



CLI Command Reference for Ethernet Routing Switch 4900 and 5900 Series

Release 7.8
9036208-00 Rev AC
April 2020

© 2017-2020, Extreme Networks, Inc.
All Rights Reserved.

Legal Notice

Extreme Networks, Inc. reserves the right to make changes in specifications and other information contained in this document and its website without prior notice. The reader should in all cases consult representatives of Extreme Networks to determine whether any such changes have been made.

The hardware, firmware, software or any specifications described or referred to in this document are subject to change without notice.

Trademarks

Extreme Networks and the Extreme Networks logo are trademarks or registered trademarks of Extreme Networks, Inc. in the United States and/or other countries.

All other names (including any product names) mentioned in this document are the property of their respective owners and may be trademarks or registered trademarks of their respective companies/owners.

For additional information on Extreme Networks trademarks, please see: www.extremenetworks.com/company/legal/trademarks

Open Source Declarations

Some software files have been licensed under certain open source or third-party licenses. End-user license agreements and open source declarations can be found at: www.extremenetworks.com/support/policies/software-licensing

Contents

Chapter 1: About this Document	27
Purpose	27
Conventions	27
Text Conventions	27
Documentation and Training	29
Getting Help	30
Providing Feedback	31
Chapter 2: New in this Document	32
Chapter 3: Application Configuration	33
end (Application Configuration)	33
exit (Application Configuration)	33
slamon agent ip address	33
slamon agent port	34
slamon agent-comm-port	34
slamon cli	35
slamon cli-timeout	35
slamon cli-timeout-mode	36
slamon ntr	36
slamon oper-mode	37
slamon refuse-server-tests	37
slamon RTP	37
slamon server ip address	38
slamon server port	38
slamon server-bypass	39
Chapter 4: DHCP Guard Configuration	40
device-role (DHCP Guard Configuration)	40
preference	40
Chapter 5: Ethernet Interface Configuration	42
adac (on a port)	42
adac detection	43
auto-negotiation-advertisements	43
brouter	44
clear arp-cache (on a port)	45
clear eapol non-eap (on a port)	45
clear ip dhcp-snooping binding (on a port)	46
clear ip forward-protocol udp counters (on a port)	46
clear ip igmp profile stats (on a port)	46
clear ip ospf counters (on a port)	47
clear ip verify source statistics (on a port)	47

clear ip-blocking (on a port).....	48
clear ipv6 destinationcache (on a port).....	48
clear ipv6 neighbor-cache (on a port).....	48
clear ipv6 statistics (on a port).....	49
clear isis lsdb (on a port).....	49
clear isis stats (on a port).....	50
clear license (on a port).....	50
clear logging (on a port).....	50
clear mac-address-table (on a port).....	51
clear sshc known-host.....	52
clear stack port-statistics (on a port).....	52
clear system last-exception (Ethernet Interface Configuration).....	53
clear-stats.....	53
ddi-logging.....	53
eapol (on a port).....	54
eapol guest-vlan (on a port).....	55
eapol multihost (on a port).....	56
eapol multihost fail-open-vlan (on a port).....	57
eapol multihost non-eap-mac.....	58
eapol multivlan(on a port).....	58
eapol radius-dynamic-server enable.....	59
end (DHCP Guard Configuration).....	59
end (on a port).....	59
energy-saver (on a port).....	60
exit (on a port).....	60
flowcontrol.....	60
ip arp-inspection (on a port).....	61
ip dhcp-relay (on a port).....	62
ip dhcp-snooping (on a port).....	62
ip igmp filter.....	63
ip ipfix (on a port).....	63
ip ospf (on a port).....	64
ip ospf message-digest-key(on a port).....	65
ip rip (for a port).....	66
ip verify source.....	68
ipv6 dhcp guard attach-policy.....	69
ipv6 nd inspection dynamic-learning enable.....	69
ipv6 nd raguard attach-policy.....	70
ipv6 source-guard.....	70
isis.....	71
isis hello-auth type.....	71
isis l1-dr-priority.....	72
isis l1-hello-interval.....	72

isis l1-hello-multiplier.....	73
isis spbm.....	73
lacp aggregation.....	74
lacp clear-stats.....	74
lacp key (on a port).....	75
lacp mode.....	75
lacp priority.....	76
lacp timeout-time.....	76
lldp config-notification(on a port).....	77
lldp location-identification (on a port).....	77
lldp med-network-policies (on a port).....	79
lldp port (on a port).....	80
lldp status (on a port).....	81
lldp tx-tlv (on a port).....	81
lldp vendor-specific (on a port).....	83
macsec confidentiality-offset (on a port).....	84
macsec connectivity-association (on a port).....	84
macsec enable (Ethernet Interface Configuration).....	85
macsec encryption enable (on a port).....	85
macsec replay-protect enable (on a port).....	86
mac-security (Ethernet Interface Configuration).....	86
name (Ethernet Interface Configuration).....	87
poe poe-limit (for PoE units).....	87
poe poe-limit (for PoE+ units).....	88
poe poe-priority.....	88
poe poe-shutdown.....	89
qos if-assign (Ethernet Interface Configuration).....	89
qos if-queue-shaper.....	89
qos if-shaper.....	90
rate-limit.....	91
sflow (Ethernet Interface Configuration).....	92
shared-port.....	93
show sflow (Ethernet Interface Configuration).....	93
shutdown (for a port).....	94
slpp enable (Ethernet Interface Configuration).....	94
slpp packet-rx-threshold (Ethernet Interface Configuration).....	94
slpp port (Ethernet Interface Configuration).....	95
slpp-guard (Ethernet Interface Configuration).....	95
spanning-tree (Ethernet Interface Configuration).....	96
spanning-tree bpdu-filtering (Ethernet Interface Configuration).....	97
spanning-tree mstp (Ethernet Interface Configuration).....	97
spanning-tree rstp (Ethernet Interface Configuration).....	99
speed.....	99

storm-control (Ethernet Interface Configuration).....	100
vlaop (Ethernet Interface Configuration).....	101
Chapter 6: Global Configuration	103
adac call-server-port.....	103
adac enable.....	103
adac mac-range-table.....	104
adac op-mode.....	105
adac uplink-port.....	105
adac voice-vlan.....	106
application.....	106
app-telemetry collector.....	107
app-telemetry enable.....	107
arp.....	108
asset-id.....	108
audit.....	109
audit encryption-key aes-cbc.....	109
audit.....	110
auto-pvid.....	110
autosave.....	111
autotopology.....	111
banner.....	111
certificate ca.....	112
certificate copy.....	114
certificate key.....	114
certificate move.....	115
certificate subject.....	116
certificate trust-store.....	117
cfm.....	117
clear fa statistics.....	118
clear stack port-statistics.....	118
cli.....	119
clock set.....	120
clock source.....	120
clock summer-time.....	121
clock sync-rtc-with-time-client.....	122
clock time-zone.....	122
csnp-interval.....	123
default app-telemetry.....	123
default clock.....	124
diagnostics-quick-mode.....	124
eapol (Global Configuration).....	125
eapol allow-port-mirroring.....	125
eapol guest-vlan (global).....	126

eapol multihost (global).....	126
eapol multihost fail-open-vlan (global).....	127
eapol multihost non-eap-pwd-fmt.....	128
eapol multihost non-eap-user-based-policies.....	129
eapol multihost non-eap-user-based-policies filter-on-mac.....	129
eapol multihost non-eap-user-based-policies dynamic-ubp.....	129
eapol multihost voip-vlan.....	130
eapol multivlan(global).....	130
eapol user-based-policies.....	131
eapol user-based-policies filter-on-mac.....	131
eapol user-based-policies dynamic-ubp.....	132
edm help-file-path.....	132
edm inactivity-timeout.....	133
end (global).....	133
energy-saver (global)	134
energy-saver schedule.....	134
enhanced-secure-mode.....	135
exit (Global configuration).....	136
fa.....	136
fa authentication-key.....	137
fa auto-provision.....	137
fa extended-logging.....	137
fa message-authentication.....	138
fa port-enable.....	138
fa proxy.....	138
fa uplink.....	139
fa vlan.....	139
fa zero-touch.....	140
fa zero-touch-client.....	140
fa zero-touch-options.....	141
http-port.....	142
https-only.....	142
interface.....	143
ip address (global).....	143
ip arp-inspection (global).....	144
ip blocking-mode.....	145
ip bootp.....	145
ip default-gateway.....	146
ip dhcp.....	146
ip dhcp-relay (global).....	147
ip dhcp-snooping (global)	148
ip dhcp-snooping binding.....	148
ip dhcp-snooping external-save.....	149

ip directed-broadcast.....	150
ip domain-name.....	150
ip forward-protocol.....	151
ip fwd-nh (Global configuration mode).....	151
ip igmp (Global Configuration).....	152
ip ipfix (Global)	153
ip ipfix collector.....	154
ip ipfix enable.....	154
ip ipfix slot.....	155
ip isis.....	155
ip isis maximum-path.....	156
ip mgmt.....	156
ip mgmt address.....	157
ip mgmt default-gateway.....	157
ip mgmt limit.....	158
ip mgmt netmask.....	158
ip mgmt route.....	159
ip mgmt shutdown.....	159
ip mgmt shutdown-interval.....	160
ip name-server.....	160
ip pim.....	161
ip pim rp-candidate group.....	161
ip pim static-rp.....	162
ip pim virtual-neighbor.....	163
ip prefix-list.....	163
ip route.....	164
ip route preference protocol	164
ip routing (global)	165
ip source-interface.....	165
ip static-mroute.....	166
ipmgr.....	167
ipv6.....	167
ipv6 address.....	168
ipv6 autoconfig.....	169
ipv6 default-gateway.....	169
ipv6 dhcp.....	170
ipv6 dhcp-relay fwd-path.....	170
ipv6 fhs.....	171
ipv6 fhs ipv6-access-list.....	172
ipv6 fhs mac-access-list.....	172
ipv6 fhs nd inspection stats clear.....	173
ipv6 icmp addr-unreach.....	173
ipv6 icmp port-unreach.....	174

ipv6 mgmt.....	174
ipv6 mld (global).....	175
ipv6 nd (global).....	176
ipv6 nd inspection clear stats.....	177
ipv6 nd inspection enable.....	177
ipv6 nd raguard clear stats.....	177
ipv6 nd raguard enable.....	178
ipv6 nd raguard policy.....	178
ipv6 neighbor.....	179
ipv6 neighbor binding clear.....	179
ipv6 neighbor binding down-lifetime.....	180
ipv6 neighbor binding max-entries.....	180
ipv6 neighbor binding reachable-lifetime.....	181
ipv6 neighbor binding stale-lifetime.....	181
ipv6 neighbor binding vlan.....	182
ipv6 rip.....	183
ipv6 route	183
ipv6 slow-path-to-cpu.....	184
ipv6 tunnel.....	184
i-sid.....	185
isis (global).....	186
isis maximum-path.....	186
jumbo-frames.....	187
lacp key (global).....	187
lacp port-mode.....	188
lacp system-priority.....	188
link-state.....	189
lldp (global).....	189
logging.....	190
mac-address-table.....	192
macsec clear-stats	193
macsec connectivity-association (global).....	193
mac-security (Global Configuration).....	194
maximum-path.....	195
mlt.....	195
mvr.....	196
mvr group-range.....	197
mvr vlan.....	197
ntp.....	198
ntp authentication-key.....	198
ntp server.....	199
ospf.....	200
password.....	200

poe.....	202
port-mirroring.....	203
qos acl-assign.....	205
qos action	205
qos agent aq-mode.....	206
qos agent buffer.....	207
qos agent dos-attack-prevention.....	207
qos agent nvram-delay.....	208
qos agent oper-mode.....	208
qos agent queue-set	209
qos agent reset-default	209
qos agent reset-partial-default	210
qos agent statistics-tracking	210
qos agent ubp	210
qos classifier	211
qos classifier-block.....	212
qos clear-queue-stats.....	213
qos clear-stats.....	213
qos egressmap	213
qos if-action-extension.....	214
qos if-assign (Global Configuration)	215
qos if-group.....	215
qos ingressmap.....	216
qos ip-acl.....	217
qos ip-element.....	218
qos l2-acl.....	219
qos l2-element	220
qos meter.....	221
qos policy.....	222
qos queue-set-assignment.....	223
qos system-element.....	224
qos traffic-profile classifier.....	225
qos traffic-profile set.....	228
qos ubp classifier.....	229
qos ubp set.....	231
quickconfig(global).....	231
radius accounting.....	232
radius dynamic-server.....	232
radius reachability.....	233
radius server.....	234
radius use-management-ip.....	235
radius-server.....	236
radius-server encapsulation.....	236

remote connection.....	237
renumber.....	237
rip	238
rmon alarm.....	238
rmon event.....	239
rmon history.....	240
rmon stats.....	240
role.....	241
route-map	241
router isis.....	243
router ospf.....	243
router rip.....	244
router vrrp.....	244
script upload (global).....	244
serial-console.....	245
serial-security	246
sflow (global).....	246
sflow enable.....	247
sftp-server.....	247
show password.....	248
show sflow (global).....	249
slpp enable (global).....	249
slpp timeout (Global Configuration).....	250
slpp ethertype (global).....	250
slpp tx-interval (global).....	250
slpp vid (global).....	251
slpp-guard (global)	251
snmp-server bootstrap.....	252
snmp-server community.....	252
snmp-server contact.....	253
snmp-server disable.....	253
snmp-server enable.....	254
snmp-server engine-id.....	254
snmp-server host.....	255
snmp-server location.....	255
snmp-server name.....	256
snmp-server notification-control.....	256
snmp-server notify-filter.....	257
snmp-server packet-size.....	257
snmp-server user.....	258
snmp-server view.....	259
sntp enable.....	259
sntp server primary.....	259

snmp server secondary	260
snmp sync-interval.....	260
snmp sync-now.....	261
spanning-tree 802dot1d-port-compliance.....	261
spanning-tree add-vlan.....	262
spanning-tree bpdu-filtering (Global Configuration)	262
spanning-tree cost-calc-mode.....	263
spanning-tree forward-time.....	263
spanning-tree hello-time.....	264
spanning-tree max-age.....	265
spanning-tree mode.....	265
spanning-tree multicast-address	266
spanning-tree port-mode	266
spanning-tree priority	267
spanning-tree remove-vlan	268
spanning-tree stp	268
spanning-tree tagged-bpdu.....	269
spanning-tree tagged-bpdu-vid.....	270
spbm (Global Configuration)	270
ssh (Global Configuration).....	271
sshd authentication.....	273
sshd close-session.....	273
sshd dsa-host-key.....	274
sshd dsa-key.....	274
sshd port.....	275
sshd rsa-host-key.....	275
sshd rsa-key.....	275
sshd upload-host-key.....	276
ssl.....	277
stack auto-unit-replacement.....	277
stack auto-unit-replacement-image.....	278
stack forced-mode	278
stack reboot-on-failure	278
stack replace	279
stack retry-count	279
stack-monitor.....	280
storm-control.....	280
tacacs accounting.....	281
tacacs authorization.....	282
tacacs server.....	282
tacacs switch.....	283
telnet-access.....	283
tftp-access.....	284

tftp-server.....	285
usb-host-port	285
username.....	286
username (Enhanced Secure Mode).....	287
username add (Enhanced Secure Mode).....	288
vlaop (Global Configuration)	288
vlan configcontrol.....	289
vlan create	289
vlan delete.....	291
vlan igmp.....	292
vlan i-sid.....	293
vlan members.....	293
vlan mgmt.....	294
vlan name.....	294
vlan ports.....	294
vlan remote-span.....	296
vlan voice-vlan.....	296
web-server.....	297
Chapter 7: ISIS Router Configuration.....	298
csnp-interval.....	298
end (ISIS Router Configuration).....	298
exit (ISIS Router Configuration).....	299
ip-source-address.....	299
is-type.....	299
manual-area.....	300
max-lsp-gen-interval.....	300
metric.....	301
min-lsp-gen-interval.....	301
overload.....	302
overload-on-startup.....	302
psnp-interval.....	303
redistribute (ISIS Router Configuration).....	303
retransmit-lsp-interval.....	304
spbm (ISIS Router Configuration).....	304
spf-delay.....	305
sys-name.....	305
system-id.....	306
Chapter 8: Loopback Interface Configuration.....	307
end (Loopback Interface Configuration).....	307
exit (Loopback Interface Configuration).....	307
ip address (Loopback Interface Configuration).....	308
ip area (Loopback Interface Configuration).....	308
ip ospf (Loopback Interface Configuration).....	309

ipv6 interface (Loopback Interface Configuration).....	309
Chapter 9: OSPF Router Configuration	310
accept adv-rtr.....	310
area.....	311
area virtual-link.....	312
area virtual-link message-digest-key.....	313
as-boundary-router.....	314
auto-vlink.....	314
default-cost.....	315
end (OSPF Router Configuration).....	316
exit (OSPF Router Configuration).....	316
host-route.....	316
network (OSPF Router Configuration).....	317
redistribute.....	317
rfc1583-compatibility.....	318
router-id.....	319
timers basic holddown.....	319
Chapter 10: Privileged Executive	320
blink-leds.....	320
boot.....	320
clear app-telemetry counters.....	321
clear arp-cache.....	321
clear eapol.....	322
clear ip dhcp-snooping	322
clear ip forward-protocol.....	323
clear ip igmp.....	323
clear ip ospf.....	324
clear ip verify.....	324
clear ipv6 destinationcache.....	325
clear ipv6 dhcp-relay	325
clear ramdisk-files.....	325
clear ssh banner	326
configure.....	326
configure network.....	327
configure network address.....	327
configure network filename.....	328
configure network load-on-boot.....	328
configure ramdisk	329
configure sftp.....	329
configure terminal.....	330
configure usb.....	330
copy config nvram.....	330
copy config ramdisk.....	331

copy config sftp.....	331
copy config tftp.....	332
copy config usb.....	332
copy nvram.....	333
copy ramdisk.....	333
copy running-config ramdisk.....	334
copy running-config sftp.....	334
copy running-config tftp.....	335
copy running-config usb.....	336
copy sftp.....	337
copy sftp config.....	337
copy sftp license.....	338
copy tftp config.....	338
copy tftp license.....	339
copy tftp script.....	339
copy usb.....	340
disable.....	341
download.....	341
energy-saver.....	342
install.....	342
ip dhcp-snooping.....	343
ip ipfix.....	343
ip ospf apply.....	344
ip ospf spf-run.....	344
manualtrigger.....	344
quickconfig.....	345
reload.....	345
renew.....	346
restore.....	346
save.....	347
script run.....	347
script upload.....	348
show adac.....	348
show adac detection.....	349
show adac interface.....	349
show adac mac-range-table.....	350
show app-telemetry counters.....	350
show app-telemetry status.....	351
show audit.....	352
show auto-negotiation-advertisements.....	352
show auto-negotiation-capabilities.....	353
show autosave.....	353
show autotopology.....	353

show banner.....	354
show cli info.....	354
show cli mode.....	355
show cli password.....	355
show clock.....	355
show config-network.....	356
show eapol.....	356
show eapol multihost.....	359
show eapol sessions.....	361
show http-port.....	362
show ip fwd-nh.....	363
show ip igmp cache.....	363
show ip igmp group.....	364
show ip igmp group-ext.....	365
show ip igmp interface.....	366
show ip igmp profile.....	368
show ip igmp router-alert.....	368
show ip igmp sender.....	368
show ip igmp snooping.....	369
show ip igmp snoop-querier-addr.....	369
show ip igmp ssm.....	370
show ip igmp ssm-map.....	370
show ip mroute interface.....	370
show ip mroute next-hop.....	371
show ip mroute route.....	372
show ip pim.....	373
show ip pim active-rp.....	374
show ip pim bsr.....	375
show ip pim interface.....	376
show ip pim mode.....	377
show ip pim mroute.....	378
show ip pim neighbor.....	378
show ip pim rp-candidate.....	379
show ip pim rp-hash.....	380
show ip pim static-rp.....	381
show ip pim virtual-neighbor.....	381
show ip source.....	382
show ip verify.....	382
show ipmgr.....	383
show ipv6 mld group.....	383
show ipv6 mld interface.....	384
show ipv6 mld snooping.....	385
show ipv6 mld stream.....	386

show jumbo-frames.....	386
show lacp aggr.....	387
show lacp debug.....	387
show lacp key.....	388
show lacp port.....	388
show lacp port-mode.....	388
show lacp stats.....	389
show lacp system.....	389
show license.....	389
show logging.....	390
show mac-address-table address.....	391
show mac-address-table aging-time.....	391
show mac-address-table dynamic.....	391
show mac-address-table mlt.....	392
show mac-address-table port.....	392
show mac-address-table spbm.....	393
show mac-address-table static.....	393
show mac-address-table vid.....	394
show mac-security.....	394
show mlt.....	395
show mlt hash-calc.....	396
show poe-main-status.....	397
show poe-port-status.....	397
show poe-power-measurement.....	397
show port-mirroring.....	398
show port-statistics.....	398
show qos acl-assign.....	399
show qos action.....	399
show qos agent.....	400
show qos capability.....	400
show qos classifier.....	401
show qos classifier-block.....	401
show qos diag.....	402
show qos diag egress.....	402
show qos egressmap.....	402
show qos if-action-extension.....	403
show qos if-assign.....	403
show qos if-group.....	404
show qos if-queue-shaper.....	404
show qos if-shaper.....	404
show qos ingressmap.....	405
show qos ip-acl.....	405
show qos ip-element	405

show qos l2-acl.....	406
show qos l2-element.....	406
show qos meter.....	407
show qos policy.....	407
show qos port.....	408
show qos queue-set.....	408
show qos queue-set-assignment.....	409
show qos queue-statistics.....	409
show qos statistics.....	410
show qos system-element.....	410
show qos traffic-profile.....	411
show qos traffic-profile statistics.....	411
show qos ubp interface.....	412
show qos ubp statistics.....	412
show qos user-policy.....	413
show radius.....	413
show radius-server.....	414
show rate-limit.....	414
show rmon alarm.....	415
show rmon ethernet history.....	415
show rmon ethernet packets.....	416
show rmon ethernet statistics.....	416
show rmon event.....	417
show rmon history.....	417
show rmon stats.....	417
show running-config.....	418
show script.....	421
show serial-console.....	421
show snmp-server.....	422
show snmp.....	422
show spanning-tree 802dot1d-port-compliance.....	423
show spanning-tree bpdu-filtering.....	423
show spanning-tree config.....	424
show spanning-tree cost-calc-mode.....	424
show spanning-tree mode.....	424
show spanning-tree port.....	425
show spanning-tree port-mode.....	425
show spanning-tree stp.....	425
show spanning-tree vlans.....	426
show ssh banner.....	426
show ssh download-auth-key.....	427
show ssh global.....	427
show ssh session.....	427

show ssl.....	428
show stack health.....	428
show stack-info.....	428
show stack-monitor.....	429
show storm-control.....	429
show storm-control interface.....	430
show sys-info.....	430
show system.....	430
show tacacs.....	431
show tdr.....	431
show telnet.....	432
show telnet-access.....	432
show tftp-server.....	432
show trace.....	433
show usb-files.....	433
show usb-host-port.....	434
show vlacp.....	434
show vlan.....	435
show vlan configcontrol.....	435
show vlan dhcp-relay.....	435
show vlan id.....	436
show vlan igmp.....	438
show vlan interface.....	438
show vlan ip.....	439
show vlan i-sid.....	440
show vlan mgmt.....	441
show vlan multicast.....	441
show vlan private-vlan.....	442
show vlan remote-span.....	442
show vlan summary.....	442
show vlan type.....	443
show vlan voice-vlan.....	444
show web-server.....	444
shutdown.....	445
stack auto-unit-replacement config.....	445
stack auto-unit-replacement remove-mac-address.....	446
stack loopback-test.....	446
tdr.....	447
toggle-next-boot-image.....	447
write	447
Chapter 11: RA Guard Configuration.....	449
device-role (RA Guard Configuration).....	449
hop-limit.....	449

managed-config-flag.....	450
match ipv6 access-list.....	450
match mac-access-list.....	451
match ra prefix-list.....	451
match reply prefix-list.....	452
match server access-list.....	452
router-preference maximum.....	453
Chapter 12: RIP Router Configuration.....	454
default-metric.....	454
end (RA Guard Configuration).....	454
end (RIP Router Configuration).....	455
exit (RA Guard Configuration).....	455
exit (RIP Router Configuration).....	455
network (RIP Router Configuration).....	456
timers basic.....	456
trap (RIP Router Configuration).....	457
Chapter 13: User Executive.....	458
enable	458
exit.....	458
help	458
l2 ping.....	460
l2 tracemroute source.....	461
l2 traceroute	461
l2 tracetree	462
logout	463
ping.....	463
run	464
show application.....	464
show arp	465
show arp-table	466
show auto-pvid	466
show boot.....	467
show brouter	467
show cfm.....	468
show cli list.....	468
show cpu-utilization.....	469
show ddi-logging	469
show ecmp.....	470
show edm	470
show energy-saver	471
show energy-saver interface.....	471
show energy-saver savings.....	471
show energy-saver schedule.....	472

show enhanced-secure-mode.....	472
show environmental	472
show fa	473
show flash	474
show https-only.....	474
show https-port.....	475
show interfaces	475
show interfaces gbic-info.....	476
show ip	478
show ip arp-inspection.....	478
show ip arp-inspection interface.....	479
show ip arp-proxy interface	479
show ip blocking-mode.....	480
show ip default-ttl.....	480
show ip dhcp.....	480
show ip dhcp-relay.....	481
show ip dhcp-relay counters	481
show ip dhcp-relay fwd-path	482
show ip dhcp-relay interface.....	483
show ip dhcp-snooping	483
show ip dhcp-snooping binding	484
show ip dhcp-snooping external-save	484
show ip dhcp-snooping interface	485
show ip dhcp-snooping vlan.....	485
show ip directed-broadcast	485
show ip dns	486
show ip forward-protocol	486
show ip ipfix	488
show ip ipfix collector.....	488
show ip ipfix interface.....	489
show ip ipfix slot	489
show ip ipfix table	490
show ip isis.....	492
show ip mgmt	492
show ip netstat	493
show ip ospf.....	493
show ip ospf accept.....	494
show ip ospf area	494
show ip ospf area-range	494
show ip ospf ase	495
show ip ospf authentication	495
show ip ospf default-cost.....	496
show ip ospf host-route	496

show ip ospf ifstats	496
show ip ospf int-auth	497
show ip ospf int-timers	497
show ip ospf interface.....	498
show ip ospf lsdb.....	498
show ip ospf neighbor.....	499
show ip ospf redistribute	499
show ip ospf stats	500
show ip ospf timer	500
show ip ospf virtual-links	500
show ip ospf virtual-neighbors	501
show ip prefix-list.....	501
show ip rip	501
show ip rip interface.....	502
show ip rip stats.....	504
show ip route	504
show ip routing.....	507
show ip source-interface.....	508
show ip static-mroute.....	508
show ip vrrp	508
show ip vrrp address	509
show ip vrrp interface	509
show ip-blocking	510
show ipv6 address.....	510
show ipv6 address interface.....	511
show ipv6 default-gateway	511
show ipv6 default-routers.....	512
show ipv6 destinationcache	512
show ipv6 dhcp guard policy.....	512
show ipv6 dhcp-relay	513
show ipv6 fhs capture-policy	514
show ipv6 fhs ipv6-access-list	515
show ipv6 fhs mac-access-list	515
show ipv6 fhs status.....	516
show ipv6 forwarding	516
show ipv6 global	516
show ipv6 interface.....	517
show ipv6 interface icmpstatistics	518
show ipv6 interface process-redirect	518
show ipv6 interface statistics.....	519
show ipv6 mgmt address	519
show ipv6 mgmt default-gateway	520
show ipv6 mgmt interface	520

show ipv6 mld-cache interface.....	521
show ipv6 mld-host-cache.....	521
show ipv6 mld-proxy-cache.....	521
show ipv6 nd interface.....	522
show ipv6 nd rguard policy.....	522
show ipv6 nd-prefix interface.....	523
show ipv6 neighbor	524
show ipv6 neighbor binding.....	524
show ipv6 neighbor interface.....	526
show ipv6 neighbor summary.....	526
show ipv6 neighbor type.....	527
show ipv6 rip.....	527
show ipv6 route	528
show ipv6 source-guard.....	529
show ipv6 tcp.....	529
show ipv6 tcp connections.....	530
show ipv6 tcp listener	530
show ipv6 tunnel	530
show ipv6 udp	531
show i-sid	531
show isis.....	532
show isis adjacencies	532
show isis int-auth.....	533
show isis int-ckt-level	534
show isis int-counters	535
show isis interface.....	536
show isis int-l1-cntl-pkts.....	537
show isis int-timers	538
show isis lsdb	539
show isis manual-area.....	542
show isis net.....	542
show isis redistribute.....	542
show isis spbm.....	543
show isis spbm i-sid	543
show isis spbm ip-multicast-route.....	544
show isis spbm ip-unicast-fib	545
show isis spbm multicast.....	546
show isis spbm multicast-fib	546
show isis spbm nick-name.....	547
show isis spbm unicast-fib.....	548
show isis spbm unicast-tree	549
show isis spb-mcast-summary.....	549
show isis statistics.....	551

show isis system-id.....	552
show link-state.....	552
show lldp local-sys-data	552
show lldp med-network-policies.....	553
show lldp mgmt-sys-data.....	553
show lldp neighbor	554
show lldp neighbor-mgmt-addr	555
show lldp pdu-tlv-size.....	556
show lldp port	556
show lldp rx-stats	557
show lldp stats	557
show lldp tx-stats.....	558
show lldp tx-tlv.....	558
show lldp vendor-specific.....	559
show macsec connectivity-association.....	560
show macsec statistics.....	560
show macsec status	561
show memory-utilization	561
show mgmt-port	561
show mvr.....	562
show ntp.....	562
show nvram.....	563
show password	563
show quickconfig	564
show radius accounting	565
show radius dynamic-server.....	565
show radius reachability	566
show radius use-management-ip.....	566
show ramdisk-files.....	566
show remote connection	567
show role.....	567
show route-map.....	567
show serial-security	568
show sftp-server.....	568
show slpp.....	569
show slpp-guard	569
show spanning-tree.....	569
show spbm (User Executive).....	570
show spbm reserved-port	570
show stack.....	570
show stack-cable-info.....	571
show tech (User Executive).....	571
show terminal.....	572

show username	572
show who	572
ssh	573
telnet	573
terminal	574
trace.....	574
traceroute.....	575
username.....	576
Chapter 14: VLAN Interface Configuration.....	577
end (VLAN Interface Configuration).....	577
exit (VLAN Interface Configuration).....	577
igmp last-member-query-interval.....	578
igmp query-interval.....	578
igmp query-max-response.....	579
igmp send-query.....	579
ip address (VLAN Interface Configuration).....	579
ip arp-proxy.....	580
ip dhcp-relay (VLAN Interface Configuration).....	580
ip directed-broadcast.....	581
ip forward-protocol udp (VLAN Interface Configuration).....	582
ip fwd-nh (VLAN Interface Configuration).....	582
ip igmp (VLAN Interface Configuration).....	583
ip igmp mrouter.....	583
ip igmp proxy.....	584
ip igmp robust-value.....	584
ip igmp router-alert.....	585
ip igmp snooping.....	585
ip igmp snoop-querier-addr	585
ip igmp version.....	586
ip ospf (VLAN Interface Configuration).....	586
ip ospf message-digest-key (VLAN Interface Configuration).....	588
ip pim (VLAN Interface Configuration).....	588
ip rip (VLAN Interface Configuration).....	589
ip routing (VLAN Interface Configuration).....	591
ip vrrp.....	592
ip vrrp address.....	592
ip vrrp critical-ip enable.....	593
ip vrrp critical-ip-addr.....	593
ip vrrp fast-adv-int.....	594
ip vrrp holddown-timer.....	594
ip vrrp priority.....	595
ipv6 dhcp-relay fwd-path.....	595
ipv6 interface (VLAN Interface Configuration).....	596

ipv6 mld (VLAN Interface Configuration).....	596
ipv6 mld proxy.....	597
ipv6 nd (VLAN Interface Configuration).....	598
Chapter 15: VRRP Router Configuration	600
end (VRRP Router Configuration).....	600
exit (VRRP Router Configuration).....	600
ping-virtual-address.....	600

Chapter 1: About this Document

This section discusses the purpose of this document, the conventions used, ways to provide feedback, additional help, and information regarding other Extreme Networks publications.

Purpose

This document provides information on features in Ethernet Routing Switch 4900 and 5900 Series.

This guide describes the Command Line Interface (CLI) commands for the configuration of various features for ERS 4900 and ERS 5900 Series. The chapters in this document correspond to a command mode in the CLI. Each chapter is organized alphabetically for those commands in that mode. If a command is available in all modes, like many **show** commands, it is documented in the mode that requires the lowest level of access privileges.

Conventions

This section discusses the conventions used in this guide.

Text Conventions

The following tables list text conventions that can be used throughout this document.

Table 1: Notice Icons

Icon	Alerts you to...
 Important:	A situation that can cause serious inconvenience.
 Note:	Important features or instructions.
 Tip:	Helpful tips and notices for using the product.

Table continues...

Icon	Alerts you to...
 Danger:	Situations that will result in severe bodily injury; up to and including death.
 Warning:	Risk of severe personal injury or critical loss of data.
 Caution:	Risk of personal injury, system damage, or loss of data.

Table 2: Text Conventions

Convention	Description
Angle brackets (< >)	Angle brackets (< >) indicate that you choose the text to enter based on the description inside the brackets. Do not type the brackets when you enter the command. If the command syntax is <code>cfm maintenance-domain maintenance-level <0-7></code> , you can enter <code>cfm maintenance-domain maintenance-level 4</code>.
Bold text	Bold text indicates the GUI object name you must act upon. Examples: • Click OK. • On the Tools menu, choose Options.
Braces ({ })	Braces ({ }) indicate required elements in syntax descriptions. Do not type the braces when you enter the command. For example, if the command syntax is <code>ip address {A.B.C.D}</code>, you must enter the IP address in dotted, decimal notation.
Brackets ([])	Brackets ([]) indicate optional elements in syntax descriptions. Do not type the brackets when you enter the command. For example, if the command syntax is <code>show clock [detail]</code>, you can enter either <code>show clock</code> or <code>show clock detail</code>.
Ellipses (...)	An ellipsis (...) indicates that you repeat the last element of the command as needed. For example, if the command syntax is <code>ethernet/2/1 [<parameter> <value>] ...</code>, you enter <code>ethernet/2/1</code> and as many parameter-value pairs as you need.

Table continues...

Convention	Description
<i>Italic Text</i>	Italics emphasize a point or denote new terms at the place where they are defined in the text. Italics are also used when referring to publication titles that are not active links.
Plain Courier Text	Plain Courier text indicates command names, options, and text that you must enter. Plain Courier text also indicates command syntax and system output, for example, prompts and system messages. Examples: • <code>show ip route</code> • <code>Error: Invalid command syntax</code> <code>[Failed][2013-03-22 13:37:03.303</code> <code>-04:00]</code>
Separator (>)	A greater than sign (>) shows separation in menu paths. For example, in the Navigation tree, expand the Configuration > Edit folders.
Vertical Line ()	A vertical line () separates choices for command keywords and arguments. Enter only one choice. Do not type the vertical line when you enter the command. For example, if the command syntax is <code>access-policy by-mac action { allow deny }</code> , you enter either <code>access-policy by-mac action allow</code> or <code>access-policy by-mac action deny</code> , but not both.

Documentation and Training

Find Extreme Networks product information at the following locations:

[Current Product Documentation](#)

[Release Notes](#)

[Hardware/software compatibility matrices](#) for Campus and Edge products

[Supported transceivers and cables](#) for Data Center products

[Other resources](#), like white papers, data sheets, and case studies

Extreme Networks offers product training courses, both online and in person, as well as specialized certifications. For details, visit www.extremenetworks.com/education/.

Getting Help

If you require assistance, contact Extreme Networks using one of the following methods:

Extreme Portal

Search the GTAC (Global Technical Assistance Center) knowledge base; manage support cases and service contracts; download software; and obtain product licensing, training, and certifications.

The Hub

A forum for Extreme Networks customers to connect with one another, answer questions, and share ideas and feedback. This community is monitored by Extreme Networks employees, but is not intended to replace specific guidance from GTAC.

Call GTAC

For immediate support: (800) 998 2408 (toll-free in U.S. and Canada) or 1 (408) 579 2826. For the support phone number in your country, visit:
www.extremenetworks.com/support/contact

Before contacting Extreme Networks for technical support, have the following information ready:

- Your Extreme Networks service contract number, or serial numbers for all involved Extreme Networks products
- A description of the failure
- A description of any actions already taken to resolve the problem
- A description of your network environment (such as layout, cable type, other relevant environmental information)
- Network load at the time of trouble (if known)
- The device history (for example, if you have returned the device before, or if this is a recurring problem)
- Any related RMA (Return Material Authorization) numbers

Subscribe to Service Notifications

You can subscribe to email notifications for product and software release announcements, Vulnerability Notices, and Service Notifications.

1. Go to www.extremenetworks.com/support/service-notification-form.
2. Complete the form (all fields are required).
3. Select the products for which you would like to receive notifications.

*** Note:**

You can modify your product selections or unsubscribe at any time.

4. Select **Submit**.

Providing Feedback

The Information Development team at Extreme Networks has made every effort to ensure the accuracy and completeness of this document. We are always striving to improve our documentation and help you work better, so we want to hear from you. We welcome all feedback, but we especially want to know about:

- Content errors, or confusing or conflicting information.
- Improvements that would help you find relevant information in the document.
- Broken links or usability issues.

If you would like to provide feedback, you can do so in three ways:

- In a web browser, select the feedback icon and complete the online feedback form.
- Access the feedback form at <https://www.extremenetworks.com/documentation-feedback/>.
- Email us at documentation@extremenetworks.com.

Provide the publication title, part number, and as much detail as possible, including the topic heading and page number if applicable, as well as your suggestions for improvement.

Chapter 2: New in this Document

The following sections detail what is new in this document.

New Commands

The following commands are newly added to this document:

RADIUS Dynamic UBP ACL

- [eapol user-based-policies dynamic-ubp](#) on page 132
- [eapol multihost non-eap-user-based-policies dynamic-ubp](#) on page 129
- [show eapol multihost](#) on page 359

Updated Commands

The following commands are updated in this document:

Table 3: Existing Command Updates

Command	Update
<code>eapol user-based-policies</code>	Content is updated to improve clarity.
<code>eapol user-based-policies filter-on-mac</code>	Content is updated to improve clarity.
<code>show eapol</code>	Content is updated to improve clarity.
<code>eapol multihost non-eap-user-based-policies</code>	Content is updated to improve clarity.
<code>eapol multihost non-eap-user-based-policies filter-on-mac</code>	Content is updated to improve clarity.
<code>show qos ubp classifier</code>	Content is updated to improve clarity.

Chapter 3: Application Configuration

This chapter provides information related to the Application configuration commands.

end (Application Configuration)

Exits from configure mode.

Syntax

- **end**

Default

None

Command Mode

Application Configuration

exit (Application Configuration)

Exits from application configuration mode.

Syntax

- **exit**

Default

None

Command Mode

Application Configuration

slamon agent ip address

Configures the agent IP address.

Syntax

- `default slamon agent ip address`
- `slamon agent ip address {A.B.C.D}`

Command Parameters

{A.B.C.D} Configures the agent IP address. If no IP address is specified, the default value is 0.0.0.0, which causes the agent to use the switch/stack IP address.

Default

None

Command Mode

Application Configuration

slamon agent port

Configures the UDP port.

Syntax

- `default slamon agent port`
- `slamon agent port {0 |<1024-65535>}`

Command Parameters

{0 |<1024-65535>} Configures the UDP port for agent-server communication. The agent receives discovery packets on this port. The default is port 50011. The server must use the same port.

Default

The default is 50011.

Command Mode

Application Configuration

slamon agent-comm-port

Configures the agent-to-agent communication port.

Syntax

- `default slamon agent-comm-port`
- `slamon agent-comm-port {0 |<1024-65535>}`

Command Parameters

{0 | <1024-65535>} Configures the SLA Monitor agent-to-agent communication UDP port.

Default

None

Command Mode

Application Configuration

slamon cli

Enables the SLA Monitor agent CLI support.

Syntax

- `default slamon cli`
- `no slamon cli [enable]`
- `slamon cli enable`

Default

None

Command Mode

Application Configuration

slamon cli-timeout

Configures the agent automatic CLI session timeout value.

Syntax

- `default slamon cli-timeout <60-600>`
- `slamon cli-timeout <60-600>`

Command Parameters

<60-600> Configures the CLI timeout value in seconds. The default is 60 seconds

Default

60

Command Mode

Application Configuration

slamon cli-timeout-mode

Enables the agent automatic CLI session timeout.

Syntax

- `default slamon cli-timeout-mode`
- `no slamon cli-timeout-mode [enable]`
- `slamon cli-timeout-mode enable`

Default

None

Command Mode

Application Configuration

slamon ntr

Executes a new trace route (NTR) test on the network to establish the QoS benchmark.

Syntax

- `slamon ntr {A.B.C.D} <0-63> [attempts <1-10>] [period <1000-200000>]`

Command Parameters

<0-63>	Specifies the Differential Services Code Point (DSCP) value for use in packets that are generated by the NTR test.
<A.B.C.D>	Specifies the destination IP address. If no IP address is specified, the test execution fails.
attempts <1-10>	Specifies the number of attempts generated by the NTR test. The default value is 2.
period <1000-200000>	Specifies the interval between packets in microseconds, generated by the NTR test. The default interval is 20000 microseconds.

Default

None

Command Mode

Application Configuration

slamon oper-mode

Enables the SLA Monitor agent.

Syntax

- `default slamon oper-mode`
- `no slamon oper-mode [enable]`
- `slamon oper-mode enable`

Default

None

Command Mode

Application Configuration

slamon refuse-server-tests

Enables the agent refuse server test mode.

Syntax

- `default slamon refuse-server-tests`
- `no slamon refuse-server-tests [enable]`
- `slamon refuse-server-tests [enable]`

Default

None

Command Mode

Application Configuration

slamon RTP

Executes a real time protocol (RTP) test on the network to establish the QoS benchmark.

Syntax

- `slamon RTP {A.B.C.D} <0-63> [npack <10-100>] [nsync <10-100>] [period <1000-200000>]`

Command Parameters

<0-63>	Specifies the DSCP value for use in packets that are generated by the RTP test.
<A.B.C.D>	Specifies the destination IP address. If no IP address is specified, the test execution fails.
npack <10-100>	Specifies the RTP npack value. The default value is 50.
nsync <10-100>	Specifies the RTP nsync value. The default value is 10.
period <1000-200000>	Specifies the interval between packets in microseconds, generated by the RTP test. The default interval is 20000 microseconds.

Default

None

Command Mode

Application Configuration

slamon server ip address

Configures the agent server IP address.

Syntax

- **default slamon server ip address**
- **slamon server ip address {A.B.C.D} [{A.B.C.D}]**

Command Parameters

{A.B.C.D} [{A.B.C.D}]	Restricts the agent to use of this server IP address only. The default is 0.0.0.0, which means the agent can register with any server.

Default

0.0.0.0

Command Mode

Application Configuration

slamon server port

Configure the server TCP registration port.

Syntax

- `default slamon server port`
- `slamon server port <0-65535>`

Command Parameters

<0-65535> Restricts the agent to use of this registration port only. The default is 0, which means the agent disregards the source port information in server traffic. The server must use the same port.

Default

0

Command Mode

Application Configuration

slamon server-bypass

Enables the agent server bypass mode.

Syntax

- `default slamon server-bypass`
- `no slamon server-bypass [enable]`
- `slamon server-bypass [enable]`

Default

None

Command Mode

Application Configuration

Chapter 4: DHCP Guard Configuration

This chapter provides information related to the DHCP Guard configuration commands.

device-role (DHCP Guard Configuration)

Enables verification of the role of the device attached to the port.

Syntax

- `default device-role`
- `device-role {client|server}`

Command Parameters

client	Specifies client.
server	Specifies server.

Default

The default is router.

Command Mode

DHCP Guard Configuration

preference

Enables verification that the advertised preference is greater or less than the specified limit, depending on the configuration.

Syntax

- `default preference {min limit |max limit}`
- `preference {min limit <0-255>|max limit <0-255>}`

Command Parameters

max limit <0-255>	Enables the verification that the advertised preference in the preference option is less than the specified limit. If not specified, this check is bypassed.
min limit <0-255>	Enables the verification that the advertised preference in the preference option is greater than the specified limit. If not specified, this check is bypassed.

Default

None

Command Mode

DHCP Guard Configuration

Chapter 5: Ethernet Interface Configuration

This chapter provides information related to the Ethernet Interface configuration commands.

adac (on a port)

Modifies ADAC port settings.

Syntax

- `adac [port <LINE>] {[enable] [tagged-frames-pvid (<1-4094>| no-change)] [tagged-frames-tagging (tag-all|tag-pvid-only|untag-pvid-only|no-change)]}`
- `default adac [enable] [port <LINE> tagged-frames-pvid enable] [port <LINE> tagged-frames-tagging enable]`
- `no adac [enable] [port <LINE> enable]`

Command Parameters

enable	Enable auto-detection on ports.
no-change	Leave the tagging unchanged to its current set value.
port <LINE>	Ports to which to apply the ADAC configuration.
tag-all	Enable tagging.
tagged-frames-pvid {<1-4094> [no-change]}	Sets Tagged-Frames PVID on the port or ports listed. Use no-change to keep the current setting.
tagged-frames-tagging {no-change tag-all tag-pvid-only untag-pvid-only}	Set the tagging to be configured for telephony ports in Tagged Frames operating mode.
tag-pvid-only	Enable tagging of frames matching the PVID of the port.
untag-pvid-only	Disable tagging of frames matching the PVID of the port.

Default

None

Command Mode

Ethernet Interface Configuration

adac detection

Enables detection mechanisms on ports.

Syntax

- `adac detection [port <LINE>] {[mac] [lldp]}`
- `default adac detection [port <LINE>] {[mac] [lldp]}`
- `no adac detection [port <LINE>] {[mac] [lldp]}`

Command Parameters

lldp	Enable 802.1ab-based detection on ports.
mac	Enable MAC-based detection on ports.
port <LINE>	Port number(s) for which to change settings.

Default

None

Command Mode

Ethernet Interface Configuration

auto-negotiation-advertisements

Configure auto-negotiation advertisement settings.

Syntax

- `auto-negotiation-advertisements {[port <LINE>][add | remove] [10-full] [10-half] [100-full] [100-half] [1000-full] [10000-full] [2500-full] [asymm-pause-frame] [none]}`
- `default auto-negotiation-advertisements [port <LINE>]`
- `no auto-negotiation-advertisements [port <LINE>]`

Command Parameters

10000-full	Advertise 10000Mbps full-duplex
1000-full	Advertise 1000Mbps full-duplex.

100-full	Advertise 100Mbps full-duplex.
100-half	Advertise 100Mbps half-duplex.
10-full	Advertise 10Mbps full-duplex.
10-half	Advertise 10Mbps half-duplex.
2500-full	Advertise 2500Mbps full-duplex.
add	Specifies the option as add.
asymm-pause-frame	Advertise use of asymmetric pause frames half-duplex.
none	Do not advertise anything during auto-negotiation
port <LINE>	Select a port for operation.
remove	Specifies the option as remove.

Default

None

Command Mode

Ethernet Interface Configuration

brouter

Configures brouter ports.

Syntax

- **brouter** [port <LINE>] vlan <1-4094> subnet <ip_address/mask> [routing enable]
- **no brouter** [port <LINE>] [routing enable]

Command Parameters

port <LINE>	Specifies the port to configure as a brouter port
routing enable	Enables Layer 3 routing on the brouter port
subnet A.B.C.D/ <0-32>	Specifies the IP address and subnet mask of the brouter. When creating a new brouter, this is the IP address and subnet mask assigned.
vlan <1-4094>	Specifies the VLAN ID of the brouter. When creating a new brouter port, this is the VLAN ID assigned to the brouter port.

Default

None

Command Mode

Ethernet Interface Configuration

clear arp-cache (on a port)

Clears the Layer 3 ARP cache.

Syntax

- `clear arp-cache`

Default

None

Command Mode

Ethernet Interface Configuration

clear eapol non-eap (on a port)

Clears NEAP authenticated clients.

Syntax

- `clear eapol non-eap [<LINE>] address <H.H.H>`

Command Parameters

<LINE>	Specifies an individual port or list of ports from which to clear authenticated NEAP clients.
address <H.H.H>	Specifies the MAC address of an authenticated NEAP client to clear from the port. If you enter a MAC address value of 00:00:00:00:00:00, all authenticated NEAP clients are cleared from the specified port.

Default

None

Command Mode

Ethernet Interface Configuration

clear ip dhcp-snooping binding (on a port)

Clears DHCP snooping bindings.

Syntax

- `clear ip dhcp-snooping binding {dynamic|static}`

Command Parameters

dynamic Clear DHCP snooping dynamic bindings

static Clear DHCP snooping static bindings

Default

None

Command Mode

Ethernet Interface Configuration

clear ip forward-protocol udp counters (on a port)

Clears UDP broadcast counters.

Syntax

- `clear ip forward-protocol udp counters <LINE>`

Command Parameters

<LINE> Clear counters for specific VLAN

Default

None

Command Mode

Ethernet Interface Configuration

clear ip igmp profile stats (on a port)

Clears IGMP profile statistics.

Syntax

- `clear ip igmp profile stats <1-65535>`

Command Parameters

<1-65535> Specifies the profile ID. If you do not include this variable in the command, statistics for all profiles are cleared.

Default

None

Command Mode

Ethernet Interface Configuration

clear ip ospf counters (on a port)

Clears OSPF statistics counters.

Syntax

• `clear ip ospf counters <1-4094>`

Command Parameters

<1-4094> Specifies the VLAN ID. Range is 1-4094. If no VLAN is specified, the command clears OSPF global counters.

Default

None

Command Mode

Ethernet Interface Configuration

clear ip verify source statistics (on a port)

Clears IP Source Guard statistics.

Syntax

• `clear ip verify source statistics interface [ethernet] <WORD>`

Command Parameters

<WORD>	Port list
interface Ethernet	Select interface

Default

None

Command Mode

Ethernet Interface Configuration

clear ip-blocking (on a port)

Clears the Layer 3 IP blocking state.

Syntax

- `clear ip-blocking`

Default

None

Command Mode

Ethernet Interface Configuration

clear ipv6 destinationcache (on a port)

Clear the IPv6 destination cache.

Syntax

- `clear ipv6 destinationcache`

Default

None

Command Mode

Ethernet Interface Configuration

clear ipv6 neighbor-cache (on a port)

Clears the IPv6 neighbor-cache.

Syntax

- `clear ipv6 neighbor-cache`

Default

None

Command Mode

Ethernet Interface Configuration

clear ipv6 statistics (on a port)

Clear IPv6 statistics.

Syntax

- `clear ipv6 statistics [all] [interface] [tcp] [udp] [ripng vlan <1-4094>]`

Command Parameters

all	Clear all IPv6 statistics
interface	Clear IPv6 interface statistics
ripng vlan <1-4094>	Clear RIPng statistics for specific vlan interface
tcp	Clear IPv6 TCP statistics
udp	Clear IPv6 UDP statistics

Default

None

Command Mode

Ethernet Interface Configuration

clear isis lsdb (on a port)

Clears LSP database and restarts the state machine.

Syntax

- `clear isis lsdb`

Default

None

Command Mode

Ethernet Interface Configuration

clear isis stats (on a port)

Clears ISIS statistics.

Syntax

- `clear isis stats {error-counters | packet-counters}`

Command Parameters

error-counters	Clear ISIS error counters
packet-counters	Clear ISIS packet counters

Default

None

Command Mode

Ethernet Interface Configuration

clear license (on a port)

Clears licenses.

Syntax

- `clear license`

Default

None

Command Mode

Ethernet Interface Configuration

clear logging (on a port)

Clears log messages (with no parameters, from DRAM only).

Syntax

- `clear logging {non-volatile <critical> <serious>|nv|volatile <critical> <informational> <serious>}`

Command Parameters

critical	Clear critical log messages

informational	Clear informational log messages
non-volatile	Clear log messages from NVRAM
nv	Clear log messages from NVRAM and DRAM
serious	Clear serious log messages
volatile	Clear log messages from DRAM

Default

None

Command Mode

Ethernet Interface Configuration

clear mac-address-table (on a port)

Flushes the MAC address table for a specific VLAN.

Syntax

- `clear mac-address-table [address <H.H.H>|dynamic|static] [interface {Ethernet |mlt <1-32>| vlan <1-4094>}]`
- `clear mac-address-table address <H.H.H>`
- `clear mac-address-table interface mlt <1-32>`

Command Parameters

<1-4094>	Vlan to be flushed out
address <H.H.H>	Flush a single MAC Address
dynamic	Flush only dynamically learned addresses
interface {Ethernet mlt <1-32> vlan 1-4094>}	Flush MAC Addresses of a specific interface
mlt <1-32>	Trunk to be flushed out
static	Flush only statically inserted addresses

Default

None

Command Mode

Ethernet Interface Configuration

clear sshc known-host

Clears the public key of a known host.

Syntax

```
• clear sshc known-host {<A.B.C.D> | <host_name> | <ipv6_address> | all}
```

Command Parameters

<A.B.C.D>	IP address
<host_name>	Remote host name
<ipv6_address>	Remote host IPv6 address
all	Clear all licenses

Default

None

Command Mode

Ethernet Interface Configuration

clear stack port-statistics (on a port)

Clears the stack port counters.

Syntax

```
• clear stack port-statistics unit <1-8>
```

Command Parameters

unit <1-8>	Specifies the unit in the stack

Default

None

Command Mode

Ethernet Interface Configuration

clear system last-exception (Ethernet Interface Configuration)

Clears last software exception information.

Syntax

- `clear system last-exception unit {<1-8>| all}`

Command Parameters

<1-8> Clear last software exception for a specified unit

all All units

Default

None

Command Mode

Ethernet Interface Configuration

clear-stats

Clears the port counter.

Syntax

- `clear-stats port <LINE> [mgmt]`

Command Parameters

mgmt Clear management port statistics

port <LINE> Selects a port to clear the port counter

Default

None

Command Mode

Ethernet Interface Configuration

ddi-logging

Sets logging of DDI (Digital Diagnostics Interface) events

Syntax

- `ddi-logging enable`
- `default ddi-logging`
- `no ddi-logging enable`

Command Parameters

enable Enables DDI events logging.

Default

None

Command Mode

Ethernet Interface Configuration

eapol (on a port)

Modifies EAPOL-based security parameters.

Syntax

- `eapol [port <portlist>] [init] [status {authorized|unauthorized|auto}] [traffic-control {in-out|in}] [re-authentication {enable|disable}] [re-authentication-period <1-604800>] [re-authenticate] [quiet-interval <0-65535>] [supplicant-timeout <1-65535>] [server-timeout <1-65535>] [max-request <1-10>]`

Command Parameters

init	Reinitiates EAP authentication
max-request <1-10>	Enter the number of times to retry sending packets to supplicant
port <LINE>	Specifies the ports to configure for EAPOL
quiet-interval <0-65535>	Enter the desired number of seconds between an authentication failure and the start of a new authentication attempt.
re-authenticate	Specifies an immediate reauthentication. NonEAP clients are not reauthenticated even if reauthentication is enabled on the port.
reauthentication enable disable	Enables or disables reauthentication for EAPOL clients
reauthentication-period <1-604800>	Enter the desired number of seconds between reauthentication attempts

server-timeout <1-65535>	Specifies a waiting period for response from the server. Enter the number of seconds to wait; range is 1 to 65535.
status {authorized unauthorized auto}	Specifies the EAP status of the port (authorized — port is always authorized; unauthorized — port is always unauthorized; auto — port authorization status depends on the result of the EAP authentication).
supplicant-timeout <1-65535>	Specifies a waiting period for response from supplicant for all EAP packets except EAP Request/Identity packets. Enter the number of seconds to wait.
traffic-control {in-out in}	Sets the level of traffic control (in-out — if EAP authentication fails, both ingressing and egressing traffic are blocked; in — if EAP authentication fails, only ingressing traffic is blocked).

Default

None

Command Mode

Ethernet Interface Configuration

eapol guest-vlan (on a port)

Sets guest-vlan.

Syntax

- `default eapol guest-vlan [port <LINE>] [enable] [vid]`
- `eapol guest-vlan [port <LINE>] {enable|vid {<1-4094>|global}}`
- `no eapol [port<LINE>] enable`

Command Parameters

enable	Enable guest-vlan
port <LINE>	Port number on which to enable EAPOL
vid {<1-4094> global}	Guest-vlan ID

Default

None

Command Mode

Ethernet Interface Configuration

eapol multihost (on a port)

Sets EAPOL multihost settings.

Syntax

- **default eapol multihost** [port <LINE>] [mac-max] [eap-mac-max] [non-eap-mac-max] [allow-non-eap-enable] [radius-non-eap-enable] [auto-non-eap-mhsa-enable] [non-eap-phone-enable] [use-radius assigned-vlan] [eap-packet-mode] [non-eap-use-radius-assigned-vlan] [mhsa-no-limit]
- **eapol multihost** [port <LINE>] [adac-non-eap-enable] [allow-non-eap-enable] [auto-non-eap-mhsa-enable] [eap-mac-max <1-32>] [eap-packet-mode {multicast | unicast}] [eap-protocol-enable] [mac-max <1-64>] [non-eap-mac-max <1-32>] [non-eap-phone-enable] [non-eap-use-radius-assigned-vlan] [radius-non-eap-enable] [use-radius-assigned-vlan] [mhsa-no-limit]
- **no eapol multihost** [port <LINE>] [allow-non-eap-enable] [radius-non-eap-enable] [auto-non-eap-mhsa-enable] [non-eap-phone-enable] [use-radius-assigned-vlan] [non-eap-use-radius-assigned-vlan] [mhsa-no-limit] [adac-non-eap-enable] [eap-protocol-enable]

Command Parameters

adac-non-eap-enable	Allow authentication of Non-EAP Phones using ADAC
allow-non-eap-enable	Control of non-EAP clients (MAC addresses)
auto-non-eap-mhsa-enable	Allow auto-auth of non-EAP clients
eap-mac-max <1-32>	Maximum number of EAP-authentication MAC addresses allowed
eap-packet-mode {multicast unicast}	Send initial EAP requests multicast or unicast
eap-protocol-enable	Enable EAP protocol on port
mac-max <1-64>	Maximum clients per port
mhsa-no-limit	Allow an unlimited numbers of auto-learned NEAP clients on port.
non-eap-mac-max <1-32>	Maximum number of non-EAP-authentication MAC addresses allowed
non-eap-phone-enable	Allow non-eap phone clients
non-eap-use-radius-assigned-vlan	Allow the use of VLAN IDs assigned by RADIUS for non-EAP clients

port <LINE>	Port number on which to apply EAPOL settings
radius-non-eap-enable	Enable RADIUS authentication of non-eap clients
use-radius-assigned-vlan	Allow the use of VLAN IDs assigned by RADIUS

Default

None

Command Mode

Ethernet Interface Configuration

eapol multihost fail-open-vlan (on a port)

Sets fail-open-vlan.

Syntax

- `default eapol multihost fail-open-vlan [port <LINE>] [enable] [vid] [ubp]`
- `eapol multihost fail-open-vlan [port <LINE>] [enable] [vid {<1-4094> | global | port-pvid}] [ubp <WORD>]`
- `no eapol multihost fail-open-vlan [port <LINE>] [enable] [ubp]`

Command Parameters

enable	Enable fail-open-vlan
global	Global fail-open-vlan ID
port <LINE>	Port number on which to enable fail-open-vlan
port-pvid	Enable fail-open-vlan port-pvid mode
ubp	User Base Policy when FOV is active
vid <1-4094>	Fail-open-vlan ID

Default

None

Command Mode

Ethernet Interface Configuration

eapol multihost non-eap-mac

Sets the maximum number of non-EAP-authentication MAC addresses allowed.

Syntax

- `default eapol multihost non-eap-mac [port <portlist>] [ default-all ] <H.H.H>`
- `eapol multihost non-eap-mac [port <portlist>] <H.H.H>`
- `no eapol multihost non-eap-mac [port <portlist>] [ delete-all ] <H.H.H>`

Command Parameters

- <H.H.H>** The MAC address of the allowed non EAPOL host
- default-all** Default all local NEAP clients
- delete-all** Delete all local NEAP clients
- port <portlist>** The list of ports on which you want to allow the specified non EAPOL hosts

Default

None

Command Mode

Ethernet Interface Configuration

eapol multivlan(on a port)

Sets EAPOL MHMV on ports.

Syntax

- `eapol multivlan auto-config port <LINE>`

Command Parameters

- auto-config** Apply auto config MHMV settings on ports
- port <LINE>** Apply auto config on ports

Default

None

Command Mode

Ethernet Interface Configuration

eapol radius-dynamic-server enable

Enables 802.1X dynamic authorization extension (RFC 3576) on an EAP port.

Syntax

- `default eapol [port <LINE>] radius-dynamic-server`
- `eapol [port <LINE>] radius-dynamic-server enable`
- `no eapol port <LINE> radius-dynamic-server enable`

Command Parameters

<LINE> Indicates an individual port or list of ports

Default

None

Command Mode

Ethernet Interface Configuration

end (DHCP Guard Configuration)

Exits from configure mode.

Syntax

- `end`

Default

None

Command Mode

Ethernet Interface Configuration

end (on a port)

Exits from configure mode.

Syntax

- `end`

Default

None

Command Mode

Ethernet Interface Configuration

energy-saver (on a port)

Configures per-port energy saver settings.

Syntax

- `default energy-saver [enable] [port <portlist> enable]`
- `energy-saver [enable] [port <portlist> enable]`
- `no energy-saver [enable] [port <portlist> enable]`

Command Parameters

enable	Enable energy saving
port <LINE>	Specify list of ports

Default

None

Command Mode

Ethernet Interface Configuration

exit (on a port)

Exits from interface configuration mode.

Syntax

- `exit`

Default

None

Command Mode

Ethernet Interface Configuration

flowcontrol

Configures flow control mode of a port.

Syntax

- `default flowcontrol [port <portlist>]`
- `flowcontrol [port <LINE>] {asymmetric | symmetric | auto | disable}`
- `no flowcontrol [port <portlist>]`

Command Parameters

- auto** Set the port to automatically determine the flow control mode (default).
- disable** Disable flow control on the port
- port <LINE>** Specify the port numbers to configure for flow control
- symmetric** Set the mode for flow control. PAUSE frames can flow in either direction.

Default

None

Command Mode

Ethernet Interface Configuration

ip arp-inspection (on a port)

Specifies whether a particular port or range of ports is trusted (ARP traffic is not subject to dynamic ARP inspection) or untrusted (ARP traffic is subject to dynamic ARP inspection).

Syntax

- `default ip arp-inspection port <LINE>`
- `ip arp-inspection [port <LINE>] {trusted|untrusted}`

Command Parameters

- port <LINE>** Specify list of ports
- trusted** ARP traffic is not subject to dynamic ARP inspection
- untrusted** ARP traffic is subject to dynamic ARP inspection

Default

untrusted

Command Mode

Ethernet Interface Configuration

ip dhcp-relay (on a port)

Assigns an Option 82 for DHCP Relay subscriber Id to a port.

Syntax

- `default ip dhcp-relay option82-subscriber-id`
- `ip dhcp-relay [port <LINE>] option82-subscriber-id <WORD>`
- `no ip dhcp-relay option82-subscriber-id`

Command Parameters

option82-subscriber-id <WORD> Specifies the DHCP Option 82 subscriber Id for the port. Value is a character string between 0 and 64 characters.

port <LINE> Specify list of ports

Default

None

Command Mode

Ethernet Interface Configuration

ip dhcp-snooping (on a port)

Configures DHCP snooping port settings.

Syntax

- `default ip dhcp-snooping [port <portlist>] <trusted | untrusted> option82-subscriber-id <WORD>`
- `ip dhcp-snooping [port <portlist>] <trusted | untrusted> option82-subscriber-id <WORD>`
- `no ip dhcp-snooping [port <portlist>] <trusted | untrusted> option82-subscriber-id <WORD>`

Command Parameters

option82-subscriber-id WORD Specifies the DHCP Option 82 subscriber Id for the port. Value is a character string between 0 and 64 characters.

port <portlist> Specifies a port or group of ports

trusted When selected, the port or ports automatically forward DHCP replies.

untrusted When selected, the port or ports filter DHCP replies through DHCP snooping.

Default

None

Command Mode

Ethernet Interface Configuration

ip igmp filter

Adds IGMP filter profile to interface.

Syntax

- `ip igmp filter <1-65535>`
- `no ip igmp filter`

Command Parameters

<1-65535> Add IGMP filter profile to interface

Default

None

Command Mode

Ethernet Interface Configuration

ip ipfix (on a port)

Enables IPFIX for one or more ports.

Syntax

- `default ip ipfix [enable] [port <LINE> enable]`
- `ip ipfix [enable] [port <LINE> enable]`
- `no ip ipfix [enable] [port <LINE> enable]`

Command Parameters

enable Enable IPFIX for one or more ports

port <LINE> Specifies an individual port or list of ports

Default

None

Command Mode

Ethernet Interface Configuration

ip ospf (on a port)

Configures OSPF for an interface.

Syntax

- `default ip ospf [ port LINE ] {[enable] [advertise-when-down] [area] [authentication-key] [authentication-type] [network] [hello-interval] [dead-interval] [retransmit-interval] [transit-delay] [cost] [mtu-ignore enable] [priority]}`
- `ip ospf [port LINE] {[enable] [advertise-when-down enable] [area {A.B.C.D}] [authentication-key <WORD>] [authentication-type {message-digest | none | simple}] [primary-md5-key <1-255>] [network <broadcast | passive>] [hello-interval <1-65535>] [dead-interval <1-2147483647>] [retransmit-interval <1-3600>] [transit-delay <1-3600>] [cost <1-65535>] [mtu-ignore enable] [priority <0-255>] }`
- `no ip ospf [port <LINE>] {[enable] [advertise-when-down enable] [area {A.B.C.D}] [authentication-key <WORD>] [authentication-type]}`

Command Parameters

advertise-when-down enable	Enables the advertisement of the OSPF interface, and even if the port or VLAN for the routing interface subsequently goes down, the switch continues to advertise the route.
area {A.B.C.D}	Specifies the unique ID of the area to which the interface connects. An area ID of 0.0.0.0 indicates the OSPF area backbone and is created automatically by the switch.
authentication-key <WORD>	Configure interface authentication password
authentication-type {message-digest none simple}	Select interface authentication type
cost <1-65535>	Specifies the cost assigned to the interface. This is an integer value between 1 and 65535.
dead-interval <1-2147483647>	Specifies a dead interval for the interface. This is the interval of time that a neighbor waits for a Hello packet from this interface before the neighbor declares it down. This is an integer value between 1 and 2147483647.

enable	Enable OSPF on an interface
hello-interval <1-65535>	Specifies the amount of time between transmission of hello packets from this interface. This is an integer value between 1 and 65535.
mtu-ignore enable	Instructs the interface to ignore the packet MTU size specified in Database Descriptors.
network {broadcast passive}	Defines the type of OSPF interface this interface is.
port <LINE>	Select port(s) for operation
primary-md5-key <1-255>	Select MD5 key used for transmit
priority <0-255>	Assigns a priority to the interface for the purposes of Designated Router election. This is an integer value between 0 and 255.
retransmit-interval <1-3600>	Defines the number of seconds between link state advertisement retransmissions for adjacencies belonging to this interface. This is an integer value between 1 and 3600.
transit-delay <1-3600>	Defines the transit delay for this OSPF interface in seconds. The transit delay is the estimated number of seconds it takes to transmit a link-state update over the interface. This is an integer value between 1 and 3600.

Default

None

Command Mode

Ethernet Interface Configuration

ip ospf message-digest-key(on a port)

Configure MD5 key for interface.

Syntax

- **default ip ospf message-digest-key <1-255>**
- **ip ospf message-digest-key <1-255> md5 <WORD>**
- **no ip ospf message-digest-key <1-255>**

Command Parameters

- <1-255>** Specifies an index value for the MD5 key being configured. This is an integer value between 1 and 255.
- md5 <WORD>** Specifies the value of the MD5 key. This is a string value of up to 16 characters in length.

Default

None

Command Mode

Ethernet Interface Configuration

ip rip (for a port)

Configures RIP parameters on an interface.

Syntax

- [default] [no] ip rip in-policy <rmap_name>
- [default] [no] ip rip out-policy <rmap_name>
- default ip rip [port <LINE>] [advertise-when-down enable] [auto-aggregation enable] [cost <cost>] [default-listen enable] [default-supply enable] [enable] [holddown <holddown> | <global>] [listen enable] [poison enable] [proxy-announce enable] [receive version {rip1 | rip1orrip2 | rip 2}] [send version { notsend |rip1 | rip1comp | rip 2}] [supply enable] [timeout {<timeout> | global}] [triggered enable]
- ip rip [port <LINE>] [advertise-when-down enable] [auto-aggregation enable] [cost <cost>] [default-listen enable] [default-supply enable] [enable] [holddown <holddown> | <global>] [listen enable] [poison enable] [proxy-announce enable] [receive version {rip1 | rip1orrip2 | rip 2}] [send version { notsend |rip1 | rip1comp | rip 2}] [supply enable] [timeout {<timeout> | global}] [triggered enable]
- no ip rip [port <LINE>] [advertise-when-down enable] [auto-aggregation enable] [cost <cost>] [default-listen enable] [default-supply enable] [enable] [holddown <holddown> | <global>] [listen enable] [poison enable] [proxy-announce enable] [receive version {rip1 | rip1orrip2 | rip 2}] [send version { notsend |rip1 | rip1comp | rip 2}] [supply enable] [timeout {<timeout> | global}] [triggered enable]

Command Parameters

- advertise-when-down enable** Enables RIP advertisements for an interface even when the link to the network fails. The router continues to advertise the subnet even if that particular network is no longer connected (no link in the enabled VLAN). This feature does not advertise the route until the VLAN is first enabled.

