River and its licensors.

## M. Network Time Protocol Version 4

The following copyright notice applies to all files collectively called the Network Time Protocol Version 4 Distribution. Unless specifically declared otherwise in an individual file, this notice applies as if the text was explicitly included in the file.

```
*****
*
* Copyright (c) David L. Mills 1992-2003
*
* Permission to use, copy, modify, and distribute this software and
* its documentation for any purpose and without fee is hereby
* granted, provided that the above copyright notice appears in all
* copies and that both the copyright notice and this permission
* notice appear in supporting documentation, and that the name
* University of Delaware not be used in advertising or publicity
* pertaining to distribution of the software without specific,
* written prior permission. The University of Delaware makes no
* representations about the suitability this software for any
* purpose. It is provided "as is" without express or implied
* warranty.
*
*****
```

---

## N.Remote-ni

Provided with this product is a file (part of GDB), the GNU debugger and is licensed from Free Software Foundation, Inc., whose copyright notice is as follows: Copyright (C) 1989, 1991, 1992 by Free Software Foundation, Inc. Licensee can redistribute this software and modify it under the terms of General Public License as published by Free Software Foundation Inc.

This program is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

## O.GNU Zip

GNU Zip -- A compression utility which compresses the files with zip algorithm.

Copyright (C) 1992-1993 Jean-loup Gailly.

BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

## P. FREESCALE SEMICONDUCTOR SOFTWARE LICENSE AGREEMENT

Provided with this product is a software also known as DINK32 (Dynamic Interactive Nano Kernel for 32-bit processors) solely in conjunction with the development and marketing of your products which use and incorporate microprocessors which implement the PowerPC (TM) architecture manufactured by Motorola. The licensee comply with all of the following restrictions:

1. This entire notice is retained without alteration in any modified and/or redistributed versions.
2. The modified versions are clearly identified as such. No licenses are granted by implication, estoppel or otherwise under any patents or trademarks of Motorola, Inc.

The SOFTWARE is provided on an "AS IS" basis and without warranty. To the maximum extent permitted by applicable law, MOTOROLA DISCLAIMS ALL WARRANTIES WHETHER EXPRESS OR IMPLIED, INCLUDING IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE AND ANY WARRANTY AGAINST INFRINGEMENT WITH REGARD TO THE SOFTWARE (INCLUDING ANY MODIFIED VERSIONS THEREOF) AND ANY ACCOMPANYING WRITTEN MATERIALS. To the maximum extent permitted by applicable law, IN NO EVENT SHALL MOTOROLA BE LIABLE FOR ANY DAMAGES WHATSOEVER.

Copyright (C) Motorola, Inc. 1989-2001 All rights reserved.

Version 13.1

---

## Q. Boost C++ Libraries

Provided with this product is free peer-reviewed portable C++ source libraries.

Version 1.33.1

Copyright (C) by Beman Dawes, David Abrahams, 1998-2003. All rights reserved.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, TITLE AND NON-INFRINGEMENT. IN NO EVENT SHALL THE COPYRIGHT HOLDERS OR ANYONE DISTRIBUTING THE SOFTWARE BE LIABLE FOR ANY DAMAGES OR OTHER LIABILITY, WHETHER IN CONTRACT, TORT OR OTHERWISE,

ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

## R. U-Boot

Provided with this product is a software licensed from Free Software Foundation Inc. This is used as OS Bootloader; and located in on-board flash. This product is standalone and not linked (statically or dynamically) to any other software.

Version 1.1.0

Copyright (C) 2000-2004. All rights reserved.

## S. Solaris

Provided with this product is free software; Licensee can redistribute it and/or modify it under the terms of the GNU General Public License.

Copyright (C) 1992-1993 Jean-loup Gailly. All rights reserved.

## T. Internet Protocol Version 6

Copyright (C) 1982, 1986, 1990, 1991, 1993. The Regents of the University of California. All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
3. All advertising materials mentioning features or use of this software must display the following acknowledgment: This product includes software developed by the University of California, Berkeley and its contributors.

---

4. Neither the name of the University nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE REGENTS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE REGENTS OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION). HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

The copyright of the products such as crypto, dhcp, net, netinet, netinet6, netley, netwrs, libinet6 are same as that of the internet protocol version 6.

## **U. CURSES**

Copyright (C) 1987. The Regents of the University of California. All rights reserved.

Redistribution and use in source and binary forms are permitted provided that the above copyright notice and this paragraph are duplicated in all such forms and that any documentation, advertising materials, and other materials related to such distribution and use acknowledge that the software was developed by the University of California, Berkeley. The name of the University may not be used to endorse or promote products derived from this software without specific prior written permission.

## **V. ZModem**

Provided with this product is a program or code that can be used without any restriction.

Copyright (C) 1986 Gary S. Brown. All rights reserved.

## **W.Boost Software License**

Provided with this product is reference implementation, so that the Boost libraries are suitable for eventual standardization. Boost works on any modern operating system, including UNIX and Windows variants.

Version 1.0

Copyright (C) Gennadiy Rozental 2005. All rights reserved.

## **X. OpenLDAP**

Provided with this software is an open source implementation of the Lightweight Directory Access Protocol (LDAP).

Version 3

Copyright (C) 1990, 1998, 1999, Regents of the University of Michigan, A. Hartgers, Juan C. Gomez. All rights reserved.

---

This software is not subject to any license of Eindhoven University of Technology. Redistribution and use in source and binary forms are permitted only as authorized by the OpenLDAP Public License.

This software is not subject to any license of Silicon Graphics Inc. or Purdue University. Redistribution and use in source and binary forms are permitted without restriction or fee of any kind as long as this notice is preserved.

## **Y. BITMAP.C**

Provided with this product is a program for personal and non-profit use.

Copyright (C) Allen I. Holub, All rights reserved.

## **Z. University of Toronto**

Provided with this product is a code that is modified specifically for use with the STEVIE editor. Permission is granted to anyone to use this software for any purpose on any computer system, and to redistribute it freely, subject to the following restrictions:

1. The author is not responsible for the consequences of use of this software, no matter how awful, even if they arise from defects in it.
2. The origin of this software must not be misrepresented, either by explicit claim or by omission.
3. Altered versions must be plainly marked as such, and must not be misrepresented as being the original software.

Version 1.5

Copyright (C) 1986 by University of Toronto and written by Henry Spencer.

## **AA.Free/OpenBSD**

Copyright (c) 1982, 1986, 1990, 1991, 1993 The Regents of University of California. All Rights Reserved.

# CLI Quick Reference

## Ethernet Port Commands

```
interfaces {slot chassis/slot | port chassis/slot/port[-port2]} {admin-state | autoneg | epp}
  {enable | disable}
interfaces {slot chassis/slot | port chassis/slot/port [-port2]} speed {10 | 100 | 1000 | 2500 |
  10000 | 40000 | 100000 | 2000 | 4000 | 8000 | auto | max {100 | 1000 | 4000 | 8000}}
interfaces {slot chassis/slot | port chassis/slot/port[-port2]} duplex {full | half | auto}
interfaces port chassis/slot/port alias description
clear interfaces {slot chassis/slot | port chassis/slot/port[-port2]} {12-statistics [cli] | tdr-
  statistics}
interfaces {slot chassis/slot | port chassis/slot/port[-port2]} max-frame-size bytes
interfaces {slot chassis/slot | port chassis/slot/port[-port2]} flood-limit {bcast | mcast | uucast
  | all} rate {pps pps_num | mbps mbps_num | cap% cap_num | enable | disable | default}
  {low-threshold low_num}
interfaces {slot chassis/slot | port chassis/slot/port[-port2]} flood-limit {bcast | mcast | uucast
  | all} action {shutdown | trap | default}
interfaces {slot chassis/slot | port chassis/slot/port[-port2]} ingress-bandwidth {mbps} enable
  | disable}
interfaces {slot chassis/slot | port chassis/slot/port[-port2]} pause {tx | rx | tx-and-rx | disable}
interfaces [slot chassis/slot | port chassis/slot/port [-port2]] link-trap {enable | disable}
interfaces ddm {enable | disable}
interfaces ddm-trap {enable | disable}
interfaces {slot chassis/slot | port chassis/slot/port[-port2]} eee {enable | disable}
clear violation {port chassis/slot/port[-port2] | linkagg agg_id[-agg_id2]}
violation recovery-maximum {infinite | max_attempts}
violation [slot chassis/slot | port chassis/slot/port[-port2]] recovery-maximum {infinite |
  default | max_attempts}
violation recovery-time seconds
violation [slot chassis/slot | port chassis/slot/port[-port2]] recovery-time {seconds | default}
violation recovery-trap {enable | disable}
show interfaces [slot chassis/slot | port chassis/slot/port[-port2]]
show interfaces [slot chassis/slot | port chassis/slot/port[-port2]] alias
show interfaces [slot chassis/slot | port chassis/slot/port[-port2]] status
show interfaces [slot chassis/slot | port chassis/slot/port[-port2]] capability
show interfaces [slot chassis/slot | port chassis/slot/port[-port2]] accounting
show interfaces [slot chassis/slot | port chassis/slot/port[-port2]] counters
show interfaces [slot chassis/slot | port chassis/slot/port[-port2]] counters errors
show interfaces [slot chassis/slot | port chassis/slot/port[-port2]] flood-rate
show interfaces [slot chassis/slot | port chassis/slot/port[-port2]] traffic
show interfaces [slot chassis/slot | port chassis/slot/port[-port1]] ingress-rate-limit
```

```
show interfaces [slot chassis/slot | port chassis/slot/port[-port1]] ddm [w-low | w-high | status
  | a-low | a-high | actual]
show transceivers [slot chassis/slot | transceiver transceiver_num]
show violation [port chassis/slot/port[-port2] | linkagg agg_id[-agg_id2]]
show violation-recovery-configuration {slot chassis/slot | port chassis/slot/port[-port2]}
interfaces port chassis/slot/port tdr enable
show interfaces [slot chassis/slot | port chassis/slot/port[-port2]] tdr-statistics
```

## Power over Ethernet (PoE) Commands

```
lanpower {chassis chassis | slot chassis/slot} service {start | stop}
lanpower port chassis/slot/port admin-state {enable | disable}
lanpower {chassis chassis | slot chassis/slot | port chassis/slot/port} type string
lanpower {slot chassis/slot | port chassis/slot/port} power milliwatts
lanpower {chassis chassis | slot chassis/slot | port chassis/slot/port} power milliwatts
lanpower {chassis chassis | slot chassis/slot} maxpower watts
lanpower {chassis chassis | slot chassis/slot | port chassis/slot/port} priority {critical | high |
  low}
lanpower {chassis chassis | slot chassis/slot} priority-disconnect {enable | disable}
lanpower power-rule rule-name [admin-state {enable | disable}] [power {on | off}] [at
  {minutes mm | time hh:mm}] [days {all | day [day...]} | date [date...]] [months {all |
  month}] [timezone {local-server | utc | originator-server}]
no lanpower power-rule rule-name [admin-state {enable | disable}] [power {on | off}] [at
  {minutes mm | time hh:mm}] [days {all | day [day...]} | date [date...]] [months {all |
  month}] [timezone {local-server | utc | originator-server}]
lanpower [slot chassis/slot | port chassis/slot/port] power-policy policy-name [power-
  rule rule-name]
no lanpower power-policy name
lanpower {chassis chassis | slot chassis/slot} class-detection {enable | disable}
lanpower {chassis chassis | slot chassis/slot} capacitor-detection {enable | disable}
lanpower {chassis chassis | slot chassis/slot} usage-threshold num
lanpower slot {chassis/slot | all} update-from filename
lanpower {slot chassis/slot} fpoe {enable | disable}
lanpower {slot chassis/slot} ppoe {enable | disable}
show lanpower slot chassis/slot
show lanpower power-rule [name]
show lanpower power-policy [policy-name slot | policy-name power-rule | policy-name port]
show lanpower {chassis chassis | slot chassis/slot} class-detection
show lanpower {chassis chassis | slot chassis/slot} capacitor-detection
show lanpower {chassis chassis | slot chassis/slot} priority-disconnect
show lanpower {chassis chassis | slot chassis/slot} usage-threshold]
show lanpower slot {chassis/slot | all} update-from
```



## UDLD Commands

```
udld {enable | disable}
udld port chassis/slot/port[-port2] {enable | disable}
udld [port [chassis/slot/port[-port2]]] mode {normal | aggressive}
udld [port [chassis/slot/port[-port2]]] probe-timer seconds
no udld [port [chassis/slot/port[-port2]]] probe-timer
udld [port [chassis/slot/port[-port2]]] echo-wait-timer seconds
no udld [port [chassis/slot/port[-port2]]] echo-wait-timer
clear udld statistics [port chassis/slot/port]
show udld configuration
show udld configuration port [chassis/slot/port]
show udld statistics port chassis/slot/port
show udld neighbor port chassis/slot/port
show udld status port [chassis/slot/port]
```

