ExtremeSwitching

Command Line Interface Commands Reference for VOSS

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Contents

Chapter 1: About this Document 52
Purpose 52
Conventions 52
Text Conventions 52
Documentation and Training 54
Getting Help 55
Providing Feedback to Us 56
Chapter 2: New in this Document 57
Notice about Feature Support 57
Chapter 3: Application Configuration 58
restconf 58
slamon agent 58
slamon agent-comm-port 59
slamon install-cert-file 60
slamon oper-mode enable 60
slamon server 61
Chapter 4: BGP Router Configuration 62
aggregate-address 62
auto-peer-restart enable 63
auto-summary 64
bgp aggregation 64
bgp always-compare-med 65
bgp client-to-client reflection 65
bgp cluster-id 65
bgp confederation 66
bgp default local-preference 67
bgp deterministic-med enable 67
bgp multiple-paths 68
comp-bestpath-med-confed 68
debug-screen 69
default-information 69
default-metric (for BGP) 69
flap-dampening 70
global-debug mask 71
ibgp-report-import-rt 71
ignore-illegal-rtrid 72
neighbor password 72
neighbor WORD<0-1536> 73
neighbor WORD<0-1536> address-family 73

neighbor WORD<0-1536> advertisement-interval <5-120> ... 74
neighbor WORD<0-1536> default-ipv6-originate ... 74
neighbor WORD<0-1536> default-originate ... 75
neighbor WORD<0-1536> ebgp-multihop ... 75
neighbor WORD<0-1536> enable ... 75
neighbor WORD<0-1536> in-route-map WORD<0-256> ... 76
neighbor WORD<0-1536> ipv6-in-route-map WORD<0-256> ... 76
neighbor WORD<0-1536> ipv6-out-route-map WORD<0-256> ... 77
neighbor WORD<0-1536> max-prefix <0-2147483647> ... 77
neighbor WORD<0-1536> MD5-authentication enable ... 78
neighbor WORD<0-1536> neighbor-debug-mask WORD<1-100> ... 78
neighbor WORD<0-1536> next-hop-self ... 79
neighbor WORD<0-1536> out-route-map WORD<0-256> ... 80
neighbor WORD<0-1536> peer-group WORD<0-1536> ... 80
neighbor WORD<0-1536> remote-as WORD<0-11> ... 81
neighbor WORD<0-1536> remove-private-as enable ... 81
neighbor WORD<0-1536> retry-interval <1-65535> ... 81
neighbor WORD<0-1536> route-reflector-client ... 82
neighbor WORD<0-1536> route-refresh ... 82
neighbor WORD<0-1536> send-community ... 83
neighbor WORD<0-1536> soft-reconfiguration-in enable ... 83
neighbor WORD<0-1536> timers ... 83
neighbor WORD<0-1536> update-source ... 84
neighbor WORD<0-1536> weight ... 84
neighbor-debug-all ... 85
network (for BGP) ... 85
no-med-path-is-worst ... 86
quick-start ... 87
redistribute direct (for BGP) ... 87
redistribute dvr (for BGP) ... 88
redistribute ipv6-direct (for BGP) ... 89
redistribute ipv6-isis enable ... 90
redistribute ipv6-isis metric ... 90
redistribute ipv6-isis route-map ... 91
redistribute ipv6-static (for BGP) ... 91
redistribute isis (for BGP) ... 92
redistribute ospf (for BGP) ... 93
redistribute ospfv3 (for BGP) ... 94
redistribute rip (for BGP) ... 95
redistribute ripng enable ... 96
redistribute ripng metric ... 96
redistribute ripng route-map ... 97
redistribute static (for BGP) ... 97

route-reflector enable 98
route-refresh 99
router-id (for BGP) 99
synchronization 100
traps 100
Chapter 5: DHCP-guard Configuration 101
match reply prefix-list 101
match server access-list 101
preference max-limit 102
preference min-limit 102
Chapter 6: Elan I-SID Configuration 103
c-vid (for a mlt) 103
c-vid (for a port) 103
untagged-traffic (for a mlt) 104
untagged-traffic (for a port) 104
Chapter 7: Elan-Transparent Configuration 106
mlt (T-UNI based) 106
port (T-UNI based) 106
Chapter 8: GigabitEthernet Interface Configuration 108
access-diffserv 108
action 109
auto-negotiate enable (on an Ethernet port) 110
auto-negotiation-advertisements 111
auto-nni 113
auto-recover-port 113
brouter 114
channelize 115
clear mac-address-table dynamic 116
default-vlan-id 116
duplex 117
eapol 118
eapol fail-open-vlan 118
eapol guest-vlan 119
eapol max-request 120
eapol multihost eap-mac-max 120
eapol multihost eap-oper-mode 121
eapol multihost mac-max 121
eapol multihost non-eap-mac-max 121
eapol multihost radius-non-eap-enable 122
eapol quiet-interval 122
eapol radius-dynamic-server enable 123
eapol re-authentication 123
eapol re-authentication-period 124

eapol status 125
enable-diffserv 126
encapsulation dot1q 127
energy-saver (for port) 127
fa authentication-key (for a port) 128
fa enable (for a port) 128
fa management (for a port) 129
fa message-authentication (for a port) 129
fec 130
high-secure enable 130
ip arp-inspection 131
ip arp-proxy enable (for a port) 132
ip arp-response (for a port) 132
ip dhcp-relay (for a port) 133
ip dhcp-relay fwd-path (for a port) 134
ip dhcp-relay fwd-path mode (for a port) 135
ip dhcp-snooping (for port) 136
ip directed-broadcast (for a port) 136
ip forward-protocol udp (on a port) 137
ip forward-protocol udp broadcastmask (on a port) 137
ip forward-protocol udp maxttl (on a port) 138
ip forward-protocol udp port 138
ip forward-protocol udp portfwdlist (on a port) 139
ip igmp (for a port) 140
ip igmp access-list (for a port) 142
ip igmp access-list mode (for a port) 143
ip igmp igmpv3-explicit-host-tracking (for an Ethernet port) 144
ip igmp immediate-leave (for an Ethernet port) 144
ip igmp stream-limit (for a port) 145
ip ipsec enable (for a port) 145
ip ipsec policy (for a port) 146
ip irdp address (for a port) 146
ip irdp holdtime (for a port) 147
ip irdp maxadvertinterval (for a port) 147
ip irdp minadvertinterval (for a port) 148
ip irdp multicast (for a port) 148
ip irdp preference (for a port) 149
ip mroute (for a port) 149
ip ospf advertise-when-down enable (for a port) 150
ip ospf area (for a port) 151
ip ospf authentication-key (for a port) 152
ip ospf authentication-type (for a port) 152
ip ospf cost (for a port) 154

ip ospf dead-interval (for a port)..... 154
ip ospf digest-key (for a port)..... 155
ip ospf enable (for a port)..... 155
ip ospf hello-interval (for a port)..... 156
ip ospf mtu-ignore enable (for a port)..... 157
ip ospf network (for a port)..... 157
ip ospf poll-interval (for a port)..... 158
ip ospf primary-digest-key (for a port)..... 159
ip ospf priority (for a port)..... 159
ip ospf retransmit-interval (for a port)..... 160
ip ospf transit-delay (for a port)..... 160
ip pim (for a port)..... 161
ip pim bsr-candidate preference (for a port)..... 162
ip pim hello-interval (for a port)..... 163
ip pim interface-type (for a port)..... 163
ip pim join-prune-interval (for a port)..... 164
ip rip advertise-when-down enable (for a port)..... 164
ip rip auto-aggregation (for a port)..... 165
ip rip cost (for a port)..... 165
ip rip default-listen (for a port)..... 166
ip rip default-supply enable (for a port)..... 166
ip rip enable (for a port)..... 167
ip rip holddown (for a port)..... 167
ip rip in-policy (for a port)..... 168
ip rip listen (for a port)..... 168
ip rip out-policy (for a port)..... 169
ip rip poison enable (for a port)..... 169
ip rip port..... 170
ip rip receive version (for a port)..... 171
ip rip send (for a port)..... 171
ip rip supply (for a port)..... 172
ip rip timeout (for a port)..... 172
ip rip triggered (for a port)..... 173
ip rvs-path-chk..... 173
ip source verify 174
ip spb-multicast enable (for a port)..... 174
ip spb-pim-gw enable (for a port)..... 174
ip spb-pim-gw hello-interval (for a port)..... 175
ip spb-pim-gw ip join-prune-interval (for a port)..... 175
ip vrrp (for a port)..... 176
ip vrrp address (for a port)..... 178
ip vrrp version..... 179
ipv6 dhcp-relay (for a port)..... 179

ipv6 fhs dhcp-guard..... 180
ipv6 fhs nd-inspection enable (for a port)..... 181
ipv6 fhs ra-guard..... 181
ipv6 forwarding (for a port)..... 182
ipv6 interface (for a port)..... 182
ipv6 interface address (for a port)..... 182
ipv6 interface enable (for a port)..... 183
ipv6 interface hop-limit (for a port)..... 183
ipv6 interface link-local (for a port)..... 184
ipv6 interface mtu (for a port)..... 185
ipv6 interface name (for a port)..... 185
ipv6 interface reachable-time (for a port)..... 186
ipv6 interface retransmit-timer (for a port)..... 186
ipv6 interface vlan (for a port)..... 187
ipv6 ipsec enable (for a port)..... 187
ipv6 ipsec policy (for a port)..... 188
ipv6 mld last-listener-query-interval (for a port)..... 188
ipv6 mld query-interval (for a port)..... 189
ipv6 mld query-max-response (for a port)..... 189
ipv6 mld robust-value (for a port)..... 190
ipv6 mld version (for a port)..... 190
ipv6 nd (for a port)..... 190
ipv6 nd dad-ns (for a port)..... 191
ipv6 nd hop-limit (for a port)..... 192
ipv6 nd managed-config-flag (for a port)..... 192
ipv6 nd mtu (for a port)..... 193
ipv6 nd other-config-flag (for a port)..... 193
ipv6 nd prefix (for a port)..... 194
ipv6 nd prefix-interface (for a port)..... 195
ipv6 nd ra-lifetime (for a port)..... 195
ipv6 nd reachable-time (for a port)..... 196
ipv6 nd retransmit-timer (for a port)..... 196
ipv6 nd rtr-advert-max-interval (for a port)..... 197
ipv6 nd rtr-advert-min-interval (for a port)..... 197
ipv6 nd send-ra (for a port)..... 198
ipv6 nd valid-life (for a port)..... 198
ipv6 ospf (for a port)..... 199
ipv6 ospf area (for a port)..... 201
ipv6 pim enable (for a port)..... 202
ipv6 pim hello-interval (for a port)..... 202
ipv6 pim join-prune-interval (for a port)..... 203
ipv6 rip cost (for a port)..... 203
ipv6 rip poison enable (for a port)..... 203

ipv6 rvs-path-chk..... 204
ipv6 source-guard 205
ipv6 vrrp (for a port)..... 205
ipv6 vrrp address (for a port)..... 208
i-sid (for a port)..... 208
isis (on a port)..... 209
isis hello-auth (on a port)..... 209
isis l1-dr-priority (on a port)..... 210
isis l1-hello-interval (on a port)..... 211
isis l1-hello-multiplier (on a port)..... 211
isis spbm (on a port)..... 212
lacp aggregation enable..... 213
lacp aggr-wait-time 213
lacp enable (for a port)..... 213
lacp fast-periodic-time 214
lacp key 214
lacp mode..... 215
lacp partner-key 215
lacp partner-port 215
lacp partner-port-priority 216
lacp partner-state 216
lacp partner-system-id 217
lacp partner-system-priority 217
lacp priority 218
lacp slow-periodic-time 218
lacp system-priority 219
lacp timeout-scale 219
lacp timeout-time..... 219
lldp location-identification civic-address..... 220
lldp location-identification coordinate..... 222
lldp location-identification ecs-elin..... 222
lldp med-network-policies..... 223
lock..... 224
macsec cipher-suite..... 224
macsec confidentiality-offset..... 225
macsec connectivity-association (to a port)..... 225
macsec enable..... 226
macsec encryption..... 226
mac-security limit-learning..... 227
mef-uni enable (for a port)..... 228
name (for a port)..... 228
poe poe-limit..... 229
poe poe-priority..... 229

poe poe-shutdown 230
policy-vlan-precedence 231
private-vlan 231
protocol-vlan 232
qos 802.1p-override 233
qos if-policer 233
qos if-rate-limiting 234
qos if-shaper 235
qos level 236
rate-limit 236
rmon (for a port) 237
sflow counter-interval 238
sflow max-header-size 238
sflow sampling-rate 239
shutdown 239
slpp (for a port) 240
slpp-guard (for a port) 241
snmp trap link-status 242
source-mac-vlan 243
spanning-tree bpduguard 244
spanning-tree mstp cost 244
spanning-tree mstp edge-port 245
spanning-tree mstp force-port-state 245
spanning-tree mstp hello-time (on a port) 246
spanning-tree mstp msti (on a port) 246
spanning-tree mstp p2p 247
spanning-tree mstp port 248
spanning-tree mstp priority (on a port) 249
spanning-tree mstp protocol-migration 250
spanning-tree rstp cost 250
spanning-tree rstp edge-port 251
spanning-tree rstp p2p 251
spanning-tree rstp port 252
spanning-tree rstp priority (on a port) 253
spanning-tree rstp protocol-migration 254
spanning-tree rstp stp 254
speed 254
subnet-vlan 255
spoof-detect 256
tagged-frames-discard 257
tx-flow-control 258
untagged-frames-discard 259
untag-port-default-vlan 260

vlacp 260
vrf (for a port) 262
Chapter 9: Global Configuration 263
access-policy 263
access-policy <1-65535> accesslevel 263
access-policy <1-65535> access-strict 264
access-policy <1-65535> enable 264
access-policy <1-65535> ftp 265
access-policy <1-65535> host 265
access-policy <1-65535> http 266
access-policy <1-65535> mode 266
access-policy <1-65535> name 267
access-policy <1-65535> network 267
access-policy <1-65535> precedence 268
access-policy <1-65535> rlogin 268
access-policy <1-65535> snmp-group 269
access-policy <1-65535> snmpv3 269
access-policy <1-65535> ssh 270
access-policy <1-65535> telnet 270
access-policy <1-65535> tftp 271
access-policy <1-65535> username 271
access-policy by-mac 272
application 272
app-telemetry enable 273
auto-recover-delay 273
autotopology 274
banner 274
boot config choice 275
boot config flags advanced-feature-bandwidth-reservation 276
boot config flags block-snmp 276
boot config flags debug-config 277
boot config flags debugmode 278
boot config flags dvr-leaf-mode 278
boot config flags enhancedsecure-mode 278
boot config flags factorydefaults 279
boot config flags factorydefaults fabric 280
boot config flags flow-control-mode 280
boot config flags ftpd 281
boot config flags ha-cpu 281
boot config flags hsecure 281
boot config flags insight-port-connect-type 282
boot config flags ipv6-egress-filter 283
boot config flags ipv6-mode 283

boot config flags linerate-directed-broadcast 283
boot config flags logging 284
boot config flags nni-mstp 285
boot config flags reboot 285
boot config flags rlogind 286
boot config flags spanning-tree-mode 286
boot config flags spbm-config-mode 287
boot config flags sshd 287
boot config flags syslog-rfc5424-format 287
boot config flags telnetd 288
boot config flags tftpd 288
boot config flags trace-logging 289
boot config flags urpf-mode 289
boot config flags verify-config 289
boot config flags vrf-scaling 290
boot config flags vxlan-gw-full-interworking-mode 290
boot config host 291
boot config loadconfigtime 292
boot config logfile 293
boot config multicast 294
boot config sio console baud 294
certifcate subject 294
certificate ca 296
certificate generate-csr 297
certificate generate-keypair 298
certificate install-file 298
cfm cmac enable 299
cfm cmac level <0-7> 299
cfm cmac mepid <1-8191> 300
cfm maintenance-association 300
cfm maintenance-domain 301
cfm maintenance-endpoint 302
cfm spbm enable 302
cfm spbm level 303
cfm spbm mepid 303
clear ipv6 fhs snooping 303
clear ipv6 fhs statistics dhcp-guard 304
clear ipv6 fhs statistics nd-inspection 305
clear ipv6 fhs statistics ra-guard 305
cli password 306
cli timeout 306
clilog 307
clock time-zone 307