After the VLAN is enabled, the route is advertised even when the link fails. By default, advertise when down functionality is disabled.

auto-aggregation enable	Enables auto aggregation on the RIP interface. After you enable auto aggregation, the Ethernet Routing Switch automatically aggregates routes to their natural net mask when they are advertised on an interface in a network of a different class. Automatic route aggregation can be enabled only in RIP2 mode or RIP1 compatibility mode. By default, auto aggregation is disabled.
cost <cost>	Specifies the RIP cost (metric) for this interface in a range from 1 to 15. The default cost is 1.
default-listen enable	Enables the interface to accept default routes learned through RIP updates. The default setting is disabled.
default-supply enable	Enables the interface to send default route information in RIP updates. This setting takes effect only if a default route exists in the routing table. The default setting is disabled.
enable	Enables RIP on the interface.
holddown {<holddown> <global>}	Specifies the interface holddown timer, which is the length of time (in seconds) that RIP maintains a route in the garbage list after determining that it is unreachable. <holddown> — overrides the global parameter and does not change if the global parameter is modified. Range is 0–360 seconds; <global> — default global holddown parameter (120 seconds).
in-policy <WORD>	Add in-policy on this interface.
listen enable	Enables this interface to listen for RIP advertisements. The default value is enabled.
out-policy <WORD>	Add out-policy on this interface.
poison enable	Specifies whether RIP routes on the interface learned from a neighbor are advertised back to the neighbor. If poison reverse is disabled, split horizon is invoked and IP routes learned from an immediate neighbor are not advertised back to the neighbor. If poison reverse is enabled, the RIP updates sent to a neighbor from which a route is learned are "poisoned" with a metric of 16. The receiving neighbor ignores this route because the metric 16 indicates infinite hops in the network. By default, poison reverse is disabled.
port <LINE>	Select ports.
proxy-announce enable	Enables proxy announcements on a RIP interface. When proxy announcements are enabled, the source of a route and its next hop are treated as the same when processing received updates. So, instead of the

	advertising router being used as the source, the next hop is. Proxy announcements are disabled by default.
receive version {rip1 rip1orrip2 rip 2}	Specifies the RIP version received on this interface. Default is rip1orrip2.
send version {notsend rip1 rip1comp rip 2}	Specifies the RIP version sent on an interface. Default is rip1compatible
supply enable	Enables RIP route advertisements on this interface. The default value is enabled.
timeout <timeout> <global>	Specifies the RIP timeout value on this interface. If a RIP interface does not receive an update from another RIP router within the configured timeout period, it moves the routes advertised by the nonupdating router to the garbage list. The timeout interval must be greater than the update timer. <timeout> — sets the interface timeout. Value ranges from 15 to 259200 seconds. <global> — sets the timeout to the global default (180 seconds). The interface timer setting overrides the global parameter and does not change if the global parameter is changed.
triggered enable	Enables automatic triggered updates on this RIP interface. Default is disabled.

Default

None

Command Mode

Ethernet Interface Configuration

ip verify source

Enables IP Source Guard to add a higher level of security to the desired port by preventing IP spoofing.

Syntax

- default ip verify source [interface Ethernet [<WORD>]]
- ip verify source [interface Ethernet <WORD>]
- no ip verify source [interface Ethernet [<WORD>]]

Command Parameters

<WORD> Port list

interface Ethernet Select Ethernet interfaces

Default

None

Command Mode

Ethernet Interface Configuration

ipv6 dhcp guard attach-policy

Attaches dhcp guard policy on interface

Syntax

- `ipv6 dhcp guard attach-policy <WORD>`
- `no ipv6 dhcp guard attach-policy <WORD>`

Command Parameters

<WORD> Specifies the policy name.

Default

None

Command Mode

Ethernet Interface Configuration

ipv6 nd inspection dynamic-learning enable

Enable dynamic learning of a neighbor source address.

Syntax

- `default ipv6 nd inspection dynamic-learning enable`
- `ipv6 nd inspection dynamic-learning enable`
- `no ipv6 nd inspection dynamic-learning enable`

Default

None

Command Mode

Ethernet Interface Configuration

ipv6 nd raguard attach-policy

Apply the router advertisement (RA) guard on a particular interface.

Syntax

- `default ipv6 nd raguard attach-policy <WORD>`
- `ipv6 nd raguard attach-policy <WORD>`
- `no ipv6 nd raguard attach-policy <WORD>`

Command Parameters

<WORD> Specifies the policy.

Default

The default is disabled.

Command Mode

Ethernet Interface Configuration

ipv6 source-guard

Enables Source Guard on interface.

Syntax

- `default ipv6 source-guard enable | max-allowed-addr`
- `ipv6 source-guard {enable | max-allowed-addr <2-10> | overflow-count clear | drop-count clear}`
- `no ipv6 source-guard enable`

Command Parameters

clear	Clear the source guard overflow counter
drop-count clear	Clears the source guard drop counter
enable	Enable Source Guard on interface
max-allowed-addr <2-10>	Max allowed ipv6 address
overflow-count	Clear overflow counter

Default

None

Command Mode

Ethernet Interface Configuration

isis

Creates an IS-IS circuit and interface on the selected ports.

Syntax

- `default isis`
- `default isis enable`
- `isis enable`
- `no isis`
- `no isis enable`

Command Parameters

enable Enables the IS-IS circuit/interface on the selected ports.

Default

None

Command Mode

Ethernet Interface Configuration

isis hello-auth type

Specifies the authentication type used for IS-IS hello packets on the interface.

Syntax

- `default isis hello-auth`
- `isis hello-auth type {none|simple|hmac-md5}`
- `isis hello-auth type hmac-md5 key <WORD> [key-id <1-255>]`
- `isis hello-auth type simple key <WORD> [key-id <1-255>]`
- `no isis hello-auth`

Command Parameters

hmac-md5 If selected, you must also specify a key value but the key-id is optional. MD5 authentication creates an encoded checksum in the transmitted packet. The receiving router uses an authentication key (password) to verify the MD5 checksum of the packet. There is an optional key ID.

key <WORD> Authentication key

key-id Key value (1-16 length)

none	Specifies the authentication type used for IS-IS hello packets on the interface
simple	If selected, you must also specify a key value but the key id is optional. Simple password authentication uses a text password in the transmitted packet. The receiving router uses an authentication key (password) to verify the packet.

Default

None

Command Mode

Ethernet Interface Configuration

isis l1-dr-priority

Configures the level 1 IS-IS designated router priority to the specified value. This parameter is not used for SPBM because SPBM only runs on point-to-point interfaces. This parameter is for designated router election on a broadcast LAN segment, which is not supported.

Syntax

- **default isis l1-dr-priority**
- **isis l1-dr-priority <0-127>**
- **no isis l1-dr-priority**

Command Parameters

<0-127> Configures the level 1 IS-IS designated router priority to the specified value

Default

64

Command Mode

Ethernet Interface Configuration

isis l1-hello-interval

Configures the level 1 hello interval.

Syntax

- **default isis l1-hello-interval**
- **isis l1-hello-interval <1-600>**
- **no isis l1-hello-interval**

Command Parameters

<1-600> Configures the level 1 hello interval

Default

9

Command Mode

Ethernet Interface Configuration

isis l1-hello-multiplier

Configures the level 1 hello multiplier.

Syntax

- `default isis l1-hello-multiplier`
- `isis l1-hello-multiplier <2-100>`
- `no isis l1-hello-multiplier`

Command Parameters

<2-100> Level-1 hello multiplier value

Default

3

Command Mode

Ethernet Interface Configuration

isis spbm

SPBM commands

Syntax

- `default isis spbm <1-100> { interface-type | l1-metric }`
- `isis spbm <1-100> {interface-type ptpt | l1-metric <1-16777215>}`
- `no isis spbm <1-100> [ interface-type | l1-metric ]`

Command Parameters

l1-metric <1-16777215> Configures the SPBM instance l1-metric on the IS-IS interface located on the specified port or MLT. The default value is 10.

<1-100> SPBM instance

interface-type ptpt Configures the SPBM instance interfacetype on the IS-IS interface located on the specified port or MLT.

Default

None

Command Mode

Ethernet Interface Configuration

lacp aggregation

Enables the port aggregation mode.

Syntax

- `default lacp aggregation`
- `lacp aggregation [port <portList>] enable`
- `no lacp aggregation [port <portList>] enable`

Command Parameters

enable Enable port aggregation mode

port <portList> Specify port list

Default

None

Command Mode

Ethernet Interface Configuration

lacp clear-stats

Clears LACP statistics.

Syntax

- `lacp clear-stats [port <WORD>]`

Command Parameters

port <WORD> Specify port list

Default

none

Command Mode

Ethernet Interface Configuration

lacp key (on a port)

Configures the administrative LACP key for a set of ports.

Syntax

- `default lacp key [port <portList>]`
- `lacp key [port <portList>] <1-4095>`

Command Parameters

- <1-4095>** The LACP key to use
- <portList>** The ports to configure the LACP key for

Default

None

Command Mode

Ethernet Interface Configuration

lacp mode

Configures the LACP mode of operations for a set of ports.

Syntax

- `default lacp mode [port <portList>]`
- `lacp mode [port <portList>] {active | passive | off}`

Command Parameters

- <portList>** The ports for which the LACP mode is to be set
- active** The port will participate as an active Link Aggregation port. Ports in active mode send LACPDU's periodically to the other end to negotiate for link aggregation.
- off** The port does not participate in Link Aggregation

passive The port will participate as a passive Link Aggregation port. Ports in passive mode send LACPDUs only when the configuration is changed or when its link partner communicates first.

Default

None

Command Mode

Ethernet Interface Configuration

lacp priority

Configures the per-port LACP priority for a set of ports.

Syntax

- `default lacp priority [port <portList>]`
- `lacp priority [port <portList>] <0-65535>`

Command Parameters

<0-65535> The priority value to assign

port <portList> The ports for which to configure LACP priority

Default

None

Command Mode

Ethernet Interface Configuration

lacp timeout-time

Configures the LACP periodic transmission timeout interval for a set of ports.

Syntax

- `default lacp timeout-time [port <portList>]`
- `lacp timeout-time [port <portList>] {long | short}`

Command Parameters

{long | short} Specify the long or short timeout interval

port <portList> The ports for which to configure the timeout interval

Default

None

Command Mode

Ethernet Interface Configuration

lldp config-notification(on a port)

Enable notification on configuration change.

Syntax

- `default lldp config-notification`
- `lldp config-notification`
- `no lldp config-notification`

Default

None

Command Mode

Ethernet Interface Configuration

lldp location-identification (on a port)

Location Configuration Information (LCI)

Syntax

- `default lldp location-identification [civic-address] [coordinate-base] [ecs-elin]`
- `lldp location-identification [port <LINE>] [civic-address country-code <WORD> { [additional-code <WORD>] [additional-information <WORD>] [apartment <WORD>] [block <WORD>] [building <WORD>] [city <WORD>] [city-district <WORD>] [county <WORD>] [floor <WORD>] [house-number <WORD>] [house-number-suffix <WORD>] [landmark <WORD>] [leading-street-direction <WORD>] [name <WORD>] [p.o.box <WORD>] [place-type <WORD>] [postal-community-name <WORD>] [postal/zip-code <WORD>] [room-number <WORD>] [state <WORD>] [street <WORD>] [street-suffix <WORD>] [trailing-street-suffix <WORD>]}] [coordinate-base {altitude <LINE> {floors | meters} | {datum {NAD83/MLLW | NAD83/NAVD88 | WGS84}} | latitude <LINE> {north | south}} | {longitude <LINE> {east | west}}] [ecs-elin <LINE>]`

```
• no lldp location-identification [port <LINE>] [civic-address]
  [coordinate-base] [ecs-elin]
```

Command Parameters

additional-code <WORD>	Additional code
additional-information <WORD>	Additional location information
altitude <LINE> {floors meters}	Altitude
apartment <WORD>	Unit (apartment, suite)
block <WORD>	Neighborhood, block
building <WORD>	Building (structure)
city <WORD>	City, township, shi (JP)
city-district <WORD>	City division, city district, ward
coordinate-base	Coordinate-based
country-code <WORD>	Country code
county <WORD>	County, parish, gun (JP), district(IN)
datum {NAD83/MLLW NAD83/NAVD88 WGS84}	Reference datum
ecs-elin <LINE>	Emergency Call Service ELIN
floor <WORD>	Floor
house-number <WORD>	House number
house-number-suffix <WORD>	House number suffix
landmark <WORD>	Landmark or vanity address
latitude <LINE> {north south}	Latitude
leading-street-direction <WORD>	Leading street direction
longitude <LINE> {east west}	Longitude
name <WORD>	Residence and office occupant
p.o.box <WORD>	Post office box
place-type <WORD>	Office

port <LINE>	Port list
postal/zip-code <WORD>	Postal/Zip code
postal-community-name <WORD>	Postal community name
room-number <WORD>	Room number
state <WORD>	National subdivisions: (state, canton, region)
street <WORD>	Street
street-suffix <WORD>	Street suffix
trailing-street-suffix <WORD>	Trailing street suffix

Default

None

Command Mode

Ethernet Interface Configuration

lldp med-network-policies (on a port)

Configures LLDP Media Endpoint Devices (MED) policies for switch ports.

Syntax

- **default lldp med-network-policies [port <portList>] {voice|voice-signaling}**
- **lldp med-network-policies [port <portList>] {voice|voice-signaling} [dscp <0-63>] [priority <0-7>] [tagging {tagged|untagged}] [vlan-id <0-4094>]**
- **no lldp med-network-policies [port <portList>] {voice|voice signaling}**

Command Parameters

dscp <0-63>	Specifies the value of the Differentiated Service Code Point (DSCP) as defined in IETF RFC 2474 and RFC 2475 that is associated with the selected switch port or ports. Values range from 0–63. The default value is 46.
port <portlist>	Specifies the port or ports on which to configure LLDP MED policies
priority <0-7>	Specifies the value of the 802.1p priority that applies to the selected switch port or ports. Values range from 0–7. The default value is 6

tagging {tagged untagged}	Specifies the type of VLAN tagging to apply on the selected switch port or ports. tagged—uses a tagged VLAN. untagged—uses an untagged VLAN or does not support port-based VLANs. If you select untagged, the system ignores the VLAN ID and priority values, and recognizes only the DSCP value.
vlan-id <0-4094>	Specifies the VLAN identifier for the selected port or ports. Values range from 0–4094 (0 is for priority tagged frames). If you select priority tagged frames, the system recognizes only the 802.1p priority level and uses a value of 0 for the VLAN ID of the ingress port.
voice	Specifies voice network policy. The default value is 46.
voice-signaling	Specifies voice signaling network policy

Default

None

Command Mode

Ethernet Interface Configuration

lldp port (on a port)

Port list

Syntax

- `default lldp port <LINE> [status] [config-notification] [vendor-specific {dot1q-framing | poe-conservation-request-level}]`
- `lldp port <LINE> [status {rxOnly | txAndRx | txOnly}] [config-notification] [vendor-specific {dot1q-framing {auto | tagged | untagged} | {poe-conservation-request-level <0-255>}}]`
- `no lldp port <LINE> status config-notification`

Command Parameters

config-notification	Enable notification on configuration change
dot1q-framing {auto tagged untagged}	802.1Q framing tagging-mode
poe-conservation-request-level<0-255>	PoE conservation request level
status {rxOnly txAndRx txOnly}	Set 802.1ab port(s) admin status
vendor-specific	Configure 802.1ab vendor-specific settings

Default

None

Command Mode

Ethernet Interface Configuration

lldp status (on a port)

Set 802.1ab port(s) admin status

Syntax

- `default lldp status config-notification`
- `lldp status {rxOnly | txAndRx | txOnly} config-notification`
- `no lldp status config-notification`

Command Parameters

config-notification	Enable notification on configuration change
rxOnly	Enable receive only
txAndRx	Enable transmit and receive
txOnly	Enable transmit only

Default

None

Command Mode

Ethernet Interface Configuration

lldp tx-tlv (on a port)

Sets the optional Management TLVs to be included in the transmitted LLDPDUs.

Syntax

- `default lldp tx-tlv [port <LINE>] [dot1 {port-protocol-vlan-id <LINE> | port-vlan-id | protocol-identity [EAP] [LLDP] [STP] [vlan-name <LINE>] | [vlan-name <LINE>] } [dot3 [link-aggregation] [mac-phy-config-status] [maximum-frame-size] [mdi-power-support]] [local-mgmt-addr [port-desc] [sys-cap] [sys-desc] [sys-name]] [med [extendedPSE] [inventory] [location] [med-capabilities] [network-policy]] [port-desc] [sys-cap] [sys-desc] [sys-name] [vendor-specific {[call-server] [dot1q-framing] [file-server] [poe-conservation]]]`
- `lldp tx-tlv [port <LINE>] [dot1 {port-protocol-vlan-id <LINE> | port-vlan-id <LINE> | protocol-identity [EAP] [LLDP] [STP] [vlan-name`

```

<LINE>] | [vlan-name <LINE>] ] [dot3 [link-aggregation] [mac-phy-
config-status] [maximum-frame-size] [mdi-power-support]] [local-mgmt-
addr [port-desc] [sys-cap] [sys-desc] [sys-name]] [ med [extendedPSE]
[inventory] [location] [med-capabilities] [network-policy]] [port-
desc] [sys-cap] [sys-desc] [sys-name] [vendor-specific {[call-server]
[dot1q-framing][file-server] [poe-conservation]]

• no lldp tx-tlv [port <LINE>] [dot1 {port-protocol-vlan-id <LINE> |
port-vlan-id | protocol-identity [EAP] [LLDP] [STP] [vlan-name <LINE>]
| [vlan-name <LINE>] ] [dot3 [link-aggregation] [mac-phy-config-
status] [maximum-frame-size] [mdi-power-support]] [local-mgmt-addr
[port-desc] [sys-cap] [sys-desc] [sys-name]] [ med [extendedPSE]
[inventory] [location] [med-capabilities] [network-policy]] [port-
desc] [sys-cap] [sys-desc] [sys-name] [vendor-specific {[call-server]
[dot1q-framing][file-server] [poe-conservation]]

```

Command Parameters

call-server	Call Server TLV
dot1	Specifies IEEE 802.1 organizationally specific TLVs.
dot3	Specifies IEEE 802.3 organizationally specific TLVs.
dotq1-framing	Specifies the Dot1q framing TLV.
extendedPSE	Extended PSE TLV, the transmission of this TLV is enabled by default only on POE port switches
file-server	Specifies the file server TLV.
inventory	Inventory TLVs This TLV is enabled by default
link-aggregation	The link aggregation TLV
local-mgmt-addr	The local management address TLV. This TLV is enabled by default.
location	Location Identification TLV This TLV is enabled by default
mac-phy-config-status	The MAC/Phy configuration or status TLV
maximum-frame-size	Maximum Frame Size TLV
mdi-power-support	Power via MDI TLV is sent only on ports where transmission is enabled. The power via MDI TLV, transmission of this TLV is enabled by default on all POE ports. The transmission can be enabled only on PoE ports
med	Specifies Media Endpoint Devices (MED) specific TLVs.

med-capabilities	MED Capabilities TLV (MED TLVs are transmitted only if MED Capabilities TLVs are transmitted). This TLV is enabled by default.
network-policy	Network Policy TLV This TLV is enabled by default
poe-conservation	Specifies the Power over Ethernet (POE) conservation TLV.
port <LINE>	Specifies a port or list of ports
port-desc	The port description TLV This TLV is enabled by default. This TLV is enabled by default.
port-protocol-vlan-id <LINE>	The port and protocol VLAN ID TLV
port-vlan-id <LINE>	The port VLAN ID TLV
protocol-identity {[EAP] [LLDP] [STP]}	Protocol Identity TLV
sys-cap	The system capabilities TLV
sys-desc	The system description TLV. This TLV is enabled by default.
sys-name	The system name TLV. This TLV is enabled by default.
vendor-specific	Vendor-specific TLVs
vlan-name <LINE>	The VLAN name TLV

Default

None

Command Mode

Ethernet Interface Configuration

lldp vendor-specific (on a port)

Configures 802.1ab vendor-specific settings.

Syntax

- **default lldp vendor-specific {dot1q-framing | poe-conservation-request-level}**
- **lldp vendor-specific {dot1q-framing {auto | tagged | untagged} | {poe-conservation-request-level <0-255>}}**

Command Parameters

**dot1q-framing {auto |
untagged | tagged}**

Enables the Layer 2 priority tagging TLV transmit flag.

**poe-conservation-
request-level <0-255>**

Specifies the power conservation level to request for a vendor specific PD. Values range from 0 to 255. With the default value of 0, the switch does not request a power conservation level for an IP phone connected to the port.

Default

None

Command Mode

Ethernet Interface Configuration

macsec confidentiality-offset (on a port)

Configures Encryption Offset on the port

Syntax

- **macsec confidentiality-offset <30|50>**
- **no macsec confidentiality-offset**

Command Parameters

<30|50> Specifies the encryption offset to 30 or 50 bytes from the Sec Tag.

Default

None

Command Mode

Ethernet Interface Configuration

macsec connectivity-association (on a port)

Associates a connectivity association to a port.

Syntax

- **macsec connectivity-association WORD<5-15>**

Command Parameters

WORD<5-15> Specifies a connectivity-association name. It is a 5 to 15 character alphanumeric string.

Default

None

Command Mode

Ethernet Interface Configuration

macsec enable (Ethernet Interface Configuration)

Enables macsec on a port.

Syntax

- `macsec enable`
- `no macsec enable`

Default

Disabled

Command Mode

Ethernet Interface Configuration

macsec encryption enable (on a port)

Enables macsec encryption on a port.

Syntax

- `macsec encryption enable`
- `no macsec encryption enable`

Default

Disabled

Command Mode

Ethernet Interface Configuration

macsec replay-protect enable (on a port)

Prevents the macsec port from replay-attacks

Syntax

- `macsec replay-protect enable window-size <5-500>`

Command Parameters

window-size<5-500> Sets the window size value.

Default

Disabled

Command Mode

Ethernet Interface Configuration

mac-security (Ethernet Interface Configuration)

Enables /disables MAC-based security for individual port.

Syntax

- `default mac-security auto-learning [port <portlist>] [enable] [max-
 addrs]`
- `default mac-security [port <portlist>] lock-out`
- `mac-security [port <portlist>] {disable|enable}`
- `mac-security auto-learning [port <portlist>] {disable | enable | max-
 addrs <1-25>}`
- `no mac-security [port <portlist>] [learning|lock-out]`
- `no mac-security auto-learning [port <portlist>]`

Command Parameters

auto-learning	Configure MAC Auto-Learning.
disable	Disable MAC security for port(s)
enable	Enable MAC security for port(s)
learning	Enable MAC security address learning for port(s)
lock-out	Lock out ports from mac security
max-addrs	Number of auto-learned entries

port <portlist> Specifies a port or list of ports

Default

None

Command Mode

Ethernet Interface Configuration

name (Ethernet Interface Configuration)

Sets the names of ports.

Syntax

- `default name [port <LINE>]`
- `name [port <LINE>] <LINE>`
- `no name [ port <LINE>]`

Command Parameters

<LINE> New port name

port <LINE> Port number(s) whose names are to be changed

Default

None

Command Mode

Ethernet Interface Configuration

poe poe-limit (for PoE units)

Sets the power limit for channels.

Syntax

- `poe poe-limit [port <portlist>] <3-16>`

Command Parameters

<3-16> Power limit in watt

port <portlist> Select port for operation

Default

None

Command Mode

Ethernet Interface Configuration

poe poe-limit (for PoE+ units)

Sets the power limit for channels.

Syntax

• `poe poe-limit [port <portlist>] <3-32>`

Command Parameters

<3-32> Power limit in watt

port <portlist> Select port for operation

Default

None

Command Mode

Ethernet Interface Configuration

poe poe-priority

Sets the port power priority.

Syntax

• `poe poe-priority [port <portlist>] {critical | high | low}`

Command Parameters

{low | high | critical} The PoE priority for the port

port <portlist> The ports to set priority for

Default

None

Command Mode

Ethernet Interface Configuration

poe poe-shutdown

Disables PoE to a port.

Syntax

- `no poe-shutdown [port <portlist>]`
- `poe poe-shutdown [port <portlist>]`

Command Parameters

port <portlist> List of ports

Default

None

Command Mode

Ethernet Interface Configuration

qos if-assign (Ethernet Interface Configuration)

Adds ports to an interface group.

Syntax

- `no qos if-assign [port <portlist>] name [<WORD>]`
- `qos if-assign [port <portlist>] name [<WORD>]`

Command Parameters

name <WORD> Specify name of interface group

port <portlist> Enter the ports to add to interface group

Default

None

Command Mode

Ethernet Interface Configuration

qos if-queue-shaper

Creates an egress queue shaper for one or more interfaces.

Syntax

- `no qos if-queue-shaper [port <portlist>] [queue <1-8>]`
- `qos if-queue-shaper [port <portlist>] [queue <1-8>] [name <WORD>]
shape-rate <0-10230000> shape-min-rate <0-10230000>`

Command Parameters

name <WORD>	Specifies an alphanumeric label used to identify the QoS interface queue shaper. Value is a character string ranging from 1–16 characters in length.
port <portlist>	Specifies the port or list of ports for which to apply egress queue shaping
queue <1-8>	Specifies the queue for the selected interface port or ports, on which traffic is shaped. The range of available values is determined by the OoS agent default queue configuration.
shape-min-rate <0-10230000>	Specifies the minimum QoS interface queue shaping rate, in kilobits per second (Kbps). Values range from 0 to 10230000 Kbps.
shape-rate <0-10230000>	Specifies the QoS interface queue shaping rate, in kilobits per second (Kbps). Values range from 0 to 10230000 Kbps

Default

None

Command Mode

Ethernet Interface Configuration

qos if-shaper

Configures the interface shaping parameters for a set of ports.

Syntax

- `no qos if-shaper [name <WORD>] [port <portlist>] [shape-rate <64-10230000>] [burst-size <burst-size>] [max-burst-rate <64-4294967295>] [max-burst-duration <1-4294967295>]`
- `qos if-shaper [name <WORD>] [port <portlist>] [shape-rate <64-10230000>] [burst-size <burst-size>] [max-burst-rate <64-4294967295>] [max-burst-duration <1-4294967295>]`

Command Parameters

burst-size <burst-size>	Committed burst size in Kilobytes. The value range is: 4, 8, 16, 32, 64, 128, 256, 512, 1024, 2048, 4096, 8192, 16384.

max-burst-duration <1-4294967295>	Maximum burst duration in milliseconds; range is 1–4294967295 ms
max-burst-rate <64-4294967295>	Maximum burst rate in kilobits/sec; range is 64-4294967295Kbits/sec
name <WORD>	Specify name for if-shaper; maximum is 16 alphanumeric characters
port <portlist>	Specify the port or list of ports for which to apply egress shaping
shape-rate <64-10230000>	Shaping rate in kilobits/sec; range is 64-10230000 kilobits/sec

Default

None

Command Mode

Ethernet Interface Configuration

rate-limit

Configures rate-limiting on the port.

Syntax

- **default rate-limit [port <portlist>]**
- **no rate-limit [port <portlist>]**
- **rate-limit [port <portlist>] {multicast <pct> | broadcast <pct> | both {<pct> | percent <0-10> | pps <0-262143>}}**

Command Parameters

both <pct>	Apply rate-limiting to both multicast and broadcast. Enter an integer from 1–10 to set the rate-limiting percentage.
broadcast <pct>	Apply rate-limiting to broadcast packets. Enter an integer from 1–10 to set the rate-limiting percentage.
multicast <pct>	Apply rate-limiting to multicast packets. Enter an integer from 1–10 to set the rate-limiting percentage.
percent	Changes rate-limit in percent
port <portlist>	Specify the port numbers to configure for rate-limiting. Enter the port numbers to configure. If you omit this parameter, the system uses the port number you specified in the interface command.

pps Changes rate-limit in pps

Default

None

Command Mode

Ethernet Interface Configuration

sflow (Ethernet Interface Configuration)

Configures sFlow on the switch.

Syntax

- `default sflow collector <1-4>`
- `default sflow counter-interval`
- `default sflow max-header-size`
- `default sflow sampling-rate [ingress | egress]`
- `no sflow collector <1-4>`
- `no sflow counter-interval`
- `no sflow max-header-size`
- `no sflow sampling-rate [ingress | egress]`
- `sflow [port <portlist>] collector <1-4>`
- `sflow [port <portlist>] counter-interval <1-3600>`
- `sflow [port <portlist>] max-header-size <64-256>`
- `sflow [port <portlist>] sampling-rate <ingress | egress> <4096-1000000>`

Command Parameters

collector <1-4>	Specifies the Collector ID.
counter-interval <1-3600>	Specifies the counter on the pooling interval on the port.
max-header-size <64-256>	Specifies the maximum captured header size.
portlist	Specifies the port on the device.
sampling-rate [egress ingress] <4096-1000000>	Specifies the sampling rate on the port.

Default

None

Command Mode

Ethernet Interface Configuration

shared-port

Configures shared-port setting.

Syntax

- `default shared-port [port <portlist>]`
- `shared-port [port <portlist>] {auto-select | force-copper | force-fiber}`

Command Parameters

auto-select	Auto-select copper or fiber shared port
force-copper	Force use of copper shared port
force-fiber	Force use of fiber shared port
port <portlist>	Specifies a port or list of ports

Default

None

Command Mode

Ethernet Interface Configuration

show sflow (Ethernet Interface Configuration)

Displays sFlow-related information.

Syntax

- `show sflow interface [enabled] [<port number>]`

Command Parameters

<port number>	Specifies the port number.
interface	Displays SFLOW configuration for specified interfaces.

Default

None

Command Mode

Ethernet Interface Configuration

shutdown (for a port)

Shut downs the selected interface.

Syntax

- `shutdown [port <portlist>]`

Command Parameters

port <portlist> Specifies a port or list of ports

Default

None

Command Mode

Ethernet Interface Configuration

slpp enable (Ethernet Interface Configuration)

Enable SLPP receive on ports.

Syntax

- `default slpp enable`
- `no slpp enable`
- `slpp enable`

Default

Disabled

Command Mode

Ethernet Interface Configuration

slpp packet-rx-threshold (Ethernet Interface Configuration)

Specifies the number of SLPP packets received before port becomes disabled.

Syntax

- `default slpp packet-rx-threshold`
- `no slpp packet-rx-threshold`
- `slpp packet-rx-threshold <1-500>`

Command Parameters

<1-500> Specifies the number of SLPP packets received before port becomes disabled. The default is 5.

Default

Default is 5

Command Mode

Ethernet Interface Configuration

slpp port (Ethernet Interface Configuration)

Specifies the Port number(s) on which to change SLPP settings.

Syntax

- `slpp port`

Default

None

Command Mode

Ethernet Interface Configuration

slpp-guard (Ethernet Interface Configuration)

Configures SLPP Guard for switch ports.

Syntax

- `default slpp-guard [port <portlist>][enable][timeout {0| <10-65535>}]`
- `no slpp-guard [port <portlist>][enable][timeout {0| <10-65535>}]`
- `slpp-guard [port <portlist>][enable][timeout {0| <10-65535>}]`

Command Parameters

default Sets SLPP Guard parameters to default values for a port or list of ports.

enable	Enables SLPP Guard parameters for a port or list of ports.
no	Disables SLPP Guard parameters for a port or list of ports.
port <portlist>	Specifies the port or list of ports on which the specified SLPP Guard parameter or parameters are configured
timeout {0 <10-65535>}	Specifies the time period, in seconds, for which SLPP Guard disables the port. After the timeout period expires, the switch re-enables the port. The timeout value can be 0 or a value ranging from 10 to 65535. With a value of 0, the port remains disabled until it is manually re-enabled. The default timeout value is 60 seconds.

Default

None

Command Mode

Ethernet Interface Configuration

spanning-tree (Ethernet Interface Configuration)

Sets the Spanning Tree Protocol (STP) and multiple Spanning Tree Group (STG) participation for the ports within the specified Spanning Tree Group.

Syntax

- **default spanning-tree** [port <portlist>] [stp <1-8>] [learning] [cost] [priority]
- **no spanning-tree** [port <portlist>] [stp <1-8>]
- **spanning-tree** [port <portlist>] [stp <1-8>] [learning {disable | normal | fast}] [cost <1-65535>] [priority {00 | 10 | < | F0}]

Command Parameters

cost <1-65535>	Enter the path cost of the spanning tree; range is from 1–65535.
learning {disable normal fast}	Specify the STP learning mode: disable: disables FastLearn mode; normal: changes to normal learning mode; fast: enables FastLearn mode.
port <portlist>	Enable the spanning tree for the specified port or ports; enter port or ports you want enabled for the spanning tree. If you omit this parameter, the system uses the port number you specified when you issued the interface command to enter the Interface Configuration mode.
priority {00 10 < F0}	Set the spanning tree priority for a port as a hexadecimal value.

stp <1-8> Specify the spanning tree group; enter the STG ID.

Default

None

Command Mode

Ethernet Interface Configuration

spanning-tree bpdu-filtering (Ethernet Interface Configuration)

Configures STP BPDU filtering.

Syntax

- `default spanning-tree bpdu-filtering [enable] [port <portlist>enable]`
- `no spanning-tree bpdu-filtering [enable] [port <portlist>enable]`
- `spanning-tree bpdu-filtering [port <portlist>] [enable] [timeout <10-65535 | 0>]`

Command Parameters

enable	Enables STP BPDU Filtering on the specified ports. The default value is disabled
port <portlist>	Specifies the ports affected by the command.
timeout <10-65535 0>	When BPDU filtering is enabled, this indicates the time (in seconds) during which the port remains disabled after it receives a BPDU. The port timer is disabled if this value is set to 0. The default value is 120 seconds.

Default

None

Command Mode

Ethernet Interface Configuration

spanning-tree mstp (Ethernet Interface Configuration)

Sets the MSTP parameters.

Syntax

- **default spanning-tree mstp** [port <LINE>] [cost] [edge-port] [hello-time] [learning] [p2p] [priority] [protocol-migration]
- **default spanning-tree mstp msti** <1-7> [port<portlist>] [cost] [learning] [priority]
- **spanning-tree MSTP** [port <portlist>] [cost <1-200000000>] [edge-port {false | true}] [hello-time <1-10>] [learning {disable | enable}] [p2p {auto | force-false | force-true}] [priority {00 | 10 | < | F0}] [protocol-migration {false | true}] [instance-specific <1-7>]
- **spanning-tree mstp msti** [<1-7>] [port LINE] [cost] <1-200000000> [learning {disable | enable }] [priority {00 | 10 | < | F0}]

Command Parameters

cost <1-200000000>	Set the MSTP path cost on the single or multiple ports for the CIST; the default is 200000.
edge-port {false true}	Indicate whether the single or multiple ports are assumed to be edge ports. This parameter sets the Admin value of edge port status; the default is false.
hello-time <1-10>	Set the MSTP hello time on the single or multiple ports for the CIST; the default is 2.
instance-specific <1-7>	Set the MSTP instance-specific configuration in a range from 1–7 (filter on the MSTP instance).
learning {disable enable}	Enable or disable MSTP on the single or multiple ports; the default is enable.
p2p {auto force-false forcetrue}	Indicate whether the single or multiple ports are treated as point-to-point links. This command sets the Admin value of P2P Status; the default is force-true.
port <portlist>	Enter a list or range of port numbers.
priority {00 10 ... F0}	Set the MSTP port priority on the single or multiple ports; the default is 80.
protocol-migration {false true}	Force the single or multiple ports to transmit MSTP BPDUs when set to true, while operating in MSTP mode; the default is false.

Default

None

Command Mode

Ethernet Interface Configuration

spanning-tree rstp (Ethernet Interface Configuration)

Sets the RSTP parameters.

Syntax

- **default spanning-tree rstp** [port <LINE>] [cost | edge-port | learning | p2p | priority | protocol-migration]
- **spanning-tree rstp** [port <portlist>] [cost <1 - 200000000>] [edge-port {false | true}] [learning {disable | enable}] [p2p {auto | force-false | force-true}] [priority {00 | 10 | ... | F0}] [protocol-migration {false | true}]

Command Parameters

cost <1-200000000>	Set the RSTP path cost on the single or multiple ports; the default is 200000.
edge-port {false true}	Indicate whether the single or multiple ports are assumed to be edge ports. This parameter sets the Admin value of edge port status; the default is false.
learning {disable enable}	Enable or disable RSTP on the single or multiple ports; the default is enable.
p2p {auto force-false force-true}	Indicate whether the single or multiple ports are to be treated as point-to-point links. This command sets the Admin value of P2P Status; the default is force-true.
port <portlist>	Filter on list of ports.
priority {00 10 ... F0}	Set the RSTP port priority on the single or multiple ports; the default is 80.
protocol-migration {false true}	Force the single or multiple port to transmit RSTP BPDUs when set to true, while operating in RSTP mode; the default is false.

Default

None

Command Mode

Ethernet Interface Configuration

speed

Sets the port speed.

Syntax

- **default speed** [port <portlist>]
- **speed** [port <portlist>] {10 | 100 | 1000 | 2500 | 10000 | auto}

Command Parameters

10|100|1000|10000|2500|auto Set the speed to: 10: 10 Mb/s; 100: 100 Mb/s; 1000: 1000 Mb/s or 1 GB/s; 2500 Mb/s or 2.5 GB/s; 10000: 10000 Mb/s or 10 GB/s; auto: autonegotiation.

port <portlist> List of ports

Default

None

Command Mode

Ethernet Interface Configuration

storm-control (Ethernet Interface Configuration)

Configures storm control.

Syntax

- **default storm-control** [broadcast | multicast | unicast | all] [action] [high-watermark] [low-watermark] [poll interval] [trap-interval] [enable]
- **no storm-control** [broadcast | multicast | unicast | all] [enable]
- **storm-control** [broadcast | multicast | unicast | all] [action [none | drop | shutdown]] [enable] [high-watermark <10-100000000>] [low-watermark <10-100000000>] [poll interval <5-300>] [trap-interval <0-1000>]

Command Parameters

action {drop|non|shutdown} Configures the storm control action.

all Configures storm-control settings for all types of traffic.

broadcast Configures storm-control settings for broadcast traffic.

enable Enables storm control.

high-watermark <10-100000000> Configures the high-watermark in pps.

low-watermark <10-100000000>	Configures the low-watermark in pps.
multicast	Configures storm-control settings for multicast traffic.
poll-interval <5-300>	Configures the interval for watermark checking in seconds.
trap-interval <0-1000>	Configures the trap sending interval in poll intervals when above the high-watermark. If the value is zero it does not send.
unicast	Configures storm-control settings for unicast traffic.

Default

None

Command Mode

Ethernet Interface Configuration

vlacp (Ethernet Interface Configuration)

Configures VLACP parameters per port.

Syntax

- **default vlacp** [port <LINE>] [enable] [ethertype] [fast-periodic-time] [funcmac-addr] [port LINE] [slow-periodic-time] [timeout] [timeout-scale]
- **no vlacp enable**
- **vlacp port** <slot/port> [enable] [timeout <long/short>] [fast-periodic-time <integer>] [slow-periodic-time <integer>] [timeout-scale <integer>] [funcmac-addr <mac>] [ethertype {<0x8101-0x81ff>|<33025-33279>}]

Command Parameters

<slot/port>	Specifies the slot and port number.
enable	Enables VLACP.
ethertype {<0x8101-0x81ff> <33025-33279>}	Sets the VLACP protocol identification for this port. Defines the ethertype value of the VLACP frame. The range is 8101-81FF. Default is 8103.
fast-periodic-time <integer>	Specifies the number of milliseconds between periodic VLACPDU transmissions using short timeouts. The range is 400-20000 milliseconds. Default is 500.

funcmac-addr <mac>	Specifies the address of the far-end switch/stack configured to be the partner of this switch/stack. If none is configured, any VLACP-enabled switch communicating with the local switch through VLACP PDUs is considered to be the partner switch.
slow-periodic-time <integer>	Specifies the number of milliseconds between periodic VLACPDU transmissions using long timeouts. The range is 10000-30000 milliseconds. Default is 30000.
timeout {long short}	Specifies whether the timeout control value for the port is a long or short timeout. long— sets the port timeout value to: (timeoutscale value) × (slow-periodic-time value). short— sets the port's timeout value to: (timeout-scale value) × (fast-periodic-time value). For example, if the timeout is set to short while the timeout-scale value is 5 and the fast-periodic-time value is 500 ms, the timer expires after 2500 ms. Default is long.
timeout-scale <integer>	Sets a timeout scale for the port, where timeout = (periodic time) × (timeout-scale). The range is 1-10. Default is 3. Note: When you use fast-timers, you do not use a timeout-scale of 1, because this breaks the link continuity from service due to the time taken to transmit VLACPDU and for the partner to provide a corresponding response. You should set the minimum timeout-scale to 3. It is recommended that you use the minimum setting of 5 for the timeout-scale when using the fast-periodic-timer of 500 ms.

Default

None

Command Mode

Ethernet Interface Configuration

Chapter 6: Global Configuration

This chapter provides information related to the Global configuration commands.

adac call-server-port

Sets call server port(s) range.

Syntax

- `adac call-server-port <LINE>`
- `default adac call-server-port`
- `no adac call-server-port`

Command Parameters

<LINE> Set call server port(s) range.

Default

None

Command Mode

Global Configuration

adac enable

Enables adac on the port or ports listed.

Syntax

- `adac enable [op-mode {tagged-frames | untagged-frames-advanced | untagged-frames-basic}] [voice-vlan <1-4094>] [uplink-port {<LINE> | spbm}] [call-server-port <LINE>]`
- `default adac enable [voice-vlan] [uplink-port] [call-server-port]`
- `no adac enable [voice-vlan] [uplink-port] [call-server-port]`

Command Parameters

call-server-port <LINE>	Set call server port(s) range.
op-mode	Set ADAC operation mode.
spbm	Use an SPBM I-SID as uplink-port.
tagged-frames	IP phones send tagged frames
untagged-frames-advanced	IP phones send untagged frames and Voice-VLAN is created
untagged-frames-basic	IP phones send untagged frames and Voice-VLAN is not created

Default

None

Command Mode

Global Configuration

adac mac-range-table

Adds new supported MAC address range.

Syntax

- **adac mac-range-table low-end <H.H.H> high-end <H.H.H>**
- **default adac mac-range-table**
- **no adac mac-range-table low-end <H.H.H> high-end <H.H.H>**

Command Parameters

<H.H.H> MAC Address to add (i.e. H.H.H or xx:xx:xx:xx:xx:xx or xx.xx.xx.xx.xx.xx or xx-xx-xx-xx-xx-xx)

high-end High end of the MAC address range to add

low-end Low end of the MAC address range to add

Default

None

Command Mode

Global Configuration

adac op-mode

Sets ADAC operation mode.

Syntax

- `adac op-mode {tagged-frames | untagged-frames-advanced | untagged-frames-basic} [voice-vlan <1-4094>] [uplink-port {<LINE> | spbm}] [call-server-port <LINE>]`
- `default adac op-mode [voice-vlan] [uplink-port] [call-server-port]`

Command Parameters

call-server-port <LINE>	Set call server port(s) range
spbm	Use an SPBM I-SID as uplink-port
tagged-frames	IP phones send tagged frames
untagged-frames-advanced	IP phones send untagged frames and Voice-VLAN is created
untagged-frames-basic	IP phones send untagged frames and Voice-VLAN is not created
uplink-port <LINE>	Set uplink port(s) range
voice-vlan <1-4094>	Set Voice-VLAN

Default

None

Command Mode

Global Configuration

adac uplink-port

Sets uplink port(s) range.

Syntax

- `adac uplink-port {<LINE> | spbm} [call-server-port <LINE>]`
- `default adac uplink-port [call-server-port]`
- `no adac uplink-port [call-server-port]`

Command Parameters

<LINE>	Specifies an uplink port(s) range.

- call-server-port <LINE>** Specifies a call server port(s) range.
- spbm** Specifies Shortest Path Bridging MAC (SPBM) uplink-port.

Default

The default is none.

Command Mode

Global Configuration

adac voice-vlan

Sets Voice-VLAN ID.

Syntax

- `adac voice-vlan <1-4094> [uplink-port {<LINE> | spbm}] call-server-port <LINE>`
- `default adac voice-vlan [uplink-port] call-server-port`
- `no adac voice-vlan [uplink-port] call-server-port`

Command Parameters

- <1-4094>** Voice-VLAN ID
- call-server-port <LINE>** Set call server port(s) range
- spbm** Use an SPBM I-SID as uplink-port
- uplink-port <LINE>** Set uplink port(s) range

Default

None

Command Mode

Global Configuration

application

Enters application mode.

Syntax

- `application`

Default

None

Command Mode

Global Configuration

app-telemetry collector

Configures Application Telemetry Collector address.

Syntax

- `app-telemetry collector address {A.B.C.D}`

Command Parameters

address {A.B.C.D} Specifies the IP address of the collector.

**Note:**

Application Telemetry sends data only over IPv4 GRE tunnels.

Default

None

Command Mode

Global Configuration

app-telemetry enable

Enables Application Telemetry.

Syntax

- `app-telemetry enable [ports <LINE>]`

Command Parameters

enable Enables Application Telemetry protocol.

ports Enables Application Telemetry only on particular ports.

LINE Port list.

*** Note:**

If the **ports** parameter is not used after **enable**, then Application Telemetry protocol is enabled on all ports.

Default

The default value is disable.

Command Mode

Global Configuration

arp

Configures a static ARP entry.

Syntax

- **arp** {<A.B.C.D> <H.H.H> <WORD> id <1-4094> | timeout <5-360>}
- **default arp timeout**
- **no arp** {<A.B.C.D>}

Command Parameters

<A.B.C.D>	IP addr of ARP entry
<H.H.H>	MAC addr of ARP entry (i.e. H.H.H or xx:xx:xx:xx:xx:xx or xx.xx.xx.xx.xx.xx or xx-xx-xx-xx-xx-xx)
<WORD>	unit/port
id <1-4094>	VLAN ID to apply ARP entry for
timeout <5-360>	time for the entry to exist

Default

None

Command Mode

Global Configuration

asset-id

Configures the Asset-ID.

Syntax

- `asset-id {stack <WORD> | unit <1-8> <WORD>| <WORD>}`
- `default asset-id {stack | unit <1-8>}`
- `no asset-id {stack | unit <1-8>}`

Command Parameters

<WORD>	Asset-ID of this unit
stack <WORD>	Asset-ID for the Stack
unit <1-8>	Asset-ID for specific unit in the Stack

Default

None

Command Mode

Global Configuration

audit

Configures audit settings.

Syntax

- `audit log save`
- `default audit log`
- `no audit log`

Command Parameters

log	Configure audit log settings
save	Enable audit log save settings

Default

None

Command Mode

Global Configuration

audit encryption-key aes-cbc

Changes the audit log encryption key.

Syntax

- `audit encryption-key aes-cbc`

Default

None

Command Mode

Global Configuration

audit

Configures audit settings.

Syntax

- `audit log save`
- `default audit log`
- `no audit log`

log Configures audit log settings.

save Enables audit log save settings.

Default

None

Command Mode

Global Configuration

auto-pvid

Enables Auto-PVID (for all ports).

Syntax

- `auto-pvid`
- `no auto-pvid`

Default

None

Command Mode

Global Configuration

autosave

Changes autosave settings.

Syntax

- `autosave enable`
- `default autosave enable`
- `no autosave enable`

Command Parameters

enable Enable autosave

Default

None

Command Mode

Global Configuration

autotopology

Enables the autotopology protocol.

Syntax

- `autotopology`
- `default autotopology`
- `no autotopology`

Default

None

Command Mode

Global Configuration

banner

Sets custom banner info.

Syntax

- `banner {<1-19> <LINE> | custom | disabled | static | usg}`
- `no banner`

Command Parameters

<1-19> <LINE>	Custom banner line number
custom	Use custom banner
disabled	Skip banner display
static	Use static banner
usg	Activates the U.S. Government banner

Default

None

Command Mode

Global Configuration

certificate ca

Configures Certificate Authority / Trustpoint.

Syntax

- **certificate ca** WORD<1-45> [**common-name** WORD<1-64>] [**key-name** WORD<1-45>] [**action** {caauth | enroll | generate-self-signed-cert | get-crl | remove | renew}] [**ca-url** WORD<1-1000>] [**export**] [**import**] [**regenerate-key-on-re-enroll**] [**use-for** <ike | ssl-server | ssh-server>] [**use-post** <true|false>]
- **no certificate ca**

Command Parameters

1.2.3.4	Specifies the name of the feature that uses this identity.
action caauth	Authenticates the trustpoint CA by getting the certificate of the CA and stores the CA certificate locally.
action enroll [challengepassword WORD<1-128>]	This password is given offline by the CA during the end entity registration. The length of the password is from 1 to 128.
action enroll [validity-days <7-1185>]	Generates certificate signing request to obtain identity certificate from configured trustpoint CA, gets the digital certificate, and stores it locally, associating with the trustpoint CA.
action generate-selfsigned- cert	Generates a self-signed subject certificate.

action get-crl	Gets the Certificate Revocation List from the CDP and stores into a file.
action remove	Releases the locally stored certificate associated with the trustpoint CA post revocation.
action renew [challengepassword WORD<1-128>]	This password is given offline by the CA during the end entity registration. The length of the password is from 1 to 128.
action renew [validity- days<7-1185>]	Generates certificate renewal request for given trustpoint CA, gets the digital certificate, and stores it locally by replacing the old certificate with the new one. The validity-days specifies the number of days for which the certificate will remain valid. The default value is 365 days.
ca-url WORD<1-1000>	Specifies the IPv4 or IPv6 address of the SFTP server. The range for IPv6 is 1-128. The range for IPv4 is 0.0.0.0 to 255.255.255.255.
common-name [WORD<1-64>]	Specifies the name of the owner of the device or us
encrypted	Specifies a passphrase for decryption.
export	Export CA related files.
filename	Specifies the filename of the SFTP server.
import	Import CA related files.
key-name WORD<1-45>	Specifies the key pair generated by the command that was first associated with the CA trustpoint.
ramdisk	Imports specified certificate authority files from ramdisk.
regenerate-key-on-reenroll	Generates a new key pair before each re-enrollment.
sftp	Imports specified certificate authority files from SFTP server.
terminal	Imports specified certificate authority files from a terminal.
usb	Imports specified certificate authority files from USB storage.
use-post <false true>	Specifies the HTTP request style. The default value is True.
username	Specifies the username of the SFTP server.
username WORD<1-64>	Specifies the trusted CA url.

WORD <1-45>

Specifies the name of the certificate authority. It should be alphanumeric and case-sensitive. The maximum length should be 45 characters.

Default

None

Command Mode

Global Configuration

certificate copy

Copies a certificate or a CRL.

Syntax

- `certificate copy [ca WORD<1-45>] [trust-store]`

Command Parameters

ca WORD<1-45> Specifies the name of the source CA.

trust-store Copies the certificate from trust store.

Default

None

Command Mode

Global Configuration

certificate key

Configures Key pair.

Syntax

- `certificate key name WORD<1-45>`
- `certificate key name WORD<1-45> export {[sftp [address <Hostname or A.B.C.D>] [filename <WORD>] [username]] | [usb file WORD<1-512>] | [terminal]}`
- `certificate key name WORD<1-45> generate [size <2048-2048>] | [type rsa]`
- `certificate key name WORD<1-45> import {[sftp [address <Hostname or A.B.C.D>] [filename <WORD>] [username]] | [usb file WORD<1-512>] | [terminal]}`

Command Parameters

address <Hostname or A.B.C.D>	Specifies the IPv4 or IPv6 address of the SFTP server. The range for IPv6 is 1–128. The range for IPv4 is 0.0.0.0 to 255.255.255.255.
export {sftp usb terminal sftp}	Exports key pair to another device.
filename	Specifies the filename on the SFTP server.
generate [size <2048–2048>]	Specifies the size or modulus of key-pair to be generated. The value should be 2048.
generate type rsa	Specifies type of cryptography algorithm used to generate the key-pair. The switch uses only rsa as the cryptography algorithm type.
import {sftp usb terminal sftp}	Imports key pair from another device.
name WORD<1–45>	Speifies the name of the key pair.
unit <1–8>	Specifies the stack unit with USB storage.
username	Specifies the username for the SFTP server.

Default

None

Command Mode

Global Configuration

certificate move

Moves or renames a certificate or CRL.

Syntax

- **certificate move** [ca WORD<1–45>] [trust-store]

Command Parameters

ca WORD<1–45>	Specifies the name of the source CA.
file WORD<1-512>	Speifies the name of the source file.
trust-store	Copies the certificate from trust store.

Default

None

Command Mode

Global Configuration

certificate subject

Defines subject information for device certificate.

Syntax

- **certificate subject** [**common-name** WORD<0-64>] [**country** WORD<2>] [**e-mail** WORD<0-254>] [**fqdn**] [**include-ip-address**] [**locality** WORD<0-128>] [**organization** WORD<0-64>] [**province** WORD<0-128>] [**unit** WORD<0-64>]
- **no certificate subect**

Command Parameters

common-name WORD<0-64>	Specifies the name of the subject sending the Certificate Signing Request to the Certificate Authority.
country WORD<2>	Specifies the country of the subject sending the Certificate Signing Request to the Certificate Authority.
e-mail WORD<0-254>	Specifies the Email address of the subject sending the Certificate Signing Request to the Certificate Authority.
locality WORD<0-128>	Specifies the locality of the subject sending the Certificate Signing Request to the Certificate Authority.
organization WORD<0-64>	Specifies the organization of the subject sending the Certificate Signing Request to the Certificate Authority.
province WORD<0-128>	Specifies the province of the subject sending the Certificate Signing Request to the Certificate Authority.
unit WORD<0-64>	Specifies the organizational unit of the subject sending the Certificate Signing Request to the Certificate Authority.

Default

None

Command Mode

Global Configuration

certificate trust-store

Configures trust store.

Syntax

- `certificate trust-store export {[sftp [filename <WORD>]] | [address <Hostname or A.B.C.D> | <WORD>] | [username <WORD>]] | [usb {filename <WORD>}] | [ramdisk {filename <WORD>}] | [terminal]}`
- `certificate trust-store import {[sftp [filename <WORD>]] | [address <Hostname or A.B.C.D> | <WORD>] | [username <WORD>]] | [usb {filename <WORD>}] | [ramdisk {filename <WORD>}] | [terminal]}`

Command Parameters

address<Hostname or A.B.C.D>	Specifies the IPv4 or IPv6 address of the SFTP server. The range for IPv6 is 1–128. The range for IPv4 is 0.0.0.0 to 255.255.255.255.
export {sftp usb ramdisk terminal}	Specifies the device to export the trusted certificate authority files.
filename WORD<1–512>	Specifies the local and remote names of the file to import or export.
import {sftp usb ramdisk terminal}	Specifies the device to import the trusted certificate authority files.
unit<1–8>	Specifies the stack unit with USB storage.
username WORD<1–512>	Speceifies the user name for the SFTP server.

Default

None

Command Mode

Global Configuration

cfm

Configures CFM.

Syntax

- `cfm {[ethertype <0x0-0xFFFF>] | [spbm [enable] [level <0-7>] mepid <1-8191>]}`
- `default cfm ethertype`

- `default cfm spbm [enable] [level] [mepid]`
- `no cfm spbm enable`

Command Parameters

enable	Enable CFM SPBM
ethertype <0x0-0xFFFF>	Specify the ethertype classifier criteria
level <0-7>	Configure maintenance domain level
mepid <1-8191>	Configure maintenance end point id
spbm	Configure CFM SPBM settings

Default

None

Command Mode

Global Configuration

clear fa statistics

Clears FA summary and per-port statistics counters.

Syntax

- `clear fa statistics [summary | <PortList>]`

Command Parameters

summary	Clears FA summary statistics.

Default

None

Command Mode

Global Configuration

clear stack port-statistics

Clears the stack port counters.

Syntax

- `clear stack port-statistics [ unit <1-8> ]`

Command Parameters

unit <1-8> Specifies the unit number.

Default

None

Command Mode

Global Configuration

cli

Modifies session settings.

Syntax

- `cli [[timestamp enable] | [password [{read-only | read-write} <WORD>] | [{serial | telnet} {local | none | radius | tacacs }]] ]`
- `default cli timestamp enable`
- `no cli timestamp enable`

Command Parameters

<WORD>	password
local	Use local password
none	Disable password
password	Modify CLI passwords
radius	Use RADIUS password authentication
read-only	Modify read-only password
read-write	Modify read-write password
serial	Enable/disable serial port password
tacacs	Use TACACS+ AAA services
telnet	Enable/disable telnet, ssh and web password
timestamp	Enable Displays timestamp

Default

None

Command Mode

Global Configuration

clock set

Configure Real Time Clock

Syntax

- `clock set { [hh:mm:ss <1-31>] [MONTH <2005-2099>] | [LINE] }`

Command Parameters

<1-31>	RTC date
<2005-2099>	RTC year
hh:mm:ss	RTC hour, minute, second
LINE	RTC time :mmddyyyyhhmmss
MONTH	RTC month

Default

None

Command Mode

Global Configuration

clock source

Configures time source.

Syntax

- `clock source {ntp | rtc | sntp | sysUpTime}`
- `default clock source`

Command Parameters

ntp	Configure NTP as time source
rtc	Configure RTC as time source
sntp	Configure SNTP as time source

sysUpTime Configure System Up Time as time source

Default

None

Command Mode

Global Configuration

clock summer-time

Configures the system to automatically switch to summer time (daylight saving time).

Syntax

- `clock summer-time {[recurring <1-5> <DAY> <MONTH> <hh:mm>] [last <1-5> <DAY> <MONTH> <hh:mm> <1-1440>] | [WORD <date> <1-31> <MONTH> <1990-2099> <hh:mm> <-840 - 840>]}`
- `default clock summer-time recurring`
- `no clock summer-time recurring`

Command Parameters

<1-1440>	Number of minutes to add/subtract during summer-time recurring
<1-31>	Day of the month, when summer time starts/ends
<1-5>	Week of the month when the summer-time recurring starts/ends
<1990-2099>	Year when summer time starts/ends
<-840 - 840>	Number of minutes to add/subtract during summer time
<WORD>	Set time zone acronym containing at most 4 chars (for example 'PDT' for Pacific Daylight Time) to be displayed when summer time is in effect.
date	Indicates that summer time should start on the first specific date listed in the command and end the second specific date in the command
day	Day of the week when summer-time recurring starts/ends (Monday, Tuesday etc)
hh:mm	Time in hours and minutes when summer-time recurring starts
last	Select the last day which will be specified of the month for summer-time starts/ends
MONTH	Month when summer-time recurring starts/ends (January, February etc)

recurring Specify the summer-time dates which recur every year

Default

None

Command Mode

Global Configuration

clock sync-rtc-with-time-client

Enables RTC sync with NTP/SNTP status.

Syntax

- `clock sync-rtc-with-time-client enable`
- `no clock sync-rtc-with-time-client`

Command Parameters

enable Enable RTC sync with NTP/SNTP status

Default

None

Command Mode

Global Configuration

clock time-zone

Sets local time zone.

Syntax

- `clock time-zone <WORD> <-12 - 13> <0-59>`
- `no clock time-zone`

Command Parameters

<0-59> Minutes difference from UTC (0, 15, 30 or 45)

<-12 - 13> Hours difference from UTC

<WORD> Set time zone acronym containing at most 4 chars

Default

None

Command Mode

Global Configuration

csnp-interval

Creates/modifies/deletes ASCII configuration script table entries.

Syntax

- `csnp-interval <1-600>`
- `default csnp-interval`
- `no csnp-interval`

Command Parameters

<1-600> Specifies the CSNP interval in seconds. This is a system level parameter that applies for level 1 CSNP generation on all interfaces. A longer interval reduces overhead, while a shorter interval speeds up convergence. The default value is 10. Use the `no` or `default` options to set this parameter to the default value of 10.

Default

None

Command Mode

Global Configuration

default app-telemetry

Default all Application Telemetry configuration. The default mode:

- Disables the application
- Clears the collector's IP address
- Deletes the custom policy file

Syntax

- `default app-telemetry`

Command Parameters

app-telemetry Default all App-telemetry configuration

Default

None

Command Mode

Global Configuration

default clock

Configure clock settings

Syntax

- `default clock {[source] [summer-time recurring] [sync-rtc-with-time-client enable]}`

Command Parameters

source	Configure default time source
summer-time	Set default values for summer-time.
sync-rtc-with-time-client	Configure default status of synchronization of RTC with NTP/SNTP

Default

None

Command Mode

Global Configuration

diagnostics-quick-mode

Diagnostics quick mode.

Syntax

- `default diagnostics-quick-mode`
- `diagnostics-quick-mode [enable]`
- `no diagnostics-quick-mode`

Command Parameters

enable	Enable diagnostics quick mode

Default

None

Command Mode

Global Configuration

eapol (Global Configuration)

Enables/Disables EAPOL protocol.

Syntax

- `default eapol`
- `eapol {disable | enable}`
- `no eapol`

Command Parameters

`{disable|enable}` Disable/enable EAPOL protocol

Default

None

Command Mode

Global Configuration

eapol allow-port-mirroring

Enables port mirroring on eap ports.

Syntax

- `default eapol allow-port-mirroring`
- `eapol allow-port-mirroring`
- `no eapol allow-port-mirroring`

Default

None

Command Mode

Global Configuration

eapol guest-vlan (global)

Sets guest-vlan.

Syntax

- `default eapol guest-vlan [enable] vid <1-4094>`
- `eapol guest-vlan [enable] vid <1-4094>`
- `no eapol guest-vlan enable`

Command Parameters

enable	Enable guest-vlan
vid <1-4094>	guest-vlan ID

Default

None

Command Mode

Global Configuration

eapol multihost (global)

Sets EAPOL multihost settings of port.

Syntax

- `default eapol multihost [allow-non-eap-enable] [radius-non-eap-enable] [auto-non-eap-mhsa-enable] [non-eap-phone-enable] [use-radius-assigned-vlan] [non-eap-use-radius-assigned-vlan] [radius-non-eap-delay] [eap-packet-mode] [eap-protocol-enable] [non-eap-reauthentication-enable] [adac-non-eap-enable]`
- `eapol multihost [allow-non-eap-enable] [radius-non-eap-enable] [auto-non-eap-mhsa-enable] [non-eap-phone-enable] [use-radius-assigned-vlan] [non-eap-use-radius-assigned-vlan] [radius-non-eap-delay <0-20>] [eap-packet-mode { multicast | unicast }] [eap-protocol-enable] [non-eap-reauthentication-enable] [adac-non-eap-enable]`
- `no eapol multihost [allow-non-eap-enable] [radius-non-eap-enable] [auto-non-eap-mhsa-enable] [non-eap-phone-enable] [use-radius-assigned-vlan] [non-eap-use-radius-assigned-vlan] [eap-protocol-enable] [non-eap-reauthentication-enable] [adac-non-eap-enable]`

Command Parameters

adac-non-eap-enable	Allow authentication of Non-EAP Phones using ADAC

allow-non-eap-enable	Control of non-EAP clients (MAC addresses)
auto-non-eap-mhsa-enable	Allow auto-auth of non-EAP clients
eap-packet-mode	Select type of packet used for initial eap request for ids
eap-protocol-enable	Enable EAP protocol on port
non-eap-phone-enable	Allow non-eap phone clients
non-eap-reauthentication-enable	Enable re-authentication for non-EAP clients
non-eap-use-radius-assigned-vlan	Allow the use of VLAN IDs assigned by RADIUS for non-EAP clients
radius-non-eap-delay <0-20>	Specifies the delay (sec) between learning a new MAC and trying to authenticate it via RADIUS.
radius-non-eap-enable	Enable RADIUS authentication of non-eap clients
use-radius-assigned-vlan	Allow the use of VLAN IDs assigned by RADIUS

Default

None

Command Mode

Global Configuration

eapol multihost fail-open-vlan (global)

Sets fail-open-vlan.

Syntax

- `default eapol multihost fail-open-vlan [enable] [vid <1-4094>] continuity-mode enable`
- `eapol multihost fail-open-vlan [enable] [vid <1-4094>] continuity-mode enable`
- `no eapol multihost fail-open-vlan [enable] continuity-mode enable`

Command Parameters

continuity-mode	Enable fail-open-vlan continuity-mode
enable	Enable fail-open-vlan
vid <1-4094>	fail-open-vlan ID

Default

None

Command Mode

Global Configuration

eapol multihost non-eap-pwd-fmt

Sets bits in RADIUS non-EAPOL password format.

Syntax

- `default eapol multihost non-eap-pwd-fmt { [padding ] [ip-addr] [mac-addr] [port-number] key | key-string }`
- `eapol multihost non-eap-pwd-fmt { [padding | no-padding] [ip-addr] [mac-addr] [port-number] key | key-string <LINE> }`
- `no eapol multihost non-eap-pwd-fmt { [padding ] [ip-addr] [mac-addr] [port-number] key | key-string }`

Command Parameters

<LINE>	Non-EAP Password key
ip-addr	Set IP Address bit
key	Use the key for Non-EAP Password
key-string	Enter Non-EAP Password Key
mac-addr	Set MAC Address bit
no-padding	Use dots only to separate fields in password
padding	Use dots for every missing parameters
port-number	Set Port Number bit

Default

None

Command Mode

Global Configuration

eapol multihost non-eap-user-based-policies

Enables non-EAP user based policies.

Syntax

- `eapol multihost non-eap-user-based-policies enable`
- `default eapol multihost non-eap-user-based-policies enable`
- `no eapol multihost non-eap-user-based-policies enable`

Command Parameters

enable Enables non-EAP user based policies.

Default

Disabled

Command Mode

Global Configuration

eapol multihost non-eap-user-based-policies filter-on-mac

Enables filtering of non-EAP user based policies based on MAC address.

Syntax

- `eapol multihost non-eap-user-based-policies filter-on-mac enable`
- `default eapol multihost non-eap-user-based-policies filter-on-mac enable`
- `no eapol multihost non-eap-user-based-policies filter-on-mac enable`

Command Parameters

filter-on-mac enable Enables filtering of user based policies based on MAC address.

Default

Disabled

Command Mode

Global Configuration

eapol multihost non-eap-user-based-policies dynamic-ubp

Enables the creation of dynamic non-EAP user based policies.

Syntax

- `eapol multihost non-eap-user-based-policies dynamic-ubp enable`
- `default eapol multihost non-eap-user-based-policies dynamic-ubp enable`
- `no eapol multihost non-eap-user-based-policies dynamic-ubp enable`

Command Parameters

dynamic-ubp enable Enables the creation of dynamic non-EAP user based policies.

Default

Disabled

Command Mode

Global Configuration

eapol multihost voip-vlan

Sets voip-vlan.

Syntax

- `default eapol multihost voip-vlan <1-5> [enable] vid`
- `eapol multihost voip-vlan <1-5> [enable] vid <1-4094>`
- `no eapol multihost voip-vlan <1-5> enable`

Command Parameters

<1-5> Number of voip vlan

enable Enable voip-vlan

vid <1-4094> voip-vlan ID

Default

None

Command Mode

Global Configuration

eapol multivlan(global)

Sets EAPOL MHMV on ports.

Syntax

- `eapol multivlan auto-config port <LINE>`

Command Parameters

auto-config	Apply auto config MHMV settings on ports
port <LINE>	Apply auto config on ports

Default

None

Command Mode

Global Configuration

eapol user-based-policies

Enables EAPoL user based policies.

Syntax

- `eapol user-based-policies enable`
- `default eapol user-based-policies enable`
- `no eapol user-based-policies enable`

Command Parameters

enable	Enables EAPoL user based policies.

Default

Disabled

Command Mode

Global Configuration

eapol user-based-policies filter-on-mac

Enables the filtering of EAPoL user based policies based on MAC address.

Syntax

- `eapol user-based-policies filter-on-mac enable`
- `default eapol user-based-policies filter-on-mac enable`
- `no eapol user-based-policies filter-on-mac enable`

Command Parameters

filter-on-mac enable Enables filtering of EAPoL user based policies based on MAC address.

Default

Disabled

Command Mode

Global Configuration

eapol user-based-policies dynamic-ubp

Enables the creation of dynamic EAPoL user based policies.

Syntax

- `eapol user-based-policies dynamic-ubp enable`
- `default eapol user-based-policies dynamic-ubp enable`
- `no eapol user-based-policies dynamic-ubp enable`

Command Parameters

dynamic-ubp enable Enables the creation of dynamic EAPoL user based policies.

Default

Disabled

Command Mode

Global Configuration

edm help-file-path

Sets the EDM help file path.

Syntax

- `default edm help-file-path`
- `edm help-file-path <WORD> {tftp <address> {<A.B.C.D> | <IPv6-Address>} | usb unit <1-8>}`
- `no edm help-file-path`

Command Parameters

<A.B.C.D> IPv4 address of the TFTP server

<IPv6-address>	IPv6 address
<WORD>	EDM help file path
address	TFTP server address
tftp	Tftp-server
unit	Unit
usb	Usb device

Default

None

Command Mode

Global Configuration

edm inactivity-timeout

Sets the EDM inactivity timeout.

Syntax

- `default edm inactivity-timeout`
- `edm inactivity-timeout <30 - 65535>`
- `no edm inactivity-timeout`

Command Parameters

<30 - 65535> seconds

Default

None

Command Mode

Global Configuration

end (global)

Exits from configure mode.

Syntax

- `end`

Default

None

Command Mode

Global Configuration

energy-saver (global)

Configures global energy saver settings.

Syntax

- `energy-saver [enable] [poe-power-saving] [efficiency-mode]`
- `default energy-saver [enable] [port <portlist> enable]`
- `energy-saver [enable] [port <portlist> enable]`
- `no energy-saver [enable] [port <portlist> enable]`

Command Parameters

efficiency-mode	Enable Efficiency mode
enable	Enable energy saver
poe-power-saving	Enable POE power saving

Default

None

Command Mode

Global Configuration

energy-saver schedule

Configures energy saver activation/deactivation schedule.

Syntax

- `default energy-saver schedule { {sunday | monday | tuesday | wednesday | thursday | friday | saturday | weekday | weekend} <hh:mm>`
- `energy-saver schedule { {sunday | monday | tuesday | wednesday | thursday | friday | saturday | weekday | weekend} <hh:mm> {activate | deactivate} }`

- `no energy-saver schedule { {sunday | monday | tuesday | wednesday | thursday | friday | saturday | weekday | weekend} <hh:mm>`

Command Parameters

<hh:mm>	Set the hour and minutes
activate	Activate event
deactivate	Deactivate event
friday	Configure schedule entry for Friday
monday	Configure schedule entry for Monday
saturday	Configure schedule entry for Saturday
sunday	Configure schedule entry for Sunday
thursday	Configure schedule entry for Thursday
tuesday	Configure schedule entry for Tuesday
wednesday	Configure schedule entry for Wednesday
weekday	Configure schedule entries for weekdays
weekend	Configure schedule entries for weekends

Default

None

Command Mode

Global Configuration

enhanced-secure-mode

Enables or disables Enhanced Secure Mode.

Syntax

- `{no | default} enhanced-secure-mode`
- `enhanced-secure-mode {enable | disable}`

Command Parameters

disable	Disables Enhanced Secure Mode.

enable Enables Enhanced Secure Mode.

no Disables Enhanced Secure Mode.

Default

None

Command Mode

Global Configuration

exit (Global configuration)

Exits from configure mode.

Syntax

- **exit**

Default

None

Command Mode

Global Configuration

fa

Configures Fabric Attach.

Syntax

- **default fa {authentication-key | auto-provision | message-authentication |port-enable | proxy | vlan| zero-touch |zero-touch-options | zero-touch-client}**

Default

Enabled

Command Mode

Global Configuration

fa authentication-key

Configure Fabric Attach authentication key.

Syntax

- `fa authentication-key`

Default

None

Command Mode

Global Configuration

fa auto-provision

Configure Fabric Attach auto provision setting.

Syntax

- `fa auto-provision {proxy |server}`

Command Parameters

proxy Configure Fabric Attach auto provision setting as proxy.

server Configure Fabric Attach auto provision setting as server.

Default

None

Command Mode

Global Configuration

fa extended-logging

Enables Fabric Attach extended logging

Syntax

- `fa extended-logging`

Default

None

Command Mode

Global Configuration

fa message-authentication

Enable Fabric Attach message authentication.

Syntax

- `fa message-authentication [<PortList>] [key-mode <strict | standard>]`

Command Parameters

key-mode <strict | standard> Specifies the Authentication key usage setting.

Default

Enabled

Command Mode

Global Configuration

fa port-enable

Enables the Fabric Attach operation for each port.

Syntax

- `fa port-enable <LINE>`

Command Parameters

<LINE> Enables the Fabric Attach operation for each port.