## Source Learning Commands

```
mac-learning {vlan vlan[-vlan2] | port chassis/slot/port[-port2] | linkagg agg_id} {enable |
disable}
mac-learning flush {dynamic | static | multicast} [mac-address mac_address]
mac-learning flush domain all {dynamic | static}
mac-learning flush domain vlan {vlan vlan_id} {port chassis/slot/port | linkagg agg_id} |
{dynamic | static | static-multicast} [mac-address mac_address]
mac-learning {vlan vlan_id {port chassis/slot/port | linkagg agg_id}} static mac-address
mac_address [bridging | filtering]
mac-learning flush [vlan vlan_id [port chassis/slot/port | linkagg agg_id]] static [mac-address
mac_address]
mac-learning domain vlan vlan vlan_id {port chassis/slot/port | linkagg agg_id} static mac-
address mac_address [bridging | filtering]
mac-learning flush domain vlan [vlan vlan_id [port chassis/slot/port | linkagg agg_id]] static
[mac-address mac_address]
mac-learning {vlan vlan_id {port chassis/slot/port | linkagg agg_id}} multicast mac-address
multicast_address [group group_id]
mac-learning flush [vlan vlan_id [port chassis/slot/port | linkagg agg_id]] multicast [mac-
address multicast_address]
mac-learning aging-time {seconds | default}
no mac-learning aging-time
show mac-learning [summary | dynamic | static | multicast | bmac] [port chassis/slot/port]
[linkagg agg_id] [mac-address mac_address] [remote [mac-address mac_address]]
show mac-learning domain all [summary]
show mac-learning domain vlan [vlan vlan_id] [port chassis/slot/port | linkagg agg_id]
[dynamic | static | static-multicast | bmac] [mac-address mac_address] [summary]
```

```
show mac-learning aging-time
show mac-learning learning-state [vlan vlan[-vlan2] | port chassis/slot/port | linkagg agg_id]
```

## VLAN Management Commands

```
vlan vlan_id [admin-state {enable | disable}] [name description]
no vlan vlan_id
vlan vlan_id[-vlan_id] members {port chassis/slot/port[-port1] | linkagg agg_id[-agg_id]}
untagged
no vlan vlan_id[-vlan_id] members {port chassis/slot/port[-port1] | linkagg agg_id[-agg_id]}
vlan vlan_id[-vlan_id] members {port chassis/slot/port[-port] | linkagg agg_id[-agg_id]}
tagged
no vlan vlan_id[-vlan_id] members {port chassis/slot/port[-port] | linkagg agg_id[-agg_id]}
vlan vlan_id mtu-ip size
show vlan [vlan_id]
show vlan [vlan_id[-vlan_id]] members [port chassis/slot/port[-port]] linkagg agg_id[-
agg_id]
```

## Loopback Detection Commands

```
loopback-detection [remote-origin] {enable | disable}
loopback-detection port chassis/slot/port[-port2] [remote-origin] {enable | disable}
loopback-detection service-access {port chassis/slot/port[-port2] | linkagg agg_id[-agg_id2]}
{enable | disable}
loopback-detection transmission-timer seconds
loopback-detection autorecovery-timer seconds
show loopback-detection
show loopback-detection port [chassis/slot/port]
show loopback-detection linkagg agg_id
show loopback-detection statistics port chassis/slot/port
clear loopback-detection statistics port [chassis/slot/port]
```

## Distributed Spanning Tree Commands

```
spantree mode {flat | per-vlan}
spantree cist | vlan vlan_id protocol {stp | rstp | mstp}
spantree vlan vlan_id [-vlan_id2] admin-state {enable | disable}
spantree mst region name name
no spantree mst region name
spantree mst region revision-level rev_level
spantree mst region max-hops max_hops
spantree msti msti_id [name name]
no spantree msti msti_id [name]
```

```

spantree msti msti_id vlan vlan_id [-vlan_id2]
no spantree msti msti_id vlan vlan_id [-vlan_id2]
spantree [cist | msti msti_id | vlan vlan_id] [port chassis/slot/port [-port2] | linkagg agg_id [-agg_id2]] priority priority
spantree [cist | vlan vlan_id] hello-time seconds
spantree [cist | vlan vlan_id] max-age seconds
spantree [cist | vlan vlan_id] forward-delay seconds
spantree {vlan vlan_id | cist} bpdu-switching {enable | disable}
spantree path-cost-mode {auto | 32bit}
spantree [msti msti_id] auto-vlan-containment {enable | disable}
spantree cist {port chassis/slot/port [-port2] | linkagg agg_id [-agg_id2]} {enable | disable}
spantree vlan vlan_id [-vlan2] {port chassis/slot/port [-port2] | linkagg agg_id [-agg_id2]} {enable | disable}
spantree cist {port chassis/slot/port [-port2] | linkagg agg_id [-agg_id2]} path-cost path_cost
spantree msti msti_id {port chassis/slot/port [-port2] | linkagg agg_id [-agg_id2]} path-cost path_cost
spantree vlan vlan_id {port chassis/slot/port [-port2] | linkagg agg_id [-agg_id2]} path-cost path_cost
spantree cist {port chassis/slot/port [-port2] | linkagg agg_id [-agg_id2]} mode {forwarding | dynamic | blocking}
spantree vlan vlan_id {port chassis/slot/port [-port2] | linkagg agg_id [-agg_id2]} mode {dynamic | blocking | forwarding}
spantree cist {port chassis/slot/port [-port2] | linkagg agg_id [-agg_id2]} connection {noptp | ptp | autoptp}
spantree vlan vlan_id {port chassis/slot/port [-port2] | linkagg agg_id [-agg_id2]} connection {noptp | ptp | autoptp}
spantree cist {port chassis/slot/port [-port2] | linkagg agg_id [-agg_id2]} admin-edge {enable | disable}
spantree vlan vlan_id {port chassis/slot/port [-port2] | linkagg agg_id [-agg_id2]} admin-edge {enable | disable}
spantree cist {port chassis/slot/port [-port2] | linkagg agg_id [-agg_id2]} auto-edge {enable | disable}
spantree vlan vlan_id {port chassis/slot/port [-port2] | linkagg agg_id [-agg_id2]} auto-edge {enable | disable}
spantree cist {port chassis/slot/port [-port2] | linkagg agg_id [-agg_id2]} restricted-role {enable | disable}
spantree vlan vlan_id {port chassis/slot/port [-port2] | linkagg agg_id [-agg_id2]} restricted-role {enable | disable}
spantree cist {port chassis/slot/port [-port2] | linkagg agg_id [-agg_id2]} restricted-tcn {enable | disable}
spantree vlan vlan_id {port chassis/slot/port [-port2] | linkagg agg_id [-agg_id2]} restricted-tcn {enable | disable}
spantree cist txholdcount value

```

```

spantree vlan vlan_id txholdcount {value}
show spantree
show spantree cist
show spantree msti [msti_id]
show spantree vlan [vlan_id]
show spantree ports [forwarding | blocking | active | configured]
show spantree cist ports [forwarding | blocking | active | configured]
show spantree msti [msti_id] ports [forwarding | blocking | active | configured]
show spantree vlan [vlan_id [-vlan_id2]] ports [forwarding | blocking | active | configured]
show spantree mode
show spantree mst {region | port chassis/slot/port | linkagg agg_id}
show spantree msti [msti_id] vlan-map
show spantree cist vlan-map
show spantree [vlan vlan_id] map-msti

```

## Link Aggregation Commands

```

linkagg static agg agg_id [-agg_id2] size size [name name] [admin-state {enable | disable}]
    [multi-chassis active] [hash {source-mac | destination-mac | source-and-destination-mac
    | source-ip | destination-ip | source-and-destination-ip | tunnel-protocol}]
no linkagg static agg agg_id [-agg_id2]
linkagg static agg agg_id [-agg_id2] name name
no linkagg static agg agg_id [-agg_id2] name
linkagg static agg agg_id [-agg_id2] wait-to-restore-time wtr_minutes
no linkagg static agg agg_id [-agg_id2] wait-to-restore-time
linkagg static agg agg_id [-agg_id2] admin-state {enable | disable}
linkagg static port chassis/slot/port [-port2] agg agg_id
no linkagg static port chassis/slot/port [-port2]
linkagg lacp agg agg_id [-agg_id2] size size
no linkagg lacp agg agg_id [-agg_id2] size size
linkagg lacp agg agg_id name name
no linkagg lacp agg agg_id [-agg_id2] name
linkagg lacp agg agg_id [-agg_id2] wait-to-restore-time wtr_minutes
no linkagg lacp agg agg_id [-agg_id2] wait-to-restore-time
linkagg lacp agg agg_id [-agg_id2] admin-state {enable | disable}
linkagg lacp agg agg_id [-agg_id2] actor admin-key actor_admin_key
no linkagg lacp agg agg_id [-agg_id2] actor admin-key
linkagg lacp agg agg_id [-agg_id2] actor system-priority actor_system_priority
no linkagg lacp agg agg_id [-agg_id2] actor system-priority
no linkagg lacp agg agg_id [-agg_id2] actor system-id
linkagg lacp agg agg_id [-agg_id2] partner system-id partner_system_id
no linkagg lacp agg agg_id [-agg_id2] partner system-id
linkagg lacp agg agg_id [-agg_id2] partner system-priority partner_system_priority
no linkagg lacp agg agg_id [-agg_id2] partner system-priority

```

```

linkagg lacp agg agg_id[-agg_id2] partner admin-key partner_admin_key
no linkagg lacp agg agg_id[-agg_id2] partner admin-key
linkagg lacp port chassis/slot/port[-port2] actor admin-key actor_admin_key
no linkagg lacp port chassis/slot/port[-port2] [actor admin-state {[active] [timeout]
[aggregate] [synchronize] [collect] [distribute] [default] [expire] | none]}
linkagg lacp port chassis/slot/port[-port2] actor admin-state {[active] [timeout] [aggregate]
[synchronize] [collect] [distribute] [default] [expire] | none}
no linkagg lacp port chassis/slot/port[-port2] actor admin-state {[active] [timeout]
[aggregate] [synchronize] [collect] [distribute] [default] [expire] | none}
linkagg lacp port chassis/slot/port[-port2] actor system-id actor_system_id
no linkagg lacp port chassis/slot/port[-port2] actor system-id
linkagg lacp port chassis/slot/port[-port2] actor system-priority actor_system_priority
no linkagg lacp port chassis/slot/port[-port2] actor system-priority
linkagg lacp port chassis/slot/port[-port2] partner admin-state {[active] [timeout] [aggregate]
[synchronize] [collect] [distribute] [default] [expire] | none}
no linkagg lacp port chassis/slot/port[-port2] partner admin-state {[active] [timeout]
[aggregate] [synchronize] [collect] [distribute] [default] [expire] | none}
linkagg lacp port chassis/slot/port[-port2] partner admin system-id partner_admin_system_id
no linkagg lacp port chassis/slot/port[-port2] partner admin system-id
linkagg lacp port chassis/slot/port[-port2] partner admin-key partner_admin_key
no linkagg lacp port chassis/slot/port[-port2] partner admin-key
linkagg lacp port chassis/slot/port[-port2] partner admin system-priority
partner_admin_system_priority
no linkagg lacp port chassis/slot/port[-port2] partner admin system-priority
linkagg lacp port chassis/slot/port[-port2] actor port-priority actor_port_priority
no linkagg lacp port chassis/slot/port[-port2] actor port-priority
linkagg lacp port chassis/slot/port[-port2] partner admin-port partner_admin_port
no linkagg lacp port chassis/slot/port[-port2] partner admin-port
linkagg lacp port chassis/slot/port[-port2] partner admin port-priority
partner_admin_port_priority
no linkagg lacp port chassis/slot/port[-port2] partner admin port-priority
show linkagg [agg agg_id[-agg_id2]]
show linkagg [agg agg_id[-agg_id2]] port [chassis/slot/port]
show linkagg accounting
show linkagg counters [errors]
show linkagg traffic
clear linkagg-statistics [agg agg_id[-agg_id2]]

```

## Virtual Chassis Commands

```

virtual-chassis [chassis-id oper_chassis] configured-chassis-id config_chassis
no virtual-chassis [chassis-id oper_chassis] configured-chassis-id config_chassis
virtual-chassis [chassis-id oper_chassis] chassis-group group
virtual-chassis [chassis-id oper_chassis] configured-chassis-priority priority

```

```

virtual-chassis [chassis-id oper_chassis] configured-control-vlan vlan
virtual-chassis [chassis-id oper_chassis] configured-hello-interval hello
virtual-chassis [chassis-id oper_chassis] vf-link vfl_id create
no virtual-chassis [chassis-id oper_chassis] vf-link vfl_id
virtual-chassis [chassis-id oper_chassis] vf-link vfl_id member-port [oper_chassis/]slot/port
no virtual-chassis [chassis-id oper_chassis] vf-link vfl_id member-port [oper_chassis/]slot/port
virtual-chassis [chassis-id oper_chassis] vf-link vfl_id default-vlan vlan
no virtual-chassis [chassis-id oper_chassis] vf-link vfl_id default-vlan
virtual-chassis [chassis-id oper_chassis] hello-interval hello
virtual-chassis shutdown [chassis-id oper_chassis]
virtual-chassis vf-link-mode {auto}
[no] virtual-chassis auto-vf-link-port chassis/slot/port
vc-takeover
show virtual-chassis [chassis-id {oper_chassis}] topology
show virtual-chassis [chassis-id oper_chassis] consistency
show virtual-chassis [chassis-id oper_chassis] vf-link vfl_id member-port [oper_chassis/]slot/port
show virtual-chassis [chassis-id oper_chassis] auto-vf-link-port [chassis/slot/port]
show virtual-chassis [chassis-id oper_chassis] chassis-reset-list
show virtual-chassis [chassis-id oper_chassis] slot-reset-list
show virtual-chassis [chassis-id oper_chassis] neighbors
show configuration vcm-snapshot chassis-id oper_chassis