debug ip pim..... 308
dvr apply redistribute direct 309
dvr apply redistribute static 310
dvr controller 310
dvr controller <1-255> inject-default-route-disable..... 311
dvr leaf 311
dvr leaf <1-255> virtual-ist {A.B.C.D/X} {A.B.C.D} peer-ip {A.B.C.D} cluster-id <1-1000>..... 312
dvr leaf <1-255> virtual-ist {A.B.C.D} {A.B.C.D} peer-ip {A.B.C.D} cluster-id <1-1000>..... 312
dvr redistribute direct 313
dvr redistribute static 313
eapol enable..... 314
eapol multihost non-eap-pwd-fmt..... 314
end..... 315
energy-saver (global)..... 315
energy-saver schedule..... 316
fa assignment-timeout..... 317
fa discovery-timeout..... 317
fa enable..... 318
fa zero-touch-client..... 318
filter acl..... 320
filter acl ace..... 321
filter acl ace action..... 322
filter acl ace arp..... 326
filter acl ace ethernet..... 326
filter acl ace ip..... 328
filter acl ace ipv6..... 331
filter acl ace protocol..... 332
filter acl i-sid..... 334
filter acl port..... 335
filter acl set..... 335
filter acl vlan..... 336
ike policy..... 337
ike profile..... 339
ike v2-profile..... 340
interface GigabitEthernet..... 342
interface Loopback..... 342
interface mgmtEthernet..... 343
interface mlt..... 343
interface vlan..... 343
ip alternative-route (globally)..... 344
ip arp..... 344
ip arp multicast-mac-flooding..... 346
ip arp static-mcast..... 346

ip as-list 347
ip community-list 348
ip dhcp-relay fwd-path 348
ip dhcp-relay fwd-path enable 349
ip dhcp-relay fwd-path mode 350
ip dhcp-snooping binding 350
ip dhcp-snooping enable 351
ip domain-name 351
ip ecmp 352
ip forward-protocol udp 354
ip forward-protocol udp portfwd 354
ip forward-protocol udp portfwdlist 355
ip gratuitous-arp 355
ip icmp 356
ip icmp echo-broadcast-request (globally) 356
ip igmp (globally) 357
ip igmp generate-log 358
ip ipfix aging-interval 359
ip ipfix collector 359
ip ipfix enable 360
ip ipfix observation-domain 360
ip irdp 361
ip isid-list 361
ip max-routes-trap enable 362
ip more-specific-non-local-route 362
ip mroute resource-usage (globally) 363
ip mroute resource-usage egress-threshold 364
ip mroute resource-usage log-msg trap-msg 364
ip mroute static-source-group 365
ip mroute stats enable 365
ip mroute stream-limit (globally) 366
ip msdp apply redistribute (globally) 366
ip msdp connect—retry (globally) 366
ip msdp enable 367
ip msdp keepalive (globally) 367
ip msdp md5-authentication (globally) 368
ip msdp mesh-group (globally) 368
ip msdp originator-id (globally) 369
ip msdp password peer (globally) 369
ip msdp redistribute (globally) 370
ip msdp redistribute route-policy (globally) 370
ip msdp sa-filter in (globally) 371
ip msdp sa-filter out (globally) 371

ip msdp sa-limit (globally)..... 372
ip msdp ttl-threshold (globally)..... 372
ip name-server..... 373
ip pim (globally)..... 374
ip pim mode..... 375
ip pim rp-candidate group..... 376
ip pim static-rp..... 376
ip pim virtual-neighbor..... 377
ip prefix-list..... 377
ip route (globally)..... 378
ip route preference protocol ebgp..... 380
ip route preference protocol ibgp..... 380
ip route preference protocol ospf-extern1..... 381
ip route preference protocol ospf-extern2..... 381
ip route preference protocol ospf-inter..... 382
ip route preference protocol ospf-intra..... 382
ip route preference protocol rip..... 382
ip route preference protocol spbm-level1..... 383
ip route preference protocol static..... 383
ip routing..... 384
ip rsmlt edge-support..... 384
ip source-route..... 385
ip spb-pim-gw foreign-source (globally)..... 385
ip supernet..... 386
ip ttl..... 386
ip vrf..... 387
ipsec policy..... 388
ipsec policy admin enable..... 389
ipsec policy security-association..... 390
ipsec security-association..... 390
ipv6 alternative-route..... 393
ipv6 autoconfig..... 393
ipv6 dhcp-relay fwd-path..... 393
ipv6 ecmp..... 394
ipv6 fhs dhcp-guard enable..... 395
ipv6 fhs dhcp-guard policy 395
ipv6 fhs enable..... 396
ipv6 fhs ipv6-access-list..... 396
ipv6 fhs mac–access-list..... 397
ipv6 fhs nd-inspection enable (globally)..... 397
ipv6 fhs ra-guard enable..... 397
ipv6 fhs ra-guard policy 398
ipv6 fhs snooping static-binding..... 398

ipv6 forwarding (globally)..... 399
ipv6 hop-limit..... 400
ipv6 icmp addr-unreach..... 400
ipv6 icmp echo multicast-request (globally)..... 400
ipv6 icmp error-interval..... 401
ipv6 icmp error-quota..... 401
ipv6 icmp port-unreach..... 402
ipv6 icmp unreach-msg..... 402
ipv6 interface address <IPv6addr/prefixlen>..... 403
ipv6 isis apply accept..... 403
ipv6 max-routes-trap..... 403
ipv6 mld generate-log..... 404
ipv6 mld generate-trap..... 404
ipv6 mroute stats enable..... 404
ipv6 neighbor..... 405
ipv6 pim disc-data-timeout..... 406
ipv6 pim enable..... 406
ipv6 pim fwd-cache-timeout 406
ipv6 pim join-prune-interval 407
ipv6 pim mode 407
ipv6 pim register-suppression-timeout 408
ipv6 pim static-rp..... 408
ipv6 pim unicast-route-change-timeout 409
ipv6 prefix-list..... 409
ipv6 route..... 410
ipv6 route preference protocol..... 412
ipv6 route static..... 413
ipv6 source-route..... 413
ipv6 tunnel..... 414
i-sid..... 415
i-sid (T-UNI based)..... 415
i-sid mac-address-entry..... 416
lacp (globally)..... 416
license-grant..... 417
link-flap-detect..... 418
link-state group..... 419
lldp tx-hold-multiplier 419
lldp tx-interval 420
load-license..... 420
logging level..... 421
logging screen..... 421
logging transferFile..... 422
logging transferFile filename-prefix..... 422

logging write 423
logical-intf isis 423
login-message 424
mac-address-table 425
macsec connectivity-association (globally) 425
max-logins 426
mgmt clip 426
mgmt vlan 427
mirror-by-port 428
mlt 431
mlt <1-512> member 432
monitor-by-isid 433
monitor-statistics 434
monitor-statistics duration 435
monitor-statistics interval 435
multicast software-forwarding 436
ntp 436
ntp authentication-key 436
ntp interval <1-2185> 437
ntp master <1-16> 437
ntp restrict 438
ntp server 438
ntp version 439
ovsdb 440
password 440
password access-level 441
password aging-time 442
password change-interval 443
password create-user 444
password default-lockout-time 445
password delete-user 445
password lockout 446
password max-sessions 446
password min-passwd-len 447
password password-history 447
password password-rule 448
password post-expiry-notification-interval 449
password post-pass-expiry-notification-interval 449
password pre-expiry-notification-interval 450
password pre-pass-expiry-notification-interval 450
password set-password 451
passwordprompt 451
pluggable-optical-module 452

poe poe-pd-detect-type 453
poe poe-power-usage-threshold 454
portlock enable 454
prompt 455
qos egressmap 455
qos ingressmap 456
qos queue-profile <1-6> 457
qos queue-profile queue <1-6> <0-7> 458
radius 458
radius access-priority-attribute 460
radius accounting attribute-value 461
radius accounting enable 461
radius accounting include-cli-commands 461
radius auth-info-attr-value 462
radius clear-stat 462
radius cli-cmd-count 463
radius cli-profile 463
radius command-access-attribute 463
radius dynamic-server client 464
radius enable 465
radius maxserver 465
radius mcast-addr-attr-value 466
radius reachability keep-alive-timer 466
radius reachability mode 467
radius reachability password 467
radius reachability unreachable-timer 467
radius reachability username 468
radius server host 468
radius sourceip-flag 471
radius-snmp 472
rmon alarm 473
rmon event 474
rmon history 475
rmon stats 476
rmon util-method 477
route-map 477
router bgp 478
router bgp as-4-byte enable 478
router bgp as-dot enable 479
router isis 479
router isis enable 480
router ospf 480
router rip enable 481

router rip ipv6-enable 481
router vrf 482
router vrrp 482
run spbm 482
run spbm interface 483
run vms layer-2 switch 483
run vms layer-3 switch 484
sflow agent-ip 484
sflow collector 485
sflow enable 486
slot shutdown 486
slpp (globally) 486
slpp-guard ethertype 487
smtp 488
snmplog 489
snmp-server authentication-trap enable 490
snmp-server community 490
snmp-server contact 491
snmp-server force-iphdr-sender enable 491
snmp-server force-trap-sender enable 492
snmp-server group 492
snmp-server host v1 494
snmp-server host v2 495
snmp-server host v3 496
snmp-server location 497
snmp-server login-success-trap enable 498
snmp-server name 498
snmp-server notify-filter 499
snmp-server sender-ip 499
snmp-server user 500
snmp-server view 502
spanning-tree mstp forward-time 502
spanning-tree mstp max-age 503
spanning-tree mstp max-hop 503
spanning-tree mstp msti (globally) 504
spanning-tree mstp pathcost-type 505
spanning-tree mstp priority (globally) 505
spanning-tree mstp region 506
spanning-tree mstp tx-holdcount 506
spanning-tree mstp version 507
spanning-tree rstp forward-time 508
spanning-tree rstp group-stp enable 508
spanning-tree rstp hello-time 508

spanning-tree rstp max-age 509
spanning-tree rstp pathcost-type 509
spanning-tree rstp priority (globally) 510
spanning-tree rstp tx-holdcount 510
spanning-tree rstp version 511
spanning-tree tc-receive-alarm-threshold count 511
spanning-tree tc-receive-alarm-threshold interval 511
spbm 512
spbm ethertype 512
spbm nick-name server 513
spbm nick-name server range 513
ssh (configuration) 514
ssh client 518
ssh keyboard-interactive-auth 519
ssh rekey 519
ssh rekey data-limit 519
ssh rekey time-interval 520
ssh sftp 520
ssl certificate 521
ssl reset 521
sys clipId-topology-ip 522
sys control tcp-timestamp 522
sys force-msg 523
sys force-topology-ip-flag 523
sys msg-control 524
sys mtu 525
sys name 525
sys power slot 525
sys power slot-priority 526
sys security-console 526
sys software auto-commit 527
sys software commit-time 527
sys system-default 528
sys usb disable 528
sys usb enable 529
syslog enable 529
syslog host 530
syslog ip-header-type 532
syslog max-hosts <1-10> 533
syslog root-cert 533
tacacs accounting 533
tacacs authentication 534
tacacs authorization 535

tacacs protocol enable 535
tacacs server host 536
tacacs server secondary-host 537
tacacs switch 539
telnet-access sessions 539
udp checksum 540
username 540
virtual-ist 541
virtual-service (globally) 542
vlacp enable 543
vlan action 544
vlan agetime 544
vlan create 545
vlan delete 547
vlan i-sid 548
vlan mac-address-entry 549
vlan mac-address-static 549
vlan members 550
vlan mlt 551
vlan name 551
vlan nodal-mep 552
vlan nodal-mip-level 553
vlan ports 553
vlan rmon 555
vlan srcmac 555
vlan static-mcastmac 556
vnid 557
vnid mac-address-entry 557
vtep (configuration) 558
vtep source-ip 558
web-server 559
Chapter 10: IS-IS Router Configuration 561
accept (for the GRT) 561
accept adv-rtr (for the GRT) 562
accept i-sid (for the GRT) 563
accept isid-list (for the GRT) 564
accept route-map 565
backbone 565
csnp-interval 566
inband-mgmt-ip 566
ip-source-address 567
ip-tunnel-source-address 567
ipv6 accept (IS-IS) 568

ipv6 accept adv-rtr (for IS-IS)..... 569
ipv6 redistribute (for GRT)..... 570
ipv6 redistribute (for ISIS)..... 571
ipv6 redistribute bgp enable (For IS-IS)..... 572
ipv6-source-address..... 572
ipv6-source-address <ipv6-addr>..... 572
is-type..... 573
manual-area..... 574
max-lsp-gen-interval..... 574
metric..... 575
overload..... 575
overload-on-startup..... 576
psnp-interval..... 576
redistribute bgp (for IS-IS)..... 577
redistribute direct (for IS-IS)..... 578
redistribute ospf (for IS-IS)..... 580
redistribute rip (for IS-IS)..... 581
redistribute static (for IS-IS)..... 582
retransmit-lsp-interval..... 584
spbm <1-100>..... 584
spbm <1-100> b-vid..... 585
spbm <1-100> ip 586
spbm <1-100> ipv6..... 586
spbm <1-100> lsdb-trap..... 587
spbm <1-100> multicast..... 587
spbm <1-100> multicast fwd-cache-timeout..... 588
spbm <1-100> multicast spb-pim-gw controller..... 588
spbm <1-100> nick-name..... 589
spbm <1-100> smlt-peer-system-id..... 589
spbm <1-100> smlt-virtual-bmac..... 590
spbm <1-100> stp-multi-homing..... 591
spf-delay..... 591
sys-name..... 592
system-id..... 592
Chapter 11: Logical Interface Configuration..... 593
auth-key..... 593
egress-shaping-rate..... 593
ipsec..... 594
isis enable..... 594
isis hello-auth..... 595
isis l1-dr-priority..... 596
isis l1-hello-interval..... 596
isis l1-hello-multiplier..... 596

isis spbm 597
Chapter 12: Loopback Interface Configuration 598
ip address (loopback) 598
ip area (loopback) 599
ip dhcp-relay (for loopback) 599
ip ipsec enable (for a loopback interface) 600
ip ipsec policy (for a loopback interface) 600
ip ospf (loopback) 601
ip pim (loopback) 602
ipv6 interface address (loopback) 603
ipv6 ipsec enable (for a loopback interface) 603
ipv6 ipsec policy (for a loopback interface) 604
migrate-to-mgmt (for a loopback interface) 604
Chapter 13: Management Instance Configuration 606
enable (for a Management Instance) 606
ip address (for a Mangement Instance) 606
ip route (for a Management Instance) 607
ipv6 address (for a Management Instance) 608
ipv6 route (for a Management Instance) 608
Chapter 14: mgmtEthernet Interface Configuration 610
auto-negotiate (for the management port) 610
duplex (for the management port) 610
ip address (for the management port) 611
ip ipsec enable (for a mgmt port) 612
ip ipsec policy (for a management interface) 612
ipv6 interface address (for the management port) 613
ipv6 interface enable (for the management port) 613
ipv6 interface hop-limit (for the management port) 614
ipv6 interface link-local (for the management port) 614
ipv6 interface mtu (for the management port) 615
ipv6 interface name (for the management port) 615
ipv6 interface process-redirect (for the management port) 616
ipv6 interface reachable-time (for the management port) 616
ipv6 interface retransmit-timer (for the management port) 617
ipv6 ipsec enable (for a mgmt port) 617
ipv6 ipsec policy (for a management interface) 618
ipv6 nd dad-ns (for the management port) 618
shutdown (for the management port) 619
speed (for the management port) 619
Chapter 15: MLT Interface Configuration 621
default svlan-porttype 621
fa authentication-key (for a MLT) 621
fa enable (for a MLT) 622