Default

Enabled

Command Mode

Global Configuration

fa proxy

Enable Fabric Attach client proxy.

Syntax

- `fa proxy`

Default

None

Command Mode

Global Configuration

fa uplink

Configures Fabric Attach uplink data

Syntax

- `fa uplink {port <port> | trunk <trunkId>}`

Command Parameters

port <port> Specifies the uplink port.

trunk <trunkId> Specifies the uplink trunk.

Default

None

Command Mode

Global Configuration

fa vlan

Configure Fabric Attach VLANs.

Syntax

- `fa vlan`

Command Parameters

<LINE> Enable Fabric Attach client proxy.

Default

None

Command Mode

Global Configuration

fa zero-touch

Enable Fabric Attach Zero Touch.

Syntax

- `default fa zero-touch`
- `fa zero-touch`
- `fa zero-touch disable-mgmt-vlan-distribution`
- `no fa zero-touch`

Command Parameters

disable-mgmt-vlan-distribution Disables management VLAN distribution.

Default

None

Command Mode

Global Configuration

fa zero-touch-client

Configure Fabric Attach Zero Touch Client specifications.

Syntax

- `fa zero-touch-client standard {camera | ona-sdn | ona-spb-over-ip | phone | router | security-dev | srvr-endpt | switch | video | virtual-switch | wap-type1 | wap-type2} vlan <VLAN> [i-sid <ISID>] [priority <Priority>] [keep-static]`

Command Parameters

camera	Specifies the client type as IP Camera
i-sid <0-16777214>	Specifies the client I-SID for I-SID/VLAN binding generation.
keep-static	Specifies whether static VLANs should be kept or removed on the client port for the duration of the client connection.
ona-sdn	Specifies the client type as ONA (SDN)
ona-spb-over-ip	Specifies the client type as ONA (SpbOIp)
phone	Specifies the client type as IP Phone

priority <0-7>	Specifies the client port priority.
router	Specifies the client type as Router
security-dev	Specifies the client type as Security Device
srvr-endpt	Specifies the client type as Server Endpoint
standard	Specifies the Standard (pre-defined) client type.
switch	Specifies the client type as Switch
video	Specifies the client type as IP Video
virtual-switch	Specifies the client type as Virtual Switch
vlan <1-4094>	Specifies the VLAN ID.
wap-type1	Specifies the client type as Wireless AP (Type 1)
wap-type2	Specifies the client type as Wireless AP (Type 2)

Default

None

Command Mode

Global Configuration

fa zero-touch-options

Configure Fabric Attach Zero Touch option settings.

Syntax

- **default fa zero-touch-options**
- **fa zero-touch-options** {{auto-port-mode-fa-client | auto-mgmt-vlan-fa-client | auto-pvid-mode-fa-client | auto-trusted-mode-fa-client | auto-client-attach} [client-type <6-17>] | ip-addr-dhcp}
- **no fa zero-touch-options** {{auto-port-mode-fa-client | auto-mgmt-vlan-fa-client | auto-pvid-mode-fa-client | auto-trusted-mode-fa-client | auto-client-attach} [client-type <6-17>] | ip-addr-dhcp}

Command Parameters

auto-client-attach	Enables automated client attach configuration.
auto-mgmt-vlan-fa-client	Automates Mgmt VLAN update.

auto-port-mode-fa-client	Automates the configuration of EAP port modes for clients.
auto-pvid-mode-fa-client	Automates client PVID/Mgmt VLAN updates.
auto-trusted-mode-fa-client	Enables automatic trusted FA Client connection.
client-type	Specifies the FA Client type for which to automate operations.
ip-addr-dhcp	Automates IP address source mode to DHCP.

Default

None

Command Mode

Global Configuration

http-port

Sets the TCP port on which web server will listen.

Syntax

- default http-port
- http-port <1024-65535>

Command Parameters

<1024-65535> http port number

Default

None

Command Mode

Global Configuration

https-only

Enables HTTPS only. When SSL is enabled, the web server will listen only on HTTPS port.

Syntax

- default https-only
- https-only
- no https-only

Default

None

Command Mode

Global Configuration

interface

Selects an interface to configure.

Syntax

- `interface {Ethernet <LINE> | mgmt <1-8> | loopback <1-16> | vlan <1-4094>}`

Command Parameters

<LINE>	Specifies the port list.
Ethernet	Specifies the Ethernet IEEE 802.3 interface.
loopback <1-16>	Specifies the loopback interface.
mgmt <1-8>	Specifies the mgmt interface.
vlan <1-4094>	Specifies the Layer 3 IP VLAN interface.

Default

None

Command Mode

Global Configuration

ip address (global)

Sets switch/stack IP address.

Syntax

- `default ip address <source>`
- `ip address { [[stack | switch] {A.B.C.D} [netmask {A.B.C.D}] [default-gateway {A.B.C.D}] ] | [source {bootp-always | bootp-last-address | bootp-when-needed | configured-address | dhcp-always | dhcp-last-address | dhcp-when-needed} | [unit <1-8> {A.B.C.D}] ] }`
- `no ip address {stack | switch | unit <1-8>}`

Command Parameters

<source>	Restore default BootP/DHCP settings
A.B.C.D	IP address
bootp-always	Always use the bootp server
bootp-last-address	Use the last time bootp server
bootp-when-needed	Use bootp server when needed
configured-address	User-configured IP address
default-gateway {A.B.C.D}	set default-gateway address
dhcp-always	Always use the DHCP server
dhcp-last-address	Use the last time DHCP server
dhcp-when-needed	Use DHCP client when needed
netmask {A.B.C.D}	The subnet mask
source	BootP/DHCP mode
stack	The address of the stack
switch	To set the IP address of local unit
unit <1-8> {A.B.C.D}	To set the IP address of another unit in a stack

Default

None

Command Mode

Global Configuration

ip arp-inspection (global)

Enables ARP inspection.

Syntax

- **ip arp-inspection vlan <1-4094>**
- **no ip arp-inspection vlan <1-4094>**

Command Parameters

vlan <LINE> Configure ARP inspection VLAN list.

Default

None

Command Mode

Global Configuration

ip blocking-mode

Configures the Layer 3 IP blocking mode.

Syntax

- `default ip blocking-mode`
- `ip blocking-mode {full | none}`

Command Parameters

full Set the IP blocking mode to full

none Set the IP blocking mode to none

Default

None

Command Mode

Global Configuration

ip bootp

Configures BOOTP services.

Syntax

- `default ip bootp server`
- `ip bootp server {always | default-ip | disable | last}`
- `no ip bootp server`

Command Parameters

always Always use the bootp server

default-ip Use BootP server or the default IP

disable Never use bootp server

last Use the last time bootp server

Default

None

Command Mode

Global Configuration

ip default-gateway

Specifies default gateway (if not routing IP).

Syntax

- `default ip default-gateway`
- `ip default-gateway {A.B.C.D}`
- `no ip default-gateway`

Command Parameters

{A.B.C.D} IP address of default gateway

Default

None

Command Mode

Global Configuration

ip dhcp

Configures DHCP client settings.

Syntax

- `default ip dhcp client lease`
- `ip dhcp client lease {<10-4294967295> | days <1-49710> | hours <1-1193046> | minutes <1-71582788>|weeks <1-7101>}`
- `no ip dhcp client lease`

Command Parameters

<10-4294967295>	Lease time in seconds
client	Configure DHCP client settings
days <1-49710>	Lease time in days
hours <1-1193046>	Lease time in hours
lease	Configure DHCP lease time
minutes <1-71582788>	Lease time in minutes
weeks <1-7101>	Lease time in weeks

Default

None

Command Mode

Global Configuration

ip dhcp-relay (global)

Enables DHCP relay.

Syntax

- **default ip dhcp-relay {max-frame | option82}**
- **ip dhcp-relay {fwd-path <agent-ip> <dhcp-ip> {disable | enable | mode <bootp | bootp-dhcp | dhcp>}} | max-frame <576-1536> | option82}**
- **no ip dhcp-relay {fwd-path <agent-ip> <dhcp-ip> | option82}**

Command Parameters

bootp	set DHCP server mode to BOOTP only
bootp-dhcp	set DHCP server mode to both BOOTP and DHCP
dhcp	set DHCP server mode to DHCP only
disable	disable this forwarder path
enable	enable this forwarder path
fwd-path <agent-ip> <dhcp-ip>	Configure DHCP relay forward path

max-frame <576-1536> Set the maximum length for which option82 is added to DHCP packets for relay

mode set DHCP mode supported by this forwarder path

option82 Enable option 82 for DHCP Relay

Default

None

Command Mode

Global Configuration

ip dhcp-snooping (global)

Configures DHCP snooping settings.

Syntax

- `default ip dhcp-snooping {external-save | option82 | vlan <LINE> option82}`
- `ip dhcp-snooping {enable | option82 | vlan <LINE> option82}`
- `no ip dhcp-snooping {option82 | vlan <LINE> option82}`

Command Parameters

enable Enable DHCP Snooping

external-save Disable DHCP snooping binding table external saving

option82 Enable option 82 for DHCP snooping

vlan <LINE> Configure DHCP snooping VLANs

Default

None

Command Mode

Global Configuration

ip dhcp-snooping binding

Adds static DHCP snooping binding table entry.

Syntax

- `ip dhcp-snooping binding <1-4094> <H.H.H> ip {A.B.C.D} port <LINE> expiry <1-4294967295>`
- `no ip dhcp-snooping binding <1-4094> <H.H.H>`

Command Parameters

<1-4094>	Specifies the VLAN ID.
<H.H.H>	Specifies the MAC address to add. The format can include one of the following: H.H.H or xx:xx:xx:xx:xx:xx or xx.xx.xx.xx.xx.xx or xx-xx-xx-xx-xx-xx.
expiry <1-4294967295>	Specifies the entry expiry time.
ip {A.B.C.D}	Specifies the IP address of the device.
port <LINE>	Specifies the port on which the device is connected.

Default

None

Command Mode

Global Configuration

ip dhcp-snooping external-save

Controls the external DHCP snooping binding table saving.

Syntax

- `ip dhcp-snooping external-save [enable] {[tftp {[<A.B.C.D> | <WORD>] filename <WORD>}] | [sftp {[<A.B.C.D> | <WORD>] filename <WORD>}] | [usb {[unit <1-8>] [filename <WORD>]}] }`
- `no ip dhcp-snooping external-save enable`

Command Parameters

enable	Enables DHCP snooping binding table external saving.
filename <WORD>	DHCP snooping binding table external file name
sftp	Saves the DHCP snooping binding table on a SFTP server.
tftp	Save the DHCP snooping binding table on a TFTP server
unit <1-8>	USB unit number on which to save the DHCP snooping binding table

usb Save the DHCP snooping binding table on USB

WORD IPv6 address of TFTP server

Default

None

Command Mode

Global Configuration

ip directed-broadcast

Enabled directed broadcast forwarding.

Syntax

- `default ip directed-broadcast enable`
- `ip directed-broadcast enable`
- `no ip directed-broadcast enable`

Command Parameters

enable Enable IP directed broadcast

Default

None

Command Mode

Global Configuration

ip domain-name

Configures DNS domain name.

Syntax

- `default ip domain-name`
- `ip domain-name <LINE>`
- `no ip domain-name`

Command Parameters

<LINE> DNS domain name

Default

None

Command Mode

Global Configuration

ip forward-protocol

Configures broadcast forwarding.

Syntax

- `ip forward-protocol udp {<1-65535> <WORD> | portfwdlist <1-128> <1-65535> <A.B.C.D> <name>}`
- `no ip forward-protocol udp {<1-65535> | portfwdlist <1-128> <1-65535> <A.B.C.D>}`

Command Parameters

<1-128>	Enter ID of list of ports to forward
<1-65535>	Enter UDP port to forward
<A.B.C.D>	Enter IP Destination for the UDP port
<WORD>	Protocol name
name	Enter name of the list
portfwdlist	Set a port forwarding list
udp	Configure UDP broadcast forwarding

Default

None

Command Mode

Global Configuration

ip fwd-nh (Global configuration mode)

Configure IP forwarding next-hop settings

Syntax

- `ip fwd-nh [enable][policy <WORD> match source-ip <A.B.C.D/><0-32> { [port-min <0-65535> port-max <0-65535>] [port-type <both | tcp | udp>] [set next-hop <A.B.C.D> [secondary-next-hop <A.B.C.D>]]`

Command Parameters

enable	Enables the IP forwarding next-hop feature.
match	Policy matching parameters
policy <WORD>	Name of next-hop forwarding policy.
port-min <0-65535> port-max <0-65535>	Specifies the minimum and maximum L4 destination port value.
port-type <both tcp udp>	Specifies destination port type.
secondary-next-hop <A.B.C.D>	Specifies IP address of secondary next-hop IP forwarding next-hop
set next-hop <A.B.C.D>	Specifies next-hop IP address
source-ip A.B.C.D/><0-32>	Source IP address and mask length to be matched.

Default

None

Command Mode

Global Configuration

ip igmp (Global Configuration)

Configures global IGMP settings.

Syntax

- `default ip igmp { [profile <1-65535>] | [ssm [dynamic-learning group-range ...]] | [ssm-map <A.B.C.D> enable]}`
- `ip igmp { [flush {all | vlan <1-4094> | ethernet <LINE>} [grp-member] [mrouter] [stream] ] | [ profile <1-65535> ] | [ssm [dynamic-learning] [group-range <A.B.C.D>/><0-32>]] | [ssm-map <A.B.C.D> <A.B.C.D> enable<A.B.C.D>]}`
- `no ip igmp { [profile <1-65535>] | [ssm dynamic-learning] | [ssm-map <A.B.C.D> enable]}`

Command Parameters

<LINE>	Listt of ports
dynamic-learning	Enable SSM dynamic learning
Ethernet	Flush on Ethernet ports
flush	Flush IGMP Mrouter, group member, or sender
group-range <A.B.C.D>/<0-32>]	Configure SSM group range IP/mask
grp-member	Flush IGMP group member
mrouter	Flush IGMP Mrouter
profile <1-65535>	Create/modify IGMP filter profile
ssm	Configure global SSM settings
ssm-map <A.B.C.D>	Create/modify SSM map/channel
stream	Flush IGMP streams
vlan <1-4094>	Flush on vlan interfaces

Default

None

Command Mode

Global Configuration

ip ipfix (Global)

Configures IPFIX.

Syntax

- **default ip ipfix {export-interval | exporter-enable | template-refresh-interval | template-refresh-packets}**
- **ip ipfix { [export-interval <10-3600>] [exporter-enable] [template-refresh-interval [<300 - 3600>]] template-refresh-packets <10000-100000> }**
- **no ip ipfix exporter-enable**

Command Parameters

exporter-enable	Enable exporter
export-interval <10-3600>	Set frequency of flow export to collector
template-refresh-interval <300-3600>	Set template refresh timeout interval
template-refresh-packets <10000-100000>	Set template refresh packets

Default

None

Command Mode

Global Configuration

ip ipfix collector

Configures IPFIX collectors.

Syntax

- **default ip ipfix collector <A.B.C.D> {dest-port | enable dest-port}**
- **ip ipfix collector {<A.B.C.D> [enable] dest-port <1-65535>} | use-management-ip**
- **no ip ipfix collector <A.B.C.D> enable**

Command Parameters

A.B.C.D	Collector address
dest-port <1-65535>	Set destination port
enable	Enable IPFIX collector

Default

None

Command Mode

Global Configuration

ip ipfix enable

Enables IPFIX.

Syntax

- `default ip ipfix enable`
- `ip ipfix enable`
- `no ip ipfix enable`

Default

None

Command Mode

Global Configuration

ip ipfix slot

Configures IPFIX per-slot/unit settings.

Syntax

- `default ip ipfix slot <LINE> active-timeout`
- `default ip ipfix slot <LINE> aging-interval`
- `ip ipfix slot <LINE> aging-interval <0-2147400> | active-timeout <1-60>`

Command Parameters

<LINE> slot list (1 for standalone; 1- n for n high stack)

active-timeout <1-60> Set the active timeout value (mins).

aging-interval <0-2147400> Set the aging interval value (seconds)

Default

None

Command Mode

Global Configuration

ip isis

Applies ISIS policy/redistribute configuration

Syntax

- `ip isis apply redistribute {direct |static}`

Command Parameters

apply	Apply ISIS policy/redistribute configuration
direct	Only apply direct redistribute configuration
redistribute	Apply ISIS redistribute configurations
static	Only apply static redistribute configuration

Default

None

Command Mode

Global Configuration

ip isis maximum-path

Sets the maximum number of ECMP path for ISIS routes.

Syntax

- `ip isis maximum-path <1-4>`

Command Parameters

<1-4> Specifies the ECMP path value.

Default

None

Command Mode

Global Configuration

ip mgmt

Configures management information.

Syntax

- `default ip mgmt {address unit <1-8> | default-gateway | limit | netmask unit <1-8> | shutdown-interval}`
- `ip mgmt route <destination-ip-addr> <destination-subnet-mask> <gateway-ip>`
- `no ip mgmt route <destination-ip-addr> <destination-subnet-mask> <gateway-ip>`

Command Parameters

<destination-ip-addr>	destination IP <A.B.C.D>
<destination-subnet-mask>	destination subnet mask <A.B.C.D>
<gateway-ip>	gateway IP <A.B.C.D>
route	Configure a static route for the mgmt vlan

Default

None

Command Mode

Global Configuration

ip mgmt address

Configures management IP address.

Syntax

- `ip mgmt address { [<A.B.C.D> {<A.B.C.D> [default-gateway A.B.C.D] [default-gateway A.B.C.D]} [netmask <A.B.C.D> {[default-gateway A.B.C.D]}] [stack] [switch]`

Command Parameters

<A.B.C.D>	IP address
netmask <A.B.C.D>	Set management subnet mask
stack	Management IP address of the stack
switch	Local management address

Default

None

Command Mode

Global Configuration

ip mgmt default-gateway

Specify management default gateway (if not routing IP).

Syntax

- `ip mgmt default-gateway {<A.B.C.D>}`

Command Parameters

<A.B.C.D> Specify management default gateway (if not routing IP)

Default

None

Command Mode

Global Configuration

ip mgmt limit

Set the pps limit at which the OOB port will be automatically shutdown.

Syntax

- `ip mgmt limit <50-10000>`

Command Parameters

<50-10000> Specify the pps limit at which the OOB port will be automatic shutdown

Default

None

Command Mode

Global Configuration

ip mgmt netmask

Set management subnet mask.

Syntax

- `ip mgmt netmask {[<A.B.C.D>]} [unit <1-8> A.B.C.D]}`

Command Parameters

<A.B.C.D> Management subnet mask

unit <1-8> Set the management subnet mask of another unit in a stack

Default

None

Command Mode

Global Configuration

ip mgmt route

Configure a static route for the mgmt vlan.

Syntax

- `ip mgmt route [<A.B.C.D>] [<A.B.C.D>] [<A.B.C.D>]`

Command Parameters

<A.B.C.D>	Destination IP
<A.B.C.D>	Destination subnet mask
<A.B.C.D>	Gateway IP

Default

None

Command Mode

Global Configuration

ip mgmt shutdown

Shutdown the mgmt port.

Syntax

- `ip mgmt shutdown [all] [unit <1-8>]`

Command Parameters

all	Disable the management port of all units in a stack
unit <1-8>	Disable the management port of another unit in a stack

Default

None

Command Mode

Global Configuration

ip mgmt shutdown-interval

Set the mgmt port shutdown time.

Syntax

- `ip mgmt shutdown-interval <0-180>`

Command Parameters

<0-180> seconds 0 signifies shutdown without auto-recovery

Default

None

Command Mode

Global Configuration

ip name-server

Configures DNS server IP addresses.

Syntax

- `ip name-server {<A.B.C.D> | <WORD>}`
- `no ip name-server {<A.B.C.D> | <WORD>}`

Command Parameters

<A.B.C.D> IPv4 address

<WORD> IPv6 address, 45 length

Default

None

Command Mode

Global Configuration

ip pim

Configure global Protocol Independent Multicast (PIM) settings.

Syntax

- `ip pim {[bootstrap-period <5-32757>][disc-data-timeout <5-65535>][enable][fwd-cache-timeout <10-86400>][join-prune-interval <1-18724>][mode {ssm | sparse}][register-suppression-timeout <6-65535>][rp-c-adv-timeout <5-26214>][unicast-route-change-timeout <2-65535>]}`

Command Parameters

bootstrap-period <5-32757>	Configures the PIM bootstrap period.
disc-data-timeout <5-65535>	Configures the PIM disc data timeout.
enable	Enables PIM.
fwd-cache-timeout <1-86400>	Configures the forwarding cache timeout.
join-prune-interval <1-18724>	Configures the PIM join-prune interval.
mode {ssm sparse}	Configures the PIM mode globally.
register-suppression-timeout <6-65535>	Configures the PIM register suppression timeout.
rp-c-adv-timeout <5-26214>	Configures how often the candidate rendezvous points send C-RP advertisement messages.
unicast-route-change-timeout <2-65535>	Configures the PIM-SM unicast route change timeout.

Default

None

Command Mode

Global Configuration

ip pim rp-candidate group

Configure a dynamic C-RP.

Syntax

- `default ip pim rp-candidate group <A.B.C.D> <A.B.C.D> rp <A.B.C.D>`
- `ip pim rp-candidate group <A.B.C.D> <A.B.C.D> rp <A.B.C.D>`

- `no ip pim rp-candidate group <A.B.C.D> <A.B.C.D> rp <A.B.C.D>`

Command Parameters

<A.B.C.D>
<A.B.C.D> Specifies the group address and group subnet. The first <A.B.C.D> is the group address and the second <A.B.C.D> is the group subnet.

rp <A.B.C.D> Specifies the RP address.

Default

None

Command Mode

Global Configuration

ip pim static-rp

Configure a Protocol Independent Multicast (PIM) static RP.

Syntax

- `default ip pim static-rp [<A.B.C.D> <A.B.C.D> <A.B.C.D>]`
- `default ip pim static-rp [<A.B.C.D>/<0-32> <A.B.C.D> ]`
- `ip pim static-rp [<A.B.C.D> <A.B.C.D> <A.B.C.D>][enable]`
- `ip pim static-rp [<A.B.C.D>/<0-32> <A.B.C.D> ][enable]`
- `no ip pim static-rp [<A.B.C.D> <A.B.C.D> <A.B.C.D>][enable]`
- `no ip pim static-rp [<A.B.C.D>/<0-32> <A.B.C.D> ][enable]`

Command Parameters

<A.B.C.D> The first <A.B.C.D> specifies the group address.

<A.B.C.D> The third <A.B.C.D> specifies the RP address.

<A.B.C.D>/<0-32> The second <A.B.C.D> specifies the address and mask.

enable Enables the static RP.

Default

None

Command Mode

Global Configuration

ip pim virtual-neighbor

Configure a Protocol Independent Multicast (PIM) virtual neighbor.

Syntax

- `default ip pim virtual-neighbor <A.B.C.D> <A.B.C.D>`
- `ip pim virtual-neighbor <A.B.C.D> <A.B.C.D>`
- `no ip pim virtual-neighbor <A.B.C.D> <A.B.C.D>`

Command Parameters

<A.B.C.D>
<A.B.C.D> The first <A.B.C.D> specifies the interface address, and the second specifies the virtual neighbor address.

Default

None

Command Mode

Global Configuration

ip prefix-list

Adds/modifies a prefix from an IP prefix list.

Syntax

- `ip prefix-list <WORD> { {A.B.C.D/<0-32> {ge <0-32> le <0-32>} | {le <0-32> ge <0-32>}} | {name <WORD>} }`
- `no ip prefix-list <WORD> <A.B.C.D>/<0-32>`

Command Parameters

<WORD> Ip prefix list name

A.B.C.D/<0-32> IP prefix and mask bits

ge <0-32> Starting point within the mask length, greater than or equal to

le <0-32> Ending point within the mask length, less than or equal to

name <WORD> Rename the ip prefix list

Default

None

Command Mode

Global Configuration

ip route

Creates a static IP route.

Syntax

- `ip route <destination-ip> <destination-subnet-mask> <next-hop-ip> {<1-65535> | disable | enable | weight <1-65535>}`
- `no ip route <destination-ip> <destination-subnet-mask> <next-hop-ip>`

Command Parameters

<1-65535>	cost
<destination-ip>	destination IP <A.B.C.D>
<destination-subnet-mask>	destination subnet mask <A.B.C.D>
<next-hop-ip>	next hop IP <A.B.C.D>
disable	disable a route
enable	enable a route
weight	change cost of existing route

Default

None

Command Mode

Global Configuration

ip route preference protocol

Configures the ip route preference protocol value.

Syntax

- `[default] ip route preference protocol { [ spbm-level1 | ospf-ext1 | ospf5-ext2 | ospf-inter | ospf-intra | rip | static ] [ <1-255> ] }`

Command Parameters

<1-255>	Preference value (0 is reserved for local routes).
ospf-ext1	Specifies protocol type OSPF-EXT1. Default preference value is 120.
ospf-ext2	Specifies protocol type OSPF-EXT2. Default preference value is 125.

ospf-inter	Specifies protocol type OSPF-INTER. Default preference value is 25.
ospf-intra	Specifies protocol type OSPF-INTRA. Default preference value is 20.
rip	Specifies protocol type RIP. Default preference value is 100.
spbm-level1	Specifies protocol type ISIS (SPBM-LEVEL1). Default preference value is 7.
static	Specifies protocol type static. Default preference value is 5.

Default

None

Command Mode

Global Configuration

ip routing (global)

Enables global routing.

Syntax

- `ip routing force`
- `no ip routing`

Command Parameters

force Do not ask for confirmation

Default

None

Command Mode

Global Configuration

ip source-interface

Configures source interface.

Syntax

- `default ip source-interface {radius|syslog|tacacs|snmp-traps|ssh|telnet|all}`
- `ip source-interface {radius|syslog|tacacs|snmp-traps|ssh|telnet|all} {loopback <1-16>}`

```
• no ip source-interface {radius|syslog|tacacs|snmp-traps|ssh|telnet|all}
```

Command Parameters

all	Configures source interface for all listed applications
radius	Configures source interface for RADIUS
snmp-traps	Configures source interface for SNMP traps
ssh	Configures source interface for SSH
syslog	Configures source interface for SYSLOG
tacacs	Configures source interface for TACACS
telnet	Configures source interface for TELNET

Default

None

Command Mode

Global Configuration

ip static-mroute

Configure static multicast route.

Syntax

```
• ip static-mroute <A.B.C.D/<0-32> rpf <A.B.C.D> [preference <1-255>] [enable]
```

Command Parameters

<A.B.C.D/<0-32> rpf <A.B.C.D>	Specify IP address/mask of the destination network and IP address of the Reverse Path Forwarding neighbor towards RP/Source
enable	Enable static multicast route
preference <1-255>	Specify administrative distance value of the static multicast route

Default

None

Command Mode

Global Configuration

ipmgr

Modifies IP Manager settings.

Syntax

- `default ipmgr {snmp|telnet|web|source-ip <list ID>}`
- `ipmgr {snmp|telnet|web|source-ip <list ID> <IPaddr> [mask <mask>]}`
- `no ipmgr {snmp|telnet|web|source-ip <list ID>}`

Command Parameters

snmp	Enable IP Manager control over SNMP traffic
source-ip {<1-50> <50-100> <WORD>}	Set source IP address from which connections are allowed
telnet	Enable IP Manager control over TELNET sessions
web	Enable IP Manager control over WEB connections

Default

None

Command Mode

Global Configuration

ipv6

Sets global IPv6 configuration subcommands.

Syntax

- `default ipv6 [auto-config] [enable] [forwarding ] [hop-limit <0-255] [icmp]`
- `default ipv6 [enable] [icmp] {[block-multicast-replies] [icmp] [error-interval] [icmp] [error-quota] [icmp] [unreach-msg]}`
- `ipv6 [auto-config] [enable] [forwarding ] [hop-limit <0-255] [icmp]`
- `ipv6 [auto-config] [enable] [icmp] {[block-multicast-replies] [icmp] [error-interval <0-2147483647>] [icmp] [error-quota <0-2000000>] [icmp] [unreach-msg]}`
- `no ipv6 [auto-config] [enable] [forwarding ][icmp]`
- `no ipv6 [enable] [icmp] {[block-multicast-replies] [icmp] [unreach-msg]}`

Command Parameters

addr-unreach	Enable IPv6 ICMP address unreachable
autoconfig	Set IPv6 autoconfiguration
block-multicast-replies	Enable IPv6 ICMP block-multicast-replies
enable	Enable IPv6 global admin status
error-interval<0-2147483647>	Set IPv6 ICMP error-interval
error-quota<0-2000000>	Set IPv6 ICMP error-quota
forwarding	Enable global IPv5 forwarding
hop-limit <0-255>	Enable global IPv5 forwarding
icmp	Set IPv6 ICMP parameters
port-unreach	Enable IPv6 ICMP port unreachable
unreach-msg	Enable IPv6 ICMP unreach-msg

Default

None

Command Mode

Global Configuration

ipv6 address

Sets default IPv6 address.

Syntax

- **default ipv6 address [stack] [switch] [unit <1-8>]**
- **ipv6 address {[stack <WORD>] [switch <WORD> [eui <1-3>]] [unit <1-8> <WORD>] [<WORD>]}**
- **no ipv6 address [stack] [switch] [unit <1-8>]**

Command Parameters

<WORD>	IPv6 address /prefix length
eui <1-3>	Sets the EUI parameter.

stack	The address of the stack
switch	Set the IP address of local unit
unit <1-8>	Set the IP address of another unit in a stack

Default

None

Command Mode

Global Configuration

ipv6 autoconfig

Configures IPv6 autoconfiguration.

Syntax

- `default ipv6 autoconfig`
- `ipv6 autoconfig`
- `no ipv6 autoconfig`

Default

None

Command Mode

Global Configuration

ipv6 default-gateway

Configures IPv6 default gateway.

Syntax

- `default ipv6 default-gateway`
- `ipv6 default-gateway <WORD>`
- `no ipv6 default-gateway`

Command Parameters

<WORD> IPv6 address

Default

None

Command Mode

Global Configuration

ipv6 dhcp

Global dhcp guard subcommands

Syntax

- **default ipv6 dhcp guard enable**
- **default ipv6 dhcp guard policy <WORD>**
- **ipv6 dhcp guard clear stats [<LINE>]**
- **ipv6 dhcp guard enable**
- **ipv6 dhcp guard policy <WORD>**
- **no ipv6 dhcp guard enable**
- **no ipv6 dhcp guard policy <WORD>**

Command Parameters

<WORD> Specifies the Dynamic Host Configuration Protocol (DHCP) policy name.

clear Clear statistics globally

enable Enable dhcp guard globally

guard Global dhcp guard subcommands

LINE List of ports

policy Create a policy globally

stats Clear statistics globally

Default

None

Command Mode

Global Configuration

ipv6 dhcp-relay fwd-path

Create fwd-path.

Syntax

- `default ipv6 dhcp-relay fwd-path <WORD> [enable]`
- `ipv6 dhcp-relay [fwd-path <WORD>] [enable]`
- `no ipv6 dhcp-relay fwd-path <WORD> [enable]`

Command Parameters

<WORD> Agent IPv6 address

Default

None

Command Mode

Global Configuration

ipv6 fhs

Global ipv6 fhs subcommands.

Syntax

- `default ipv6 fhs enable`
- `ipv6 fhs enable`
- `no ipv6 fhs enable`

Command Parameters

enable	Enable First Hoop Security globally
ipv6-access-list	Ipv6 access list
mac-access-list	Create FHS mac access list
nd	ND subcommands

Default

None

Command Mode

Global Configuration

ipv6 fhs ipv6-access-list

Creates the First Hop Security (FHS) IPv6 access list or adds IP prefixes to the existing FHS IPv6 access list.

Syntax

- `default ipv6 fhs ipv6-access-list <WORD> [<WORD>]`
- `ipv6 fhs ipv6-access-list <WORD> <WORD> [ge <0-128>] [le <0-128>] [mode {allow|deny}]`
- `no ipv6 fhs ipv6-access-list <WORD> <WORD>`

Command Parameters

<WORD> <WORD> The first <WORD> specifies the access list name. The second <WORD> specifies the IPV6 address prefix and mask length.

ge <0-128> Specifies the start mask length for providing the IP range. The default is 0.

le <0-128> Specifies the end mask length for providing the IP range. The default is 0.

mode {allow|deny} Specifies the access mode. The default is allow.

Default

The default is disabled.

Command Mode

Global Configuration

ipv6 fhs mac-access-list

Create the First Hop Security (FHS) MAC access list or add a MAC to the existing MAC address list.

Syntax

- `default ipv6 fhs mac-access-list <WORD> <H.H.H>`
- `ipv6 fhs mac-access-list <WORD> <H.H.H> [mode {allow|deny}]`
- `no ipv6 fhs mac-access-list <WORD> <H.H.H>`

Command Parameters

<H.H.H> Specifies the MAC address. The format can include one of the following: H.H.H., xx:xx:xx:xx:xx:xx, xx.xx.xx.xx.xx.xx, xx-xx-xx-xx-xx-xx.

<WORD> Specifies the MAC address name.

mode {allow|deny} Specifies the access mode.

Default

The default is disabled.

Command Mode

Global Configuration

ipv6 fhs nd inspection stats clear

Clears ND inspection global overflow statistics.

Syntax

- `ipv6 fhs nd inspection stats clear`

Default

None

Command Mode

Global Configuration

ipv6 icmp addr-unreach

Configure IPv6 Internet Control Message Protocol (ICMP) parameters.

Syntax

- `default ipv6 icmp addr-unreach icmp`
- `ipv6 icmp addr-unreach icmp`
- `no ipv6 icmp addr-unreach [icmp]`

Command Parameters

icmp Enables IPv6 redirect message.

Default

None

Command Mode

Global Configuration

ipv6 icmp port-unreach

Configure IPv6 Internet Control Message Protocol (ICMP) parameters.

Syntax

- `default ipv6 icmp port-unreach icmp`
- `ipv6 icmp port-unreach icmp`
- `no ipv6 icmp port-unreach icmp`

Command Parameters

icmp Enables IPv6 ICMP port unreachable message.

Default

None

Command Mode

Global Configuration

ipv6 mgmt

Configure IPv6 management port

Syntax

- `default ipv6 mgmt address {[stack][ switch] [unit <1-8>]}`
- `default ipv6 mgmt default-gateway`
- `default ipv6 mgmt interface`
- `ipv6 mgmt address {[WORD <ipv6-addr/prefix_len>] [stack <ipv6-addr/prefix_len> ] [switch <ipv6-addr/prefix_len> ] [unit <1-8> <ipv6-addr/prefix_len>]}`
- `ipv6 mgmt default-gateway <ipv6-addr>`
- `ipv6 mgmt interface [dad-ns <0-600>| hop-limit <0-255>]`
- `no ipv6 mgmt address {[stack][ switch] [unit <1-8>]}`
- `no ipv6 mgmt default-gateway`
- `no ipv6 mgmt interface`

Command Parameters

address Configure management stack/unit/switch address

dad-ns Duplicate address detection - number of neighbor solicitations

default-gateway	Configure IPv6 management default gateway
hop-limit	Number of hops for DAD NS packets
interface	Set the management interface
process-redirect	Enable processing IPv6 redirect-msg
stack <ipv6-addr/prefix_len>	Set the management address of the stack
switch <ipv6-addr/prefix_len>	Set the management address of local unit
unit <1-8> <ipv6-addr/prefix_len>	Set the management address of a unit in the stack
WORD <ipv6-addr/prefix_len>	ipv6_address/prefix_length
WORD <ipv6-addr>	ipv6_address

Default

None

Command Mode

Global Configuration

ipv6 mld (global)

Configure global MLD settings.

Syntax

- **ipv6 mld flush** [grp-member] [mrouter] [port <LINE>] [stream] [vlan<1-4094>]
- **ipv6 mld flush** [port <LINE>] [grp-member] [mrouter] [stream]
- **ipv6 mld flush** [vlan <1-4094>] [port <LINE>] [grp-member] [mrouter] [stream]

Command Parameters

flush	Flush the multicast listener discovery (MLD) multicast router, group member, or sender.
grp-member	Flushes the MLD group member.
mrouter	Flushes the MLD multicast router.
port <LINE>	Flushes the ports.

stream Flushes MLD Streams.

vlan <1-4094> Flushes the VLAN interfaces.

Default

None

Command Mode

Global Configuration

ipv6 nd (global)

Global ipv6 nd subcommands.

Syntax

- `ipv6 nd inspection clear stats line`
- `ipv6 nd inspection enable`
- `ipv6 nd rguard clear stats line`
- `ipv6 nd rguard policy word`

Command Parameters

clear	Clear rguard statistics globally
enable	Enable rguard globally
inspection	ND inspection subcommands
LINE	List of ports
policy	Set rguard policy globally
rguard	Global ipv6 nd rguard subcommands
stats	Clear rguard statistics globally
WORD	Rguard policy name

Default

None

Command Mode

Global Configuration

ipv6 nd inspection clear stats

Clear the network discovery (ND)-inspection statistics and the source binding table (SBT) entry drop status. If you select a particular port-number option, the device clears the statistics for that particular port.

Syntax

- `ipv6 nd inspection clear stats [<LINE>]`

Command Parameters

<LINE> Specifies a list of ports.

Default

None

Command Mode

Global Configuration

ipv6 nd inspection enable

Enable ND inspection globally.

Syntax

- `default ipv6 nd inspection enable`
- `ipv6 nd inspection enable`
- `no ipv6 nd inspection enable`

Default

The default is disabled.

Command Mode

Global Configuration

ipv6 nd rguard clear stats

Clear the router advertisement (RA) guard statistics.

Syntax

- `ipv6 nd rguard clear stats [<LINE>]`

Command Parameters

<LINE> Specifies a list of ports.

Default

None

Command Mode

Global Configuration

ipv6 nd raguard enable

Enable router advertisement (RA) guard globally.

Syntax

- `default ipv6 nd raguard enable`
- `ipv6 nd raguard enable`
- `no ipv6 nd raguard enable`

Default

The default is disabled.

Command Mode

Global Configuration

ipv6 nd raguard policy

Enables the user to enter RA Guard Configuration mode to create, configure, and modify the router advertisement (RA) guard policy.

Syntax

- `default ipv6 nd raguard policy <WORD>`
- `ipv6 nd raguard policy <WORD>`
- `no ipv6 nd raguard policy <WORD>`

Command Parameters

<WORD> Specifies the RA guard policy name.

Default

The default is disabled.

Command Mode

Global Configuration

ipv6 neighbor

Configures neighbor cache.

Syntax

- `ipv6 neighbor <WORD> port <WORD> mac <H.H.H> [vlan <1-4094>]`
- `no ipv6 neighbor <WORD>`

Command Parameters

<WORD> IPv6 address, 45 length

mac <H.H.H> MAC address of IPv6 neighbor entry (H.H.H or xx:xx:xx:xx:xx:xx or xx.xx.xx.xx.xx.xx or xx-xx-xx-xx-xx-xx)

port <WORD> unit/ port

Default

None

Command Mode

Global Configuration

ipv6 neighbor binding clear

Clears all dynamically learned source binding table (SBT) entries, such as DHCP learned information. The command does not clear the SBT static entries.

Syntax

- `ipv6 neighbor binding clear`

Default

None

Command Mode

Global Configuration

ipv6 neighbor binding down-lifetime

Configures the maximum downtime for a dynamically learned source binding table (SBT) entry. If the switch receives any network discovery (ND) messages in this state that matches the information in the source binding table (SBT) entry, then no validation occurs on that packet, rather the entry moves directly to the REACHABLE state. After this timer expires, the device deletes this entry from the SBT. In the case of “infinite” option, the device never deletes the SBT entry. If you change the timer value from “infinite” to a “finite” value then the timer restarts and expires after the finite value in seconds.

Syntax

- `default ipv6 neighbor binding down-lifetime`
- `ipv6 neighbor binding down-lifetime [<30-86400>][infinite]`

Command Parameters

<30-86400> Configures the down lifetime value in seconds.

infinite Configures the down lifetime to infinite. In the case of “infinite” option, the device never deletes the SBT entry. If you change the timer value from “infinite” to a “finite” value then the timer restarts and expires after the finite value in seconds.

Default

The default is 86400.

Command Mode

Global Configuration

ipv6 neighbor binding max-entries

Specifies the maximum number of dynamic entries that can be inserted into the source binding table (SBT). The maximum number of static entries is 100. If the SBT has more than the maximum number of entries, the additional entries are not allowed until the SBT is cleared.

Syntax

- `default ipv6 neighbor binding max-entries`
- `ipv6 neighbor binding max-entries <1-1024>`

Command Parameters

<1-1024> Specifies the number of entries in the neighbor binding table.

Default

The default is 512.

Command Mode

Global Configuration

ipv6 neighbor binding reachable-lifetime

Specifies the maximum reachable lifetime for a dynamically-learned source binding table (SBT) entry. After this timeout, the entry moves to a STALE state. If the interface is down before the timer expires, then the state moves to a DOWN state. In the DOWN state, if the switch receives any network discovery (ND) packets with the matching entry in the source binding table (SBT), then without validation the state moves to REACHABLE. Similarly if the switch receives any ND packets that match the entry in the SBT, then this aging timer is refreshed. In the case of the “infinite” option, the SBT entry state never moves from a REACHABLE state to an other state. If the timer value changes from “infinite” to a “finite” value, then the timer restarts and expires after the finite value in seconds.

Syntax

- `default ipv6 neighbor binding reachable-lifetime`
- `ipv6 neighbor binding reachable-lifetime [<30-86400>] [infinite]`

Command Parameters

<30-86400> Configures the reachable lifetime value in seconds.

infinite Configures the reachable-lifetime to infinite. In the case of the “infinite” option, the SBT entry state never moves from a REACHABLE state to an other state. If the timer value changes from “infinite” to a “finite” value, then the timer restarts and expires after the finite value in seconds.

Default

The default is 300 seconds.

Command Mode

Global Configuration

ipv6 neighbor binding stale-lifetime

Specifies the maximum stale lifetime for a dynamically learned source binding table (SBT) entry. In this state, if the switch receives any network discovery (ND) message that matches the information of the SBT entry, then no validation occurs on that packet, instead the SBT entry moves directly to a REACHABLE state. After this timer expires the entry is deleted from the SBT. In the case of “infinite” option, the SBT entry state is never deleted. If the timer value is changed from “infinite” to a “finite” value, then the timer restarts and expires after the finite value in seconds.

Syntax

- `default ipv6 neighbor binding stale-lifetime`
- `ipv6 neighbor binding stale-lifetime [<30-86400>] [infinite]`

Command Parameters

infinite Configures the stale lifetime to infinite. In the case of “infinite” option, the SBT entry state is never deleted. If the timer value is changed from “infinite” to a “finite” value, then the timer restarts and expires after the finite value in seconds.

Default

The default is 86400 seconds.

Command Mode

Global Configuration

ipv6 neighbor binding vlan

Adds a static entry to the Source Binding Table (SBT). Note: The static entry replaces the dynamic entry (matching the source IP). If a static SBT entry with a matching source IP already exists, then if you try to add a static SBT entry with a different MAC address and port, the pre-existing entries are not overwritten. The same SBT entry can be added to a different VLAN. The SBT entry is not tied to a particular VLAN, or a VLAN to port mapping. An SBT entry can be created without the VLAN existing. Ipv6-address: “0::0” is not allowed. LL-MAC: “0:0:0:0:0:0” is not allowed.

Syntax

- `ipv6 neighbor binding vlan <1-4094> <WORD> interface Ethernet <WORD> <H.H.H>`
- `no ipv6 neighbor binding vlan <1-4094> <WORD> interface Ethernet <WORD> <H.H.H>`

Command Parameters

<1-4094>	Specifies the VLAN ID.
<H.H.H>	Specifies the MAC address in the following formats: H.H.H, xx:xx:xx:xx:xx:xx, xx.xx.xx.xx.xx.xx, xx-xx-xx-xx-xx-xx. LL-MAC “0:0:0:0:0:0” is not allowed.
<WORD>	Specifies the IPv6 address. IPv6 address 0::0 is not allowed.
interface Ethernet <WORD>	Specifies the Ethernet interface. <WORD> specifies unit/port.

Default

None

Command Mode

Global Configuration

ipv6 rip

Enables RIPng interface.

Syntax

- `ipv6 rip {enable | poison enable | cost <1-15 Cost> | default-information}`

Command Parameters

cost	Sets the RIPng interface metric.
default-information	Advertises only the default route on the interface.
enable	Enables RIPng on the interface.
poison	Enables poison reverse on the interface.

Default

Disabled

Command Mode

Global Configuration

ipv6 route

Creates a static route and set the parameters.

Syntax

- `default ipv6 route <WORD> {[mgmt] [enable] [next-hop <WORD>] [tunnel <1-2147483647>] [vlan <1-4094>] | | preference protocol {ripng | static}}`
- `ipv6 route <WORD> {[cost <1-65535>] [mgmt [enable]] [next-hop <WORD>] [preference <1-255>] [tunnel <1-2147483647>] [vlan <1-4094>] | preference protocol {ripng | static} <1-255>}`
- `no ipv6 route <WORD> {[mgmt] [enable] [next-hop <WORD>] [tunnel <1-2147483647>] [vlan <1-4094>]}`

Command Parameters

<WORD>	IPv6 route 49 length
cost <1-65535>	IPv6 route cost
mgmt [enable]	Out of band management
next-hop <WORD>	IPv6 route next-hop, 49 length
preference	Configures route preference.
preference <1-255>	IPv6 route preference
tunnel <1-2147483647>	IPv6 route tunnel
vlan <1-4094>	IPv6 route VLAN

Default

None

Command Mode

Global Configuration

ipv6 slow-path-to-cpu

Enables slow path to cpu.

Syntax

- `ipv6 slow-path-to-cpu enable`

Command Parameters

enable	Enable slow path to cpu.

Default

None

Command Mode

Global Configuration

ipv6 tunnel

IPv6 Tunnel configuration commands.

Syntax

- `default ipv6 tunnel <1-2147483647> {[hop-limit]`
- `ipv6 tunnel <1-2147483647> {[hop-limit <0-255>] [source <A.B.C.D>
<ipv6-addr/prefix-len> <WORD> destination <A.B.C.D> [mode {data |
mgmt}]] type 6in4]}`
- `no ipv6 tunnel <1-2147483647>`

Command Parameters

<1-2147483647>	Tunnel ID
address <WORD>	ipv6_address/prefix_length
data	Data tunnel
hop-limit <0-255>	Specify number of hops in the tunnel
mgmt	Management tunnel
mode	Tunneling mode <data or mgmt>
source <A.B.C.D>	Specify IP address for source and destination of IPv6 tunnel
type 6in4	Tunnel type

Default

None

Command Mode

Global Configuration

i-sid

Configures the User-Network-Interface (UNI).

Syntax

- `default i-sid [<1-16777214>] {port<LINE>|vlan <1-4094>} [port <LINE>]
[vlan <1-4094>]`
- `i-sid [<1-16777214>] {port<LINE>|vlan <1-4094>} [port <LINE>] [vlan
<1-4094>]`
- `no i-sid [<1-16777214>] {port<LINE>|vlan <1-4094>} [port <LINE>] [vlan
<1-4094>]`

Command Parameters

<1-16777214>	Specifies the I-SID.
<LINE>	Specifies the port list.
port	Configures the switched UNI by assigning port and VLAN to I-SID.
vlan <1-4094>	Configures the C-VLAN UNI by assigning VLAN to I-SID.

Default

None

Command Mode

Global Configuration

isis (global)

Configures ISIS operations.

Syntax

- **isis apply redistribute {direct | static}**

Command Parameters

apply	Apply ISIS policy/redistribute configuration
direct	Only apply direct redistribute configuration
redistribute	Apply ISIS redistribute configurations
static	Only apply static redistribute configuration

Default

None

Command Mode

Global Configuration

isis maximum-path

Sets the maximum number of ECMP path for ISIS routes.

Syntax

- `default isis maximum-path`
- `isis maximum-path <1-4>`
- `no isis maximum-path`

Command Parameters

<1-4> Specifies the ECMP path value.

Default

None

Command Mode

Global Configuration

jumbo-frames

Enables jumbo frames on switch/stack.

Syntax

- `default jumbo-frames [enable] [size]`
- `jumbo-frames [enable] [size <1519-9216>]`
- `no jumbo-frames [enable]`

Command Parameters

enable Enable jumbo frames on switch/stack

size <1519-9216> Maximum jumbo-frames size

Default

None

Command Mode

Global Configuration

lacp key (global)

Configures LACP key to MLT mappings.

Syntax

- `default lacp key <1-4095>`

- `lacp key <1-4095> mlt-id <1-32>`

Command Parameters

- <1-4095>** LACP key value
- mlt-id <1-32>** Configure MLT ID for this LACP key

Default

None

Command Mode

Global Configuration

lacp port-mode

Configure the LACP port mode for a set of ports.

Syntax

- `default lacp port-mode`
- `lacp port-mode {[advance] [default]}`

Command Parameters

- advance** Configure LACP ports to behave in advance mode
- default** Configure LACP ports to behave in default mode

Default

None

Command Mode

Global Configuration

lacp system-priority

Sets LACP system priority.

Syntax

- `default lacp system-priority`
- `lacp system-priority <0-65535>`

Command Parameters

<0-65535>

Priority

Default

None

Command Mode

Global Configuration

link-state

Configures link state tracking group.

Syntax

- `default link-state group <1-2> [downstream] [upstream]`
- `link-state group <1-2> {[downstream interface] [enable] [upstream interface] [Ethernet <LINE>] [mlt <1-32>]}`
- `no link-state group <1-2> {[downstream interface] [enable] [upstream interface] [Ethernet <LINE>] [mlt <1-32>]}`

Command Parameters

downstream interface	Add a specific interface to group downstream
enable	Enable group
Ethernet <LINE>	Add list of ports
group <1-2>	Tracking group ID
mlt <1-32>	Add trunk number
upstream interface	Add a specific interface to group upstream

Default

None

Command Mode

Global Configuration

Ildp (global)

Configures 802.1ab settings.

Syntax

- **default lldp** [tx-interval] [tx-hold-multiplier] [reinit-delay] [tx-delay] [notification-interval] [med-fast-start] [vendor-specific] {[call-server] {[<1-8>] [<1-8>] [<1-8>] [<1-8>] [<1-8>] [<1-8>] [<1-8>] [<1-8>]}} [file-server] {[<1-4>] [<1-4>] [<1-4>] [<1-4>]}}
- **lldp** [tx-interval <5-32768>] [tx-hold-multiplier <2-10>] [reinit-delay <1-10>] [tx-delay <1-8192>] [notification-interval <5-3600>] [med-fast-start <1-10>] [vendor-specific] {[call-server] {[<1-8> A.B.C.D] [<1-8> A.B.C.D] [<1-8> A.B.C.D] [<1-8> A.B.C.D] [<1-8> A.B.C.D] [<1-8> A.B.C.D] [<1-8> A.B.C.D] [<1-8> A.B.C.D]}} [file-server] {[<1-4> A.B.C.D] [<1-4> A.B.C.D] [<1-4> A.B.C.D] [<1-4> A.B.C.D]}}

Command Parameters

call-server <1-8> {A.B.C.D}	Configure call server address number or IP address
file-server <1-4> {A.B.C.D}	Configure file server address number or IP address
med-fast-start <1-10>	Set MED Fast Start repeat count value
notification-interval <5-3600>	Set notification interval value
reinit-delay <1-10>	Set reinitialize delay value
tx-delay <1-8192>	Set transmission delay value
tx-hold-multiplier <2-10>	Set transmission multiplier value
tx-interval <5-32768>	Set retransmission interval value
vendor-specific	Configure 802.1ab vendor specific settings

Default

None

Command Mode

Global Configuration

logging

Changes system event log settings.

Syntax

- **default logging** [remote] {[address] [facility] [level] [secondary-address]}
- **logging** [disable] [enable] [level] {[critical] [informational] [none] [serious]} [nv-level] {[critical] [none] [serious]} [remote]

```
{[address] {[A.B.C.D] [WORD]} [enable] [facility] {[daemon] [local0]
[local1] [local2] [local3] [local4] [local5] [local6] [local7]}
[level] {[critical] [informational] [none] [serious]} [secondary-
address] {[A.B.C.D] [WORD]}} [volatile] {[latch] [overwrite]}
• no logging [remote] {[address] [enable] [facility] [level] [secondary-
address]}
```

Command Parameters

address {A.B.C.D} <WORD>	Configure remote syslog address
critical	Critical event
daemon	Set daemon facility
disable	Disable the event log
enable	Enable the event log
facility	Configure remote logging facility
informational	Informational message
latch	Latch DRAM log when it is full
level	The severity level of events that will be logged in DRAM
local0	Set local0 facility
local1	Set local1 facility
local2	Set local2 facility
local3	Set local3 facility
local4	Set local4 facility
local5	Set local5 facility
local6	Set local6 facility
local7	Set local7 facility
none	No events stored in volatile storage
nv-level	The severity level of events that will be saved in NV storage
overwrite	Overwrite DRAM log when it is full
remote	Configure remote logging parameters

secondary-address {A.B.C.D} <WORD>	Configure remote syslog address
serious	Serious event message
volatile	Configure options for logging to DRAM
Default	
None	
Command Mode	
Global Configuration	

mac-address-table

Configures MAC address table settings.

Syntax

- **default mac-address-table [aging-time] [learning <LINE>] [static <H.H.H> <1-4094> interface {[Ethernet <LINE>] | [mlt <1-32>]]}**
- **mac-address-table [aging-time <10-1000000>] [learning <LINE>] [static <H.H.H> <1-4094> interface {[Ethernet <LINE>] | [mlt <1-32>]]}**
- **no mac-address-table [learning <LINE>] [static <H.H.H> <1-4094> interface {[Ethernet <LINE>] | [mlt <1-32>]]}**

Command Parameters

aging-time <10 - 1000000>	Configure MAC address table aging time
interface {ethernet <LINE> mlt <1-32>}	Add MAC Address of a specific interface
learning <LINE>	Enable the list of ports for MAC Address learning
static <H.H.H> <1-4094>	Add static MAC Address

Default

None

Command Mode

Global Configuration

macsec clear-stats

Clears MACSec stats for all ports or entered ports.

Syntax

- `macsec clear-stats`
- `macsec clear-stats port<LINE>`

Command Parameters

port<LINE> Specifies the ports to clear MACSec stats.

Default

None

Command Mode

Global Configuration

macsec connectivity-association (global)

Configures a new connectivity association.

Syntax

- `macsec connectivity-association WORD<5-15> connectivity association-key WORD<10-32> [keyparity {even | odd}]`

Command Parameters

connectivity association-key WORD<10-32> Specifies the hexadecimal value of the connectivityassociation key (CAK). A 32 character string is recommended.

key-parity {even | odd}] Specifies even or odd generated keys.

WORD<5-15> Specifies a connectivity-association name. It is a 5 to 15 character alphanumeric string.

Default

None

Command Mode

Global Configuration

mac-security (Global Configuration)

Configures MAC Address security options.

Syntax

- **default mac-security** [auto-learning] {[aging-time] | [sticky]} [mac-da-filter <H.H.H>]
- **mac-security** [auto-learning]{[aging-time <0-65535>] | [sticky]} [mac-address-table] {[address <H.H.H>] {[mlt-id <1-32>] | [port <LINE>]} | [security-list <1-128>]} | {[sticky-address <H.H.H>] {[mlt-id <1-32>] | [port <LINE>]}]} [mac-da-filter] {[add <H.H.H>] | [delete <H.H.H>] | <H.H.H>} [disable] [enable] [intrusion-detect] {[disable] | [enable] | [forever]} [intrusion-timer <0-65535>] [filtering] {[disable] | [enable]} [learning] {[disable] | [enable]} [learning-ports] {[add <LINE>] | [LINE] | [remove <LINE>]} [security-list] [<1-128>] {[add <LINE>] | <LINE> | [remove <LINE>]} [snmp-lock] { [disable] | [enable]}
- **no mac-security** [auto-learning] {[aging-time] | [sticky]} [mac-address-table] {[address <H.H.H>] | [mlt-id <1-32>] | [port <LINE>]} | [security-list <1-128>]} [mac-da-filter <H.H.H>] [security-list <1-128>]

Command Parameters

aging-time <0-65535>	Set aging-time value for auto-learned addresses
auto-learning	Configure MAC Auto-Learning
disable	Disable MAC Address Security
enable	Enable MAC Address Security
filtering	Enable/disable DA filtering for intruder addresses
intrusion-detect	Enable/disable partitioning on intrusion detection
intrusion-timer <0-65535>	Set temporary partition time for intrusion detection
learning	Enable/disable MAC address learning
learning-ports {add <LINE> remove <LINE> <LINE>}	Modify ports participation in MAC address learning
mac-address-table	Add addresses to MAC security address table
mac-da-filter	Add/delete MAC DA filtering addresses
mlt-id <1-32>	Assign specific trunk to a MAC address

port <LINE>	Assign specific port to a MAC address
security-list <1-32>	Assign a security list to a MAC address
snmp-lock	Enable/disable SNMP lock on MAC address security parameters
sticky	Set mac-security sticky mode
sticky-address <H.H.H>	Adds a sticky address to the mac-security mac-address table

Default

None

Command Mode

Global Configuration

maximum-path

Sets the maximum number of ECMP path for static routes.

Syntax

- `default maximum-path`
- `maximum-path <1-4>`
- `no maximum-path`

Command Parameters

<1-4> ECMP path value

Default

None

Command Mode

Global Configuration

mlt

Modifies Multi-Link Trunking (MLT) configuration.

Syntax

- `default mlt {<1-32> bpdu | shutdown-ports-on-disable enable}`

- `mlt <id> [name <mlt-name>] [enable | disable] [member <LINE>]
[learning {disable | fast | normal}] [bpdu {all-ports | single-port}]
[loadbalance {advance|basic}]`
- `mlt shutdown-ports-on-disable enable`
- `mlt spanning-tree <1-32> stp {<1-8> | all | learning {disable |normal
| fast}}`
- `no mlt {<1-32>|shutdown-ports-on-disable enable}`

Command Parameters

<1-32>	MLT ID
bpdu {all-ports single-port}	Set BPDU send/receive mode
disable	Disable MLT
enable	Enable MLT
learning {disable fast normal}	Set STP learning mode to disable, fast or normal for a trunk
loadbalance {advance basic}	MLT Load Balance Selection (Advance/Basic)
member <LINE>	Set port membership of MLT
name <mlt-name>	MLT Name
shutdown-ports-on-disable	Set protection for disabled trunk
spanning-tree	Set MLT spanning-tree settings
stp {<1-8> all learning}	Spanning tree group and learning mode

Default

None

Command Mode

Global Configuration

mvr

Configures MVR on the switch

Syntax

- `[no] mvr enable`
- `default mvr`

Command Parameters

default	Restores MVR to default.
no	Disables MVR on the switch.

Default

None

Command Mode

Global Configuration

mvr group-range

Configure the IP multicast address ranges for MVR processing

Syntax

- `[no] mvr group-range <A.B.C.D>/<0-32>`

Command Parameters

<0-32>	Specifies the mask.
<A.B.C.D>	Specifies the IP address.

Default

None

Command Mode

Global Configuration

mvr vlan

Configures a VLAN as an MVR receiver or Source VLAN

Syntax

- `[no] mvr vlan <receiver | source> [enable]`

Command Parameters

no	Removes configured VLAN.
receiver	Specifies VLAN as MVR receiver VLAN.

source Specifies VLAN as MVR source VLAN.

Default

None

Command Mode

Global Configuration

ntp

Enable Network Time Protocol (NTP) globally.

Syntax

- `default ntp`
- `no ntp`
- `ntp`

Default

None

Command Mode

Global Configuration

ntp authentication-key

Creates an authentication key for Message Digest 5 (MD5) or Secure Hash Algorithm 1 (SHA1) authentication.

Syntax

- `default ntp authentication-key <1-65535>`
- `no ntp authentication-key <1-65535>`
- `ntp authentication-key <1-65535> type <md5|sha1> <WORD>`

Command Parameters

<1-65535> Creates the key ID.

type <md5|sha1> Specifies the type of authentication, whether MD5 or SHA1. The default is MD5 authentication.

<WORD> Specifies the secret key.

Default

The default configuration removes the secret key.

Command Mode

Global Configuration

ntp server

Add an IP address for a Network Time Protocol (NTP) server or modify existing NTP server parameters. You can configure a maximum of 10 NTP servers.

Syntax

- `default ntp server {<A.B.C.D> | <IPv6_address>}`
- `default ntp server {<A.B.C.D> | <IPv6_address>} auth-enable`
- `default ntp server {<A.B.C.D> | <IPv6_address>} authentication-key`
- `default ntp server {<A.B.C.D> | <IPv6_address>} enable`
- `no ntp server {<A.B.C.D> | <IPv6_address>}`
- `no ntp server {<A.B.C.D> | <IPv6_address>} auth-enable`
- `no ntp server {<A.B.C.D> | <IPv6_address>} enable`
- `ntp server {<A.B.C.D> | <IPv6_address>} auth-enable`
- `ntp server {<A.B.C.D> | <IPv6_address>} authentication-key <1-65535>`
- `ntp server {<A.B.C.D> | <IPv6_address>} enable`

Command Parameters

auth-enable	Activates MD5 or SHA1 authentication on this Network Time Protocol (NTP) server. Without this option, the NTP server will not have any authentication by default.
authentication-key <1-65535>	Specifies the key ID value used to generate the MD5 or SHA1 digest for the Network Time Protocol (NTP) server. If this parameter is omitted, the key defaults to 0 (disabled authentication).
enable	Activates the Network Time Protocol (NTP) server.
<A.B.C.D>	Specifies the IPv4 address of the NTP server.
<IPv6_address>	Specifies the IPv6 address of the NTP server.

Default

No authentication.

Command Mode

Global Configuration

ospf

Sets the maximum number of ECMP path for "ospf" protocol.

Syntax

- `default ospf maximum-path`
- `no ospf maximum-path`
- `ospf maximum-path <1-4>`

Command Parameters

maximum-path <1-4> Set the maximum number of ECMP path

Default

None

Command Mode

Global Configuration

password

Configure password security restrictions.

Syntax

- `default password aging-time [ username WORD ]`
- `default password check-repeated`
- `default password check-sequential`
- `default password complexity`
- `default password delay_time`
- `default password min-length`
- `default password notifications`
- `default password password-change-on-first-login`
- `default password password-change-rate-limiter`
- `default password password-history`
- `default password unlock-timer`

- no password login-failure-notification
- no password security
- no password unlock-timer
- password aging-time { [username <WORD>] <0-365> }
- password check-repeated { [disable] [enable] }
- password check-sequential { [disable] [enable] }
- password complexity { [lower-case] { [<0-9>] } [numeric] { [<0-9>] } [special] { [<0-9>] } [upper-case] { [<0-9>] } }
- password delay-time <0-3600>
- password login-failure-notification WORD
- password min-length <8-255>
- password notifications <1-90>
- password password-change-on-first-login { [disable] [enable] }
- password password-change-rate-limiter <1-10>
- password password-history { [<0-12>] }
- password security
- password unlock-timer <1-365>
- password unlock-timer <1-365>

Command Parameters

aging-time {[username <WORD>] <0-365>}	Specifies the password validity period.
check-repeated	Accepts or forbids repeated consecutive characters in your password.
check-sequential	Accepts or forbids sequential characters in your password.
complexity	Sets the password complexity rules.
delay-time <0-3600>	Specifies the amount of delay time after 3 failed login attempts within one minute.
login-failure-notification <WORD>	Configures notification message to users encountering a login failure.
min-length <8-255>	Specifies the minimum password length.
notifications <1-90>	Specifies the password expiration notifications intervals.
password-change-on-first-login {[disable][enable]}	Specifies the ability to force password change on first login.

password-change-rate-limiter <1-10> Restricts number of times a password can be changed in a day.

password-history <0-12> Configures the number of passwords in history if password security is enabled.

password-history <0-12> Configures the number of passwords in the history if password security is enabled.

security Enables password security restrictions.

unlock-timer <1-365> Set number of days after which a disabled account will be enabled.

Default

None

Command Mode

Global Configuration

poe

Sets global configuration of Power Over Ethernet.

Syntax

- **no poe ip-phone {poe-limit | poe-priority}**
- **poe [ip-phone] {[poe-limit <3-32>] [poe-lldp port <portline>] [poe-priority {critical | high | low}]} [poe-pd-detect-type] {[unit <1-8>] [802dot3af] [802dot3af_and_legacy] [802dot3at] [802dot3at_and_legacy]} [poe-power-usage-threshold] {[unit <1-8>] [<1-99>]}**

Command Parameters

802dot3af	Set PD detection mode in 802.3af
802dot3af_and_legacy	Set PD detection mode in 802.3af and legacy
802dot3at	Set PD detection mode in 802.3at
802dot3at_and_legacy	Set PD detection mode in 802.3at and legacy
ip-phone	Configure IP phone automatic settings for PoE
poe-limit <3-32>	Set IP phone automatic PoE limit
poe-pd-detect-type	Set PD detection type

poe-power-usage-threshold <1-99>	Set power usage threshold in percentage
poe-power-usage-threshold unit <1-8>	Set power usage threshold of an unit in stack
poe-priority {critical high low}	Set IP phone automatic PoE priority to critical, high, or low
unit <1-8>	Set PD detection mode of an unit in stack

Default

None

Command Mode

Global Configuration

port-mirroring

Changes port mirroring configuration.

Syntax

- **no port-mirroring** {<1-4> | rspan <1-4>}
- **port-mirroring** {[<1-4>] [allow-traffic] [mode] {disable | adst monitor-port <LINE> mirror-MAC-A <H.H.H> | Asrc monitor-port <LINE> mirror-MAC-A <H.H.H> | AsrcBdst monitor-port <LINE> mirror-MAC-A <H.H.H> mirror-MAC-B <H.H.H> | AsrcBdstOrBsrcAdst monitor-port <LINE> mirror-MAC-A <H.H.H> mirror-MAC-B <H.H.H> | AsrcOrAdst monitor-port <LINE> mirror-MAC-A <H.H.H> | ManyToOneRx monitor-port <LINE> mirror-ports <LINE> | ManyToOneRxTx monitor-port <LINE> mirror-ports <LINE> | ManyToOneTx monitor-port <LINE> mirror-ports <LINE> | Xrx monitor-port <LINE> mirror port-X <LINE> | XrxOrXtx monitor-port <LINE> mirror-port-X <LINE> | XrxOrYtx monitor-port <LINE> mirror port-X <LINE> mirror-port-Y <LINE> | XrxYtx monitor port <LINE> mirror-port-X <LINE> mirror-port-Y <LINE> | XrxYtxOrYrxXtx monitor-port <LINE> mirror-port-X <LINE> mirror-port-Y <LINE> | Xtx monitor-port <LINE> mirror-port-X <LINE>}} [rspan-vlan <2-4094>] [mirror-vlan <1-4094>]
- **port-mirroring rspan** {[<1-4>] [destination-port <LINE>] [vlan <2-4094>]}

Command Parameters

<1-4>	instance number 1...4 (default 1)
Adst	Mirror packets with destination MAC address A
allow-traffic	Allow traffic for monitor port

Asrc	Mirror packets with source MAC address A
AsrcBdst	Mirror packets with source MAC address A and destination MAC address B
AsrcBdstOrBsrcAdst	Mirror packets with source MAC address A and destination MAC address B, or packets with source MAC address B and destination MAC address A
AsrcOrAdst	Mirror packets with source or destination MAC address A
destination-port <LINE>	Specify RSPAN destination port
disable	Disable port mirroring
ManytoOneRx	Many to one port mirroring ingress traffic
ManytoOneRxTx	Many to one port mirroring ingress & egress traffic
ManytoOneTx	Many to one port mirroring egress traffic
mirror-MAC-A <H.H.H>	Set mirroring MAC address A (i.e. H.H.H or xx:xx:xx:xx:xx:xx or xx.xx.xx.xx.xx.xx or xx-xx-xx-xx-xx-xx)
mirror-MAC-B <H.H.H>	Set mirroring MAC address B (i.e. H.H.H or xx:xx:xx:xx:xx:xx or xx.xx.xx.xx.xx.xx or xx-xx-xx-xx-xx-xx)
mode	Set port mirroring mode
monitor-port <LINE>	Set port mirroring monitor port
rspan <1-4>	Configure RSPAN settings
rspan-vlan <2-4094>	Specify RSPAN VLAN
Xrx	Mirror packets received on port X
XrxOrXtx	Mirror packets received or transmitted on port X
XrxOrYtx	Mirror packets received on port X or transmitted on port Y
XrxYtx	Mirror packets received on port X and transmitted on port Y
XrxYtxOrYrxXtx	Mirror packets received on port X and transmitted on port Y, or packets received on port Y and transmitted on port X
Xtx	Mirror packets transmitted on port X
Default	
None	

Command Mode

Global Configuration

qos acl-assign

Creates access-list assignment.

Syntax

- `no qos acl-assign {<1 - 55000> enable | [<port> <LINE> acl-type [ip | l2] <name> <WORD>]}`
- `qos acl-assign {<1-55000> enable | <port> <LINE> acl-type [ip | l2] <name> <WORD>}`

Command Parameters

<1-55000>	Access-list assignment ID
<name>	Specify the access-list to reference
<WORD>	1..16 character string
acl-type [ip l2]	Specify the access-list type (ip,l2)
port	Specify the port(s) to apply access-list on

Default

None

Command Mode

Global Configuration

qos action

Creates base actions entry.

Syntax

- `no qos action [<10-55000>]`
- `qos action <10-55000> {[name <WORD>] [drop-action <enable | disable | deferred-pass>] [update-dscp <0-63>] [update-lp {<0-7> | use-egress | use-tos-prec}] [set-drop-prec <low-drop | high-drop>] [action-ext <1-55000> | action-ext-name <WORD>] [session-id <1-4294967295>]}`

Command Parameters

<10-55000>	Specify the Action ID.
action-ext <1-55000>	Specify the action extension id.
action-ext-name <WORD>	Specify the action extension name.
drop-action <enable disable deferred-pass>	Specify the drop action.
name <WORD>	Specify the action label.
session-id <1-4294967295>	Specify the session ID.
set-drop-prec {<0-7> use-tos-prec use-egress}	Specifies the set drop precedence.
update-1p {<0-7> copy-priority use-tos-prec use-egress}	Specifies the update user priority. <0-7> specifies the range of the 802.1p user priority. Copy priority specifies for the device to copy the priority from the VLAN tag. Use-egress assigns the value based on the DSCP-to-user priority map. Use-tos-prec assigns the value based on the value of the precedence bits in the TOS field.
update-dscp <0-63>	Specifies the update DSCP.

Default

None

Command Mode

Global Configuration

qos agent aq-mode

Modifies the Auto QOS application traffic processing mode.

Syntax

- **default qos agent aq-mode**
- **qos agent aq-mode {disable | mixed | pure}**

Command Parameters

disable	Auto QOS application traffic processing disabled on all ports.
mixed	Auto QOS application traffic processing enabled on all ports with egress DSCP remapping.

pure Auto QoS application traffic processing enabled on all ports without egress DSCP remapping.

Default

None

Command Mode

Global Configuration

qos agent buffer

Modifies the QoS resource buffer allocation.