```

## Ethernet Ring Protection Commands

```

erp-ring ring_id port1 {chassis/slot/port | linkagg agg_id} port2 {chassis/slot/port | linkagg
agg_id} service-vlan vlan_id level level_num [guard-timer guard_timer] [wait-to-
restore-timer wtr_timer] [enable | disable]
no erp-ring ring_id
erp-ring ring_id rpl-node {port chassis/slot/port | linkagg agg_id}
no erp-ring ring_id rpl-node
erp-ring ring_id wait-to-restore wtr_timer
no erp-ring ring_id wait-to-restore
erp-ring ring_id {enable | disable}
erp-ring ring_id guard-timer guard_timer
no erp-ring ring_id guard-timer
erp-ring ring_id sub-ring-port {chassis/slot/port | linkagg agg_id} service-vlan vlan_id level
level_num [guard-timer guard_timer] [wait-to-restore-timer wtr_timer] [enable |
disable]
erp-ring ring_id virtual-channel [enable | disable]
erp-ring ring_id revertive [enable | disable]
erp-ring ring_id clear
erp-ring ring_id ethoam-event {chassis/slot/port | linkagg agg_id} remote-endpoint mep_id

```

```
no erp-ring ring_id ethoam-event {chassis/slot/port | linkagg agg_id}
clear erp statistics [ring ring_id [port chassis/slot/port | linkagg agg_id]]
show erp [ring ring_id [port chassis/slot/port | linkagg agg_id]]
show erp statistics [ring ring_id [port chassis/slot/port | linkagg agg_id]]
```

## MVRP Commands

```
mvrp {enable | disable}
mvrp port chassis/slot/port[-port2] {enable | disable}
mvrp linkagg agg_id[-agg_id2] {enable | disable}
mvrp maximum-vlan vlan_limit
mvrp {port chassis/slot/port[-port2] | linkagg agg_id[-agg_id2]} registration {normal | fixed | forbidden}
mvrp {port chassis/slot/port[-port2] | linkagg agg_id[-agg_id2]} applicant {participant | non-participant | active}
mvrp {port chassis/slot/port[-port2] | linkagg agg_id[-agg_id2]} timer join timer_value
mvrp {port chassis/slot/port[-port2] | linkagg agg_id[-agg_id2]} timer leave timer_value
mvrp {port chassis/slot/port[-port2] | linkagg agg_id[-agg_id2]} timer leaveall timer_value
mvrp {port chassis/slot/port[-port2] | linkagg agg_id[-agg_id2]} timer periodic-timer timer_value
mvrp {port chassis/slot/port[-port2] | linkagg agg_id[-agg_id2]} periodic-transmission {enable | disable}
mvrp {port chassis/slot/port [-port2] | linkagg agg_id[-agg_id2]} restrict-vlan-registration vlan vlan_list
no mvrp {port chassis/slot/port [-port2] | linkagg agg_id[-agg_id2]} restrict-vlan-registration vlan vlan_list
mvrp {port chassis/slot/port[-port2] | linkagg agg_id[-agg_id2]} restrict-vlan-advertisement vlan vlan_list
no mvrp {port chassis/slot/port[-port2] | linkagg agg_id[-agg_id2]} restrict-vlan-advertisement vlan vlan_list
mvrp {linkagg agg_id[-agg_id2] | port chassis/slot/port[-port2]} static-vlan-restrict vlan vlan_list
no mvrp {linkagg agg_id[-agg_id2] | port chassis/slot/port[-port2]} static-vlan-restrict vlan vlan_list
show mvrp configuration
show mvrp port [chassis/slot/port[-port2]] [enable | disable]
show mvrp linkagg [agg_id[-agg_id2]] [enabled | disabled]
show mvrp [port chassis/slot/port[-port2] | linkagg agg_id[-agg_id2]] timer {join | leave | leaveall | periodic-timer}
show mvrp {port chassis/slot/port[-port2] | linkagg agg_id[-agg_id2]} statistics
show mvrp {port chassis/slot/port[-port2] | linkagg agg_id[-agg_id2]} last-pdu-origin
show mvrp {port chassis/slot/port[-port2] | linkagg agg_id[-agg_id2]} vlan-restrictions
mvrp [port chassis/slot/port[-port2] | linkagg agg_id[-agg_id2]] clear-statistics
```

## 802.1AB Commands

```
lldp nearest-edge mode {enable | disable}
lldp transmit interval seconds
lldp transmit hold-multiplier num
lldp reinit delay seconds
lldp notification interval seconds
lldp [non-tpmr | nearest-customer | nearest-bridge | all] {port chassis/slot/port[-port2] | slot chassis/slot | chassis} lldpdu {tx | rx | tx-and-rx | disable}
lldp [non-tpmr | nearest-customer | nearest-bridge | all] {port chassis/slot/port[-port2] | slot chassis/slot | chassis} notification {enable | disable}
lldp network-policy policy_id application {voice | voice-signaling | guest-voice | guest-voice-signaling | softphone-voice | video-conferencing | streaming-video | video-signaling}
vlan {untagged | priority-tag | vlan-id} [12-priority 802.1p_value] [dscp dscp_value]
no lldp network-policy policy_id - [policy_id2]
lldp [nearest-bridge | nearest-customer | non-tpmr | all] {port chassis/slot/port | slot chassis/slot | chassis} med network-policy policy_id - [policy_id2]
no lldp {port chassis/slot/port | slot chassis/slot | chassis} med network-policy policy_id - [policy_id2]
lldp [non-tpmr | nearest-customer | nearest-bridge | all] {port chassis/slot/port[-port2] | slot chassis/slot | chassis} tlv management {port-description | system-name | system-description | system-capabilities | management-address} {enable | disable}
lldp [non-tpmr | nearest-customer | nearest-bridge | all] {port chassis/slot/port[-port2] | slot chassis/slot | chassis} tlv dot1 {port-vlan | vlan-name} {enable | disable}
lldp [non-tpmr | nearest-customer | nearest-bridge | all] {port chassis/slot/port [-port2] | slot chassis/slot | chassis} tlv dot3 mac-phy {enable | disable}
lldp [non-tpmr | nearest-customer | nearest-bridge | all] {port chassis/slot/port [-port2] | slot chassis/slot | chassis} tlv med {power | capability} {enable | disable}
lldp {port chassis/slot/port [-port2] | slot chassis/slot | chassis} tlv proprietary {enable | disable}
lldp [non-tpmr | nearest-customer | nearest-bridge | all] {port chassis/slot/port [-port2] | slot chassis/slot | chassis} tlv application {enable | disable}
lldp [non-tpmr | nearest-customer | nearest-bridge | all] {port chassis/slot/port[-port2] | slot chassis/slot | chassis} tlv application {fcoe | iscsi | ethertype etype | tcp-sctp-port protocol | udp-dccp-port protocol | port protocol} priority priority
show lldp system-statistics
show lldp [non-tpmr | nearest-customer | nearest-bridge] [port chassis/slot/port [-port2] | slot chassis/slot] statistics
show lldp local-system
show lldp [non-tpmr | nearest-customer | nearest-bridge] [port chassis/slot/port [-port2] | slot chassis/slot] local-port
show lldp local-management-address
show lldp [non-tpmr | nearest-customer | nearest-bridge] [port chassis/slot/port [-port2] | slot chassis/slot] config [application-tlv]
```

```

show lldp network-policy [policy_id]
show lldp [nearest-bridge | nearest-customer | non-tpmr | all] [slot chassis/slot| port chassis/
slot/port] med network-policy
show lldp [non-tpmr | nearest-customer | nearest-bridge] [port chassis/slot/port [-port2] | slot
chassis/slot] remote-system
show lldp [non-tpmr | nearest-customer | nearest-bridge] [port chassis/slot/port [-port2] | slot
chassis/slot] remote-system med {network-policy | inventory}
show lldp [non-tpmr | nearest-customer | nearest-bridge] [port chassis/slot/port2[-port] | slot
chassis/slot] remote-system application-tlv
show lldp agent-destination-address
lldp {chassis/slot/port | chassis/slot | chassis} trust-agent [admin-state] {enable | disable} |
chassis-id-subtype {chassis-component | interface-alias | port-component | mac-
address | network-address | interface-name | locally-assigned | any}
lldp {chassis/slot/port | chassis/slot | chassis} trust-agent violation-action {trap-and-shutdown
| trap | shutdown}
show lldp [chassis/slot | chassis/slot/port] trusted remote-agent
show lldp [chassis/slot | chassis/slot/port] trust-agent

```

## IP Commands

```

ip interface {if_name | emp | master emp | local chassis-id chassis} [{address | vip-address}
ip_address] [mask subnet_mask] [admin-state {enable | disable}] [vlan vlan_id | service
service_id] [forward | no forward] [local-proxy-arp | no local-proxy-arp] [e2 | snap]
[primary | no primary]
no ip interface if_name
ip interface if_name address ip_address/mask vlan vlan_id rtr-port {port chassis/slot/
port | linkagg agg_id} {tagged | untagged}
ip interface dhcp-client [vlan vlan_id ] [vsi-accept-filter filter-string | server-preference]
[release | renew] [option-60 opt60_string] [admin {enable | disable}] [local-proxy-arp |
no local-proxy-arp]]
no ip interface dhcp-client
ip interface dhcp-client no server-preference
ip static-route ip_address [mask mask] {gateway {gateway_address | null} [tag num] [name
string] | interface interface_name | follows ip_address} [metric metric]
no ip static-route ip_address [mask mask] [gateway {gateway_address | null} | interface
interface_name | follows ip_address] [metric metric]
ip route-pref static value
ip default-ttl hops
ping {ip_address | hostname} [source-interface ip_interface] [count count] [size packet_size]
[interval seconds] [timeout seconds] [data-pattern string] [dont-fragment] [tos tos_val]
traceroute {ip_address | hostname} [max-hop max_hop_count] [min-hop min_hop_count]
[source-interface ip_interface] [probes probe_count] [timeout seconds] [port
port_number_value]
ip directed-broadcast {enable | disable}

```

```

ip directed-broadcast trusted-source-ip {ip_address/mask | ip_address mask subnet_mask}
[destination-ip {ip_address/mask | ip_address destination-mask subnet_mask} |
destination-vlan {vlan_id | vlan_id[-vlan_id]}]
no ip directed-broadcast trusted source-ip ip_address {ip_address/mask | ip_address mask
subnet_mask}
ip directed-broadcast clear [trusted-source-ip {ip_address/mask | ip_address mask
subnet_mask}]
show ip directed-broadcast [trusted-source-ip {ip_address/mask | ip_address mask
subnet_mask}] details
ip service {all | service_name | port service_port} admin-state {enable | disable}
ip service {service_name} port {default | service_port}
ip service source-ip {Loopback0 | interface_name} [tftp] [telnet] [tacacs] [swlog] [ssh]
[snmp] [sflow] [radius] [ntp] [ldap] [ftp] [dns] [all]
no ip service source-ip {Loopback0 | interface_name} [tftp] [telnet] [tacacs] [swlog] [ssh]
[snmp] [sflow] [radius] [ntp] [ldap] [ftp] [dns] [all]
arp ip_address mac address [alias] [arp-name name] [interface interface_name] [port
chassis/slot/port] [linkagg agg_id]
no arp ip_address [alias]
clear arp-cache
ip dos arp-poison restricted-address ip_address
no ip dos arp-poison restricted-address ip_address
arp filter ip_address [mask ip_mask] [vlan_id] [sender | target] [allow | block]
no arp filter ip_address
clear arp-cache
icmp type type code code {{enable | disable} | min-pkt-gap gap}
icmp unreachable [net-unreachable | host-unreachable | protocol-unreachable | port-
unreachable] {{enable | disable} | min-pkt-gap gap}
icmp echo [request | reply] {{enable | disable} | min-pkt-gap gap}
icmp timestamp [request | reply] {{enable | disable} | min-pkt-gap gap}
icmp add-mask [request | reply] {{enable | disable} | min-pkt-gap gap}
icmp messages {enable | disable}
ip dos scan close-port-penalty penalty_value
ip dos scan tcp open-port-penalty penalty_value
ip dos scan udp open-port-penalty penalty_value
ip dos scan threshold threshold_value
ip dos trap {enable | disable}
ip dos scan decay decay_value
ip dos type {port-scan | ping-of-death | land | loopback-src | invalid-ip | invalid-multicast |
unicast-ip-mcast-mac | ping-overload | arp-flood | arp-poison} admin-state {enable |
disable}
ip tcp half-open-timeout timeout_value
show ip traffic
show ip interface [if_name | vlan vlan_id | dhcp-client]
show ip emp-interfaces

```

```

show ip route-pref
show ip router database [protocol type | gateway ip_address | dest {ip_address/prefixlen |
ip_address}]
show ip emp-routes
show ip config
show ip protocols
show ip service
show ip service source-ip
show ip dos arp-poison
show arp [ip_address | mac_address]
show arp filter [ip_address]
show icmp control
show icmp [statistics]
show tcp statistics
show tcp ports
show ip tcp half-open-timeout
show udp statistics
show udp ports
show ip dos config
show ip dos statistics