fa management (for an MLT)..... 622
fa message-authentication (for an MLT)..... 622
flex-uni (for an MLT)..... 623
ip dhcp-relay (for an MLT)..... 623
ip dhcp-snooping (for MLT)..... 626
i-sid (for a mlt)..... 626
isis (on an MLT)..... 627
isis hello-auth (on an MLT)..... 627
isis l1-dr-priority (on an MLT)..... 628
isis l1-hello-interval (on an MLT)..... 629
isis l1-hello-multiplier (on an MLT)..... 629
isis spbm (on an MLT)..... 630
lacp (on an MLT)..... 630
mef-uni enable (for a mlt)..... 631
virtual-ist (on an MLT)..... 632
Chapter 16: OSPF Router Configuration..... 633
accept adv-rtr (for OSPF)..... 633
area..... 634
area range..... 635
area virtual-link..... 635
as-boundary-router enable..... 637
auto-vlink..... 638
bad-lsa-ignore enable..... 638
default-cost..... 639
helper-mode-disable..... 640
host-route..... 640
ip area virtual-link ipsec..... 641
ip area virtual-link ipsec action..... 641
ip area virtual-link ipsec direction..... 642
ip area virtual-link ipsec enable..... 642
ip area virtual-link ipsec security-association..... 643
ipv6 area..... 643
ipv6 area range..... 645
ipv6 area virtual-link..... 646
ipv6 area virtual-link ipsec..... 647
ipv6 area virtual-link ipsec action..... 647
ipv6 area virtual-link ipsec direction..... 648
ipv6 area virtual-link ipsec enable..... 648
ipv6 area virtual-link ipsec security-association..... 649
ipv6 as-boundary-router..... 650
ipv6 redistribute (for OSPF)..... 650
ipv6 redistribute bgp enable (For OSPF)..... 651
ipv6 router-id..... 651

ipv6 tunnel (for OSPF)..... 652
neighbor (for OSPF)..... 653
network (for OSPF)..... 654
redistribute (for OSPF)..... 654
rfc1583-compatibility enable..... 656
router-id (for OSPF)..... 656
show ip ospf..... 657
timers basic holddown (for OSPF)..... 657
trap..... 658
Chapter 17: OVSDB Configuration..... 659
controller..... 659
install-cert-file..... 659
managed-interface i-sids..... 660
private-key..... 660
replication..... 661
Chapter 18: Privileged EXEC..... 662
!(command number)..... 662
attribute..... 662
backup..... 663
boot..... 663
cd..... 664
clear alarm..... 664
clear app-telemetry counter..... 665
clear eapol non-eap..... 665
clear filter acl..... 666
clear ip arp interface..... 667
clear ip dhcp-relay..... 668
clear ip dhcp-relay counters..... 669
clear ip dhcp-snooping binding..... 669
clear ip mdsp sa-cache..... 670
clear ip mdsp sa-cache peer..... 670
clear ip mroute stats 671
clear ip msdp peer..... 671
clear ip msdp statistics..... 672
clear ip ospf stats..... 672
clear ip route..... 673
clear ip vrrp..... 673
clear ipsec stats all..... 674
clear ipv6 dcache..... 674
clear ipv6 mroute stats 675
clear ipv6 neighbor-cache..... 676
clear ipv6 ospf stats..... 677
clear ipv6 route static..... 677

clear ipv6 statistics..... 677
clear ipv6 vrrp..... 679
clear isis lsdb..... 680
clear isis stats..... 680
clear khi..... 681
clear lacp..... 681
clear logging..... 682
clear mac-address-table..... 682
clear mgmt statistics..... 683
clear mlt..... 683
clear qos..... 683
clear qos cosq-stats..... 684
clear radius statistics..... 685
clear sflow statistics..... 685
clear slpp..... 686
clear slpp stats..... 686
clear telnet..... 687
clear trace..... 687
clear virtual-ist stats..... 687
configure..... 688
copy..... 688
cp..... 689
delete..... 690
dir..... 690
disable..... 691
dos-chkdsk..... 691
dos-format..... 692
editing..... 692
energy-saver..... 692
flight-recorder..... 693
grep..... 694
maintenance system-action..... 694
mkdir..... 694
monitor ip mroute stats..... 695
monitor ip vrrp statistics..... 695
monitor ipv6 mroute stats 696
monitor mlt error collision..... 696
monitor mlt error main..... 697
monitor mlt stats interface main..... 697
monitor mlt stats interface utilization..... 698
monitor ports error..... 698
monitor ports statistics 699
monitor ports statistics bridging..... 701

monitor ports statistics dhcp-relay..... 702
monitor ports statistics interface..... 702
monitor ports statistics ospf..... 704
monitor ports statistics rmon..... 704
monitor ports statistics routing..... 705
more..... 706
mv..... 706
pwd..... 707
rename..... 707
reset..... 707
restore..... 708
rlogin..... 708
rsh..... 709
save config..... 710
save log..... 711
save trace..... 711
show access-policy..... 711
show alarm..... 712
show boot config..... 713
show boot config choice..... 714
show boot config flags..... 714
show eapol multihost-session-stats interface..... 717
show eapol session interface..... 718
show eapol summary..... 718
show energy-saver..... 719
show filter acl..... 720
show filter acl ace..... 720
show filter acl action..... 720
show filter acl arp..... 721
show filter acl config..... 721
show filter acl ethernet..... 722
show filter acl ip..... 722
show filter acl ipv6..... 723
show filter acl protocol..... 723
show filter acl statistics..... 724
show history..... 725
show interface gigabitethernet config..... 725
show interface vlan nlb-mode..... 726
show interfaces gigabitethernet..... 726
show interfaces gigabitethernet channelize..... 727
show interfaces gigabitethernet config..... 728
show interfaces gigabitethernet error..... 728
show interfaces gigabitethernet fdb-entry..... 729

show interfaces gigabitethernet high-secure 730
show interfaces gigabitethernet interface 730
show interfaces gigabitEthernet i-sid 731
show interfaces gigabitethernet l1-config 732
show interfaces gigabitethernet limit-fdb-learning 732
show interfaces gigabitethernet loop-detected 733
show interfaces gigabitethernet mac-security 734
show interfaces gigabitethernet name 734
show interfaces gigabitethernet ospf 735
show interfaces gigabitethernet private-vlan 736
show interfaces gigabitethernet rate-limit 736
show interfaces gigabitethernet shape 737
show interfaces gigabitethernet slpp 737
show interfaces gigabitethernet state 738
show interfaces gigabitethernet statistics 739
show interfaces gigabitethernet statistics bridging 739
show interfaces gigabitethernet statistics dhcp-relay 740
show interfaces gigabitethernet statistics lacp 740
show interfaces gigabitethernet statistics policer 741
show interfaces gigabitethernet statistics rmon 741
show interfaces gigabitethernet statistics verbose 742
show interfaces gigabitethernet vlan 743
show interfaces gigabitethernet vrfs 743
show interfaces loopback 744
show interfaces mgmtethernet 744
show interfaces mgmtethernet config-L1 745
show interfaces mgmtethernet error 745
show interfaces mgmtethernet statistics 746
show interfaces vlan 746
show interfaces vlan arp 746
show interfaces vlan autolearn-mac 747
show interfaces vlan dhcp-relay 747
show interfaces vlan igmp 748
show interfaces vlan igmp-mrdisc 748
show interfaces vlan ip 749
show interfaces vlan manual-edit-mac 750
show interfaces vlan nlb-mode 750
show interfaces vlan vlan-bysrcmac 750
show interfaces vlan vrfs 751
show ip igmp access 751
show ip igmp cache 752
show ip igmp group 753
show ip igmp group count 753

show ip igmp group count group {A.B.C.D}..... 754
show ip igmp group count group {A.B.C.D} tracked-members..... 755
show ip igmp group count group {A.B.C.D} tracked-members member-subnet..... 756
show ip igmp group count group {A.B.C.D} tracked-members port..... 758
show ip igmp group count group {A.B.C.D} tracked-members source-subnet..... 761
show ip igmp group count group {A.B.C.D} tracked-members vlan..... 763
show ip igmp group count group {A.B.C.D} tracked-members vrf..... 764
show ip igmp group count group {A.B.C.D} tracked-members vrfids..... 765
show ip igmp group count member-subnet..... 765
show ip igmp group count member-subnet {A.B.C.D/X} group..... 766
show ip igmp group count member-subnet {A.B.C.D/X} group {A.B.C.D} detail..... 766
show ip igmp group count member-subnet {A.B.C.D/X} group {A.B.C.D} tracked-members..... 768
show ip igmp group count member-subnet {A.B.C.D/X} group {A.B.C.D} tracked-members port. 771
show ip igmp group count member-subnet {A.B.C.D/X} group {A.B.C.D} tracked-members source-subnet..... 774
show ip igmp group count member-subnet {A.B.C.D/X} group {A.B.C.D} tracked-members source-subnet {A.B.C.D/X} port..... 776
show ip igmp group count member-subnet {A.B.C.D/X} group {A.B.C.D} tracked-members source-subnet {A.B.C.D/X} vlan..... 778
show ip igmp group count member-subnet {A.B.C.D/X} group {A.B.C.D} tracked-members source-subnet {A.B.C.D/X} vrf..... 779
show ip igmp group count member-subnet {A.B.C.D/X} group {A.B.C.D} tracked-members source-subnet {A.B.C.D/X} vrfids..... 780
show ip igmp group count member-subnet {A.B.C.D/X} group {A.B.C.D} tracked-members vlan 780
show ip igmp group count member-subnet {A.B.C.D/X} group {A.B.C.D} tracked-members vrf... 782
show ip igmp group count member-subnet {A.B.C.D/X} group {A.B.C.D} tracked-members vrfids..... 783
show ip igmp group count member-subnet {A.B.C.D/X} group {A.B.C.D} vrf..... 783
show ip igmp group count member-subnet {A.B.C.D/X} group {A.B.C.D} vrfids..... 784
show ip igmp group count member-subnet {A.B.C.D/X} vrf..... 785
show ip igmp group count member-subnet {A.B.C.D/X} vrfids..... 785
show ip igmp group group <A.B.C.D>..... 786
show ip igmp group group <A.B.C.D> tracked-members..... 787
show ip igmp group member-subnet..... 798
show ip igmp interface..... 798
show ip igmp mrdisc..... 799
show ip igmp mrdisc neighbors..... 800
show ip igmp router-alert..... 800
show ip igmp sender..... 801
show ip igmp snooping..... 802
show ip igmp snoop-trace..... 802
show ip igmp ssm..... 803
show ip igmp ssm-map..... 804
show ip igmp static..... 804

show ip igmp stream-limit..... 805
show ip igmp sys..... 805
show ip irdp..... 806
show ip msdp count..... 806
show ip msdp mesh-group..... 807
show ip msdp peer..... 808
show ip msdp rpf..... 808
show ip msdp sa-cache..... 809
show ip msdp sa-check..... 809
show ip msdp show-all..... 810
show ip msdp summary..... 811
show ip redistribute..... 811
show ipv6 fhs statistics..... 812
show ipv6 isis accept..... 812
show ipv6 isis redistribute..... 813
show ipv6 ospf default-cost..... 813
show ipv6 ospf ipsec..... 814
show ipv6 ospf vrf..... 814
show ipv6 ospf vrfids..... 815
show ipv6 rip redistiribute..... 815
show link-flap-detect..... 816
show lldp..... 816
show lldp local-sys-data..... 816
show lldp med-network-policies..... 817
show lldp neighbor..... 818
show lldp port..... 818
show lldp rx-stats..... 820
show lldp stats..... 820
show lldp tx-stats..... 820
show mac-address-entry..... 821
show macsec connectivity-association..... 821
show macsec status..... 822
show pluggable-optical-modules..... 822
show poe-main-status..... 823
show poe-port-status..... 824
show poe-power-measurement..... 824
show ports statistics ospf extended..... 824
show ports statistics ospf main..... 825
show qos policer..... 825
show radius dynamic-server..... 826
show routing statistics..... 826
show running-config..... 827
show slot..... 828

show vlan src-mac..... 828
show vnid i-sid..... 828
show vnid mac-address-entry..... 829
show vtep local..... 829
show vtep remote..... 830
show vtep remote name..... 830
software..... 830
software reset-commit-time 831
source..... 832
sys action..... 833
sys shutdown..... 834
trace ipv6 base..... 834
trace ipv6 forwarding..... 835
trace ipv6 nd..... 835
trace ipv6 ospf..... 836
trace ipv6 rtm..... 836
trace ipv6 transport..... 837
traceroute..... 838
uboot-install..... 839
usb-stop..... 840
virtual-service..... 840
virtual-service WORD<1-80> install..... 841
virtual-service WORD<1-80> uninstall..... 841
write memory 842
Chapter 19: RA-guard Configuration..... 843
hop-limit maximum 843
hop-limit minimum..... 843
managed-config-flag..... 844
match ra-macaddr-list..... 844
match ra-prefix-list..... 845
match ra-srcaddr-list..... 845
router-preference..... 846
Chapter 20: RIP Router Configuration..... 847
default-metric (for RIP)..... 847
ipv6 default-information enable..... 847
ipv6 default-information metric..... 848
ipv6 redistribute bgp enable..... 848
ipv6 redistribute bgp enable (For RIPng)..... 848
ipv6 redistribute direct enable..... 849
ipv6 redistribute isis enable..... 849
ipv6 redistribute ospf enable..... 849
ipv6 redistribute static enable..... 850
ipv6 timers basic holddown..... 850

ipv6 timers basic timeout..... 851
ipv6 timers basic update..... 851
network (for RIP)..... 851
redistribute (for RIP)..... 852
timers basic holddown (for RIP)..... 854
timers basic timeout..... 854
timers basic update..... 855
Chapter 21: Route-Map Configuration..... 856
enable (for a route policy)..... 856
match as-path..... 856
match community..... 857
match community-exact..... 857
match extcommunity..... 858
match interface..... 858
match local-preference..... 859
match metric..... 859
match metric-type-isis..... 859
match network..... 860
match next-hop..... 860
match protocol..... 861
match route-source..... 861
match route-type..... 862
match tag..... 862
match vrf..... 863
match vrfids..... 863
name..... 864
permit..... 864
set as-path..... 865
set as-path-mode..... 865
set automatic-tag..... 866
set community..... 866
set community-mode..... 867
set injectlist..... 867
set ip-preference..... 868
set local-preference..... 868
set mask..... 868
set metric..... 869
set metric-type..... 869
set metric-type-internal..... 870
set metric-type-isis..... 870
set next-hop..... 871
set nssa-pbit..... 871
set origin..... 872

set origin-egp-as..... 872
set tag..... 873
set weight..... 873
set-metric-type-live-metric..... 874
Chapter 22: User EXEC..... 875
clear-stats..... 875
clock set..... 875
debug-file remove..... 876
dump ar..... 876
eapol init..... 877
eapol re-authenticate..... 877
enable..... 878
exit..... 878
file-checksum..... 879
help..... 880
ip bgp apply redistribute..... 881
ip bgp restart-bgp..... 882
ip bgp stats-clear-counters..... 882
ip ecmp path-list apply..... 883
ip igmp flush port..... 883
ip igmp flush vlan..... 884
ip ospf apply accept..... 885
ip ospf apply accept adv-rtr..... 885
ip ospf apply redistribute..... 886
ip ospf spf-run..... 887
ip rip apply redistribute..... 887
ipv6 bgp apply redistribute..... 889
ipv6 mld flush..... 889
ipv6 ospf apply redistribute..... 890
isis apply accept..... 891
isis apply redistribute..... 891
isis dup-detection-temp-disable..... 892
l2 ping ip-address..... 892
l2 ping vlan..... 894
l2 tracemroute..... 897
l2 traceroute ip-address 897
l2 traceroute vlan..... 898
l2 tracetree 900
l2 tracetree-fan..... 901
line-card..... 902
linktrace..... 903
login..... 904
logout..... 904

loopback ... 904
ls ... 907
manualtrigger ip rip interface ... 907
ping ... 908
pwc ... 910
remove ... 911
show alarm database ... 911
show alarm statistics ... 912
show application restconf ... 912
show application restconf conflict-ifname ... 913
show application slamon agent ... 914
show app-telemetry counter ... 914
show app-telemetry status ... 914
show autotopology ... 915
show banner ... 915
show basic config ... 916
show bgp ipv6 aggregates ... 916
show bgp ipv6 imported-routes ... 916
show bgp ipv6 neighbors ... 917
show bgp ipv6 networks ... 918
show bgp ipv6 redistributed-routes ... 919
show bgp ipv6 route ... 919
show bgp ipv6 summary ... 920
show brouter ... 921
show certificate ca ... 921
show certificate cert-type ... 921
show certificate key-name ... 922
show certificate subject ... 923
show cfm cmac ... 923
show cfm maintenance-association ... 923
show cfm maintenance-domain ... 924
show cfm maintenance-endpoint ... 924
show cfm spbm ... 924
show cli info ... 925
show cli password ... 925
show clilog ... 925
show clock ... 926
show debug ... 926
show dvr ... 927
show dvr backbone-entries ... 927
show dvr backbone-entries adv-controller ... 928
show dvr backbone-entries domain-id ... 930
show dvr backbone-entries host-mac-address ... 931