Syntax

- `default qos agent buffer`
- `qos agent buffer {large | maximum | regular}`

Command Parameters

large Medium amount of resource sharing.

maximum Maximum amount of resource sharing.

regular Minimum amount of resource sharing.

Default

None

Command Mode

Global Configuration

qos agent dos-attack-prevention

Enable the QoS DoS Attack Prevention

Syntax

- `default qos agent dos-attack-prevention`
- `no qos agent dos-attack-prevention [enable]`
- `qos agent dos-attack-prevention [enable] [max-ipv4-icmp <0-1023>] [max-ipv6-icmp <0-16383>] [min-tcp-header <0-255>] [status-tracking] [enable]`

Command Parameters

enable	Enable the QoS DoS Attack Prevention
max-ipv4-icmp <0-1023>	Specify the maximum IPv4 ICMP packet size in bytes
max-ipv6-icmp <0-16383>	Specify the maximum IPv6 ICMP packet size
min-tcp-header <0-255>	Specify the minimum TCP header size in bytes
status-tracking	Enable status tracking

Default

None

Command Mode

Global Configuration

qos agent nvram-delay

Modifies the maximum time in seconds to write config data to non-volatile storage.

Syntax

- `default qos agent nvram-delay`
- `qos agent nvram-delay <0-604800>`

Command Parameters

<0-604800> The maximum amount of time in seconds before non-volatile QoS configuration is written to non-volatile storage.

Default

None

Command Mode

Global Configuration

qos agent oper-mode

Enables the QoS operational mode.

Syntax

- `default qos agent [oper-mode]`

- `no qos agent oper-mode enable`
- `qos agent oper-mode enable`

Command Parameters

enable QoS enabled globally

Default

None

Command Mode

Global Configuration

qos agent queue-set

Modifies the default QoS CoS queue set.

Syntax

- `default qos agent queue-set`
- `qos agent queue-set <1-8>`

Command Parameters

<1-8> queue set value

Default

None

Command Mode

Global Configuration

qos agent reset-default

Resets the QoS to its configuration default.

Syntax

- `qos agent reset-default`

Default

None

Command Mode

Global Configuration

qos agent reset-partial-default

Resets the QoS to its partial configuration default.

Syntax

- `qos agent reset-partial-default`

Default

None

Command Mode

Global Configuration

qos agent statistics-tracking

Modifies the QoS default statistics tracking.

Syntax

- `default qos agent statistics-tracking`
- `qos agent statistics-tracking {aggregate | disable | individual}`

Command Parameters

- aggregate** Allocate a single statistics counter to track data for all classifier of the QoS policy being created
- disable** No statistics tracking for QoS policy being created
- individual** Allocate individual statistics counters to track data for each classifier of the QoS policy being created

Default

None

Command Mode

Global Configuration

qos agent ubp

Modifies the QoS UBP support level.

Syntax

- `default qos agent ubp`

- `qos agent ubp {disable | high-security-local | low-security-local}`

Command Parameters

disable	QoS Agent ignore user information forwarded by other applications (i.e. EAP)
high-security-local	QoS Agent internal database to be searched for user-specific classification data forwarded by other applications with high security
low-security-local	QoS Agent internal database to be searched for user-specific classification data forwarded by other applications with low security

Default

None

Command Mode

Global Configuration

qos classifier

Creates classifier set entry.

Syntax

- `no qos classifier <1-55000>`
- `qos classifier <1-55000> set-id <1-55000> [name <WORD>] element-type {ip | l2 | system} element-id <1-55000> [session id <1-4294967295>]`

Command Parameters

<1-55000>	Specify the classifier ID
element-id <1-55000>	Specify the IP classifier element ID
element-type {ip l2 system}	Specify the classifier element type (IP, L2, System)
name <WORD>	Specify the classifier name
session id <1-4294967295>	Specify the session ID
set-id <1-55000>	Specify the classifier set ID

Default

None

Command Mode

Global Configuration

qos classifier-block

Creates classifier block entry.

Syntax

- `no qos classifier-block <1-55000>`
- `qos classifier-block <1-55000> block-number <1-55000> [name <WORD>] {set-id <1-55000> | set-name <WORD>} [{in-profile-action <1-55000> | in-profile-action-name <WORD>} | {meter <1-55000> | meter-name <WORD>}] [session-id <1-4294967295>] [eval-order]`

Command Parameters

<1-55000>	Specify the classifier block ID
block-number <1-55000>	Specify the classifier block number
eval-order	Specify the block entry evaluation order
in-profile-action <1-55000>	Specify the in-profile action ID to be linked to the classifier entry of this block
in-profile-action-name <WORD>	Specify the in-profile action name to be linked to the classifier entry of this block
meter <1-55000>	Specify the meter ID to be linked to the classifier entry of this block
meter-name <WORD>	Specify the meter name to be linked to the classifier entry of this block
name <WORD>	Specify the classifier block name
session-id <1-4294967295>	Specify the session ID
set-id <1-55000>	Specify the classifier set ID to be linked to the block
set-name <WORD>	Specify the classifier set name to be linked to block

Default

None

Command Mode

Global Configuration

qos clear-queue-stats

Clears all Quality of Service (QoS) queue statistics.

Syntax

- `qos clear-queue-stats {port <LINE>|queue <1-8>}`

Command Parameters

port <LINE> Clears statistics on the specified port.

queue <1-8> Clears statistics on the specified queue.

Default

None

Command Mode

Global Configuration

qos clear-stats

Clears all QoS statistic counters.

Syntax

- `qos clear-stats`

Default

None

Command Mode

Global Configuration

qos egressmap

Configures the DSCP to 802.1p priority and drop precedence associations.

Syntax

- `default qos egressmap [ds <0-63>]`
- `qos egressmap [name <WORD>] [ds <0-63>] [lp <0-7>] [dp <low-drop | high-drop>] [ds-new <0-63>]`

Command Parameters

1p <0-7>	Specify the 802.1p priority associated with the target DSCP
dp high-drop	Higher probability of being dropped when congestion is encountered
dp low-drop	Lower probability of being dropped when congestion is encountered
ds <0-63>	Specify the DSCP value used as lookup key for 802.1p priority and drop precedence
ds-new <0-63>	Specify the new DSCP associated with the target DSCP
name <WORD>	Specify label for the egress mapping

Default

None

Command Mode

Global Configuration

qos if-action-extension

Creates interface actions extension entry.

Syntax

- **no qos if-action-extension <1-55000>**
- **qos if-action-extension <1-55000> [name <WORD>] {egress-ucast <LIST> | egress-non-ucast <LINE>} [session-id <1-4294967295>]**

Command Parameters

<1-55000>	Specify the Interface Action ID
egress-non-ucast <LINE>	Specify redirection of broadcast, multicast, and unknown unicast (floods) to specified interface
egress-ucast <LIST>	Specify redirection of known unicast packets to specified interface
name <WORD>	Specify Interface Action label
session-id <1-4294967295>	Specify the session ID

Default

None

Command Mode

Global Configuration

qos if-assign (Global Configuration)

Adds interfaces to interface groups.

Syntax

- `no qos if-assign [port <LINE>]`
- `qos if-assign [port <LINE>] [name <WORD>]`

Command Parameters

name <WORD> Specify name of interface group

port <LINE> Specify list of ports

Default

None

Command Mode

Global Configuration

qos if-group

Creates interface group.

Syntax

- `no qos if-group name <WORD>`
- `qos if-group name <WORD> class {trusted | untrusted | unrestricted | untrustedbasic | untrustedv4v6}`

Command Parameters

class Specify class of traffic received on interfaces associated with this interface group

name <WORD> Specify name of interface group

trusted Traffic received on the associated interfaces are assumed to be trusted (i.e. trusted ports are usually connected to the core network; 802.1p remarked based on DSCP by default)

unrestricted	Traffic received on the associated interfaces may have unrestricted treatment applied (i.e. unrestricted ports can be either access links or connected to the core network; no default processing is applied)
untrusted	IPv4 traffic received on the associated interfaces are assumed to be untrusted (i.e. untrusted ports are typically access links that are connected to end stations; DSCP and 802.1p remarked by default)
untrustedbasic	IPv4 and IPv6 traffic received on the associated interfaces are assumed to be untrusted (i.e. untrusted ports are typically access links that are connected to end stations; DSCP and 802.1p remarked by default). Tagged and untagged traffic are treated the same for minimum resource consumption.
untrusteddv4v6	IPv4 and IPv6 traffic received on the associated interfaces are assumed to be untrusted (i.e. untrusted ports are typically access links that are connected to end stations; DSCP and 802.1p remarked by default)

Default

None

Command Mode

Global Configuration

qos ingressmap

Configures the 802.1p to DSCP associations.

Syntax

- `default qos ingressmap`
- `qos ingressmap {[name <WORD>] [lp <0-7> ds <0-63>]}`

Command Parameters

lp <0-7>	Specify the 802.1p user priority used as lookup key for DSCP assignment at ingress
ds <0-63>	Specify the DSCP value associated with the target 802.1p priority
name <WORD>	Specify label for the ingress mapping

Default

None

Command Mode

Global Configuration

qos ip-acl

Creates IP access-list element.

Syntax

- `no qos ip-acl {<1-55000> | all}`
- `qos ip-acl name <WORD> [[addr-type <ipv4 | ipv6>] [src-ip {A.B.C.D}/<0-32>] [dst-ip {A.B.C.D}/<0-32>] [ds-field <0-63>] [protocol <0-255>] [next_header <0-255>] [flow-id <0x0-0xffff>] [src-port-min <0-65535> src-port-max <0-65535>] [dst-port-min <0-65535> dst-port-max <0-65535>] [drop-action {enable | disable}] [update-dscp <0 - 63>] [update-ip <0 - 7>] [set-drop-prec {high drop | low drop}] [block <WORD>]`

Command Parameters

addr-type <ipv4 ipv6>	Specify the address type (IPv4, IPv6) classifier criteria
block <WORD>	Specify the label to identify access-list elements that are of the same block
drop-action {enable disable}	Specify the drop action
ds-field <0-63>	Specify the DSCP classifier criteria
dst-ip {A.B.C.D}/<0-32>	Specify the destination IP classifier criteria
dst-port-max <0-65535>	Specify the L4 destination port maximum value filter criteria
dst-port-min <0-65535>	Specify the L4 destination port minimum value classifier criteria
flow-id 0x0-0xffff	Specify the IPv6 flow identifier classifier criteria
name <WORD>	Specify the label used to reference the access-list element
next_header <0-255>	Specify the IPv6 next header classifier criteria
protocol <0-255>	Specify the IPv4 protocol classifier criteria
set-drop-prec {high drop low drop}	Specify the set drop precedence
src-ip {A.B.C.D}/<0-32>	Specify the source IP classifier criteria
src-port-max <0-65535>	Specify the L4 source port maximum value filter criteria

src-port-min <0-65535> Specify the L4 source port minimum value classifier criteria

update-1p <0 - 7> Specify the update user priority

update-dscp <0 - 63> Specify the update DSCP

Default

None

Command Mode

Global Configuration

qos ip-element

Creates IP classifier element entry.

Syntax

- **no qos ip-element <1-55000>**
- **qos ip-element <1-55000> [addr-type <ipv4 | ipv6>] [ds-field <0-63>] [dst-ip {A.B.C.D}/<0-32>] [dstport-min <0-65535> dst-port-max <0-65535>] [flow-id <0x00-0xffff>] [ip-flag <LINE>] [ipv4-option <no-opt|with-opt>] [name <WORD>] [next-header <0-255>] [protocol <0-255>] [src-ip {A.B.C.D}/<0-32>] [src-port-min <0-65535> src-port-max <0-65535>] [tcp-control <a|f|p|r|s|u>] [session-id <1-4294967295>]**

Command Parameters

addr-type <ipv4 | ipv6> Specify the address type (IPv4, IPv6) classifier criteria

ds-field <0-63> Specify the DSCP classifier criteria

dst-ip {A.B.C.D}/<0-32> Specify the destination IP classifier criteria

dst-port-max <0-65535> Specify the L4 destination port maximum value filter criteria

dst-port-min <0-65535> Specify the L4 destination port minimum value classifier criteria

flow-id <0x00-0xffff> Specify the IPv6 flow identifier classifier criteria

ip-flag <LINE> Specify the IP fragment flag criteria

ipv4-option <no-opt|with-opt> Specify the IPv4 option criteria

name <WORD> Specify name of ip-element

next-header <0-255>	Specify the IPv6 next header classifier criteria
protocol <0-255>	Specify the IPv4 protocol classifier criteria
session-id <1-4294967295>	Specify the session ID
src-ip {A.B.C.D}/<0-32>	Specify the source IP classifier criteria
src-port-max <0-65535>	Specify the L4 source port maximum value filter criteria
src-port-min <0-65535>	Specify the L4 source port minimum value classifier criteria
tcp-control <a f p r s u>	Specify the TCP control criteria

Default

None

Command Mode

Global Configuration

qos l2-acl

Creates L2 access-list element.

Syntax

- **no qos l2-acl {<1-55000> | all}**
- **qos l2-acl name <WORD> [src-mac <H.H.H>] [src-mac-mask <H.H.H>] [dst-mac <H.H.H>] [dst-mac-mask <H.H.H>] [vlan-min <1-4094> vlan-max <1-4094>] [vlan-tag <tagged | untagged>] [ethertype <0x0-0xFFFF>] [priority <0-7>| All] [drop-action {enable | disable}] [update-dscp <0-63>] [update-lp <0-7>] [set-drop-prec {high-drop | low-drop}] [block <WORD>]**

Command Parameters

block <WORD>	Specify the label to identify access-list elements that are of the same block
drop-action {enable disable}	Specify the drop action
dst-mac <H.H.H>	Specify the destination MAC classifier criteria
dst-mac-mask <H.H.H>	Specify the destination MAC mask classifier criteria
ethertype <0x0-0xFFFF>	Specify the ethertype classifier criteria

priority <0-7> All	Specify the user priority classifier criteria
set-drop-prec {high drop low drop}	Specify the set drop precedence
src-mac <H.H.H>	Specify the source MAC classifier criteria
src-mac-mask <H.H.H>	Specify the source MAC mask classifier criteria
update-1p <0-7>	Specify the update user priority
update-dscp <0-63>	Specify the update DSCP
vlan-min <1-4094> vlan-max <1-4094>	Specify the Vlan ID minimum and maximum value classifier criteria
vlan-tag <tagged untagged>	Specify the vlan tag classifier criteria

Default

None

Command Mode

Global Configuration

qos l2-element

Creates L2 classifier element entry .

Syntax

- **no qos l2-element <1-55000>**
- **qos l2-element <1-55000> [dst-mac <H.H.H>] [dst-mac-mask <H.H.H>] [ethertype <0x00-0xffff>] [name <WORD>] [pkt-type <etherII|llc|snap>] [priority <0-7>|all] [session-id <1-4294967295>] [src-mac <H.H.H>] [src-mac-mask <H.H.H>] [vlan-min <1-4094> vlan-max <1-4094>] [vlan-tag <tagged| untagged>]**

Command Parameters

<1-55000>	Specify the L2 classifier element ID
dst-mac <H.H.H>	Specify the destination MAC classifier criteria
dst-mac-mask <H.H.H>	Specify the destination MAC mask classifier criteria
ethertype <0x0-0xFFFF>	Specify the ethertype classifier criteria
name <WORD>	Specify name of l2 element

pkt-type <etherll llc snap>	Specify the filter packet format ethertype encoding criteria (Ethernet II packet, or LLC packet or SNAP packet)
priority <0-7> All	Specify the user priority classifier criteria
session-id <1-4294967295>	Specify the session ID
src-mac <H.H.H>	Specify the source MAC classifier criteria
src-mac-mask <H.H.H>	Specify the source MAC mask classifier criteria
vlan-min <1-4094> vlan-max <1-4094>	Specify the Vlan ID minimum value classifier criteria
vlan-tag <tagged untagged>	Specify the vlan tag classifier criteria

Default

None

Command Mode

Global Configuration

qos meter

Creates meter entry.

Syntax

- **no qos meter** <1-55000>
- **qos meter** <1-5000> [**name** <WORD>] [**committed-rate** <64-10230000>] [**burst-size** <1024 | 128 | 16 | 16384 | 2048 | 256 | 32 | 4 | 4096 | 512 | 64 | 8 | 8192>] [**max-burst-rate** <64-4294967295>] [**max-burst-duration** <1-4294967295>] {**inprofile-action** <1-55000> | **in-profile-action-name** <WORD>} {**outprofile-action** <1,9-55000> | **out-profile-action-name** <WORD>} [**session-id** <1-4294967295>]

Command Parameters

<1-5000>	Specify the meter ID
burst-size <1024 128 16 16384 2048 256 32 4 4096 512 64 8 8192>	Specify the burst size in KBytes
committed-rate <64-10230000>	Specify the committed rate value
in-profile-action <1-55000>	Specify the in-profile action ID

in-profile-action-name <WORD>	Specify the in-profile action name
max-burst-duration <64-4294967295>	Specify the maximum burst duration value
max-burst-rate <64-4294967295>	Specify the maximum burst rate value
name <WORD>	Specify the meter label
out-profile-action <1,9-55000>	Specify the out-profile action ID
out-profile-action-name <WORD>	Specify the out-profile action name
session-id <1-4294967295>	Specify the session ID

Default

None

Command Mode

Global Configuration

qos policy

Creates the Quality of Service (QoS) policy entry.

Syntax

- **no qos policy** <1-55000> [enable]
- **qos policy** <1-55000> [enable] [name <WORD>] [port <LINE>] [if-group <WORD> clfr-type {classifier | block} {clfr-id <1-55000> | clfr-name <WORD>}{in-profile-action <1-55000> | in-profile-action-name <WORD>} | meter <1-55000> | meter-name <WORD>} precedence <1-15> [track-statistics <individual | aggregate>}] [session-id <1-4294967295>]

Command Parameters

<1-55000>	Enter an integer to specify the QoS policy. The range is 1–55000.
aggregate	Specifies that all classifiers associated with the policy will share the statistics resource.
block	Associates a classifier block to the policy.
classifier	Associates a classifier to the policy.
clfr-id <1-55000>	Specifies the classifier set ID or classifier block number.

clfr-name <NAME>	Specifies the classifier set name or classifier block name.
clfr-type	Specifies the classifier type (classifier,block).
enable	Enables the policy.
if-group <WORD>	Specifies the interface group to apply policy.
individual	Specifies that each classifier associated with the policy will have its own statistics resource.
in-profile-action <1-55000>	Specifies the in-profile action ID.
in-profile-action-name <WORD>	Specifies the in-profile action name.
meter <1-55000>	Specifies the meter ID.
meter-name <WORD>	Specifies the meter name.
name <WORD>	Specifies the policy label.
port <LINE>	Specifies the port to apply policy.
precedence <1-14>	Specifies the precedence of this policy in relation to other policies associated with the same interface group.
session-id <1-4294967295>	Specifies the session ID.
track-statistics <individual aggregate>	Specifies to track statistics on policy.

Default

None

Command Mode

Global Configuration

qos queue-set-assignment

Configures the 802.1p priority to queue.

Syntax

- **qos queue-set-assignment queue-set <1-8> 1p <0-7> queue <1-8>**

Command Parameters

1p <0-7>	Specifies the 802.1p priority value.
queue <1-8>	Specifies the QoS queue set. Values range from 1 to 8.
queue-set <1-8>	Specifies the queue set ID.

Default

None

Command Mode

Global Configuration

qos system-element

Creates system classifier element entry.

Syntax

- `no qos system-element <1-55000>`
- `qos system-element <1-55000> [name <WORD>] [known-ip-mcast] [known-non-ipmcast] [non-ip] [unknown-ucast] [unknown-ip-mcast] [unknown-non-ip-mcast] [pattern-data <WORD> pattern-mask <WORD>] [pattern-format <tagged | untagged>] [pattern-ip-version <ipv4|ipv6|nonip>] [pattern-12-format <ethernetII|llc|snap>] [session-id <1-4294967295>]`

Command Parameters

<1-55000>	Specify the system classifier element ID
known-ip-mcast	Match frames containing a known IP multicast destination address
known-non-ip-mcast	Match frames containing a known non-IP multicast destination address
name <WORD>	Specify name of system element
non-ip	Match non-IP frames
pattern-data <WORD>	Match frames with a specific data pattern
pattern-format <tagged untagged>	Specify the format of the pattern data/mask
pattern-ip-version <ipv4 ipv6 nonip>	Specify the IP version of the pattern data/mask

pattern-l2-format <ethernetII llc snap>	Specify the L2 format of the pattern data/mask
pattern-mask <WORD>	Specifies the specific data pattern bit positions of interest
session-id <1-4294967295>	Specify the session ID
unknown-ip-mcast	Match frames containing an unknown IP multicast destination address
unknown-non-ip-mcast	Match frames containing an unknown non-IP multicast destination address
unknown-ucast	Match frames containing an unknown unicast destination address

Default

None

Command Mode

Global Configuration

qos traffic-profile classifier

Creates QoS Traffic Profile classifier entry.

Syntax

- **no qos traffic-profile classifier** [name <WORD>] [eval-order <1-255>]
- **qos traffic-profile classifier** name <WORD>] [addr-type {ipv4 | ipv6}] [block <WORD>] [committed-rate <64-10230000> {[committed-burst-size [max-burst-rate <64-4294967295>]}] [drop-action {disable | enable}] [drop-out-action {disable | enable}] [ds-field <0-63>] [dst-ip A.B.C.D/<0-32>] [dst-mac <H.H.H> dst-mac-mask <H.H.H>] [dst-port-min <0-65535> dst-port-max <0-65535>] [ethertype <0x0-0xFFFF>] [stage <egress>] [eval-order <1-255>] [flow-id <0x0-0xffff>] [ip-flag <LINE>] [ipv4-option {no-opt | with -opt}] [master] [next-header <0-255>] [pkt-type {etherII | llc | snap}] [priority {<0-7> | all}] [protocol <0-255>] [set-drop-prec {high-drop | low-drop}] [set-drop-prec-out-action {high-drop | low-drop}] [src-ip <A.B.C.D/<0-32>] [src-mac <H.H.H> src-mac-mask <H.H.H>] [src-port-min <0-65535> src-port-max <0-65535>] [tcp-control <LINE>] [update-lp {<0-7> | use-egress | use-tos-prec}] [update-dscp <0-63>] [update-dscp-out-action <0-63>] [vlan-min <1-4094> vlan-max <1-4094>] [vlan-tag {tagged | untagged}]

Command Parameters

addr-type {ipv4 ipv6}	Specify the address type (IPv4, IPv6) classifier criteria
block <WORD>	Specify the label to identify access-list elements that are of the same block
committed-burst-size <burst sizeoptions>	Specifies the committed burst size in KiloBytes.
committed-rate 64-10230000>	Specify the committed rate value
drop-action {disable enable}	Specify the drop action
drop-out-action {disable enable}	Specifies the drop out-of-profile action
ds-field <0-63>	Specifies the DSCP classifier criteria
dst-ip A.B.C.D/<0-32>	Specifies the destination IP classifier criteria
dst-mac <H.H.H>	Specifies the destination MAC classifier criteria
dst-mac-mask <dst-mac-mask>	Specifies the mask for the MAC address against which the MAC destination address of incoming packets is compared.
dst-port-max <0-65535>	Specifies the maximum value for the Layer 4 destination port classifier.
dst-port-min <0-65535>	Specify the L4 destination port minimum value classifier criteria
ethertype <0x0-0xFFFF>	Specify the ethertype classifier criteria
eval-order <1-255>	Specify the evaluation order
flow-id <0x0-0xFFFF>	Specifies the flow identifier for IPv6 packets. Values range from 0x0 to 0xFFFF hexadecimal.
ip-flag <LINE>	Specify the IP fragment flag criteria
ipv4-option {no-opt with -opt}	Specify the IPv4 option criteria
master	Specify as the master member of the block
max-burst-duration <1-4294967295>	Specifies the maximum burst duration in milliseconds (ms). Values range from 1 to 4294967295 ms. You configure this parameter when a committed metering rate is specified.

max-burst-rate <64-4294967295>	Specifies the maximum burst rate. Values range from 64 to 4294967295 Kbps. You configure this parameter when a committed metering rate is specified.
name <WORD>	Specify the label used to reference the Traffic Profile entry
next-header <0-255>	Specifies the IPv6 next-header value. Values range from 0–255.
pkt-type {etherII llc snap}	Specify the filter packet format ethertype encoding criteria
priority <0-7> All	Specify the user priority classifier criteria
protocol <0-255>	Specify the IPv4 protocol classifier criteria
set-drop-prec {high-drop low-drop}	Specify the set drop precedence
set-drop-prec-out-action {high-drop low-drop}	Specify the set drop precedence out-of-profile action
src-ip <A.B.C.D/<0-32>	Specify the source IP classifier criteria
src-mac <H.H.H>	Specify the source MAC classifier criteria
src-mac-mask <src-mac-mask>	Specifies the MAC source address mask of incoming packets.
src-port-max <0-65535>	Specifies the maximum value for the Layer 4 source port number in a packet.
src-port-min <0-65535>	Specify the L4 source port minimum value classifier criteria
stage <egress>	Specifies the stage to apply the filter.
stage <egress>	Specifies the stage to apply the filter.
tcp-control <LINE>	Specify the TCP control criteria
update-1p {<0-7> use-egress use-tos-prec}	Specify the update user priority
update-dscp <0-63>	Specify the update DSCP
update-dscp-out-action <0-63>	Specify the remark DSCP out-of-profile action
vlan-max <1-4094>	Specifies the maximum VLAN ID value for the classifier.

vlan-min <1-4094> Specify the Vlan ID minimum value classifier criteria

vlan-tag {tagged | untagged} Specify the vlan tag classifier criteria

Default

None

Command Mode

Global Configuration

qos traffic-profile set

Creates QoS Traffic Profile set.

Syntax

- `no qos traffic-profile set [port <LINE>] [name <WORD>] [enable]`
- `qos traffic-profile set [port <LINE>] [name <WORD>] [enable] [meter-mode] [classifier] [individual-per-policy] [uniform-per-policy] [track-statistics {aggregate | disable | individual}] [committed-rate <64-10230000> {committed-burst-size | max-burst-rate <64-4294967295>}]`

Command Parameters

classifier	A meter applied on a per-classifier basis, with derived rate and burst data
committed-burst-size	Specify the burst size in KBytes
committed-rate <64-10230000>	Specify the committed rate value
enable	Enable QoS Traffic Profile entry
individual-per-policy	A unique meter applied to each policy that comprises the filter set, with derived rate and burst data
max-burst-rate <64-4294967295>	Specify the maximum burst rate value
meter-mode	Specify the meter mode
name <WORD>	Specify the label used to reference the Traffic Profile entry
port <LINE>	Specify the port(s) to apply traffic profile on
track-statistics {aggregate disable individual}	Specify to track statistics on policy

uniform-per-policy

A unique meter applied to each policy that comprises the filter set, with uniform rate and burst data

Default

None

Command Mode

Global Configuration

qos ubp classifier

Creates QoS UBP entries.

Syntax

- **no qos ubp** [name <WORD>] [set name<WORD>]
- **qos ubp classifier** name <WORD> [addr-type {ipv4|ipv6}] [alloc-mode {best-effort| double|single}] [block <WORD>] [drop-action {disable| enable}] [ds-field <0-63>] [dst-ip A.B.C.D/<0-32>] [dst-mac <H.H.H> dst-mac-mask <H.H.H>] [dst-port-min <0-65535> dst-port-max <0-65535>] [ethertype <0x0-0xFFFF>] [eval-order <1-255>] [ip-flag <LINE>] [ipv4-option {no-opt |with -opt}] [master] [pkt-type {etherII | llc | snap}] [priority {<0-7> | all}] [protocol <0-255>] [set-drop-prec {high-drop | low-drop}] [src-ip <A.B.C.D/<0-32>] [src-mac <H.H.H> src-mac-mask <H.H.H>] [src-port-min <0-65535> src-port-max <0-65535>] [tcp-control <LINE>] [update-lp {<0-7> | use-egress | use-tos-prec}] [update-dscp <0-63>] [vlan-min <1-4094> vlan-max <1-4094>] [vlan-tag {tagged | untagged}]

Command Parameters

addr-type {ipv4 ipv6}	Specify the address type (IPv4, IPv6) classifier criteria
block <WORD>	Specify the label to identify access-list elements that are of the same block
drop-action {disable enable}	Specify the drop action
ds-field <0-63>	Specify the DSCP classifier criteria
dst-ip A.B.C.D/<0-32>	Specify the destination IP classifier criteria
dst-mac <H.H.H>	Specify the destination MAC classifier criteria
dst-port-min <0-65535>	Specify the L4 destination port minimum value classifier criteria

ethertype <0x0-0xFFFF>	Specify the ethertype classifier criteria
eval-order <1-255>	Specify the evaluation order
ip-flag <LINE>	Specify the IP fragment flag criteria
ipv4-option {no-opt with -opt}	Specify the IPv4 option criteria
master	Specify as the master member of the block
name <WORD>	Specify the label used to reference the Traffic Profile entry
pkt-type {etherII llc snap}	Specify the filter packet format ethertype encoding criteria
priority <0-7> All	Specify the user priority classifier criteria
protocol <0-255>	Specify the IPv4 protocol classifier criteria
set-drop-prec {high-drop low-drop}	Specify the set drop precedence
src-ip <A.B.C.D/<0-32>	Specify the source IP classifier criteria
src-mac <H.H.H>	Specify the source MAC classifier criteria
src-port-min <0-65535>	Specify the L4 source port minimum value classifier criteria
tcp-control <LINE>	Specify the TCP control criteria
update-1p {<0-7> use-egress use-tos-prec}	Specify the update user priority
update-dscp <0-63>	Specify the update DSCP
vlan-min <1-4094>	Specify the Vlan ID minimum value classifier criteria
vlan-tag {tagged untagged}	Specify the vlan tag classifier criteria

Default

None

Command Mode

Global Configuration

qos ubp set

Creates QoS UBP set.

Syntax

- `no qos ubp set [name <WORD>]`
- `qos ubp set [name <WORD>] [set-priority <1-255>] [track-statistics {aggregate | disable | individual}] [committed-rate <64-10230000> {committed-burst-size | max-burst-rate <64-4294967295>}]`

Command Parameters

committed-burst-size	Specify the burst size in KBytes
committed-rate <64-10230000>	Specify the committed rate value
max-burst-rate <64-4294967295>	Specify the maximum burst rate value
name <WORD>	Specify the label used to reference the Traffic Profile entry.
set-priority <1-255>	Specify the filter set priority
track-statistics {aggregate disable individual}	Specify to track statistics on policy

Default

None

Command Mode

Global Configuration

quickconfig(global)

Enables quick config.

Syntax

- `default quickconfig`
- `no quickconfig enable`
- `quickconfig enable`

Command Parameters

enable	Enable quick config

Default

None

Command Mode

Global Configuration

radius accounting

Configures RADIUS accounting settings.

Syntax

- `default radius accounting interim-updates [enable] [interval] [use-server-interval]`
- `no radius accounting interim-updates [enable] [use-server-interval]`
- `radius accounting interim-updates [enable] [interval <60-3600>] [use-server-interval]`

Command Parameters

enable	Enable RADIUS Accounting Interim-Updates.
interim-updates	Modify interim-updates settings.
interval <60-3600>	Modify the timeout interval for RADIUS Accounting Interim-Updates.
use-server-interval	Use the value given by server for the timeout interval.

Default

None

Command Mode

Global Configuration

radius dynamic-server

RADIUS Dynamic Authorization Client settings.

Syntax

- `default radius dynamic-server {[client] {A.B.C.D} [secret] [enable] [port] [process-disconnect-requests] [process-change-of-auth-requests] [process-reauthentication-requests]} | [replay-protection]`

- `no radius dynamic-server {[client] {A.B.C.D} [secret] [enable] [process-disconnect-requests] [process-change-of-auth-requests] [process-reauthentication-requests]] | [replay-protection]`
- `radius dynamic-server {[client] {A.B.C.D} [secret] [port <1024-65535>] [enable] [process-disconnect-requests] [process-change-of-auth-requests] [process-reauthentication-requests]] | [replay-protection]`

Command Parameters

{A.B.C.D}	Add new RADIUS Dynamic Authorization Client or change RADIUS Dynamic Authorization Client settings.
client	Add new RADIUS Dynamic Authorization Client or change RADIUS Dynamic.
enable	Enable packet receive from this RADIUS Dynamic Authorization Client.
port <1024-65535>	Set server/NAS UDP port to listen for requests from this RADIUS Dynamic Authorization Client.
process-change-of-auth-requests	Enable change-of-authorization requests processing.
process-disconnect-requests	Enable disconnect requests processing.
process-reauthentication-requests	Enable reauthentication requests processing
replay-protection	Enable globally Radius dynamic server replay protection.
secret	Set RADIUS Dynamic Authorization Client secret.

Default

None

Command Mode

Global Configuration

radius reachability

Configure RADIUS server reachability settings.

Syntax

- `default radius reachability [bad-timer] [good-timer] [mode] [retry] [timeout]`

- **radius reachability** {check {eap | non-eap} [global] | mode {use-icmp | use-radius [username <username> password <password>] [timeout <1-60>] [retry <1-5>] [bad-timer <30-600>] [good-timer <30-600>] | bad-timer <30-600> | good-timer <30-600> | retry <1-5>}}

Command Parameters

bad-timer <30-600>	Configures the interval between checks when the RADIUS server is unreachable.
check	Initiates an immediate check to determine the reachability of the RADIUS server.
eap	Checks the EAP RADIUS server reachability.
global	Checks the Global RADIUS server reachability.
good-timer <30-600>	Configures the interval between checks when the RADIUS server is reachable.
mode {use-icmp use-radius}	Configures the RADIUS reachability mode as use-icmp to enable RADIUS server reachability using ICMP or use-radius to enable RADIUS server reachability using RADIUS requests.
non-eap	Checks the Non-EAP RADIUS server reachability.
password <LINE>	Configures the RADIUS request password.
retry <1-5>	Specifies the retry attempts.
timeout <1-60>	Specifies the timeout period in seconds.
username <LINE>	Set RADIUS request username

Default

None

Command Mode

Global Configuration

radius server

Configures RADIUS server settings.

Syntax

- **default radius server host** {<A.B.C.D> | <WORD>} [acct-enable] [acct-port] [key] [port] [retry] [secondary] [timeout] [used-by {eapol | non-eapol}]

- `no radius server host {<A.B.C.D> | <WORD>} [acct-enable] [secondary] [used-by {eapol | non-eapol}]`
- `radius server host {<A.B.C.D> | <WORD>} [acct-enable] [acct-port <1-65535>] [key] [port <1-65535>] [retry <1-5>] [secondary] [timeout <1-60>] [used-by {eapol | non-eapol}]`

Command Parameters

{A.B.C.D}	IP address of RADIUS server
acct-enable	Enable RADIUS accounting mode
acct-port <1-65535>	Radius accounting port
host	RADIUS host
key	RADIUS shared secret
port <1-65535>	RADIUS UDP port
retry <1-5>	RADIUS retry attempts
secondary	Set as RADIUS secondary host
timeout <1-60>	RADIUS time-out period
used-by {eapol non-eapol}	Application name
WORD	IPV6 address of RADIUS server

Default

None

Command Mode

Global Configuration

radius use-management-ip

Enables Radius use-management-ip flag.

Syntax

- `default radius use-management-ip`
- `no radius use-management-ip`
- `radius use-management-ip`

Default

None

Command Mode

Global Configuration

radius-server

Configures RADIUS server password fallback.

Syntax

- `default radius-server encapsulation | password fallback`
- `no radius-server {encapsulation [ms-chap-v2] [pap]} | password fallback`
- `radius-server {encapsulation [ms-chap-v2] [pap]} | password fallback`

Command Parameters

encapsulation	RADIUS encapsulation protocol
fallback	RADIUS password fallback
ms-chap-v2	MS-CHAP-V2 protocol
pap	PAP protocol
password	RADIUS password fallback

Default

None

Command Mode

Global Configuration

radius-server encapsulation

Enables Change Radius Password

Syntax

- `default radius-server encapsulation ms-chap-v2`
- `no radius-server encapsulation ms-chap-v2`
- `radius-server encapsulation ms-chap-v2`

Command Parameters

ms-chap-v2 Enables Microsoft Challenge-Handshake Authentication Protocol version 2 (MS-CHAP-V2)

Default

None

Command Mode

Global Configuration

remote connection

Enables or disables SSHC and Telnet on device.

Syntax

- `remote connection {enable | disable}`

Command Parameters

disable Disables SSHC and Telnet on device.

enable Enables SSHC and Telnet on device.

Default

None

Command Mode

Global Configuration

renumber

Renumbers unit numbers in a stack.

Syntax

- `renumber unit`

Command Parameters

unit Renumber unit numbers in a stack

Default

None

Command Mode

Global Configuration

rip

Sets the maximum number of ECMP path for "rip" protocol.

Syntax

- `default rip maximum-path`
- `no rip maximum-path`
- `rip maximum-path <1-4>`

Command Parameters

maximum-path <1-4> Set the maximum number of ECMP path

Default

None

Command Mode

Global Configuration

rmon alarm

Creates RMON Alarm entries.

Syntax

- `no rmon alarm <1-65535>`
- `rmon alarm <1-65535> <WORD> <1-2147483647> {absolute | delta} [rising-threshold <-2147483648-2147483647>] [<1-65535>] [falling-threshold <-2147483648-2147483647>] [<1-65535>] [owner <LINE>]`

Command Parameters

<1-2147483647>	Sampling interval (seconds)
<1-65535>	Index of entry
<1-65535>	falling event index
<1-65535>	rising event index

<WORD>	Alarm variable (OID)
absolute	Absolute sampling type
delta	Delta sampling type
falling-threshold <-2147483648-2147483647>	Specify falling threshold values
owner <LINE>	Specify owner string
rising-threshold <-2147483648-2147483647>	Specify rising threshold values

Default

None

Command Mode

Global Configuration

rmon event

Creates RMON Event entries.

Syntax

- **no rmon event <1-65535>**
- **rmon event <1-65535> [log] [trap] [description <LINE>] [owner <LINE>] [community <LINE>]**

Command Parameters

<1-65535>	Index of entry
community <LINE>	Specify community string
description <LINE>	Specify description of event
log	Specify events should be logged
owner <LINE>	Specify owner string
trap	Specify that events should generate traps

Default

None

Command Mode

Global Configuration

rmon history

Creates RMON History entries.

Syntax

- `no rmon history <1-65535>`
- `rmon history <1-65535> <LINE> <1-65535> <1-3600> [owner <LINE>]`

Command Parameters

<1-3600>	Sampling interval (seconds)
<1-65535>	Index of entry
LINE <1-65535>	Data source (port number)
owner <LINE>	Specify owner string

Default

None

Command Mode

Global Configuration

rmon stats

Creates RMON Stats entries.

Syntax

- `no rmon stats <1-65535>`
- `rmon stats <1-65535> <LINE> [owner <LINE>]`

Command Parameters

<1-65535>	Index of entry
<LINE>	Data source (port number)
owner <LINE>	Specify owner string

Default

None

Command Mode

Global Configuration

role

Configures a role.

Syntax

- `role <role_name>`
- `role <role_name> [show-only <command_group_A> | show-config <command_group_B>]`

Command Parameters

<role_name>	Specifies the name of the role.
show-config <command_group_B>	Specifies the group of commands for which the specified role will have full privileges (show, configure, no and default).
show-only <command_group_A>	Specifies the group of commands for which the specified role will have show-only privileges.

Default

None

Command Mode

Global Configuration

route-map

Adds/modifies an IP route policy map.

Syntax

- `default route-map <WORD> <1-65535> [enable] [match {interface | metric | network | next-hop | protocol | route-source | route-type}] [set {injectlist | ip-preference | mask | metric | metric-type | nssa-pbit enable}]`
- `no route-map <WORD> <1-65535> [enable] [match {interface | metric | network | next-hop | protocol | route-source | route-type}] [set {injectlist | mask | metric | nssa-pbit enable}]`
- `route-map <WORD> [permit | deny] <1-65535> [enable] [match {interface <WORD> | metric <0-65535> | network <WORD> | next-hop <WORD> | protocol <LINE> | route-source <WORD> | route-type {any | external | external-1 | external-2 | internal | local}}] [name <WORD>] [set {injectlist <WORD> | ip-preference <0-255> | mask {A.B.C.D} | metric <0-65535> | metric-type <type 1 | type 2> | nssa-pbit enable}]`

Command Parameters

<1-65535>	Index used to identify a specific policy in the route policy group
<WORD>	Name used to group a set of policies with different sequence number
deny	Deny the route policy
enable	Enable route map policy
injectlist <WORD>	Specifies the prefix list to be used either for injecting the routes into the routing table or to include the networks in the advertisement.
interface <WORD>	Set match received interface.(Only for rip routes. Ignored in
ip-preference <0-255>	Specifies the route preference value to be assigned to the routes that this policy applies to
mask {A.B.C.D}	Set Mask Ip Address
match	Configure match criteria
metric <0-65535>	Set match the metric field in the incoming advertisement
metric <0-65535>	Set metric used while sending an update for the routes that match the matching criteria in this route policy
metric-type <type 1 type 2>	Set metric type for the routes to be imported into OSPF routing protocol, which passed the matching criteria configured in this route policy
network <WORD>	Set match network (can specify one or more prefix list name)
next-hop <WORD>	Set the next hop (RIP interface)
nssa-pbit	Set P bit in specified type 7 LSA
permit	Permit the route policy
protocol <LINE>	Set match protocol
route-source <WORD>	Set route source (on RIP is RIP interface)
route-type <any external external-1 external-2 internal local>	Set route type

Default

None

Command Mode

Global Configuration

router isis

Changes router ISIS mode configuration.

Syntax

- `default router isis enable`
- `no router isis enable`
- `router isis enable`

Command Parameters

enable Enable router ISIS mode configuration

Default

None

Command Mode

Global Configuration

router ospf

Changes OSPF config settings.

Syntax

- `default router ospf enable`
- `no router ospf enable`
- `router ospf enable`

Command Parameters

enable Enable OSPF config settings

Default

None

Command Mode

Global Configuration

router rip

Changes RIP config settings.

Syntax

- `default router rip {enable | ipv6-enable}`
- `no router rip {enable | ipv6-enable}`
- `router rip {enable | ipv6-enable}`

Command Parameters

enable Enable RIP config settings

ipv6-enable Enable RIPng

Default

None

Command Mode

Global Configuration

router vrrp

Changes VRRP config settings.

Syntax

- `default router vrrp enable`
- `no router vrrp enable`
- `router vrrp enable`

Command Parameters

enable Enable VRRP config settings

Default

None

Command Mode

Global Configuration

script upload (global)

Uploads the current ASCII configuration using an entry in the ASCII configuration script table.

Syntax

- `script upload <1-127> [upload <1-127>] [verbose] [module] {[802.1ab] [aaa] [aaur] [adac] [arp-inspection] [asset-id] [aur] [banner] [brouter] [cfm] [core] [dhcp-relay] [dhcp-snooping] [eap] [energy-saver] [fa] [igmp] [interface] [ip] [ip-source-guard] [ipfix] [ipmgr] [ipv6] [l3] [l3-protocols] [lacp] [link-state] [logging] [mac-security] [mlt] [mvr] [poe] [port-mirroring] [qos] [rate-limit] [rmon] [rtc] [sflow] [slamon] [slpp] [snmp] [spbm] [ssh] [sshc] [ssl] [stack] [stkmon] [stp] [vlacp] [vlan]}`

Command Parameters

- module** Copies application configuration.
- verbose** Uploads ASCII configuration (defaults and non-defaults).

Default

None

Command Mode

Global Configuration

serial-console

Enables serial console port.

Syntax

- `default serial-console serial-console [unit <1-8>] [enable]`
- `no serial-console [unit <1-8>] [enable]`
- `serial-console [unit <1-8>] [enable]`

Command Parameters

- enable** Enable serial console port access
- unit <1-8>** Unit number

Default

None

Command Mode

Global Configuration

serial-security

Serial security settings.

Syntax

- `default serial-security enable`
- `no serial-security enable`
- `serial-security enable`

Command Parameters

enable Enable serial security

Default

None

Command Mode

Global Configuration

sflow (global)

Configures sFlow on the switch.

Syntax

- `default sflow collector <1-4>`
- `no sflow collector <1-4>`
- `sflow collector <1-4> [max-datagram-size <400-9216>] [timeout <0-65535>]`
- `sflow collector <1-4> address <a.b.c.d> | <ipv6addr> [owner <word>] [port <1-65535>]`

Command Parameters

address	Specifies the IPv4 address or IPv6 address.
collector <1-4>	Specifies the Collector ID.
max-datagram-size <400-9216>	Specifies the maximum size of the datagram packets. The default is 1400.
owner <word>	Specifies the owner that created the entry (maximum length 20).
port <1-65535>	Specifies the UDP port number. The default UDP port is 6343.

timeout <0-65535> Specifies the timeout until collector is deleted. The default is 0.

Default

None

Command Mode

Global Configuration

sflow enable

Enables or disables sFlow on the switch.

Syntax

- `default sflow enable`
- `no sflow enable`
- `sflow enable`

Default

None

Command Mode

Global Configuration

sftp-server

Configure the sftp-server

Syntax

- `default sftp-server`
- `no sftp-server`
- `sftp-server [<ipv6_address> | <A.B.C.D>]`

Command Parameters

<A.B.C.D> Specifies the IP address of SFTP server

<ipv6_address> Specifies the IPv6 address of SFTP server

Default

None

Command Mode

Global Configuration

show password

Displays password security restrictions.

Syntax

- `show password check-repeated`
- `show password check-sequential`
- `show password complexity`
- `show password delay-time`
- `show password min-length`
- `show password notifications`
- `show password password-change-on-first-login`
- `show password password-change-rate-limiter`
- `show password unlock-timer`

Command Parameters

check-repeated	State of check-repeated-characters option
check-sequential	State of check-sequential-characters option
complexity	Display password complexity rules settings
delay-time	Display the delay time after 3 failed login attempts within one minute
min-length	Display the password minimum length
notifications	Display password expiration notifications intervals
password-change-on-first-login	State of password-change-on-first-login option
password-change-rate-limiter	Display number of times a password can be changed in a day
unlock-timer	State of unlock-timer option

Default

None

Command Mode

Global Configuration

show sflow (global)

Displays sFlow-related information.

Syntax

- `show sflow`
- `show sflow collector [<1-4>]`
- `show sflow interface <port>`

Command Parameters

collector [<1-4>] Specifies the Collector ID.

Default

None

Command Mode

Global Configuration

slpp enable (global)

Enables SLPP.

Syntax

- `default slpp enable`
- `no slpp enable`
- `slpp enable`

Default

Disabled

Command Mode

Global Configuration

slpp timeout (Global Configuration)

Sets the SLPP auto port re-enable timeout

Syntax

- `default slpp timeout`
- `no slpp timeout`
- `slpp timeout <0-65535>`

Command Parameters

<0-65535> Specifies the SLPP auto port re-enable timeout. If timeout is 0, the port stays in disable state until manually enabled. The default is 0.

Default

Default value is 0

Command Mode

Global Configuration

slpp ethertype (global)

Sets the SLPP ethertype.

Syntax

- `default slpp ethertype`
- `slpp ethertype <0x0600 - 0xffff>`

Command Parameters

<0x0600 – 0xffff> Configures the SLPP PDU ethertype value. The default value is 0x8102. Value 0x8100 is reserved and cannot be selected.

Default

Default value is 0x8102

Command Mode

Global Configuration

slpp tx-interval (global)

Sets SLPP packet transmission interval

Syntax

- `default slpp tx-interval`
- `no slpp tx-interval`
- `slpp tx-interval <500–5000>`

Command Parameters

<500–5000> Configures the SLPP packet transmit interval, expressed in milliseconds in a range from 500–5000. The default value is 500.

Default

Default value is 500

Command Mode

Global Configuration

slpp vid (global)

Sets the SLPP VLAN list.

Syntax

- `default slpp vid`
- `no slpp vid`
- `slpp vid <1 – 4094>`

Command Parameters

<1 – 4094> Specifies the VLAN, by VLAN ID, to add to the SLPP transmission list.

Default

Default value is 1

Command Mode

Global Configuration

slpp-guard (global)

Configures SLPP-guard global settings.

Syntax

- `default slpp-guard ethertype`

- `slpp-guard ethertype <0x0600-0xffff>`

Command Parameters

ethertype <0x0600-0xffff> Ethertype used for SLPP-guard packets

Default

None

Command Mode

Global Configuration

snmp-server bootstrap

Generates SNMP bootstrap parameters.

Syntax

- `snmp-server bootstrap <minimum-secure>|<semi-secure> |<very-secure>`

Command Parameters

minimum-secure Use minimum security configuration

semi-secure Use partial security configuration

very-secure Use maximum security configuration

Default

None

Command Mode

Global Configuration

snmp-server community

Enables SNMP; set community string and access privs.

Syntax

- `default snmp-server community { ro |rw }`
- `no snmp-server community {<WORD> | ro |rw }`
- `snmp-server community <WORD> {read-view <WORD> | write-view <WORD>|
notify-view <WORD> | ro |rw }`

Command Parameters

<WORD>	SNMP community string
notify-view <WORD>	Enter notify (trap) access view name
read-view <WORD>	Enter read access view name
ro	Read-only access with this community string
rw	Read-write access with this community string
write-view <WORD>	Enter write access view name

Default

None

Command Mode

Global Configuration

snmp-server contact

Text for mib object sysContact.

Syntax

- `default snmp-server contact`
- `no snmp-server contact`
- `snmp-server contact <LINE>`

Command Parameters

<LINE> Identification of the contact person for this managed node

Default

None

Command Mode

Global Configuration

snmp-server disable

Disables SNMP access.

Syntax

- `snmp-server disable`

Default

None

Command Mode

Global Configuration

snmp-server enable

Enables SNMP access.

Syntax

- `snmp-server enable`

Default

None

Command Mode

Global Configuration

snmp-server engine-id

Changes the default unique SNMP Engine ID.

Syntax

- `default snmp-server engine-id`
- `snmp-server engine-id <WORD>`

Command Parameters

<WORD> Specifies the SNMP Engine ID.

Default

None

Command Mode

Global Configuration

snmp-server host

Specifies hosts to receive SNMP notifications.

Syntax

- `default snmp-server host`
- `no snmp-server host [A.B.C.D] [<WORD>] [port <1-65535>] [v1] [v2c] [v3] [ <WORD>]`
- `snmp-server host [A.B.C.D] [<WORD>] [port <1-65535>] [v1 <WORD> filter <WORD>] [v2c <WORD> {filter <WORD> | inform {[timeout <1-2147483647>] [retries <0-255>}}] [v3 <auth | no-auth> <WORD>]`

Command Parameters

<WORD>	IPv6 Address of SNMP Notification Host
A.B.C.D	IP address of SNMP notification host
auth	Generate authenticated traps
filter <WORD>	Create SNMP notify filter profile
inform	Generate acknowledge Inform requests
no-auth	Generate unauthenticated traps
port <1-65535>	Select a non-standard SNMP trap port
retries <0-255>	Retries for inform requests
timeout <1-2147483647>	Timeout for inform requests (centi-seconds)
v1 <WORD>	Create SNMPv1 trap receiver
v2c <WORD>	Create SNMPv2c trap receiver
v3	Create SNMPv3 trap receiver

Default

None

Command Mode

Global Configuration

snmp-server location

Modifies text for mib object sysLocation.

Syntax

- `default snmp-server location`
- `no snmp-server location`
- `snmp-server location <LINE>`

Command Parameters

<LINE> The physical location of this node

Default

None

Command Mode

Global Configuration

snmp-server name

Modifies text for mib object sysName.

Syntax

- `default snmp-server name`
- `no snmp-server name`
- `snmp-server name <LINE>`

Command Parameters

<LINE> The system name of this node

Default

None

Command Mode

Global Configuration

snmp-server notification-control

Enables generation of a notification type.

Syntax

- `default snmp-server notification-control <WORD> <LINE>`
- `no snmp-server notification-control <WORD> <LINE>`

- `snmp-server notification-control <WORD> <LINE>`

Command Parameters

- <LINE>** List of ports
- <WORD>** Description or OID of a notification type

Default

None

Command Mode

Global Configuration

snmp-server notify-filter

Creates SNMP notify filter.

Syntax

- `no snmp-server notify-filter <WORD> [<WORD>]`
- `snmp-server notify-filter <Profile-name> <WORD> [<WORD>] [<WORD>]
[<WORD>] [<WORD>] [<WORD>] [<WORD>] [<WORD>] [<WORD>] [<WORD>]`

Command Parameters

- <Profile-name>** Filter profile name
- <WORD>** Description or OID filter specification

Default

None

Command Mode

Global Configuration

snmp-server packet-size

Sets the SNMP maximum packet size.

Syntax

- `default snmp-server packet-size`
- `snmp-server packet-size <484-8192>`

Command Parameters

<484-8192> Specifies the maximum size of SNMP packet.

Default

None

Command Mode

Global Configuration

snmp-server user

Creates SNMPv3 user.

Syntax

- `default snmp-server port`
- `no snmp-server user [engine-id <WORD>] | [WORD]`
- `snmp-server user {[engine-id <WORD> <user-name>] [md5 <LINE>] | [WORD] [md5<LINE>] [read-view <WORD>] [write-view <WORD>] [notify-view <WORD>]}`

Command Parameters

<user-name>	User name
engine-id <WORD>	Enter a remote SNMP entity's snmpEngineID
md5	Select MD5 authentication protocol
md5 <LINE>	MD5 authentication password
notify-view <WORD>	Enter unauthenticated notify (trap) access view name
read-view <WORD>	Enter unauthenticated read access view name
write-view <WORD>	Enter unauthenticated write access view name

Default

None

Command Mode

Global Configuration

snmp-server view

Creates/modifies an SNMP access view.

Syntax

- `no snmp-server view <view-name>`
- `snmp-server view <view-name> <OID> [<OID> [<OID> [<OID> [<OID> [<OID> [<OID> [<OID> [<OID>]]]]]]]]]`

Command Parameters

<OID>	OID view specification
<view-name>	View name

Default

None

Command Mode

Global Configuration

sntp enable

Enables Simple Network Time Protocol (SNTP) parameters.

Syntax

- `default sntp enable`
- `no sntp enable`
- `sntp enable`

Default

None

Command Mode

Global Configuration

sntp server primary

Configures primary SNTP server.

Syntax

- `default sntp server primary`

- `no sntp server primary`
- `sntp server primary address {A.B.C.D} | [WORD]`

Command Parameters

<code>{A.B.C.D}</code>	server IP address
<code><WORD></code>	primary server IPV6 address (45 length)
<code>address</code>	primary server address

Default

None

Command Mode

Global Configuration

sntp server secondary

Configures secondary SNTP server.

Syntax

- `default sntp server secondary`
- `no sntp server secondary`
- `sntp server secondary address {A.B.C.D} | [WORD]`

Command Parameters

<code>{A.B.C.D}</code>	server IP address
<code><WORD></code>	secondary server IPV6 address (45 length)
<code>address</code>	secondary server address

Default

None

Command Mode

Global Configuration

sntp sync-interval

Sets SNTP re-synchronization interval.

Syntax

- `default snmp sync-interval`
- `snmp sync-interval <0-168>`

Command Parameters

<0-168> SNTP re-synchronization interval hours

Default

None

Command Mode

Global Configuration

snmp sync-now

Forces immediate SNMP synchronization.

Syntax

- `snmp sync-now`

Default

None

Command Mode

Global Configuration

spanning-tree 802dot1d-port-compliance

Sets 802dot1d port compliance mode.

Syntax

- `default spanning-tree 802dot1d-port-compliance enable`
- `no spanning-tree 802dot1d-port-compliance enable`
- `spanning-tree 802dot1d-port-compliance enable`

Command Parameters

enable Enable 802dot1d port compliance mode

Default

None

Command Mode

Global Configuration

spanning-tree add-vlan

Adds a VLAN to a spanning-tree group.

Syntax

- `spanning-tree add-vlan <1-4094>`

Command Parameters

<1-4094> VLAN ID

Default

None

Command Mode

Global Configuration

spanning-tree bpdu-filtering (Global Configuration)

Configures spanning-tree bpdu-filtering.

Syntax

- `default spanning-tree bpdu-filtering ignore-self`
- `no spanning-tree bpdu-filtering ignore-self`
- `spanning-tree bpdu-filtering ignore-self`

Command Parameters

ignore-self Ignore bridge's own BPDUs

Default

None

Command Mode

Global Configuration

spanning-tree cost-calc-mode

Sets pathcost type IEEE 802.1d or IEEE 802.1t.

Syntax

- `default spanning-tree cost-calc-mode`
- `spanning-tree cost-calc-mode [dot1d | dot1t]`

Command Parameters

dot1d IEEE 802.1d pathcost

dot1t IEEE 802.1t pathcost

Default

None

Command Mode

Global Configuration

spanning-tree forward-time

Sets spanning tree forwarding time.

Syntax

- `default spanning-tree forward-time [hello-time] [max-age] [multicast-address] [priority] [tagged-bpdu]`
- `spanning-tree forward-time <4-30> [hello-time <1-10>] [max-age <6-40>] [multicast-address <H.H.H>] [priority {[0000] [1000] [2000] [3000] [4000] [5000] [6000] [7000] [8000] [9000] [a000] [b000] [c000] [d000] [e000] [f000]}]} [tagged-bpdu {[disable] [enable]}]} [tagged-bpdu-vid <1-4094>]`

Command Parameters

<4-30> seconds

disable Disable tagged BPDUs on tagged ports

enable Enable tagged BPDUs on tagged ports

hello-time <1-10> Set spanning tree hello time

max-age <6-40> Set spanning tree maximum age

multicast-address <H.H.H> Set spanning-tree multicast MAC address

priority (0000 - f000 priority value in Hex) Set spanning tree priority (in Hex); if 802.1T compliance, should be multiple of 0x1000.

tagged-bpdu Enable/disable tagged BPDUs on tagged ports

tagged-bpdu-vid <1-4094> Set VLAN ID for tagged BPDUs

Default

None

Command Mode

Global Configuration

spanning-tree hello-time

Sets spanning tree hello time.

Syntax

- **default spanning-tree hello-time** [max-age] [multicast-address] [priority] [tagged-bpdu]
- **spanning-tree hello-time** <1-10> [max-age <6-40>] [multicast-address <H.H.H>] [priority {[0000] [1000] [2000] [3000] [4000] [5000] [6000] [7000] [8000] [9000] [a000] [b000] [c000] [d000] [e000] [f000]}] [tagged-bpdu {[disable] [enable]}] [tagged-bpdu-vid <1-4094>]

Command Parameters

disable Disable tagged BPDUs on tagged ports

enable Enable tagged BPDUs on tagged ports

hello-time <1-10> Set spanning tree hello time

max-age <6-40> Set spanning tree maximum age

multicast-address <H.H.H> Set spanning-tree multicast MAC address

priority (0000 - f000 priority value in Hex) Set spanning tree priority (in Hex); if 802.1T compliance, should be multiple of 0x1000.

tagged-bpdu Enable/disable tagged BPDUs on tagged ports

tagged-bpdu-vid <1-4094> Set VLAN ID for tagged BPDUs

Default

None

Command Mode

Global Configuration

spanning-tree max-age

Sets spanning tree maximum age.

Syntax

- **default spanning-tree max-age <6-40> [multicast-address] [priority] [tagged-bpdu]**
- **spanning-tree max-age <6-40> [multicast-address <H.H.H>] [priority {[0000] [1000] [2000] [3000] [4000] [5000] [6000] [7000] [8000] [9000] [a000] [b000] [c000] [d000] [e000] [f000]}] [tagged-bpdu {[disable] [enable]}] [tagged-bpdu-vid <1-4094>]**

Command Parameters

disable	Disable tagged BPDUs on tagged ports
enable	Enable tagged BPDUs on tagged ports
max-age <6-40>	Set spanning tree maximum age
multicast-address <H.H.H>	Set spanning-tree multicast MAC address
priority (0000 - f000 priority value in Hex)	Set spanning tree priority (in Hex); if 802.1T compliance, should be multiple of 0x1000.
tagged-bpdu	Enable/disable tagged BPDUs on tagged ports
tagged-bpdu-vid <1-4094>	Set VLAN ID for tagged BPDUs

Default

None

Command Mode

Global Configuration

spanning-tree mode

Sets spanning tree operation mode.

Syntax

- `spanning-tree mode {mst | rstp | stpg}`

Command Parameters

- mst** 802.1s Multi Spanning Tree Protocol
- rstp** 802.1w Rapid Spanning Tree Protocol (single group/instance)
- stpg** Multi Spanning Tree Protocol

Default

None

Command Mode

Global Configuration

spanning-tree multicast-address

Sets spanning-tree multicast MAC address.

Syntax

- `default spanning-tree multicast-address`
- `spanning-tree multicast-address <H.H.H>`

Command Parameters

- <H.H.H>** Multicast MAC Address (i.e. H.H.H or xx:xx:xx:xx:xx:xx or xx.xx.xx.xx.xx.xx or xx-xx-xx-xx-xx-xx)

Default

None

Command Mode

Global Configuration

spanning-tree port-mode

Sets spanning-tree port membership mode.

Syntax

- `spanning-tree port-mode {auto | normal}`

Command Parameters

auto	spanning-tree auto port membership mode
normal	spanning-tree normal port membership mode

Default

None

Command Mode

Global Configuration

spanning-tree priority

Sets spanning tree priority (in Hex); if 802.1T compliance, should be multiple of 0x1000.

Syntax

- **default spanning-tree priority** [multicast-address] [tagged-bpdu] [tagged-bpdu-vid]
- **spanning-tree priority** {[0000] [1000] [2000] [3000] [4000] [5000] [6000] [7000] [8000] [9000] [a000] [b000] [c000] [d000] [e000] [f000]} [multicast-address <H.H.H>] [tagged-bpdu {[disable] [enable]}] [tagged-bpdu-vid <1-4094>]

Command Parameters

disable	Disable tagged BPDUs on tagged ports
enable	Enable tagged BPDUs on tagged ports
multicast-address <H.H.H>	Set spanning-tree multicast MAC address
priority (0000 - f000 priority value in Hex)	Set spanning tree priority (in Hex); if 802.1T compliance, should be multiple of 0x1000.
tagged-bpdu	Enable/disable tagged BPDUs on tagged ports
tagged-bpdu-vid <1-4094>	Set VLAN ID for tagged BPDUs

Default

None

Command Mode

Global Configuration

spanning-tree remove-vlan

Removes a VLAN from a spanning-tree group.

Syntax

- `spanning-tree remove-vlan <1-4094>`

Command Parameters

<1-4094> VLAN ID

Default

None

Command Mode

Global Configuration

spanning-tree stp

Specifies spanning-tree group ID.

Syntax

- `default spanning-tree stp <1-8> [forward-time] [hello-time] [max-age] [priority] [tagged-bpdu] [multicast-address]`
- `spanning-tree [stp <1-8>] [forward-time <4-30>] [hello-time <1-10>] [max-age <6-40>] [priority {[0000] [1000] [2000] [3000] [4000] [5000] [6000] [7000] [8000] [9000] [a000] [b000] [c000] [d000] [e000] [f000]}] [tagged-bpdu {enable | disable}] [tagged-bpdu-vid <1-4094>] [multicast-address <H.H.H>] [add-vlan <1-4094>] [create] [delete] [disable] [enable] [remove-vlan <1-4094>]`

Command Parameters

<1-8>	STPG ID
add-vlan <1-4094>	Add a VLAN to a spanning-tree group
create	Create a spanning-tree group (STG)
delete	Delete a spanning-tree group (STG)
disable	Disable a spanning tree group (STG)
enable	Enable a spanning tree group (STG)
forward-time <4-30>	Set spanning tree forwarding time

hello-time <1-10>	Set spanning tree hello time
max-age <6-40>	Set spanning tree maximum age
multicast-address <H.H.H>	Set spanning-tree multicast MAC address
priority (0000 - f000 priority value in Hex)	Set spanning tree priority (in Hex); if 802.1T compliance, should be multiple of 0x1000.
remove-vlan <1-4094>	Remove a VLAN from a spanning-tree group
tagged-bpdu {enable disable}	Enable/disable tagged BPDUs on tagged ports
tagged-bpdu-vid <1-4094>	Set VLAN ID for tagged BPDUs

Default

None

Command Mode

Global Configuration

spanning-tree tagged-bpdu

Enables/disables tagged BPDUs on tagged ports.

Syntax

- **spanning-tree tagged-bpdu {enable | disable}} [tagged-bpdu-vid <1-4094>] [multicast-address <H.H.H>]**

Command Parameters

disable	Disable tagged BPDUs on tagged ports
enable	Enable tagged BPDUs on tagged ports
multicast-address <H.H.H>	Set spanning-tree multicast MAC address
tagged-bpdu-vid <1-4094>	Set VLAN ID for tagged BPDUs

Default

None

Command Mode

Global Configuration

spanning-tree tagged-bpdu-vid

Sets VLAN ID for tagged BPDUs.

Syntax

- `spanning-tree tagged-bpdu-vid <1-4094> [multicast-address <H.H.H>]`

Command Parameters

multicast-address <H.H.H>	Set spanning-tree multicast MAC address
tagged-bpdu-vid <1-4094>	Set VLAN ID for tagged BPDUs

Default

None

Command Mode

Global Configuration

spbm (Global Configuration)

Enables SPBM.

Syntax

- `default spbm ethertype`
- `no spbm`
- `spbm ethertype {0x8100 | 0x88a8}`

Command Parameters

0x8100	Set SPBM ethertype value to 0x8100
0x88a8	Set SPBM ethertype value to 0x88a8
ethertype	Set SPBM ethertype
reserved-port {front-panel none stack}	Configures one port in loopback.

Default

None

Command Mode

Global Configuration

ssh (Global Configuration)

Configure SSH setting

Syntax

- `default ssh {dsa-auth | pass-auth | port | rekey | rekey-datalimit | rekey-interval | retries | rsa-auth | timeout | x509v3-auth}`
- `default ssh x509v3-auth username {overwrite | strip-domain | use-domain}`
- `no ssh {dsa-auth | dsa-auth-key | dsa-host-key | pass-auth | rsa-auth | rsa-auth-key | rsa-host-key | x509v3-auth}`
- `no ssh x509v3-auth username {overwrite | strip-domain | use-domain}`
- `ssh download-auth-key {[address <A.B.C.D > | <WORD>] usb [unit <1-8>]} [key-name <WORD>] [dsa | rsa ]`
- `ssh download-banner {[address <A.B.C.D> | <WORD>] <filename>}`
- `ssh dsa-auth`
- `ssh dsa-host-key`
- `ssh pass-auth`
- `ssh rekey`
- `ssh rekey-datalimit <1-6>`
- `ssh rekey-interval <1-6>`
- `ssh rsa-auth`
- `ssh rsa-host-key`
- `ssh secure [force]`
- `ssh x509v3-auth`
- `ssh x509v3-auth username {overwrite | strip-domain | use-domain}`

Command Parameters

[A.B.C.D]	Specifies the IP address
[WORD]	Specifies the IPv6 address
address	Specifies the address of the TFTP server
certificate	Creates digital certificate.
download-auth-key	Download SSH auth key.
download-banner	Download SSH Banner.
dsa	Specifies DSA authentication key to be downloaded

dsa-auth	Enable SSH DSA authentication.
dsa-host-key	Generate new SSH DSA host key.
filename	Specifies the file to be downloaded from the TFTP server.
force	Skips the confirmation step
key-name WORD	Specifies the TFTP or USB filename
pass-auth	Enable SSH password authentication.
port <1-65535>	Set SSH port for accepting new connections
rekey	Enables SSH rekey.
rekey-datalimit <1-6>	Configures SSH rekey data limit in Gigabytes. The default is 1 Gigabyte.
rekey-interval <1-6>	Configures SSH rekey interval in hours. The default is 1 hour.
reset	Resets the SSL server
retries <1-100>	Configure number of SSH password authentication retries.
rsa	Specifies RSA authentication key to be downloaded
rsa-auth	Enable SSH RSA Authentication.
rsa-host-key	Generate new SSH RSA host key
secure	Enable SSH secure mode.
timeout <1-120>	Set SSH authentication timeout
usb	Downloads SSH auth key via USB.
username overwrite	Overwrites the username sent by the SSH client with username information from the client certificate—subject alternative name and principal name.
username strip-domain	Strips the domain name so that it is not sent to the RADIUS server.
username user-domain	Specifies a locally configured domain to be sent to the RADIUS server.
x509v3-auth	Enables SSH RSA Authentication
Default	
None	

Command Mode

Global Configuration

sshc authentication

Configure the SFTP authentication method Secure Shell (SSH) Client uses for transferring files.

Syntax

- `default sshc authentication`
- `no sshc authentication`
- `sshc authentication {dsa|password|rsa}`

Command Parameters

dsa	Enables SFTP DSA authentication for SSH Client (default).
password	Enables SFTP password authentication for SSH Client.
rsa	Enables SFTP RSA authentication for SSH Client.

Default

The default is DSA.

Command Mode

Global Configuration

sshc close-session

Close a specific Secure Shell (SSH) Client session.

Syntax

- `sshc close-session <0-8>`

Command Parameters

<0-8>	Specifies the SSH Client session ID.

Default

None

Command Mode

Global Configuration

sshc dsa-host-key

Generate public and private DSA Secure Shell (SSH) client host keys for user access authentication.

Syntax

- `no sshc dsa-host-key`
- `sshc dsa-host-key [force]`

Command Parameters

force Create a new DSA key, even in the presence of an existing DSA key.

Default

None

Command Mode

Global Configuration

sshc dsa-key

Configures the Secure Shell Client (SSHC) DSA host key size and generates the new key at system reboot.

Syntax

- `default sshc dsa-key`
- `default sshc dsa-keysize`
- `sshc dsa-key <512-1024>`

Command Parameters

<512-1024> Specifies the key size. Use the command `default sshc dsa-key` to clear the SSHC DSA key and then use the command `default sshc dsa-keysize` to configure the keysize to the default.

Default

None

Command Mode

Global Configuration

sshc port

Configures the Secure Shell Client (SSHC) port to accept new connections.

Syntax

- `default sshc port`
- `sshc port <1-65535>`

Command Parameters

<1-65535> Specifies the TCP port.

Default

None

Command Mode

Global Configuration

sshc rsa-host-key

Generate public and private Secure Shell Client (SSHC) RSA host keys for user access authentication.

Syntax

- `no sshc rsa-host-key`
- `sshc rsa-host-key [force]`

Command Parameters

force Create a new RSA key, even in the presence of an existing RSA key.

Default

None

Command Mode

Global Configuration

sshc rsa-key

Configure Secure Shell Client (SSHC) RSA host key size and generate a new key at the next system reboot.

Syntax

- **default sshc rsa-key**
- **default sshc rsa-keysize**
- **sshc rsa-key <1024-2048>**

Command Parameters

<1024-2048> Specifies the key size. Use the command **default sshc rsa-key** to clear the SSHC RSA key and then use the command **default sshc rsa-keysize** to configure the keysize to the default.

Default

None

Command Mode

Global Configuration

sshc upload-host-key

Upload the Secure Shell Client (SSHC) host key.

Syntax

- **sshc upload-host-key [address {<A.B.C.D>|<WORD>}] [dsa] [key-name <WORD>] [rsa] [usb unit <1-8>]**

Command Parameters

address {<A.B.C.D> <WORD>}	Specifies the TFTP server address.
dsa	Uploads the Secure Shell Client (SSHC) DSA host key.
key-name <WORD>	Specifies the TFTP filename.
rsa	Uploads the Secure Shell Client (SSHC) RSA host key.
usb unit <1-8>	Uploads the Secure Shell Client (SSHC) authentication key to USB.