```

## DHCP Relay Commands

```

ip dhcp relay admin-state {enable | disable}
ip dhcp relay destination ip_address
no ip dhcp relay destination ip_address
ip dhcp relay per-interface-mode
no ip dhcp relay per-interface-mode
ip dhcp relay interface if_name destination ip_address
no ip dhcp relay interface if_name destination ip_address
ip dhcp relay interface if_name admin-state {enable | disable}
ip dhcp relay forward-delay seconds
ip dhcp relay maximum-hops hops
ip dhcp relay insert-agent-information
no ip dhcp relay insert-agent-information
ip dhcp relay insert-agent-information policy {drop | keep | replace}
ip dhcp relay insert-agent-information format {base-mac | system-name | user-string string |
interface-alias | auto-interface-alias | ascii {{circuit-id | remoted-id} {base-mac | cvlan
| interface | interface-alias | system-name | user-string string | vlan}} {delimiter string}}]
ip dhcp relay pxe-support
no dhcp relay pxe-support
show ip dhcp relay interface
show ip dhcp relay statistics

```

```

ip dhcp relay clear statistics [global-only | destination ip_address | interface if_name
destination ip_address]
show ip dhcp relay insert-agent-informaton error-count [interface if_name | port chassis/slot/
port [interface if_name]]
ip dhcp relay clear insert-agent-informaton error-count [interface if_name | port chassis/slot/
port
show ip dhcp relay counters
dhcp-snooping admin-state {enable | disable}
no dhcp-snooping
dhcp-snooping mac-address-verification admin-state {enable | disable}
dhcp-snooping option-82-data-insertion admin-state {enable | disable}
dhcp-snooping bypass option-82-check admin-state {enable | disable}
dhcp-snooping option-82 format [base-mac | system-name | user-string string | interface-alias
| auto-interface-alias | ascii [{remote-id | circuit-id} {base-mac | cvlan | interface |
interface-alias | system-name | user-string string | vlan}] {delimiter string}}]
no dhcp-snooping option-82 format ascii {remote-id | circuit-id}
dhcp-snooping option-82 policy [replace | keep | drop]
dhcp-snooping vlan vlan_id[-vlan_id2] [mac-address-verification | option-82-data-insertion]
admin-state {enable | disable}
no dhcp-snooping vlan vlan_id[-vlan_id2]
dhcp-snooping port chassis/slot1/port1[-port2] {block | client-only | trust}
dhcp-snooping linkagg agg_id[-agg_id2] {block | client-only | trust}
dhcp-snooping ip-source-filtering admin-state {enable | disable}
dhcp-snooping ip-source-filter {vlan vlan_id[-vlan_id2] | port chassis/slot/port1[-port2] |
linkagg agg_id[-agg_id2]} admin-state {enable | disable}
dhcp-snooping binding admin-state {enable | disable}
dhcp-snooping binding timeout seconds
dhcp-snooping binding action {purge | renew | save}
dhcp-snooping binding persistency admin-state {enable | disable}
dhcp-snooping binding mac_address port chassis/slot/port address ip_address vlan vlan_id
no dhcp-snooping binding mac_address port chassis/slot/port address ip_address vlan vlan_id
show dhcp-snooping
show dhcp-snooping ip-source-filter {vlan | port}
show dhcp-snooping vlan
show dhcp-snooping port
dhcp-snooping clear violation-counters {port chassis/slot/port [-port2]} | slot chassis/slot |
linkagg agg_id | all}
show dhcp-snooping counters [slot chassis_id/slot_id]
dhcp-snooping clear counters
show dhcp-snooping isf-statistics [vlan vlan_id]
dhcp-snooping clear isf-statistics
show dhcp-snooping binding [port chassis/slot/port] | linkagg agg_id | ip-address ip_address
| snapshot [static | dynamic]]
dhcpv6-snooping vlan vlan_id[-vlan_id2] admin-state {enable | disable}

```

```

no dhcpv6-snooping vlan vlan_id[-vlan_id2]
dhcpv6-snooping global admin-state {enable | disable}
dhcpv6-snooping binding vlan vlan_id link-local ipv6_address [global-address ipv6_address]
    [mac-address mac_address] [port chassis/slot/port | linkagg agg_id]
no dhcpv6-snooping binding vlan vlan_id link-local ipv6_address
dhcpv6-snooping binding timeout seconds
dhcpv6-snooping binding action {purge | renew | save}
dhcpv6-snooping binding persistency {enable | disable}
dhcpv6-snooping ipv6-source-filter {vlan vlan_id[-vlan_id2] | port chassis/slot1/port[-port2]
    | linkagg agg_id[-agg_id2]} admin-state {enable | disable}
ipv6 dhcp guard vlan vlan_id [client {enable | disable}] [admin-state {enable | disable}]
no ipv6 dhcp guard vlan vlan_id
ipv6 dhcp guard vlan vlan_id trusted [port chassis/slot/port | linkagg agg_id]
no ipv6 dhcp guard vlan vlan_id trusted [port chassis/slot/port | linkagg agg_id]
show dhcpv6-snooping
show dhcpv6-snooping interfaces
show dhcpv6-snooping binding [global-address ipv6_address] [port chassis/slot/port |
    linkagg agg_id]
show dhcpv6-snooping ipv6-source-filter
show ipv6 dhcp guard [vlan vlan_id]

```

## IP Multicast Switching Commands

```

ip multicast [vlan vlan_id[-vlan_id2]] admin-state [enable | disable]
no ip multicast [vlan vlan_id[-vlan_id2]] admin-state
ip multicast [vlan vlan_id[-vlan_id2]] flood-unknown [enable | disable]
no ip multicast [vlan vlan_id[-vlan_id2]] flood-unknown
ip multicast [vlan vlan_id[-vlan_id2]] version [version]
no ip multicast [vlan vlan_id[-vlan_id2]] version
ip multicast port chassis/slot/port max-group [num] [action {none | drop |
    replace}]
ip multicast [vlan vlan_id[-vlan_id2]] max-group [num] [action {none | drop | replace}]
ip multicast static-neighbor vlan vlan_id {port chassis/slot/port | linkagg agg_id}
no ip multicast static-neighbor vlan vlan_id {port chassis/slot/port | linkagg agg_id}
ip multicast static-querier vlan vlan_id {port chassis/slot/port | linkagg agg_id}
no ip multicast static-querier vlan vlan_id {port chassis/slot/port | linkagg agg_id}
ip multicast static-group ip_address vlan vlan_id {port chassis/slot/port | linkagg agg_id}
no ip multicast static-group ip_address vlan vlan_id {port chassis/slot/port | linkagg agg_id}
ip multicast [vlan vlan_id[-vlan_id2]] query-interval [seconds]
no ip multicast [vlan vlan_id[-vlan_id2]] query-interval
ip multicast [vlan vlan_id[-vlan_id2]] last-member-query-interval [tenths_of_seconds]
no ip multicast [vlan vlan_id[-vlan_id2]] last-member-query-interval
ip multicast [vlan vlan_id[-vlan_id2]] query-response-interval [tenths_of_seconds]
no ip multicast [vlan vlan_id[-vlan_id2]] query-response-interval

```

```

ip multicast [vlan vlan_id[-vlan_id2]] unsolicited-report-interval [seconds]
no ip multicast [vlan vlan_id[-vlan_id2]] unsolicited-report-interval
ip multicast [vlan vlan_id[-vlan_id2]] router-timeout [seconds]
no ip multicast [vlan vlan_id[-vlan_id2]] router-timeout
ip multicast [vlan vlan_id[-vlan_id2]] source-timeout [seconds]
no ip multicast [vlan vlan_id[-vlan_id2]] source-timeout
ip multicast [vlan vlan_id[-vlan_id2]] querying {enable | disable} [static-source-ip
    ip_address]
no ip multicast [vlan vlan_id[-vlan_id2]] querying [static-source-ip]
ip multicast [vlan vlan_id[-vlan_id2]] robustness [robustness]
no ip multicast [vlan vlan_id[-vlan_id2]] robustness
ip multicast [vlan vlan_id[-vlan_id2]] spoofing {enable | disable}
no ip multicast [vlan vlan_id[-vlan_id2]] spoofing
ip multicast [vlan vlan_id[-vlan_id2]] spoofing static-source-ip ip_address
no ip multicast [vlan vlan_id[-vlan_id2]] spoofing static-source-ip
ip multicast [vlan vlan_id[-vlan_id2]] zapping [{enable | disable}]
no ip multicast [vlan vlan_id[-vlan_id2]] zapping
ip multicast [vlan vlan_id[-vlan_id2]] querier-forwarding [enable | disable]
no ip multicast [vlan vlan_id[-vlan_id2]] querier-forwarding
ip multicast [vlan vlan_id[-vlan_id2]] proxying [enable | disable]
no ip multicast [vlan vlan_id[-vlan_id2]] proxying
ip multicast [vlan vlan_id[-vlan_id2]] helper-address ip_address
no ip multicast [vlan vlan_id[-vlan_id2]] helper-address
ip multicast [vlan vlan_id[-vlan_id2]] zero-based-query [enable | disable]
no ip multicast [vlan vlan_id[-vlan_id2]] zero-based-query
ip multicast [vlan vlan_id[-vlan_id2]] forward-mode {asm | ssm | mac | auto}
no ip multicast [vlan vlan_id[-vlan_id2]] forward-mode
ip multicast [vlan vlan_id[-vlan_id2]] update-delay-interval [milliseconds]
no ip multicast [vlan vlan_id[-vlan_id2]] update-delay-interval
ip multicast display-interface-names
no ip multicast display-interface-names
ip multicast inherit-default-vrf-config
no ip multicast inherit-default-vrf-config
ip multicast profile profile_name
no ip multicast profile profile_name [admin-state | flood-unknown | version | robustness | ...]
ip multicast [vlan vlan_id[-vlan_id2]] apply-profile profile_name
no ip multicast [vlan vlan_id[-vlan_id2]] apply-profile
ipv6 multicast [vlan vlan_id[-vlan_id2]] admin-state [enable | disable]
no ipv6 multicast [vlan vlan_id[-vlan_id2]] admin-state
ipv6 multicast [vlan vlan_id[-vlan_id2]] flood-unknown [enable | disable]
no ipv6 multicast [vlan vlan_id[-vlan_id2]] flood-unknown
ipv6 multicast [vlan vlan_id[-vlan_id2]] version [version]
no ipv6 multicast [vlan vlan_id[-vlan_id2]] version
ipv6 multicast port chassis/slot/port max-group [num] [action {none | drop | replace}]

```

```

ipv6 multicast [vlan vlan_id[-vlan_id2]] max-group [num] [action {none | drop | replace}]
ipv6 multicast static-neighbor vlan vlan_id {port chassis/slot/port | linkagg agg_id}
no ipv6 multicast static-neighbor vlan vlan_id {port chassis/slot/port | linkagg agg_id}
ipv6 multicast static-querier vlan vlan_id {port chassis/slot/port | linkagg agg_id}
no ipv6 multicast static-querier vlan vlan_id {port chassis/slot/port | linkagg agg_id}
ipv6 multicast static-group ipv6_address vlan vlan_id {port chassis/slot/port | linkagg agg_id}
no ipv6 multicast static-group ipv6_address vlan vlan_id {port chassis/slot/port | linkagg agg_id}
ipv6 multicast [vlan vlan_id[-vlan_id2]] query-interval [seconds]
no ipv6 multicast [vlan vlan_id[-vlan_id2]] query-interval
ipv6 multicast [vlan vlan_id[-vlan_id2]] last-member-query-interval [milliseconds]
no ipv6 multicast [vlan vlan_id[-vlan_id2]] last-member-query-interval
ipv6 multicast [vlan vlan_id[-vlan_id2]] query-response-interval [milliseconds]
no ip multicast [vlan vlan_id[-vlan_id2]] query-response-interval
ipv6 multicast [vlan vlan_id[-vlan_id2]] unsolicited-report-interval [seconds]
no ipv6 multicast [vlan vlan_id[-vlan_id2]] unsolicited-report-interval
ipv6 multicast [vlan vlan_id[-vlan_id2]] router-timeout [seconds]
no ipv6 multicast [vlan vlan_id[-vlan_id2]] router-timeout
ipv6 multicast [vlan vlan_id[-vlan_id2]] source-timeout [seconds]
no ip multicast [vlan vlan_id[-vlan_id2]] source-timeout
ipv6 multicast [vlan vlan_id[-vlan_id2]] querying [{enable | disable}] [static-source-ip ipv6_address]
no ipv6 multicast [vlan vlan_id[-vlan_id2]] querying [static-source-ip]
ipv6 multicast [vlan vlan_id[-vlan_id2]] robustness [robustness]
no ipv6 multicast [vlan vlan_id[-vlan_id2]] robustness
ipv6 multicast [vlan vlan_id[-vlan_id2]] spoofing {enable | disable}
no ipv6 multicast [vlan vlan_id[-vlan_id2]] spoofing
ipv6 multicast [vlan vlan_id[-vlan_id2]] spoofing static-source-ip ipv6_address
no ipv6 multicast [vlan vlan_id[-vlan_id2]] spoofing static-source-ip
ipv6 multicast [vlan vlan_id[-vlan_id2]] zapping [enable | disable]
no ipv6 multicast [vlan vlan_id[-vlan_id2]] zapping
ipv6 multicast [vlan vlan_id[-vlan_id2]] querier-forwarding [enable | disable]
no ipv6 multicast [vlan vlan_id[-vlan_id2]] querier-forwarding
ipv6 multicast [vlan vlan_id[-vlan_id2]] proxying [enable | disable]
no ipv6 multicast [vlan vlan_id[-vlan_id2]] proxying
ipv6 multicast [vlan vlan_id[-vlan_id2]] helper-address [ipv6_address]
no ipv6 multicast [vlan vlan_id[-vlan_id2]] helper-address
ipv6 multicast [vlan vlan_id[-vlan_id2]] zero-based-query [enable | disable]
no ipv6 multicast [vlan vlan_id[-vlan_id2]] zero-based-query
ipv6 multicast [vlan vlan_id[-vlan_id2]] forward-mode {asm | ssm | mac | auto}
no ipv6 multicast [vlan vlan_id[-vlan_id2]] forward-mode
ipv6 multicast [vlan vlan_id[-vlan_id2]] update-delay-interval [milliseconds]
no ipv6 multicast [vlan vlan_id[-vlan_id2]] update-delay-interval