show dvr backbone-entries ipv4 933
show dvr backbone-entries l2isid 934
show dvr backbone-entries l3isid 935
show dvr backbone-entries next-hop 935
show dvr backbone-entries nh-as-mac 936
show dvr backbone-members 936
show dvr database 937
show dvr host-entries 937
show dvr interfaces 938
show dvr l3vsn 939
show dvr members 940
show dvr redistribute 941
show dvr routes 941
show eapol auth-diags interface 942
show eapol auth-stats interface 943
show eapol multihost non-eap-mac status 943
show eapol port 944
show eapol session-stats interface 945
show eapol status interface 946
show eapol system 946
show fa 947
show fa agent 947
show fa assignment 947
show fa elements 948
show fa interface 948
show fa interface disabled-auth 949
show fa interface enabled-auth 949
show fa interface mlt 949
show fa interface port 950
show fa statistics 950
show fa zero-touch-client 951
show fdb-filter 951
show ftp-access 952
show fulltech 952
show hosts 953
show ike policy 953
show ike profile 954
show ike sa 954
show ike v2-profile 955
show io 955
show ip arp 956
show ip arp gigabitethernet 957
show ip arp interface 958

show ip arp spbm-tunnel-as-mac 959
show ip arp-inspection 959
show ip arp-inspection interface 960
show ip arp-inspection interface gigabitEthernet 960
show ip as-list 961
show ip bgp aggregates 961
show ip bgp cidr-only 962
show ip bgp confederation 962
show ip bgp dampened-paths 963
show ip bgp flap-damp-config 963
show ip bgp imported-routes 964
show ip bgp neighbors 965
show ip bgp networks 966
show ip bgp peer-group 966
show ip bgp redistributed-routes 967
show ip bgp route 967
show ip bgp stats 968
show ip bgp summary 968
show ip community-list 969
show ip dhcp-relay 969
show ip dhcp-snooping 971
show ip dhcp-snooping binding 971
show ip dhcp-snooping binding address 972
show ip dhcp-snooping binding interface 972
show ip dhcp-snooping binding summary 973
show ip dhcp-snooping binding type 974
show ip dhcp-snooping interface 974
show ip dhcp-snooping interface gigabitEthernet 975
show ip directed-broadcast 976
show ip directed-broadcast vlan 976
show ip dns 977
show ip ecmp 977
show ip extcommunity-list 978
show ip forward-protocol udp 979
show ip forward-protocol udp portfwd 980
show ip forward-protocol udp portfwdlist 980
show ip icmp statistics 981
show ip interface 981
show ip ipfix 982
show ip ipfix collector 982
show ip ipfix flows 983
show ip ipvpn 984
show ip isid-list 984

show ip isis redistribute 985
show ip mroute hw-resource-usage..... 985
show ip mroute interface..... 986
show ip mroute next-hop..... 987
show ip mroute route..... 987
show ip mroute static-source-group..... 988
show ip mroute stats 988
show ip ospf accept..... 989
show ip ospf area..... 989
show ip ospf area-range..... 990
show ip ospf ase..... 990
show ip ospf authentication..... 991
show ip ospf default-cost..... 992
show ip ospf host-route..... 992
show ip ospf ifstats..... 993
show ip ospf int-auth..... 993
show ip ospf interface..... 994
show ip ospf int-timers..... 995
show ip ospf lsdb..... 995
show ip ospf neighbor..... 997
show ip ospf port-error..... 997
show ip ospf redistribute..... 998
show ip ospf stats..... 998
show ip ospf virtual-link..... 999
show ip ospf vrf..... 1000
show ip ospf vrfids..... 1000
show ip pim..... 1000
show ip pim active-rp..... 1001
show ip pim bsr..... 1001
show ip pim interface..... 1001
show ip pim mode..... 1002
show ip pim mroute..... 1002
show ip pim neighbor..... 1003
show ip pim rp-candidate..... 1003
show ip pim rp-hash..... 1004
show ip pim static-rp..... 1004
show ip pim virtual-neighbor..... 1004
show ip prefix-list..... 1005
show ip rip..... 1005
show ip rip interface..... 1006
show ip rip redistribute..... 1007
show ip rip vrf..... 1008
show ip rip vrfids..... 1008

show ip route..... 1009
show ip routing..... 1010
show ip rsmlt..... 1011
show ip rsmlt edge-support..... 1011
show ip source binding..... 1012
show ip source verify 1013
show ip spb–pim–gw..... 1013
show ip spb-pim-gw foreign-source..... 1014
show ip spb–pim–gw interface..... 1015
show ip spb–pim–gw neighbor..... 1015
show ip spb–pim–gw node..... 1016
show ip spb-pim-gw spbmc-source..... 1017
show ip spb-pim-rw mroute..... 1017
show ip tcp connections..... 1018
show ip tcp properties..... 1019
show ip tcp statistics..... 1019
show ip udp endpoints 1019
show ip udp statistics..... 1020
show ip vrf..... 1020
show ip vrf mvpn..... 1021
show ip vrrp..... 1021
show ip vrrp address..... 1021
show ip vrrp interface..... 1022
show ip vrrp interface gigabitEthernet..... 1023
show ip vrrp interface gigabitEthernet statistics..... 1024
show ip vrrp interface vlan..... 1024
show ip vrrp statistics..... 1025
show ipsec interface (for a port)..... 1026
show ipsec interface (for a VLAN)..... 1027
show ipsec interface mgmtethernet mgmt..... 1027
show ipsec policy..... 1028
show ipsec sa..... 1028
show ipsec sa-policy..... 1029
show ipsec statistics gigabitethernet..... 1029
show ipsec statistics mgmtethernet..... 1029
show ipsec statistics system..... 1030
show ipsec statistics vlan..... 1030
show ipv6 address..... 1031
show ipv6 dcache..... 1032
show ipv6 default-routers..... 1032
show ipv6 dhcp-relay..... 1033
show ipv6 fhs dhcp-guard policy..... 1034
show ipv6 fhs ipv6-access-list..... 1034

show ipv6 fhs mac-access-list 1035
show ipv6 fhs port-policy 1035
show ipv6 fhs ra-guard policy 1036
show ipv6 fhs snooping binding 1036
show ipv6 fhs status 1037
show ipv6 forwarding 1037
show ipv6 global 1038
show ipv6 interface 1038
show ipv6 interface loopback 1040
show ipv6 mld cache 1041
show ipv6 mld group 1041
show ipv6 mld group count 1041
show ipv6 mld group group 1042
show ipv6 mld group group WORD<0-255> detail 1042
show ipv6 mld group member-subnet 1043
show ipv6 mld interface 1043
show ipv6 mld sender 1044
show ipv6 mld snooping 1044
show ipv6 mld snoop-trace 1045
show ipv6 mld sys 1045
show ipv6 mld-host-cache 1045
show ipv6 mroute interface 1046
show ipv6 mroute next-hop 1046
show ipv6 mroute route 1047
show ipv6 mroute stats 1047
show ipv6 nd interface 1047
show ipv6 nd-prefix 1048
show ipv6 neighbor 1049
show ipv6 ospf 1050
show ipv6 ospf area 1051
show ipv6 ospf area-range 1051
show ipv6 ospf ase 1052
show ipv6 ospf ase metric-type 1052
show ipv6 ospf interface 1053
show ipv6 ospf int-timers 1053
show ipv6 ospf lsdb 1054
show ipv6 ospf nbma-nbr interface 1055
show ipv6 ospf neighbor 1056
show ipv6 ospf redistribute 1056
show ipv6 ospf statistics 1057
show ipv6 pim 1057
show ipv6 pim active-rp 1058
show ipv6 pim interface 1058

show ipv6 pim mode 1059
show ipv6 pim mroute 1059
show ipv6 pim neighbor 1060
show ipv6 pim rp-hash 1060
show ipv6 pim static-rp 1060
show ipv6 prefix-list 1061
show ipv6 rip 1061
show ipv6 rip interface 1062
show ipv6 rip statistics 1062
show ipv6 route 1063
show ipv6 route alternative 1064
show ipv6 route preference 1065
show ipv6 source-guard 1066
show ipv6 source-guard binding 1066
show ipv6 tcp 1067
show ipv6 trace 1068
show ipv6 tunnel 1069
show ipv6 udp 1069
show ipv6 vrrp 1070
show ipv6 vrrp address 1071
show ipv6 vrrp interface 1071
show ipv6 vrrp interface gigabitethernet statistics 1072
show ipv6 vrrp statistics 1073
show i-sid 1074
show i-sid limit-fdb-learning 1075
show i-sid mac-address-entry 1075
show isis 1076
show isis adjacencies 1077
show isis area 1077
show isis dup-detection-temp-disable 1077
show isis int-auth 1078
show isis int-ckt-level 1078
show isis int-counters 1078
show isis interface 1079
show isis int-l1-cntl-pkts 1079
show isis int-l2-cntl-pkts 1079
show isis int-timers 1080
show isis logical-interface 1080
show isis lsdb 1081
show isis manual-area 1083
show isis net 1083
show isis spbm 1083
show isis spbm ip-multicast-fib 1084

show isis spbm ip-multicast-route 1084
show isis spbm ip-multicast-route group 1085
show isis spbm ip-multicast-route vlan 1085
show isis spbm ip-multicast-route vrf 1087
show isis spbm ip-multicast-route vsn-isid 1087
show isis spbm ip-unicast-fib 1089
show isis spbm ipv6-unicast-fib 1089
show isis spbm i-sid 1090
show isis spbm multicast 1092
show isis spbm multicast-fib 1092
show isis spbm nick-name 1093
show isis spbm unicast-fib 1093
show isis spbm unicast-tree 1094
show isis spb-mcast summary 1094
show isis statistics 1095
show isis system-id 1095
show khi cpp 1095
show khi fe-ona detail 1096
show khi fe-ona status 1096
show khi performance 1097
show lacp 1098
show lacp interface 1099
show license 1100
show link-state group 1100
show logging 1101
show logging file 1102
show mac-address-table aging-time 1103
show mgmt interface 1103
show mgmt ip 1104
show mgmt ip arp 1104
show mgmt ip route 1105
show mgmt ip route static 1105
show mgmt ipv6 neighbor 1106
show mgmt ipv6 route 1106
show mgmt ipv6 route static 1107
show mgmt migration 1107
show mgmt statistics 1108
show mirror-by-port 1108
show mirror-resources 1109
show mlt 1109
show mlt error collision 1109
show mlt error main 1110
show mlt i-sid 1110

show mlt stats..... 1111
show monitor-statistics..... 1111
show multicast software-forwarding..... 1111
show ntp..... 1112
show ovsdb..... 1112
show qos 802.1p-override..... 1113
show qos cosq-stats..... 1114
show qos egressmap..... 1114
show qos ingressmap..... 1115
show qos queue-profile..... 1115
show qos rate-limiting 1116
show qos shaper..... 1117
show radius..... 1117
show radius reachability..... 1118
show radius snmp..... 1118
show radius-server..... 1118
show radius-server statistics..... 1119
show rmon..... 1119
show route-map..... 1120
show sflow..... 1121
show sflow collector..... 1121
show sflow interface..... 1122
show sflow statistics..... 1122
show slpp..... 1123
show slpp interface..... 1123
show slpp-guard..... 1123
show smlt..... 1124
show smtp..... 1124
show snmplog..... 1125
show snmp-server..... 1125
show snmp-server host..... 1126
show snmp-server notify-filter..... 1126
show software..... 1127
show spanning-tree bpduguard..... 1127
show spanning-tree config..... 1128
show spanning-tree mstp config..... 1128
show spanning-tree mstp msti config..... 1129
show spanning-tree mstp msti port..... 1129
show spanning-tree mstp port config..... 1130
show spanning-tree mstp port role..... 1130
show spanning-tree mstp port statistics..... 1131
show spanning-tree mstp statistics..... 1132
show spanning-tree mstp status..... 1132

show spanning-tree rstp config..... 1132
show spanning-tree rstp port config..... 1133
show spanning-tree rstp port role..... 1133
show spanning-tree rstp port statistics..... 1134
show spanning-tree rstp port status..... 1134
show spanning-tree rstp statistics..... 1135
show spanning-tree rstp status..... 1135
show spanning-tree status..... 1135
show spanning-tree tc-receive-alarm-threshold..... 1136
show spbm 1136
show ssh..... 1136
show ssh rekey..... 1137
show sys control..... 1137
show sys dns..... 1138
show sys force-msg..... 1138
show sys mgid-usage..... 1138
show sys msg-control..... 1139
show sys mtu..... 1139
show sys power..... 1139
show sys setting 1140
show sys software..... 1140
show sys stats 1141
show sys stats ipmc-threshold-exceeded-cnt..... 1141
show sys topology-ip 1141
show sys-info..... 1142
show syslog..... 1142
show syslog host..... 1143
show tacacs..... 1143
show tech..... 1144
show telnet-access..... 1144
show trace cfm 1144
show trace file..... 1145
show trace level..... 1145
show trace modid-list..... 1145
show trace spbm isis 1146
show trace sub-system..... 1146
show unsupported-lastset..... 1146
show users..... 1147
show virtual-ist..... 1147
show virtual-ist stat 1147
show virtual-service..... 1148
show vlacp 1148
show vlacp interface..... 1148

show vlan advance ... 1149
show vlan autolearn-mac ... 1150
show vlan basic ... 1150
show vlan brouter-port ... 1150
show vlan i-sid ... 1151
show vlan mac-address-entry ... 1152
show vlan mac-address-static ... 1153
show vlan manual-edit-mac ... 1153
show vlan members ... 1154
show vlan nodal-mep ... 1155
show vlan nodal-mip-level ... 1155
show vlan private-vlan ... 1156
show vlan remote-mac-table ... 1156
show vlan static-mcastmac ... 1157
show web-server ... 1157
slot reset ... 1157
ssh (connection) ... 1158
telnet ... 1158
terminal ... 1159
trace cfm ... 1159
trace filter file ... 1160
trace filter module ... 1161
trace flags ... 1161
trace flags isis ... 1162
trace flags ospf ... 1164
trace grep ... 1165
trace level ... 1166
trace route-map ... 1167
trace save ... 1168
trace screen ... 1168
trace shutdown ... 1168
trace spbm isis level ... 1169
Chapter 23: VLAN Interface Configuration ... 1170
dsapssap ... 1170
ip address (on a VLAN) ... 1170
ip arp-inspection enable ... 1171
ip arp-proxy enable (for a VLAN) ... 1171
ip arp-response (for a VLAN) ... 1172
ip dhcp-relay (for a VLAN) ... 1172
ip dhcp-snooping enable (for VLAN) ... 1174
ip directed-broadcast (for a VLAN) ... 1174
ip forward-protocol udp (on a VLAN) ... 1175
ip forward-protocol udp broadcastmask ... 1176

ip forward-protocol udp maxttl..... 1176
ip forward-protocol udp portfwdlist (on a VLAN)..... 1177
ip igmp (for a VLAN)..... 1177
ip igmp access-list (for a VLAN)..... 1181
ip igmp access-list mode (for a VLAN)..... 1182
ip igmp igmpv3-explicit-host-tracking (for a VLAN)..... 1183
ip igmp immediate-leave (for a VLAN)..... 1183
ip igmp immediate-leave-members..... 1184
ip igmp mrdisc..... 1184
ip igmp snoop-querier..... 1185
ip igmp snoop-querier-addr..... 1186
ip igmp static-group..... 1186
ip igmp stream-limit (for a VLAN)..... 1187
ip igmp stream-limit-group..... 1188
ip ipsec enable (for a VLAN)..... 1189
ip ipsec policy (for a VLAN)..... 1189
ip irdp address (for a VLAN)..... 1190
ip irdp holdtime (for a VLAN)..... 1190
ip irdp maxadvertinterval (for a VLAN)..... 1191
ip irdp minadvertinterval (for a VLAN)..... 1192
ip irdp multicast (for a VLAN)..... 1192
ip irdp preference (for a VLAN)..... 1193
ip ospf advertise-when-down enable (for a VLAN)..... 1194
ip ospf area (for a VLAN)..... 1194
ip ospf authentication-key (for a VLAN)..... 1194
ip ospf authentication-type (for a VLAN)..... 1195
ip ospf cost (for a VLAN)..... 1196
ip ospf dead-interval (for a VLAN)..... 1196
ip ospf digest-key (for a VLAN)..... 1197
ip ospf enable (for a VLAN)..... 1197
ip ospf hello-interval (for a VLAN)..... 1198
ip ospf mtu-ignore enable (for a VLAN)..... 1198
ip ospf network (for a VLAN)..... 1199
ip ospf poll-interval (for a VLAN)..... 1199
ip ospf primary-digest-key (for a VLAN)..... 1200
ip ospf priority (for a VLAN)..... 1200
ip ospf retransmit-interval (for a VLAN)..... 1201
ip ospf transit-delay (for a VLAN)..... 1201
ip ospf vlan (for a VLAN)..... 1202
ip pim (for a VLAN)..... 1204
ip pim bsr-candidate preference (for a VLAN)..... 1205
ip pim interface-type (for a VLAN)..... 1206
ip rip advertise-when-down enable (for a VLAN)..... 1206