Default

None

Command Mode

Global Configuration

ssl

Configure SSL

Syntax

- **ssl**

Default

None

Command Mode

Global Configuration

stack auto-unit-replacement

Sets auto unit replacement settings.

Syntax

- **default stack auto-unit-replacement enable**
- **no stack auto-unit-replacement enable**
- **stack auto-unit-replacement config {restore unit <1-8> | save [disable] [enable] [unit <1-8>]}**

Command Parameters

config	Modify AUR operational settings
disable	Disable AUR auto-save
enable	Enable AUR auto-save
restore	Restore configuration of a unit from the saved configuration on the base unit
save	Enable/disable auto-save of unit configuration to base unit
unit <1-8>	Force immediate save of NBU config to BU

Default

None

Command Mode

Global Configuration

stack auto-unit-replacement-image

Sets auto unit image replacement settings.

Syntax

- `default stack auto-unit-replacement-image enable`
- `no stack auto-unit-replacement-image enable`
- `stack auto-unit-replacement-image enable`

Command Parameters

enable Enable auto unit image replacement

Default

None

Command Mode

Global Configuration

stack forced-mode

Enables the forced stack mode.

Syntax

- `default stack forced-mode`
- `no stack forced-mode`
- `stack forced-mode`

Default

None

Command Mode

Global Configuration

stack reboot-on-failure

Reboots stack units when their stacking ports fail to come up.

Syntax

- `default stack reboot-on-failure`
- `no stack reboot-on-failure`

- `stack reboot-on-failure`

Default

None

Command Mode

Global Configuration

stack replace

Replaces a stack member that is down.

Syntax

- `stack replace unit <1-8>`

Command Parameters

unit <1-8> Select the unit to be replaced

Default

None

Command Mode

Global Configuration

stack retry-count

Configures stack retry count.

Syntax

- `default stack retry-count`
- `stack retry-count <0-4294967295>`

Command Parameters

<0-4294967295> retry count

Default

None

Command Mode

Global Configuration

stack-monitor

Configures stack monitoring.

Syntax

- `default stack-monitor [enable] [stack-size] [trap-interval]`
- `no stack-monitor enable`
- `stack-monitor [enable] [stack-size <2-8>] [trap-interval <30-300>]`

Command Parameters

enable	Enable stack monitoring
stack-size <2-8>	Set stack size to be monitored <2-8>
trap-interval <30-300>	Set interval between traps (seconds) <30-300>

Default

None

Command Mode

Global Configuration

storm-control

Configures storm control.

Syntax

- `default storm-control [broadcast | multicast | unicast | all] [action] [high-watermark] [low-watermark] [poll interval] [trap-interval] [enable]`
- `no storm-control [broadcast | multicast | unicast | all] [enable]`
- `storm-control [broadcast | multicast | unicast | all] [action [none | drop | shutdown ]] [enable] [high-watermark <10-100000000>] [low-watermark <10-100000000>] [poll interval <5-300>] [trap-interval <0-1000>]`

Command Parameters

action {drop non shutdown}	Configures the storm control action.
all	Configures storm-control settings for all types of traffic.
broadcast	Configures storm-control settings for broadcast traffic.

enable	Enables storm control.
high-watermark <10-100000000>	Configures the high-watermark in pps.
low-watermark <10-100000000>	Configures the low-watermark in pps.
multicast	Configures storm-control settings for multicast traffic.
poll-interval <5-300>	Configures the interval for watermark checking in seconds.
trap-interval <0-1000>	Configures the trap sending interval in poll intervals when above the high-watermark. If the value is zero it does not send.
unicast	Configures storm-control settings for unicast traffic.
Default	
None	
Command Mode	
Global Configuration	

tacacs accounting

Configures TACACS+ accounting to track what the user does.

Syntax

• `tacacs accounting {disable | enable}`

Command Parameters

disable	disable accounting
enable	enable accounting

Default

None

Command Mode

Global Configuration

tacacs authorization

TACACS+ authorization determines what the user is allowed to do.

Syntax

- `tacacs authorization {disable | enable | level {ALL | <LINE> | NONE}}`

Command Parameters

ALL	all privilege levels
disable	disable authorization
enable	enable authorization
level	authorization level
LINE	Enable authorization on privilege level(s)
NONE	none privilege level

Default

None

Command Mode

Global Configuration

tacacs server

TACACS+ server's primary/secondary host, shared secret key and TCP port.

Syntax

- `default tacacs server [host] [secondary-host] [port] [key][retry]`
- `no tacacs server [host] [secondary-host] [port] [key]`
- `tacacs server [host {A.B.C.D}] [secondary-host {A.B.C.D}] [port <1-65535>] [retry <1-5>] [key]`

Command Parameters

{A.B.C.D}	IP address of primary TACACS+ server
{A.B.C.D}	IP address of secondary TACACS+ server
host {A.B.C.D}	TACACS+ primary host
key	TACACS+ shared secret

port <1-65535>	TACACS+ TCP port
retry	Specifies the TACACS+ retry attempts
secondary-host {A.B.C.D}	TACACS+ secondary host

Default

None

Command Mode

Global Configuration

tacacs switch

Switches between TACACS+ privilege levels.

Syntax

- `tacacs switch {back | level <1-15>}`

Command Parameters

<1-15>	privilege level
back	Back one level
level	New privilege level

Default

None

Command Mode

Global Configuration

telnet-access

Configures TELNET access settings.

Syntax

- `default telnet-access`
- `no telnet-access source-ip {<1-50> | <51-100>}`
- `telnet-access [enable | disable] [login-timeout <1-10>] [retry <1-100>] [inactive-timeout <0-60>] [logging {none | access | failures | all}] [source-ip {<1-50> {A.B.C.D} mask {A.B.C.D} | <51-100> <WORD>}]`

Command Parameters

<1-50>	Select which address/mask pair
<51-100>	Select which ipv6 address/prefix
access	Log successful telnet connections
all	Log all telnet connections
disable	Disable TELNET access
enable	Enable TELNET access
failures	Log failed telnet connections
inactive-timeout <0-60>	Inactivity timeout for TELNET and CONSOLE sessions
logging {none access failures all}	Level of logging for TELNET and CONSOLE attempts
login-timeout <1-10>	Set time to wait for TELNET and CONSOLE login before closing connection
mask {A.B.C.D}	Source IP mask from which connections are allowed
none	Do not log telnet connections
retry <1-100>	Number of allowed login attempts for TELNET and CONSOLE
source-ip	Set source IP address from which connections are allowed

Default

None

Command Mode

Global Configuration

tftp-access

Configures TFTP access.

Syntax

- **default tftp-access**
- **tftp-access {enable | disable}**

Command Parameters

disable	Disables TFTP access.
enable	Enables TFTP access.

Default

None

Command Mode

Global Configuration

tftp-server

Configures the tftp server.

Syntax

- `default tftp-server`
- `no tftp-server`
- `tftp-server {<A.B.C.D> | <WORD>}`

Command Parameters

<A.B.C.D>	IP address of TFTP server
<WORD>	IPv6 address of TFTP server

Default

None

Command Mode

Global Configuration

usb-host-port

Enables USB Host Port.

Syntax

- `default usb-host-port {[unit <1-8>] [enable]}`
- `no usb-host-port {[unit <1-8>] [enable]}`
- `usb-host-port {[unit <1-8>] [enable]}`

Command Parameters

enable	Enable USB Host Port
unit <1-8>	Unit number

Default

None

Command Mode

Global Configuration

username

Sets the RO/RW credentials.

Syntax

- `default username {ro | rw}`
- `default username lockout-retries`
- `username <WORD> <password> {ro | rw}`
- `username add <WORD> inactive-period <0-360>`
- `username lockout-retries <0-100>`

Command Parameters

inactive-period <0-360>	Disables the username after the specified number of days during which the user name has not been used.
<password>	Cleartext password (when password security is disabled)
<WORD>	Username
lockout-retries <0-100>	Configures the lockout retries.
ro	Read-only user name reset to default.
rw	Read-write user name reset to default.

Default

None

Command Mode

Global Configuration

username (Enhanced Secure Mode)

Configures user options.

Syntax

- `default username { emergency_account_timeout | <user-name> [daily-access-interval | enable | inactive-period | max-number-of-sessions | role-name | ssh-access | telnet-access] | lockout-time}`
- `no username <user-name> [ daily-access-interval | enable | ssh-access | telnet-access ]`
- `username emergency_account_timeout <1-360>`
- `username <user-name> {daily-access-interval daily-access-interval access-start-hour <0-24> access-end-hour <0-24> | enable | inactive-period <1-360> | max-number-of-sessions <1-12> | password | role-name | ssh-access | telnet-access}`
- `username lockout-time <0-60>`

Command Parameters

<user-name>	Specifies the user name.
daily-access-interval daily-access-interval access-start-hour <0-24>	Specifies the day interval during which the user can access the switch. The default interval is 0-24.
inactive-period <1-360>	Specifies the period during which the user must access the switch in order to not be locked out. The default value is 360 days.
max-number-of-sessions <1-12>	Specifies the number of concurrent sessions allowed for a user. The default value is 12.
role-name <role_name>	Specifies the user role.
ssh-access	Enables or disables SSH access for the user.
telnet-access	Enables or disables telnet access for the user.

Default

None

Command Mode

Global Configuration

username add (Enhanced Secure Mode)

Creates a user.

Syntax

- `username add <user_name> {daily-access-interval access-start-hour <0-24> access-stop-hour <0-24> | inactive-period <1-360> | max-number-of-sessions <1-12> | role-name <role_name>} password <user_password>`
- `username add <user_name> password <user_password>`

Command Parameters

<user_name>	Specifies the user name.
<user_password>	Specifies the user password.
daily-access-interval	Specifies the day interval during which the user can access the switch. The default interval is 0-24.
inactive-period	Specifies the period during which the user must access the switch in order to not be locked out. The default value is 360 days.
max-number-of-sessions	Specifies the number of concurrent sessions allowed for a user. The default value is 12.
role-name <role_name>	Specifies the role for the new user.

Default

None

Command Mode

Global Configuration

vlacp (Global Configuration)

Modifies VLACP configuration.

Syntax

- `default vlacp {enable | hold_time <0-60> | macaddress <H.H.H>}`
- `no vlacp {enable | hold_time <0-60> | macaddress <H.H.H>}`
- `vlacp {enable | hold_time <0-60> | macaddress <H.H.H>}`

Command Parameters

- <H.H.H>** VLACP multicast address (i.e. H.H.H or xx:xx:xx:xx:xx:xx or xx.xx.xx.xx.xx.xx or xx-xx-xx-xx-xx-xx)
- enable** Enable VLACP for the system
- macaddress** Set the multicast address used for VLACPDU

Default

None

Command Mode

Global Configuration

vlan configcontrol

Configures the VLAN control mode.

Syntax

- `default vlan configcontrol`
- `vlan configcontrol {automatic | autopvid | flexible | strict}`

Command Parameters

- automatic** AutoPVID and automatic change to membership of port-based VLANs
- autopvid** Automatic change to PVID
- flexible** No restricts or automatic changes
- strict** AutoPVID and restrictions imposed on adding port to VLAN and changing tagging

Default

None

Command Mode

Global Configuration

vlan create

Creates new VLAN.

Syntax

```

• vlan create [<2-4094>] [<LINE>] [name <LINE>] [type] [private-vlan
secondary <2-4094> {<1-8> | cist | msti <1-7>}] [port] [protocol-
decEther2] [protocol-decOtherEther2] [protocol-ipEther2] [protocol-
ipv6Ether2] [protocol-ipx802.2] [protocol-ipx802.3] [protocol-
ipxEther2] [protocol-ipxSnap] [protocol-Netbios] [protocol-RarpEther2]
[protocol-sna802.2] [protocol-snaEther2] [protocol-vinesEther2]
[protocol-xnsEther2] [protocol-Userdef {ether <4096-65534> | llc
<1-65534> | snap <1-65534>}] [spbm-bvlan] [spbm-switchedUni] [<1-8>]
[remote-span] [voice-vlan]

```

Command Parameters

<1-7>	Specifies the MSTI ID.
<1-8>	Spanning Tree Group ID
<1-8>	Specifies the Spanning Tree Group ID.
<2-4094>	Specifies the VLAN ID.
<4094-65534>	Creates the Ethernet II Userdef VLAN with this Protocol ID.
<LINE>	Specifies the VLAN List.
cist	Adds VLAN to CIST.
ether <4096-65534>	Create Ethernet II Userdef VLAN
llc <1-65534>	Create LLC Userdef VLAN
msti	Adds vlan to MSTI.
name <LINE>	Specify name of new VLAN
port	Creates the port-based VLAN.
private-vlan	Creates a private VLAN.
protocol-decEther2	Creates the decEther2 VLAN.
protocol-decOtherEther2	Display decOtherEther2 VLANs.
protocol-ipEther2	Creates the ipEther2 VLAN.
protocol-ipv6Ether2	Creates the ipv6Ether2 VLAN.
protocol-ipx802.2	Creates the ipx802.2 VLAN.
protocol-ipx802.3	Creates the ipx802.3 VLAN.

protocol-ipxEther2	Creates the ipxEther2 VLAN.
protocol-ipxSnap	Creates the ipxSnap VLAN.
protocol-Netbios	Creates the Netbios VLAN.
protocol-RarpEther2	Creates the RarpEther2 VLAN.
protocol-sna802.2	Creates the sna802.2 VLAN.
protocol-snaEther2	Creates the snaEther2 VLAN.
protocol-Userdef	Creates the Userdef VLAN.
protocol-vinesEther2	Creates the vinesEther2 VLAN.
protocol-xnsEther2	Creates the xnsEther2 VLAN.
remote-span	Creates the RSPAN VLAN.
secondary	Specifies the secondary VLAN ID.
snap <1-65534>	Creates the SNAP Userdef VLAN.
spbm-bvlan	Creates the SPBM B-VLAN.
spbm-switchedUni	Creates the SPBM switched UNI.
type	Specify type of new VLAN.
voice-vlan	Creates the Voice VLAN.

Default

None

Command Mode

Global Configuration

vlan delete

Deletes a VLAN.

Syntax

- **vlan delete <LINE>**

Command Parameters**<LINE>** VLAN list**Default**

None

Command Mode

Global Configuration

vlan igmp

Modifies IGMP snoop settings.

Syntax

- **default vlan igmp <1-4094>**
- **vlan igmp [<1-4094>] [snooping {disable | enable}] [proxy {disable | enable}] [robust-value <2-255>] [query-interval <1-65535>] [v1-members {[add | remove] <LINE>}] [v2-members {[add | remove] <LINE>}]**

Command Parameters

<1-4094>	VLAN ID
add	Add port members
LINE	Port list
proxy {disable enable}	Enable/disable VLAN proxy
query-interval <1-65535>	Set the IGMP query interval
remove	Remove port members
robust-value <2-255>	Set the IGMP robust value
snooping {disable enable}	Enable/disable IGMP snooping
v1-members	Specify IGMPv1 static port membership
v2-members	Specify IGMPv2 static port membership

Default

None

Command Mode

Global Configuration

vlan i-sid

Creates a C-VLAN.

Syntax

- `default vlan i-sid <1-4094>`
- `no vlan i-sid <1-4094>`
- `vlan i-sid <1-4094> <0-16777214>`

Command Parameters

<code><1-16777214></code>	I-SID
<code><1-4094></code>	VLAN ID

Default

None

Command Mode

Global Configuration

vlan members

Modifies VLAN port membership.

Syntax

- `vlan members {[add] [<VLANlist>] [remove]} <LINE>`

Command Parameters

<code><LINE></code>	Port list
<code><VLANlist></code>	VLAN list
<code>add</code>	Add ports to a VLAN
<code>remove</code>	Remove ports from a VLAN

Default

None

Command Mode

Global Configuration

vlan mgmt

Sets management VLAN.

Syntax

- `default vlan mgmt`
- `vlan mgmt <1-4094>`

Command Parameters

<1-4094> VLAN ID

Default

None

Command Mode

Global Configuration

vlan name

Changes the name of a VLAN.

Syntax

- `default vlan name <LINE>`
- `no vlan name <LINE>`
- `vlan name <1-4094> <LINE>`

Command Parameters

<1-4094> VLAN ID

<LINE> New name for VLAN

Default

None

Command Mode

Global Configuration

vlan ports

Modifies VLAN port settings.

Syntax

- `default vlan ports {name <LINE> | private-vlan <LINE>}`
- `no vlan ports {private-vlan | name <LINE>}`
- `vlan ports <LINE> [tagging {disable | enable | tagAll | tagPvidOnly | untagAll | untagPvidOnly}] [pvid <1-4094>] [filter-untagged-frame {disable | enable}] [filter-unregistered-frames {disable | enable}] [priority <0-7>] [name <LINE>] [private-vlan {isolated | promiscuous | trunk}]`

Command Parameters

<LINE>	Port list
disable	Disable tagging on this port
enable	Enable tagging on this port
filter-unregistered-frames {disable enable}	Enable/disable filtering of unregistered frames
filter-untagged-frame {disable enable}	Enable/disable filtering of untagged frames
isolated	Specifies the port type. An Isolated port can belong only to one private VLAN.
name <LINE>	Set VLAN port name
priority <0-7>	Set VLAN port priority
promiscuous	A Promiscuous port can belong to many private VLANs
pvid <1-4094>	Change PVID
tagAll	Enable tagging on this port
tagging {disable enable tagAll tagPvidOnly untagAll untagPvidOnly}	Enable/disable tagging
tagPvidOnly	Enable tagging of packets matching the
trunk	A Trunk port can belong to many private VLANs, is tagged, and can also belong to non-private VLANs
untagAll	Disable tagging on this port
untagPvidOnly	Disable tagging of packets matching the Pv

Default

None

Command Mode

Global Configuration

vlan remote-span

Enables RSPAN VLAN.

Syntax

- `vlan remote-span <LINE>`

Command Parameters

<LINE> List of VLANs to be enabled

Default

None

Command Mode

Global Configuration

vlan voice-vlan

Changes to voice VLAN.

Syntax

- `no vlan <LINE> {remote-span | voice-vlan}`
- `vlan voice-vlan <LINE>`

Command Parameters

<LINE> The VLAN id

Default

None

Command Mode

Global Configuration

web-server

Modifies WEB server parameters.

Syntax

- `no web-server`
- `web-server {disable | enable}`

Command Parameters

disable Disable HTTP access

enable Enable HTTP access

Default

None

Command Mode

Global Configuration

Chapter 7: ISIS Router Configuration

This chapter provides information related to the ISIS Router configuration commands.

csnp-interval

Specifies the Complete Sequence Number Packet (CSNP) interval in seconds.

Syntax

- `csnp-interval <1-600>`
- `default csnp-interval`
- `no csnp-interval`

Command Parameters

<1-600> Specifies the CSNP interval in seconds. This is a system level parameter that applies for level 1 CSNP generation on all interfaces. A longer interval reduces overhead, while a shorter interval speeds up convergence. The default value is 10. Use the `no` or `default` options to set this parameter to the default value of 10.

Default

10

Command Mode

ISIS Router Configuration

end (ISIS Router Configuration)

Exits from router configure mode.

Syntax

- `end`

Default

None

Command Mode

ISIS Router Configuration

exit (ISIS Router Configuration)

Exits from router configuration mode.

Syntax

- **exit**

Default

None

Command Mode

ISIS Router Configuration

ip-source-address

Configures the source address for SPBM IP shortcuts

Syntax

- **ip-source-address** <A.B.C.D>
- **no ip-source-address**

Command Parameters

<A.B.C.D> Specify ISIS Source IP Address

Default

None

Command Mode

ISIS Router Configuration

is-type

Configures the router type globally.

Syntax

- **is-type** {11}

- `no is-type`

Command Parameters

{l1} Sets the router type globally: l1: Level-1 router type

Default

None

Command Mode

ISIS Router Configuration

manual-area

Configures an IS-IS manual area.

Syntax

- `manual-area <xx.xxxx.xxxx...xxx>`
- `no manual-area`

Command Parameters

<xx.xxxx.xxxx...xxx> Specifies the IS-IS manual-area (1–13 bytes in the format <xx.xxxx.xxxx...xxx>. In this release, only one manual area is supported. For IS-IS to operate, you must configure at least one area.

Default

None

Command Mode

ISIS Router Configuration

max-lsp-gen-interval

Configures the maximum level, in seconds, between generated LSPs by this Intermediate System.

Syntax

- `default max-lsp-gen-interval`
- `max-lsp-gen-interval <30-900>`
- `no max-lsp-gen-interval`

Command Parameters

<30-900> Specifies the maximum interval, in seconds, between generated LSPs by this Intermediate System.

Default

None

Command Mode

ISIS Router Configuration

metric

Configures the IS-IS metric type.

Syntax

- `default metric`
- `metric wide`
- `no metric`

Command Parameters

wide Specifies the IS-IS metric type. Only wide is supported in this release. The default value is wide. Use the no or default options to set this parameter to the default value of wide.

Default

wide

Command Mode

ISIS Router Configuration

min-lsp-gen-interval

Sets minimum time between successive generation of LSPs with the same LSPID (in seconds).

Syntax

- `default min-lsp-gen-interval`
- `min-lsp-gen-interval <1-900>`
- `no min-lsp-gen-interval`

Command Parameters

<1-900> Specifies the number of seconds

Default

None

Command Mode

ISIS Router Configuration

overload

Sets overload condition

Syntax

- `default overload`
- `no overload`
- `overload`

Default

None

Command Mode

ISIS Router Configuration

overload-on-startup

Sets IS-IS overload-on-startup value (in seconds)

Syntax

- `default overload-on-startup`
- `no overload-on-startup`
- `overload-on-startup <15-3600>`

Command Parameters

<15-3600> Specifies the overload-on-startup value (in seconds).

Default

None

Command Mode

ISIS Router Configuration

psnp-interval

Configures the Partial Sequence Number Packet (PSNP) in seconds.

Syntax

- `default psnp-interval`
- `no psnp-interval`
- `psnp-interval <1-120>`

Command Parameters

<1-120> Specifies the PSNP interval in seconds. This is a system level parameter that applies for level 1 PSNP generation on all interfaces. A longer interval reduces overhead, while a shorter interval speeds up convergence. The default value is 2. Use the `no` or `default` options to set this parameter to the default value of 2.

Default

None

Command Mode

ISIS Router Configuration

redistribute (ISIS Router Configuration)

Configures isis redistribution policies.

Syntax

- `default redistribute {direct | ospf | rip | static} enable`
- `no redistribute {ospf [route-policy] | rip[route-policy] } enable`
- `redistribute {direct | static} enable`

Command Parameters

direct Configures isis redistribution policies for direct routes.

no Deletes isis redistribution policies.

static Configures isis redistribution policies for static routes.

Default

None

Command Mode

ISIS Router Configuration

retransmit-lsp-interval

Configures the minimum time between retransmission of an LSP.

Syntax

- `default retransmit-lsp-interval`
- `no retransmit-lsp-interval`
- `retransmit-lsp-interval <1-300>`

Command Parameters

- <1-300>** Specifies the minimum time between retransmission of an LSP. This defines how fast the switch resends the same LSP. This is a system level parameter that applies for Level1 retransmission of LSPs. The default value is 5 seconds. Use the `no` or `default` options to set this parameter to the default value of 5.

Default

5

Command Mode

ISIS Router Configuration

spbm (ISIS Router Configuration)

Enables SPBM.

Syntax

- `default spbm <1-100> b-vid {<vlan-id> [-<vlan-id>][,...]} [primary <1-4094>]`
- `default spbm <1-100> ip enable`
- `no spbm <1-100> b-vid {<vlan-id> [-<vlan-id>][,...]} [primary <1-4094>]`
- `no spbm <1-100> ip enable`
- `spbm <1-100> b-vid {<vlan-id> [-<vlan-id>][,...]} [primary <1-4094>]`
- `spbm <1-100> ip enable`

Command Parameters

- <1-100>** Creates the SPBM instance. In this release, only one SPBM instance is supported.
- b-vid {<vlan-id> [-<vlan-id>] [...]}** Sets the ISIS SPBM instance data VLANs. Use the `no` option to remove the specified BVLAN from the SPBM instance.

ip	Enable IP Shortcut
nick-name <x.xx.xx>	Specifies a nickname for the SPBM instance globally. The value is 2.5 bytes in the format <x.xx.xx>. Use the no or default options to delete the configured nickname.
primary <1-4094>	Sets the IS-IS instance primary data VLAN

Default

None

Command Mode

ISIS Router Configuration

spf-delay

Configures the SPF delay in milliseconds.

Syntax

- **default spf-delay**
- **no spf-delay**
- **spf-delay <0-5000>**

Command Parameters

<0-5000> Configures the delay, in milliseconds, to pace successive Shortest Path First (SPF) runs. The timer prevents more than two SPF runs from being scheduled back-to-back. The mechanism for pacing SPF allows two back-to-back SPF runs. The default value is 100 milliseconds. Use the no or default options to set this parameter to the default value of 100 milliseconds.

Default

100

Command Mode

ISIS Router Configuration

sys-name

Configures the name for the system.

Syntax

- **default sys-name**
- **no sys-name**
- **sys-name <WORD> <0-255>**

Command Parameters

<WORD> Specifies a name for the system. This may be used as the host name for dynamic host name exchange in accordance with RFC 2763. By default, the system name comes from the host name configured at the system level. Use the no or default options to set this parameter to the default value (host name).

<0-255>

Default

host name

Command Mode

ISIS Router Configuration

system-id

Configures the IS-IS system ID for the switch.

Syntax

- **system-id <xxxx.xxxx.xxxx>**

Command Parameters

<xxxx.xxxx.xxxx> Specifies the IS-IS system ID for the switch. Use the no or default options to set this parameter to the default value (node BMAC).

Default

node BMAC

Command Mode

ISIS Router Configuration

Chapter 8: Loopback Interface Configuration

This chapter provides information related to the Loopback Interface configuration commands.

end (Loopback Interface Configuration)

Exits from Loopback Configuration mode.

Syntax

- **end**

Default

None

Command Mode

Loopback Interface Configuration

exit (Loopback Interface Configuration)

Exits from Loopback Interface Configuration mode.

Syntax

- **exit**

Default

None

Command Mode

Loopback Interface Configuration

ip address (Loopback Interface Configuration)

Assigns an IP address to a Loopback Interface.

Syntax

- `ip address <A.B.C.D> <A.B.C.D> [ <1-256> ]`
- `no ip address <A.B.C.D> <A.B.C.D>`

Command Parameters

- <1-256>** Specifies the MAC offset value. Note: 1 is for the management VLAN only.
- <A.B.C.D><A.B.C.D>** The first <A.B.C.D> specifies the IP address and the second <A.B.C.D> specifies the subnet mask.

Default

None

Command Mode

Loopback Interface Configuration

ip area (Loopback Interface Configuration)

Assigns a Loopback Interface to an area.

Syntax

- `default ip area`
- `ip area <A.B.C.D>`
- `no ip area <A.B.C.D>`

Command Parameters

- <A.B.C.D>** Specifies an area IP address.

Default

None

Command Mode

Loopback Interface Configuration

ip ospf (Loopback Interface Configuration)

Enables Open Shortest Path First (OSPF) on an interface.

Syntax

- `default ip ospf`
- `ip ospf`
- `no ip ospf`

Default

None

Command Mode

Loopback Interface Configuration

ipv6 interface (Loopback Interface Configuration)

Creates and configures a Loopback IPv6 interface.

Syntax

- `default ipv6 interface [enable]`
- `ipv6 interface [clip] [address <WORD>] [enable]`
- `no ipv6 interface [address <WORD>] [enable]`

Command Parameters

address <WORD>	Specifies the IPv6 address.
clip	Circuitless IPv6 interface.
enable	Enables the address.

Default

None

Command Mode

Loopback Interface Configuration

Chapter 9: OSPF Router Configuration

This chapter provides information related to the OSPF Router configuration commands.

accept adv-rtr

Configures the OSPF accept-advertisements router policy.

Syntax

- `accept adv-rtr <router_ip_address> [enable] [metric-type {any | type1 | type2}] [route-policy <rmap_name>]`
- `default accept adv-rtr <router_ip_address> [enable] [metric-type {any | type1 | type2}] [route-policy <rmap_name>]`
- `no accept adv-rtr <router_ip_address> [enable] [metric-type {any | type1 | type2}] [route-policy <rmap_name>]`

Command Parameters

<router_ip_address>	Represents the IP address of the router from which advertisements are to be accepted. The value 0.0.0.0 denotes that advertisements from all routers are accepted.
any	Specifies match as any metric type.
enable	Enables the accept entry for the router specified in the <ip_address> parameter.
metric-type {any type1 type2}	Indicates the type of OSPF external routes that will be accepted from this router.
route-policy <rmap_name>	Specifies the name of a previously configured route map to be used for filtering external routes advertised by the specified advertising router before accepting them into the routing table.
type1	Specifies match as type-1 metric type.
type2	Specifies match as type-2 metric type.
Default	None

Command Mode

OSPF Router Configuration

area

Configures area.

Syntax

- `area <area-id> [default-cost {0-16777215}] [import {external | noexternal | nssa}] [import-summaries {enable}] [range {ip_addr/subnet_mask} {nssa-extlink {advertise-metric <0-65535> | advertise-mode {no-summarize | summarize | suppress} } | summary-link {advertise-metric <0-65535> | advertise-mode {no-summarize | summarize | suppress} }]`
- `default area <area-id> [default-cost {0-16777215}] [import {external | noexternal | nssa}] [import-summaries {enable}] [range {ip_addr/subnet_mask} {nssa-extlink {advertise-metric <0-65535> | advertise-mode {no-summarize | summarize | suppress} } | summary-link {advertise-metric <0-65535> | advertise-mode {no-summarize | summarize | suppress} }]`
- `no area <area-id> [default-cost {0-16777215}] [import {external | noexternal | nssa}] [import-summaries {enable}] [range {ip_addr/subnet_mask} {nssa-extlink {advertise-metric <0-65535> | advertise-mode {no-summarize | summarize | suppress} } | summary-link {advertise-metric <0-65535> | advertise-mode {no-summarize | summarize | suppress} }]`

Command Parameters

advertise-metric <0-65535>	Configure metric to be advertised for area range
advertise-mode {no-summarize summarize suppress}	Select advertise mode for area range
area-id	Specifies the Area ID in dotted decimal notation (A.B.C.D)
default-cost {0-16777215}	Specifies the default cost associated with an OSPF stub area
external	Specifies a normal area
import {external noexternal nssa}	Specifies the area type by defining the area's support for importing Autonomous System external link state advertisements: external: specifies a normal area ;noexternal: specifies a stub area ; nssa: specifies an NSSA.

import-summaries {enable}	Controls the import of summary link state advertisements into stub areas. This setting has no effect on other areas.
noexternal	Specifies a stub area
nssa	Specifies a not-so-stubby area
nssa-extlink	Not-so-stubby area link summary (Type 7)
range {ip_addr/ subnet_mask} [{nssa-extlink summary-link}]	Specifies range parameters for the OSPF area
summary-link	Aggregated summary (Type 3)

Default

None

Command Mode

OSPF Router Configuration

area virtual-link

Creates a virtual link.

Syntax

- **area virtual-link <area-id> <nghbr-router-id> {[authentication-key <WORD>] [authentication-type {none| simple|message-digest}] [primary-md5-key <1-255>] [dead-interval <1-2147483647>] [hello-interval <1-65535>] [retransmit-interval <1-3600>] [transit-delay <1-3600>]}**
- **default area virtual-link <area-id> <nghbr-router-id> {[authentication-key <WORD>] [authentication-type {none| simple| message-digest}] [primary-md5-key <1-255>] [dead-interval <1-2147483647>] [hello-interval <1-65535>] [retransmit-interval <1-3600>] [transit-delay <1-3600>]}**
- **no area virtual-link <area-id> <nghbr-router-id> {[authentication-key <WORD>] [authentication-type {none| simple|message-digest}] [primary-md5-key <1-255>] [dead-interval <1-2147483647>] [hello-interval <1-65535>] [retransmit-interval <1-3600>] [transit-delay <1-3600>]}**

Command Parameters

<area_id>	Specifies the transit area ID in dotted decimal notation (A.B.C.D)
<nghbr-routerid>	Specifies the transit area ID in dotted decimal notation (A.B.C.D)

authentication-key <WORD>	Specifies the unique identifier assigned to the authentication key
authentication-type	Specifies one of the following authentication types: none; simple; password; message; digest MD5
dead-interval	Specifies the time interval, in seconds, that a Hello packet has not been transmitted from the virtual interface before its neighbors declare it down. Expressed as an integer from 1-2147483647, the default dead interval value is 60 seconds
hello-interval	Specifies the time interval, in seconds, between transmission of Hello packets from the virtual interface. Expressed as an integer from 1-65535, the hello-interval default value is 10 seconds
primary-md5-key	Specifies the user-selected key used to encrypt OSPF protocol packets for transmission.
retransmit-interval	Specifies the time interval, in seconds, between link stage advertisement retransmissions for adjacencies belonging to the virtual interface. Expressed as an integer from 1-3600, the default value is 5 seconds.
transit-delay	Specifies the estimated number of seconds required to transmit a link state update packet over the virtual interface. Expressed as an integer from 1-3600, the default value is 1 second.

Default

None

Command Mode

OSPF Router Configuration

area virtual-link message-digest-key

Creates a virtual interface message digest key.

Syntax

- **area virtual-link message-digest-key** <area_id> <neighbor_id> <1-255> md5-key <WORD>
- **default area virtual-link message-digest-key** <area_id> <neighbor_id> <1-255> md5-key <WORD>
- **no area virtual-link message-digest-key** <area_id> <neighbor_id> <1-255> md5-key <WORD>

Command Parameters

<1-255>	Specifies the primary MD5 key value, expressed as an integer from 1-255.
<area_id>	Specifies the transit area Id expressed as an IP address
<neighbor_id>	Specifies the neighbor router ID expressed as an IP address
md5-key <WORD>	Specifies the user-selected key used to encrypt OSPF protocol packets for transmission.

Default

None

Command Mode

OSPF Router Configuration

as-boundary-router

Configures a router as an ASBR.

Syntax

- **as-boundary-router enable**
- **default as-boundary-router enable**
- **no as-boundary-router enable**

Command Parameters

enable	Disable ASBR on the switch

Default

Disabled

Command Mode

OSPF Router Configuration

auto-vlink

Enables global automatic Virtual Link creation.

Syntax

- **auto-vlink**

- `default auto-vlink`
- `no auto-vlink`

Default

None

Command Mode

OSPF Router Configuration

default-cost

Configures the OSPF default cost metric.

Syntax

- `default default-cost {ethernet | fast-ethernet | gig-ethernet | two-gig-ethernet | ten-gig-ethernet} <metric_value>`
- `default-cost {ethernet | fast-ethernet | gig-ethernet | ten-gig-ethernet} <metric_value>`
- `no default-cost {ethernet | fast-ethernet | gig-ethernet | two-gig-ethernet | ten-gig-ethernet} <metric_value>`

Command Parameters

<metric_value>	Specifies the default cost metric to assign to the specified port type. The metric value is an integer between 1 and 65535.
default	Sets the OSPF default cost metric to factory default values. The default values are as follows: ethernet (10 Mb/s): 100; fast-ethernet (100 Mb/s): 10; gig-ethernet (1000 Mb/s): 1; two-gig-ethernet (2500 Mbps/s): 1; ten-gig-ethernet (10000 Mb/s): 1.
ethernet	Set default cost for ethernet interfaces
fast-ethernet	Set default cost for fast-ethernet interfaces
gig-ethernet	Set default cost for gigabit-ethernet interfaces
ten-gig-ethernet	Set default cost for ten-gigabit-ethernet interfaces

Default

None

Command Mode

OSPF Router Configuration

end (OSPF Router Configuration)

Exits from router configure mode.

Syntax

- **end**

Default

None

Command Mode

OSPF Router Configuration

exit (OSPF Router Configuration)

Exits from router configuration mode.

Syntax

- **exit**

Default

None

Command Mode

OSPF Router Configuration

host-route

Adds a host to a router.

Syntax

- **default host-route {A.B.C.D} metric <0-65535>**
- **host-route {A.B.C.D} metric <0-65535>**
- **no host-route {A.B.C.D} metric <0-65535>**

Command Parameters

{A.B.C.D} Specifies the host IP address

metric <0-65535> Specifies an integer between 0 and 65535 representing the configured cost of the host route.

Default

None

Command Mode

OSPF Router Configuration

network (OSPF Router Configuration)

Enables OSPF on an interface.

Syntax

- `default network <ip_address>`
- `network <ip_address> [area <area_id>]`
- `no network <ip_address>`

Command Parameters

<ip_address> Specifies the IP address of interface to be enabled for OSPF routing

area <area_id> Specifies the ID of the area assigned to the interface in dotted decimal notation (A.B.C.D)

Default

None

Command Mode

OSPF Router Configuration

redistribute

Configures OSPF route redistribution.

Syntax

- `default redistribute {direct | rip | static} enable metric metric-type route-policy subnets`
- `no redistribute {direct | isis | rip | static} enable route-policy`
- `redistribute {direct | rip | static} [enable] [metric <0-65535>] [metric-type {type1 | type2}] [route-policy <WORD>] [subnets {allow | suppress}]`

Command Parameters

direct	Configure OSPF redistribution policies for direct routes
enable	Enable this ospf redistribute policy
isis	Configure OSPF redistribution policies for ISIS routes
metric <0-65535>	Specifies the metric value to associate with the route redistribution.
metric-type {type1 type2}	Specifies the metric type to associate with the route redistribution.
rip	Configure OSPF redistribution policies for RIP routes
route-policy <WORD>	Specifies the route policy to associate with route redistribution. This is the name of a previously configured route map.
static	Configure OSPF redistribution policies for static routes
subnets {allow suppress}	Specifies the subnet advertisement setting of this route redistribution. This determines whether individual subnets are advertised.

Default

None

Command Mode

OSPF Router Configuration

rfc1583-compatibility

Configures OSPF RFC 1583 compatibility.

Syntax

- **default rfc1583-compatibility enable**
- **no rfc1583-compatibility enable**
- **rfc1583-compatibility enable**

Command Parameters

enable	Enable RFC-1583 compatibility mode

Default

None

Command Mode

OSPF Router Configuration

router-id

Configures the router ID.

Syntax

- `default router-id`
- `no router-id [<router_id>]`
- `router-id <router_id>`

Command Parameters

<router_id> Specifies the unique identifier for the router

no Resets the router ID to 0.0.0.0

Default

None

Command Mode

OSPF Router Configuration

timers basic holddown

Configures the OSPF hold own timer.

Syntax

- `default timers basic holddown <timer_value>`
- `timers basic holddown <timer_value>`

Command Parameters

<timer_value> Specifies a hold down timer value between 3 and 60 seconds

Default

None

Command Mode

OSPF Router Configuration

Chapter 10: Privileged Executive

This chapter provides information related to the Privileged Executive commands.

blink-leds

Blinks the LEDs on the display panel to identify the unit.

Syntax

```
• blink-leds [unit <1-8>] { time <1-10> | off}
```

Command Parameters

off	Stop blinking the LEDs
time <1-10>	How long to blink the LEDs
unit <1-8>	Unit number

Default

None

Command Mode

Privileged Executive

boot

Resets the switch/stack.

Syntax

```
• boot {default unit <1-8> | {nvram | script} block <1-2> | partial-  
  default | primary | secondary | unit <1-8>}
```

Command Parameters

block <1-2>	Select block from which ascii cfg file should be copied

default	Reboot the stack/switch and use the factory default configurations
nvram	Boot with binary cfg in nvram
partial-default	Reboot the stack/switch and use partial factory default configurations
primary	Reboot the stack/switch and use primary factory default configurations
script	Boot with script
secondary	Reboot the stack/switch and use secondary factory default configurations
unit <1-8>	Unit number

Default

None

Command Mode

Privileged Executive

clear app-telemetry counters

Clear the Application Telemetry status counters.

Syntax

```
• clear app-telemetry counters [id <1-256>] [name <LINE>]
```

Command Parameters

- id <1-256>** Clears the Application Telemetry counters for the filter identified by ID.
- name <LINE>** Clears the Application Telemetry counters for the filter identified by name.

Default

None

Command Mode

Privileged Executive

clear arp-cache

Clears the Layer 3 ARP cache.

Syntax

- `clear arp-cache`

Default

None

Command Mode

Privileged Executive

clear eapol

Clears authenticated clients.

Syntax

- `clear eapol non-eap [<LINE>] address <H.H.H>`

Command Parameters

<LINE>	List of ports
address <H.H.H>	Non-EAP MAC address
non-eap	Clear NEAP authenticated clients

Default

None

Command Mode

Privileged Executive

clear ip dhcp-snooping

Clears DHCP snooping data.

Syntax

- `clear ip dhcp-snooping binding {dynamic | static}`

Command Parameters

binding	Clear DHCP snooping bindings
dynamic	Clear DHCP snooping dynamic bindings
static	Clear DHCP snooping static bindings

Default

None

Command Mode

Privileged Executive

clear ip forward-protocol

Clears broadcast protocols counters.

Syntax

- `clear ip forward-protocol udp counters <LINE>`

Command Parameters

<LINE> Clear counters for specific VLAN

udp counters Clear UDP broadcast counters

Default

None

Command Mode

Privileged Executive

clear ip igmp

Clears IGMP data.

Syntax

- `clear ip igmp profile stats <1-65535>`

Command Parameters

<1-65535> Profile ID

profile Clear IGMP profile data

stats Clear IGMP profile statistics

Default

None

Command Mode

Privileged Executive

clear ip ospf

Clears OSPF-related data.

Syntax

- `clear ip ospf counters <1-4094>`

Command Parameters

<1-4094>	VLAN ID
counters	Clear OSPF counters

Default

None

Command Mode

Privileged Executive

clear ip verify

Clears IP Source Guard statistics.

Syntax

- `clear ip verify source statistics interface [ethernet] <WORD>`

Command Parameters

<WORD>	ports line
Ethernet	Select Ethernet interfaces
interface	select interfaces
source	Clear IP Source Guard statistics
statistics	Clear IP Source Guard statistics

Default

None

Command Mode

Privileged Executive

clear ipv6 destinationcache

Clear the IPv6 destination cache.

Syntax

- `clear ipv6 destinationcache`

Default

None

Command Mode

Privileged Executive

clear ipv6 dhcp-relay

Clear IPv6 DHCP-relay parameters.

Syntax

- `clear ipv6 dhcp-relay counters [vlan <1-4094>]`

Command Parameters

counters Clear IPv6 DHCP-relay counters.

vlan Clear counters for specific vlan.

Default

None

Command Mode

Privileged Executive

clear ramdisk-files

Clears all files in the ramdisk.

Syntax

- `clear ramdisk-files`

Default

None

Command Mode

Privileged Executive

clear ssh banner

Clears the SSH banner.

Syntax

- `clear ssh banner`

Default

None

Command Mode

Privileged Executive

configure

Configures setting.

Syntax

- `configure [network] [terminal] [usb]`

Command Parameters

network	Configure from a TFTP network host
terminal	Configure from the terminal
usb	Configure from USB

Default

None

Command Mode

Privileged Executive

configure network

Configure from a TFTP network host

Syntax

- `configure {[address] [filename] [load-on-boot]}`

Command Parameters

address	Specify address of TFTP server
filename	Specify filename of config file
load-on-boot	Specify settings for loading config file at boot time

Default

None

Command Mode

Privileged Executive

configure network address

Specifies address of TFTP server.

Syntax

- `configure network address {[A.B.C.D | <WORD>] [filename <WORD>]}`

Command Parameters

<WORD>	TFTP Server IPv6 address
A.B.C.D	TFTP Server IP address
filename <WORD>	Specify filename of config file

Default

None

Command Mode

Privileged Executive

configure network filename

Specifies filename of config file.

Syntax

- `configure network filename { [<WORD>] [address] [<A.B.C.D> | WORD] }`

Command Parameters

<code>[<A.B.C.D> <WORD>]</code>	TFTP Server IP address or TFTP Server IPv6 address
<code><WORD></code>	Config file name
<code>address</code>	Specify address of TFTP server

Default

None

Command Mode

Privileged Executive

configure network load-on-boot

Specifies settings for loading config file at boot time.

Syntax

- `configure network load-on-boot { [disable] [use-config] { { [address { A.B.C.D | <WORD> | filename <WORD> } ] [filename <WORD>] } } | [use-bootp]`

Command Parameters

<code>[A.B.C.D]</code>	TFTP Server IP address
<code><WORD></code>	TFTP Server IPv6 address
<code>disable</code>	Disable loading of config file at boot time
<code>filename <word></code>	Specify filename of config file
<code>use-bootp</code>	Load config file at boot time using BOOTP
<code>use-config</code>	Load config file at boot time using configured parameters

Default

None

Command Mode

Privileged Executive

configure ramdisk

Configures from ramdisk.

Syntax

- `configure ramdisk filename <WORD>`

Command Parameters

filename <WORD> Specifies the name of the configuration file on ramdisk.

Default

None

Command Mode

Privileged Executive

configure sftp

Configures from an SFTP network host.

Syntax

- `configure sftp {[address {<A.B.C.D> | <ipv6addr>}] [filename <WORD>]} [username <WORD>]`

Command Parameters

address {<A.B.C.D> | <ipv6addr> Specifies the address of the SFTP server as an IPv4 address or IPv6 address.

filename <WORD> Specifies the name of the configuration file on the SFTP server.

username <WORD> Specifies the username.

Default

None

Command Mode

Privileged Executive

configure terminal

Configures from the terminal.

Syntax

- `configure terminal`

Default

None

Command Mode

Privileged Executive

configure usb

Configures from USB.

Syntax

- `configure usb filename <WORD> unit <1-8>`

Command Parameters

filename <WORD>	Specifies the filename of a config file.
unit <1-8>	Configure from USB of another unit in a stack

Default

None

Command Mode

Privileged Executive

copy config nvram

Copies to local NV storage.

Syntax

- `copy config nvram block <1-2> name <WORD>`

Command Parameters

block <1-2>	Specify configuration block number

name <WORD> Specify configuration block name

Default

None

Command Mode

Privileged Executive

copy config ramdisk

Copies to ramdisk.

Syntax

- `copy config ramdisk filename <WORD>`

Command Parameters

filename <WORD> Specifies the name of the configuration file on ramdisk.

Default

None

Command Mode

Privileged Executive

copy config sftp

Copy configuration in a binary file to an SFTP server.

Syntax

- `copy config sftp {[address {<A.B.C.D> | <ipv6addr>}] [filename <WORD>]
[username <WORD>] [password]}`

Command Parameters

address {<A.B.C.D> | <ipv6addr> Specifies the address of the SFTP server as IPv4 address or IPv6 address.

filename <WORD> Specifies the name of the configuration file on the SFTP server.

password Specifies the password which is mandatory when password authentication is enabled.

username <WORD> Specifies the username.

Default

None

Command Mode

Privileged Executive

copy config tftp

Copies to TFTP server.

Syntax

- `copy config tftp [filename <word>] address {A.B.C.D | <WORD>} filename <word>`

Command Parameters

{A.B.C.D} TFTP Server IP address

<WORD> TFTP Server IPv6 address

address {A.B.C.D | <WORD>} Specify address of the TFTP server

filename <word> Specify filename in which to store configuration on TFTP server

Default

None

Command Mode

Privileged Executive

copy config usb

Copies to USB.

Syntax

- `copy config usb filename <word> unit <1-8>`

Command Parameters

filename <word> Specify filename in which to store configuration on USB

unit <1-8> Copies to USB of another unit in a stack

Default

None

Command Mode

Privileged Executive

copy nvram

Loads the configuration from the specified NV storage configuration block.

Syntax

• `copy nvram config block <1-2>`

Command Parameters

block <1-2> Specify configuration block number

config Load the configuration from the specified NV storage configuration block

Default

None

Command Mode

Privileged Executive

copy ramdisk

Copy configuration from ramdisk.

Syntax

• `copy ramdisk {[config <filename>] | [license <filename>]}`

Command Parameters

config Specifies the file to copy to local configuration.

filename <WORD> Specifies the name of the configuration file or license.

license Specifies the license to copy from ramdisk.

Default

None

Command Mode

Privileged Executive

copy running-config ramdisk

Copies to ramdisk.

Syntax

- `copy running-config ramdisk [verbose] [module [802.1ab] [aaa] [aaur] [adac] [arp-inspection] [asset-id] [aur] [banner] [brouter] [cfm] [core] [dhcp-relay] [dhcp-snooping] [eap] [energy-saver] [igmp] [ike] [interface] [ip] [ip-source-guard] [ipfix] [ipmgr] [ipv6] [ipv6-fhs] [l3] [l3-protocols] [lcp] [link-state] [logging] [mac-security] [macsec] [mld] [mlt] [mvr] [pim] [port-mirroring] [qos] [radius] [rate-limit] [ripng] [rmon] [rtc] [sflow] [slamon] [slpp] [snmp] [spbm] [ssh] [sshc] [ssl] [stack] [stkmon] [strom-control] [stp] [tacacs] [vlacp] [vlan]] filename <file-name> address {A.B.C.D | <WORD>}] [filename <file-name>]`

Command Parameters

filename <file-name> Specifies the filename in which to store the configuration on the SFTP server.

module <module> Copies the application configuration.

verbose Copies the entire configuration (defaults and non-defaults).

Default

None

Command Mode

Privileged Executive

copy running-config sftp

Copies to SFTP server.

Syntax

- `copy running-config tftp [verbose] [module [802.1ab] [aaa] [aaur] [adac] [arp-inspection] [asset-id] [aur] [banner] [brouter] [cfm]`

```
[core] [dhcp-relay] [dhcp-snooping] [eap] [energy-saver] [igmp] [ike]
[interface] [ip] [ip-source-guard] [ipfix] [ipmgr] [ipv6] [ipv6-fhs]
[l3] [l3-protocols] [lACP] [link-state] [logging] [mac-security]
[macsec] [mld] [mlt] [mvr] [pim] [port-mirroring] [qos] [radius]
[rate-limit] [ripng] [rmon] [rtc] [sflow] [slamon] [slpp] [snmp]
[spbm] [ssh] [sshc] [ssl] [stack] [stkmon] [strom-control] [stp]
[tacacs] [vlACP] [vlan]] filename <file-name> address {A.B.C.D |
<WORD>}
```

Command Parameters

address {<A.B.C.D> <WORD>}	Specifies the address of the SFTP server.
filename <file-name>	Specifies the filename in which to store the configuration on ramdisk.
module <module>	Copies the application configuration.
verbose	Copies the entire configuration (defaults and non-defaults).

Default

None

Command Mode

Privileged Executive

copy running-config tftp

Copy to a Trivial File Transfer Protocol (TFTP) server.

Syntax

- `copy running-config tftp [verbose] [module [802.1ab] [aaa] [aaur] [adac] [arp-inspection] [asset-id] [aur] [banner] [brouter] [cfm] [core] [dhcp-relay] [dhcp-snooping] [eap] [energy-saver] [igmp] [ike] [interface] [ip] [ip-source-guard] [ipfix] [ipmgr] [ipv6] [ipv6-fhs] [l3] [l3-protocols] [lACP] [link-state] [logging] [mac-security] [macsec] [mld] [mlt] [mvr] [pim] [port-mirroring] [qos] [radius] [rate-limit] [ripng] [rmon] [rtc] [sflow] [slamon] [slpp] [snmp] [spbm] [ssh] [sshc] [ssl] [stack] [stkmon] [strom-control] [stp] [tacacs] [vlACP] [vlan]] filename <file-name> address {A.B.C.D | <WORD>}] filename <file-name> address {A.B.C.D | <WORD>}`

Command Parameters

address {<A.B.C.D> <WORD>}	Specifies the TFTP server IP address. <A.B.C.D> specifies an IPv4 address and <WORD> specifies an IPv6 address.

filename <WORD>	Specifies the filename in which to store configuration on TFTP server.
module <module>	Copies application configuration.
verbose	Copy entire configuration (defaults and non-defaults).

Default

None

Command Mode

Privileged Executive

copy running-config usb

Copies to USB.

Syntax

- `copy running-config usb [verbose] [module [802.1ab] [aaa] [aaur] [adac] [arp-inspection] [asset-id] [aur] [banner] [brouter] [cfm] [core] [dhcp-relay] [dhcp-snooping] [eap] [energy-saver] [igmp] [ike] [interface] [ip] [ip-source-guard] [ipfix] [ipmgr] [ipv6] [ipv6-fhs] [l3] [l3-protocols] [lACP] [link-state] [logging] [mac-security] [macsec] [mld] [mlt] [mvr] [pim] [port-mirroring] [qos] [radius] [rate-limit] [ripng] [rmon] [rtc] [sflow] [slamon] [slpp] [snmp] [spbm] [ssh] [sshc] [ssl] [stack] [stkmon] [strom-control] [stp] [tacacs] [vlACP] [vlan]] filename <file-name> address {A.B.C.D | <WORD>}] [filename <file-name>] [unit <1-8>]`

Command Parameters

filename <file-name>	Specifies the filename in which to store the configuration on the USB server.
module <module>	Copies application configuration.
verbose	Copy entire configuration (defaults and non-defaults).

Default

None

Command Mode

Privileged Executive

copy sftp

Copies configuration from SFTP server.

Syntax

- `copy sftp`

Default

None

Command Mode

Privileged Executive

copy sftp config

Copies the configuration from a binary file from a SFTP server.

Syntax

- `copy sftp config {[address {<A.B.C.D> | <ipv6addr>}] [unit {all | <1-8>}]} [filename <WORD>] [username <WORD>] [password]}`

Command Parameters

address {<A.B.C.D> <ipv6addr>}	Specifies the address of the SFTP server as IPv4 address or IPv6 address.
filename <WORD>	Specifies the name of the file to be retrieved.
password	Specifies the password.
unit {all <1-8>}	Selects units from which to copy the configuration. You can specify all units or a unit number from 1 to 8.
username <WORD>	Specifies the username.

Default

None

Command Mode

Privileged Executive

copy sftp license

Copy the license from SFTP server.

Syntax

- `copy sftp license {[address {<A.B.C.D> | <ipv6addr>}] [filename <WORD>] [username <WORD>]}`

Command Parameters

address {<A.B.C.D> | <WORD>} Specifies the address of the SFTP server as an IPv4 address or an IPv6 address. A.B.C.D specifies an IPv4 address and <WORD> specifies an IPv6 address.

filename <WORD> Specifies the name of the file to be retrieved.

username <WORD> Specifies the username.

Default

None

Command Mode

Privileged Executive

copy tftp config

Copies to local configuration.

Syntax

- `copy tftp config [filename <word>] [address {A.B.C.D | <WORD>}] [filename <word>]] unit {<1-8> | all}`

Command Parameters

{A.B.C.D} TFTP server IP address

<WORD> TFTP server IPv6 address

address Specify address of the TFTP server

filename Specify filename on TFTP server from which to Copies the configuration

unit {<1-8> | all} Select units from which config should be copied

Default

None

Command Mode

Privileged Executive

copy tftp license

Copies license from TFTP server.

Syntax

- `copy tftp license {address {A.B.C.D | <WORD>} filename <file-name> | filename <file-name> address {A.B.C.D | <WORD>}}`

Command Parameters

<file-name>	License file name on TFTP server
<WORD>	TFTP server IPv6 address
A.B.C.D	TFTP server IP address
address	Specify address of the TFTP server
filename	Specify filename on TFTP server from which to license file

Default

None

Command Mode

Privileged Executive

copy tftp script

Copies to local script

Syntax

- `copy tftp script {address {A.B.C.D | <WORD>} filename <file-name>} block <1-2> name<WORD>`

Command Parameters

<WORD>	TFTP server IPv6 address
A.B.C.D	TFTP server IP address
address	Specify address of the TFTP server

block <1-2>	Select block from which ascii cfg file should be copied
filename	Specify target filename on TFTP server to copy configuration
name <WORD>	Specify the block name

Default

None

Command Mode

Privileged Executive

copy usb

Copies from USB memory stick.

Syntax

- `copy usb {config | license | script} [filename <WORD>] [block <1-2> name <WORD>]`

Command Parameters

<WORD>	Config file name on USB
block <1-2>	Selects block from which ascii cfg file should be copied
config	Copies the configuration from usb
filename	Specify filename from which to Copies the configuration from USB
license	Copies the license file from USB
name <WORD>	Specifies the block name
script	Copies ascii config file from USB
unit <1-8>	Unit number

Default

None

Command Mode

Privileged Executive

disable

Turns off privileged commands.

Syntax

- **disable**

Default

None

Command Mode

Privileged Executive

download

Downloads and run new image.

Syntax

- **download** {[address {A.B.C.D | <WORD>}] [diag <image-name>] [image <image-name>] [image-if-newer <image-name>] no-reset} [poe_module_image <image-name>] [primary {image <image-name> | image-if-newer <image-name>}] [secondary {image <image-name> | image-if-newer <image-name>}] [usb {[diag <image-name>] | [image {<image-name>] | [poe_module_image <image-name>] | [primary {image <image-name> | image-if-newer <image-name>}] | [secondary {image <image-name> | image-if-newer <image-name>}]}
- **download sftp** [address {A.B.C.D | <WORD>}] [diag <image-name> | image <image-name>] [no-reset] [username <WORD>] [password]

Command Parameters

address {A.B.C.D <WORD>	Specify IP address of TFTP server
diag <image-name>	Diagnostics image file name
image <image-name>	Software image
image-if-newer <image-name>	Software image if version newer
no-reset	Do not reset the switch after downloading
poe_module_image <image-name>	PoE image file name
primary	Download the primary agent image
ramdisk	Download image from ramdisk.

secondary	Download the secondary agent image
sftp	Download image from SFTP.
usb	Download image from USB
username <WORD>	Specify the username
Default	
None	
Command Mode	
Privileged Executive	

energy-saver

Manually activates or deactivate energy saver.

Syntax

- **energy-saver {activate | deactivate}**

Command Parameters

activate	Manually activate energy saver
deactivate	Manually deactivate energy saver

Default

None

Command Mode

Privileged Executive

install

Quick Install & Setup Script.

Syntax

- **install**

Default

None

Command Mode

Privileged Executive

ip dhcp-snooping

Configures DHCP snooping settings.

Syntax

- `ip dhcp-snooping external-save restore`

Command Parameters

external-save Control the external DHCP snooping binding table saving

restore Restore previously saved DHCP snooping binding table

Default

None

Command Mode

Privileged Executive

ip ipfix

Exports/Flushes IPFIX.

Syntax

- `ip ipfix flush port <LINE> export-and-flush`

Command Parameters

export-and-flush Export and flush ipfix data

flush Flush ipfix port data

port<LINE> Specify ports

Default

None

Command Mode

Privileged Executive

ip ospf apply

Applies OSPF policy/redistribute configuration.

Syntax

- `ip ospf apply {accept | redistribute <direct | rip | isis| static>}`

Command Parameters

accept	Apply OSPF accept policies
direct	Only apply direct redistribute configuration
isis	Only apply isis redistribute configuration
redistribute	Apply OSPF redistribute configurations
rip	Only apply RIP redistribute configuration
static	Only apply static redistribute configuration

Default

None

Command Mode

Privileged Executive

ip ospf spf-run

Initiates SPF run to immediately update OSPF LSDB.

Syntax

- `ip ospf spf-run`

Default

None

Command Mode

Privileged Executive

manualtrigger

Triggers RIP update manually.

Syntax

- `manualtrigger ip rip interface vlan <1-4094>`

Command Parameters

interface	Trigger per-interface RIP update
ip	Global IP configuration subcommands
rip	Trigger RIP update
vlan <1-4094>	VLAN interface

Default

None

Command Mode

Privileged Executive

quickconfig

New unit quick configuration

Syntax

- `quickconfig start-recording`

Command Parameters

start-recording	Start recording the command template

Default

None

Command Mode

Privileged Executive

reload

Reloads the switch/stack.

Syntax

- `reload {cancel | force minutes-to-wait <1-60> | minutes-to-wait <1-60>}`

Command Parameters

cancel	Cancel a previous scheduled reload
force	Do not ask for confirmation
minutes-to-wait <1-60>	Minutes to wait before reboot

Default

None

Command Mode

Privileged Executive

renew

Renews DHCP lease.

Syntax

- **renew dhcp**

Command Parameters

dhcp	Renew DHCP lease

Default

None

Command Mode

Privileged Executive

restore

Resets the switch/stack to factory default.

Syntax

- **restore factory-default [-y]**

Command Parameters

factory-default	Reset stack/switch to factory default configurations
-y	Do not prompt

Default

None

Command Mode

Privileged Executive

save

Writes configuration to nvram.

Syntax

- `save config`

Command Parameters

config Save configuration to local NV storage

Default

None

Command Mode

Privileged Executive

script run

Runs an ASCII configuration script.

Syntax

- `script run {<1-127> | tftp {{<hostname> | {A.B.C.D}} | sftp {<hostname> | {A.B.C.D}} | <ipv6address>} | usb [unit <1-8> <filename>]}`

Command Parameters

<1-127>	Specify index in ASCII configuration script table of the script to be loaded
<file-name>	Specify filename
<Hostname> or {A.B.C.D}	Specify hostname or IP address of TFTP server
A.B.C.D <WORD>	Specify IPv6 address of TFTP server
<ipv6address>	Specify IPv6 address of TFTP server

sftp	Load script from SFTP server
tftp	Load script from TFTP server
unit <1-8>	Specify unit number
usb	Load script from USB

Default

None

Command Mode

Privileged Executive

script upload

Upload the current ASCII configuration using an entry in the ASCII configuration script table.

Syntax

- **script upload** <1-127> [verbose] [module [802.1ab] [aaur] [adac] [arp-inspection] [asset-id] [aur] [banner] [brouter] [cfm] [core] [default-cmd-interface] [dhcp-relay] [dhcp-snooping] [eap] [energy-saver] [fa] [igmp] [interface] [ip] [ip-source-guard] [ipfix] [ipmgr] [ipv6] [l3] [l3-protocols] [lACP] [link-state] [logging] [mac-security] [mld] [mlt] [mvr] [pim] [poe] [port-mirroring] [qos] [rate-limit] [rmon] [sflow] [rtc] [slamon] [slpp] [snmp] [spbm] [stack] [storm-control] [stkmon] [stp] [vlACP] [vlan]

Command Parameters

module	Copies application configuration.
verbose	Uploads ASCII configuration (defaults and non-defaults).

Default

None

Command Mode

Privileged Executive

show adac

Displays ADAC configuration.

Syntax

- `show adac`

Default

None

Command Mode

Privileged Executive

show adac detection

Displays detection mechanisms.

Syntax

- `show adac detection interface [ethernet] <LINE>`

Command Parameters

<LINE> List of ports

Ethernet Ethernet IEEE 802.3

interface Select interfaces for which to display detection mechanisms

Default

None

Command Mode

Privileged Executive

show adac interface

Displays configuration for specified interfaces.

Syntax

- `show adac interface [ethernet] <LINE>`

Command Parameters

<LINE> List of ports

Ethernet Ethernet IEEE 802.3

Default

None

Command Mode

Privileged Executive

show adac mac-range-table

Displays the supported MAC address ranges.

Syntax

- `show adac mac-range-table`

Default

None

Command Mode

Privileged Executive

show app-telemetry counters

Displays the Application Telemetry counters.

Syntax

- `show app-telemetry counters [id <1-256>] [name <LINE>]`

Command Parameters

- id <1-256>** Displays Application Telemetry counters for the filter identified by ID.
- name <LINE>** Displays Application Telemetry counters for the filter identified by name.

Default

None

Command Mode

Privileged Executive

Command Output

The following table shows the field descriptions for the `show app-telemetry counters` command output.

Field	Description
Filter Number	Indicates the counter ID.
Filter Name	Indicates the counter name.
No. of Packets	Indicates the number of counter packets received.
No. of Bytes	Indicates the number of counter bytes used.

Example

The following is an example for the **show app-telemetry counters** command output:

```
Switch:1>enable
Switch:1#show app-telemetry counters
=====
Filter | Filter | No. of | No. of
Number | Name   | Packets | Bytes
=====
1      | ssh    | 1258    | 72145
2      | sslclient | 457    | 27000
```

show app-telemetry status

Displays whether Application Telemetry is enabled or disabled and whether or not the collector is reachable.

Syntax

- **show app-telemetry status**

Default

None

Command Mode

Privileged Executive

Example

The following is an example for the **show app-telemetry status** command output:

```
Switch:1>enable
Switch:1#show app-telemetry status
APPTEL is disabled
The collector's address is: 0.0.0.0
```

The following is an example for the **show app-telemetry status** command output, when the Application Telemetry is enabled:

```
Switch:1>enable
Switch:1#show app-telemetry status
APPTEL is enabled
Current set of ports: ALL
The collector's address is: 10.10.10.2
```

```
The collector is reachable via:  
    U 0/P 1/NH 0-9-f-9-0-6/172.16.120.1  
Policy file in use: apptel_default.pol
```

show audit

Displays audit settings.

Syntax

- **show audit log {asccfg | config | serial | telnet}**

Command Parameters

asccfg	Display audit log for ASCII configuration
config	Display audit log save config
log	Display audit log
serial	Display audit log for serial connection
telnet	Display audit log for telnet/ssh

Default

None

Command Mode

Privileged Executive

show auto-negotiation-advertisements

Displays current auto-negotiation advertisement settings.

Syntax

- **show auto-negotiation-advertisements port <LINE>**

Command Parameters

<LINE>	List of ports
port	Display auto-negotiation-advertisements configuration for specified ports

Default

None

Command Mode

Privileged Executive

show auto-negotiation-capabilities

Displays current auto-negotiation advertisement capabilities.

Syntax

- `show auto-negotiation-capabilities port <LINE>`

Command Parameters

<LINE> List of ports

port Display auto-negotiation-capabilities for specified ports

Default

None

Command Mode

Privileged Executive

show autosave

Displays current autosave setting.

Syntax

- `show autosave`

Default

None

Command Mode

Privileged Executive

show autotopology

Displays autotopology information.

Syntax

- `show autotopology {nmm-table | settings}`

Command Parameters

nmm-table	Display autotopology NMM table
settings	Display autotopology global settings

Default

None

Command Mode

Privileged Executive

show banner

Shows banner information.

Syntax

- `show banner {custom | static | usg}`

Command Parameters

custom	Display custom banner
static	Display static banner
usg	Display the U.S. Government banner

Default

None

Command Mode

Privileged Executive

show cli info

Displays general Console settings.

Syntax

- `show cli info`

Default

None

Command Mode

Privileged Executive

show cli mode

Displays information about current CLI mode.

Syntax

- `show cli mode`

Default

None

Command Mode

Privileged Executive

show cli password

Displays CLI usernames and passwords.

Syntax

- `show cli password type`

Command Parameters

type Display passwords types

Default

None

Command Mode

Privileged Executive

show clock

Displays current time.

Syntax

- `show clock {detail | summer-time | time-zone}`

Command Parameters

- detail** Addition to displaying current time, display all time source current value and RTC configuration
- summer-time** Displays daylight saving time settings
- time-zone** Displays local time zone settings

Default

None

Command Mode

Privileged Executive

show config-network

Shows settings for downloading config files.

Syntax

- `show config-network`

Default

None

Command Mode

Privileged Executive

show eapol

Displays current settings of the EAPoL protocol.

Syntax

- `show eapol [acct-session-id | auth-stats interface <LINE> | guest-vlan interface <LINE> | multihost [fail-open-vlan interface <LINE> | interface <LINE> | non-eap-mac {interface <LINE>|status <LINE>} | non-eap-pwd-fmt key | status <LINE>|verbose | voip-vlan] | port <LINE> | sessions [dhcp-phones|eap|non-eap|port<LINE>|unauthenticated] summary [interface <LINE>|verbose]]`

Command Parameters

acct-session-id	Displays the accounting session ID format.
auth-stats	Displays EAPoL statistics.
guest-vlan	Displays EAPoL guest VLAN settings.
multihost [fail-open-vlan interface <LINE> interface <LINE> non-eap-mac { interface <LINE> status <LINE>} non-eap-pwd-fmt key status <LINE> verbose voip-vlan]	Displays EAPoL multihost settings.
fail-open-vlan interface <LINE>	Displays EAPoL multihost Fail Open VLAN settings.
interface <LINE>	Displays EAPoL multihost configuration on the specified port(s).
non-eap-mac { interface <LINE> status <LINE>}	Displays the allowed non-EAP MAC addresses.
non-eap-pwd-fmt { key }	Displays Non-EAP password format.
status <LINE> verbose	Displays EAPoL multihost port status.
voip-vlan	Displays EAPoL multihost VoIP VLAN settings.
summary interface <LINE> verbose	Displays a summary of authenticated clients.
verbose	Displays detailed output.

Default

None

Command Mode

Privileged Executive

Command Output

The **show eapol** command displays the following information:

Output field	Description
EAP Administrative State	Specifies the EAPoL administrative state.
Protocol Version	Specifies the protocol version.
Port-mirroring on EAP ports	Specifies whether port mirroring is enabled on the EAPoL ports.
EAP User Based Policies	Specifies if EAPoL User Based Policy settings are enabled.

Table continues...

Output field	Description
EAP User Based Policies Filter On MAC Addresses	Specifies whether MAC filtering is enabled on EAPoL User Based Policies.
EAP Dynamic User Based Policies	Specifies whether the creation of dynamic User Based Policies is enabled.
Admin Status	Specifies the EAPoL administrative status.
Authorized	Specifies whether the EAPoL client is authorized to access the port.
Admin Directions	Specifies the administrative direction. Options are: • both—Specifies both ingress and egress traffic. • in—Specifies ingress traffic. • out—Specifies egress traffic. The default is both.
Oper Directions	Specifies the operational direction. Options are: • both—Specifies both ingress and egress traffic. • in—Specifies ingress traffic. • out—Specifies egress traffic. The default is both.
ReAuth Enable	Specifies whether re-authentication is enabled.
ReAuth Period	Specifies the re-authentication period.
Quiet Period	Specifies the quiet period.
Supplicant Timeout	Specifies the timeout period for the supplicant.
Server Timeout	Specifies the server timeout period.
Max Requests	Specifies the maximum number of EAP requests.
Dynamic RADIUS Server	Specifies whether the dynamic RADIUS server is configured.

Example

The following is an example output of the **show eapol** command:

```
Switch:1#show eapol

EAP Administrative State           : Disabled
Protocol Version                  : 2
Port-mirroring on EAP ports       : Disabled
EAP User Based Policies           : Enabled
EAP User Based Policies Filter On MAC Addresses : Enabled
EAP Dynamic User Based Policies   : Enabled

Port: 1
  Admin Status                    : Force Authorized
  Authorized                      : Yes
  Admin Directions                 : Both
  Oper Directions                 : Both
  ReAuth Enable                   : No
  ReAuth Period                   : 3600
  Quiet Period                    : 60
```

```

Supplicant Timeout      : 30
Server Timeout         : 30
Max Requests           : 2
Dynamic RADIUS Server  : No
Port: 2
Admin Status           : Force Authorized
Authorized              : Yes
Admin Directions       : Both
Oper Directions        : Both
ReAuth Enable          : No
ReAuth Period          : 3600
Quiet Period           : 60
Supplicant Timeout     : 30
Server Timeout         : 30
Max Requests           : 2
Dynamic RADIUS Server  : Yes

```

show eapol multihost

Displays EAPoL multi-host information.