```

```

ipv6 multicast display-interface-names
no ipv6 multicast display-interface-names
ipv6 multicast inherit-default-vrf-config
no ipv6 multicast inherit-default-vrf-config
ipv6 multicast profile profile_name
no ipv6 multicast profile profile_name [admin-state | flood-unknown | version | robustness | ...]
ipv6 multicast [vlan vlan_id[-vlan_id2]] apply-profile profile_name
no ipv6 multicast [vlan vlan_id[-vlan_id2]] apply-profile
show ip multicast [vlan vlan_id]
show ip multicast {port [chassis/slot/port]}
show ip multicast forward [ip_address] [vlan [vlan_id[-vlan_id2]]] [all-vrf]
show ip multicast neighbor [vlan [vlan_id[-vlan_id2]]] [all-vrf]
show ip multicast querier [vlan [vlan_id[-vlan_id2]]] [all-vrf]
show ip multicast group [ip_address] [vlan [vlan_id[-vlan_id2]]] [all-vrf]
show ip multicast source [ip_address] [vlan [vlan_id[-vlan_id2]]] [all-vrf]
show ip multicast tunnel [ip_address] [vlan [vlan_id[-vlan_id2]]] [all-vrf]
show ip multicast bridge [vlan [vlan_id[-vlan_id2] | ip_address | mac_address]] [all-vrf]
show ip multicast bridge-forward [vlan [vlan_id[-vlan_id2] | ip_address | mac_address]] [all-vrf]
show ip multicast profile [profile_name]
show ipv6 multicast port [chassis/slot/port]
show ipv6 multicast forward [ipv6_address] [vlan [vlan_id[-vlan_id2]]] [all-vrf]
show ipv6 multicast neighbor [vlan [vlan_id[-vlan_id2]]] [all-vrf]
show ipv6 multicast querier [vlan [vlan_id[-vlan_id2]]] [all-vrf]
show ipv6 multicast group [ipv6_address] [vlan [vlan_id[-vlan_id2]]] [all-vrf]
show ipv6 multicast source [ipv6_address] [vlan [vlan_id[-vlan_id2]]] [all-vrf]
show ipv6 multicast tunnel [ipv6_address] [vlan [vlan_id[-vlan_id2]]] [all-vrf]
show ipv6 multicast bridge [vlan [vlan_id[-vlan_id2] | ipv6_address | mac_address]] [all-vrf]
show ipv6 multicast bridge-forward [vlan [vlan_id[-vlan_id2] | ipv6_address | mac_address]] [all-vrf]
show ipv6 multicast profile [profile_name]

```

## QoS Commands

```

qos {enable | disable}
qos trust-ports
qos no trust-ports
qos forward log
qos no forward log
qos log console
qos no log console
qos log lines lines
qos log level level

```



```

qos no log level
qos phones [priority priority_value | trusted]
qos no phones
qos user-port {filter | shutdown} {spool | bgp | bpdu | rip | ospf | vrrp | dvmp | pim | isis | dhcp-
server | dns-reply}
qos no user-port {filter | shutdown}
qos dei {ingress | egress}
qos no dei {ingress | egress}
debug qos [info] [config] [rule] [main] [port] [msg] [sl] [ioctl] [mem] [mapper] [slot] [12] [13]
[classifier] [nat] [sem] [pm] [ingress] [egress]
debug no qos
debug no qos [info] [config] [rule] [main] [port] [msg] [sl] [ioctl] [mem] [mapper] [slot] [12]
[13] [classifier] [nat] [sem] [pm] [ingress] [egress]
debug qos internal [slice slot/slice] [flow] [queue] [port] [12tree] [13tree] [vector] [pending]
[verbose] [mapper] [pool] [log] [pingonly | nopingonly]
clear qos log
qos apply
qos revert
qos flush
qos reset
qos stats reset
qos port chassis/slot/port[-port2] reset
qos port chassis/slot/port[-port2]
qos port chassis/slot/port[-port2] trusted
qos port chassis/slot/port no trusted
qos port chassis/slot/port[-port2] default 802.1p value
qos port chassis/slot/port[-port2] default dscp value
qos port chassis/slot/port[-port2] default classification {tos | 802.1p | dscp}
qos port chassis/slot/port dei {ingress | egress}
qos port chassis/slot/port no dei {ingress | egress}
qos qsi {port chassis/slot/port[-port2] | linkagg agg_id[-agg_id2] | vf-link vfl_id} qsp {qsp_id
| qsp_name}
qos qsi {port chassis/slot/port[-port2] | linkagg agg_id[-agg_id2]} stats {admin-state {enable
| disable} | interval interval_time}}
show qos port [chassis/slot/port]
show qos log
show qos config
show qos statistics
show qos qsp [qsp_id | qsp_name] [brief | detail [port chassis/slot/port[-port2]] | linkagg
agg_id[-agg_id2]]
show qos qsi [port chassis/slot/port[-port2] | linkagg agg_id[-agg_id2] | vf-link vfl_id] detail
show qos qsi [port chassis/slot/port[-port2] | linkagg agg_id[-agg_id2]] summary
show qos qsi {port chassis/slot/port[-port2] | linkagg agg_id[-agg_id2]} stats [bytes | rate
[bytes]]

```

```
clear qos qsi {port chassis/slot/port[-port2] | linkagg agg_id[-agg_id2]} stats
```

## QoS Policy Commands

```

policy rule rule_name [enable | disable] [precedence precedence] [condition condition]
[action action] [validity-period name] [save] [log [log-interval seconds]] [count {packets
| bytes}] [trap] [default-list]
policy rule rule_name no {validity-period | save | log | trap | default-list}
no policy rule rule_name
iec message-type message priority string
iec message-type message flush
iec show
policy validity-period name [days days] [months months] [hours hh:mm to hh:mm] [interval
mm:dd:yy hh:mm to mm:dd:yy hh:mm]
policy validity-period name no {hours | interval}
no policy validity-period name
policy list list_name type {unp | egress | appfp | empac1} [enable | disable]
no policy list list_name
policy list list_name rules rule_name [rule_name2...]
policy list list_name no rules rule_name [rule_name2...]
policy network group net_group ip_address [mask net_mask] [ip_address2 [mask
net_mask2]...]
no policy network group net_group
policy network group net_group no ip_address [mask netmask] [ip_address2 [mask
net_mask2]...]
policy service group service_group service_name1 [service_name2...]
no policy service group service_group
policy service group service_group no service_name1 [service_name2...]
policy mac group mac_group mac_address [mask mac_mask] [mac_address2 [mask
mac_mask2]...]
no policy mac group mac_group
policy mac group mac_group no mac_address [mask mac_mask] [mac_address2 [mask
mac_mask2]...]
policy port group group_name {chassis//slot/port[-port2] | agg_id[-agg_id2]} [chassis//slot/
port[-port2] | agg_id[-agg_id2]]
no policy port group group_name
policy port group group_name no {chassis//slot/port[-port2] | agg_id[-agg_id2]} [chassis//
slot/port[-port2] | agg_id[-agg_id2]]
policy map group map_group {value1:value2...}
no policy map group map_group
policy map group no {value1:value2...}
policy service service_name
no policy service service_name

```

policy service *service\_name* protocol *protocol* {[source ip-port *port*[-*port*]] [destination ip-port *port*[-*port*]]}  
 no policy service *service\_name*  
 policy service *service\_name* no {source ip-port | destination ip-port}  
 policy service *service\_name* source tcp-port *port*[-*port*]  
 no policy service *service\_name*  
 policy service *service\_name* no source tcp-port  
 policy service *service\_name* destination tcp-port *port*[-*port*]  
 no policy service *service\_name*  
 policy service *service\_name* no destination tcp-port  
 policy service *service\_name* source udp-port *port*[-*port*]  
 no policy service *service\_name*  
 policy service *service\_name* no source udp-port  
 policy service *service\_name* destination udp-port *port*[-*port*]  
 no policy service *service\_name*  
 policy service *service\_name* no destination udp-port  
 policy condition *condition\_name*  
 no policy condition *condition\_name*  
 policy condition *condition\_name* source ip {any | *ip\_address* [mask *netmask*]}  
 policy condition *condition\_name* no source ip  
 policy condition *condition\_name* source ipv6 {any | *ipv6\_address* [mask *netmask*]}  
 policy condition *condition\_name* no source ipv6  
 policy condition *condition\_name* destination ip *ip\_address* [mask *netmask*]  
 policy condition *condition\_name* no destination ip  
 policy condition *condition\_name* destination ipv6 {any | *ipv6\_address* [mask *netmask*]}  
 policy condition *condition\_name* no destination ipv6  
 policy condition *condition\_name* multicast ip *ip\_address* [mask *netmask*]  
 policy condition *condition\_name* no multicast ip  
 policy condition *condition\_name* source network group *network\_group*  
 policy condition *condition\_name* no source network group  
 policy condition *condition\_name* destination network group *network\_group*  
 policy condition *condition\_name* no destination network group  
 policy condition *condition\_name* multicast network group *multicast\_group*  
 policy condition *condition\_name* no multicast network group  
 policy condition *condition\_name* source ip-port *port*[-*port*]  
 policy condition *condition\_name* no source ip-port  
 policy condition *condition\_name* destination ip-port *port*[-*port*]  
 policy condition *condition\_name* no destination ip-port  
 policy condition *condition\_name* source tcp-port *port*[-*port*]  
 policy condition *condition\_name* no source tcp-port  
 policy condition *condition\_name* destination tcp-port *port*[-*port*]  
 policy condition *condition\_name* no destination tcp-port  
 policy condition *condition\_name* source udp-port *port*[-*port*]  
 policy condition *condition\_name* no source udp-port

policy condition *condition\_name* destination udp-port *port*[-*port*]  
 policy condition *condition\_name* no destination udp-port  
 policy condition *condition\_name* ethertype *etype*  
 policy condition *condition\_name* no ethertype  
 policy condition *condition\_name* established  
 policy condition *condition\_name* no established  
 policy condition *condition\_name* tcpflags [any | all] {f | s | r | p | a | u | e | w} mask {f | s | r | p | a | u | e | w}  
 policy condition *condition\_name* no tcpflags  
 policy condition *condition\_name* service *service\_name*  
 policy condition *condition\_name* no service  
 policy condition *condition\_name* service group *service\_group*  
 policy condition *condition\_name* no service group  
 policy condition *condition\_name* icmp type *type*  
 policy condition *condition\_name* no icmp type  
 policy condition *condition\_name* icmp code *code*  
 policy condition *condition\_name* no icmp code  
 policy condition *condition\_name* ip-protocol *protocol*  
 policy condition *condition\_name* no ip-protocol  
 policy condition *condition\_name* ipv6  
 policy condition *condition\_name* no ipv6  
 policy condition *condition\_name* flow-label *flow\_label\_value*  
 policy condition *condition\_name* no flow-label  
 policy condition *condition\_name* tos *tos\_value* [mask *tos\_mask*]  
 policy condition *condition\_name* no tos  
 policy condition *condition\_name* dscp {*dscp\_value*[-*value*]} [mask *dscp\_mask*]  
 policy condition *condition\_name* no dscp  
 policy condition *condition\_name* source mac *mac\_address* [mask *mac\_mask*]  
 policy condition *condition\_name* no source mac  
 policy condition *condition\_name* destination mac *mac\_address* [mask *mac\_mask*]  
 policy condition *condition\_name* no destination mac  
 policy condition *condition\_name* source mac group *group\_name*  
 policy condition *condition\_name* no source mac group  
 policy condition *condition\_name* destination mac group *mac\_group*  
 policy condition *condition\_name* no destination  
 policy condition *condition\_name* source vlan *vlan\_id*  
 policy condition *condition\_name* no source vlan  
 policy condition *condition\_name* inner source-vlan *vlan\_id*  
 policy condition *condition\_name* no inner source-vlan  
 policy condition *condition\_name* destination vlan *vlan\_id*  
 policy condition *condition\_name* no destination vlan  
 policy condition *condition\_name* 802.1p *802.1p\_value*  
 policy condition *condition\_name* no 802.1p  
 policy condition *condition\_name* inner 802.1p *802.1p\_value*