ip rip auto-aggregation enable (for a VLAN)..... 1207
ip rip cost (for a VLAN)..... 1207
ip rip default-listen enable (for a VLAN)..... 1208
ip rip default-supply enable (for a VLAN)..... 1208
ip rip enable (for a VLAN)..... 1209
ip rip holddown (for a VLAN)..... 1209
ip rip in-policy (for a VLAN)..... 1210
ip rip listen enable (for a VLAN)..... 1210
ip rip out-policy (for a VLAN)..... 1211
ip rip poison enable (for a VLAN)..... 1211
ip rip receive version (for a VLAN)..... 1212
ip rip send (for a VLAN)..... 1212
ip rip supply (for a VLAN)..... 1213
ip rip timeout (for a VLAN)..... 1213
ip rip triggered (for a VLAN)..... 1214
ip rsmlt..... 1214
ip spb-multicast enable (for a VLAN)..... 1215
ip spb-pim-gw enable (for a VLAN)..... 1215
ip spb-pim-gw hello-interval (for a VLAN)..... 1216
ip spb-pim-gw ip join-prune-interval (for a VLAN)..... 1216
ip vrrp (for a VLAN)..... 1217
ipv6 dhcp-relay (for a VLAN)..... 1219
ipv6 fhs nd-inspection enable (for a VLAN)..... 1220
ipv6 fhs snooping dhcp enable (for a VLAN)..... 1220
ipv6 forwarding (for a VLAN)..... 1221
ipv6 interface address (for a VLAN)..... 1221
ipv6 interface enable (for a VLAN)..... 1221
ipv6 interface hop-limit (for a VLAN)..... 1222
ipv6 interface link-local (for a VLAN)..... 1222
ipv6 interface mac-offset..... 1223
ipv6 interface mtu (for a VLAN)..... 1223
ipv6 interface name (for a VLAN)..... 1223
ipv6 interface reachable-time (for a VLAN)..... 1224
ipv6 interface retransmit-timer (for a VLAN)..... 1224
ipv6 ipsec enable (for a VLAN)..... 1225
ipv6 ipsec policy (for a VLAN)..... 1225
ipv6 mld last-listener-query-interval (for a VLAN)..... 1226
ipv6 mld query-interval (for a VLAN)..... 1226
ipv6 mld query-max-response (for a VLAN)..... 1227
ipv6 mld robust-value (for a VLAN)..... 1227
ipv6 mld snooping..... 1228
ipv6 mld ssm-snoop..... 1228
ipv6 mld version (for a VLAN)..... 1229

ipv6 nd dad-ns (for a VLAN)..... 1229
ipv6 nd hop-limit (for a VLAN)..... 1229
ipv6 nd managed-config-flag (for a VLAN)..... 1230
ipv6 nd other-config-flag (for a VLAN)..... 1230
ipv6 nd prefix (for a VLAN)..... 1231
ipv6 nd ra-lifetime (for a VLAN)..... 1232
ipv6 nd rtr-advert-max-interval (for a VLAN)..... 1232
ipv6 nd rtr-advert-min-interval (for a VLAN)..... 1232
ipv6 nd send-ra (for a VLAN)..... 1233
ipv6 ospf (for a VLAN)..... 1233
ipv6 ospf area (for a VLAN)..... 1235
ipv6 pim enable (for a VLAN)..... 1236
ipv6 pim hello-interval (for a VLAN)..... 1237
ipv6 pim join-prune-interval (for a VLAN)..... 1237
ipv6 rip cost (for a VLAN)..... 1238
ipv6 rip poison enable (for a VLAN)..... 1238
ipv6 vrrp (for a VLAN)..... 1238
ipv6 vrrp address (for a VLAN)..... 1240
migrate-to-mgmt (for a VLAN)..... 1241
nlb-mode..... 1241
slpp (on a VLAN)..... 1242
vrf (for a VLAN)..... 1243
Chapter 24: VRF Router Configuration..... 1244
dvr inject-default-route-disable..... 1244
dvr redistribute direct (for a VRF)..... 1244
dvr redistribute static (for a VRF)..... 1245
ip alternative-route (on a VRF)..... 1245
ip arp (for a VRF)..... 1246
ip as-list (for a VRF)..... 1247
ip bgp..... 1248
ip bgp aggregate-address..... 1248
ip bgp aggregation..... 1249
ip bgp always-compare-med..... 1250
ip bgp auto-peer-restart enable..... 1250
ip bgp auto-summary..... 1251
ip bgp debug-screen..... 1251
ip bgp default local-preference..... 1252
ip bgp default-information..... 1252
ip bgp default-metric..... 1253
ip bgp deterministic-med enable..... 1253
ip bgp enable..... 1254
ip bgp flap-dampening..... 1254
ip bgp global-debug mask 1254

ip bgp ibgp-report-import-rt enable 1255
ip bgp ignore-illegal-rtrid enable 1255
ip bgp in-route-map 1256
ip bgp multiple-paths 1256
ip bgp neighbor 1256
ip bgp neighbor password 1260
ip bgp network 1260
ip bgp no-med-path-is-worst enable 1261
ip bgp out-route-map WORD<0-256> 1262
ip bgp quick-start enable 1262
ip bgp redistribute 1262
ip bgp router-id {A.B.C.D} 1264
ip bgp synchronization 1264
ip bgp traps enable 1264
ip community-list (for a VRF) 1265
ip dhcp-relay fwd-path (for a VRF) 1266
ip dhcp-relay fwd-path mode (for a VRF) 1266
ip icmp (for a VRF) 1267
ip icmp echo-broadcast-request (for a VRF) 1268
ip igmp (for a VRF) 1268
ip igmp generate-log (for a VRF) 1269
ip igmp generate-trap (for a VRF) 1270
ip igmp immediate-leave-mode (for a VRF) 1270
ip igmp ssm dynamic-learning (for a VRF) 1271
ip igmp ssm group-range (for a VRF) 1271
ip igmp ssm-map (for a VRF) 1272
ip isid-list (for a VRF) 1273
ip mroute resource-usage (for a VRF) 1273
ip msdp (for a VRF) 1274
ip msdp apply redistribute (for a VRF) 1275
ip msdp connect—retry (for a VRF) 1275
ip msdp description 1275
ip msdp keepalive (for a VRF) 1276
ip msdp md5-authentication (for a VRF) 1277
ip msdp mesh-group (for a VRF) 1277
ip msdp originator-id (for a VRF) 1278
ip msdp password peer (for a VRF) 1278
ip msdp peer 1279
ip msdp redistribute (for a VRF) 1279
ip msdp redistribute route-policy (for a VRF) 1280
ip msdp sa-filter in (for a VRF) 1280
ip msdp sa-filter out (for a VRF) 1281
ip msdp sa-limit (for a VRF) 1281

ip msdp ttl-threshold (for a VRF)..... 1282
ip ospf 1282
ip ospf (for a VRF)..... 1283
ip ospf accept adv-rtr..... 1283
ip ospf admin-state 1284
ip ospf area (for a VRF)..... 1284
ip ospf area range (for a VRF)..... 1285
ip ospf area virtual-link (for a VRF)..... 1286
ip ospf area virtual-link message-digest-key (for a VRF)..... 1288
ip ospf as-boundary-router (for a VRF)..... 1288
ip ospf as-boundary-router enable (for a VRF)..... 1289
ip ospf auto-vlink (for a VRF)..... 1289
ip ospf bad-lsa-ignore enable (for a VRF)..... 1290
ip ospf default-cost..... 1290
ip ospf host-route {A.B.C.D} (for a VRF)..... 1291
ip ospf neighbor (for a VRF)..... 1292
ip ospf network (for a VRF)..... 1292
ip ospf redistribute..... 1293
ip ospf rfc1583-compatibility enable (for a VRF)..... 1295
ip ospf router-id (for a VRF)..... 1295
ip ospf timers basic holddown (for a VRF)..... 1296
ip ospf trap (For a VRF)..... 1296
ip prefix-list (for a VRF)..... 1297
ip rip (for a VRF)..... 1298
ip rip default-metric (for a VRF)..... 1298
ip rip domain (for a VRF)..... 1298
ip rip enable (for a VRF)..... 1299
ip rip redistribute..... 1299
ip rip redistribute { direct | isis | ospf | rip | static }..... 1301
ip rip timers basic holddown (for a VRF)..... 1302
ip rip timers basic timeout (for a VRF)..... 1303
ip rip timers basic update (for a VRF)..... 1303
ip route (for a VRF)..... 1303
ip route preference protocol (for a VRF)..... 1305
ip source-route (for VRF)..... 1305
ip spb-pim-gw foreign-source (for a VRF)..... 1306
ipv6 alternative-route (for VRF)..... 1306
ipv6 dhcp-relay (for VRF)..... 1307
ipv6 ecmp (for VRF)..... 1307
ipv6 forwarding (for VRF)..... 1308
ipv6 hop-limit (for VRF)..... 1308
ipv6 icmp echo multicast-request (for VRF)..... 1309
ipv6 icmp error-interval (for VRF)..... 1309

ipv6 icmp error-quota (for VRF)..... 1310
ipv6 icmp unreach-msg (for VRF)..... 1310
ipv6 ipvpn (for VRF)..... 1311
ipv6 isis (for VRF)..... 1311
ipv6 isis accept (for a VRF)..... 1312
ipv6 isis accept adv-rtr (for a VRF)..... 1313
ipv6 isis redistribute bgp..... 1314
ipv6 isis redistribute direct..... 1315
ipv6 isis redistribute ospf..... 1316
ipv6 isis redistribute static..... 1317
ipv6 neighbor (for VRF)..... 1318
ipv6 ospf (for a VRF)..... 1319
ipv6 ospf area (for a VRF)..... 1319
ipv6 ospf area range (for a VRF)..... 1320
ipv6 ospf area virtual-link (for a VRF)..... 1321
ipv6 ospf as-boundary-router..... 1322
ipv6 ospf default-cost..... 1323
ipv6 ospf helper-mode-disable..... 1324
ipv6 ospf redistribute..... 1324
ipv6 ospf router-id..... 1326
ipv6 prefix-list..... 1326
ipv6 route (for VRF)..... 1327
ipv6 source-route (for VRF)..... 1329
ipvpn..... 1329
ipvpn enable..... 1329
i-sid (for a VRF)..... 1330
isis accept (for a VRF)..... 1330
isis accept adv-rtr (for a VRF)..... 1331
isis redistribute bgp..... 1332
isis redistribute direct..... 1334
isis redistribute ospf..... 1335
isis redistribute rip..... 1337
isis redistribute static..... 1339
mvpn enable..... 1340
mvpn fwd-cache-timeout <10-86400>..... 1341
Chapter 25: VRRP Router Configuration..... 1342
ipv6 send-trap enable..... 1342
ping-virtual-address..... 1342
send-trap..... 1343
Chapter 26: VXLAN Configuration..... 1344
c-vid (for a VXLAN Gateway mlt)..... 1344
c-vid (for a VXLAN Gateway port)..... 1344
untagged-traffic (for a VXLAN Gateway mlt)..... 1345

untagged-traffic (for a VXLAN Gateway port)..... 1345
vtep (association)..... 1346

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 VSP Operating System Software (VOSS). VOSS runs on the following product families:

- Extreme Networks VSP 4000 Series
- Extreme Networks VSP 7200 Series
- Extreme Networks VSP 7400 Series
- Extreme Networks VSP 8000 Series (includes VSP 8200 Series and VSP 8400 Series)
- Extreme Networks VSP 8600 Series
- Extreme Networks XA1400 Series

This guide describes the Command Line Interface (CLI) commands for the configuration of various features in VOSS. 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.
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 `cfm maintenance-domain maintenance-level <0-7>` , you can enter `cfm maintenance-domain maintenance-level 4`.
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 `ip address {A.B.C.D}`, 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 `show clock [detail]`, you can enter either `show clock` or `show clock detail`.

Table continues…

Convention	Description
Ellipses (…)	An ellipsis (…) indicates that you repeat the last element of the command as needed. For example, if the command syntax is `ethernet/2/1 [ <parameter> <value> ]...`, you enter `ethernet/2/1` and as many parameter-value pairs as you need.
Italic Text	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: • `show ip route` • `Error: Invalid command syntax [Failed][2013-03-22 13:37:03.303 -04:00]`
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 `access-policy by-mac action { allow | deny }`, you enter either `access-policy by-mac action allow` or `access-policy by-mac action deny`, but not both.

Documentation and Training

To find Extreme Networks product guides, visit our documentation pages at:

Current Product Documentation	www.extremenetworks.com/documentation/

Table continues…

Archived Documentation (for earlier versions and legacy products)	www.extremenetworks.com/support/documentation-archives/
Release Notes	www.extremenetworks.com/support/release-notes
Hardware/Software Compatibility Matrices	https://www.extremenetworks.com/support/compatibility-matrices/
White papers, data sheets, case studies, and other product resources	https://www.extremenetworks.com/resources/

Training

Extreme Networks offers product training courses, both online and in person, as well as specialized certifications. For more information, 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: 1-800-998-2408 (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 and/or serial numbers for all involved Extreme Networks products
- A description of the failure
- A description of any action(s) 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

Subscribing 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 with your information (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. Click **Submit**.

Providing Feedback to Us

Quality is our first concern at Extreme Networks, and we have 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 especially want to know about:

- Content errors or confusing or conflicting information.
- Ideas for improvements to our documentation so you can find the information you need faster.
- Broken links or usability issues.

If you would like to provide feedback to the Extreme Networks Information Development team, you can do so in two ways:

- Use our short online feedback form at https://www.extremenetworks.com/documentation-feedback/.
- Email us at documentation@extremenetworks.com.

Please 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:

- auth-key on page 593
- egress-shaping-rate on page 593
- ipsec on page 594

Updated Commands

The following commands are updated in this document:

Table 3: Existing Command Updates

Command	Update
show isis logical-interface	Added **ipsec** and **shaper** parameters.
show io	Added **cpu-cosq-counters**, **filter-tables**, **logical-intf-ipsec**, **logical-intf-tables**, **nic-counters**, and **spb-tables** parameters.

Notice about Feature Support

This document includes content for multiple hardware platforms across different software releases. As a result, the content can include features not supported by your hardware in the current software release.

If a documented command, parameter, tab, or field does not appear on your hardware, it is not supported.

For information about feature support, see Release Notes for XA1400 Series.

For information about physical hardware restrictions, see your hardware documentation.

Chapter 3: Application Configuration

restconf

Enable or disable the Representational State Transfer Configuration Protocol (RESTCONF) server.

Syntax

- `default restconf <enable | tcp-port | tls | trap-notification>`
- `no restconf <enable | install-cert-file | tls | trap-notification>`
- `restconf <enable | install-cert-file WORD<1-128> | tcp-port <1-49151> | tls | trap-notication>`

Command Parameters

enable	Enables the RESTCONF server.
install-cert-file WORD <1-128>	Installs the certificate file for RESTCONF.
tcp-port <1-49151>	Specifies the TCP port to use for the RESTCONF server. The default is 8080.
tls	Enables or disables TLS/SSL for the RESTCONF server. The default is disable.
trap-notification	Enables or disables trap notification with the RESTCONF protocol is not available. The default is enable.

Default

The default value is disable.

Command Mode

Application Configuration

slamon agent

Configures the SLA Mon agent. This feature is not supported on all hardware platforms. For more information about feature support, see Release Notes for XA1400 Series.

Syntax

- **default slamon agent ip address**
- **default slamon agent port**
- **slamon agent ip address {A.B.C.D}**
- **slamon agent ip address {A.B.C.D} vrf WORD<1-16>**
- **slamon agent port <0-65535>**

Command Parameters

ip address {A.B.C.D}	Configures the SLA Mon agent IP address. You must configure the IP address before the agent can process received discovery packets from the SLA Mon server. The agent IP address is a mandatory parameter if you enable SLA Monitor. The default value is 0.0.0.0.
port <0-65535>	Configures the UDP port for SLA Mon agent-server communication. The agent receives discovery packets on this port. The default is port 50011. The server must use the same port.
vrf WORD<1-16>	Specifies a VRF name. The VRF parameter is optional.