Syntax

- **show eapol multihost** [**fail-open-vlan interface** <LINE> | **interface** <LINE>|**non-eap-mac** {**interface** <LINE>|**status** <LINE>} | **non-eap-pwd-fmt key** | **status** {<LINE>|**verbose**} | **voip-vlan**]

Command Parameters

fail-open-vlan	Display EAPoL multihost Fail Open VLAN settings.
interface <LINE>	Displays EAPoL multihost port configuration.
non-eap-mac { interface <LINE> Status <LINE>}	Display allowed non-EAPoL MAC addresses.
non-eap-pwd-fmt key	Displays the non-EAP password format.
status {<LINE> verbose }	Display EAPoL multihost status
interface <LINE>	Select interfaces to be displayed
key	Displays Non-EAP Password Key
verbose	Displays detailed output.
voip-vlan	Display EAPoL multihost voip-vlan settings

Default

None

Command Mode

Privileged Executive

Command Output

The **show eapol multihost** command displays the following information:

Output field	Description
Allow Local Non-EAP Clients	Specifies whether support is enabled or disabled for Non-EAP clients using local authentication.
Non-EAP RADIUS Authentication	Specifies whether Non-EAP RADIUS authentication is enabled or disabled.
Non-EAP RADIUS Authentication Delay	Specifies the Non-EAP RADIUS authentication delay.
Non-EAP AutoLearned After Single Authent (MHSA)	Specifies whether auto-authentication of non-EAP clients in the Multiple Host with Single Authentication (MHSA) mode is enabled.
Non-EAP DHCP Phone Authentication	Specifies whether non-EAP DHCP phone authentication is enabled.
EAPoL Request Packet Generation Mode	Indicates the packet generation mode. It can be unicast, multicast, or broadcast.
EAP RADIUS Assigned VLANs	Specifies whether support for RADIUS-assigned VLANs in multihost-EAP mode for EAPoL clients is enabled.
Non-EAP RADIUS Assigned VLANs	Specifies whether support for RADIUS-assigned VLANs in multihost-EAP mode for non-EAP clients is enabled.
Non-EAP RADIUS Password Attribute Format	Specifies the format of the RADIUS server password attribute for Non-EAP clients. • ipAddr — include switch IP address string • macAddr — include MAC address string • portNumber — include port string • key — include configurable key string • padding — With the padding option unchecked, the RADIUS password uses dots only to separate fields. This is the default setting. With the option checked, the RADIUS password uses dots for every missing parameter
Non-EAP User Based Policies	Specifies if Non-EAP User Based Policies are enabled.
Non-EAP User Based Policies Filter On MAC Addresses	Specifies whether filtering of user based policies based on MAC address is enabled.
Non-EAP Dynamic User Based Policies	Specifies whether the creation of Non-EAP dynamic user based policies is enabled.
EAP Protocol	Specifies whether the EAPoL protocol is enabled on the port.

Table continues...

Output field	Description
Non-EAP ReAuthentication	Specifies whether Non-EAP re-authentication is enabled.
ADAC Non-EAP Phone Authentication	Specifies whether Non-EAP phone authentication using ADAC mode is enabled.
Fail Open VLAN	Specifies whether Fail Open VLAN is enabled.
Fail Open VLAN ID	Specifies the Fail Open VLAN ID
Fail Open VLAN Continuity Mode	Specifies whether Fail Open VLAN continuity mode is enabled.

Example

The following is an example output of the **show eapol multihost** command:

```
Switch:1#show eapol multihost

Allow Local Non-EAP Clients           : Disabled
Non-EAP RADIUS Authentication         : Disabled
Non-EAP RADIUS Authentication Delay   : 4
Non-EAP AutoLearned After Single Authent (MHSA) : Disabled
Non-EAP DHCP Phone Authentication     : Disabled
EAPoL Request Packet Generation Mode  : Unicast
EAP RADIUS Assigned VLANs             : Enabled
Non-EAP RADIUS Assigned VLANs        : Enabled
Non-EAP RADIUS Password Attribute Format : MACAddr
Non-EAP User Based Policies           : Disabled
Non-EAP User Based Policies Filter On MAC Addresses : Disabled
Non-EAP Dynamic User Based Policies   : Enabled
EAP Protocol                          : Enabled
Non-EAP ReAuthentication              : Disabled
ADAC Non-EAP Phone Authentication     : Disabled
Fail Open VLAN                       : Disabled
Fail Open VLAN ID                    : 1
Fail Open VLAN Continuity Mode        : Disabled
```

show eapol sessions

Displays information on MACs for EAP sessions.

Syntax

- show eapol sessions** {[port <portmask>] | [dhcp-phones] | [[eap] | [non-eap [radius] [local] [adac-lldp] [adac-mac-range] [held] [mhsa]] | [[unauthenticated [intruder] [guest-vlan] [fail-open-vlan] [mhsa-no-limit]]]}

Command Parameters

- adac-lldp** Displays non-EAPOL clients authenticated through ADAC.
- adac-mac-range** Displays neap sessions with macs in the adac mac range list.

dhcp-phones	Displays MACs of DHCP Phones.
eap	Displays authenticated EAPOL sessions.
fail-open-vlan	Displays MACs of clients in Fail Open VLAN.
guest-vlan	Displays unauthenticated clients in Guest VLAN.
held	Displays unauthenticated clients held by RADIUS.
interface <portlist>	Specifies the interfaces for which to display information. Select a port or a list of ports for which to display information.
intruder	Displays intruder MACs.
local	Displays locally authenticated non-EAPOL clients.
mhsa	Displays non-EAP sessions for MHSa.
mhsa-no-limit	Displays non-EAP sessions for MHSa when no-limit is enabled.
non-eap	Displays authenticated non-EAPOL clients.
port <portmask>	Specifies the numeric slot/port format.
radius	Displays non-EAPOL clients authenticated by RADIUS.
unauthenticated	Displays unauthenticated EAPOL and non-EAPOL clients.

Default

None

Command Mode

Privileged Executive

show http-port

Displays the TCP port on which web server will listen.

Syntax

- **show http-port**

Default

None

Command Mode

Privileged Executive

show ip fwd-nh

Display IP forwarding next-hop settings

Syntax

- `show ip fwd-nh [policy [<WORD>]][interface [vlan <1-4094>]]`

Command Parameters

interface	Display IP forwarding next-hop per-interface settings
policy [<WORD>]	Display IP forwarding next-hope policies
vlan <1-4094>	Select a VLAN interface

Default

None

Command Mode

Privileged Executive

show ip igmp cache

Displays IGMP cache details.

Syntax

- `show ip igmp cache`

Default

None

Command Mode

Privileged Executive

Command OutputThe following table shows the field descriptions for the `show ip igmp cache` command.

Field	Description
Group Address	Indicates the multicast group address

Table continues...

Field	Description
Vlan ID	Indicates the VLAN interface on which the group exists.
Last Reporter	Indicates the last IGMP host to join the group.
Expiration	Indicates the group expiration time (in seconds).
V1 Host Timer	Indicates the time remaining until the local router assumes that no IGMP version 1 members exist on the IP subnet attached to the interface. Upon hearing an IGMPv1 membership report, this value is reset to the group membership timer. When the time remaining is nonzero, the local interface ignores IGMPv2 Leave messages that it receives for this group.
Type	Indicates whether the entry is learned dynamically or is added statically.

Example

The following is an example for the **show ip igmp cache** command output:

```
Switch#show ip igmp cache
Group Address  Vlan ID Last Reporter  Expiration Vl Host Timer Type
-----
239.255.255.250 1          172.16.120.253  160          0          Dynamic
```

show ip igmp group

Displays IGMP group details.

Syntax

- **show ip igmp group** [**count**] [**member-subnet A.B.C.D/<0-32>**] [**group {A.B.C.D}**]

Command Parameters

count	Display count of entries
group {A.B.C.D}	Select group
member-subnet A.B.C.D/<0-32>	Select member subnet

Default

None

Command Mode

Privileged Executive

Command Output

The following table shows the field descriptions for the **show ip igmp group** command.

Field	Description
Group Address	Indicates the multicast group address.
VLAN	Indicates the VLAN interface on which the group exists.
Member Address	Indicates the IP address of the IGMP receiver (host or IGMP reporter). The IP address is 0.0.0.0 if the type is static.
Expiration	Indicates the time left before the group report expires. This variable is updated upon receiving a group report.
Type	Indicates the type of membership: static or dynamic
In Port	Identifies the member port for the group. This is the port on which group traffic is forwarded and in those case where the type is dynamic, it is the port on which the IGMP join was received.

Example

The following is an example for the **show ip igmp group** command output:

```
Switch#show ip igmp group
Group Address    VLAN Member Address  Expiration Type      In Port
-----
239.255.255.250 1      172.16.120.253  188          Dynamic 1
```

show ip igmp group-ext

Displays IGMP extended group details.

Syntax

- **show ip igmp group-ext** [**count**] [**member-subnet** **A.B.C.D/<0-32>**] [**group** **{A.B.C.D}**] [**source** **{A.B.C.D}**]

Command Parameters

count	Display count of entries
group {A.B.C.D}	Select group
member-subnet A.B.C.D/<0-32>	Select member subnet
source {A.B.C.D}	Select source address

Default

None

Command Mode

Privileged Executive

Command Output

The following table shows the field descriptions for the `show ip igmp group-ext` command.

Field	Description
Group Address	Indicates the multicast group address
Source Address	Indicates the source address specified in the Source Address field of the group record(s).
Mode	Indicates the group record type of the IGMP entry.
VLAN	Indicates the VLAN interface on which the group exists.
Member Address	Indicates the IP address of the IGMP receiver (host or IGMP reporter). The IP address is 0.0.0.0 if the type is static.
Expiration	Indicates the time left before the group report expires. This variable is updated upon receiving a group report.
Type	Specifies the type of membership: static or dynamic
In Port	Identifies the member port for the group. This is the port on which group traffic is forwarded and in those case where the type is dynamic, it is the port on which the IGMP join was received.

Example

The following is an example for `show ip igmp group-ext` command output:

```
Switch#show ip igmp group-ext
Group Address    Source Address  Mode    VLAN  Member Address  Expiration  InPort
-----
239.255.255.250 0.0.0.0        Include 1      172.16.120.253 136         1
```

show ip igmp interface

Displays IGMP interface information.

Syntax

- `show ip igmp interface vlan <1-4094>`

Command Parameters

vlan <1-4094> Display VLAN interfaces

Default

None

Command Mode

Privileged Executive

Command Output

The following table shows the field descriptions for the **show ip igmp interface** command output.

Field	Description
VLAN	Indicates the VLAN on which IGMP is configured.
Query Intvl	Indicates the frequency (in seconds) at which host query packets are transmitted on the interface.
Vers	Indicates the version of IGMP configured on this interface.
Oper Vers	Indicates the version of IGMP running on this interface.
Querier	Indicates the IP address of the IGMP querier on the IP subnet to which this interface is attached.
Query MaxRspT	Indicates the maximum query response time (in tenths of a second) advertised in IGMPv2 queries on this interface.
Wrong Query	Indicates the number of queries received whose IGMP version does not match the Interface version. You must configure all routers on a LAN to run the same version of IGMP. Thus, if queries are received with the wrong version, a configuration error occurs.
Joins	Indicates the number of times a group membership was added on this interface.
Robust	Indicates the robust value configured for expected packet loss on the interface.
LastMbr Query	Indicates the maximum response time (in tenths of a second) inserted into group-specific queries sent in response to leave group messages, and is also the amount of time between group specific query messages. Use this value to modify the leave latency of the network. A reduced value results in reduced time to detect the loss of the last member of a group. This does not apply if the interface is configured for IGMPv1.
Send Query	Indicates whether the ip igmp send-query feature is enabled or disabled. Values are YES or NO. Default is disabled.

Example

The following is an example for the **show ip igmp interface** command output:

```
Switch>enable
Switch#show ip igmp interface vlan 1
```

VLAN	Query Intvl	Oper Vers	Querier	Query MaxRspT	Wrong Query	Joins	Robust	LastMbr Query	Send Query	
1	125	2	2	0.0.0.0	100	0	0	2	10	No

show ip igmp profile

Displays IGMP filter profiles.

Syntax

- `show ip igmp profile <1-65535>`

Command Parameters

<1-65535> profile ID

Default

None

Command Mode

Privileged Executive

show ip igmp router-alert

Displays router-alert settings.

Syntax

- `show ip igmp router-alert vlan <1-4094>`

Command Parameters

vlan <1-4094> Display VLAN interfaces

Default

None

Command Mode

Privileged Executive

show ip igmp sender

Displays IGMP sender details.

Syntax

- `show ip igmp sender{count | group <A.B.C.D> | member-subnet <A.B.C.D>/<0-32> | vlan <1-4094>}`

Command Parameters

vlan <1-4094>	Selects a VLAN interface
count	Display count of entries
group <A.B.C.D>	Display selected destination
member-subnet <A.B.C.D>/<0-32>	Display selected member subnet

Default

None

Command Mode

Privileged Executive

show ip igmp snooping

Displays IGMP snooping information.

Syntax

- `show ip igmp snooping`

Default

None

Command Mode

Privileged Executive

show ip igmp snoop-querier-addr

Displays IGMP information.

Syntax

- `show ip igmp snoop-querier-addr`

Default

None

Command Mode

Privileged Executive

show ip igmp ssm

Displays global SSM settings.

Syntax

- `show ip igmp ssm`

Default

None

Command Mode

Privileged Executive

show ip igmp ssm-map

Displays SSM map/channel settings.

Syntax

- `show ip igmp ssm-map`

Default

None

Command Mode

Privileged Executive

show ip mroute interface

Display general multicast information.

Syntax

- `show ip mroute interface [vlan <1-16>]`

Command Parameters

`vlan <1-4094>` Displays VLAN interfaces.

Default

None

Command Mode

Privileged Executive

Command Output

The following table shows the field descriptions for the **show ip mroute interface** command.

Field	Description
Interface	Indicates the interface.
Ttl	Indicates the datagram TTL threshold for the interface. IP multicast datagrams with a TTL less than this threshold are not forwarded out of the interface. The default value of 0 means all multicast packets are forwarded out of the interface.
Protocol	Indicates the routing protocol running on this interface.

Example

The following is an example for the **show ip mroute interface** command output:

```
Switch#show ip mroute interface
Interface      Ttl Protocol
-----
Vlan 1         1   Other
```

show ip mroute next-hop

Display multicast next-hop information.

Syntax

- **show ip mroute next-hop**

Default

None

Command Mode

Privileged Executive

Command Output

The following table shows the field descriptions for the **show ip mroute next-hop** command.

Field	Description
Interface	Indicates the interface identity.

Table continues...

Field	Description
Group	Indicates the IP multicast group for which this entry specifies a next hop on an outgoing interface.
Source	Indicates the network address, which when combined with the corresponding value of Srcmask identifies the sources for which this entry specifies a next hop on an outgoing interface.
Srcmask	Indicates the network mask, which when combined with the corresponding value of Source identifies the sources for which this entry specifies a next hop on an outgoing interface.
Address	Indicates the address of the next hop specific to this entry. For most interfaces, this address is identical to Group.
State	Indicates whether the outgoing interface and next hop represented by this entry are currently forwarding IP datagrams. The value forwarding indicates the information is currently used. The value pruned indicates it is not used.
Exptime	Indicates the minimum amount of time remaining before this entry ages out. The value 0 indicates that the entry is not subject to aging.
Closehop	Indicates the minimum number of hops between this router and members of this IP multicast group reached through this next hop on this outgoing interface. IP multicast datagrams for the group that use a TTL less than this number of hops are forwarded to the next hop.
Protocol	Indicates the routing mechanism through which this next hop was learned.

Example

The following is an example for the **show ip mroute next-hop** command output:

```
Switch#show ip mroute next-hop
Interface Group Source Srcmask Address State Exptime Closehop Protocol
-----
Total: 0
```

show ip mroute route

Display multicast route information.

Syntax

- **show ip mroute route**

Default

None

Command Mode

Privileged Executive

Command Output

The following table shows the field descriptions for the **show ip mroute route** command.

Field	Description
Group	Indicates the IP multicast group for which this entry specifies a next hop on an outgoing interface.
Source	Indicates the network address that, when combined with the corresponding value of Srcmask, identifies the sources for which this entry specifies a next hop on an outgoing interface.
Srcmask	Indicates the network mask that, when combined with the corresponding value of Source, identifies the sources for which this entry specifies a next hop on an outgoing interface.
Upstream_nbr	Indicates the address of the upstream neighbor from which IP datagrams from these sources to this multicast address are received, or 0.0.0.0 if the upstream neighbor is unknown.
If	Indicates the value of ifIndex for the interface on which IP datagrams sent by these sources to this multicast address are received. A value of 0 indicates that datagrams are not subject to an incoming interface check, but can be accepted on multiple interfaces (for example, in CBT).
Expir	Indicates the minimum amount of time remaining before this entry ages out. The value 0 indicates that the entry is not subject to aging.
Prot	Indicates the outgoing mechanism through which this route was learned.

Example

The following is an example for the **show ip mroute route** command output:

```
Switch#show ip mroute route
Group Source Srcmask Upstream_nbr If Expir Prot
-----
0 out of 0 Total mroute Entries displayed.
```

show ip pim

Display the global Protocol Independent Multicast-Sparse Mode (PIM-SM) properties.

Syntax

- **show ip pim**

Default

None

Command Mode

Privileged Executive

Command Output

The following table shows the field descriptions for the **show ip pim** command.

Field	Description
PIM Admin Status	Indicates the status of PIM-SM.
PIM Oper Status	Indicates the operational status of PIM-SM.
PIM Boot Strap Period	Indicates the interval between originating bootstrap messages at the elected BSR.
PIM C-RP-Adv Message Send Interval	Indicates the candidate RPs timer (in seconds) for sending C-RP advertisement messages.
PIM Discard Data Timeout	After the router forwards the first source packet to the RP, this value indicates how long (in seconds) the router discards subsequent source data while waiting for a join from the RP. An IPMC discard record is created and deleted after the timer expires or after a join is received.
PIM Join Prune Interval	Indicates the join/prune interval in seconds.
PIM Register Suppression Timer	Indicates the register suppression timer in seconds.
PIM Uni Route Change Timeout	Indicates how often (in seconds) the switch polls the routing table manager (RTM) for unicast routing information updates to be used by PIM.
PIM Mode	Indicates the PIM mode (sparse mode).
PIM Static-RP	Indicates the status of static RP.
Forward Cache Timeout	Indicates the PIM-SM forward cache expiry value in seconds. This value is used in aging PIM-SM mroutes.

Example

The following is an example for the **show ip pim** command output:

```
Switch#show ip pim
PIM Admin Status: Disabled
PIM Oper Status: Disabled
PIM Boot Strap Period: 60
PIM C-RP-Adv Message Send Interval: 60
PIM Discard Data Timeout: 60
PIM Join Prune Interval: 60
PIM Register Suppression Timer: 60
PIM Uni Route Change Timeout: 5
PIM Mode: Sparse
PIM Static-RP: Disabled
Forward Cache Timeout: 210
```

show ip pim active-rp

Display the active rendezvous points for Protocol Independent Multicast (PIM).

Syntax

- `show ip pim active-rp [group <A.B.C.D>]`

Command Parameters

group <A.B.C.D> Specifies the group to display.

Default

None

Command Mode

Privileged Executive

Command Output

The following table shows the field descriptions for the `show ip pim active-rp` command.

Field	Description
Group Address	Indicates the IP address of the multicast group.
Group Mask	Indicates the address mask of the multicast group.
Active RP	Indicates the IP address of the active RP.
Priority	Indicates the RP priority.

Example

The following is an example for the `show ip pim active-rp` command output:

```
Switch#show ip pim active-rp
Group Address   Group Mask     Active RP      Priority
-----
Total active RP flows: 0
```

show ip pim bsr

Display the bootstrap router settings for Protocol Independent Multicast (PIM).

Syntax

- `show ip pim bsr`

Default

None

Command Mode

Privileged Executive

Command Output

The following table shows the field descriptions for the `show ip pim bsr` command.

Field	Description
Current BSR Address	Indicates the IP address of the current BSR for the local PIM-SM domain.
Current BSR Priority	Indicates the priority of the current BSR. The Candidate BSR (C-BSR) with the highest BSR priority and address (referred to as the preferred BSR) is elected as the BSR for the domain.
Current BSR Hash Mask	Indicates the mask used in the hash function to map a group to one of the C-RPs from the RP-Set. With the hash-mask, a small number of consecutive groups (for example, four) can always hash to the same RP.
Current BSR Fragment Tag	Indicates the randomly generated number that distinguishes fragments belonging to different bootstrap messages. Fragments belonging to the same bootstrap message carry the same Fragment Tag.
Current BSR Boot Strap Timer	Indicates the time the BSR waits between sending bootstrap messages.

Example

The following is an example for the **show ip pim bsr** command output:

```
Switch#show ip pim bsr
Current BSR Address:  0.0.0.0
Current BSR Priority:  -1
Current BSR Hash Mask: 255.255.255.252
Current BSR Fragment Tag:  0
Current BSR Boot Strap Timer:  0
```

show ip pim interface

Display Protocol Independent Multicast (PIM) for each interface setting.

Syntax

• **show ip pim interface** [**enabled**] [**vlan <1-4094>**]

Command Parameters

enabled Displays only admin enabled Protocol Independent Multicast (PIM) interfaces.

vlan <1-4094> Displays VLAN interfaces.

Default

None

Command Mode

Privileged Executive

Command Output

The following table shows the field descriptions for the **show ip pim interface vlan** command.

Field	Description
Vlan	Identifies the VLAN.
State	Indicates the state of PIM-SM on the VLAN.
Address	Indicates the VLAN IP address.
Mask	Indicates the VLAN subnet mask.
Mode	Indicates the PIM mode of this VLAN: sparse mode.
DR	Indicates the Designated Router for this interface.
Hello Interval	Indicates how long the switch waits (in seconds) between sending out a hello message to neighboring switches. The default hello interval is 30 seconds.
Join Prune Interval	Indicates how long the switch waits (in seconds) between sending out a join/prune message to the upstream neighbors. The default join/prune interval is 60 seconds.
CBSPR	Indicates the priority for this local interface to become a Candidate BSR. The Candidate BSR with the highest BSR priority and address is referred to as the preferred BSR. The default is -1, which indicates that the current interface is not a Candidate BSR.
Oper State	Indicates the status of PIM-SM on this interface: up or down.
Interface Type	Indicates whether the PIM-SM interface is active or passive.

Example

The following is an example for the **show ip pim interface vlan** command output:

```
Switch#show ip pim interface
Vlan: 1
  State: Disabled
  Address: 172.16.120.161
  Mask: 255.255.255.0
  Mode: Sparse
  DR: 0.0.0.0
  Hello Interval: 30
  Join Prune Interval: 60
  CBSPR: Disabled
  Oper State: Down
  Interface Type: Active
```

show ip pim mode

Display the Protocol Independent Multicast (PIM) mode.

Syntax

- **show ip pim mode**

Default

None

Command Mode

Privileged Executive

show ip pim mroute

Display the Protocol Independent Multicast (PIM) multicast routes.

Syntax

• `show ip pim mroute [count] [group <A.B.C.D>] [source <A.B.C.D>] [summary]`

Command Parameters

count	Displays the count of entries.
group <A.B.C.D>	Displays specific groups by IP address.
source <A.B.C.D>	Displays specific sources by IP address.
summary	Displays summary information of Protocol Independent Multicast (PIM) multicast routes.

Default

None

Command Mode

Privileged Executive

show ip pim neighbor

Display the global Protocol Independent Multicast-Sparse Mode (PIM-SM) neighbors.

Syntax

• `show ip pim neighbor`

Default

None

Command Mode

Privileged Executive

Command Output

The following table shows the field descriptions for the **show ip pim neighbor** command.

Field	Description
Address	Indicates the IP address of the PIM-SM neighbor.
Vlan	Indicates the local interface.
Uptime	Indicates the elapsed time since the PIM-SM neighbor last became a neighbor of the local interface.
Expiry Time	Indicates the time remaining before this PIM-SM neighbor times out.
Total PIM Neighbors	Indicates the total number of PIM neighbors on the switch.

Example

The following is an example for the **show ip pim neighbor** command output:

```
Switch#show ip pim neighbor
Address          Vlan      Uptime                Expiry Time
-----
Total PIM Neighbors:  0
```

show ip pim rp-candidate

Display the Protocol Independent Multicast (PIM) candidate rendezvous points.

Syntax

- **show ip pim rp-candidate [group <A.B.C.D>]**

Command Parameters

group <A.B.C.D> Displays specific groups by IP address.

Default

None

Command Mode

Privileged Executive

Command Output

The following table shows the field descriptions for the **show ip pim rp-candidate** command.

Field	Description
Group Address	Indicates the IP address of the multicast group. When combined with the group mask, it identifies the prefix that the local router uses to advertise itself as a C-RP router.

Table continues...

Field	Description
Group Mask	Indicates the address mask of the multicast group. When combined with the group address, it identifies the prefix that the local router uses to advertise itself as a C-RP router.
RP Address	Indicates the IP address of the C-RP.

Example

The following is an example for the **show ip pim rp-candidate** command output:

```
Switch#show ip pim rp-candidate
Group Address   Group Mask      RP Address
-----
Total candidate RPs:  0
```

show ip pim rp-hash

Display the Protocol Independent Multicast rendezvous point set and hash.

Syntax

- **show ip pim rp-hash**

Default

None

Command Mode

Privileged Executive

Command Output

The following table shows the field descriptions for the **show ip pim rp-hash** command.

Field	Description
Group Address	Indicates the IP address of the multicast group.
Group Mask	Indicates the address mask of the multicast group.
Address	Indicates the IP address of the C-RP for the specified group.
Hold Time	Indicates the time specified in a C-RP advertisement that the BSR uses to time out the RP. After the BSR receives an advertisement for the RP, it restarts the timer. If no advertisement arrives before the timer expires, the BSR removes that RP from the RP set.
Expiry Time	Indicates the time remaining before this C-RP times out.

Example

The following is an example for the **show ip pim rp-hash** command output:

```
Switch#show ip pim rp-hash
Group Address   Group Mask      Address          Hold Time Expiry Time
```

```
-----
Total RP sets:  0
```

show ip pim static-rp

Display the statically configured Protocol Independent Multicast rendezvous point.

Syntax

- `show ip pim static-rp`

Default

None

Command Mode

Privileged Executive

show ip pim virtual-neighbor

Display the Protocol Independent Multicast virtual neighbor.

Syntax

- `show ip pim virtual-neighbor`

Default

None

Command Mode

Privileged Executive

Command Output

The following table shows the field descriptions for the `show ip pim virtual-neighbor` command.

Field	Description
Vlan	Indicates the VLAN interface.
Neighbor address	Indicates the IP address of the virtual neighbor.

Example

The following is an example for the `show ip pim virtual-neighbor` command output:

```
Switch#show ip pim virtual-neighbor
Vlan      Neighbor Address
-----  -
```

show ip source

Displays IP Source Guard address bindings.

Syntax

```
• show ip source binding {{A.B.C.D} | interface [ethernet] <WORD>}
```

Command Parameters

<WORD>	port list
A.B.C.D	specify ip address for which to display binding entries
binding	Display IP Source Guard address bindings
Ethernet	Select Ethernet interfaces
interface	select interfaces

Default

None

Command Mode

Privileged Executive

show ip verify

Displays IP Source Guard settings.

Syntax

```
• show ip verify source [statistics] interface [ethernet] <WORD>
```

Command Parameters

<WORD>	port list
Ethernet	Select Ethernet interfaces
interface	select interfaces
source	Display IP Source Guard settings
statistics	Display IP Source Guard Statistics

Default

None

Command Mode

Privileged Executive

show ipmgr

Displays IP Manager settings.

Syntax

- `show ipmgr {IPv4 | IPv6}`

Command Parameters

IPv4 Displays only IPv4 information.

IPv6 Displays only IPv6 information.

Default

None

Command Mode

Privileged Executive

show ipv6 mld group

Displays the learned multicast groups information.

Syntax

- `show ipv6 mld group [count] [group <WORD>] [interface vlan <1-4094>] [member-subnet <WORD>] [port <LINE>]`

Command Parameters

count Displays the count of entries.

group <WORD> Displays the group by IPv6 address. <WORD> specifies the IPv6 address.

interface vlan <1-4094> Displays the VLAN interfaces.

member-subnet <WORD> Displays the subnet-mask for group member network by IPv6 address. <WORD> specifies the IPv6 address.

port <LINE> Filters information by port number or a list of ports. <LINE> specifies the port or list of ports.

Default

None

Command Mode

Privileged Executive

show ipv6 mld interface

Displays the learned multicast groups interface.

Syntax

- `show ipv6 mld interface [vlan <1-4094>]`

Command Parameters

vlan <1-4094> Displays by VLAN.

Default

None

Command Mode

Privileged Executive

Command Output

The following table shows the field descriptions for the `show ipv6 mld interface` command.

Field	Description
VID	Indicates the VLAN ID.
Q-INT	Indicates the query interval, the frequency at which IPv6 MLD snooping host-query packets are transmitted on this interface.
VR	Indicates the version.
OVR	Indicates the operational version.
QUERIER	Indicates the IPv6 MLD snooping querier on the IPv6 subnet to which this interface is attached.
Q-M-R	Indicates the maximum query response time advertised in IPv6 MLD snooping queries on this interface.
ROB	Indicates the robustness value.
L-M-Q	Indicates the last member query interval. The last member query interval is the maximum response delay inserted into group-specific

Table continues...

Field	Description
	queries sent in response to leave group messages, and it is also the amount of time between group-specific query messages.
S-Q	Indicates the send-query status.

Example

The following is an example for the **show ipv6 mld interface** command output:

```
Switch#show ipv6 mld interface
=====
                        MLD Interface Information
=====
VID  Q-INT VR OVR QUERIER                      Q-M-R  ROB L-M-Q S-Q
-----
430  125   2  2   ::                        10    2   1   Yes

1 out of 1 Total Num of MLD Interface Entries displayed.

Legend: VID: vlan id  Q-INT: query-interval VR: admin version OVR: operational version
        QUERIER: querier address  Q-M-R: query-max-resp ROB: robust-value
        L-M-Q: last-memb-query-int S-Q: send-query
```

show ipv6 mld snooping

Displays the learned multicast groups snooping information.

Syntax

- **show ipv6 mld snooping**

Default

None

Command Mode

Privileged Executive

Command Output

The **show ipv6 mld snooping** command displays the following information:

Variable	Description
Vlan	Identifies the VLAN ID.
Snoop Enable	Identifies whether snoop is enabled (true) or disabled (false).
Proxy Enable	Identifies whether MLD Proxy is enabled (true) or disabled (false).
Static Mrouter Ports	Identifies the static mrouter ports in this VLAN that provide connectivity to an IP multicast router.

Table continues...

Variable	Description
Active Mrouter Ports	Displays all dynamic (querier port) and static mrouter ports that are active on the interface.
Mrouter Expiration Time	Specifies the time remaining before the multicast router is aged out on this interface. If the switch does not receive queries before this time expires, it flushes out all group memberships known to the VLAN. The Query Max Response Interval (obtained from the queries received) is used as the timer resolution.

Example

The following is an example for the **show ipv6 mld snooping** command output:

```
Switch#show ipv6 mld snooping
Vlan Snoop Proxy Static Active Mrouter Mrouter
      Enable Enable Mrouter Ports      Expiration
-----
1     True   True  NONE      NONE      0
```

show ipv6 mld stream

Displays MLD sender details.

Syntax

- **show ipv6 mld stream vlan <1-4094>**

Command Parameters

vlan <1-4094> Select VLAN.

Default

None

Command Mode

Privileged Executive

show jumbo-frames

Displays jumbo-frames support.

Syntax

- **show jumbo-frames**

Default

None

Command Mode

Privileged Executive

show lacp aggr

Displays LACP aggregator information.

Syntax

- `show lacp aggr <1-65535>`

Command Parameters**<1-65535>**

Aggr ID

Default

None

Command Mode

Privileged Executive

show lacp debug

Displays LACP port debug information.

Syntax

- `show lacp debug member <WORD>`

Command Parameters**<WORD>** List of ports**member** Display LACP port debug information for specified port(s)**Default**

None

Command Mode

Privileged Executive

show lacp key

Displays MLTs or MLTs/SMLTs reserved for LACP key values.

Syntax

- `show lacp key <1-4095>`

Command Parameters

<1-4095> LACP key value

Default

None

Command Mode

Privileged Executive

show lacp port

Displays LACP port information.

Syntax

- `show lacp port {aggr <1-65535> | key <1-4095> | <WORD>}`

Command Parameters

<WORD> List of ports

aggr <1-65535> select ports that are members of an aggregator

key <1-4095> Select ports that have a specific key

Default

None

Command Mode

Privileged Executive

show lacp port-mode

Displays LACP port mode information.

Syntax

- `show lacp port-mode`

Default

None

Command Mode

Privileged Executive

show lacp stats

Displays LACP statistics information.

Syntax

- `show lacp stats`

Default

None

Command Mode

Privileged Executive

show lacp system

Displays LACP system settings.

Syntax

- `show lacp system`

Default

None

Command Mode

Privileged Executive

show license

Displays licenses.

Syntax

```
• show license {<1-10> | all} verbose
```

Command Parameters

<1-10> Select license to be displayed

all Display all licenses

verbose Display verbose license info

Default

None

Command Mode

Privileged Executive

show logging

Shows the contents of logging buffers.

Syntax

```
• show logging [critical] [serious] [informational] [sort-reverse] [unit  
  <1-8>] [config]
```

Command Parameters

config Display configuration of event logging.

critical Critical event

informational Informational message

serious Serious event message

sort-reverse display log messages in reverse order

unit <1-8> Unit number

Default

None

Command Mode

Privileged Executive

show mac-address-table address

Displays specific address.

Syntax

- `show mac-address-table address <H.H.H>`

Command Parameters

<H.H.H> Address to be displayed (i.e. H.H.H or xx.xx.xx.xx.xx.xx or xx-xx-xx-xx-xx-xx or xx:xx:xx:xx:xx:xx)

Default

None

Command Mode

Privileged Executive

show mac-address-table aging-time

Displays forwarding database aging time.

Syntax

- `show mac-address-table aging-time`

Default

None

Command Mode

Privileged Executive

show mac-address-table dynamic

Displays only dynamically learned addresses.

Syntax

- `show mac-address-table dynamic {mlt <1-32> | vid <1-4094>} [port <LINE>] address <H.H.H>`

Command Parameters

address <H.H.H> Display specific address

mlt <1-32>	Display mac-address-table for specified trunk id
port	Display mac-address-table for specified ports
vid <1-4094>	Display mac-address-table for specified VLAN ID

Default

None

Command Mode

Privileged Executive

show mac-address-table mlt

Displays mac-address-table for specified trunk id.

Syntax

- `show mac-address-table mlt <1-32> address`

Command Parameters

<1-32>	Trunk number
address	Display specific address

Default

None

Command Mode

Privileged Executive

show mac-address-table port

Displays mac-address-table for specified ports.

Syntax

- `show mac-address-table port <LINE> address <H.H.H>`

Command Parameters

<H.H.H>	Address to be displayed (i.e. H.H.H or xx.xx.xx.xx.xx.xx or xx-xx-xx-xx-xx-xx or xx:xx:xx:xx:xx:xx)

<LINE> List of port(s)

address <H.H.H> Display specific address

Default

None

Command Mode

Privileged Executive

show mac-address-table spbm

Displays SPBM MAC entries.

Syntax

- `show mac-address-table spbm i-sid <1-16777215>`

Command Parameters

i-sid <1-16777215> Display SPBM MAC entries for specified i-sid

Default

None

Command Mode

Privileged Executive

show mac-address-table static

Displays only statically inserted addresses.

Syntax

- `show mac-address-table static [vid <1-4094>] [port <LINE>] [mlt <1-32>] address <H.H.H>`

Command Parameters

address <H.H.H> Display specific address

mlt <1-32> Display mac-address-table for specified trunk id

port <LINE> Display mac-address-table for specified ports

vid <1-4094> Display mac-address-table for specified VLAN ID

Default

None

Command Mode

Privileged Executive

show mac-address-table vid

Displays mac-address-table for specified VLAN ID.

Syntax

• `show mac-address-table vid <1-4094> [port <LINE>] address <H.H.H>`

Command Parameters

<1-4094> VLAN ID

address <H.H.H> Display specific address

port <LINE> Display mac-address-table for specified ports

Default

None

Command Mode

Privileged Executive

show mac-security

Displays current MAC address security settings.

Syntax

• `show mac-security {config | mac-address-table {address <H.H.H> | port <LINE>}} | mac-da-filter | port <LINE> | security-lists <LINE>}`

Command Parameters

address <H.H.H> Display the accessible port for specific MAC address.

config Display the stack/switch MAC security configuration.

mac-address-table	Display the accessible MAC addresses on each port.
mac-da-filter	Display MAC DA filtering addresses
port	Display ports' MAC security status.
port <LINE>	Display MAC addresses from specific port
security-lists <LINE>	Display port membership of security lists

Default

None

Command Mode

Privileged Executive

show mlt

Displays Multi-Link Trunking (MLT) configuration.

Syntax

```
• show mlt {all-members | disabled | enabled | <LINE> | shutdown-ports-
  on-disable | spanning-tree <1-32> | utilization <1-32>}
```

Command Parameters

<LINE>	List of Trunk Groups
all-members	Display all members of the selected trunk
disabled	Display disabled MLTs
enabled	Display enabled MLTs
shutdown-ports-on-disable	Display disabled trunk loop prevention status
spanning-tree <1-32>	Display multi-link trunk spanning-tree settings
utilization <1-32>	Display multi-link trunk utilization

Default

None

Command Mode

Privileged Executive

show mlt hash-calc

Displays MLT hash calculations.

Syntax

- `show mlt hash-calc <1-32> {dest-ip {A.B.C.D} src-ip {A.B.C.D} tcp-udp-dport <0-65535> tcp-udp-sport <0-65535>} | [ WORD src-ip {A.B.C.D} tcp-udp-dport <0-65535> tcp-udp-sport <0-65535> | {dest-mac <H.H.H> src-mac <H.H.H> vlan <1-4094> ethertype <0x0600-0xffff> src-port <WORD>}`
- `show mlt hash-calc MLT ID <1-32> dest-ip <A.B.C.D> src-ip <A.B.C.D> tcp-udp-dport <0-65535> tcp-udp-sport <0-65535>`
- `show mlt hash-calc MLT ID <1-32> dest-mac <H.H.H> src-mac <H.H.H> vlan <1-4094> ethertype <0x0600-0xffff> src-port <WORD>`
- `show mlt hash-calc MLT ID <1-32> non-unicast dest-mac <dest-mac> src-mac <src-mac> src-port < unit / port>`

Command Parameters

<1-32>	MLT ID
<WORD>	Unit/Port
dest-ip {A.B.C.D}	Destination IP address
dest-mac <H.H.H>	Destination MAC address
ethertype <0x0600-0xffff>	Ethernet Type
non-unicast	Displays non-unicast hash algorithm
src-ip {A.B.C.D}	Source IP address
src-mac <H.H.H>	Source MAC address
src-port <WORD>	Source Port
tcp-udp-dport <0-65535>	TCP/UDP Destination Port Number
tcp-udp-sport <0-65535>	TCP/UDP Source Port Number
vlan <1-4094>	Vlan ID

Default

None

Command Mode

Privileged Executive

show poe-main-status

Shows PoE main configuration.

Syntax

- `show poe-main-status unit <1-8>`

Command Parameters

unit <1-8> Display main configuration of an unit in stack

Default

None

Command Mode

Privileged Executive

show poe-port-status

Shows PoE port configuration.

Syntax

- `show poe-port-status <LINE>`

Command Parameters

<LINE> List of ports

Default

None

Command Mode

Privileged Executive

show poe-power-measurement

Shows port power measurement.

Syntax

- `show poe-power-measurement <LINE>`

Command Parameters

<LINE> List of ports

Default

None

Command Mode

Privileged Executive

show port-mirroring

Displays port mirroring configuration.

Syntax

• **show port-mirroring** {<1-4> | **rspan**}

Command Parameters

<1-4> Instance number

rspan Display RSPAN settings

Default

None

Command Mode

Privileged Executive

show port-statistics

Displays the port counter for a port.

Syntax

• **show port-statistics port** <LINE> [**mgmt**]

Command Parameters

<LINE> List of ports

mgmt Display management port statistics

port Display port-statistics for specified ports

Default

None

Command Mode

Privileged Executive

show qos acl-assign

Displays access-list assignments.

Syntax

- `show qos acl-assign <1-65535>`

Command Parameters

<1-65535> Display the specified access-list assignment entry

Default

None

Command Mode

Privileged Executive

show qos action

Displays the base action entries.

Syntax

- `show qos action {<1-65535> | all | system | user}`

Command Parameters

<1-65535> Display the specified base action entry

all Display all user-created, default, and system entries

system Display only system entries

user Display only user-created and default entries

Default

None

Command Mode

Privileged Executive

show qos agent

Displays the global QoS parameters.

Syntax

- `show qos agent details`

Command Parameters

details	Display QoS agent details

Default

None

Command Mode

Privileged Executive

show qos capability

Displays QoS port capabilities.

Syntax

- `show qos capability {meter | shaper} port <LINE>`

Command Parameters

meter	Display QoS port meter capabilities
port <LINE>	Specify list of ports
shaper	Display QoS port shaper capabilities

Default

None

Command Mode

Privileged Executive

show qos classifier

Displays the classifier entries.

Syntax

```
• show qos classifier {<1-65535> | all | system | user}
```

Command Parameters

<1-65535>	Display the specified classifier entry
all	Display all user-created, default, and system entries
system	Display only system entries
user	Display only user-created and default entries

Default

None

Command Mode

Privileged Executive

show qos classifier-block

Displays the classifier block entries.

Syntax

```
• show qos classifier-block {<1-65535> | all | system | user}
```

Command Parameters

<1-65535>	Display the specified classifier block entry
all	Display all user-created, default, and system entries
system	Display only system entries
user	Display only user-created and default entries

Default

None

Command Mode

Privileged Executive

show qos diag

Displays the diagnostics entries.

Syntax

- `show qos diag unit <1-8>`

Command Parameters

unit <1-8> Display the diagnostics entries for specific unit

Default

None

Command Mode

Privileged Executive

show qos diag egress

Displays QoS egress precedence information on all units.

Syntax

- `show qos diag egress`

Default

None

Command Mode

Privileged Executive

show qos egressmap

Displays the association between the DSCP and the 802.1p priority and drop precedence.

Syntax

- `show qos egressmap ds <0-63>`

Command Parameters

ds <0-63> Displays mapping for one DSCP value

Default

None

Command Mode

Privileged Executive

show qos if-action-extension

Displays the interface action extension entries.

Syntax

- `show qos if-action-extension {<1-65535> | all | system | user}`

Command Parameters

<1-65535>	Display the specified interface action extension entry
all	Display all user-created, default, and system entries
system	Display only system entries
user	Display only user-created and default entries

Default

None

Command Mode

Privileged Executive

show qos if-assign

Displays the list of interface assignments.

Syntax

- `show qos if-assign port <LINE>`

Command Parameters

port <LINE>	Specify list of ports

Default

None

Command Mode

Privileged Executive

show qos if-group

Displays the interface groups.

Syntax

- `show qos if-group`

Default

None

Command Mode

Privileged Executive

show qos if-queue-shaper

Displays the interface egress queue shaping parameters.

Syntax

- `show qos if-queue-shaper port <LINE>`

Command Parameters

`port <LINE>` Specify list of ports

Default

None

Command Mode

Privileged Executive

show qos if-shaper

Displays the interface shaping parameters.

Syntax

- `show qos if-shaper port <LINE>`

Command Parameters

`port <LINE>` Specify list of ports

Default

None

Command Mode

Privileged Executive

show qos ingressmap

Displays the 802.1p priority to DSCP mapping.

Syntax

- `show qos ingressmap`

Default

None

Command Mode

Privileged Executive

show qos ip-acl

Displays IP access-lists.

Syntax

- `show qos ip-acl <1-65535>`

Command Parameters

<1-65535> The identifier of the IP access list

Default

None

Command Mode

Privileged Executive

show qos ip-element

Displays the IP classifier element entries.

Syntax

- `show qos ip-element {<1-65535> | all | system | user}`

Command Parameters

<1-65535>	Display the specified IP classifier element entry
all	Display all user-created, default, and system entries
system	Display only system entries
user	Display only user-created and default entries

Default

None

Command Mode

Privileged Executive

show qos l2-acl

Displays L2 access-lists.

Syntax

- `show qos l2-acl <1-65535>`

Command Parameters

<1-65535>	The identifier of the L2 access list

Default

None

Command Mode

Privileged Executive

show qos l2-element

Displays the Layer2 classifier element entries.

Syntax

- `show qos l2-element {<1-65535> | all | system | user}`

Command Parameters

<1-65535>	Display the specified Layer2 classifier element entry

all	Display all user-created, default, and system entries
system	Display only system entries
user	Display only user-created and default entries

Default

None

Command Mode

Privileged Executive

show qos meter

Displays the meter entries.

Syntax

- `show qos meter {<1-65535> | all | system | user}`

Command Parameters

<1-65535>	Display the specified meter entry
all	Display all user-created, default, and system entries
system	Display only system entries
user	Display only user-created and default entries

Default

None

Command Mode

Privileged Executive

show qos policy

Displays the policy entries.

Syntax

- `show qos policy {<1-65535> | all | system | user}`

Command Parameters

<1-65535>	Display the specified policy entry
all	Display all user-created, default, and system entries
port	Specify list of ports
system	Display only system entries
user	Display only user-created and default entries

Default

None

Command Mode

Privileged Executive

show qos port

Displays QoS port configuration.

Syntax

- **show qos port <LINE>**

Command Parameters

LINE	List of ports

Default

None

Command Mode

Privileged Executive

show qos queue-set

Displays the queue set configuration.

Syntax

- **show qos queue-set <1-8>**

Command Parameters

<1-8> Displays the specified queue-set.

Default

None

Command Mode

Privileged Executive

show qos queue-set-assignment

Displays the association between the 802.1p priority to that of a specific queue.

Syntax

- `show qos queue-set-assignment queue-set <1-8>`

Command Parameters

queue-set <1-8> Displays the specified queue-set.

Default

None

Command Mode

Privileged Executive

show qos queue-statistics

Display the queue-statistics values.

Syntax

- `show qos queue-statistics [non-zero] [port <LINE>] [queue <1-8>]`

Command Parameters

non-zero Displays only queues with non-zero statistics.

port <LINE> Displays the queue statistics for the specified port.

queue <1-8> Displays the statistics on the specified queue.

Default

None

Command Mode

Privileged Executive

show qos statistics

Displays the statistics values.

Syntax

- `show qos statistics <1-65535> port <LINE>`

Command Parameters

<1-65535> Specifies the policy ID.

port <LINE> Display the port statistics for the specified policy.

Default

None

Command Mode

Privileged Executive

show qos system-element

Displays the system classifier element entries.

Syntax

- `show qos system-element {<1-65535> | all | system | user}`

Command Parameters

<1-65535> Display the specified system classifier element entry.

all Display all user-created, default, and system entries.

system Display only system entries.

user Display only user-created and default entries

Default

None

Command Mode

Privileged Executive

show qos traffic-profile

Displays QoS Traffic Profile entries.

Syntax

- `show qos traffic-profile {classifier name <WORD> eval-order <1-255>} | interface | {set [port <LINE> name <WORD>} | {statistics port <LINE> name <WORD> precedence <1-15>}`

Command Parameters

<1-15>	Specifies the range of precedence.
classifier	Displays Quality of Service (QoS) Traffic Profile classifier entries.
eval-order <1-255>	Specifies the evaluation order to reference a specific Traffic Profile classifier entry.
interface	Displays Quality of Service (QoS) Traffic Profile interface entries
name <WORD>	Specifies the label to display a specific Traffic Profile classifier entry.
port <LINE>	Specifies the port(s) used to reference the Traffic Profile entry.
precedence	Specifies the precedence used to reference the Traffic Profile entry.
set	Displays Quality of Service (QoS) Traffic Profile set entries.
statistics	Displays Quality of Service (QoS) Traffic Profile statistics.

Default

None

Command Mode

Privileged Executive

show qos traffic-profile statistics

Displays QoS traffic profile statistics.

Syntax

- `show qos traffic-profile statistics port <LINE> precedence <1-15>`

Command Parameters

name <WORD>	Specifies the label used to reference the Traffic Profile entry.

- port <LINE>** Specifies a port to reference Traffic Profile entry.
- precedence <1-15>** Specify the precedence used to reference the Traffic Profile entry.

Default

None

Command Mode

Privileged Executive

show qos ubp interface

Displays QoS UBP entries.

Syntax

- `show qos ubp interface | [classifier] name <WORD> | statistics port <LINE> name <WORD> precedence <1-7>`

Command Parameters

- classifier** Display QoS UBP classifier entries
- interface** Display QoS UBP interface entries
- name** Specify the label to display a particular UBP template entry
- name <WORD>** Specify the label to display a specific UBP classifier entry
- port <LINE>** Specify a port to reference UBP entry
- precedence <1-7>** Specify the precedence used to reference the UBP entry
- statistics** Display QoS UBP statistics.

Default

None

Command Mode

Privileged Executive

show qos ubp statistics

Displays QoS UBP statistics.

Syntax

- `show qos ubp statistics [port <LINE>] [name <WORD>] [precedence]`

Command Parameters

- name <WORD>** Specifies the label used to reference the UBP entry.
- port <LINE>** Specifies a port to reference the UBP entry.
- precedence** Specifies the precedence use to reference the UBP entry.

Default

None

Command Mode

Privileged Executive

show qos user-policy

Displays Quality of Service (QoS) user policy entries.

Syntax

- `show qos user-policy [port <LINE>] [user <WORD>]`

Command Parameters

- port <LINE>** Specifies the port(s) used to reference the User Policy entries.
- user <WORD>** Specifies the user for whom the user policy must be displayed.

Default

None

Command Mode

Privileged Executive

show radius

Displays RADIUS settings.

Syntax

- `show radius {accounting interim-updates | dynamic-server {client {A.B.C.D} | replay-protection | statistics client {A.B.C.D}} | reachability | use-management-ip}`

Command Parameters

accounting	Display the configuration of RADIUS Accounting Interim-Updates
client {A.B.C.D}	Display the configuration of RADIUS Dynamic Authorization Client
dynamic-server	Display the configuration of RADIUS Dynamic Authorization Clients
interim-updates	Display the parameters of interim-updates
reachability	Display RADIUS reachability settings
replay-protection	Display status of RADIUS dynamic server replay protection
statistics	Display the statistics for RADIUS Dynamic Authorization Client
use-management-ip	Display RADIUS use-management-ip setting

Default

None

Command Mode

Privileged Executive

show radius-server

Displays current RADIUS server/port/key configuration.

Syntax

- `show radius-server`

Default

None

Command Mode

Privileged Executive

show rate-limit

Displays rate-limiting settings and statistics.

Syntax

- `show rate-limit port <LINE>`

Command Parameters

port <LINE> Display rate-limit configuration for specified ports

Default

None

Command Mode

Privileged Executive

show rmon alarm

Displays RMON Alarm entries.

Syntax

- `show rmon alarm sort-reverse`

Command Parameters

sort-reverse Display RMON Alarm entries in reversed order

Default

None

Command Mode

Privileged Executive

show rmon ethernet history

Displays RMON ethernet history data.

Syntax

- `show rmon ethernet history [sample-set <1-65535>] [sample-range <1-2147483647> <1-2147483647>] [interval-range <hh:mm:ss> <hh:mm:ss>] [port <LINE>] delta`

Command Parameters

<hh:mm:ss> First or second history interval-range value

<1-2147483647> First or second history sample index value

delta Display deltas of consecutive history data

interval-range	Display history data for specific interval range
port <LINE>	Display history data for specific ports
sample-range	Display history data for specific sample range
sample-set <1-65535>	Display history data for specific index

Default

None

Command Mode

Privileged Executive

show rmon ethernet packets

Displays rmon ethernet packets according to their size.

Syntax

- `show rmon ethernet packets port <LINE>`

Command Parameters

port <LINE> Display rmon ethernet packets specific to port

Default

None

Command Mode

Privileged Executive

show rmon ethernet statistics

Displays rmon ethernet statistics.

Syntax

- `show rmon ethernet statistics port <LINE>`

Command Parameters

port <LINE> Display ethernet statistics for specific ports

Default

None

Command Mode

Privileged Executive

show rmon event

Displays RMON Event entries.

Syntax

- `show rmon event`

Default

None

Command Mode

Privileged Executive

show rmon history

Displays RMON History entries.

Syntax

- `show rmon history port <LINE>`

Command Parameters

port <LINE> Display rmon history for specific ports

Default

None

Command Mode

Privileged Executive

show rmon stats

Displays RMON Stats entries.

Syntax

- `show rmon stats`

Default

None

Command Mode

Privileged Executive

show running-config

Displays current configuration of system as a series of CLI commands.

Syntax

- `show running-config [verbose] [module [802.1ab] [aaa] [aaur] [adac] [apptel] [arp-inspection] [asset-id] [aur] [banner] [brouter] [cfm] [core] [dhcp-relay] [dhcp-snooping] [digicert] [eap] [energy-saver] [fa] [igmp] [ike] [interface] [ip] [ip-source-guard] [ipfix] [ipmgr] [ipsec] [ipv6] [ipv6-fhs] [l3] [l3-protocols] [lacp] [link-state] [logging] [mac-security] [macsec] [mld] [mlt] [mvr] [pim] [port-mirroring] [qos] [radius] [rate-limit] [ripng] [rmon] [rtc] [sflow] [slamon] [slpp] [snmp] [spbm] [ssh] [sshc] [ssl] [stack] [stkmon] [storm-control] [stp] [tacacs] [vlacp] [vlan]]`

Command Parameters

802.1ab	Displays the 802.1ab configuration.
aaa	Display the AAA configuration.
aaur	Displays the AAUR configuration.
adac	Displays the ADAC configuration.
apptel	Displays the Application Telemetry configuration.
arp-inspection	Displays the ARP Inspection configuration.
asset-id	Displays the Asset ID configuration.
aur	Displays the AUR configuration.
banner	Displays the Custom Banner configuration.
brouter	Displays the Brouter configuration.
cfm	Displays the CFM configuration.

core	Displays the Core configuration.
dhcp-relay	Displays the DHCP Relay configuration.
dhcp-snooping	Displays the DHCP Snooping configuration.
digicert	Displays the Digital Certificate configuration.
eap	Displays the EAP configuration.
energy-saver	Displays the Energy Saver configuration.
fa	Displays the Fabric Attach configuration.
igmp	Displays the IGMP configuration.
ike	Displays the IKE configuration.
interface	Displays the Interface configuration.
ip	Displays the IP configuration.
ipfix	Displays the IPFIX configuration.
ipmgr	Displays the IP Manager configuration.
ip-source-guard	Displays the IP Source Guard configuration.
ipsec	Displays the IPSEC configuration.
ipv6	Displays the IPv6 configuration.
ipv6-fhs	Displays the IPv6 first hop security (FHS) configuration.
l3	Displays the Layer 3 configuration.
l3-protocols	Displays the Layer 3 protocols configuration.
lACP	Displays the LACP configuration.
link-state	Displays the Link State Tracking configuration.
logging	Displays the System Logging configuration.
mac-security	Displays the MAC Security configuration.
macsec	Displays the MACsec configuration.
mld	Displays the MLD configuration.

mlt	Displays the MLT configuration.
module	Displays the configuration of an application.
mvr	Displays the MVR configuration.
PIM	Displays the Protocol Independent Multicast (PIM) configuration.
poe	Displays the PoE configuration.
port-mirroring	Displays the Port Mirroring configuration.
qos	Displays the QoS configuration.
radius	Displays the RADIUS configuration.
rate-limit	Displays the Rate Limiting configuration.
ripng	Displays the RIPng configuration.
rmon	Displays the RMON configuration.
rtc	Displays the RTC configuration.
sflow	Displays the sFlow configuration.
slamon	Displays the SLAMon configuration.
slpp	Displays the SLPP configuration.
snmp	Displays the SNMP configuration.
spbm	Displays the SPBM configuration.
ssh	Displays the SSH configuration.
sshc	Displays the SSHC configuration.
ssl	Displays the SSL configuration.
stack	Displays the Stack configuration.
stkmon	Displays the Stack Monitor configuration.
storm-control	Displays the storm-control configuration.
stp	Displays the STP configuration.
tacacs	Displays the TACACS+ configuration.

verbose Displays the entire configuration. (defaults and non-defaults)

vlacp Displays the VLACP configuration.

vlan Displays the VLAN configuration.

Default

None

Command Mode

Privileged Executive

show script

Displays ASCII configuration script table entries.

Syntax

• `show script [status] <1-127> [block]`

Command Parameters

<1-127> Index of the ASCII configuration script table entry

block Display script block

status Display script status

Default

None

Command Mode

Privileged Executive

show serial-console

Displays current serial console port access.

Syntax

• `show serial-console unit <1-8>`

Command Parameters

unit <1-8> Unit number

Default

None

Command Mode

Privileged Executive

show snmp-server

Displays the SNMP configuration.

Syntax

- `show snmp-server {community | engine-id <WORD>|host | notification-control <WORD> | notify-filter | user | view}`

Command Parameters

community	Displays the SNMP community strings.
engine-id <WORD>	Displays the Engine-ID information.
host	Displays the SNMP trap destinations.
notification-control <WORD>	Displays the notification control table.
notify-filter	Displays the SNMP notify filter configuration.
user	Displays the SNMP users.
view	Displays the SNMP views.

Default

None

Command Mode

Privileged Executive

show sntp

Displays Simple Network Time Protocol (SNTP).

Syntax

- `show sntp`

Default

None

Command Mode

Privileged Executive

show spanning-tree 802dot1d-port-compliance

Displays 802dot1d port compliance mode.

Syntax

- `show spanning-tree 802dot1d-port-compliance`

Default

None

Command Mode

Privileged Executive

show spanning-tree bpdu-filtering

Displays BPDU filtering configuration.

Syntax

- `show spanning-tree bpdu-filtering {[ethernet] port <LINE> | ignore-self}`

Command Parameters

Ethernet	Ethernet IEEE 802.3
ignore-self	Ignore bridge's own BPDUs
port <LINE>	The port list whose BPDU filtering settings will be displayed

Default

None

Command Mode

Privileged Executive

show spanning-tree config

Displays Spanning Tree configuration.

Syntax

- `show spanning-tree config [port <LINE> | vlans] vlans`

Command Parameters

<LINE>	List of ports
port	Display spanning tree status of each port
vlans	Display spanning-tree group VLAN members

Default

None

Command Mode

Privileged Executive

show spanning-tree cost-calc-mode

Displays pathcost type.

Syntax

- `show spanning-tree cost-calc-mode`

Default

None

Command Mode

Privileged Executive

show spanning-tree mode

Displays Spanning Tree operation mode.

Syntax

- `show spanning-tree mode`

Default

None

Command Mode

Privileged Executive

show spanning-tree port

Displays spanning tree status of each port.

Syntax

- `show spanning-tree port {<LINE> | vlans}`

Command Parameters

<LINE> List of ports

vlans Display spanning-tree group VLAN members

Default

None

Command Mode

Privileged Executive

show spanning-tree port-mode

Displays spanning-tree port membership mode.

Syntax

- `show spanning-tree port-mode`

Default

None

Command Mode

Privileged Executive

show spanning-tree stp

Displays spanning-tree configuration for specified group ID.

Syntax

- `show spanning-tree stp <1-8> {config vlans | {port <LINE>|vlans} | vlans}`

Command Parameters

<LINE>	List of ports
config	Display Spanning Tree configuration
port	Display spanning tree status of each port
vlans	Display spanning-tree group VLAN members

Default

None

Command Mode

Privileged Executive

show spanning-tree vlans

Displays spanning-tree group VLAN members.

Syntax

- `show spanning-tree vlans`

Default

None

Command Mode

Privileged Executive

show ssh banner

Displays the SSH Banner.

Syntax

- `show ssh banner`

Default

None

Command Mode

Privileged Executive

show ssh download-auth-key

Display auth key TFTP download info

Syntax

- `show ssh download-auth-key`

Default

None

Command Mode

Privileged Executive

show ssh global

Display general SSH settings

Syntax

- `show ssh global`

Default

None

Command Mode

Privileged Executive

show ssh session

Display SSH session info

Syntax

- `show ssh session`

Default

None

Command Mode

Privileged Executive

show ssl

Displays SSL configuration

Syntax

- `show ssl [certificate]`

Command Parameters

certificate Displays digital certificate information

Default

None

Command Mode

Privileged Executive

show stack health

Displays the status of each stacking link.

Syntax

- `show stack health`

Default

None

Command Mode

Privileged Executive

show stack-info

Displays stack information.

Syntax

- `show stack-info uptime`

Command Parameters

uptime Display stack up-time for each unit

Default

None

Command Mode

Privileged Executive

show stack-monitor

Displays stack-monitor configuration.

Syntax

- `show stack-monitor`

Default

None

Command Mode

Privileged Executive

show storm-control

Display the storm-control configuration.

Syntax

- `show storm-control [all] [broadcast] [multicast] [unicast]`

Command Parameters

all Displays storm control settings for all types of traffic.

broadcast Displays storm control settings for broadcast traffic.

multicast Displays storm control settings for multicast traffic.

unicast Displays storm control settings for unicast traffic.

Default

None

Command Mode

Privileged Executive

show storm-control interface

Display the storm-control configuration for the interface selected.

Syntax

- `show storm-control interface Ethernet <LINE>`

Command Parameters

<LINE> Displays storm control settings for a port or list of ports.

Ethernet Displays storm control settings for the Ethernet interface.

Default

None

Command Mode

Privileged Executive

show sys-info

Displays system information.

Syntax

- `show sys-info`

Default

None

Command Mode

Privileged Executive

show system

Displays consolidated system information.

Syntax

- `show system {last-exception unit<1-8>|all} | verbose`

Command Parameters

last-exception	Display last software exception information.
unit <1-8> all	Display last exception for a specified unit
verbose	Display verbose system information

Default

None

Command Mode

Privileged Executive

show tacacs

Displays current TACACS+ server/port/key configuration.

Syntax

- `show tacacs`

Default

None

Command Mode

Privileged Executive

show tdr

Displays TDR test results.

Syntax

- `show tdr <WORD>`

Command Parameters

<WORD>	List of ports

Default

None

Command Mode

Privileged Executive

show telnet

Shows telnet active sessions.

Syntax

- `show telnet sessions`

Command Parameters

sessions Displays telnet active sessions

Default

None

Command Mode

Privileged Executive

show telnet-access

Displays configuration of telnet access.

Syntax

- `show telnet-access`

Default

None

Command Mode

Privileged Executive

show tftp-server

Shows the TFTP Server IP address.

Syntax

- `show tftp-server`

Default

None

Command Mode

Privileged Executive

show trace

Displays trace information.

Syntax

```
• show trace {level | modid-list | status}
```

Command Parameters

level	Display info for active trace module
list	Display info for all trace modules
status	Display trace status

Default

None

Command Mode

Privileged Executive

show usb-files

Shows USB files.

Syntax

```
• show usb-files {ascii <WORD> unit <1-8> | binary <WORD> unit <1-8> |  
  dir <WORD> {tree unit<1-8>|unit<1-8> tree} | unit <1-8> {tree  
  dir<WORD>|dir<WORD> tree}}
```

Command Parameters

<WORD>	The filename which will be displayed
ascii	Display the ASCII contents of a file.
binary	Display the binary contents of a file.

dir Displays files from a specific directory

tree List subdirectories recursively

unit <1-8> Unit

Default

None

Command Mode

Privileged Executive

show usb-host-port

Shows USB host port info.

Syntax

• `show usb-host-port {all | unit <1-8>}`

Command Parameters

all Display USB host port info for all units

unit <1-8> Display USB host port info of an unit in stack

Default

None

Command Mode

Privileged Executive

show vlacp

Displays VLACP configuration.

Syntax

• `show vlacp interface <LINE>`

Command Parameters

<LINE> List of ports

interface Display VLACP configuration for specified interfaces

Default

None

Command Mode

Privileged Executive

show vlan

Displays VLAN information.

Syntax

- `show vlan [configcontrol] [dhcp-relay] [i-sid] [id] [igmp] [interface] [ip] [mgmt] [multicast] [remote-span] [summary] [type] [voice-vlan]`

Default

None

Command Mode

Privileged Executive

show vlan configcontrol

Displays VLAN control mode.

Syntax

- `show vlan configcontrol`

Default

None

Command Mode

Privileged Executive

show vlan dhcp-relay

Displays DHCP relay info for a particular VLAN.

Syntax

- `show vlan dhcp-relay <LINE>`

Command Parameters

<LINE> VLAN list

Default

None

Command Mode

Privileged Executive

Command Output

The following table shows the field descriptions for the **show vlan dhcp-relay** command.

Field	Description
IfIndex	Indicates the VLAN interface index.
MIN_SEC	Indicates the min-sec value. The switch immediately forwards a BootP/DHCP packet if the secs field in the BootP/DHCP packet header is greater than the configured min-sec value; otherwise, the packet is dropped.
ENABLED	Indicates whether DHCP relay is enabled on the VLAN.
MODE	Indicates the type of DHCP packets this interface supports. Options include none, BootP, DHCP, and both.
ALWAYS_BROADCAST	Indicates whether DHCP reply packets are broadcast to the DHCP client on this VLAN interface.
OPTION_82	Indicates if Option 82 for DHCP Relay is enabled or disabled on the VLAN.

Example

The following is an example for the **show vlan dhcp-relay** command output:

```
Switch#show vlan dhcp-relay
=====
DHCP Relay Interface VLAN
=====
IfIndex    MIN_SEC    ENABLED    MODE      ALWAYS_BROADCAST    OPTION_82
-----
10001      0          True      Both      Disabled             Disabled
```

show vlan id

Displays specific VLAN.

Syntax

- show vlan id line type {port | protocol-decEther2 | protocol-decOtherEther2 | protocol-ipEther2 | protocol-ipv6Ether2 | protocol-ipx802.2 | protocol-ipx802.3 | protocol-ipxEther2 | protocol-ipxSnap | protocol-Netbios | protocol-RarpEther2 | protocol-sna802.2 | protocol-snaEther2 | protocol-Userdef {all | ether | llc | snap} | protocol-**

```
vinesEther2 | protocol-xnsEther2 | spbm-bvlan | spbm-switchedUni |
voice-vlan}
```

Command Parameters

all	Display All Userdef VLANs
ether	Display Ethernet II Userdef VLANs
LINE	VLAN list
llc	Display LLC Userdef VLANs
port	Display port-based VLANs
protocol-decEther2	Display decEther2 VLANs
protocol-decOtherEther2	Display decOtherEther2 VLANs
protocol-ipEther2	Display ipEther2 VLANs
protocol-ipv6Ether2	Display ipv6Ether2 VLANs
protocol-ipx802.2	Display ipx802.2 VLANs
protocol-ipx802.3	Display ipx802.3 VLANs
protocol-ipxEther2	Display ipxEther2 VLANs
protocol-ipxSnap	Display ipxSnap VLANs
protocol-Netbios	Display Netbios VLANs
protocol-RarpEther2	Display RarpEther2 VLANs
protocol-sna802.2	Display sna802.2 VLANs
protocol-snaEther2	Display snaEther2 VLANs
protocol-Userdef	Display Userdef VLANs
protocol-vinesEther2	Display vinesEther2 VLANs
protocol-xnsEther2	Display xnsEther2 VLANs
snap	Display SNAP Userdef VLANs
spbm-bvlan	Display SPBM B-VLANs
spbm-switchedUni	Display SPBM switched UNI VLANs

type Display specific type of VLAN

voice-vlan Display voice VLANs

Default

None

Command Mode

Privileged Executive

show vlan igmp

Displays IGMP snoop settings.

Syntax

- `show vlan igmp {<LINE> | unknown-mcast-allow-flood <1-4094> | unknown-mcast-no-flood}`

Command Parameters

<1-4094> Vlan ID

<LINE> VLAN list

unknown-mcast-allow-flood Display list of multicast MAC addresses for which flooding is allowed

unknown-mcast-no-flood Display setting for flooding packets with unknown multicast addresses

Default

None

Command Mode

Privileged Executive

show vlan interface

Displays VLAN configuration for specified interfaces.

Syntax

- `show vlan interface {info | verbose | private-vlan | vids} <LINE>`

Command Parameters

<LINE>	Port list
info	Display VLAN-related settings of ports
private-vlan	Displays the Private VLAN configuration.
verbose	Display VLAN-related settings and membership of ports
vids	Display VLAN membership of ports

Default

None

Command Mode

Privileged Executive

show vlan ip

Displays IP info for VLANs.

Syntax

- **show vlan ip [id <LINE>] summary**

Command Parameters

id <LINE>	display for specific VLAN ID
summary	Display vlan ip summary

Default

None

Command Mode

Privileged Executive

Command OutputThe following table shows the field descriptions for the **show vlan ip** command.

Field	Description
Vid	Specifies the VLAN ID.
ifIndex	Specifies an Index entry for the interface.
Address	Specifies the IP address associated with the VLAN.

Table continues...

Field	Description
Mask	Specifies the mask.
MacAddress	Specifies the MAC address associated with the VLAN.
Offset	Specifies the value used to calculate the VLAN MAC address, which is offset from the switch MAC address.
Routing	Specifies the status of routing on the VLAN: enabled or disabled.

Example

The following example displays the IP information for VLAN ID 1:

```
Switch#show vlan ip id 1
=====
Vid  ifIndex Address          Mask          MacAddress      Offset Routing
=====
Primary Interfaces
-----
1    10001  172.16.120.20  255.255.255.0  D4:EA:0E:1C:24:40 1      Enabled
Total VLAN IP entries: 1
```

show vlan i-sid

Displays the C-VLAN to I-SID associations.

Syntax

- **show vlan i-sid** <1-4094>

Command Parameters

<1-4094> Specifies the VLAN ID.

Default

None

Command Mode

Privileged Executive

Command Output

The **show vlan i-sid** command displays the following information:

Output field	Description
VLAN_ID	Indicates the VLAN IDs.
I-SID	Indicates the I-SIDs associated with the specified CVLANs.

Example

The following example displays the output for this command.

```
Switch#show vlan i-sid
=====
                        Vlan I-SID
=====
VLAN_ID    I-SID
-----
1
2
5           5
10
20
```

show vlan mgmt

Displays mgmt vlan ID.

Syntax

- **show vlan mgmt**

Default

None

Command Mode

Privileged Executive

show vlan multicast

Displays VLAN multicast configuration.

Syntax

- **show vlan multicast membership <1-4094>**

Command Parameters

<1-4094>	Specifies the VLAN ID.
membership	Displays VLAN multicast membership.

Default

None

Command Mode

Privileged Executive

show vlan private-vlan

Displays the Private VLAN configuration.

Syntax

- `show vlan private-vlan`

Default

None

Command Mode

Privileged Executive

show vlan remote-span

Displays Rspan VLANs.

Syntax

- `show vlan remote-span`

Default

None

Command Mode

Privileged Executive

show vlan summary

Displays a summary of VLANs.

Syntax

- `show vlan summary`

Default

None

Command Mode

Privileged Executive

show vlan type

Displays specific type of VLAN.