policy condition *condition\_name* no inner 802.1p  
 policy condition *condition\_name* source {port *chassis/slot/port*[-*port2*] | linkagg *agg\_id*[-*agg\_id2*]}  
 policy condition *condition\_name* no source {port | linkagg}  
 policy condition *condition\_name* destination {port *chassis/slot/port*[-*port2*] | linkagg *agg\_id*[-*agg\_id2*]}  
 policy condition *condition\_name* no destination {port | linkagg}  
 policy condition *condition\_name* source port group *group\_name*  
 policy condition *condition\_name* no source port group  
 policy condition *condition\_name* destination port group *group\_name*  
 policy condition *condition\_name* no destination port  
 policy condition *condition\_name* vrf {*vrf\_name* | default}  
 policy condition *condition\_name* no vrf  
 policy condition *condition\_name* fragments  
 policy condition *condition\_name* no fragments  
 policy condition *condition\_name* app-mon-application-group *group\_name*  
 policy condition *condition\_name* no app-mon-application-group  
 policy condition *condition\_name* app-mon-application-name *app\_name*  
 policy condition *condition\_name* no app-mon-application-name  
 policy condition *condition\_name* appfp-group *group\_name*  
 policy condition *condition\_name* no appfp-group  
 policy condition *condition\_name* vxlan vni *vxlan\_id*  
 no policy condition *condition\_name*  
 policy condition *condition\_name* vxlan inner source mac *mac\_address* [mask *mac\_mask*]  
 policy condition *condition\_name* vxlan no source mac  
 policy condition *condition\_name* vxlan inner source mac-group *group\_name*  
 policy condition *condition\_name* vxlan no source mac-group  
 policy condition *condition\_name* vxlan inner source ip *ip\_address* [mask *netmask*]  
 policy condition *condition\_name* vxlan no source ip  
 policy condition *condition\_name* vxlan inner source ipv6 *ipv6\_address* [mask *netmask*]  
 policy condition *condition\_name* vxlan no source ipv6  
 policy condition *condition\_name* vxlan inner ip-protocol *protocol*  
 policy condition *condition\_name* vxlan no ip-protocol  
 policy condition *condition\_name* vxlan inner l4-port {src *src\_port* | dest *dest\_port*}  
 policy condition *condition\_name* vxlan no l4-port  
 policy condition *condition\_name* vxlan vxlan-port *udp\_port*  
 policy condition *condition\_name* vxlan no vxlan-port  
 policy action *action\_name*  
 policy no action *action\_name*  
 policy action *action\_name* disposition {accept | drop | deny}  
 policy action *action\_name* no disposition  
 policy action *action\_name* shared  
 policy action *action\_name* no shared  
 policy action *action\_name* priority *priority\_value*

policy action *action\_name* no priority  
 policy action *action\_name* maximum bandwidth *bps*[k | m | g | t]  
 policy action *action\_name* no maximum bandwidth  
 policy action *action\_name* maximum depth *bytes* [K (kilo)| M (mega) | G (giga) | T (tera)]  
 policy action *action\_name* no maximum depth  
 policy action *action\_name* cir *bps* [cbs *bytes*] [pir *bps*] [pbs *bytes*] [color-only]  
 policy action *action\_name* no cir  
 policy action *action\_name* no pir  
 policy action *action\_name* cpu priority *priority*  
 policy action *action\_name* no cpu priority  
 policy action *action\_name* tos *tos\_value*  
 policy action *action\_name* no tos  
 policy action *action\_name* 802.1p *802.1p\_value*  
 policy action *action\_name* no 802.1p  
 policy action *action\_name* dscp *dscp\_value*  
 policy action *action\_name* no dscp  
 policy action map {802.1p | tos | dscp} to {802.1p | tos | dscp} using *map\_group*  
 policy action no map  
 policy action *action\_name* permanent gateway-ip *ip\_address*  
 policy action *action\_name* no permanent gateway-ip  
 policy action *action\_name* permanent gateway-ipv6 *ipv6\_address*  
 policy action *action\_name* no permanent gateway-ipv6  
 policy action *action\_name* port-disable  
 policy action *action\_name* no port-disable  
 policy action *action\_name* redirect port *chassis/slot/port*  
 policy action *action\_name* no redirect port  
 policy action *action\_name* redirect linkagg *agg\_id*  
 policy action *action\_name* no redirect linkagg  
 policy action *action\_name* no-cache  
 policy action *action\_name* no no-cache  
 policy action *action\_name* [ingress | egress | ingress egress] mirror {*chassis/slot/port* | session *session\_id*}  
 policy action *action\_name* no mirror {*chassis/slot/port* | session *session\_id*}  
 show [applied] policy network group [*network\_group*]  
 show [applied] policy service [*service\_name*]  
 show [applied] policy service group [*service\_group*]  
 show [applied] policy mac group [*mac\_group*]  
 show [applied] policy port group [*group\_name*]  
 show [applied] policy map group [*group\_name*]  
 show [applied] policy action [*action\_name*]  
 show [applied] policy condition [*condition\_name*]  
 show active policy rule [*rule\_name*]  
 show [applied] policy rule [*rule\_name*]  
 show policy validity period [*name*]

```
show active policy list [list_name]  
show [applied] policy list [list_name]  
show policy ipv4-summary [rule rule_name]  
show policy ipv6-summary [rule rule_name]
```

## Policy Server Commands

```
policy server load  
policy server flush  
policy server ip_address [port port_number] [admin-state {enable | disable}] [preference  
  preference] [user user_name password password] [searchbase search_string] [ssl | no  
  ssl]  
no policy server ip_address [port port_number]  
show policy server  
show policy server long  
show policy server statistics  
show policy server rules  
show policy server events
```

## AAA Commands

```
aaa radius-server server_name host {hostname | ip_address | ipv6_address} [hostname2 |  
  ip_address2 | ipv6_address2] {key secret | hash-key hash_secret | prompt-key} [salt salt  
  | hash-salt hash_salt] [retransmit retries] [timeout seconds] [auth-port auth_port] [acct-  
  port acct_port] [vrf-name name] [ssl | no ssl]  
no aaa radius-server server_name  
aaa radius-server server_name health-check [poling-interval seconds | username user_name |  
  password password | hash-key hash_secret | failover]  
no aaa radius-server server_name health-check [failover]  
aaa test-radius-server server_name type {authentication user user_name password password  
  [method {md5 | pap}] | accounting user user_name}  
aaa tacacs+-server server_name host {hostname | ip_address} [hostname2 | ip_address2]  
  {key secret | prompt-key} [salt salt | hash-salt hash_salt] [timeout seconds] [port port]  
  [vrf-name name]  
no aaa tacacs+-server server  
aaa ldap-server server_name host {hostname | ip_address} [hostname2 | ip_address2] dn  
  dn_name {password super_password | prompt-password} [salt salt | hash-salt hash_salt]  
  [base search_base] [retransmit retries] [timeout seconds] [ssl | no ssl] [port port] [vrf-  
  name name]  
no aaa ldap-server server-name  
aaa authentication {console | telnet | ftp | http | snmp | ssh | default} server1 [server2...] [local]  
no aaa authentication [console | telnet | ftp | http | snmp | ssh | default]  
aaa console admin-only {enable | disable}
```

```
aaa authentication {console | telnet | ftp | http | snmp | ssh} default  
aaa accounting session server1 [server2...] [local]  
no accounting session  
aaa accounting command server1 [server2...] [local]  
no accounting command  
aaa device-authentication {802.1x | mac | captive-portal} server1 [server2] [server3]  
  [server4]  
no device-authentication {802.1x | mac | captive-portal}  
aaa accounting {802.1x | mac | captive-portal} {server1 [server2...] | syslog ip_address [port  
  udp_port]}  
no accounting {802.1x | mac | captive-portal}  
aaa accounting {802.1x | mac | captive-portal} radius calling-station-id {mac-address | ip-  
  address}  
aaa 802.1x re-authentication {enable | disable | interval seconds | trust-radius {enable |  
  disable}}  
aaa {802.1x | mac | captive-portal} interim-interval seconds [trust-radius {enable | disable}]  
aaa {mac | captive-portal} session-timeout {enable | disable} [interval seconds] [trust-radius  
  {enable | disable}]  
aaa session console {enable | disable}  
aaa {mac | captive-portal} inactivity-logout {enable | disable} [interval seconds]  
aaa radius nas-port-id {user-string string | default}  
aaa radius nas-identifier {user-string string | default}  
aaa radius nas-ip-address {default | local-ip [ip_address]}  
aaa radius mac-format {username | password | calling-station-id | called-station-id} delimiter  
  {char | none} case {uppercase | lowercase}  
aaa profile profile_name  
no aaa profile profile_name  
user username  
no user username  
password  
user password-size min size  
user password-expiration {day | disable}  
user password-policy cannot-contain-username {enable | disable}  
user password-policy min-uppercase number  
user password-policy min-uppercase number  
user password-policy min-digit number  
user password-policy min-nonalpha number  
user password-history number  
user password-min-age days  
user lockout-window minutes  
user lockout-threshold number  
user lockout-duration minutes  
user username {lockout | unlock}  
show aaa server [server_name]
```

```

show aaa server server_name statistics
aaa radius-server server_name clear-statistics
show aaa authentication
show aaa device-authentication [802.1x | mac | captive-portal]
show aaa accounting [802.1x | mac | captive-portal]
show aaa {802.1x | mac | captive-portal} config
show aaa radius config
show aaa radius health-chec-config
show aaa profile [profile_name]
show aaa session console config
show user [username]
show user password-policy
show user lockout-setting
show aaa priv hexa [domain or family]
aaa switch-access ip-lockout-threshold number
aaa switch-access banned-ip {all | ip_address} release
aaa switch-access priv-mask {console | telnet | ssh | http | https} {read-only | read-write}
    [families... | domains... all | none | all-except families...]
aaa switch-access management-stations admin-state {enable | disable}
show aaa switch-access ip-lockout-threshold
show aaa switch-access banned-ip
show aaa switch-access priv-mask
aaa certificate update-ca-certificate ca_file
aaa certificate update-crl crl_file
aaa certificate generate-rsa-key key_file key_file
aaa certificate generate-self-signed {cert_file} key {key_file} [days valid_period] {CN
    common_name} {ON org_name} {OU org_unit} {L locality} {ST state} {C country}
aaa certificate view cert_file
aaa certificate verify ca-certificate cert_file certificate cert_file
aaa certificate delete cert_file
aaa certificate generate-csr {csr_file} key {key_file} [dn domain_name] {CN
    common_name} {ON org_name} {OU org_unit} {L locality} {ST state} {C country}

```

## Access Guardian Commands

```

unp auth-server-down {profile1 profile_name [profile2 profile_name] [profile3
    profile_name]}
no unp auth-server-down [profile1] [profile2] [profile3]
unp auth-server-down-timeout seconds
no unp auth-server-down-timeout
unp redirect pause-timer seconds
no redirect pause-timer
unp redirect proxy-server-port proxy_port
no unp rediret proxy-server-port

```

```

unp redirect server {ip_address | domain_name}
no unp redirect server
unp redirect allowed-name name ip-address ip_address ip-mask ip_mask
no unp redirect allowed-name name
unp 802.1x-pass-through
no unp 802.1x-pass-through
unp ipv6-drop
no unp ipv6-drop
unp ap-mode {enable | disable} {secure [enable | disable]}
unp user flush [port chassis/slot/port1[-port2] | linkagg agg_id[-agg_id2]] [service-id
    service_id] [authentication-type {mac | 802.1x | none}] [profile profile_name] [mac-
    address mac_address]
unp profile profile_name
no unp profile profile_name
unp profile profile_name captive-portal-authentication
no unp profile profile_name captive-portal-authentication
unp profile profile_name captive-portal-profile cp_profile_name
no unp profile profile_name captive-portal-profile
unp profile profile_name maximum-ingress-bandwidth bps[k | m]
no unp profile profile_name maximum-ingress-bandwidth
unp profile profile_name maximum-egress-bandwidth bps[k | m]
no unp profile profile_name maximum-egress-bandwidth
unp profile profile_name maximum-ingress-depth bytes
no unp profile profile_name maximum-ingress-depth
unp profile profile_name maximum-egress-depth bytes
no unp profile profile_name maximum-egress-depth
unp profile profile_name map vlan vlan_id
unp {port chassis/slot/port1[-port2] | linkagg agg_id1[-agg_id2]} port-type {bridge}
no unp {port chassis/slot/port1[-port2] | linkagg agg_id1[-agg_id2]}
unp {port chassis/slot/port1[-port2] | linkagg agg_id[-agg_id2]} redirect port-bounce
no unp {port chassis/slot/port1[-port2] | linkagg agg_id[-agg_id2]} redirect port-bounce
unp redirect port-bounce {enable | disable}
unp {port chassis/slot/port1[-port2] | linkagg agg_id[-agg_id2]} 802.1x-authentication
no unp {port chassis/slot/port1[-port2] | linkagg agg_id[-agg_id2]} 802.1x-authentication
unp {port chassis/slot/port1[-port2] | linkagg agg_id[-agg_id2]} 802.1x-authentication pass-
    alternate profile_name
no unp {port chassis/slot/port1[-port2] | linkagg agg_id} 802.1X-authentication pass-
    alternate
unp {port chassis/slot/port1[-port2] | linkagg agg_id[-agg_id2]} 802.1x-authentication tx-
    period seconds
no unp {port chassis/slot/port1[-port2] | linkagg agg_id[-agg_id2]} 802.1x-authentication tx-
    period
unp {port chassis/slot/port1[-port2] | linkagg agg_id[-agg_id2]} 802.1x-authentication supp-
    timeout seconds