Default

None

Command Mode

Application Configuration

slamon agent-comm-port

Controls the port used for Real Time Protocol (RTP) and New Trace Route (NTR) testing. This feature is not supported on all hardware platforms. For more information about feature support, see Release Notes for XA1400 Series.

Syntax

- **default slamon agent-comm-port**
- **slamon agent-comm-port <0-65535>**

Command Parameters

<0-65535>	Configures the port used for RTP and NTR testing in agent-to-agent communication. The default port is 50012. If you configure this value to zero (0), the default port is used.

Default

The default is 50012.

Command Mode

Application Configuration

slamon install-cert-file

Installs a Secure Sockets Layer (SSL) certificate. This feature is not supported on all hardware platforms. For more information about feature support, see Release Notes for XA1400 Series.

Syntax

- `no slamon install-cert-file`
- `slamon install-cert-file WORD<0-128>`

Command Parameters

WORD<0-128>	Specifies the file name and path of the certificate to install.

Default

None

Command Mode

Application Configuration

slamon oper-mode enable

Enables the SLA Mon agent. This feature is not supported on all hardware platforms. For more information about feature support, see Release Notes for XA1400 Series.

Syntax

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

Default

The default is disabled.

Command Mode

Application Configuration

slamon server

Configures information about the SLA Mon server with which the agent communicates. This feature is not supported on all hardware platforms. For more information about feature support, see Release Notes for XA1400 Series.

Syntax

- `default slamon server ip address`
- `default slamon server port`
- `port <0-65535> <0-65535>`
- `slamon server ip address {A.B.C.D}`
- `slamon server ip address {A.B.C.D} {A.B.C.D}`
- `slamon server port <0-65535>`
- `slamon server port <0-65535> <0-65535>`

Command Parameters

ip address {A.B.C.D} {A.B.C.D}	Restricts the SLA Mon agent to use one of this SLA Mon server IP address only. The default is 0.0.0.0, which means the agent can register with any server. The second {A.B.C.D} represents an optional secondary server. Omit this parameter if you use only one server.
port <0-65535> <0-65535>	Restricts the SLA Mon agent to use one of this registration port only. The default is 0, which means the agent disregards the source port information in server traffic. The SLA Mon server must use the same port. The second <0-65535> represents the UDP port for an optional secondary server. Omit this parameter if you use only one server.

Default

None

Command Mode

Application Configuration

Chapter 4: BGP Router Configuration

aggregate-address

Add or delete an aggregate address in a BGP routing table.

Syntax

- **aggregate-address WORD<1-256>**
- **aggregate-address WORD<1-256> advertise-map WORD<0-1536>**
- **aggregate-address WORD<1-256> as-set**
- **aggregate-address WORD<1-256> attribute-map WORD<0-1536>**
- **aggregate-address WORD<1-256> summary-only**
- **aggregate-address WORD<1-256> suppress-map WORD<0-1536>**
- **default aggregate-address WORD<1-256>**
- **default aggregate-address WORD<1-256> advertise-map**
- **default aggregate-address WORD<1-256> as-set**
- **default aggregate-address WORD<1-256> attribute-map**
- **default aggregate-address WORD<1-256> summary-only**
- **default aggregate-address WORD<1-256> suppress-map**
- **no aggregate-address WORD<1-256>**
- **no aggregate-address WORD<1-256> advertise-map WORD<0-1536>**
- **no aggregate-address WORD<1-256> as-set**
- **no aggregate-address WORD<1-256> attribute-map WORD<0-1536>**
- **no aggregate-address WORD<1-256> summary-only**
- **no aggregate-address WORD<1-256> suppress-map WORD<0-1536>**

Command Parameters

advertise-map WORD<0-1536>	Specifies the route map name (any string length between 0 and 64 characters) for route advertisements.
as-set	Enables autonomous system (AS) information.

attribute-map WORD <0-1536>	Specifies the route map name (string length between 0 and 64 characters).
summary-only	Enables the summarization of routes not included in routing updates. This parameter creates the aggregate route and suppresses advertisements of more specific routes to all neighbors. The default value is disable.
suppress-map WORD<0-1536>	Specifies the route map name (string length between 0 and 64 characters) for the suppressed route list.
WORD <1-256>	Specifies the IPv4 or the IPv6 address and an integer value in the range of 1 to 256.

Default

The default value is disable.

Command Mode

BGP Router Configuration

auto-peer-restart enable

Enable the process that automatically restarts a connection to a BGP neighbor.

Syntax

- **auto-peer-restart enable**
- **default auto-peer-restart**
- **default auto-peer-restart enable**
- **no auto-peer-restart**
- **no auto-peer-restart enable**

Command Parameters

enable	Enables the process that automatically restarts a connection to a BGP neighbor.

Default

The default value is enable.

Command Mode

BGP Router Configuration

auto-summary

Summarize the networks based on class limits after BGP is enabled. (For example, Class A, B, C networks).

Syntax

- **auto-summary**
- **default auto-summary**
- **no auto-summary**

Default

The default value is enable.

Command Mode

BGP Router Configuration

bgp aggregation

Enables or disables the aggregation feature on the interface.

Syntax

- **bgp aggregation**
- **bgp aggregation enable**
- **default bgp aggregation**
- **default bgp aggregation enable**
- **no bgp aggregation**
- **no bgp aggregation enable**

Command Parameters

enable	Enables the aggregation feature on the interface.

Default

The default value is enable.

Command Mode

BGP Router Configuration

bgp always-compare-med

Enables the comparison of the multiexit discriminator (MED) parameter for paths from neighbors in different autonomous systems. A path with a lower MED is preferred over a path with a higher MED.

Syntax

- **bgp always-compare-med**
- **default bgp always-compare-med**
- **no bgp always-compare-med**

Default

The default value is disable.

Command Mode

BGP Router Configuration

bgp client-to-client reflection

Enables or disables route reflection between two route reflector clients. This option is applicable only if the route reflection value is set to enable.

Syntax

- **bgp client-to-client reflection**
- **default bgp client-to-client reflection**
- **no bgp client-to-client reflection**

Default

The default value is enable.

Command Mode

BGP Router Configuration

bgp cluster-id

Configures a cluster ID. This option applies only if the route reflection value is set to enable, and if multiple route reflectors are in a cluster.

Syntax

- **bgp cluster-id {A.B.C.D}**
- **no bgp cluster-id {A.B.C.D}**

Command Parameters

<A.B.C.D>	Specifies the cluster ID of the reflector router.

Default

None

Command Mode

BGP Router Configuration

bgp confederation

Configures a BGP confederation.

Syntax

- **bgp confederation identifier <0-4294967295>**
- **bgp confederation peers WORD<0-255>**
- **default bgp confederation**
- **default bgp confederation identifier**
- **default bgp confederation peers**
- **no bgp confederation**
- **no bgp confederation identifier**
- **no bgp confederation peers**

Command Parameters

identifier <0-4294967295>	Specifies the confederation identifier. Identifier number 0-65535(2-Byte AS) 0-4294967295(4-Byte AS).
peers WORD <0-255>	Lists adjoining Autonomous Sytems that are part of the confederation in the format (5500,65535,0,10,...,...).

Default

The default value is 0.

Command Mode

BGP Router Configuration

bgp default local-preference

Specifies the default value of the local preference attribute. You cannot change the default value when BGP is enabled.

Syntax

- **bgp default local-preference <0-2147483647>**
- **default bgp default local-preference**
- **no bgp default local-preference**
- **no bgp default local-preference <0-2147483647>**

Command Parameters

<0-2147483647>	Specifies the preference value.

Default

The default value is 100.

Command Mode

BGP Router Configuration

bgp deterministic-med enable

Enables deterministic Multiexit Discriminator (MED).

Syntax

- **bgp deterministic-med enable**
- **default bgp deterministic-med**
- **default bgp deterministic-med enable**
- **no bgp deterministic-med**
- **no bgp deterministic-med enable**

Default

The default value is enable.

Command Mode

BGP Router Configuration

bgp multiple-paths

Configures the maximum number of equal-cost-paths that are available to a BGP router by limiting the number of equal-costpaths that can be stored in the routing table.

Syntax

- **bgp multiple-paths <1-8>**
- **default bgp multiple-paths**

Command Parameters

<1-8> Specifies the number of equal-cost-paths that are available to a BGP router.

Default

The default value is 1.

Command Mode

BGP Router Configuration

comp-bestpath-med-confed

When enabled, compares multiexit discriminator (MED) attributes within a confederation.

Syntax

- **comp-bestpath-med-confed enable**
- **default comp-bestpath-med-confed**
- **default comp-bestpath-med-confed enable**
- **no comp-bestpath-med-confed**
- **no comp-bestpath-med-confed enable**

Command Parameters

enable Enables and compares multiexit discriminator attributes within a BGP confederation.

Default

The default value is enable.

Command Mode

BGP Router Configuration

debug-screen

Display debug messages on the console, or saves them in a log file.

Syntax

- **debug-screen { off | on }**
- **default debug-screen**
- **no debug-screen**

Command Parameters

<on|off>	Disables BGP screen logging (off) or enable BGP screen logging (on).

Default

The default value is off.

Command Mode

BGP Router Configuration

default-information

Enable the advertisement of a default route to peers, if it is present in the routing table.

Syntax

- **default default-information originate**
- **default-information originate**
- **no default-information originate**

Command Parameters

originate	Enables the origination default route.

Default

The default value is disable.

Command Mode

BGP Router Configuration

default-metric (for BGP)

Configure a value that is sent to a BGP neighbor to determine the cost of a route a neighbor is using.

Syntax

- **default default-metric**
- **default-metric <-1-2147483647>**
- **no default-metric**
- **no default-metric <-1-2147483647>**

Command Parameters

<-1-2147483647>	Specifies the range of the default metric. A default metric value helps solve the problems associated with redistributing routes that have incompatible metrics.

Default

The default value is -1.

Command Mode

BGP Router Configuration

flap-dampening

Enable route suppression for routes that flap on and off.

Syntax

- **default flap-dampening**
- **default flap-dampening enable**
- **flap-dampening**
- **flap-dampening enable**
- **no flap-dampening**
- **no flap-dampening enable**

Command Parameters

enable	Enables Border Gateway Protocol (BGP) flap-dampening.

Default

The default value is enable.

Command Mode

BGP Router Configuration

global-debug mask

Display specific debug messages for your global BGP configuration.

Syntax

- **default global-debug mask**
- **global-debug mask WORD<1-100>**
- **no global-debug mask**

Command Parameters

mask WORD <1-100>	Specifies one or more mask choices that you enter, separated by commas with no space between choices. For example,[<mask>,<mask>,<mask>...]. Options include: • none • all • error • packet • event • trace • warning • state • init • filter • update

Default

None

Command Mode

BGP Router Configuration

ibgp-report-import-rt

Configure BGP to advertise imported routes to an interior BGP (IBGP) peer. This command Enable or disables the advertisement of nonBGP imported routes to other IBGP neighbors.

Syntax

- **default ibgp-report-import-rt**
- **default ibgp-report-import-rt enable**

- **ibgp-report-import-rt enable**
- **no ibgp-report-import-rt**
- **no ibgp-report-import-rt enable**

Command Parameters

enable Enables advertisement of non BGP imported routes to other IBGP neighbors.

Default

The default value is enable.

Command Mode

BGP Router Configuration

ignore-illegal-rtrid

Overlook an illegal router id after enabling BGP.

Syntax

- **default ignore-illegal-rtrid**
- **default ignore-illegal-rtrid enable**
- **ignore-illegal-rtrid enable**
- **no ignore-illegal-rtrid**
- **no ignore-illegal-rtrid enable**

Command Parameters

enable Enables or disables the acceptance of a connection from a peer that sends an open message using a router ID of 0 (zero).

Default

The default value is enable.

Command Mode

BGP Router Configuration

neighbor password

Configure a BGP peer or peer group password for Transmission Control Protocol (TCP) MD5 authentication between two peers.

Syntax

- **default neighbor password <nbr_ipaddr|peer-group-name> WORD<0-1536>**
- **neighbor password <nbr_ipaddr|peer-group-name> WORD<0-1536>**
- **no neighbor password <nbr_ipaddr|peer-group-name> WORD<0-1536>**

Command Parameters

<nbr_ipaddr|peer-group-name> WORD <0–1536>	Specifies a password for TCP MD5 authentication between two peers. WORD <0–1536> is an alphanumeric string length from 0 to 1536 characters. To disable this option, use no operator with the command. To configure this option to the default value, use default operator with the command.

Default

None

Command Mode

BGP Router Configuration

neighbor WORD<0-1536>

Create a peer or peer group.

Syntax

- **default neighbor WORD<0-1536>**
- **neighbor WORD<0-1536>**
- **no neighbor WORD<0-1536>**

Default

None

Command Mode

BGP Router Configuration

neighbor WORD<0-1536> address-family

Enables BGP address families for IPv6 or IPv4 (BGP) and L3 VPN (MP-BGP) support.

Syntax

- **default neighbor WORD<0-1536> address-family ipv6**

- **default neighbor WORD<0-1536> address-family vpnv4**
- **neighbor WORD<0-1536> address-family ipv6**
- **neighbor WORD<0-1536> address-family vpnv4**
- **no neighbor WORD<0-1536> address-family ipv6**
- **no neighbor WORD<0-1536> address-family vpnv4**

Default

None

Command Mode

BGP Router Configuration

neighbor WORD<0-1536> advertisement-interval <5-120>

Specifies the time interval (in seconds) that transpires between each transmission of an advertisement from a BGP neighbor.

Syntax

- **default neighbor WORD<0-1536> advertisement-interval**
- **neighbor WORD<0-1536> advertisement-interval <5-120>**

Default

The default value is 5 seconds.

Command Mode

BGP Router Configuration

neighbor WORD<0-1536> default-ipv6-originate

Enables IPv6 BGP neighbor default originate.

Syntax

- **default neighbor WORD<0-1536> default-ipv6-originate**
- **neighbor WORD<0-1536> default-ipv6-originate**
- **no neighbor WORD<0-1536> default-ipv6-originate**

Default

The default value is disable.

Command Mode

BGP Router Configuration

neighbor WORD<0-1536> default-originate

Enables the switch to send a default route advertisement to the specified neighbor. A default route does not have to be in the routing table. Do not use this command if you globally enable default-information originate.

Syntax

- **default neighbor WORD<0-1536> default-originate**
- **neighbor WORD<0-1536> default-originate**
- **no neighbor WORD<0-1536> default-originate**

Default

The default value is disable.

Command Mode

BGP Router Configuration

neighbor WORD<0-1536> ebgp-multihop

Enables a connection to a Border Gateway Protocol (BGP) peer that is more than one hop away from the local router.

Syntax

- **default neighbor WORD<0-1536> ebgp-multihop**
- **neighbor WORD<0-1536> ebgp-multihop**
- **no neighbor WORD<0-1536> ebgp-multihop**

Default

The default value is disable.

Command Mode

BGP Router Configuration

neighbor WORD<0-1536> enable

Enables the Border Gateway Protocol (BGP) neighbor.

Syntax

- **default neighbor WORD<0-1536> enable**
- **neighbor WORD<0-1536> enable**

- **no neighbor WORD<0-1536> enable**

Default

The default value is disable.

Command Mode

BGP Router Configuration

neighbor WORD<0-1536> in-route-map WORD<0-256>

Applies a route policy rule to all incoming routes that are learned from, or sent to, the local BGP router peers, or peer groups. The local BGP router is the BGP router that allows or disallows routes and sets attributes in incoming or outgoing updates.

Syntax

- **default neighbor WORD<0-1536> in-route-map**
- **neighbor WORD<0-1536> in-route-map WORD<0-256>**
- **no neighbor WORD<0-1536> in-route-map**

Command Parameters

WORD<0-256>	Specifies an alphanumeric string length (0 to 256 characters) that indicates the name of the route map or policy.

Default

None

Command Mode

BGP Router Configuration

neighbor WORD<0-1536> ipv6-in-route-map WORD<0-256>

Creates IPv6 in route map.

Syntax

- **default neighbor WORD<0-1536> ipv6-in-route-map**
- **neighbor WORD<0-1536> ipv6-in-route-map WORD<0-256>**
- **no neighbor WORD<0-1536> ipv6-in-route-map**

Command Parameters

WORD <0-256>	Specifies the route map or policy name in an alphanumeric string.