Syntax

```
• show vlan type {port | protocol-decEther2 | protocol-ipEther2 |
  protocol-ipv6Ether2 | protocol-ipx802.2 | protocol-ipx802.3 |
  protocol-ipxEther2 | protocol-ipxSnap | protocol-Netbios | protocol-
  RarpEther2 | protocol-sna802.2 | protocol-snaEther2 | protocol-Userdef
  {all | ether | llc | snap} | protocol-vinesEther2 | protocol-xnsEther2
  | spbm-bvlan | spbm-switchedUni | voice-vlan}
```

Command Parameters

all	Display All Userdef VLANs
ether	Display Ethernet II Userdef VLANs
llc	Display LLC Userdef VLANs
port	Display port-based VLANs
protocol-decEther2	Display decEther2 VLANs
protocol-ipEther2	Display ipEther2 VLANs
protocol-ipv6Ether2	Display ipv6Ether2 VLANs
protocol-ipx802.2	Display ipx802.2 VLANs
protocol-ipx802.3	Display ipx802.3 VLANs
protocol-ipxEther2	Display ipxEther2 VLANs
protocol-ipxSnap	Display ipxSnap VLANs
protocol-Netbios	Display Netbios VLANs
protocol-RarpEther2	Display RarpEther2 VLANs
protocol-sna802.2	Display sna802.2 VLANs
protocol-snaEther2	Display snaEther2 VLANs
protocol-Userdef	Display Userdef VLANs
protocol-vinesEther2	Display vinesEther2 VLANs
protocol-xnsEther2	Display xnsEther2 VLANs

snap	Display SNAP Userdef VLANs
spbm-bvlan	Display SPBM B-VLANs
spbm-switchedUni	Display SPBM switched UNI VLANs
voice-vlan	Display voice VLANs

Default

None

Command Mode

Privileged Executive

show vlan voice-vlan

Displays voice VLANs.

Syntax

- `show vlan voice-vlan`

Default

None

Command Mode

Privileged Executive

show web-server

Displays web server status.

Syntax

- `show web-server`

Default

None

Command Mode

Privileged Executive

shutdown

Saves configuration and shutdown the switch/stack.

Syntax

- `shutdown {cancel | [force] minutes-to-wait <1-60>}`

Command Parameters

cancel	Cancel a previous scheduled shutdown
force	Do not ask for confirmation
minutes-to-wait <1-60>	Number of minutes to wait before reset

Default

None

Command Mode

Privileged Executive

stack auto-unit-replacement config

Modifies AUR operational settings.

Syntax

- `stack auto-unit-replacement config {restore unit <1-8>} | save {disable |enable |unit <1-8>}`

Command Parameters

disable	Disable AUR auto-save
enable	Enable AUR auto-save
restore	Restore configuration of a unit from the saved configuration on the base unit
save	Enable/disable auto-save of unit configuration to base unit
unit	Force immediate save of NBU config to BU
unit <1-8>	select unit

Default

None

Command Mode

Privileged Executive

stack auto-unit-replacement remove-mac-address

Removes a unit's MAC address from the AUR cache.

Syntax

- `stack auto-unit-replacement remove-mac-address unit <1-8>`

Command Parameters

unit <1-8> select unit

Default

None

Command Mode

Privileged Executive

stack loopback-test

Stacks ports loopback test.

Syntax

- `stack loopback-test {external | internal}`

Command Parameters

external External loopback test for the stack ports

internal Internal loopback test for the stack ports

Default

None

Command Mode

Privileged Executive

tdr

TDR test commands

Syntax

- `tdr test <WORD>`

Command Parameters

<WORD>	List of ports
test	Start TDR tests

Default

None

Command Mode

Privileged Executive

toggle-next-boot-image

Toggles next boot image.

Syntax

- `toggle-next-boot-image`

Default

None

Command Mode

Privileged Executive

write

Writes configuration in nvram.

Syntax

- `write memory`

Command Parameters

memory	Write configuration to local NV storage

Privileged Executive

Default

None

Command Mode

Privileged Executive

Chapter 11: RA Guard Configuration

This chapter provides information related to the RA Guard configuration commands.

device-role (RA Guard Configuration)

Enables verification of the role of the device attached to the port.

Syntax

- `default device-role`
- `device-role {router|host}`

Command Parameters

host	Configures a device as host.
router	Configures a device as router.

Default

The default is router.

Command Mode

RA Guard Configuration

hop-limit

Enables verification of the advertised hop count limit. By default the minimum and maximum limit will be 0. If the limit is 0, the hop-limit check is bypassed. If maximum and minimum value are 0, then hop-limit check is ignored.

Syntax

- `default hop-limit [maximum] [minimum]`
- `hop-limit {[maximum <0-255>] | [minimum <0-255>]}`

Default

The default is 0.

Command Mode

RA Guard Configuration

managed-config-flag

Enables verification of the managed address configuration flag in the advertised router advertisement (RA) packet. By default the value is none. If configured to none, the check is bypassed.

Syntax

- `default managed-config-flag`
- `managed-config-flag {none|on|off}`

Command Parameters

none Specifies the managed config flag to none, which means this check is bypassed.

off Specifies the managed config flag as off.

on Specifies the managed config flag as on.

Default

The default is none.

Command Mode

RA Guard Configuration

match ipv6 access-list

Configure source IP access list to allow only router advertisement (RA) packets that originate from the source IP address you specify.

Syntax

- `default match ipv6 access-list <WORD>`
- `match ipv6 access-list <WORD>`
- `no match ipv6 access-list <WORD>`

Command Parameters

<WORD> Specifies the IPv6 address.

Default

The default is disabled.

Command Mode

RA Guard Configuration

match mac-access-list

Configure the device to verify the source MAC of the received router advertisement (RA) packet.

Syntax

- `default match mac-access-list <WORD>`
- `match mac-access-list <WORD>`
- `no match mac-access-list <WORD>`

Command Parameters

<WORD> Specifies the IPv6 address.

Default

The default is disabled.

Command Mode

RA Guard Configuration

match ra prefix-list

Configure the device to verify the prefixes sent in the router advertisement (RA) packets.

Syntax

- `default match ra prefix-list <WORD>`
- `match ra prefix-list <WORD>`
- `no match ra prefix-list <WORD>`

Command Parameters

<WORD> Specifies the IPv6 address.

Default

The default is disabled.

Command Mode

RA Guard Configuration

match reply prefix-list

Enables verification of the advertised prefixes in DHCP reply messages from the configured authorized prefix list. If not configured, this check is bypassed. An empty prefix list is treated as permit.

Syntax

- `default match reply prefix-list <WORD>`
- `match reply prefix-list <WORD>`
- `no match reply prefix-list <WORD>`

Command Parameters

<WORD> Specifies the prefix list name.

Default

The default is disabled.

Command Mode

RA Guard Configuration

match server access-list

Enables verification of the IPv6 address of the sender in inspected messages from the configured authorized device source access list.

Syntax

- `default match server access-list <WORD>`
- `match server access-list <WORD>`
- `no match server access-list <WORD>`

Command Parameters

<WORD> Specifies the IPv6 access list name.

Default

The default is disabled.

Command Mode

RA Guard Configuration

router-preference maximum

Enables verification of the advertised default router-preference parameter value is lower than or equal to the specified limit.

Syntax

- `default router-preference maximum`
- `router-preference maximum {none|high|low|medium}`

Command Parameters

- high** Specifies the router-preference to high.
- low** Specifies the router-preference to low.
- medium** Specifies the router-preference to medium.
- none** Specifies the router-preference to none, which means the verification is bypassed.

Default

By default the value is none.

Command Mode

RA Guard Configuration

Chapter 12: RIP Router Configuration

This chapter provides information related to the RIP Router configuration commands.

default-metric

Configures the default RIP metric value.

Syntax

- `default default-metric`
- `default-metric <metric_value>`

Command Parameters

<metric_value> Specifies a metric value between 0 and 15

Default

None

Command Mode

RIP Router Configuration

end (RA Guard Configuration)

Exits from RA Guard configure mode.

Syntax

- `end`

Default

None

Command Mode

RIP Router Configuration

end (RIP Router Configuration)

Exits from router configure mode.

Syntax

- **end**

Default

None

Command Mode

RIP Router Configuration

exit (RA Guard Configuration)

Exits from RA Guard configuration mode.

Syntax

- **exit**

Default

None

Command Mode

RIP Router Configuration

exit (RIP Router Configuration)

Exits from router configuration mode.

Syntax

- **exit**

Default

None

Command Mode

RIP Router Configuration

network (RIP Router Configuration)

Enables RIP on an IP interface.

Syntax

- `network {A.B.C.D}`
- `no network {A.B.C.D}`

Command Parameters

{A.B.C.D} IP address of the interface

Default

None

Command Mode

RIP Router Configuration

timers basic

Sets the RIP global timeout, holddown timer, and update timer.

Syntax

- `default timers basic [holddown] [timeout] [update]`
- `timers basic holddown <holddown-timer> timeout <global-timeout> update <update-timer>`

Command Parameters

<global-timeout>	Specifies the global timeout interval parameter. If a RIP router does not receive an update from another RIP router within the configured timeout period, it moves the routes advertised by the nonupdating router to the garbage list. The timeout interval must be greater than the update timer. Range is 15–259200 seconds. Default is 180 seconds.
<holddown-timer>	Specifies the global holddown timer, which is the length of time (in seconds) that RIP maintains a route in the garbage list after determining that it is unreachable. During this period, RIP continues to advertise the garbage route with a metric of infinity (16). If a valid update for a garbage route is received within the holddown period, the router adds the route back into its routing table. If no update is received, the router deletes the garbage list entry. Range is 0–360 seconds. Default is 120 seconds.
<update-timer>	Specifies a value for the RIP update timer, which is the time interval (in seconds) between regular RIP updates. The update timer value must be less than the timeout interval. Range is 0–360 seconds. Default is 30 seconds.

default Returns the parameters to the factory default timer values: holddown timer: 120 seconds; global timeout: 180 seconds; update timer: 30 seconds.

Default

None

Command Mode

RIP Router Configuration

trap (RIP Router Configuration)

Enable RIP traps.

Syntax

- `default trap`
- `no trap`
- `trap`

Default

None

Command Mode

RIP Router Configuration

Chapter 13: User Executive

This chapter provides information related to the User Executive commands.

enable

Turns on privileged commands.

Syntax

- **enable**

Default

None

Command Mode

User Executive

exit

Exits from the EXEC.

Syntax

- **exit**

Default

None

Command Mode

User Executive

help

Description of the interactive help system.

Syntax

```
• help [commands] [mode] {application | config | current | dhcp-guard |
  exec | ifconfig | interface {Ethernet | loopback | mgmt | vlan} |
  privExec | ra-guard | router {isis | ospf | rip | vrrp}} [modes]
```

Command Parameters

application	Displays commands available in Application Configuration mode
commands	Displays commands available
config	Displays commands available in Global Configuration mode
current	Displays commands available in current configuration mode
dhcp-guard	Shows commands available in DHCP-Guard mode
Ethernet	Displays commands available in Ethernet Interface Configuration mode
exec	Displays commands available in executive mode
ifconfig	Displays commands available in Interface Configuration mode
interface	Displays commands available in Interface Configuration modes
isis	Displays commands available in ISIS Router Configuration mode
loopback	Displays commands available in interface Loopback Configuration mode
mgmt	Displays commands available in Management Interface Configuration mode
mode	Displays commands available on specific mode
modes	Displays available modes
ospf	Displays commands available in OSPF Router Configuration mode
privExec	Displays commands available in Privileged Executive mode
ra-guard	Displays commands available in RA-Guard mode
rip	Displays commands available in RIP Router Configuration mode
router	Displays commands available in Router Configuration modes
vlan	Displays commands available in VLAN Interface Configuration mode
vrrp	Displays commands available in VRRP Router Configuration mode

Default

None

Command Mode

User Executive

I2 ping

Trigger a Connectivity Fault Management (CFM) loopback message (LBM).

Syntax

- `i2 ping [vlan <1-4094> | ip-address {A.B.C.B}] [mac <H.H.H> | routernodename <WORD>] [burst-count <1-200>] [data-tlv-size <0-400>] [frame-size <64-1500>] [priority <0-7>][source-mode {nodal|smltVirtual}] [testfill {allZero | allZeroCrc | pseudoRandomBitSequence | pseudoRandomBitSequenceCrc}] [time-out <1-10>]`

Command Parameters

burst-count <1-200>	Specifies the number of packets.
data-tlv-size <0-400>	Specifies the data TLV size.
frame-size <64-1500>	Specifies the packet size.
ip-address {A.B.C.D}	Specifies IP address.
mac <H.H.H>	Specifies the destination MAC address.
priority <0-7>	Specifies the priority
routernodename <WORD>	Specifies the destination node name
source-mode {nodal smltVirtual}	Specifies the source modes of the transmit loopback service as either nodal or smltVirtual. The default is nodal.
testfill-pattern {allZero allZeroCrc pseudoRandomBitSequence pseudoRandomBitSequenceCrc}	Specifies the fill pattern.
time-out <1-10>	Specifies the timeout in seconds.
vlan <1-4094>	Specifies the destination VLAN.

Default

None

Command Mode

User Executive

I2 tracemroute source

Verifies SPBM IP multicast routes.

Syntax

- `l2 tracemroute {source A.B.C.D <1.2.3.4> group A.B.C.D <1.2.3.4> vlan <1-4096> {priority <0-7> |ttl <1-255>}}`

Command Parameters

group {A.B.C.D}	Specifies the multicast group address.
priority <0-7>	Specifies the priority. The default is 7.
source {A.B.C.D}	Specifies the source address.
ttl-value <1-255>	Specifies the time-to-live value for the trace.
vlan <1-4084>	Specifies the VLAN ID.

Default

None

Command Mode

User Executive

I2 traceroute

Trigger a Connectivity Fault Management (CFM) linktrace message (LTM).

Syntax

- `l2 traceroute [<vlan <1-4094> | ip-address <ip>] [routernodename WORD<0-255>] [mac <H.H.H>] [priority <0-7>] [ttl <1-255>]`

Command Parameters

ip-address {A.B.C.D}	Specifies IP address.
mac <H.H.H>	Specifies the MAC address.
priority <0-7>	Specifies the priority.

routernodename <WORD>	Specifies the destination node name.
ttl <1-255>	Specifies the time to live (TTL).
vlan <1-4094>	Specifies the destination VLAN.

Default

None

Command Mode

User Executive

I2 tracetree

Trigger a Connectivity Fault Management (CFM) multicast linktrace message (LTM).

Syntax

- **i2 tracetree vlan <1-4094> i-sid <1-16777215> {mac <H.H.H> | routernodename <WORD>} [source-mode {nodal|smltVirtual}] [priority <0-7>] [ttl <1-255>]**

Command Parameters

i-sid <1-16777215>	Specifies the Instance identifier (I-SID).
mac <H.H.H>	Specifies the destination MAC address.
priority <0-7>	Specifies the priority.
routernodename <WORD>	Specifies the destination node name.
source-mode {nodal smltVirtual}	Specifies the source modes of the transmit loopback service as either nodal or smltVirtual. The default is nodal.
ttl <1-255>	Specifies the time to live (TTL).
vlan <1-4094>	Specifies the destination VLAN.

Default

None

Command Mode

User Executive

logout

Exits from the EXEC and end the current session.

Syntax

- `logout`

Default

None

Command Mode

User Executive

ping

Sends echo messages.

Syntax

- `ping {<Host-name> | A.B.C.D | <WORD>} [continuous] [count <1-9999>] [datasize <64-4096>] [debug] [interval <1-60>] [scopeid {<1-4094> | loopback <1-16>} mgmt}] [source {<A.B.C.D>|<WORD>}] [timeout <1-120>] [ttl <0-255>] [-t <1-120>]`

Command Parameters

<Host-name> <A.B.C.D>	Specifies the hostname or IP address to ping.
<WORD>	Specifies the IPv6 address to ping.
continuous	Configures ping in continuous mode.
count <1-9999>	Specifies the number of packets.
datasize <64-4096>	Specifies the packet size.
debug	Enables ping debug.
interval <1-60>	Specifies the interval to retransmit in seconds.
loopback <1-16>	Specifies the loopback interface.
scopeid <1-4094>	Specifies the interface VLAN ID for link-local or multicast addresses.
source {A.B.C.D}	Specifies the source address for ping.
-t <1-120>	Specifies the timeout in seconds.

timeout <1-120> Specifies the timeout in seconds.

tll <0-255> Specifies the time to live (TTL) for packet.

Default

None

Command Mode

User Executive

run

Specialized scripted CLI commands for automated configuration.

Syntax

- **run {adac | ipoffice [verbose] | lldp | spbm}**

Command Parameters

adac Scripted CLI commands for ADAC setup

ipoffice Scripted CLI commands for setup with IP Office solutions

lldp Scripted CLI commands for LLDP setup

spbm Scripted CLI commands for SPBM setup

verbose User input prompted CLI command script for IP Office solution setup

Default

None

Command Mode

User Executive

show application

Displays settings for various applications.

Syntax

- **show application slamon agent**

Command Parameters

agent	Display SLAMon agent settings
slamon	Display SLAMon settings

Default

None

Command Mode

User Executive

show arp

Displays ARP entries.

Syntax

- **show arp** [**A.B.C.D**] [**add-fail**] [**dynamic** **<A.B.C.D>**] [**<H.H.H>**] [**static** **<A.B.C.D>**] [**summary**] [**-s** **<A.B.C.D>** **<subnet-mask>**] [**vlan** **<1-4094>**]

Command Parameters

<A.B.C.D>	Specifies the IP address of the ARP entry to be displayed.
add-fail	Displays ARP entries not programmed in hardware.
dynamic <A.B.C.D>	Includes dynamic ARP entries without a valid route.
H.H.H	Specifies the MAC address of the ARP entry to be displayed. Valid formats include: H.H.H or xx:xx:xx:xx:xx:xx or xx.xx.xx.xx.xx.xx or xx-xx-xx-xx-xx-xx).
-s <A.B.C.D> <subnet-mask>	Specifies an IP and subnet of ARP entries to be displayed.
static <ip-addr>	Includes static ARP entries without a valid route.
summary	Displays the summary of ARP entries.
vlan <1-4094>	Displays ARP entries for a specific VLAN.

Default

None

Command Mode

User Executive

show arp-table

Displays system ARP table.

Syntax

- **show arp-table** [mgmt-port]

Command Parameters

mgmt-port Displays the number of ARP entries.

Default

None

Command Mode

User Executive

Command Output

The following table shows the field descriptions for the **show arp-table** command.

Field	Description
Port	Specifies the port of the ARP entry.
IP Address	Specifies the IP address of the ARP entry.
MAC Address	Specifies the MAC address of the ARP entry.

Example

The following is an example for the **show arp-table** command output:

```
Switch>show arp-table
Total number of ARP entries: 2

Port IP Address      MAC Address
-----
1    172.16.120.1      00:09:0F:09:00:06
1    172.16.120.25     E4:5D:52:3C:65:00
```

show auto-pvid

Shows Auto-PVID mode.

Syntax

- **show auto-pvid**

Default

None

Command Mode

User Executive

show boot

Displays boot settings.

Syntax

- `show boot {diag | image [primary] [secondary]}`

Command Parameters

diag	Display information about the diag images
image	Display information about images
primary	Display primary image software version
secondary	Display secondary image software version

Default

None

Command Mode

User Executive

show brouter

Displays brouter ports information.

Syntax

- `show brouter port <LINE>`

Command Parameters

port <LINE>	Select port for operation

Default

None

Command Mode

User Executive

show cfm

Displays CFM information.

Syntax

- `show cfm spbm`

Command Parameters

spbm Display CFM SPBM information

Default

None

Command Mode

User Executive

show cli list

Display the CLI tree list.

Syntax

- `show cli list [mode {application | config | current | dhcp-guard | exec | ifconfig | interface <Ethernet|loopback|vlan> | privExec | ra-guard router <ospf|rip|vrrp>}] [verbose]`

Command Parameters

application	Displays commands available in Application Configuration mode.
config	Displays commands available in Global Configuration mode.
current	Displays commands available in current configuration mode.
dhcp-guard	Displays commands available in DHCP Guard Configuration mode.
Ethernet	Displays commands available in Ethernet Interface Configuration mode.
exec	Displays commands available in executive mode.
ifconfig	Displays commands available in Interface Configuration mode.
interface	Displays commands available in Interface Configuration modes.
mode	Displays commands available in Loopback Interface Configuration mode.
mode	Displays commands available on specific mode.

ospf	Displays commands available in OSPF Router Configuration mode.
privExec	Displays commands available in Privileged Executive mode.
ra-guard	Displays commands available in RA Guard Configuration mode.
rip	Displays commands available in RIP Router Configuration mode.
router	Displays commands available in Router Configuration mode.
verbose	Lists the CLI tree and all commands syntax.
vlan	Displays commands available in VLAN Interface Configuration mode.
vrrp	Displays commands available in VRRP Router Configuration mode.

Default

None

Command Mode

User Executive

show cpu-utilization

Displays CPU utilization info.

Syntax

- `show cpu-utilization unit <1-8>`

Command Parameters

unit <1-8>	Unit number

Default

None

Command Mode

User Executive

show ddi-logging

Displays DDI Logging on ports

Syntax

- `show ddi-logging`

Default

None

Command Mode

User Executive

show ecmp

Displays ECMP settings.

Syntax

- `show ecmp`

Default

None

Command Mode

User Executive

show edm

Displays EDM configuration.

Syntax

- `show edm {help-file-path | inactivity-timeout}`

Command Parameters

help-file-path	Display EDM help file path
inactivity-timeout	Display EDM inactivity timeout

Default

None

Command Mode

User Executive

show energy-saver

Displays energy saver settings and status.

Syntax

- `show energy-saver`

Default

None

Command Mode

User Executive

show energy-saver interface

Displays per-port energy saver settings and status.

Syntax

- `show energy-saver interface <LINE>`

Command Parameters

<LINE> List of ports

Default

None

Command Mode

User Executive

show energy-saver savings

Displays energy saver power savings.

Syntax

- `show energy-saver savings`

Default

None

Command Mode

User Executive

show energy-saver schedule

Displays energy saver activation/deactivation schedule.

Syntax

- `show energy-saver schedule`

Default

None

Command Mode

User Executive

show enhanced-secure-mode

Displays Enhanced Secure Mode status.

Syntax

- `show enhanced-secure-mode`

Default

None

Command Mode

User Executive

show environmental

Displays environmental information.

Syntax

- `show environmental`

Default

None

Command Mode

User Executive

show fa

Displays Fabric Attach specific settings.

Syntax

```
• show fa {agent | assignment <1-16777214> | elements [auth-status
  {auth-fail | auth-pass | not-auth}] [client-type <6-17>] [element-type
  {client | proxy | server [auth-status {auth-fail | auth-pass | not-
  auth}]]] [LINE] [trunk <1-32> ] | i-sid <1-16777214> | interface |
  port-enable {disabled-auth | disabled-port | enabled-auth | enabled-
  port | LINE} | statistics [summary | <LINE>] | uplink | vlan <LINE> |
  zero-touch-client | zero-touch-options [client-data]}
```

Command Parameters

<LINE>	List of ports
agent	Displays the Fabric Attach agent status.
assignment <1-16777214>	Display Fabric Attach configured UNIs
auth-status {auth-fail auth-pass not-auth}	Display only specified authorized status
client-data	Display client data
client-type	Display only specified client type
disabled-auth	Display only disabled authorized ports
disabled-port	Display only disabled ports
elements	Displays discovered Fabric Attach elements.
element-type	Display only specified element type
enabled-auth	Display only enabled authorized ports
enabled-port	Display only enabled ports
interface	Display Fabric Attach port settings
i-sid <1-16777214>	Displays the Fabric Attach configured user-to-network interface (UNIs).
port-enable <LINE>	Displays the Fabric Attach port settings.
statistics	Displays the FA summary and per-port statistics counters.
summary	Display Fabric Attach summary statistics

trunk	Display based on trunk number
uplink	Display Fabric Attach uplink data
vlan	Displays Fabric Attach VLANs.
zero-touch-client	Displays Fabric Attach Zero Touch Client specifications
zero-touch-options	Displays Fabric Attach Zero Touch option settings.

Default

None

Command Mode

User Executive

show flash

Displays FLASH information.

Syntax

- `show flash [history] unit <1-8>`

Command Parameters

history	Display FLASH writes
unit <1-8>	Unit number

Default

None

Command Mode

User Executive

show https-only

Displays secure only status.

Syntax

- `show https-only`

Default

None

Command Mode

User Executive

show https-port

Display the TCP port on which web server will listen when SSL is enabled

Syntax

- `show https-port`

Default

None

Command Mode

User Executive

show interfaces

Displays interface status and configuration.

Syntax

- `show interfaces [admin-disabled [<LINE>] | admin-enabled [<LINE>] | gbic-info [<LINE>] | <LINE> [config | verbose] | link-down [<LINE>] | link-up [<LINE>] | loopback [<1-16>] | names [<LINE>]] [verbose]`

Command Parameters

<LINE>	Specifies a list of ports.
admin-disabled	Displays the admin disabled interfaces.
admin-enabled	Displays the admin enabled interfaces.
config	Displays interfaces configuration.
gbic-info	Displays GBIC details.
link-down	Display the interfaces with link down.
link-up	Displays the interfaces with link up.

- loopback <1-16>** Displays loopback interface information.
- names** Displays interface names.
- verbose** Displays port status information for several applications.

Default

None

Command Mode

User Executive

show interfaces gbic-info

Shows the status and configuration of GBIC interfaces.

Syntax

- **show interfaces gbic-info**[<LINE>]

Command Parameters

<LINE> Specifies a list of ports.

Default

None

Command Mode

User Executive

Command Output

The **show interfaces gbic-info** command displays the following information:

Output field	Description
Port Number	Indicates the active GBIC port.
GBIC Type	Indicates the type of SFP or SFP+ connector.
Wavelength	Indicates the wavelength in nm of the SFP or SFP+.
Vendor Name	Indicates the name of the SFP or SFP+ manufacturer.
Vendor OUI	Indicates the vendor ID of the SFP or SFP+ manufacturer.
Vendor Part #	Indicates the model of the SFP or SFP+.
Vendor Revision	Indicates the manufacturer revision level for the SFP or SFP+.
Vendor Serial	Indicates the manufacturer serial number for the SFP or SFP+.
HW Options	Indicates hardware options set for the SFP or SFP+.

Table continues...

Output field	Description
Date Code	Indicates the manufacturer date code for the SFP or SFP+.
CLEI Code	Indicates the Telcordia register assignment CLEI code.
Product Code	Indicates the part number of the device.
Calibration	Indicates if the calibration is internal or external.
Rx Power	Measurement Indicates Rx power measurement as average or OMA.
Low_AlarmThreshold	Indicates the low alarm threshold
High_AlarmThreshold	Indicates the high alarm threshold.
High_WarnThreshold	Indicates the high warning threshold
Low_WarnThreshold	Indicates the low warning threshold.
Status	Indicates if any thresholds were exceeded.
Temp(C)	Indicates the current temperature in degrees Celsius of the SFP or SFP+.
Voltage(V)	Indicates the voltage of the SFP in volts.
Bias(mA)	Indicates the laser bias current in mA.
TxPower(dBm)	Indicates the transmit power of the SFP in dBm.
RxPower(dBm)	Indicates the receive power of the SFP in dBm.

Example

The following example displays sample output from the **show interfaces gbic-info** command.

```
Switch>show interfaces gbic-info
  Port  Number      3
  GBIC   Type       SX
  Wavelength      850 nm
  Vendor Name     EXTREME NETWORKS
  Vendor OUI      00176A
  Vendor Part #   AFBR-5715PZ-NT1
  Vendor Revision N/A
  Vendor Serial   AVAGCNAS00FV1
  HW Options      TX_DISABLE TX_FAULT RX_LOSS
  Date Code       10/01/2011
  CLEI Code       IPUIAHCWAA
  Product Code    AA1419048-E6
```

Digital Diagnostic Interface supported

Calibration: Internal
Rx Power Measurement: Average

	LOW_ALARM THRESHOLD	LOW_WARN THRESHOLD	ACTUAL VALUE	HIGH_WARN THRESHOLD	HIGH_ALARM THRESHOLD	STATUS
Temp (C)	-5.000	0.000	29.468	90.000	95.000	NORMAL
Voltage (V)	2.9700	3.0200	3.2934	3.5800	3.6300	NORMAL
Bias (mA)	2.000	3.000	8.216	15.000	16.000	NORMAL
TxPower (dBm)	-9.5000	-8.9997	-5.2374	-1.9997	-1.0001	NORMAL
RxPower (dBm)	-13.0102	-11.9997	-7.3376	-1.0001	0.0000	NORMAL

show ip

Displays IP-related information.

Syntax

- `show ip [bootp] [default-gateway] [address] {source | stack | switch | unit <1-8>}`

Command Parameters

address	IP address of switch/stack
bootp	Displays bootp settings
default-gateway	IP address of default gateway
source	Display BOOTP/DHCP settings
stack	Display stack ip address
switch	Display the ip address of local unit
unit <1-8>	To display the IP address of another unit in a stack

Default

None

Command Mode

User Executive

show ip arp-inspection

Displays ARP inspection VLAN information.

Syntax

- `show ip arp-inspection vlan <LINE>`

Command Parameters

vlan <LINE>	Display ARP inspection VLAN information

Default

None

Command Mode

User Executive

show ip arp-inspection interface

Displays ARP inspection port information.

Syntax

- `show ip arp-inspection interface [Ethernet] [<LINE>]`

Command Parameters

<LINE>	List of ports
Ethernet	Ethernet IEEE 802.3

Default

None

Command Mode

User Executive

show ip arp-proxy interface

Displays Proxy ARP status.

Syntax

- `show ip arp-proxy interface vlan <1-4094>`

Command Parameters

interface	Display interface configuration
vlan <1-4094>	Layer 3 IP VLAN

Default

None

Command Mode

User Executive

Command Output

The following table shows the field descriptions for the `show ip arp-proxy interface` command.

Field	Description
Vlan	Identifies a VLAN.
Proxy ARP status	Indicates the status of Proxy ARP on the VLAN.

Example

The following is an example for the **show ip arp-proxy interface** command output:

```
Switch>show ip arp-proxy interface
```

```
=====
                        Proxy ARP Status
=====
Vlan      Proxy ARP status
-----
1         Disabled
```

show ip blocking-mode

Displays the Layer 3 IP blocking mode.

Syntax

- **show ip blocking-mode**

Default

None

Command Mode

User Executive

show ip default-ttl

Displays default TTL.

Syntax

- **show ip default-ttl**

Default

None

Command Mode

User Executive

show ip dhcp

Displays DHCP settings.

Syntax

- `show ip dhcp client lease`

Command Parameters

client	DHCP client
lease	DHCP client lease

Default

None

Command Mode

User Executive

show ip dhcp-relay

Displays DHCP relay information.

Syntax

- `show ip dhcp-relay`

Default

None

Command Mode

User Executive

show ip dhcp-relay counters

Displays DHCP relay statistics.

Syntax

- `show ip dhcp-relay counters`

Default

None

Command Mode

User Executive

Command Output

The following table shows the field descriptions for the **show ip dhcp-relay counters** command.

Field	Description
INTERFACE	Indicates the interface IP address of the DHCP relay agent.
REQUESTS	Indicates the number of DHCP requests.
REPLIES	Indicates the number of DHCP replies.

Example

The following is an example for the **show ip dhcp-relay counters** command output:

```
Switch>show ip dhcp-relay counters
=====
                DHCP Relay Counters
=====
INTERFACE          REQUESTS          REPLIES
-----
172.16.120.161      0                      0
```

show ip dhcp-relay fwd-path

Displays DHCP relay global configuration.

Syntax

- **show ip dhcp-relay fwd-path summary**

Command Parameters

summary Display DHCP relay fwd-path summary

Default

None

Command Mode

User Executive

Command Output

The following table shows the field descriptions for the **show ip dhcp-relay fwd-path** command.

Field	Description
VLAN	Indicates the VLAN IP address.
INTERFACE	Indicates the interface IP address of the DHCP relay agent.
SERVER	Indicates the IP address of the DHCP server.

Table continues...

Field	Description
ENABLE	Indicates whether DHCP is enabled.
MODE	Indicates the DHCP mode.

Example

The following is an example for the **show ip dhcp-relay fwd-path** command output:

```
Switch>show ip dhcp-relay fwd-path
=====
                        DHCP Fwd-path
=====
VLAN      INTERFACE      SERVER      ENABLE      MODE
-----
Total fwd-path entries: 0
```

show ip dhcp-relay interface

Displays DHCP relay per-interface configuration.

Syntax

- **show ip dhcp-relay interface {ethernet | vlan<1-4094>} <LINE>**

Command Parameters

Ethernet <LINE> Ethernet IEEE 802.3

vlan <LINE> VLAN interface

Default

None

Command Mode

User Executive

show ip dhcp-snooping

Displays DHCP snooping information.

Syntax

- **show ip dhcp-snooping**

Default

None

Command Mode

User Executive

show ip dhcp-snooping binding

Displays DHCP snooping binding table.

Syntax

- **show ip dhcp-snooping binding** {**address** [<A.B.C.D> | <H.H.H>] | **summary** [**port** <LINE> | **unit**] | **port** <LINE> | **unit** <1-8>}

Command Parameters

address <A.B.C.D> | <H.H.H> Display DHCP snooping binding table entry for specific MAC or IP address

port <LINE> Display DHCP snooping binding table entries for specific port

summary [**port** <LINE> | **unit**] Display DHCP snooping binding table summary

unit <1-8> Display DHCP snooping binding table entries for specific unit

Default

None

Command Mode

User Executive

show ip dhcp-snooping external-save

Displays current operating state of DHCP snooping external save.

Syntax

- **show ip dhcp-snooping external-save**

Default

None

Command Mode

User Executive

show ip dhcp-snooping interface

Displays DHCP snooping port information.

Syntax

- `show ip dhcp-snooping interface {Ethernet <LINE> | <LINE>}`

Command Parameters

<LINE>	List of ports
Ethernet <LINE>	Ethernet IEEE 802.3

Default

None

Command Mode

User Executive

show ip dhcp-snooping vlan

Displays DHCP snooping VLAN information.

Syntax

- `show ip dhcp-snooping vlan <LINE>`

Command Parameters

<LINE>	VLAN list

Default

None

Command Mode

User Executive

show ip directed-broadcast

Displays directed-broadcast forwarding mode.

Syntax

- `show ip directed-broadcast [interface] [vlan <1-4094>]`

Command Parameters

interface	Display interface configuration
vlan <1-4094>	Layer 3 IP VLAN

Default

None

Command Mode

User Executive

show ip dns

Displays DNS configuration.

Syntax

- `show ip dns`

Default

None

Command Mode

User Executive

show ip forward-protocol

Displays broadcast forwarding settings.

Syntax

- `show ip forward-protocol udp {portfwdlist <1-128> | interface [vlan <1-4094>]}`

Command Parameters

interface	Display interface configuration
portfwdlist <1-128>	Displays UDP fwdlists configured
udp	Displays UDP ports configured
vlan <1-4094>	Layer 3 IP VLAN

Default

None

Command Mode

User Executive

Command Output

The following table shows the field descriptions for the **show ip forward-protocol udp** command.

Field	Description
UDP_PORT	Indicates the UDP ports.
PROTOCOL_NAME	Indicates the name of the associated protocol.

The following table shows the field descriptions for the **show ip forward-protocol udp portfwldlist** command.

Field	Description
LIST_ID	Indicates the UDP forwarding policy number.
NAME	Indicates the name of the UDP forwarding policy.

The following table shows the field descriptions for the **show ip forward-protocol udp interface** command.

Field	Description
INTF_ADDR	Indicates the IP address of the interface.
FWD LISTID	Identifies the UDP forwarding policy.
MAXTTL	Indicates the maximum TTL.
RXPKTS	Indicates the number of received packets.
FWDPKTS	Indicates the number of forwarded packets.
DRPDEST UNREACH	Indicates the number of dropped packets that cannot reach the destination.
DRP_UNKNOWN PROTOCOL	Indicates the number of packets dropped with an unknown protocol.
BDCASTMASK	Indicates the value of the broadcast mask.

Example

The following is an example for the **show ip forward-protocol udp** command output:

```
Switch>show ip forward-protocol udp
=====
                        UDP Protocol Tbl
=====
UDP_PORT      PROTOCOL_NAME
-----
37            Time Service
49            TACACS Service
53            DNS
69            TFTP
```

```
137          NetBIOS NameSrv
138          NetBIOS DataSrv
```

The following is an example for the **show ip forward-protocol udp portfwdlist** command output:

```
Switch>show ip forward-protocol udp portfwdlist
=====
                        UDP Port Forward List Tbl
=====
LIST_ID      NAME
-----
1            udpfwd
```

The following is an example for the **show ip forward-protocol udp interfaces** command output:

```
Switch>show ip forward-protocol udp interface
=====
                        Udp Broadcast Interface Forwarding Tbl
=====
INTF_ADDR    FWD    MAXTTL RXPKTS  FWDPKTS  DRPDEST  DRP_UNKNOWN  BDCASTMASK
              LISTID              UNREACH    PROTOCOL
-----
```

show ip ipfix

Displays IPFIX settings.

Syntax

- **show ip ipfix**

Default

None

Command Mode

User Executive

show ip ipfix collector

Displays IPFIX collectors.

Syntax

- **show ip ipfix collector {A.B.C.D}**

Command Parameters

{A.B.C.D} Collector address

Default

None

Command Mode

User Executive

show ip ipfix interface

Displays IPFIX per-port settings.

Syntax

- `show ip ipfix interface <LINE>`

Command Parameters

<LINE> list of ports

Default

None

Command Mode

User Executive

show ip ipfix slot

Displays IPFIX per-slot/unit settings.

Syntax

- `show ip ipfix slot <LINE>`

Command Parameters

<LINE> slot list (1 for standalone; 1- n for n high stack)

Default

None

Command Mode

User Executive

Command Output

The **show ip ipfix slot** command displays the following information:

Output field	Description
Aging Interval (sec)	Indicates the aging interval of the flow record in seconds. Values range from 0–2147400 seconds. The default is 30 seconds.
Active Timeout (min)	Indicates the flow record active timeout value in minutes. This is not a configurable value.
Export Interval (sec)	Indicates the frequency of data exports to the collector in seconds. Values range from 10 to 3600 seconds. The default is 50 seconds.
ExportState	Indicates the operational state of the exporter. The default is enabled.
Template Refresh (sec)	Indicates the template refresh timeout in seconds. Values range from 300 to 3600. The default is 1800 seconds. The template is sent out to the collector either at the configured interval or after the specified template packets refresh number is reached, whichever occurs first.
Template Refresh (pkts)	Indicates the template refresh timeout in numbers of packets. Values range from 10000 and 100000 packets. The default is 10000 packets. The template is sent out to the collector either after the configured template packets refresh number is reached or at the specified refresh interval, whichever occurs first.

Example

The following example displays the IPFIX information for Slot 1.

```
Switch>show ip ipfix slot 1
Slot 1
-----
      Aging Interval(sec)      25
      Active Timeout(min)      30
      Export Interval(sec)      50
      Export State              enabled
      Template Refresh(sec)     1800
      Template Refresh(pkts)    10000
```

show ip ipfix table

Displays IPFIX table.

Syntax

- **show ip ipfix table sort-by {byte-count | dest-addr | first-pkt-time | last-pkt-time | pkt-count | port | protocol | source-addr | TCP-UDP-dest-port | TCP-UDP-scr-port | TOS} sort-order {ascending | descending} display {all | top-10 | top-100 | top-200 | top-25 | top-50}**

Command Parameters

all	Display all entries
ascending	Ascending order
byte-count	Byte number
descending	Descending order
dest-addr	Destination address
display	Enter number of entries to display
first-pkt-time	First packet time
last-pkt-time	Last packet time
pkt-count	Packet number
port	Port number
protocol	Protocol number
sort-by	Select sort rule
sort-order	Set sort order
source-addr	Source address
TCP-UDP-dest-port	TCP/UDP destination port
TCP-UDP-scr-port	TCP/UDP source port
top-10	Display first 10 entries
top-100	Display first 100 entries
top-200	Display first 200 entries
top-25	Display first 25 entries
top-50	Display first 50 entries
TOS	TOS

Default

None

Command Mode

User Executive

show ip isis

Displays IS-IS related information.

Syntax

- `show ip isis redistribute`

Command Parameters

redistribute Display IS-IS redistribute configuration

Default

None

Command Mode

User Executive

show ip mgmt

Displays management information.

Syntax

- `show ip mgmt [switch]`
- `show ip mgmt all`
- `show ip mgmt route`

Command Parameters

all Show the mgmt ip address from all the units in the stack

route Display management VLAN information

switch Show the mgmt switch ip address

Default

None

Command Mode

User Executive

Command Output

The following table shows the field descriptions for the `show ip mgmt route` command.

Field	Description
Destination IP	Identifies the route destination.
Subnet Mask	Identifies the route mask.
Gateway IP	Identifies the next hop in the route.

Example

The following is an example for the **show ip mgmt route** command output:

```
Switch>show ip mgmt route
Destination IP      Subnet Mask      Gateway IP      Status
-----
0.0.0.0            0.0.0.0          172.16.120.1    Active
```

show ip netstat

Shows ip tcp/udp connections and services.

Syntax

- **show ip netstat {tcp | udp}**

Command Parameters

tcp Displays ip tcp connections and services

udp Displays ip udp endpoints

Default

None

Command Mode

User Executive

show ip ospf

Displays global OSPF settings.

Syntax

- **show ip ospf**

Default

None

Command Mode

User Executive

show ip ospf accept

Displays OSPF accept adv-router.

Syntax

- `show ip ospf accept`

Default

None

Command Mode

User Executive

show ip ospf area

Displays OSPF area configuration.

Syntax

- `show ip ospf area {A.B.C.D}`

Command Parameters

{A.B.C.D} address

Default

None

Command Mode

User Executive

show ip ospf area-range

Displays OSPF area range configuration.

Syntax

- `show ip ospf area-range {A.B.C.D}`

Command Parameters

{A.B.C.D} address

Default

None

Command Mode

User Executive

show ip ospf ase

Displays AS External link state advertisements.

Syntax

- `show ip ospf ase`

Default

None

Command Mode

User Executive

show ip ospf authentication

Displays interface MD5 keys.

Syntax

- `show ip ospf authentication {interface [Ethernet <LINE>] [<LINE>]
[vlan <1-4094>] | virtual-links}`

Command Parameters

<LINE>	List of ports
Ethernet	Ethernet IEEE 802.3
interface	Display interface MD5 keys
virtual-links	Display virtual link MD5 keys
vlan <1-4094>	Layer 3 IP VLAN

Default

None

Command Mode

User Executive

show ip ospf default-cost

Displays default metric settings.

Syntax

- `show ip ospf default-cost`

Default

None

Command Mode

User Executive

show ip ospf host-route

Displays OSPF host routes.

Syntax

- `show ip ospf host-route`

Default

None

Command Mode

User Executive

show ip ospf ifstats

Displays interface statistics.

Syntax

- `show ip ospf ifstats {[A.B.C.D] [mismatch] [detail]}`

Command Parameters

[A.B.C.D]	Interface IP address
detail	Display detailed information
mismatch	Area ID not matched

Default

None

Command ModeUser Executive

show ip ospf int-auth

Displays interface auth type/password.

Syntax

- `show ip ospf int-auth`

Default

None

Command ModeUser Executive

show ip ospf int-timers

Displays timer settings of all interfaces.

Syntax

- `show ip ospf int-timers`

Default

None

Command Mode

User Executive

show ip ospf interface

Displays interface configuration.

Syntax

- `show ip ospf interface {[vlan <1-4094>] [enabled]}`

Command Parameters

enabled Display only admin enabled OSPF interfaces

vlan <1-4094> Layer 3 IP VLAN

Default

None

Command Mode

User Executive

show ip ospf lsdb

Displays OSPF link state database.

Syntax

- `show ip ospf lsdb [area {A.B.C.D}] [lsa-type {as-external-link | as-summary-link | multicast-link | network-link | nssa-extlink | router-link | summary-link}] [lsid {A.B.C.D}] [adv-rtr {A.B.C.D}] [detail {A.B.C.D}]`

Command Parameters

adv-rtr {A.B.C.D} Advertising router

area {A.B.C.D} Area

as-external-link AS External LSA

as-summary-link AS Summary LSA

detail {A.B.C.D} Display detailed lsdb information

lsa-type Link state advertisement type

lsid {A.B.C.D} Link state ID

multicast-link Multicast LSA

network-link	Network LSA
nssa-extlink	NSSA LSA
router-link	Router LSA
summary-link	Summary LSA

Default

None

Command Mode

User Executive

show ip ospf neighbor

Displays OSPF neighbors.

Syntax

- `show ip ospf neighbor`

Default

None

Command Mode

User Executive

show ip ospf redistribute

Displays OSPF redistribution policy.

Syntax

- `show ip ospf redistribute`

Default

None

Command Mode

User Executive

show ip ospf stats

Displays global statistics.

Syntax

- `show ip ospf stats`

Default

None

Command Mode

User Executive

show ip ospf timer

Displays interface timer settings.

Syntax

- `show ip ospf timer {interface vlan <1-4094> | virtual-links}`

Command Parameters

interface	Display interface timer settings
virtual-links	Display configured OSPF virtual link timer values
vlan <1-4094>	Layer 3 IP VLAN

Default

None

Command Mode

User Executive

show ip ospf virtual-links

Displays virtual links configuration.

Syntax

- `show ip ospf virtual-links`

Default

None

Command Mode

User Executive

show ip ospf virtual-neighbors

Displays OSPF virtual link neighbors.

Syntax

- `show ip ospf virtual-neighbors`

Default

None

Command Mode

User Executive

show ip prefix-list

Displays IP prefix lists.

Syntax

- `show ip prefix-list [<WORD>] [prefix {A.B.C.D}]`

Command Parameters

<WORD>	Name of the prefix list
prefix {A.B.C.D}	Ip prefix

Default

None

Command Mode

User Executive

show ip rip

Displays global RIP settings.

Syntax

- **show ip rip**

Default

None

Command Mode

User Executive

Command Output

The following table shows the field descriptions for the **show ip rip** command.

Field	Description
Default Import Metric	Indicates the value of the default import metric.
Domain	Indicates the value inserted into the Routing Domain field of all RIP packets sent on this device. This value is not configurable.
HoldDown Time	Indicates the value of the holddown timer.
Queries	Indicates the number of responses the router has sent in response to RIP queries from other systems.
Rip	Indicates whether RIP is enabled.
Route Changes	Indicates the number of route changes the RIP process has made to the routing database.
Timeout Interval	Indicates the RIP timeout interval.
Update Time	Indicates the value of the RIP update timer.

Example

The following is an example for the **show ip rip** command output:

```
Switch>show ip rip
Default Import Metric:  8
Domain:
HoldDown Time:  120
Queries:  0
Rip:  Disabled
Route Changes:  0
Timeout Interval:  180
Update Time:  30
```

show ip rip interface

Displays per-interface RIP configuration.

Syntax

- **show ip rip interface** [<1-4094> | ethernet <LINE> | vlan <1-4094>]
enabled

Command Parameters

<1-4094>	Vlan ID
enabled	Display only enabled RIP interfaces
Ethernet	Ethernet IEEE 802.3
LINE	List of ports
vlan	vlan interfaces only

Default

None

Command Mode

User Executive

Command Output

The following table shows the field descriptions for the **show ip rip interface** command.

Field	Description
unit/port	Indicates the unit and port of the RIP interface.
IP Address	Indicates the IP address of the RIP interface.
Enable	Indicates whether RIP is enabled or disabled on the interface.
Send	Indicates which send mode is enabled.
Receive	Indicates which receive mode is enabled.
Advertise When Down	Indicates whether the advertise when down feature is enabled.
RIP Cost	Indicates the RIP cost (metric) for this interface.
Dflt Supply	Indicates whether the interface sends the default route in RIP updates, if a default route exists in the routing table.
Dflt Listen	Indicates whether the interface listens for default routes in RIP updates.
Trigger Update	Indicates whether triggered updates are enabled.
AutoAgg Enable	Indicates whether auto aggregation is enabled.
Supply	Indicates whether the interface is enabled to supply updates for RIP.
Listen	Indicates whether the interface is enabled to listen for RIP routes.
Poison	Indicates whether RIP routes on the interface learned from a neighbor are advertised back to the neighbor.
Proxy	Indicates whether proxy announcements are enabled.
RIP IN Policy	Indicates the RIP policy for inbound filtering on the interface.
RIP Out Policy	Indicates the RIP policy for outbound filtering on the interface.
Holddown	Indicates the value of the RIP holddown timer for the interface.
Timeout	Indicate the RIP timeout interval for the interface.

Example

The following is an example for the **show ip rip interface** command output:

```
Switch>show ip rip interface
IP Address      Enable Send      Receive      Advertise When Down
-----
172.16.120.161  false  rip1Compatible  rip1OrRip2    false

IP Address      RIP  Dflt  Dflt  Trigger AutoAgg
Cost  Supply Listen Update  Enable  Supply Listen Poison Proxy
-----
172.16.120.161  1    false false  false  false  true  true  false false

IP Address      RIP In Policy
-----
172.16.120.161

IP Address      RIP Out Policy
-----
172.16.120.161

IP Address      Holddown Timeout
-----
172.16.120.161  120      180
```

show ip rip stats

Displays per-interface RIP statistics.

Syntax

- **show ip rip stats**

Default

None

Command Mode

User Executive

show ip route

Displays IP route information.

Syntax

- **show ip route {[ospf | rip | static] [-s {A.B.C.D} <subnet-mask>]
[A.B.C.D]} | preference | summary | isis | spbm-nh-as-mac}**

Command Parameters

<mask-ip> subnet mask

<subnet-ip>	subnet IP
A.B.C.D	specify IP addr of route to be displayed
isis	Display isis route(s) information
ospf	Display IP OSPF route(s) information
preference	Displays route preference values.
rip	Display IP RIP route(s) information
-s	specify subnet(s) of routes to be displayed
spbm-nh-as-mac	Displays spbm route next hop as mac.
static	Display IP static route(s) information
summary	Display summary of IP route information

Default

None

Command Mode

User Executive

Command Output

The following table shows the field descriptions for the **show ip route** command.

Field	Description
DST	Identifies the route destination.
MASK	Identifies the route mask.
NEXT	Identifies the next hop in the route.
COST	Identifies the route cost.
VLAN	Identifies the VLAN ID on the route.
PORT	Indicates the ports.
PROT	Indicates the routing protocols. Options are LOC (local route) or STAT (static route).
TYPE	Indicates the type of route as described by the Type Legend in the CLI command display.
PREF	Indicates the route preference.

The following table shows the field descriptions for the **show ip route static** command.

Field	Description
DEST	Identifies the route destination.
MASK	Identifies the route mask.
NEXT	Identifies the next hop in the route.
COST	Identifies the route cost.
PREF	Indicates the route preference.
LCLNHOP	Indicates the local next hop status.
STATUS	Indicates the static route status. Options are ACTIVE (in use and present in routing table) or INACTV (not in use and not present in routing table).
ENABLE	Indicates the administrative state of the static route. Options are TRUE (administratively enabled) or FALSE (administratively disabled).

The following table shows the field descriptions for the **show ip route preference** command.

Field	Description
PROTOCOL	Displays the protocol.
DEFAULT	Displays the default value.
CONFIG	Displays the configured value.

Example

The following is an example for the **show ip route** command output:

```
Switch>show ip route
=====
                        Ip Route
=====
DST                MASK                NEXT                COST   VLAN  PORT  PROT  TYPE  PREF
-----
5.5.5.6            255.255.255.255  5.5.5.6            1      0     ----  C    DB    0
15.15.15.0         255.255.255.0    BEB2                20     40    ----  I    IBS   30
50.50.50.0         255.255.255.0    50.50.50.1         1      1000  ----  C    DB    0
99.99.99.0         255.255.255.0    99.99.99.1         1      2000  ----  C    DB    0
192.168.1.0        255.255.255.0    BEB-2              20     41    16    I    IBSE  30
                   BEB-1              40     25
                   BEB-1              41     16
                   BEB-2              40     25
-----
TYPE Legend:
I=Indirect Route, D=Direct Route, A=Alternative Route, B=Best Route,
E=Ecmp Route, S= SPBM Route, U=Unresolved Route, N=Not in HW
```

The following is an example for the **show ip route static** command output:

```
Switch>show ip route static
=====
                        Ip Static Route
=====
DEST                MASK                NEXT                COST   PREF  LCNHOP  STATUS  ENABLE
-----
0.0.0.0            0.0.0.0            172.16.120.1       10     5     TRUE    ACTIVE  TRUE
```

The following is an example for **show ip route preference** command output:

```
Switch>show ip route preference
=====
                IP Route Preference
=====
=====
PROTOCOL          DEFAULT      CONFIG
-----
LOCAL              0            0
STATIC             5            5
OSPF_INTRA         20           20
OSPF_INTER         25           25
RIP                100          100
OSPF_EXT1          120          120
OSPF_EXT2          125          125
SPBM_L1            7            7
```

The following is an example for the **show ip route spbm-nh-as-mac** command output:

```
Switch>show ip route spbm-nh-as-mac
=====
                Ip Route
=====
=====
DST                MASK                NEXT                COST   VLAN  PORT  PROT  TYPE  PREF
-----
5.5.5.6            255.255.255.255    5.5.5.6            1      0     ----  C    DB    0
15.15.15.0         255.255.255.0     fc:a8:41:fb:2f:df  20     40    ----  i     30
50.50.50.0         255.255.255.0     50.50.50.1         1      1000  ----  C    DB    0
Total Routes: 3
=====
TYPE Legend:
I=Indirect Route, D=Direct Route, A=Alternative Route, B=Best Route,
E=Ecmp Route, U=Unresolved Route, N=Not in HW
```

The following is an example for the **show ip route summary** command output:

```
Switch>show ip route summary
=====
Connected routes :    0
Static routes   :    0
RIP routes      :    0
OSPF routes     :    0
ISIS routes     :    0
=====
Total routes    :    0
```

show ip routing

Displays global routing enable/disable.

Syntax

- **show ip routing**

Default

None

Command Mode

User Executive

show ip source-interface

Displays source interface configuration

Syntax

- `show ip source-interface`

Default

None

Command Mode

User Executive

show ip static-mroute

Displays Ip static mroute settings

Syntax

- `show ip static-mroute [ip A.B.C.D] [rpf A.B.C.D]`

Command Parameters

ip {A.B.C.D} IP Address of the destination network

rpf {A.B.C.D} Specifies the type of address for the reverse path forwarding address (ipv4).

Default

None

Command Mode

User Executive

show ip vrrp

Displays global VRRP settings.

Syntax

- `show ip vrrp`

Default

None

Command Mode

User Executive

show ip vrrp address

Shows VRRP associated addresses.

Syntax

- `show ip vrrp address [interface] [vlan] [<1-4094>] [vrid <1-255>]
[addr {A.B.C.D}]`

Command Parameters

<1-4094>	VLAN ID
addr {A.B.C.B}	Display specific address
interface	Display addresses per interface
vlan	Display addresses on VLAN interfaces only
vrid <1-255>	Display addresses associated with specific VR

Default

None

Command Mode

User Executive

show ip vrrp interface

Displays per-interface VRRP configuration.

Syntax

- `show ip vrrp interface [vlan] [<LINE>] [verbose] [vrid <1-255>]`

Command Parameters

<LINE>	VLAN ID
verbose	Display additional information
vlan	Display addresses on VLAN interfaces only
vrid <1-255>	VR ID

Default

None

Command Mode

User Executive

show ip-blocking

Displays the Layer 3 IP blocking state.

Syntax

- `show ip-blocking`

Default

None

Command Mode

User Executive

show ipv6 address

Displays configured ipv6 addresses.

Syntax

- `show ipv6 address {stack | switch | unit <1-8>}`

Command Parameters

stack	Display configured stack ipv6 address/prefix
switch	Display configured IPv6 address/prefix of local unit
unit <1-8>	Display configured IPv6 address/prefix of another unit in a stack

Default

None

Command Mode

User Executive

show ipv6 address interface

Displays addresses for IPv6 interfaces.

Syntax

- `show ipv6 address interface {loopback <1-16> | mgmt | summary | vlan <1-4094> | <WORD>}`

Command Parameters

loopback <1-16>	Display ipv6 address per loopback interface
mgmt	Display ipv6 address for mgmt interface
summary	Displays IPv6 interfaces summary
vlan <1-4094>	Displays per vlan addresses for IPv6 interfaces
<WORD>	IPv6 Address, 45 length

Default

None

Command Mode

User Executive

show ipv6 default-gateway

Displays IPv6 default gateway.

Syntax

- `show ipv6 default-gateway`

Default

None

Command Mode

User Executive

show ipv6 default-routers

Displays IPv6 default routers configuration.

Syntax

- `show ipv6 default-routers`

Default

None

Command Mode

User Executive

show ipv6 destinationcache

Displays IPv6 destination cache information.

Syntax

- `show ipv6 destinationcache`

Default

None

Command Mode

User Executive

show ipv6 dhcp guard policy

Displays the Dynamic Host Configuration Protocol (DHCP) guard policy information.

Syntax

- `show ipv6 dhcp guard policy [<WORD>]`

Default

None

Command Mode

User Executive

show ipv6 dhcp-relay

Displays the Dynamic Host Configuration Protocol (DHCP)relay information.

Syntax

```
• show ipv6 dhcp-relay {counters | fwd-path [summary] | interface [vlan <1-4094>]}
```

Command Parameters

<1-4094>	VLAN ID
counters	Show dhcp-relay counter information
fwd-path	Show fwd-path information
interface	Show dhcp-relay interface information
summary	Displays fwd-path summary
vlan	Show dhcp-relay counter information per vlan

Default

None

Command Mode

User Executive

Command Output

The following table shows the field descriptions for the **show ipv6 dhcp-relay counters** command.

Field	Description
INTERFACE	Indicates the interface IP address of the DHCP relay agent.
REQUESTS	Indicates the number of DHCP requests.
REPLIES	Indicates the number of DHCP replies.

The following table shows the field descriptions for the **show ipv6 dhcp-relay fwd-path** command.

Field	Description
INTERFACE	Specifies the interface IPv6 address of the DHCP relay agent.
SERVER	Specifies the IPv6 address of the DHCP server.
ENABLE	Specifies whether DHCP is enabled.

The following table shows the field descriptions for the **show ipv6 dhcp-relay interface** command.

Field	Description
VLAN ID	Indicates the VLAN ID
IF INDEX	Indicates the VLAN interface index.
MAX HOP	Indicates the maximum hop value.
DHCP-RELAY	Indicates whether DHCP relay is enabled on the VLAN.
REMOTE ID	Indicates whether Remote ID is enabled on the VLAN. This release does not support Remote ID.

Example

The following is an example for the **show ipv6 dhcp-relay counters** command output:

```
Switch>show ipv6 dhcp-relay counters
=====
                        DHCPv6 Counters
=====
INTERFACE                                REQUESTS    REPLIES
```

The following is an example for the **show ipv6 dhcp-relay fwd-path** command output:

```
Switch>show ipv6 dhcp-relay fwd-path
=====
                        DHCPv6 Fwd-path
=====
INTERFACE                                SERVER                                ENABLE
```

The following is an example for the **show ipv6 dhcp-relay interface** command output:

```
Switch>show ipv6 dhcp-relay interface
=====
                        Vlan Dhcpv6
=====
VLAN ID    IF INDEX    MAX HOP    DHCP-RELAY    REMOTE ID
```

show ipv6 fhs capture-policy

Displays the Dynamic Host Configuration Protocol for IPv6 (DHCPv6)/Router Advertisement (RA) guard policy name configured, number of DHCPv6/RA packets received, number of DHCPv6/RA packets dropped, and if dynamic learning is enabled or disabled for neighbor discovery inspection configuration.

Syntax

- **show ipv6 fhs capture-policy [interface <LINE>]**

Command Parameters

Interface <LINE> Displays the first hop security statistics for the port number specified.

Default

None

Command Mode

User Executive

show ipv6 fhs ipv6-access-list

Displays all of the configured IPv6 access lists in the system.

Syntax

- `show ipv6 fhs ipv6-access-list [<WORD>]`

Command Parameters

<WORD> Displays the IPv6 access list for the access list name specified.

Default

None

Command Mode

User Executive

show ipv6 fhs mac-access-list

Displays all of the MAC access lists in the system.

Syntax

- `show ipv6 fhs mac-access-list [<WORD>]`

Command Parameters

<WORD> Displays the IPv6 MAC access list for the MAC access list name specified.

Default

None

Command Mode

User Executive

show ipv6 fhs status

Displays the global first hop security (FHS) status, router advertisement (RA) guard status, Dynamic Host Configuration Protocol for IPv6 (DHCPv6), neighbor discovery (ND) inspection status, reachable timer value, stale timer value, down timer value and source binding table (SBT) entry overflow.

Syntax

- `show ipv6 fhs status`

Default

None

Command Mode

User Executive

show ipv6 forwarding

Displays IPv6 forwarding information.

Syntax

- `show ipv6 forwarding`

Default

None

Command Mode

User Executive

show ipv6 global

Displays IPv6 global configuration.

Syntax

- `show ipv6 global`

Default

None

Command Mode

User Executive

Command Output

The **show ipv6 global** command displays the following information:

Output Field	Default setting
forwarding	disabled
default-hop-cnt	30
number-of-interfaces	4
number-of-tunnels	0
admin-status	disabled
icmp-error-interval	1000
icmp-redirect-msg	disabled
icmp-unreach-msg	disabled
icmp port-unreach	enabled
icmp addr-unreach	enabled
multicast-admin-status	disabled
icmp-error-quota	50
block-multicast-replies	disabled
autoconfig	disabled
slow-path-to-cpu	disabled
ecmp-max-path	enabled

Example

The following is an example for the **show ipv6 global** command output:

```
Switch>show ipv6 global
forwarding                : disabled
default-hop-cnt           : 30
number-of-interfaces      : 4
number-of-tunnels         : 0
admin-status              : disabled
icmp-error-interval       : 1000
icmp-redirect-msg         : disabled
icmp-unreach-msg         : disabled
icmp port-unreach         : enabled
icmp addr-unreach         : enabled
multicast-admin-status    : disabled
icmp-error-quota          : 50
block-multicast-replies   : disabled
autoconfig                : disabled
slow-path-to-cpu          : disabled
ecmp-max-path             : 1
```

show ipv6 interface

Displays interface information.

Syntax

- `show ipv6 interface [loopback <1-16>] [vlan <1-4094>]`

Command Parameters

loopback <1-16> Displays IPv6 loopback interfaces.

vlan <1-4094> Displays IPv6 VLAN interfaces.

Default

None

Command Mode

User Executive

show ipv6 interface icmpstatistics

Displays IPv6 ICMP statistics.

Syntax

- `show ipv6 interface icmpstatistics [loopback <1-16>] [mgmt <1-4>]
[tunnel <1-2147483647>] [vlan <1-4094>]`

Command Parameters

loopback <1-16> Displays by IPv6 loopback interface.

mgmt <1-4> Out of band.

tunnel <1-2147483647> Displays by tunnel.

vlan <1-4094> Displays by VLAN.

Default

None

Command Mode

User Executive

show ipv6 interface process-redirect

Displays IPv6 processing redirect.

Syntax

- `show ipv6 interface process-redirect [mgmt] [vlan <1-4094>]`

Command Parameters

mgmt	OOB mgmt interface
vlan <1-4094>	Displays by VLAN.

Default

None

Command Mode

User Executive

show ipv6 interface statistics

Displays IPv6 statistics.

Syntax

- `show ipv6 interface statistics [loopback <1-16>] [mgmt <1-4> ] [tunnel <1-2147483647>] [vlan <1-4094>]`

Command Parameters

loopback <1-16>	Displays by loopback interface.
mgmt <1-4>	Out of band
tunnel <1-2147483647>	Displays by tunnel.
vlan <1-4094>	Displays by VLAN.

Default

None

Command Mode

User Executive

show ipv6 mgmt address

Displays IPv6 management addresses

Syntax

- `show ipv6 mgmt address [unit <1-8>]`

Command Parameters

unit <1-8> Specifies the unit number.

Default

None

Command Mode

User Executive

show ipv6 mgmt default-gateway

Displays the Dynamic Host Configuration Protocol (DHCP) management gateway.

Syntax

- `show ipv6 mgmt default-gateway`

Default

None

Command Mode

User Executive

show ipv6 mgmt interface

Display IPv6 management interface

Syntax

- `show ipv6 mgmt interface`

Default

None

Command Mode

User Executive

show ipv6 mld-cache interface

Displays the learned multicast groups in the cache.

Syntax

- `show ipv6 mld-cache interface [vlan <1-4094>]`

Command Parameters

`vlan <1-4094>` Displays by VLAN.

Default

None

Command Mode

User Executive

show ipv6 mld-host-cache

Displays the learned multicast groups in the host cache.

Syntax

- `show ipv6 mld-host-cache [interface <1-4094>] [mgmt]`

Command Parameters

`interface <1-4094>` Displays by VLAN

`mgmt` Out of Band

Default

None

Command Mode

User Executive

show ipv6 mld-proxy-cache

Displays MLD Proxy Cache.

Syntax

- `show ipv6 mld-proxy-cache vlan <1-4094> group <WORD>`

Command Parameters

group <WORD>	Select group
vlan <1-4094>	Select VLAN

Default

None

Command Mode

User Executive

show ipv6 nd interface

Displays the neighbor discovery (ND) interface configuration.

Syntax

- **show ipv6 nd interface [<1-4094>] [details] [mgmt] [vlan]**

Command Parameters

<1-4094>	VLAN ID
details	Displays IPv6 neighbor discovery details by on the interface
mgmt	Show neighbor discovery parameters for oob mgmt interface
vlan	Displays IPv6 neighbor discovery information on VLAN interfaces only

Default

None

Command Mode

User Executive

show ipv6 nd raguard policy

Displays the neighbor discovery (ND) router advertisement (RA) guard policy information.

Syntax

- **show ipv6 nd raguard policy [<WORD>]**

Command Parameters

<WORD> Displays by the policy name.

Default

None

Command Mode

User Executive

Command Output

The **show ipv6 nd raguard policy** command displays the following information:

Output field	Description
Ra guard policy name	Indicates the RA-guard policy name.
Device role	Indicates if the device role is router or host.
Source ip ACL policy	Indicates if the received RA router packet source IP matches the configured IP ACL.
Ip prefix ACL policy	Indicates if the received RA prefix in the packet matches the configured IP ACL.
Source MAC ACL policy	Indicates if the received RA router packet source MAC address matches the configured MAC ACL.
Managed config	Indicates the managed address configuration flag status in the advertised RA packet.
Router preference	Indicates the advertised default router preference value.
Minimum hop limit	Indicates the advertised hop count minimum limit.
Maximum hop limit	Indicates the advertised hop count maximum limit.

Example

The following is an example for the **show ipv6 nd raguard policy** command output:

```
Switch>show ipv6 nd raguard policy
Ra guard policy name :rag
Device role : Router
Source ip ACL policy : None
Ip prefix ACL policy : None
Source MAC ACL policy : None
Managed config : None
Router preference : None
Minimum hop limit : 0
Maximum hop limit : 0
```

show ipv6 nd-prefix interface

Displays the neighbor discovery (ND) prefix information.

Syntax

- `show ipv6 nd-prefix interface [<1-4094>] [details] [vlan]`

Command Parameters

<1-4094> Displays IPv6 neighbor discovery prefix information by VLAN ID.

details Displays IPv6 neighbor discovery prefix details by on the interface.

vlan Displays IPv6 neighbor discovery prefix information on VLAN interfaces only.

Default

None

Command Mode

User Executive

show ipv6 neighbor

Displays IPv6 neighbor information.

Syntax

- `show ipv6 neighbor [interface] [summary] [type] [WORD]`

Command Parameters

interface Display by interface

summary Display summary of IPv6 Neighbor Table

type Display by type

WORD IPv6 address

Default

None

Command Mode

User Executive

show ipv6 neighbor binding

Displays source binding table (SBT) entries and other timer values.

Syntax

- **show ipv6 neighbor binding** [**interface Ethernet <LINE>**] [**ipv6 <WORD>**]
[**vlan <1-4094>**]

Command Parameters

interface Ethernet <LINE>	Displays SBT entries and other timer values by Ethernet interface and port.
ipv6 <WORD>	Displays SBT entries and other timer values by IPv6 address.
vlan <1-4094>	Displays SBT entries and other timer values by VLAN.

Default

None

Command Mode

User Executive

Command Output

The **show ipv6 neighbor binding** command displays the following information:

Output field	Description
Reachable-timer	Indicates the default reachable lifetime for a dynamically learnt SBT entry.
Stale-timer	Indicates the default stale lifetime for a dynamically learnt SBT entry.
Down-timer	Indicates the default down lifetime for a dynamically learnt SBT entry.
Preflevel values in Hex (prlvl)	Indicates the source IP preference value learnt by the switch. SBT entry prefers the highest preference value . On a VLAN, if there is a same IP address from two different pots, the switch prefers only one SBT entry depending on the value learnt during the SBT learning process.
Type	Indicates the following SBT learning types: • ND - discovers SBT entry by processing only the ND packets. • DHCP - discovers SBT entry by snooping the DHCP IP assignment. • STATIC - statically configured.
IPv6-Addr	Indicates the IPv6 address.
LL-Addr	Indicates the MAC address corresponding to the learnt SBT entry.
port	Indicates the port on which the SBT entry is learnt.
vlan	Indicates the VLAN on which the SBT entry is learnt.
prlvl	Indicates the preference level values in hexadecimal.
state	Indicates the different stages of the SBT learning process.
Age (sec)	Indicates the elapsed time in the present state.

Example

The following is an example for the **show ipv6 neighbor binding** command output:

```
Switch>show ipv6 neighbor binding
Binding Table has 2 entries, 2 dynamic
Reachable-timer: 300 sec, Stale-timer: 86300 sec, Down-timer 86300 sec
Codes: S - Static, ND - Neighbor Discovery, DH - DHCP
Preflevel values in Hex (prlvl):
0001:Access 0002:MAC & LLA match 0008:DAD Learnt 0010:DHCP Learnt
0020:Learnt from Non-ND-inspect Port(Trusted-port)
Type IPv6-Addr LL-Addr
=====
port vlan prlvl state Age (sec)
=====
ND 2001:DB8::/32 00:50:56:84:00:20
1/8 1 0003 REACH 86
ND 2001:DB8::/32 00:50:56:84:00:1e
3/14 1 0003 REACH 60
```

show ipv6 neighbor interface

Displays IPv6 neighbor information by interface.

Syntax

- **show ipv6 neighbor interface** [**loopback** <1-16>] [**mgmt** <1-4>] [**tunnel** <1-2147483647>] [**vlan** <1-4094>]

Command Parameters

loopback <1-16>	Displays neighbor information by loopback interface
mgmt <1-4>	Out of band
tunnel <1-2147483647>	Displays neighbor information by tunnel
vlan <1-4094>	Displays neighbor information by VLAN

Default

None

Command Mode

User Executive

show ipv6 neighbor summary

Displays summary of IPv6 Neighbor Table.

Syntax

- `show ipv6 neighbor summary`

Default

None

Command Mode

User Executive

show ipv6 neighbor type

Displays by type.