```

```

no unip {port chassis/slot/port1[-port2] | linkagg agg_id[-agg_id2]} 802.1x-authentication
  supp-timeout
unip {port chassis/slot/port1[-port2] | linkagg agg_id[-agg_id2]} 802.1x-authentication max-
  req max_req
no unip {port chassis/slot/port1[-port2] | linkagg agg_id[-agg_id2]} 802.1x-authentication
  max-req
unip {port chassis/slot/port1[-port2] | linkagg agg_id[-agg_id2]} 802.1x-authentication
  bypass-8021x
no unip {port chassis/slot/port1[-port2] | linkagg agg_id[-agg_id2]} 802.1x-authentication
  bypass-8021x
unip {port chassis/slot/port1[-port2] | linkagg agg_id[-agg_id2]} 802.1x-authentication
  failure-policy {mac}
no unip {port chassis/slot/port1[-port2] | linkagg agg_id[-agg_id2]} 802.1x-authentication
  failure-policy
unip {port chassis/slot/port1[-port2] | linkagg agg_id[-agg_id2]} mac-authentication
no unip {port chassis/slot/port1[-port2] | linkagg agg_id[-agg_id2]} mac-authentication
unip {port chassis/slot/port1[-port2] | linkagg agg_id[-agg_id2]} mac-authentication pass-
  alternate profile_name
no unip {port chassis/slot/port1[-port2] | linkagg agg_id[-agg_id2]} mac-authentication pass-
  alternate
unip {port chassis/slot/port1[-port2] | linkagg agg_id[-agg_id2]} mac-authentication allow-
  eap {pass | fail | noauth}
no unip {port chassis/slot/port1[-port2] | linkagg agg_id[-agg_id2]} mac-authentication
  allow-eap
unip {port chassis/slot/port1[-port2] | linkagg agg_id[-agg_id2]} classification
no unip {port chassis/slot/port1[-port2] | linkagg agg_id[-agg_id2]} classification
unip {port chassis/slot/port1[-port2] | linkagg agg_id[-agg_id2]} default-profile profile_name
no unip {port chassis/slot/port1[-port2] | linkagg agg_id} default-profile
unip {port chassis/slot/port1[-port2] | linkagg agg_id[-agg_id2]} aaa-profile profile_name
no unip {port chassis/slot/port1[-port2] | linkagg agg_id[-agg_id2]} aaa-profile
unip {port chassis/slot/port1[-port2] | linkagg agg_id[-agg_id2]} port-template
  template_name
no unip {port chassis/slot/port1[-port2] | linkagg agg_id[-agg_id2]} port-template
unip {port chassis/slot/port1[-port2] | linkagg agg_id[-agg_id2]} direction {both | in}
no unip {port chassis/slot/port1[-port2] | linkagg agg_id[-agg_id2]} direction
unip {port chassis/slot/port1[-port2] | linkagg agg_id[-agg_id2]} admin-state {enable |
  disable}
unip {port chassis/slot/port1[-port2] | linkagg agg_id[-agg_id2]} vlan vlan_id [-vlan_id2]
  [tagged]
no unip {port chassis/slot/port1[-port2] | linkagg agg_id[-agg_id2]} vlan vlan_id [-vlan_id2]
unip {port chassis/slot/port[-port2] | linkagg agg_id[-agg_id2]} ap-mode {secure}
no unip {port chassis/slot/port[-port2] | linkagg agg_id[-agg_id2]} ap-mode {secure}
unip port-template {template_name | bridgeDefaultPortTemplate

```

```

no unip port-template template_name [802.1x-authentication | 802.1x authentication pass-
  alternate | mac-authentication | mac-authentication pass-alternate | ...]
unip classification lldp med-endpoint {ip-phone | access-point} {profile1 profile_name
  [profile2 profile_name] [profile3 profile_name]}
no unip classification lldp med-endpoint {ip-phone | access-point} [profile1] [profile2]
  [profile3]
captive-portal mode {internal | internal dhcp [ip-lease-time seconds] [ip-renew-time seconds]
  [ip-rebinding-time seconds] | external}
no captive-portal mode internal
captive-portal name {ip_address | domain_name}
no captive-portal name
captive-portal ip-address ip_address
captive-portal success-redirect-url redirect_url
no captive-portal success-redirect-url
captive-portal proxy-server-port proxy_port
no captive-portal proxy-server-port
captive-portal retry-count retries
captive-portal authentication-pass {policy-list list_name | profile profile_name | profile-
  change {enable | disable} }
no captive-portal authentication-pass {policy-list | profile}
captive-portal authentication-pass realm {prefix | suffix} domain domain_name {policy-list
  list_name | profile profile_name | profile-change {enable | disable} }
no captive-portal authentication-pass [realm {prefix | suffix} domain domain_name]
captive-portal-profile profile_name
no captive-portal-profile profile_name
show captive-portal configuration
show captive-portal {profile-names | profile-name profile_name configuration}
show unip profile [profile_name]
show unip profile [profile_name] map {vlan}
show unip global configuration
show unip classification lldp-rule
show unip {port [chassis/slot/port1[-port2]] | linkagg [agg_id[-agg_id2]]} [type {bridge}]
show unip {port [chassis/slot/port1[-port2]] | linkagg [agg_id[-agg_id2]]} config
show unip {port chassis/slot/port1[-port2] | linkagg agg_id[-agg_id2]} bandwidth
show unip {port chassis/slot/port1[-port2] | linkagg agg_id[-agg_id2]} 802.1x statistics
show unip {port [chassis/slot/port1[-port2]] | linkagg [agg_id[-agg_id2]]} configured-vlans
show unip port-template [template_name] [config | configured-vlans | profile]
show unip user [port chassis/slot/port[-port2] | linkagg agg_id[-agg_id2]] [profile
  profile_name] [authentication-type {none | mac | 802.1x}] [mac-address mac_address]
  [count]
show unip user status [port chassis/slot/port[-port2] | linkagg agg_id[-agg_id2] [profile
  profile_name] [authentication-type {none | mac | 802.1x}] [mac-address mac_address]
show unip user details [port chassis/slot/port[-port2] | linkagg agg_id[-agg_id2]] [profile
  profile_name] [authentication-type {none | mac | 802.1x}] [mac-address mac_address]

```

## Learned Port Security Commands

```
port-security {port chassis/slot/port[-port2] | chassis} [admin-state {enable | disable | locked}]
no port-security port chassis/slot/port[-port2]
port-security learning-window minutes [convert-to-static {enable | disable}] [no-aging {enable | disable}] [mac-move {enable | disable}] [learn-as-static {enable | disable}] [boot-up {enable | disable}]
no port-security learning-window
port-security {port chassis/slot/port[-port2] | chassis} convert-to-static
port-security port chassis/slot/port[-port2] mac mac_address [vlan vlan_id]
no port-security port chassis/slot/port[-port2] mac [all | mac_address] [vlan vlan_id]
port-security port chassis/slot/port[-port2] maximum number
port-security port chassis/slot/port[-port2] learn-trap-threshold number
port-security port chassis/slot/port[-port2] max-filtering number
port-security port chassis/slot/port[-port2] mac-range [low mac_address | high mac_address]
no port-security port chassis/slot/port[-port2] mac-range [low mac_address]
port-security port chassis/slot/port[-port2] violation {shutdown | restrict | discard}
show port-security {port [chassis/slot/port[-port2]] | slot chassis/slot}
show port-security [port chassis/slot/port[-port2]] mac-range
show port-security brief
show port-security learning-window
```

## Port Mapping Commands

```
port-mapping session_id [user-port {slot chassis/slot | chassis/slot/port[-port2]} | linkagg agg_id] [network-port {slot chassis/slot | chassis/slot/port[-port2]} | linkagg agg_id]
no port-mapping session_id [user-port {slot chassis/slot | chassis/slot/port[-port2]} | linkagg agg_id] [network-port {slot chassis/slot | chassis/slot/port[-port2]} | linkagg agg_id]
port-mapping session_id {enable | disable}
no port-mapping session_id
port-mapping session_id [unidirectional | bidirectional]
port-mapping session_id unknown-unicast-flooding {enable | disable}
port-mapping session_id dynamic-proxy-arp {enable | disable}
show port-mapping [session_id] status
show port-mapping [session_id]
show ip dynamic-proxy-arp
```

## Port Mirroring and

## Monitoring Commands

```
port-mirroring port_mirror_sessionid source {port chassis/slot/port[-port2]} destination {port chassis/slot/port[-port2]} [linkagg linkagg[-linkagg2]} [rpmir-vlan vlan_id] [bidirectional] [inport | outport] [unblocked-vlan vlan_id] [tag-remove] [enable | disable]
port-mirroring port_mirror_sessionid no source {port chassis/slot/port[-port2]} [chassis/slot/port[-port2]]...}
port-mirroring port_mirror_sessionid no destination {port chassis/slot/port[-port2]} [chassis/slot/port[-port2]]...} | linkagg linkagg[-linkagg2] [linkagg[-linkagg2]]...}
port-mirroring port_mirror_sessionid {enable | disable}
no port-mirroring port_mirror_sessionid
port-monitoring port_monitor_sessionid source port chassis/slot/port[-port2] [file filename] [size filesize] | no file | overwrite {on | off} [inport | outport | bidirectional] [timeout seconds] [enable | disable] [capture-type {full | brief}]
port-monitoring port_monitor_sessionid no source port chassis/slot/port[-port2]
port-monitoring port_monitor_sessionid {disable | pause | resume}
no port-monitoring port_monitor_sessionid
show port-mirroring status [port_mirror_sessionid]
show port-monitoring status [port_monitor_sessionid]
show port-monitoring file port_monitor_sessionid
```

## sFlow Commands

```
sflow agent ip ip_address
no sflow agent ip ip_address
sflow receiver receiver_index {name string | timeout {seconds | forever} | address {ip_address | ipv6_address | domain_name} | udp-port port | packet-size size version num | release}
sflow sampler num port chassis/slot/port[-port] {receiver receiver_index | rate value | sample-hdr-size size}
no sflow sampler num port [chassis_id]/slot/port[-port]
sflow poller num port chassis/slot/port[-port] {receiver receiver_index | interval value}
no sflow poller num port [chassis_id]/slot/port[-port]
show sflow agent
show sflow receiver [num]
show sflow sampler [num]
show sflow poller [num]
```

## RMON Commands

```
rmon probes {stats | history | alarm} [entry_number] {enable | disable}
show rmon probes [stats | history | alarm] [entry_number]
show rmon events [entry_number]
```

## Switch Logging Commands

```
swlog {enable | disable | preamble | hash-time-limit seconds | duplicate-detect | console level
num }
no swlog [preamble | duplicate-detect]
swlog syslog-facility-id {facility_id | num}
swlog appid {all | string} {library {all | string} | subapp {all | num} | exclude {all | num}}
{disable | enable | level {level | num}}
swlog output {tty {enable | disable} | console | flash | socket {ip_address | ipv6Address |
domain_name} [tls] [remote command-log] [vrf-name name]}
no swlog output {console | flash | socket [ip_address | ipv6Address | domain_name]}
swlog output flash-file-size kilobytes
swlog advanced {enable | disable}
swlog size-trap-threshold threshold
swlog clear [all]
show log swlog
show log swlog [timestamp mm/dd/yyyy hh:mm:ss] [slot num]
show swlog [library | appid {all | string} | dying-gasp-station]
swlog console level {num | alarm | alert | debug1 | debug2 | debug3 | error | info | off | warning }
show log events
show log events output filename
```

## Health Monitoring Commands

```
health threshold {rx percent | txrx percent | memory percent | cpu percent | flash percent}
health interval seconds
show health configuration
show health [port chassis/slot/port | slot chassis/slot[-slot2]] [statistics]
show health all {memory | cpu | rx | txrx}
```

## CMM Commands

```
reload [chassis-id chassis] secondary [in [hours:] minutes | at hour:minute [month day | day
month]]
reload secondary cancel
reload [chassis-id chassis] all [in [hours:] minutes | at hour:minute [month day | day month]]
reload all cancel
reload [chassis-id chassis] from image_dir {rollback-timeout minutes | no rollback-timeout
[in [hours:] minutes | at hour:minute] [redundancy-time minutes]}
reload chassis-id chassis [all] [in [hours:] minutes | at hour:minute [month day | day month]]
reload chassis-id cancel
copy certified image_dir [make-running-directory]
write memory [flash-synchro]
copy running certified [flash-synchro]
```

```
modify running-directory image_dir
show running-directory
show reload [[chassis-id chassis] [status | all status]
show microcode [working | certified | loaded | issu | image_dir]
usb {enable | disable}
usb backup admin-state {enable | disable} [key string | hash-key string]
usb auto-copy {enable | disable} copy-config {enable | disable} [key string | hash-key string ]
mount [/uflash]
umount /uflash
show usb statistics
auto-config-abort
image integrity check image_dir key-file filename
image integrity get-key image_dir
```

## Chassis Management and Monitoring Commands

```
system contact text_string
system name text_string
system location text_string
system date [mm/dd/yyyy]
system time [hh:mm:ss]
system timezone [timezone_abbrev]
system daylight-savings-time [enable | disable]
update uboot {cmm slot | ni {all | slot} file filename}
update fpga-cpld {cmm {chassis/cmm | all} | ni {chassis/ni | daughter num} file filename}
show system
show hardware info
show chassis
show cmm [slot]
show slot [slot]
show module [slot]
show module long [slot]
show module status [slot]
show powersupply [slot]
show fan [slot]
show temperature [fabric [index] | slot [index] | fantray [index] | cmm [index | cmm_letter] |
chassis-id chassis]
show me
show team utilization [chassis/slot] [chassis/slot/team]
show team utilization [chassis/slot] [chassis/slot/team] detail
show team app-groups
show pmd-files
show tech-support [layer2 | layer3 | eng [complete]]
show mac-range [index]
```