Default

None

Command Mode

BGP Router Configuration

neighbor WORD<0-1536> ipv6-out-route-map WORD<0-256>

Applies a route policy to all outgoing routes.

Syntax

- **default neighbor WORD<0-1536> ipv6-out-route-map**
- **default neighbor WORD<0-1536> ipv6-out-route-map**
- **neighbor WORD<0-1536> ipv6-out-route-map WORD<0-256>**
- **neighbor WORD<0-1536> ipv6-out-route-map WORD<0-256>**
- **no neighbor WORD<0-1536> ipv6-out-route-map**
- **no neighbor WORD<0-1536> ipv6-out-route-map**

Command Parameters

WORD<0-1536>	Specifies the subscriber group. You must create the specified subscriber group before you issue this command.
WORD<0-256>	WORD<0-256> name is an alphanumeric string length (0 to 256 characters) that indicates the name of the route map or policy.

Default

None

Command Mode

BGP Router Configuration

neighbor WORD<0-1536> max-prefix <0-2147483647>

Sets a limit on the number of routes that can be accepted from a neighbor.

Syntax

- **default neighbor WORD<0-1536> max-prefix**
- **neighbor WORD<0-1536> max-prefix <0-2147483647>**

Command Parameters

<0-2147483647>	Sets a limit on the number of routes that can be accepted from a neighbor. A value of 0 (zero) indicates that there is no limit to the number of routes that can be accepted.

Default

The default value is 12000 routes

Command Mode

BGP Router Configuration

neighbor WORD<0-1536> MD5-authentication enable

Enables TCP MD5 authentication between two peers.

Syntax

- **default neighbor WORD<0-1536> MD5-authentication enable**
- **neighbor WORD<0-1536> MD5-authentication enable**
- **no neighbor WORD<0-1536> MD5-authentication enable**

Default

The default value is disable.

Command Mode

BGP Router Configuration

neighbor WORD<0-1536> neighbor-debug-mask WORD<1-100>

Displays specified debug information for a BGP peer.

Syntax

- **default neighbor WORD<0-1536> neighbor-debug-mask**
- **neighbor WORD<0-1536> neighbor-debug-mask WORD<1-100>**
- **no neighbor WORD<0-1536> neighbor-debug-mask**

Command Parameters

WORD<1-100> WORD<1-100> is a list of mask choices separated by commas with no space between choices. For example, {<mask>,<mask>,<mask>...}. Mask choices are

- none - disables all debug messages
- all - enables all debug messages
- error -enables display of debug error messages
- packet - enables display of debug packet messages
- event - enables display of debug event messages
- trace - enables display of debug trace messages
- warning - enables display of debug warning messages
- state - enables display of debug state transition messages
- init - enables display of debug initialization messages
- filter - enables display of debug messages related to filtering
- update - enables display of debug messages related to sending and receiving updates

Default

The default value is none.

Command Mode

BGP Router Configuration

neighbor WORD<0-1536> next-hop-self

When enabled, specifies that the next-hop attribute in an IBGP update is the address of the local router or the router that is generating the IBGP update. You can only configure the next-hop parameter if the neighbor is disabled.

Syntax

- **default neighbor WORD<0-1536> next-hop-self**
- **neighbor WORD<0-1536> next-hop-self**
- **no neighbor WORD<0-1536> next-hop-self**

Default

The default value is disable.

Command Mode

BGP Router Configuration

neighbor WORD<0-1536> out-route-map WORD<0-256>

Applies a route policy rule to all outgoing routes that are learned from, or sent to, the local peers or peer groups, of the BGP router. The local BGP router is the BGP router that allows or disallows routes, and sets attributes in incoming or outgoing updates.

Syntax

- **default neighbor WORD<0-1536> out-route-map**
- **neighbor WORD<0-1536> out-route-map WORD<0-256>**
- **no neighbor WORD<0-1536> out-route-map**

Command Parameters

WORD<0-1536>	Specifies the neighbor IP address {a.b.c.d}, IPv6 address, or neighbor group name.
WORD<0-256>	WORD<0-256> name is an alphanumeric string length (0 to 256 characters) that indicates the name of the route map or policy.

Default

None

Command Mode

BGP Router Configuration

neighbor WORD<0-1536> peer-group WORD<0-1536>

Adds a Border Gateway Protocol (BGP) peer to the specified subscriber group. You must create the specified subscriber group before you issue this command.

Syntax

- **neighbor WORD<0-1536> peer-group WORD<0-1536>**
- **no neighbor WORD<0-1536> peer-group**

Command Parameters

WORD<0-1536>	Specifies the subscriber group. You must create the specified subscriber group before you issue this command.

Default

None

Command Mode

BGP Router Configuration

neighbor WORD<0-1536> remote-as WORD<0-11>

Configures the remote AS number of a Border Gateway Protocol (BGP) peer or a peer-group. You cannot configure this option when the admin-state is enable.

Syntax

- **default neighbor WORD<0-1536> remote-as**
- **neighbor WORD<0-1536> remote-as WORD<0-11>**
- **no neighbor WORD<0-1536> remote-as**

Command Parameters

WORD<0-11>	Specifies the remote AS number of a peer or a peer-group.

Default

None

Command Mode

BGP Router Configuration

neighbor WORD<0-1536> remove-private-as enable

When enabled, strips private AS numbers when an update is sent. This feature is especially useful within a confederation.

Syntax

- **default neighbor WORD<0-1536> remove-private-as enable**
- **neighbor WORD<0-1536> remove-private-as enable**
- **no neighbor WORD<0-1536> remove-private-as enable**

Default

The default value is enable.

Command Mode

BGP Router Configuration

neighbor WORD<0-1536> retry-interval <1-65535>

Configures the time interval (in seconds) for the ConnectRetry Timer.

Syntax

- **default neighbor WORD<0-1536> retry-interval**
- **neighbor WORD<0-1536> retry-interval <1-65535>**

Default

The default value is 120 seconds.

Command Mode

BGP Router Configuration

neighbor WORD<0-1536> route-reflector-client

Configures the specified neighbor or group of neighbors as its route reflector client. All neighbors that are configured become members of the client group and the remaining IBGP peers become members of the nonclient group for the local route reflector.

Syntax

- **neighbor WORD<0-1536> route-reflector-client**
- **no neighbor WORD<0-1536> route-reflector-client**

Default

The default value is disable.

Command Mode

BGP Router Configuration

neighbor WORD<0-1536> route-refresh

Enables IP VPN Route Refresh for the Border Gateway Protocol (BGP) peer. If enabled, a route refresh request received by a BGP speaker causes the speaker to resend all route updates it contains in its database that are eligible for the peer that issues the request.

Syntax

- **default neighbor WORD<0-1536> route-refresh**
- **neighbor WORD<0-1536> route-refresh**
- **no neighbor WORD<0-1536> route-refresh**

Default

The default value is disable

Command Mode

BGP Router Configuration

neighbor WORD<0-1536> send-community

Enables the switch to send the update message community attribute to the specified peer.

Syntax

- **default neighbor WORD<0-1536> send-community**
- **neighbor WORD<0-1536> send-community**
- **no neighbor WORD<0-1536> send-community**

Default

The default value is disable.

Command Mode

BGP Router Configuration

neighbor WORD<0-1536> soft-reconfiguration-in enable

When enabled, the router relearns routes from the specified neighbor or group of neighbors without resetting the connection when the policy changes in the inbound direction.

Syntax

- **default neighbor WORD<0-1536> soft-reconfiguration-in enable**
- **neighbor WORD<0-1536> soft-reconfiguration-in enable**
- **no neighbor WORD<0-1536> soft-reconfiguration-in enable**

Default

The default value is disable.

Command Mode

BGP Router Configuration

neighbor WORD<0-1536> timers

Configures timers (in seconds) for the Border Gateway Protocol (BGP) speaker for this peer.

Syntax

- **default neighbor WORD<0-1536> timers**
- **neighbor WORD<0-1536> timers <0-21845> <0-65535>**

Command Parameters

<0-21845>	<0-21845> is the keepalive time. The default is 60.
<0-65535>	<0-65535> is the hold time. The default is 180.

Default

None

Command Mode

BGP Router Configuration

neighbor WORD<0-1536> update-source

Specifies the source IP address when Border Gateway Protocol (BGP) packets are sent to this peer or peer group. You cannot configure this parameter when the admin-state is enable.

Syntax

- **default neighbor WORD<0-1536> update-source**
- **neighbor WORD<0-1536> update-source WORD<1-256>**
- **no neighbor WORD<0-1536> update-source**

Command Parameters

<A.B.C.D>	<A.B.C.D> is the specified source IP address.

Default

None

Command Mode

BGP Router Configuration

neighbor WORD<0-1536> weight

Specifies the weight of a Border Gateway Protocol (BGP) peer or peer groups, or the priority of updates that can be received from that BGP peer.

Syntax

- **default neighbor WORD<0-1536> weight**
- **neighbor WORD<0-1536> weight <0-65535>**
- **no neighbor WORD<0-1536> weight**

Command Parameters

<0-65535>	Specifies the weight of a BGP peer or peer groups, or the priority of updates that can be received from that BGP peer. If you have particular neighbors that you want to prefer for most of your traffic, you can assign a higher weight to all routes learned from that neighbor.

Default

The default value is 0.

Command Mode

BGP Router Configuration

neighbor-debug-all

Display specified debug information for BGP neighbors.

Syntax

- **`default neighbor-debug-all`**
- **`neighbor-debug-all mask WORD<1-100>`**
- **`no neighbor-debug-all`**

Command Parameters

mask <WORD 1-100>	<WORD 1-100> is a list of mask choices separated by commas with no space between choices.

Default

The default value is none.

Command Mode

BGP Router Configuration

network (for BGP)

Specify the Interior Gateway Protocol (IGP) network prefixes for Border Gateway Protocol (BGP) to advertise for redistribution.

Syntax

- **`default network WORD<1-256>`**
- **`network WORD<1-256>`**
- **`network WORD<1-256> metric <0-65535>`**

- **no network WORD<1-256>**

Command Parameters

metric <0-65535>	Specifies the metric to use when the system sends an update for the routes in the network table. The metric configures the MED for the routes advertised to EBGP peers. The range is 0–65535.
WORD <1-256>	Specifies IGP network prefixes for Border Gateway Protocol (BGP) to advertise for redistribution. This command imports routes into BGP. WORD <1-256> is the IPv4 or the IPv6 network address and mask.

Default

None

Command Mode

BGP Router Configuration

no-med-path-is-worst

Enable Border Gateway Protocol (BGP) to treat an update without a multiexit discriminator (MED) attribute as the worst path.

Syntax

- **default no-med-path-is-worst**
- **default no-med-path-is-worst enable**
- **no no-med-path-is-worst**
- **no no-med-path-is-worst enable**
- **no-med-path-is-worst enable**

Command Parameters

enable	Enables Border Gateway Protocol (BGP) to treat an update without a multiexit discriminator (MED) attribute as the worst path.

Default

The default value is enable.

Command Mode

BGP Router Configuration

quick-start

Enable the quick-start flag for exponential backoff.

Syntax

- **default quick-start**
- **default quick-start enable**
- **default quick-start enable**
- **no quick-start**
- **no quick-start enable**
- **quick-start enable**

Command Parameters

enable	Enables the quick-start flag for exponential backoff.

Default

The default value is enable.

Command Mode

BGP Router Configuration

redistribute direct (for BGP)

Redistribute routes learned from directly-connected networks into Border Gateway Protocol (BGP).

Syntax

- **default redistribute direct**
- **default redistribute direct enable**
- **default redistribute direct metric**
- **default redistribute direct metric-type**
- **default redistribute direct route-map**
- **default redistribute direct vrf-src WORD<1-16>**
- **no redistribute direct**
- **no redistribute direct enable**
- **no redistribute direct vrf-src WORD<1-16>**
- **redistribute direct**
- **redistribute direct enable**
- **redistribute direct metric <0-65535>**

- **redistribute direct metric-type live-metric**
- **redistribute direct route-map WORD<0-64>**
- **redistribute direct vrf-src WORD<1-16>**

Command Parameters

enable	Enables the redistribution.
metric <0-65535>	Specifies the value of the metric to be announced in the advertisement. The default is 0.
metric-type live-metric	Configures the route redistribution metric type. The default is disabled.
route-map WORD<0-64>	Configures the route policy to apply to redistributed routes.
vrf-src WORD<1-16>	Specifies the source VRF instance. This parameter is not required for redistribution within the same VRF.

Default

By default, route redistribution is disabled.

Command Mode

BGP Router Configuration

redistribute dvr (for BGP)

Redistribute DVR-learned routes into Border Gateway Protocol (BGP).

Syntax

- **default redistribute dvr**
- **default redistribute dvr enable**
- **default redistribute dvr metric**
- **default redistribute dvr metric-type**
- **default redistribute dvr route-map**
- **default redistribute dvr vrf-src WORD<1-16>**
- **no redistribute dvr**
- **no redistribute dvr enable**
- **no redistribute dvr vrf-src WORD<1-16>**
- **redistribute dvr**
- **redistribute dvr enable**

- **redistribute dvr metric <0-65535>**
- **redistribute dvr metric-type live-metric**
- **redistribute dvr route-map WORD<0-64>**
- **redistribute dvr vrf-src WORD<1-16>**

Command Parameters

enable	Enables the redistribution.
metric <0-65535>	Specifies the value of the metric to be announced in the advertisement. The default is 0.
metric-type live-metric	Configures the route redistribution metric type. The default is disabled.
route-map WORD<0-64>	Configures the route policy to apply to redistributed routes.
vrf-src WORD<1-16>	Specifies the source VRF instance. This parameter is not required for redistribution within the same VRF.

Default

By default, route redistribution is disabled.

Command Mode

BGP Router Configuration

redistribute ipv6-direct (for BGP)

Redistribute routes learned from IPv6 directly-connected networks into Border Gateway Protocol (BGP).

Syntax

- **default redistribute ipv6-direct metric-type**
- **default redistribute ipv6-direct**
- **default redistribute ipv6-direct enable**
- **default redistribute ipv6-direct metric**
- **default redistribute ipv6-direct route-map**
- **no redistribute ipv6-direct**
- **no redistribute ipv6-direct enable**
- **no redistribute ipv6-direct route-map**
- **redistribute ipv6-direct**
- **redistribute ipv6-direct enable**

- **redistribute ipv6-direct metric <0-65535>**
- **redistribute ipv6-direct metric-type live-metric**
- **redistribute ipv6-direct route-map WORD<0-64>**

Command Parameters

enable	Enables the redistribution.
metric <0-65535>	Specifies the value of the metric to be announced in the advertisement. The default is 0.
route-map WORD<0-64>	Configures the route policy to apply to redistributed routes.

Default

By default, route redistribution is disabled.

Command Mode

BGP Router Configuration

redistribute ipv6-isis enable

Enables the BGP route redistribution instance.

Syntax

- **default redistribute ipv6-isis enable**
- **no redistribute ipv6-isis enable**
- **redistribute ipv6-isis enable**

Default

The default is none.

Command Mode

BGP Router Configuration

redistribute ipv6-isis metric

Configure the metric to apply to redistributed routes.

Syntax

- **default redistribute ipv6-isis metric**
- **redistribute ipv6-isis metric <0-65535>**

Command Parameters

<0-65535>	Specifies the BGP metric.

Default

The default value is 0.

Command Mode

BGP Router Configuration

redistribute ipv6-isis route-map

Configure the route policy to apply to redistributed routes.

Syntax

- **default redistribute ipv6-isis route-map**
- **no redistribute ipv6-isis route-map**
- **redistribute ipv6-isis route-map WORD<0-64>**

Command Parameters

WORD<0-64>	Specifies the route policy name.

Default

The default value is 0.

Command Mode

BGP Router Configuration

redistribute ipv6-static (for BGP)

Redistribute IPv6 static routes into Border Gateway Protocol (BGP).

Syntax

- **default redistribute ipv6-static**
- **default redistribute ipv6-static enable**
- **default redistribute ipv6-static metric**
- **default redistribute ipv6-static route-map**
- **no redistribute ipv6-static**
- **no redistribute ipv6-static enable**

- **no redistribute ipv6-static route-map**
- **redistribute ipv6-static**
- **redistribute ipv6-static enable**
- **redistribute ipv6-static metric <0-65535>**
- **redistribute ipv6-static route-map WORD<0-64>**

Command Parameters

enable	Enables the redistribution.
metric <0-65535>	Specifies the value of the metric to be announced in the advertisement. The default is 0.
route-map WORD<0-64>	Configures the route policy to apply to redistributed routes.