Syntax

- `show ipv6 neighbor [<WORD>] type {dynamic | local | other | static}`

Command Parameters

<WORD>	IPv6 address
type	Display by type
dynamic	Display dynamically learned neighbors
local	Display local neighbor address
other	Display other neighbor entries
static	Display manually configured neighbors

Default

None

Command Mode

User Executive

show ipv6 rip

Displays global RIP settings.

Syntax

- `show ipv6 rip [interface] [ redistribute ] [ statistics] [loopback <1-16>] [vlan <1-4094>]`

Command Parameters

interface	Show RIPng per interface
loopback <1-16>	Show RIPng information for loopback CLIP interfaces
redistribute	Show RIPng redistribution
statistics	Display per-interface RIPng statistics
vlan <1-4094>	RIPng per-vlan information

Default

None

Command Mode

User Executive

show ipv6 route

Displays IPv6 route information.

Syntax

- `show ipv6 route [dest WORD] [mgmt <1-4> ] [alternative] [local] [next-hop WORD] [static] [tunnel <1-2147483647> ] [vlan <1-4094>] | preference | ripng [expired] | summary`

Command Parameters

alternative	Displays alternative routes.
dest <WORD>	Display IPV6 route destination
expired	Display timed-out ripng routes
local	Displays IPv6 local routes.
mgmt <1-4>	Out of band
next-hop <WORD>	IPV6 route next-hop
preference	Display ipv6 route preference
ripng	Display RIPng routes
static	Display IPV6 static routes

summary Display summary of IPv6 route information

tunnel <1-2147483647> IPV6 route tunnel

vlan <1-4094> IPV6 route vlan

Default

None

Command Mode

User Executive

show ipv6 source-guard

Displays Source Guard settings on interface.

Syntax

- **show ipv6 source-guard** [**binding**] [**interface**] [**enabled**] [**ethernet** **<LINE>**] [**<WORD>**]

Command Parameters

<WORD> Ipv6 address

binding Show ipv6 addresses allowed on all or a given port

enabled Show Source Guard setting on enabled interface

Ethernet <LINE> Interface type

interface Interface types

Default

None

Command Mode

User Executive

show ipv6 tcp

Displays IPV6 tcp info.

Syntax

- `show ipv6 tcp`

Default

None

Command Mode

User Executive

show ipv6 tcp connections

Displays IPv6 tcp connections.

Syntax

- `show ipv6 tcp connections`

Default

None

Command Mode

User Executive

show ipv6 tcp listener

Displays IPv6 tcp listeners.

Syntax

- `show ipv6 tcp listener`

Default

None

Command Mode

User Executive

show ipv6 tunnel

Displays IPv6 tunnel ID.

Syntax

- `show ipv6 tunnel [<1-2147483647>] [sorted]`

Command Parameters

<1-2147483647> Tunnel ID

sorted Sort tunnels by ID rather than interface index

Default

None

Command Mode

User Executive

show ipv6 udp

Displays IPv6 udp global.

Syntax

- `show ipv6 udp endpoints`

Command Parameters

endpoints Display ipv6 udp endpoints

Default

None

Command Mode

User Executive

show i-sid

Displays all configured UNIs.

Syntax

- `show i-sid <1-16777214>`

Command Parameters

<1-16777214> I-SID

Default

None

Command Mode

User Executive

Command Output

The `show i-sid` command displays the following information:

Output field	Description
I-SID	Indicates the I-SID IDs.
Vid	Indicates the VLAN IDs.
UNI-type	Indicates the UNI-type as CVLAN or Switched.
Ports	Indicates ports associated with the specific I-SIDs and VLANs.

Example

The following example displays the output for this command.

```
Switch>show i-sid
I-SID      Vid  UNI-type  Ports
-----
5          5    CVLAN     4
100        100  switched  1
```

show isis

Displays IS-IS related information.

Syntax

- `show isis`

Default

None

Command Mode

User Executive

show isis adjacencies

Displays current IS-IS adjacencies.

Syntax

- `show isis adjacencies`

Default

None

Command Mode

User Executive

Command Output

The **show isis adjacencies** command displays the following information:

Output field	Description
INTERFACE	Indicates the interface port or MLT on which IS-IS exists.
L	Indicates the level of the adjacent router.
STATE	Indicates the state of IS-IS on the interface (enabled [UP] or disabled [DOWN]). The state is non-configurable.
UPTIME	Indicates the length of time the adjacency has been up in ddd hh:mm:ss format.
PRI	Indicates the priority of the neighboring Intermediate System for becoming the Designated Intermediate System (DIS).
HOLDTIME	Indicates the calculated hold time for the Hello (hello multiplier x hello interval); if the route is determined to be a designated router, then the product is divided by 3.
SYSID	Indicates the adjacent system ID of the router.
HOST-NAME	Indicates the hostname listed in the LSP. If the host name is not configured, then the system name is displayed.

Example

The following example displays the output for this command.

```
Switch>show isis adjacencies
```

```
=====
                        ISIS Adjacencies
=====
INTERFACE L STATE   UPTIME          PRI    HOLDTIME SYSID          HOST-NAME
-----
Mlt2      1   UP      1d 03:57:25 127     20      0018.b0bb.b3df   ERS-Lab1
Port3/21  1   UP      1d 03:57:16 127     27      0016.ca23.73df   ERS-Lab2
-----
 2 out of 2 Total Num of Adjacencies
=====
```

show isis int-auth

Displays IS-IS interface authentication configuration.

Syntax

- **show isis int-auth**

Default

None

Command Mode

User Executive

Command Output

The `show isis int-auth` command displays the following information:

Output field	Description
IFIDX	Shows the interface index for the Ethernet or MLT interface.
AUTH-TYPE	Shows the type of authentication configured for the interface. Types include: • <code>none</code> for no authentication • <code>simple</code> for a simple password • <code>hmac-md5</code> for MD5 encryption
AUTH-KEYID	Shows the authentication password configured for the interface.
AUTH-KEY	Shows the HMAC-MD5 key needed for encryption. This is used only for HMAC-MD5.

Example

The following example displays the output for this command.

```
Switch>show isis int-auth
```

```
=====
                        ISIS Interface Auth
=====
IFIDX      AUTH-TYPE    AUTH-KEYID    AUTH-KEY
-----
Trunk: 3   none             0
Port: 21   none             0
```

show isis int-ckt-level

Displays IS-IS circuit level timers.

Syntax

- `show isis int-ckt-level`

Default

None

Command Mode

User Executive

Command Output

The `show isis int-ckt-level` command displays the following information:

Output field	Description
IFIDX	Shows the interface index for the ethernet or MLT interface.
LEVEL	Shows the level of the IS-IS interface (Level 1 [default] or Level 2).
DIS	Shows the Designated Intermediate System (DIS) of the circuit.
CKTID	Displays the CKT ID.

Example

The following example displays the output for this command.

```
Switch>show isis int-ckt-level
```

```
=====
                        ISIS Circuit level parameters
=====
IFIDX          LEVEL          DIS          CKTID
-----
Trunk: 2       Level 1                1
Port: 21       Level 1                2
```

show isis int-counters

Displays IS-IS interface counters.

Syntax

- `show isis int-counters`

Default

None

Command Mode

User Executive

Command Output

The `show isis int-counters` command displays the following information:

Output field	Description
IFIDX	Shows the interface index for the Ethernet or MLT interface.
LEVEL	Shows the level of the IS-IS interface (Level 1 in the current release).
AUTH FAILS	Shows the number of times authentication has failed per interface.
ADJ CHANGES	Shows the number of times the adjacencies have changed.

Table continues...

Output field	Description
INIT FAILS	Shows the number of times the adjacency has failed to establish.
REJ ADJ	Shows the number of times the adjacency was rejected by another router.
ID LEN	Shows the ID field length mismatches.
MAX AREA	Shows the maximum area address mismatches.
LAN DIS CHANGES	Shows the number of times the DIS has changed.

Example

The following example displays the output of this command.

```
Switch>show isis int-counters
```

```
=====
                        ISIS Interface Counters
=====
```

IFIDX	LEVEL	AUTH	ADJ	INIT	REJ	ID LEN	MAX AREA	LAN DIS
		FAILS	CHANGES	FAILS	ADJ			CHANGES
Mlt2	Level 1	0	1	0	0	0	0	0
Port3/21	Level 1	0	1	0	0	0	0	0

show isis interface

Displays IS-IS interface configuration and status data.

Syntax

- **show isis interface l1**

Command Parameters

l1 Display IS-IS interface configuration and status data for Level-1

Default

None

Command Mode

User Executive

Command Output

The **show isis interface** command displays the following information:

Output field	Description
IFIDX	Indicates the interface index for the Ethernet or MLT interface.

Table continues...

Output field	Description
TYPE	Indicates the type of interface configured. In this release, only pt-pt is supported.
LEVEL	Indicates the level of the IS-IS interface (Level 1 [default] or Level 2).
OP-STATE	Shows the physical connection state of the interface.
ADM-STATE	Shows the configured state of the interface.
ADJ	Shows how many adjacencies are learned through the interface.
UP-ADJ	Shows how many adjacencies are active through the interface.
SPBM-L1-METRIC	Indicates the SPBM instance Level 1 metric on the IS-IS interface.

Example

The following example displays the output for this command.

```
Switch>show isis interface
```

```
=====
                        ISIS Interfaces
=====
IFIDX      TYPE      LEVEL      OP-STATE  ADM-STATE  ADJ      UP-ADJ      SPBM-L1-METRIC
-----
Trunk: 2    pt-pt    Level 1    UP        UP         1        1         10
Port: 21    pt-pt    Level 1    UP        UP         1        1         10
=====
```

show isis int-l1-cntl-pkts

Displays IS-IS Level 1 control packet counters.

Syntax

- **show isis int-l1-cntl-pkts**

Default

None

Command Mode

User Executive

Command Output

The **show isis int-l1-cntl-pkts** command displays the following information:

Output field	Description
IFIDX	Shows the interface index for the Ethernet or MLT interface.
DIRECTION	Shows the packet flow (Transmitted or Received).
HELLO	Shows the number of interface-level Hello packets.
LSP	Shows the number of LSP packets.

Table continues...

Output field	Description
CSNP	Shows the number of CSNPs.
PSNP	Shows the number of PSNPs.

Example

The following example displays the output for this command.

```
Switch>show isis int-l1-ctrl-pkts
```

```
=====
```

ISIS L1 Control Packet counters					
IFIDX	DIRECTION	HELLO	LSP	CSNP	PSNP

Mlt2	Transmitted	13346	231	2	229
Mlt2	Received	13329	230	1	230
Port3/21	Transmitted	13340	227	2	226
Port3/21	Received	13335	226	1	227

show isis int-timers

Displays IS-IS interface timers.

Syntax

- **show isis int-timers**

Default

None

Command Mode

User Executive

Command Output

The **show isis int-timers** command displays the following information:

Output field	Description
IFIDX	Indicates the interface index for the Ethernet or MLT interface.
LEVEL	Indicates the IS-IS interface level.
HELLO INTERVAL	Indicates the interval at which a Hello packet is sent to the IS-IS network.
HELLO MULTIPLIER	Indicates the multiplier that is used in conjunction with the Hello Interval.
HELLO DR	Indicates the interval at which a Hello packet is sent to the IS-IS network if the router is a designated router (DIS).

Example

The following example displays the output for this command.

```
Switch>show isis int-timers
```

ISIS Interface Timers				
IFIDX	LEVEL	HELLO INTERVAL	HELLO MULTIPLIER	HELLO DR
Trunk: 2	Level 1	9	3	3
Port: 21	Level 1	9	3	3

show isis lsdb

Displays IS-IS LSDB.

Syntax

- **show isis lsdb** [**level l1**] [**sysid <H.H.H>**] [**lsp-id <WORD>**] [**detail**] [**tlv <WORD>**] **sub-tlv <1-3>**]

Command Parameters

detail	Display details
level l1	Level of the external router
lsp-id <WORD>	LSP ID assigned to the external IS-IS routing device
sub-tlv <1-3>	Enter sub-tlv type: 1(SPB-INST), 3(SPB-SI)
sysid <H.H.H>	System ID
tlv <WORD>	Enter tlv type: 1(Area Addresses), 3(End System Neighbors), 5(Prefix Neighbors), 22(TE Neighbors), 128(IP Addresses), 129(Protocol Supported), 135(TE IP Reachability), 137(Host Name), 144(Multi Topology), 147(Chassis mac), 185(IPVPN Multicast), 186(IPMC Multicast)

Default

None

Command Mode

User Executive

Command Output

The **show isis lsdb** command displays the following information:

Output field	Description
LSP ID	Indicates the LSP ID assigned to external IS-IS routing devices.
LEVEL	Indicates the level of the external router: L1, L2, or L12.
LIFETIME	Indicates the maximum age of the LSP. If the max-lsp-gen-interval is set to 900 (default) then the lifetime value begins to count down from 1200 seconds and updates after 300 seconds if connectivity remains. If the timer counts down to zero, the counter adds on an additional 60 seconds, then the LSP for that router is lost. This happens because of the zero age lifetime, which is detailed in the RFC standards.
SEQNUM	Indicates the LSP sequence number. This number changes each time the LSP is updated.
CHKSUM	Indicates the LSP checksum. This is an error checking mechanism used to verify the validity of the IP packet.
HOST-NAME	Indicates the hostname listed in the LSP. If the host name is not configured, then the system name is displayed.

Example

The following example displays the output for this command.

```
Switch>show isis lsdb
```

```
=====
                        ISIS LSDB
=====
LSP ID                      LEVEL    LIFETIME  SEQNUM    CHKSUM    HOST-NAME
-----
0014.c7e1.33df.00-00        1         545       0xb1      0xed28    NewYork
0016.ca23.73df.00-00        1         1119      0x9f      0x9c9d    VSP-
Lab2
0018.b0bb.b3df.00-00        1         708       0xb9      0xcb1a    VSP-Lab1
-----
Level-1 : 3 out of 3 Total Num of LSP Entries
Level-2 : 0 out of 0 Total Num of LSP Entries
```

The following example displays the output for this command using the **detail** modifier.

```
Switch>show isis lsdb detail
```

```
=====
                        ISIS LSDB (DETAIL)
=====
Level-1 LspID: 0001.bcb0.0003.00-001      SeqNum: 0x00000522      Lifetime: 1144
        Chksum: 0x32f7  PDU Length: 312
        Host_name: C0
        Attributes:      IS-Type 1
TLV:1   Area Addresses: 1
        c1.3000.0000.00
TLV:22  Extended IS reachability:
        Adjacencies: 7
        TE Neighbors: 7
        0000.beb1.0007.01 (ERS0)          Metric:10
        SPBM Sub TLV:
```

```

        port id: 640 num_port 1
        Metric: 10
0000.beb1.00b1.01 (VSP1)          Metric:10

    SPBM Sub TLV:

        port id: 643 num_port 1

        Metric: 10
0000.bcb1.0004.01 (C1)  Metric:10

    SPBM Sub TLV:

        port id: 6144 num_port 1

        Metric: 10
0000.beb1.00ca.01 (VSP2)          Metric:10

    SPBM Sub TLV:

        port id: 6156 num_port 1

        Metric: 10
0000.beb1.00a5.01 (VSS0)          Metric:10

    SPBM Sub TLV:

        port id: 651 num_port 1

        Metric: 10
0000.beb1.00b2.01 (VSS1)          Metric:10

    SPBM Sub TLV:

        port id: 645 num_port 1

        Metric: 10
0000.beb1.0008.01 (VSP1)          Metric:10

    SPBM Sub TLV:

        port id: 652 num_port 1

        Metric: 10

TLV:129 Protocol Supported: SPBM

TLV:137 Host_name: C0#

TLV:144 SUB-TLV 1      SPBM INSTANCE:
    Instance: 0
    bridge_pri: 0
    OUI: 00-33-33
    num of trees: 2
    vid tuple : u-bit 1 m-bit 1 ect-alg 0x80c201 base vid 1000
    vid tuple : u-bit 1 m-bit 1 ect-alg 0x80c202 base vid 1001
TLV:144 SUB-TLV 3      ISID:
    Instance: 0
    Metric: 0
    B-MAC: 00-00-bc-b1-00-03

```

```
BVID:1000
Number of ISID's:8
      3001 (Both) , 3002 (Rx) , 3003 (Both) , 3004 (Rx) , 4001 (Both) , 4002 (
Rx) , 4003 (Both) , 4004 (Rx)

Instance: 0
Metric: 0
B-MAC: 00-00-bc-b1-00-03

--More-- (q = quit)
```

show isis manual-area

Displays configured IS-IS manual area.

Syntax

- **show isis manual-area**

Default

None

Command Mode

User Executive

show isis net

Displays IS-IS NET address.

Syntax

- **show isis net**

Default

None

Command Mode

User Executive

show isis redistribute

Displays IS-IS redistribute configuration.

Syntax

- `show isis redistribute`

Default

None

Command Mode

User Executive

show isis spbm

Displays SPBM related information.

Syntax

- `show isis spbm`

Default

None

Command Mode

User Executive

show isis spbm i-sid

Displays IS-IS SPBM multicast FIB calculation results by I-SID.

Syntax

- `show isis spbm i-sid {all | config | discover} [vlan <0-4094>] [id <1-16777215>] nick-name <WORD>`

Command Parameters

all	Display all SPBM I-SID
config	Display configured SPBM I-SID
discover	Display discovered SPBM I-SID
id <1-16777215>	IS-IS SPBM I-SID identifier
nick-name <WORD>	Nickname of the node where I-SID was configured
vlan <0-4094>	B-VLAN where this I-SID was configured

Default

None

Command Mode

User Executive

Command Output

The `show isis spbm i-sid` command displays the following information:

Output field	Description
ISID	Indicates the IS-IS SPBM I-SID identifier. - all: display all SPBM I-SID - discover: display discovered SPBM I-SID - config: display configured SPBM I-SID
SOURCE NAME	Indicates the nickname of the node where this I-SID was configured or discovered.
VLAN	Indicates the B-VLAN where this I-SID was configured or discovered.
SYSID	Indicates the system identifier.
TYPE	Indicates the SPBM I-SID type as either configured or discovered.
HOST_NAME	Indicates the host name of the multicast FIB entry.

Example

The following example displays the output for this command.

```
Switch>show isis spbm i-sid all
=====
                        SPBM ISID INFO
=====
ISID    SOURCE NAME    VLAN    SYSID                TYPE    HOST_NAME
-----
200     1.11.16        1000    0014.c7e1.33df      config  ERS-4000
300     1.11.16        1000    0014.c7e1.33df      config  ERS-4000
400     1.11.16        1000    0014.c7e1.33df      config  ERS-4000
200     1.11.16        2000    0014.c7e1.33df      config  ERS-4000
300     1.11.16        2000    0014.c7e1.33df      config  ERS-4000
400     1.11.16        2000    0014.c7e1.33df      config  ERS-4000
-----
Total number of SPBM ISID entries configed: 6
-----
-----
Total number of SPBM ISID entries: 6
-----
```

show isis spbm ip-multicast-route

Displays isis spbm IP multicast route table.

Syntax

- `show isis spbm ip-multicast-route [all] [vlan <1-4094>] [vsid <1-16777214>] [detail] [group {A.B.C.D}] [source {A.B.C.D}] [source-beb <WORD>]`

Command Parameters

all	Display ip-multicast-route all command
detail	Display ip-multicast-route detail command
group {A.B.C.D}	Group IP address
source {A.B.C.D}	Source IP
source-beb <WORD>	Source-beb name
vlan <1-4094>	Displays ip-multicast-route by vlan ID
vsid <1-16777214>	Displays ip-multicast-route by vsid

Default

None

Command Mode

User Executive

show isis spbm ip-unicast-fib

Displays isis spbm ip unicast-fib

Syntax

- `show isis spbm ip-unicast-fib [all] [id <1-16777214>] [spbm-nh-as-mac]`

Command Parameters

all	all i-sid
id <1-16777214>	Display isis spbm ip-unicast-fib information by i-sid id
spbm-nh-as-mac	show spbm ip-unicast-fib entry next hop as mac

Default

None

Command Mode

User Executive

show isis spbm multicast

Displays the status of the global SPBM multicast configuration.

Syntax

- `show isis spbm multicast`

Default

None

Command Mode

User Executive

Command Output

The `show isis spbm multicast` command displays the following information:

Output field	Description
multicast	Specifies if multicast is enabled.
fwd-cache-timeout	Specifies the forward cache timeout value.

Example

The following example displays the output for this command.

```
Switch:1>show isis spbm multicast
      multicast : enable
      fwd-cache-timeout : 210
```

show isis spbm multicast-fib

Displays SPBM multicast FIB.

Syntax

- `show isis spbm multicast-fib [vlan <0-4094>] [i-sid <1-16777214>]
[nick-name <WORD>] summary`

Command Parameters

i-sid <1-16777214>	I-SID associated with the multicast FIB entry
nick-name <WORD>	Nickname
summary	Display summary
vlan <0-4094>	B-VLAN associated with the multicast FIB entry

Default

None

Command Mode

User Executive

Command Output

The **show isis spbm multicast-fib** command displays the following information:

Output field	Description
MCAST DA	Indicates the multicast destination MAC address of the multicast FIB entry.
ISID	Indicates the I-SID of the multicast FIB entry.
BVLAN	Indicates the B-VLAN of the multicast FIB entry.
SYSID	Indicates the system identifier of the multicast FIB entry.
HOST-NAME	Indicates the host name of the multicast FIB entry.
OUTGOING-INTERFACES	Indicates the outgoing interface of the multicast FIB entry.

Example

The following example displays the output for this command.

```
Switch>show isis spbm multicast-fib
=====
                        SPBM MULTICAST FIB ENTRY INFO
=====
MCAST DA      ISID   BVLAN  SYSID      HOST-NAME    OUTGOING-INTERFACES
-----
13:11:16:00:00:c8 200    1000  0014.c7e1.33df  SPBM-1      MLT-2,3/21,3/37
13:11:16:00:01:2c 300    1000  0014.c7e1.33df  SPBM-1      MLT-2,4/21
13:11:16:00:01:90 400    1000  0014.c7e1.33df  SPBM-1      MLT-2,3/21
13:11:16:00:00:c8 200    2000  0014.c7e1.33df  SPBM-1      MLT-2,3/21,3/31,3/37
-----
Total number of SPBM MULTICAST FIB entries 4
=====
```

show isis spbm nick-name

Displays SPBM network node identification data.

Syntax

- show isis spbm nick-name** [**nick-name** <WORD>] [**smlt-virtual-bmac** <H.H.H>] [**sysid** <H.H.H>]

Command Parameters

nick-name <WORD>	Show isis spbm nick-name info by nick-name
smlt-virtual-bmac <H.H.H>	Show isis spbm nick-name info by smlt-virtual-bmac
sysid <H.H.H>	Show isis spbm nick-name info by system-id

Default

None

Command Mode

User Executive

show isis spbm unicast-fib

Displays SPBM unicast FIB.

Syntax

- `show isis spbm unicast-fib [b-mac <H.H.H>] [vlan <0-4094>] summary`

Command Parameters

b-mac <H.H.H>	B-MAC
summary	Display summary
vlan <0-4094>	B-VLAN associated with the unicast FIB entry

Default

None

Command Mode

User Executive

Command OutputThe `show isis spbm unicast-fib` command displays the following information:

Output field	Description
DESTINATION ADDRESS	Indicates the destination MAC Address of the unicast FIB entry.
BVLAN	Indicates the B-VLAN of the unicast FIB entry.
SYSID	Indicates the destination system identifier of the unicast FIB entry.
HOST-NAME	Indicates the destination host name of the unicast FIB entry.
OUTGOING INTERFACE	Indicates the outgoing interface of the unicast FIB entry.
COST	Indicates the cost of the unicast FIB entry.

Example

The following example displays the output for this command.

```
Switch>show isis spbm unicast-fib
=====
                        SPBM UNICAST FIB ENTRY INFO
=====
DESTINATION      BVLAN  SYSID      HOST-NAME      OUTGOING      COST
```

ADDRESS				INTERFACE		
00:16:ca:23:73:df	1000	0016.ca23.73df	SPBM-1	3/21	10	
00:16:ca:23:73:df	2000	0016.ca23.73df	SPBM-1	3/21	10	
00:18:b0:bb:b3:df	1000	0018.b0bb.b3df	SPBM-2	MLT-2	10	
00:14:c7:e1:33:e0	1000	0018.b0bb.b3df	SPBM-2	MLT-2	10	
00:18:b0:bb:b3:df	2000	0018.b0bb.b3df	SPBM-2	MLT-2	10	

Total number of SPBM UNICAST FIB entries 5						

show isis spbm unicast-tree

Displays SPBM unicast tree.

Syntax

- **show isis spbm unicast-tree <1-4094> destination <H.H.H>**

Command Parameters

<1-4094>	VLAN ID
destination <H.H.H>	Destination B-MAC

Default

None

Command Mode

User Executive

Example

The following example displays the output for this command.

```
Switch>show isis spbm unicast-tree 1000
Node:0018.b0bb.b3df.00 (Switch) -> ROOT
Node:0016.ca23.73df.00 (Switch) -> ROOT
```

show isis spb-mcast-summary

Displays multicast over SPBM summary information for each S, G, V tuple.

Syntax

- **show isis spb-mcast-summary [host-name <WORD>] [lspid <WORD>]**

Command Parameters

host-name <WORD> Show spb-mcast-summary for a given host-name. <WORD> is router host name.

Ispid <WORD> Show spb-mcast-summary for a given Ispid. <WORD> is isis Ispid.

Default

None

Command Mode

User Executive

Command Output

The **show isis spb-mcast-summary** command displays the following information:

Output field	Description
SCOPE I-SID	Indicates the I-SID that specifies the multicast streams when the scope Layer 2 VSN.
SOURCE ADDRESS	Indicates the IP multicast source address that maps to the I-SID.
GROUP ADDRESS	Indicates the IP multicast group address that maps to the I-SID.
DATA I-SID	Indicates the data I-SID for the IP multicast route, which includes the source IP address, group IP address, and the local VLAN that the stream is received on (S,G,V tuple). SPBM uses the data I-SID to create the multicast tree.
BVID	Indicates the ID of the SPBM backbone VLAN (B-VLAN) on which the multicast stream forwards in the SPBM cloud.
LSP FRAG	Indicates the fragment number of the LSP ID.
HOST-NAME	Indicates the host name of the router.

Example

The following example displays the output for this command.

```
Switch:1>show isis spb-mcast-summary
```

```
=====
                        SPB Multicast - Summary
=====
SCOPE   SOURCE      GROUP      DATA      LSP   HOST
I-SID   ADDRESS      ADDRESS      I-SID   BVID  FRAG  NAME
-----
80      192.0.2.1    203.0.113.3  16300014  1000  0x0   MERS2-8606
80      192.0.2.1    203.0.113.4  16300015  1000  0x0   MERS2-8606
80      192.0.2.3    203.0.113.3  16300001  1001  0x0   MERS4-8606
80      192.0.2.3    203.0.113.4  16300002  1001  0x0   MERS4-8606
200     192.0.2.4    203.0.113.2  16000001  1000  0x1   4826GTS
80      192.0.2.5    203.0.113.2  16000003  1000  0x1   4826GTS
=====
6 out of 6 Total Num of Entries
```

show isis statistics

Displays IS-IS system statistics.

Syntax

- `show isis statistics`

Default

None

Command Mode

User Executive

Command Output

The `show isis statistics` command displays the following information:

Output field	Description
LEVEL	Shows the level of the IS-IS interface.
CORR LSPs	Shows the number of corrupted LSPs detected.
AUTH FAILS	Shows the number of times authentication has failed on the global level.
AREA DROP	Shows the number of manual addresses dropped from the area.
MAX SEQ EXCEEDED	Shows the number of attempts to exceed the maximum sequence number.
SEQ NUM SKIPS	Shows the number of times the sequence number was skipped.
OWN LSP PURGE	Shows how many times the local LSP was purged.
BAD ID LEN	Shows the number of ID field length mismatches.
PART CHANGES	Shows the number of partition link changes.
LSP DB OLOAD	Show the number of times the switch was in the overload state. The overload bit is set in this release and the parameter will not increment.

Example

The following example displays the output for this command.

```
Switch>show isis statistics
=====
                        ISIS System Stats
=====
LEVEL    CORR    AUTH    AREA    MAX SEQ    SEQ NUM    OWN LSP    BAD ID    PART    LSP DB
          LSPs    FAILS    DROP    EXCEEDED  SKIPS      PURGE      LEN      CHANGES OLOAD
=====
Level-1  0        0        0        0          1         0         0         0         0
```

show isis system-id

Displays IS-IS system ID.

Syntax

- `show isis system-id`

Default

None

Command Mode

User Executive

show link-state

Displays link-state tracking configuration.

Syntax

- `show link-state [group <1-2>] detail`

Command Parameters

detail	Display detailed configuration
group <1-2>	Display link-state tracking configuration for a specific group

Default

None

Command Mode

User Executive

show lldp local-sys-data

Displays 802.1ab local system data.

Syntax

- `show lldp local-sys-data [dot1] [dot3] [med] [detail]`

Command Parameters

detail	Display all TLVs

dot1	Display IEEE 802.1 Organizationally specific TLVs
dot3	Display IEEE 802.3 Organizationally specific TLVs
med	Display Media Endpoint Devices (MED) specific TLVs

Default

None

Command Mode

User Executive

show lldp med-network-policies

Displays Media Endpoint Devices (MED) network policies.

Syntax

- `show lldp med-network-policies [port <LINE>] [voice] [voice-signaling]`

Command Parameters

port <LINE>	Port list
voice	Display Voice Network Policies
voice-signaling	Display Voice Signaling Network Policies

Default

None

Command Mode

User Executive

show lldp mgmt-sys-data

Displays 802.1ab management data.

Syntax

- `show lldp mgmt-sys-data`

Default

None

Command Mode

User Executive

Example

The following example displays a sample output for the **show lldp mgmt-sys-data** command.

```
Switch>show lldp mgmt-sys-data
```

```
-----
          LLDP mgmt-sys-data
=====
ManagementAddr      MgmtIfId      ManagedEntityOID
-----
IPv4 192.1.1.1      0             1.3.6.4.1.45.3.78.1
-----
```

show lldp neighbor

Displays 802.1ab neighbors.

Syntax

- **show lldp neighbor** {**detail** | [**dot1**] [**dot3**] [**med** {[**capabilities**] [**network-policy**] [**location**] [**extended-power**] [**inventory**]}} | **vendor-specific** {[**call-server**] [**dot1q-framing**] [**fa-element-type**] [**file-server**] [**phone-ip**] [**poe-conservation**]}}

Command Parameters

call-server	Display neighbors call-server information
capabilities	Display neighbors MED capabilities
detail	Display all TLVs
dot1	Display IEEE 802.1 Organizationally specific TLVs
dot1q-framing	Display neighbors dot1q-framing information
dot3	Display IEEE 802.3 Organizationally specific TLVs
extended-power	Display neighbors MED power information
fa-element-type	Display neighbors Fabric Attach information
file-server	Display neighbors file-server information
inventory	Display neighbors MED inventory information
location	Display neighbors MED location information

med	Display Media Endpoint Devices (MED) specific TLVs
network-policy	Display neighbors MED network-policy information
phone-ip	Display neighbors phone-ip information
poe-conservation	Display neighbors poe-conservation information
vendor-specific	Display the vendor-specific TLVs

Default

None

Command Mode

User Executive

Example

The following example displays a sample output for the **show lldp port neighbor dot3** command.

```
Switch>show lldp port 7 neighbor dot3
```

```
-----
                        LLDP neighbor
-----
Port: 7      Index: 3      Time: 0 days, 03:31:38
      ChassisId: Network address      IPv4  10.100.41.101
      PortId:    MAC address          00:0a:e4:0c:05:ac
      SysCap:    TB / TB              (Supported/Enabled)
      PortDesc:  IP Phone
      SysDescr:  IP Telephone 2002, Firmware:0604DAD

Dot3-MAC/PHY Auto-neg: supported/enabled      OperMAUtype: 100BaseTXFD
PSE MDI power:      not supported/disabled    Port class:  PD
PSE power pair:      signal/not controllable  Power class:  1
PoE+ Power type: Type 2 PD
PoE+ Power priority: High
PoE+ PD requested power: 26.2w
PoE+ PSE allocated power: 26.2w
LinkAggr: not aggregatable/not aggregated      AggrPortID:  0
                                                MaxFrameSize: 1522
PMD auto-neg:      10Base(T, TFD), 100Base(TX, TXFD)
-----
Sys capability: O-Other; R-Repeater; B-Bridge; W-WLAN accesspoint; r-Router;
T-Telephone; D-DOCSIS cable device; S-Station only.
Total neighbors: 2
```

show lldp neighbor-mgmt-addr

Displays 802.1ab neighbors management addresses.

Syntax

- `show lldp neighbor-mgmt-addr`

Default

None

Command Mode

User Executive

show lldp pdu-tlv-size

Displays 802.1ab tlv's in pdu.

Syntax

- `show lldp pdu-tlv-size`

Default

None

Command Mode

User Executive

show lldp port

Displays 802.1ab configuration for specified ports.

Syntax

- `show lldp port <LINE> {local-sys-data | neighbor | tx-tlv} {[dot1] [dot3] [med] [detail]} [vendor-specific {dot1q-framing | poe-conservation-request-level} | neighbor-mgmt-addr | pdu-tlv-size | rx-stats | tx-stats`

Command Parameters

<LINE>	List of ports
detail	Display all TLVs
dot1	Display IEEE 802.1 Organizationally specific TLVs
dot1q-framing	Display 802.1Q framing tagging-mode
dot3	Display IEEE 802.3 Organizationally specific TLVs

local-sys-data	Display 802.1ab local system data
med	Display Media Endpoint Devices (MED) specific TLVs
neighbor	Display 802.1ab neighbors
neighbor-mgmt-addr	Display 802.1ab neighbors management addresses
pdu-tlv-size	Display 802.1ab TLVs in PDU.
poe-conservation-request-level	Display PoE conservation request level
rx-stats	Display 802.1ab RX statistics
tx-stats	Display 802.1ab TX statistics
tx-tlv	Display 802.1ab TLVs
vendor-specific	Display 802.1ab vendor-specific settings
Default	
None	
Command Mode	
User Executive	

show lldp rx-stats

Displays 802.1ab RX statistics.

Syntax

- `show lldp rx-stats`

Default

None

Command Mode

User Executive

show lldp stats

Displays 802.1ab statistics.

Syntax

- `show lldp stats`

Default

None

Command Mode

User Executive

show lldp tx-stats

Displays 802.1ab TX statistics.

Syntax

- `show lldp tx-stats`

Default

None

Command Mode

User Executive

show lldp tx-tlv

Displays 802.1ab TLVs.

Syntax

- `show lldp tx-tlv {dot1 | dot3 | med | vendor-specific}`

Command Parameters

dot1	Display IEEE 802.1 Organizationally specific TLVs
dot3	Display IEEE 802.3 Organizationally specific TLVs
med	Display Media Endpoint Devices (MED) specific TLVs
vendor-specific	Display Vendor-specific TLVs

Default

None

Command Mode

User Executive

Example

The following example displays a sample output of the **show lldp port tx-tlv** command.

```
Switch>show lldp port 1-5 tx-tlv
```

LLDP port tlvs					
Port	PortDesc	SysName	SysDesc	SysCap	MgmtAddr
1	true	true	true	true	true
2	true	true	true	true	true
3	true	true	true	true	true
4	true	true	true	true	true
5	true	true	true	true	true

show lldp vendor-specific

Displays 802.1ab vendor-specific settings.

Syntax

- **show lldp vendor-specific {call-server | dot1q-framing | file-server | poe-conservation-request-level}**

Command Parameters

call-server	Display call-server address(es).
dot1q-framing	Display 802.1Q framing tagging-mode.
file-server	Display file-server address(es).
poe-conservation-request-level	Display PoE conservation request level.

Default

None

Command Mode

User Executive

Example

The following example displays sample output for the **show lldp vendor-specific file-server** command.

```
Switch>show lld vendor-specific file-server
```

LLDP Vendor Specific File Servers IP addresses	

```

-----
Configured Call Server 1: 192.0.1.1
Configured Call Server 2: 192.0.1.2
Configured Call Server 3: 192.0.2.3
-----

```

show macsec connectivity-association

Displays macsec connectivity association information.

Syntax

- show macsec connectivity-association WORD <5-15>

Command Parameters

WORD<5-15> Display the connectivity association name.

Default

None

Command Mode

User Executive

show macsec statistics

Displays macsec port statistics.

Syntax

- show macsec statistics <LINE> secure-channel [inbound] [outbound]

Command Parameters

inbound	Shows macsec statistics for inbound secure channel of a port
<LINE>	Display macsec port statistics for specified ports.
outbound	Shows macsec statistics for outbound secure channel of port entered
secure-channel	Shows macsec statistics for a secure channel of a port

Default

None

Command Mode

User Executive

show macsec status

Displays macsec status of entered ports or all macsec capable ports.

Syntax

- show macsec status <LINE>

Command Parameters

<LINE> Display macsec status of entered ports or all macsec capable ports.

Default

None

Command Mode

User Executive

show memory-utilization

Displays memory utilization info.

Syntax

- show memory-utilization unit <1-8>

Command Parameters

unit <1-8> Unit number

Default

None

Command Mode

User Executive

show mgmt-port

Display Management port information.

Syntax

- `show mgmt-port [status]`

Command Parameters

status Show the management port link status

Default

None

Command Mode

User Executive

show mvr

Displays MVR global information.

Syntax

- `show mvr [group-range] | [vlan]`

Command Parameters

group-range Displays MVR IP multicast address range information

vlan Displays MVR receiver VLAN information

Default

None

Command Mode

User Executive

show ntp

Displays NTP information.

Syntax

- `show ntp {server | statistics}`

Command Parameters

key Displays NTP key information

server Displays NTP server information

statistics Displays NTP statistics information

Default

None

Command Mode

User Executive

show nvram

Displays NV block information.

Syntax

- `show nvram block`

Command Parameters

block Display NV block information

Default

None

Command Mode

User Executive

show password

Displays password security restrictions.

Syntax

- `show password {aging-time [username <WORD>] | check-repeated | check-sequential | complexity | delay-time | login-failure-notification | min-length | notifications | password-change-on-first-login | password-change-rate-limiter | password-history | security | unlock-timer}`

Command Parameters

aging-time Password validity period (in days)

check-repeated State of check-repeated-characters option

check-sequential State of check-sequential-characters option

complexity	Display password complexity rules settings
delay-time	Display the delay time after 3 failed login attempts within one minute
login-failure-notification	Display notification message to users encountering a login failure
min-length	Display the password minimum length
notifications	Display password expiration notifications intervals
password-change-on-first-login	State of password-change-on-first-login option
password-change-rate-limiter	Display number of times a password can be changed in a day
password-history	Number of passwords in history
security	State of password security restrictions
unlock-timer	State of unlock-timer option
username <WORD>	Display password aging-time for a specified user

Default

None

Command Mode

User Executive

show quickconfig

Shows quick config status.

Syntax

- **show quickconfig**

Default

None

Command Mode

User Executive

show radius accounting

Displays the configuration of RADIUS Accounting Interim-Updates.

Syntax

- `show radius accounting interim-updates`

Command Parameters

interim-updates Display the parameters of interim-updates

Default

None

Command Mode

User Executive

show radius dynamic-server

Displays the configuration of RADIUS Dynamic Authorization Clients.

Syntax

- `show radius dynamic-server {[statistics] client {A.B.C.D} | replay-protection}`

Command Parameters

{A.B.C.D} IP address of RADIUS Dynamic Authorization Client

client Display the configuration of RADIUS Dynamic Authorization Client

replay-protection Display status of RADIUS dynamic server replay protection

statistics Display the statistics for RADIUS Dynamic Authorization Clients

Default

None

Command Mode

User Executive

show radius reachability

Displays RADIUS reachability settings.

Syntax

- `show radius reachability`

Default

None

Command Mode

User Executive

show radius use-management-ip

Displays RADIUS use-management-ip setting.

Syntax

- `show radius use-management-ip`

Default

None

Command Mode

User Executive

show ramdisk-files

Displays a list of files in the root directory of the ramdisk or the specified directory.

Syntax

- `show ramdisk-files [ascii <WORD>] [binary <WORD>] [dir <WORD>] [tree]`

Command Parameters

ascii <WORD>	Displays the filename of the ASCII files.
binary<WORD>	Displays the filename of the binary files.
dir<WORD>	Displays the name of the ramdisk directories.
tree	Display ramdisk tree.

Default

None

Command Mode

User Executive

show remote connection

Displays remote connection status on device.

Syntax

- `show remote connection`

Default

None

Command Mode

User Executive

show role

Displays role information.

Syntax

- `show role`

Default

None

Command Mode

User Executive

show route-map

Displays route policy table.

Syntax

- `show route-map [<WORD> <1-65535>] detail`

Command Parameters

<1-65535>	Index used to identify a specific policy in the route policy group
<WORD>	Name of set of policies
detail	Route policy details

Default

None

Command Mode

User Executive

show serial-security

Displays current serial security setting.

Syntax

- `show serial-security`

Default

None

Command Mode

User Executive

show sftp-server

Displays the SFTP Server IP address.

Syntax

- `show sftp-server`

Default

None

Command Mode

User Executive

show slpp

Displays SLPP information.

Syntax

- `show slpp`

Default

None

Command Mode

User Executive

show slpp-guard

Displays SLPP-guard information.

Syntax

- `show slpp-guard <LINE>`

Command Parameters

<LINE> List of ports

Default

None

Command Mode

User Executive

show spanning-tree

Sub-commands to display spanning tree information.

Syntax

- `show spanning-tree mode`

Command Parameters

mode Display Spanning Tree operation mode

Default

None

Command Mode

User Executive

show spbm (User Executive)

Displays global SPBM status.

Syntax

- `show spbm`

Default

None

Command Mode

User Executive

show spbm reserved-port

Displays the current and the next reserved loopback port settings.

Syntax

- `show spbm reserved-port`

Default

None

Command Mode

User Executive

show stack

Shows stacking information.

Syntax

- `show stack {auto-unit-replacement [mac-addresses] | auto-unit-replacement-image | forced-mode | port-statistics | reboot-on-failure [retry-count]}`

Command Parameters

auto-unit-replacement	Display auto unit replacement configuration
auto-unit-replacement-image	Display auto unit image replacement configuration
forced-mode	Display the forced stack mode
mac-addresses	Display the AUR MAC address cache
port-statistics	Display stack port counters
reboot-on-failure	Display stack reboot-on-failure status
retry-count	Display stack retry count

Default

None

Command Mode

User Executive

show stack-cable-info

Displays cable information.

Syntax

- `show stack-cable-info`

Default

None

Command Mode

User Executive

show tech (User Executive)

Displays system information for Tech-Support.

Syntax

- `show tech`

Default

None

Command Mode

User Executive

show terminal

Displays terminal configuration parameters.

Syntax

- `show terminal`

Default

None

Command Mode

User Executive

show username

Displays user information.

Syntax

- `show username <LINE>`

Command Parameters

<LINE> Specifies the user name for which to display information.

Default

None

Command Mode

User Executive

show who

Displays the users authenticated by AAA.

Syntax

- `show who`

Default

None

Command Mode

User Executive

ssh

SSH to another host

Syntax

- `ssh {<Hostname> | {A.B.C.D} | <WORD>} username <WORD> port <0-65535>`

Command Parameters

<code><Hostname> {A.B.C.D}</code>	Remote host name or IP address
<code>port <0-65535></code>	Specifies the port number
<code>username <WORD></code>	Specifies the username
<code><WORD></code>	Specifies the remote host IPv6 address

Default

None

Command Mode

User Executive

telnet

Telnet to another host.

Syntax

- `telnet {<Hostname> | {A.B.C.D} | <WORD>} port <0-65535>`

Command Parameters

<code><Hostname> {A.B.C.D}</code>	Remote host name or IP address
<code><WORD></code>	Remote host IPv6 address (45 length)
<code>port <0-65535></code>	tcp port number

Default

None

Command Mode

User Executive

terminal

Sets terminal line parameters.

Syntax

- `terminal {length <0-132> | speed {[19200 ] | [38400] | [9600]} width <1-132>}`

Command Parameters

length <0-132>	Set number of lines on a screen
speed <19200 38400 9600>	Set the transmit and receive speeds
width <1-132>	Set width of the display terminal

Default

None

Command Mode

User Executive

trace

Traces level for a module ID.

Syntax

- `trace [screen] {[disable] [enable]} | [shutdown] | [module] {[hint] [<LINE>] [level] {critical | error | warning | info | debug | no-display} [unit <1-8>] [submodule]}`

Command Parameters

critical	enable critical level (1)
debug	enable all levels (1->5)
disable	Disable screen trace

enable	Enable screen trace
error	enable critical and error levels (1->2)
info	enable informational level (1->4)
level	Specifies the trace level
<LINE>	Specifies the module name
module	Set the trace
no-display	disable all levels (0)
screen	Enable/Disable screen trace
shutdown	Trace OFF
submodule	Specifies the trace submodule
unit <1-8>	Specifies the unit
warning	enable levels from critical to warning (1->3)

Default

None

Command Mode

User Executive

traceroute

Traces route to a remote host.

Syntax

```
• traceroute {Hostname | {A.B.C.D} | <WORD>} [<1-1460>] [-m <1-255>] [-p
  <0-65535>] [-q <1-255>] { -v | {-w <1-255>}}
```

Command Parameters

<1-1460>	probe packet data length
<WORD>	ipv6 address of remote host
Hostname {A.B.C.D}	remote host name or IP address
-m <1-255>	max ttl value

-p <1-65535>	base udp port number
-q <1-255>	number of probes per ttl
-v	verbose mode
-w <1-255>	wait time per probe

Default

None

Command Mode

User Executive

username

Configure user name settings.

Syntax

- **username password**

Command Parameters

password	Change user's password

Default

None

Command Mode

User Executive

Chapter 14: VLAN Interface Configuration

This chapter provides information related to the VLAN Interface configuration commands.

end (VLAN Interface Configuration)

Exits from interface configure mode.

Syntax

- **end**

Default

None

Command Mode

VLAN Interface Configuration

exit (VLAN Interface Configuration)

Exits from interface configuration mode.

Syntax

- **exit**

Default

None

Command Mode

VLAN Interface Configuration

igmp last-member-query-interval

Sets the maximum response time (in tenths of a second) that is inserted into group-specific queries that are sent in response to leave group messages.

Syntax

- `default ip igmp last-member-query-interval <0-255>`
- `ip igmp last-member-query-interval <0-255>`

Command Parameters

<0-255> Specifies the last member query interval value in 1/10 of a second. Values range from 0 to 255. You should configure this parameter to values higher than 3. If a fast leave process is not required, values above 10 are recommended.

default Sets the last member query interval to the default value of 10.

Default

10

Command Mode

VLAN Interface Configuration

igmp query-interval

Sets the frequency (in seconds) at which host query packets are transmitted on the VLAN.

Syntax

- `default ip igmp query-interval <1-65535>`
- `ip igmp query-interval <1-65535>`

Command Parameters

<1-65535> Specifies the query interval value. Values range from 1 to 65535 seconds.

default Sets the query interval to the default value of 125 seconds

Default

125

Command Mode

VLAN Interface Configuration

igmp query-max-response

Sets the maximum response time (in tenths of a second) that is advertised in IGMPv2 general queries on the VLAN.

Syntax

- `default ip igmp query-max-response <0-255>`
- `ip igmp query-max-response <0-255>`

Command Parameters

<0-255> Specifies the maximum query response time value in 1/10 of a second. Values range from 0 to 255.

default Sets the maximum query response time to the default value of 100.

Default

100

Command Mode

VLAN Interface Configuration

igmp send-query

Enables or disables IGMP send query on a snoop-enabled VLAN.

Syntax

- `default ip igmp send-query`
- `ip igmp send-query`
- `no ip igmp send-query`

Default

None

Command Mode

VLAN Interface Configuration

ip address (VLAN Interface Configuration)

Assigns an IP address to a VLAN.

Syntax

- `ip address {A.B.C.D} <subnet_mask> [ <1-256> ]`
- `no ip address {A.B.C.D} <subnet_mask> [ <1-256> ] [secondary]`

Command Parameters

<code>{A.B.C.D}</code>	IP address
<code><1-256></code>	MAC offset, 1 for management vlan only
<code><subnet_mask></code>	Subnet mask

Default

None

Command Mode

VLAN Interface Configuration

ip arp-proxy

Configures proxy ARP status on a VLAN.

Syntax

- `default ip arp-proxy enable`
- `ip arp-proxy enable`
- `no ip arp-proxy enable`

Command Parameters

<code>enable</code>	Enable arp-proxy

Default

None

Command Mode

VLAN Interface Configuration

ip dhcp-relay (VLAN Interface Configuration)

Configures DHCP relay for a vlan.

Syntax

- `default ip dhcp-relay option82`
- `ip dhcp-relay [broadcast] [min-sec <min-sec>] [mode {bootp | dhcp | bootp_dhcp}] [option82]`
- `ip dhcp-relay clear-counters`
- `no ip dhcp-relay [broadcast] [min-sec <min-sec>] [mode {bootp | dhcp | bootp_dhcp}] [option82]`

Command Parameters

broadcast	Enables the broadcast of DHCP reply packets to the DHCP clients on this VLAN interface
min-sec <minsec>	Indicates the min-sec value. The switch immediately forwards a BootP/DHCP packet if the secs field in the BootP/DHCP packet header is greater than the configured min-sec value; otherwise, the packet is dropped. Range is 0-65535. The default is 0.
mode {bootp dhcp bootp_dhcp}	Specifies the type of DHCP packets this VLAN supports: bootp - Supports BootP only; dhcp - Supports DHCP only; bootp_dhcp - Supports both BootP and DHCP.
option82	Enables Option 82 for DHCP relay on a VLAN

Default

None

Command Mode

VLAN Interface Configuration

ip directed-broadcast

Enabled directed broadcast forwarding.

Syntax

- `default ip directed-broadcast enable`
- `ip directed-broadcast enable`
- `no ip directed-broadcast enable`

Command Parameters

enable	Enable IP directed broadcast

Default

None

Command Mode

VLAN Interface Configuration

ip forward-protocol udp (VLAN Interface Configuration)

Associates a UDP forwarding list with a VLAN interface.

Syntax

- `default ip forward-protocol udp [vlan <vid>] [broadcastmask] [maxttl]`
- `ip forward-protocol udp [vlan <vid>] [portfwdlist <forward_list>] [broadcastmask <bcast_mask>] [maxttl <max_ttl>]`
- `no ip forward-protocol udp [vlan <vid>] [portfwdlist <forward_list>] [broadcastmask <bcast_mask>] [maxttl <max_ttl>]`

Command Parameters

- <bcast_mask>** Specifies the 32-bit mask used by the selected VLAN interface to make forwarding decisions based on the destination IP address of the incoming UDP broadcast traffic. If you do not specify a broadcast mask value, the switch uses the mask of the interface to which the forwarding list is attached.
- <forward_list>** Specifies the ID of the UDP forwarding list to attach to the selected VLAN interface.
- <max_ttl>** Specifies the time-to-live (TTL) value inserted in the IP headers of the forwarded UDP packets coming out of the selected VLAN interface. If you do not specify a TTL value, the default value (4) is used.
- <vid>** Specifies the VLAN ID on which to attach the UDP forwarding list. This parameter is optional, and if not specified, the UDP forwarding list is applied to the interface specified in the interface vlan command.

Default

None

Command Mode

VLAN Interface Configuration

ip fwd-nh (VLAN Interface Configuration)

Configure IP forwarding next-hop configuration settings

Syntax

- `ip fwd-nh {[admin-status [disable] | [enable] ]| [policy [word] [mode] [drop] [normal-routing]]}`

Command Parameters

admin-status <disable|enable> Specifies IP forwarding administrative status for all policies.

policy <WORD> Specify the name of the next-hop forwarding policy.

Default

None

Command Mode

VLAN Interface Configuration

ip igmp (VLAN Interface Configuration)

Creates a new IGMP interface.

Syntax

- `default ip igmp`
- `ip igmp`
- `no ip igmp`

Default

None

Command Mode

VLAN Interface Configuration

ip igmp mrouter

Adds one or more static mrouter ports to a VLAN.

Syntax

- `default ip igmp mrouter`
- `ip igmp mrouter <port_list>`
- `no ip igmp mrouter [<port_list>]`

Command Parameters

<port_list> Specifies the port or ports to add to the VLAN as static mrouter ports

Default

None

Command Mode

VLAN Interface Configuration

ip igmp proxy

Enables or disables IGMP proxy on a VLAN.

Syntax

- `default ip igmp proxy`
- `ip igmp proxy`
- `no ip igmp proxy`

Default

None

Command Mode

VLAN Interface Configuration

ip igmp robust-value

Sets the robustness value for a VLAN. With IGMP snooping robustness, the switch can offset expected packet loss on a subnet.

Syntax

- `default ip igmp robust-value <2-255>`
- `ip igmp robust-value <2-255>`

Command Parameters

<2-255> Specifies a numerical value for IGMP snooping robustness. Values range from 2 to 255.

Default

2

Command Mode

VLAN Interface Configuration

ip igmp router-alert

Enables the router alert feature. This feature instructs the router to drop control packets that do not have the router-alert flag in the IP header.

Syntax

- `default ip igmp router-alert`
- `ip igmp router-alert`
- `no ip igmp router-alert`

Default

None

Command Mode

VLAN Interface Configuration

ip igmp snooping

Enables or disables IGMP snooping for a VLAN.

Syntax

- `default ip igmp snooping`
- `ip igmp snooping`
- `no ip igmp snooping`

Default

None

Command Mode

VLAN Interface Configuration

ip igmp snoop-querier-addr

Configures the address of the IGMP snoop querier.

Syntax

- `default ip igmp snoop-querier-addr`
- `ip igmp snoop-querier-addr {A.B.C.D}`
- `no ip igmp snoop-querier-addr`

Command Parameters

{A.B.C.D} Specifies the IP address.

Default

The default value is 0.0.0.0.

Command Mode

VLAN Interface Configuration

ip igmp version

Configures the IGMP version running on the VLAN.

Syntax

- `default ip igmp version <1-3>`
- `ip igmp version <1-3>`

Command Parameters

<1-3> Specifies the IGMP version: 1—IGMPv1; 2—IGMPv2; 3—IGMPv3

default Restores the IGMP protocol version to the default value (IGMPv2)

Default

IGMPv2

Command Mode

VLAN Interface Configuration

ip ospf (VLAN Interface Configuration)

Configures OSPF settings.

Syntax

- `default ip ospf [vlan <1-4094>] {[enable] [advertise-when-down] [area] [authentication-key] [authentication-type] [network] [hello-interval] [dead-interval] [retransmit-interval] [transit-delay] [cost] [mtu-ignore enable] [priority]}`
- `ip ospf [vlan <1-4094>] {[enable] [advertise-when-down enable] [area {A.B.C.D}] [authentication-key <WORD>] [authentication-type {message-digest | none | simple}] [primary-md5-key <1-255>] [network <broadcast | passive>] [hello-interval <1-65535>] [dead-interval <1-2147483647>]}`

```
[retransmit-interval <1-3600>] [transit-delay <1-3600>] [cost
<1-65535>] [mtu-ignore enable] [priority <0-255>] }
```

- `no ip ospf [vlan <1-4094>]{[enable] [advertise-when-down enable] [area {A.B.C.D}]} [authentication-key <WORD>] [authentication-type]}`

Command Parameters

advertise-when-down enable	Enables the advertisement of the OSPF interface, and even if the port or VLAN for the routing interface subsequently goes down, the switch continues to advertise the route.
area {A.B.C.D}	Specifies the unique ID of the area to which the interface connects. An area ID of 0.0.0.0 indicates the OSPF area backbone and is created automatically by the switch.
authentication-key <WORD>	Configure interface authentication password
authentication-type {message-digest none simple}	Select interface authentication type
cost <1-65535>	Specifies the cost assigned to the interface.
dead-interval <1-2147483647>	Specifies a dead interval for the interface. This is the interval of time that a neighbor waits for a Hello packet from this interface before the neighbor declares it down.
hello-interval <1-65535>	Specifies the amount of time between transmission of hello packets from this interface.
mtu-ignore enable	Instructs the interface to ignore the packet MTU size specified in Database Descriptors.
network <broadcast passive>	Defines the type of OSPF interface this interface is.
primary-md5-key <1-255>	Select MD5 key used for transmit
priority <0-255>	Assigns a priority to the interface for the purposes of Designated Router election. This is an integer value between 0 and 255.
retransmit-interval <1-3600>	Defines the number of seconds between link state advertisement retransmissions for adjacencies belonging to this interface.
transit-delay <1-3600>	Defines the transit delay for this OSPF interface in seconds. The transit delay is the estimated number of seconds it takes to transmit a link-state update over the interface. This is an integer value between 1 and 3600.
vlan <1-4094>	Select VLAN ID

Default

None

Command Mode

VLAN Interface Configuration

ip ospf message-digest-key (VLAN Interface Configuration)

Configure MD5 key for interface.

Syntax

- `default ip ospf message-digest-key <1-255>`
- `ip ospf message-digest-key <1-255> md5 <WORD>`
- `no ip ospf message-digest-key <1-255>`

Command Parameters

- <1-255>** Specifies an index value for the MD5 key being configured. This is an integer value between 1 and 255.
- md5 <WORD>** Specifies the value of the MD5 key. This is a string value of up to 16 characters in length.

Default

None

Command Mode

VLAN Interface Configuration

ip pim (VLAN Interface Configuration)

Configure global Protocol Independent Multicast (PIM) settings.

Syntax

- `default ip pim {[bsr-candidate] [interface-type] [join-prune-interval ] [query-interval] [enable]}`
- `ip pim {[bsr-candidate priority <0-255>] [enable] [interface-type {active|passive}] [join-prune-interval <1-18724>] [query-interval <0-18724>]}`
- `no ip pim {[bsr-candidate ] [enable]}`

Command Parameters

bsr-candidate	Enable PIM bootstrap router (BSR) candidate and configure preference on a VLAN.
enable	Enables PIM.
interface-type {active passive}	Specifies the interface type as active or passive.
join-prune-interval <1-18724>	Configures the PIM join-prune interval.
priority <0-255>	Configures the PIM BSR-candidate priority on a VLAN.
query-interval <0-18724>	Configures the PIM query interval on a VLAN.

Default

None

Command Mode

VLAN Interface Configuration

ip rip (VLAN Interface Configuration)

Configures RIP settings.

Syntax

- `[default] [no] ip rip in-policy <rmap_name>`
- `[default] [no] ip rip out-policy <rmap_name>`
- `default ip rip [port <LINE>] [advertise-when-down enable] [auto-aggregation enable [domain <WORD>]] [cost <cost>] [default-listen enable] [default-supply enable] [enable] [holddown <holddown> | <global>] [listen enable] [poison enable] [proxy-announce enable] [receive version {rip1 | rip2} [send version { notsend | rip1 | rip2}]] [supply enable] [timeout {<timeout> | global}] [triggered enable]`
- `ip rip [port <LINE>] [advertise-when-down enable] [auto-aggregation enable [domain <WORD>]] [cost <cost>] [default-listen enable] [default-supply enable] [enable] [holddown <holddown> | <global>] [listen enable] [poison enable] [proxy-announce enable] [receive version {rip1 | rip2} [send version { notsend | rip1 | rip2}]] [supply enable] [timeout {<timeout> | global}] [triggered enable]`
- `no ip rip [port <LINE>] [advertise-when-down enable] [auto-aggregation enable [domain <WORD>]] [cost <cost>] [default-listen enable]`

```
[default-supply enable] [enable] [holddown <holddown> | <global>]
[listen enable] [poison enable] [proxy-announce enable] [receive
version {rip1 | rip2 | rip2} | rip 2}] [send version { notsend | rip1 |
rip1comp | rip 2}] [supply enable] [timeout {<timeout> | global}]
[triggered enable]
```

Command Parameters

advertise-when-down enable	Enables RIP advertisements for an interface even when the link to the network fails. The router continues to advertise the subnet even if that particular network is no longer connected (no link in the enabled VLAN). This feature does not advertise the route until the VLAN is first enabled. After the VLAN is enabled, the route is advertised even when the link fails. By default, advertise when down functionality is disabled.
auto-aggregation enable	Enables auto aggregation on the RIP interface. After you enable auto aggregation, the Ethernet Routing Switch automatically aggregates routes to their natural net mask when they are advertised on an interface in a network of a different class. Automatic route aggregation can be enabled only in RIP2 mode or RIP1 compatibility mode. By default, auto aggregation is disabled.
cost <cost>	Specifies the RIP cost (metric) for this interface in a range from 1 to 15. The default cost is 1.
default-listen enable	Enables the interface to accept default routes learned through RIP updates. The default setting is disabled.
default-supply enable	Enables the interface to send default route information in RIP updates. This setting takes effect only if a default route exists in the routing table. The default setting is disabled.
enable	Enables RIP on the interface
holddown {<holddown> <global>}	Specifies the interface holddown timer, which is the length of time (in seconds) that RIP maintains a route in the garbage list after determining that it is unreachable. <holddown> — overrides the global parameter and does not change if the global parameter is modified. Range is 0–360 seconds. <global> — default global holddown parameter (120 seconds).
in-policy <WORD>	Add in-policy on this interface
listen enable	Enables this interface to listen for RIP advertisements. The default value is enabled.
out-policy <WORD>	Add out-policy on this interface
poison enable	Specifies whether RIP routes on the interface learned from a neighbor are advertised back to the neighbor. If poison reverse is disabled, split horizon is invoked and IP routes learned from an immediate neighbor are not advertised back to the neighbor. If poison reverse is enabled, the RIP

updates sent to a neighbor from which a route is learned are "poisoned" with a metric of 16. The receiving neighbor ignores this route because the metric 16 indicates infinite hops in the network. By default, poison reverse is disabled.

port <LINE>	Select ports
proxy-announce enable	Enables proxy announcements on a RIP interface. When proxy announcements are enabled, the source of a route and its next hop are treated as the same when processing received updates. So, instead of the advertising router being used as the source, the next hop is. Proxy announcements are disabled by default.
receive version {rip1 rip1orrip2 rip 2}	Specifies the RIP version received on this interface. Default is rip1orrip2.
send version {notsend rip1 rip1comp rip 2}	Specifies the RIP version sent on an interface. Default is rip1compatible
supply enable	Enables RIP route advertisements on this interface. The default value is enabled.
timeout <timeout> <global>	Specifies the RIP timeout value on this interface. If a RIP interface does not receive an update from another RIP router within the configured timeout period, it moves the routes advertised by the nonupdating router to the garbage list. The timeout interval must be greater than the update timer. <timeout> — sets the interface timeout. Value ranges from 15 to 259200 seconds. <global> — sets the timeout to the global default (180 seconds). The interface timer setting overrides the global parameter and does not change if the global parameter is changed.
triggered enable	Enables automatic triggered updates on this RIP interface. Default is disabled.

Default

None

Command Mode

VLAN Interface Configuration

ip routing (VLAN Interface Configuration)

Enables L3 routing on a VLAN.

Syntax

- `ip routing force`
- `no ip routing`

Command Parameters

force Do not ask for confirmation

Default

None

Command Mode

VLAN Interface Configuration

ip vrrp

Changes VR settings or associate addresses.

Syntax

- `ip vrrp <vr_id> action {none | preempt}`
- `ip vrrp <vr_id> adver-int <interval>`
- `no ip vrrp <vr_id> fast-adv enable`

Command Parameters

{none | preempt} Specify the holddown action. Enter none for no action, Enter preempt to cancel the holddown timer.

<interval> Specify the advertisement interval in seconds. Value between 1 and 255.

<vr_id> Specify the virtual router ID to configure

Default

None

Command Mode

VLAN Interface Configuration

ip vrrp address

Associates an IP address with a virtual router ID.

Syntax

- `ip vrrp address <vr_id> <ip_address>`
- `no ip vrrp address <vr_id> <ip_address>`

Command Parameters

<vr_id> Specify the virtual router to configure. Value between 1 and 255.

Default

None

Command Mode

VLAN Interface Configuration

ip vrrp critical-ip enable

Configures the VRRP critical IP status.

Syntax

- `ip vrrp <vr_id> critical-ip enable`
- `no ip vrrp <vr_id> critical-ip enable`

Command Parameters

<vr_id> Specify the virtual router ID to configure

Default

None

Command Mode

VLAN Interface Configuration

ip vrrp critical-ip-addr

Configures the VRRP critical IP address.

Syntax

- `ip vrrp <vr_id> critical-ip-addr <ip_address>`
- `no ip vrrp <vr_id> critical-ip-addr <ip_address>`

Command Parameters

<ip_address>	Specify the critical IP address
<vr_id>	Specify the virtual router ID to configure

Default

None

Command Mode

VLAN Interface Configuration

ip vrrp fast-adv-int

Configures the VRRP fast advertisement interval.

Syntax

- `ip vrrp <vr_id> fast-adv-int <interval>`

Command Parameters

<interval>	Specify the fast advertisement interval in milliseconds. Value between 200 and 1000.
<vr_id>	Specify the virtual router ID to configure

Default

None

Command Mode

VLAN Interface Configuration

ip vrrp holddown-timer

Configures the VRRP holddown timer.

Syntax

- `ip vrrp <vr_id> holddown-timer <timer_value>`

Command Parameters

<timer_value>	Specify the holddown timer value. Value in seconds between 1 and 21600.
<vr_id>	Specify the virtual router ID to configure

Default

None

Command Mode

VLAN Interface Configuration

ip vrrp priority

Assigns a priority to the router for a specific virtual router ID.

Syntax

- `ip vrrp <vr_id> priority <1-255>`

Command Parameters

<1-255> Specify the priority value for the virtual router ID. Value between 1 and 255.

<vr_id> Specify the virtual router ID to configure

Default

None

Command Mode

VLAN Interface Configuration

ipv6 dhcp-relay fwd-path

Create fwd-path.

Syntax

- `default ipv6 dhcp-relay fwd-path <WORD> [enable]`
- `ipv6 dhcp-relay [fwd-path <WORD>] [enable]`
- `no ipv6 dhcp-relay fwd-path <WORD> [enable]`

Command Parameters

<WORD> Agent IPv6 address

Default

None

Command Mode

VLAN Interface Configuration

ipv6 interface (VLAN Interface Configuration)

Creates and configures a VLAN IPv6 interface.

Syntax

- **default ipv6 interface** [**all**][**enable**][**link-local**][**mtu**] [**reachable-time**][**retransmit-timer**]
- **ipv6 interface** [**address** <WORD>][**enable**][**link-local** <WORD>][**mtu** <1280-9216>][**name** <WORD>][**reachable-time** <1-3600000>][**retransmit-timer** <0-3600000>][**eui** <1-3>]
- **no ipv6 interface** [**address** <WORD>][**all**][**enable**]

Command Parameters

address <WORD>	Configures the IPv6 address and prefix length. The default value is none.
enable	Enables the interface admin status.
eui <1-3>	Specifies the EUI parameter setting.
link-local <WORD>	Configures the link local identifier. The default value is none.
mtu <1280-9216>	Configures the maximum transmission unit for the interface. The default value is 1500.
name <WORD>	Configures a description for the interface. This variable does not support the default parameter.
reachable-time <1-3600000>	Configures the time, in milliseconds, that a neighbor is considered reachable after receiving a reachability confirmation. Range is 0-3600000. The default value is 30000.
retransmit-timer <0-3600000>	Configures the time, in milliseconds, between retransmissions of Neighbor Solicitation messages to a neighbor when resolving the address or when probing the reachability of a neighbor. Range is 0-3600000. The default value is 1000.

Default

None

Command Mode

VLAN Interface Configuration

ipv6 mld (VLAN Interface Configuration)

Configures the multicast listener discovery (MLD) settings for each VLAN.

Syntax

- `default ipv6 mld [last-memb-query-int] [mrouter] [proxy] [query-interval] [query-max-response-time] [robust-value] [send-query] [snooping] [version]`
- `ipv6 mld [flush] [last-memb-query-int <0-255>] [mrouter <LINE>] [proxy] [query-interval <1-65535>] [query-max-response-time <0-255>] [robust-value <2-255>] [send-query] [snooping [enable]] [version]`
- `no ipv6 mld [mrouter <LINE>] [proxy] [send-query] [snooping [enable]]`

Command Parameters

flush	Flushes MLD Mrouter, group member, or sender.
las-memb-query-int <0-255>	Configures the last member query interval.
mrouter <LINE>	Configures multicast forwarding ports.
proxy	Enables MLD proxy.
query-interval <0-65535>	Configures the query interval time.
query-max-response-time <0-255>	Configures the maximum response time in the query message in seconds.
robust-value <2-255>	Configures the robustness variable.
send-query	Enables MLD send query.
snooping [enable]	Enables multicast listener discovery (MLD) snooping.
version	Configures MLD protocol version.

Default

None

Command Mode

VLAN Interface Configuration

ipv6 mld proxy

Enables MLD proxy.

Syntax

- `default ipv6 mld proxy {[query-interval] [query-max-response-time] [robust-value]} {send-query}`
- `ipv6 mld proxy {[query-interval <1-65535>] [query-max-response-time <0-255>] [robust-value <2-255>]} {send-query}`

- `no ipv6 mld proxy send-query`

Command Parameters

query-interval <1-65535>	Configure query interval time
query-max-response-time <0-255>	Configure Max response time in query message (in seconds)
robust-value <2-255>	Configure robustness variable
send-query	Enable MLD send query

Default

None

Command Mode

VLAN Interface Configuration

ipv6 nd (VLAN Interface Configuration)

Configures neighbor discovery.

Syntax

- `default ipv6 nd [dad-ns][hop-limit] [managed-config-flag] [other-config-flag] [ra-lifetime <0-9000>] [rtr-advert-max-interval <4-1800>] [rtr-advert-min-interval <3-1350> ] [send-ra]`
- `ipv6 nd [dad-ns][hop-limit] [managed-config-flag] [other-config-flag] [ra-lifetime <0-9000>] [rtr-advert-max-interval <4-1800>] [rtr-advert-min-interval <3-1350> ] [send-ra]`
- `no ipv6 nd [managed-config-flag] [other-config-flag] [send-ra]`

Command Parameters

dad-ns <0-600>	Duplicates address detection - neighbor solicitation.
hop-limit <1-255>	Specifies the hop limit value for the interface.
managed-config-flag	Managed config flag
other-config-flag	Other config flag
ra-lifetime <0-9000>	Router advert lifetime
rtr-advert-max-interval <4-1800>	Max interval for router advert
rtr-advert-min-interval <3-1350>	Min interval for router advert

send-ra Send router advert

Default

None

Command Mode

VLAN Interface Configuration

Chapter 15: VRRP Router Configuration

This chapter provides information related to the VRRP Router configuration commands.

end (VRRP Router Configuration)

Exits from router configuration mode.

Syntax

- **end**

Default

None

Command Mode

VRRP Router Configuration

exit (VRRP Router Configuration)

Exits from router configuration mode.

Syntax

- **exit**

Default

None

Command Mode

VRRP Router Configuration

ping-virtual-address

Enables or disables ICMP echo replies from virtual router IP addresses.

Syntax

- `default ping-virtual-address [enable]`
- `no ping-virtual-address [enable]`
- `ping-virtual-address enable`

Command Parameters

enable Enables ICMP echo replies for VRRP associated addresses

Default

None

Command Mode

VRRP Router Configuration