## Network Time Protocol Commands

```
ntp server {ip_address | server_name} [key key_id | | minpoll poll | maxpoll poll | version
  version | prefer | burst | iburst | preempt]
no ntp server ip_address
ntp client admin-state {enable | disable}
ntp broadcast-client {enable | disable}
ntp broadcast-delay microseconds
ntp key key [trusted | untrusted]
ntp key load
ntp authenticate {enable | disable}
ntp interface {interface_ip} {enable | disable}
ntp max-associations number
ntp broadcast {broadcast_addr} [version version] [minpoll poll_interval]
no ntp broadcast {broadcast_addr}
ntp peer {ip_address} [key key_id] [version version] [minpoll poll_interval]
no ntp peer {ip_address}
ntp vrf-name name
show ntp status
show ntp client
show ntp client server-list
show ntp server client-list
show ntp server status [ip_address]
show ntp keys
show ntp peers
show ntp server disabled-interfaces
```

## Session Management Commands

```
session login-attempt integer
session login-timeout seconds
session {cli | ftp | http} banner file_name
no session {cli | ftp | http} banner
session {cli | http | ftp} timeout minutes
session prompt default [string]
session xon-xoff {enable | disable}
show prefix
user profile save
user profile reset
history number
!{! | n}
command-log {enable | disable}
kill session_number
exit
```

```
whoami
who
show session config
show session xon-xoff
more filename
telnet {port [default | service_port] | admin-state [enable | disable] | ip_address}
ssh {port [default | service_port] | admin-state [enable | disable] | ip_address}
ssh login-grace-time seconds
ssh enforce-pubkey-auth {enable | disable}
ssh strong-ciphers {enable | disable}
ssh strong-hmacs {enable | disable}
installsshkey user path
revokesshkey user remote-user
show command-log
show command-log status
show telnet
show ssh
```

## File Management Commands

```
cd [path]
pwd
mkdir [options] [path] /dirname
rmdir [options] dirname
ls [options] [path/filename]
rm [options] [path/filename]
cp [options] source destination
scp [options] user_name@remote_ip_addr:[path]/source [path]/target
scp [options] [path]/source user_name@remote_ip_addr:[path]/target
mv [options] source destination
chmod {+w | -w} [path]/file
freespace [/flash | /uflash]
fsck /uflash {repair | no-repair}
newfs /uflash
vi [options] [path]/filename
tty lines columns
show tty
tftp [options] host [port]
sftp [options] {ip_address}
ftp {port [default | service_port] | admin-state [enable | disable] | ip_address}
ftp admin-state [enable | disable]
show ftp
```

## Web Management Commands

```
webview server {enable | disable}
webview access {enable | disable}
webview force-ssl {enable | disable}
webview http-port {default | port port}
webview https-port {default | port port}
webview ssl-strong-ciphers {enable | disable}
webview wlan cluster-virtual-ip precedence {lldp | configured}
webview wlan cluster-virtual-ip virtual-ip-address-of-wlan-cluster
show webview wlan config
show webview
```

## Configuration File Manager Commands

```
configuration apply filename [at hh:mm month dd [year]] | [in hh[:mm]] [verbose]
configuration error-file-limit number
show configuration status
configuration cancel
configuration syntax-check path/filename [verbose]
configuration snapshot [feature_list | all] [path/filename]
show configuration snapshot [feature_list]
write terminal
```

## SNMP Commands

```
snmp station {ip_address | ipv6_address | domain_name} {[port] [username] [v1 | v2 | v3 |
v3 tsm local-identity local_string remote-identity remote_string] [enable | disable]}
no snmp station {ip_address | ipv6_address | domain_name}
show snmp station [details]
snmp snmp-engineid-type {text | mac-address | ipv4-address | ipv6-address} snmp-engineid
{text_string | mac_address | ipv4_address | ipv6_address}
snmp snmp-engineid-type mac-address snmp-engineid default
show snmp snmp-engineid
snmp community-map {[hash-key string | community_string] user useraccount_name}
[enable | disable]
no snmp community-map community_string
snmp community-map mode {enable | disable}
show snmp community-map
snmp security {no-security | authentication set | authentication all | privacy set | privacy all |
trap-only | tls {enable | disable}}
snmp security tsm [enable | disable]
snmp tsm-map remote-identity remote_string user user_string
show snmp tsm-map
```

```
show snmp security [tsm]
show snmp statistics
show snmp mib-family [table_name]
snmp-trap absorption {enable | disable}
snmp-trap to-webview {enable | disable}
snmp-trap replay-ip {ip_address | ipv6_address | domain_name} [seq_id]
snmp-trap filter-ip {ip_address | ipv6_address | domain_name} trap_id_list
no snmp-trap filter-ip {ip_address | ipv6_address | domain_name} trap_id_list
snmp authentication-trap {enable | disable}
show snmp-trap replay-ip
show snmp-trap filter-ip
show snmp authentication-trap
show snmp-trap config
```

## OmniVista Cirrus Commands

```
cloud-agent admin-state {enable | disable | disable force | restart}
cloud-agent discovery-interval minutes
cloud-agent remove-inconsistent-certificate
show cloud-agent status
show cloud-agent vpn status
```

## DNS Commands

```
ip domain-lookup
no ip domain-lookup
ip name-server server_address1 [server_address2 [server_address3]]
ipv6 name-server server_ipv6_address1 [server_ipv6_address2 [server_ipv6_address3]]
ip domain-name name
no ip domain-name
show dns
```







# Index

## Numerics

- 802.1ab 12-1
  - notification of local system MIB changes 12-10
  - reinit delay 12-6
  - show port statistics 12-32
  - tlv management 12-16
  - transmit time interval 12-4
- 802.1p
  - mapped to ToS or DSCP 17-169
  - QoS port default 16-33

## A

- AAA 19-1
  - password-size min 19-58
  - show user network profile 20-88, 20-118, 20-120, 20-124, 20-128, 20-131, 20-133, 20-140, 20-144, 20-147
- accounting 1-40
- actions
  - supported by hardware 17-148
- active login sessions 31-21
- alerts 26-6
- ASA Configuration
  - verify information about 19-38
- assigning ports to VLANs 5-4

## B

- boot.cfg file
  - QoS log lines 16-9
- BPDU
  - see Bridge Protocol Data Units
- Bridge Protocol Data Units 7-3, 7-50, 7-52, 7-54, 7-56

## C

- CLI
  - logging commands 31-16, 31-37–31-39
- CMM
  - running configuration 28-10
- CMS
  - range table 29-46
- commands
  - domains and families 19-114
- conditions
  - multiple conditions defined 17-45, 17-131
- current user session 31-19

## D

- debug messages 26-6
- DHCP Relay 14-1

- elapsed boot time 14-11
- forward delay time 14-11
- maximum number of hops 14-13
- show ip helper 14-23
- statistics 14-26, 14-28, 14-34, 14-65

## directory

- change 32-2
- create 32-4
- delete 32-6
- display 32-3, 32-8, 32-19, 32-21

## DNS

- domain name 65-2
- enables resolver 65-2
- name servers 65-2, 65-3, 65-7
- resolver 64-1, 65-1

## DSCP

- mapped to 802.1p or ToS 17-169
- QoS port default 16-35

## dynamic link aggregation

- adding ports 8-31
- creating 8-12
- deleting 8-12
- deleting ports 8-31
- LACPDU frames 8-34, 8-40
- local port MAC address 8-36
- remote group MAC address 8-25
- remote port MAC address 8-43

## E

- editor
  - vi 32-23
- error file 34-4
- error frame 1-44
- errors 26-6
- Ethernet 1-1
  - flow 1-3
  - interfaces 1-5
  - trap port 1-3
- exit 31-18

## F

- file
  - copy 32-12, 32-14
  - delete 32-10, 32-22
  - move 32-16
  - privileges 32-18
  - system check 32-19, 32-20
  - transfer 32-28, 32-31

## H

- health 27-2

## I

- IGMP
  - default 15-7
  - group entry 15-17, 15-131, 15-140

- ip multicast querier-forwarding 15-41
- last member query interval 15-21
- neighbor entry 15-13, 15-134
- querier entry 15-15, 15-137
- query interval 15-19
- query response interval 15-23, 15-25
- querying 15-31, 15-41
- robustness variable 15-33
- router timeout 15-27
- source timeout 15-29
- spoofing 15-35, 15-37
- zapping 15-39, 15-43
- IP Multicast Switching
  - see* IPMS 15-1
- IPMS 15-1
  - ipv6 multicast querier-forwarding 15-101

## L

- LACP
  - see* dynamic link aggregation
- LPS 21-1
  - learning-window 21-4
  - learn-trap-threshold 21-14
  - max-filtering 21-16
  - maximum 21-12

## M

- MAC address table
  - duplicate MAC addresses 4-11, 4-13
- MAC addresses
  - aging time 4-16
  - dynamic link aggregation 8-25, 8-36, 8-43
  - statically assigned 4-10, 4-12, 4-15
- MLD
  - default 15-67
  - group entry 15-77, 15-160, 15-166
  - last member query interval 15-81
  - neighbor entry 15-73, 15-162
  - querier entry 15-75, 15-164
  - query interval 15-79
  - query response interval 15-83, 15-85
  - querying 15-91
  - robustness variable 15-93
  - router timeout 15-87
  - source timeout 15-89
  - spoofing 15-95, 15-97
  - zapping 15-99, 15-103
- mobile ports
  - trusted ports 16-5
- modules
  - reloading 28-4
- MVRP 11-1
  - applicant 11-10
  - disable globally 11-2
  - display configuration on specified link aggregate 11-32
  - display configuration on specified port 11-29
  - dynamic VLANs 11-7
  - enable globally 11-2

- enable on specified link aggregate 11-5
- enable on specified port 11-3
- registration 11-8

## N

- Network Interface (NI) modules
  - reloading 29-11, 29-12
- NTP 30-1
  - broadcast delay 30-7, 30-15
  - key 30-8
  - operation 30-5
  - server 30-2, 30-12, 30-14, 30-16

## P

- pending configuration
  - erasing policy configuration 16-25
- PMM
  - port mirroring 23-2
  - port monitoring source 23-7
- policies
  - save option 17-5
- policy condition
  - dscp 17-96
  - source vlan 17-106
- policy servers
  - displaying information about 18-6
  - SSL 18-4
- port mapping 22-2

## Q

- QOS
  - ip phone traffic 16-11

## R

- resolver
  - see* DNS resolver
- RMON
  - probes 25-2

## S

- secure shell session 31-29, 32-30
- secure socket layer
  - see* SSL
- session management
  - banner 31-5
  - kills 31-17
  - login attempt 31-3
  - more 31-26
  - prompt 31-8
  - timeout 31-7
  - user profile 31-11
  - xon-xoff 31-9
- sflow 24-6
  - poller 24-8
  - receiver 24-3
  - sampler 24-6

- smurf attack 13-21
- snapshot 34-11
- SNMP
  - community map 35-11
  - community strings 35-11
  - security 35-16
  - station 35-3
  - statistics 35-24
  - trap 35-28
- source learning 4-1
  - MAC address table 4-1, 4-10, 4-12, 4-15
- Spanning Tree Algorithm and Protocol 7-1
  - 1x1 operating mode 7-3, 7-8, 7-10, 7-13, 7-15, 7-105
  - bridge ID 7-18
  - flat operating mode 7-3, 7-8, 7-10, 7-13, 7-15, 7-105
  - port states 7-42, 7-44
- Spanning Tree port parameters
  - connection type 7-46, 7-47, 7-48, 7-49, 7-51, 7-53, 7-54, 7-57, 7-58, 7-59, 7-60, 7-61, 7-62, 7-63, 7-64, 7-65
  - link aggregate ports 7-32, 7-34
  - mode 7-42, 7-44
  - path cost 7-42, 7-44
  - Spanning Tree status 7-32, 7-34
- ssh6 31-32, 31-33, 31-34, 31-35, 31-36
- SSL 33-4
  - policy servers 18-4
- static link aggregation
  - creating 8-3
  - deleting 8-3
- static MAC addresses 4-10, 4-12, 4-15
- syntax check 34-9
- system information
  - administrative contact 29-3
  - date 29-6
  - location 29-5
  - name 29-4
  - time 29-6, 29-7
  - time zone 29-8

## T

- telnet 31-27
- timer session 34-6
- ToS
  - mapped to 802.1p or DSCP 17-169
  - QoS port default 16-35

## U

- UDLD 3-1
  - clear UDLD statistics 3-11
  - probe-message advertisement timer 3-7
  - show global status 3-12
  - show neighbor ports 3-18
- user accounts
  - SNMP access 19-54
- UTC 30-1

## V

- VLANs 5-1, 5-2, 10-1
  - administrative status 5-2
  - default VLAN 5-4
  - description 5-2
  - port assignments 5-4
  - secondary VLAN 5-4
  - Spanning Tree status 7-7

## W

- warnings 26-6
- WebView
  - enabling/disabling 33-2, 33-3