Default

By default, route redistribution is disabled.

Command Mode

BGP Router Configuration

redistribute isis (for BGP)

Redistribute learned routes into Border Gateway Protocol (BGP).

Syntax

- **default redistribute isis**
- **default redistribute isis enable**
- **default redistribute isis metric**
- **default redistribute isis metric-type**
- **default redistribute isis route-map**
- **default redistribute isis vrf-src WORD<1-16>**
- **no redistribute isis**
- **no redistribute isis enable**
- **redistribute isis**
- **redistribute isis enable**
- **redistribute isis metric <0-65535>**
- **redistribute isis metric-type live-metric**
- **redistribute isis route-map WORD<0-64>**

- **redistribute isis vrf-src WORD<1-16>**

Command Parameters

enable	Enables the redistribution of Intermediate-System-to-Intermediate-System (IS-IS) learned IP routes into BGP.
metric <0-65535>	Specifies the value of the metric to be announced in the advertisement. The default is 1.
metric-type live-metric	Configures the route redistribution metric type. The default is disabled.
route-map WORD<0-64>	Configures the route policy to apply to redistributed routes.
vrf-src WORD<1-16>	Specifies the source VRF instance. This parameter is not required for redistribution within the same VRF.

Default

By default, route redistribution is disabled.

Command Mode

BGP Router Configuration

redistribute ospf (for BGP)

Redistribute OSPF-learned routes into Border Gateway Protocol (BGP).

Syntax

- **default redistribute ospf**
- **default redistribute ospf enable**
- **default redistribute ospf metric**
- **default redistribute ospf metric-type**
- **default redistribute ospf route-map**
- **default redistribute ospf vrf-src WORD<1-16>**
- **no redistribute ospf**
- **no redistribute ospf enable**
- **no redistribute ospf vrf-src WORD<1-16>**
- **redistribute ospf**
- **redistribute ospf enable**
- **redistribute ospf metric <0-65535>**
- **redistribute ospf metric-type live-metric**

- **redistribute ospf route-map WORD<0-64>**
- **redistribute ospf vrf-src WORD<1-16>**

Command Parameters

enable	Enables the redistribution.
metric <0-65535>	Specifies the value of the metric to be announced in the advertisement. The default is 0.
metric-type live-metric	Configures the route redistribution metric type. The default is disabled.
route-map WORD<0-64>	Configures the route policy to apply to redistributed routes.
vrf-src WORD<1-16>	Specifies the source VRF instance. This parameter is not required for redistribution within the same VRF.

Default

By default, route redistribution is disabled.

Command Mode

BGP Router Configuration

redistribute ospfv3 (for BGP)

Redistribute OSPFv3-learned routes into Border Gateway Protocol (BGP).

Syntax

- **default redistribute ospfv3**
- **default redistribute ospfv3 enable**
- **default redistribute ospfv3 metric**
- **default redistribute ospfv3 route-map**
- **no redistribute ospfv3**
- **no redistribute ospfv3 enable**
- **no redistribute ospfv3 route-map**
- **redistribute ospfv3**
- **redistribute ospfv3 enable**
- **redistribute ospfv3 metric <0-65535>**
- **redistribute ospfv3 route-map WORD<0-64>**

Command Parameters

enable	Enables the redistribution.
metric <0-65535>	Specifies the value of the metric to be announced in the advertisement. The default is 0.
route-map WORD<0-64>	Configures the route policy to apply to redistributed routes.

Default

By default, route redistribution is disabled.

Command Mode

BGP Router Configuration

redistribute rip (for BGP)

Redistribute RIP-learned routes into Border Gateway Protocol (BGP).

Syntax

- **default redistribute rip**
- **default redistribute rip enable**
- **default redistribute rip metric**
- **default redistribute rip metric-type**
- **default redistribute rip route-map**
- **default redistribute rip vrf-src WORD<1-16>**
- **no redistribute rip**
- **no redistribute rip enable**
- **no redistribute rip vrf-src WORD<1-16>**
- **redistribute rip**
- **redistribute rip enable**
- **redistribute rip metric <0-65535>**
- **redistribute rip metric-type live-metric**
- **redistribute rip route-map WORD<0-64>**
- **redistribute rip vrf-src WORD<1-16>**

Command Parameters

enable	Enables the redistribution.

metric <0-65535>	Specifies the value of the metric to be announced in the advertisement. The default is 0.
metric-type live-metric	Configures the route redistribution metric type. The default is disabled.
route-map WORD<0-64>	Configures the route policy to apply to redistributed routes.
vrf-src WORD<1-16>	Specifies the source VRF instance. This parameter is not required for redistribution within the same VRF.

Default

By default, route redistribution is disabled.

Command Mode

BGP Router Configuration

redistribute ripng enable

Enable the BGP redistribution RIPng.

Syntax

- **default redistribute ripng enable**
- **no redistribute ripng enable**
- **redistribute ripng enable**

Default

None

Command Mode

BGP Router Configuration

redistribute ripng metric

Configure the metric to apply to redistributed routes.

Syntax

- **default redistribute ripng metric**
- **redistribute ripng metric <0-65535>**

Command Parameters

<0-65535>	Specifies the BGP route distribution metric.

Default

The default value is 0.

Command Mode

BGP Router Configuration

redistribute ripng route-map

Configure the route policy to apply to redistributed routes.

Syntax

- **default redistribute ripng route-map**
- **no redistribute ripng route-map**
- **redistribute ripng route-map WORD<0-64>**

Command Parameters

WORD<0-64>	Specifies the route policy name.

Default

The default value is 0.

Command Mode

BGP Router Configuration

redistribute static (for BGP)

Redistribute static routes into Border Gateway Protocol (BGP).

Syntax

- **default redistribute static**
- **default redistribute static enable**
- **default redistribute static metric**
- **default redistribute static metric-type**
- **default redistribute static route-map**
- **default redistribute static vrf-src WORD<1-16>**

- **no redistribute static**
- **no redistribute static enable**
- **no redistribute static vrf-src WORD<1-16>**
- **redistribute static**
- **redistribute static enable**
- **redistribute static metric <0-65535>**
- **redistribute static metric-type live metric**
- **redistribute static route-map WORD<0-64>**
- **redistribute static vrf-src WORD<1-16>**

Command Parameters

enable	Enables the redistribution.
metric <0-65535>	Specifies the value of the metric to be announced in the advertisement. The default is 0.
metric-type live-metric	Configures the route redistribution metric type. The default is disabled.
route-map WORD<0-64>	Configures the route policy to apply to redistributed routes.
vrf-src WORD<1-16>	Specifies the source VRF instance. This parameter is not required for redistribution within the same VRF.

Default

By default, route redistribution is disabled.

Command Mode

BGP Router Configuration

route-reflector enable

Enable the reflection of routes from IBGP neighbors.

Syntax

- **default route-reflector**
- **default route-reflector enable**
- **no route-reflector**
- **no route-reflector enable**
- **route-reflector**

- **route-reflector enable**

Command Parameters

enable	Enables route-reflector to reflect routers from iBGP neighbors.

Default

The default value is enable.

Command Mode

BGP Router Configuration

route-refresh

Enable or disable IP VPN Route Refresh. If enabled, a route refresh request received by a BGP speaker causes the speaker to resend all route updates it contains in its database that are eligible for the peer that issues the request.

Syntax

- **default route-refresh**
- **no route-refresh**
- **route-refresh**

Default

The default value is disable

Command Mode

BGP Router Configuration

router-id (for BGP)

Specify the BGP router ID in IP address format.

Syntax

- **default router-id**
- **no router-id**
- **router-id {A.B.C.D}**

Command Parameters

<A.B.C.D>	Identifies the router IP address.

Default

None

Command Mode

BGP Router Configuration

synchronization

Enable the router to accept routes from BGP peers without waiting for an update from the IGP.

Syntax

- **default synchronization**
- **no synchronization**
- **synchronization**

Default

The default value is enable.

Command Mode

BGP Router Configuration

traps

Enable BGP traps.

Syntax

- **default traps**
- **default traps enable**
- **no traps**
- **no traps enable**
- **traps enable**

Command Parameters

enable	Enables BGP traps.

Default

The default value is disable.

Command Mode

BGP Router Configuration

Chapter 5: DHCP-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 will be bypassed. An empty prefix list is treated as a permit.

Syntax

- **default match reply prefix-list**
- **match reply prefix-list WORD<1-64>**
- **no match reply prefix-list**

Command Parameters

WORD<1–64>	Specifies the prefix list name.

Default

None

Command Mode

DHCP-guard Configuration

match server access-list

Enables the verification of sender IPv6 address in inspected messages.

Syntax

- **default match server access-list**
- **match server access-list WORD<1-64>**
- **no match server access-list**

Command Parameters

WORD<1–64>	Specifies the access list name.

Default

None

Command Mode

DHCP-guard Configuration

preference max-limit

Enables verification that the advertised preference is less than the specified limit. If not specified, this check will be bypassed.

Syntax

- **default preference max-limit**
- **preference max-limit <0-255>**

Command Parameters

<0-255>	Specifies the maximum limit value.

Default

None

Command Mode

DHCP-guard Configuration

preference min-limit

Enables verification that the advertised preference is greater than the specified limit. If not specified, this check will be bypassed.

Syntax

- **default preference min-limit**
- **preference min-limit <0-255>**

Command Parameters

<0-255>	Specifies the minimum limit value.

Default

None

Command Mode

DHCP-guard Configuration

Chapter 6: Elan I-SID Configuration

c-vid (for a mlt)

Associate (VID, mlt) end points to the Switched UNI (S-UNI) service instance identifiers (I-SID).

Syntax

- **c-vid** <*c-vid*> **mlt <1-512>**
- **no c-vid** <*c-vid*> **mlt <1-512>**

Command Parameters

<c-vid>	Specifies the customer VLAN ID. Different hardware platforms support different customer VLAN ID ranges. Use the CLI Help to see the available range for your switch.
mlt <1-512>	Add mlt to Elan-based service.

Default

None

Command Mode

Elan I-SID Configuration

c-vid (for a port)

Associate (VID, portList) end points to the Switched UNI (S-UNI) service instance identifiers (I-SID).

Syntax

- **c-vid** <*c-vid*> **port {slot/port[/sub-port][-slot/port[/sub-port]][,...]}**
- **no c-vid** <*c-vid*> **port {slot/port[/sub-port][-slot/port[/sub-port]] [,...]}**

Command Parameters

<c-vid>	Specifies the customer VLAN ID. Different hardware platforms support different customer VLAN ID ranges. Use the CLI Help to see the available range for your switch.

port *{slot/port[/sub-port] [-slot/port[/sub-port]] [,...]}*	Add ports to Elan-based service. Identifies the slot and port in one of the following formats: a single slot and port (slot/port), a range of slots and ports (slot/port-slot/port), or a series of slots and ports (slot/port,slot/port,slot/port). If your platform supports channelization and the port is channelized, you must also specify the sub-port in the format slot/port/sub-port.

Default

None

Command Mode

Elan I-SID Configuration

untagged-traffic (for a mlt)

Associate (VID, mlt) end points to the Switched UNI (S-UNI) service instance identifiers (I-SID).

Syntax

- **`no untagged-traffic mlt <1-512> [bpdu enable]`**
- **`untagged-traffic mlt <1-512> [bpdu enable]`**

Command Parameters

bpdu	Set bpdu forwarding.
enable	Enable bpdu forwarding.
mlt <1-512>	Add mlt to Elan-based service.

Default

None

Command Mode

Elan I-SID Configuration

untagged-traffic (for a port)

Associate (VID, portList) end points to the Switched UNI (S-UNI) service instance identifiers (I-SID).

Syntax

- **`no untagged-traffic port {slot/port[/sub-port][-slot/port[/sub-port]] [,...]} [bpdu enable]`**

- **untagged-traffic port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} [bpdu enable]**

Command Parameters

bpdu	Set bpdu forwarding.
enable	Enable bpdu forwarding.
port *{slot/port[/sub-port] [-slot/port[/sub-port]] [,...]}*	Identifies the slot and port in one of the following formats: a single slot and port (slot/port), a range of slots and ports (slot/port-slot/port), or a series of slots and ports (slot/port,slot/port,slot/port). If your platform supports channelization and the port is channelized, you must also specify the sub-port in the format slot/port/sub-port.

Default

None

Command Mode

Elan I-SID Configuration

Chapter 7: Elan-Transparent Configuration

mlt (T-UNI based)

Add MLT to elan-transparent (Transparent Port UNI) based service instance identifier (I-SID).

Syntax

- `mlt <1-512>`
- `no mlt <1-512>`

Command Parameters

<1-512>	Specifies the MLT ID in the range of 1-512 of the mlt being added to (or removed from) the Transparent Port UNI based service instance identifier (I-SID).

Default

None

Command Mode

Elan-Transparent Configuration

port (T-UNI based)

Add ports to elan-transparent (Transparent Port UNI) based service instance identifier (I-SID).

Syntax

- `no port <{slot/port[/sub-port][-slot/port[/sub-port]][,...]}>`
- `port <{slot/port[/sub-port][-slot/port[/sub-port]][,...]}>`

Command Parameters

{slot/port[/sub-port] [-slot/port[/sub-port]] [,...]}	Identifies the slot and port in one of the following formats: a single slot and port (slot/port), a range of slots and ports (slot/port-slot/port), or a series of slots and ports (slot/port,slot/port,slot/port). If your platform supports channelization and the port is channelized, you must also specify the sub-port in the format slot/port/sub-port.

Default

None

Command Mode

Elan-Transparent Configuration

Chapter 8: GigabitEthernet Interface Configuration

access-diffserv

Configure a port as trusted or untrusted to determine the Layer 3 QoS actions the switch performs. A trusted (core) port honors incoming Differentiated Services Code Point (DSCP) markings. An untrusted (access) port overrides DSCP markings.

Syntax

- **access-diffserv**
- **access-diffserv enable**
- **access-diffserv port {slot/port[/sub-port][-slot/port[/sub-port]][,...]}**
- **access-diffserv port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} enable**
- **default access-diffserv**
- **default access-diffserv enable**
- **default access-diffserv port {slot/port[/sub-port][-slot/port[/sub-port]][,...]}**
- **default access-diffserv port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} enable**
- **no access-diffserv**
- **no access-diffserv enable**
- **no access-diffserv port {slot/port[/sub-port][-slot/port[/sub-port]][,...]}**
- **no access-diffserv port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} enable**

Command Parameters

enable	If enabled, specifies an access port and overrides incoming DSCP bits. If disabled, specifies a core port and honors and handles incoming DSCP bits. The default is disabled.

port *{slot/port[/sub-port] [-slot/port[/sub-port]] [,...]}*	Identifies the slot and port in one of the following formats: a single slot and port (slot/port), a range of slots and ports (slot/port-slot/port), or a series of slots and ports (slot/port,slot/port,slot/port). If your platform supports channelization and the port is channelized, you must also specify the sub-port in the format slot/port/sub-port.

Default

The default configuration is trusted (disabled).

Command Mode

GigabitEthernet Interface Configuration

action

Flush or clear the Address Resolution Protocol (ARP) tables for administrative and troubleshooting purposes. These actions are performed against a routed Gigabit Ethernet Interface. The related vlan action command performs similar functions against a VLAN interface.

Syntax

- **`action {none | flushMacFdb | flushArp | flushIp | triggerRipUpdate | flushAll | clearLoopDetectAlarm }`**
- **`action port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} { none | flushMacFdb | flushArp | flushIp | triggerRipUpdate | flushAll | clearLoopDetectAlarm}`**
- **`default action`**
- **`default action port {slot/port[/sub-port][-slot/port[/sub-port]][,...]}`**

Command Parameters

ClearLoopDetectAlarm	Sets action to clear loop detect alarm.
flushAll	Flush all tables.
flushArp	Flush ARP tables.
flushIp	Flush IP routing tables.
flushMacFdb	Flush the MAC FDB.
none	Sets action to none.
port *{slot/port[/sub-port] [-slot/port[/sub-port]] [,...]}*	Identifies the slot and port in one of the following formats: a single slot and port (slot/port), a range of slots and ports (slot/port-slot/port), or a series of slots and ports (slot/port,slot/

	port,slot/port). If your platform supports channelization and the port is channelized, you must also specify the sub-port in the format slot/port/sub-port.
triggerRipUpdate	Force RIP to update the routing table so that the port or VLAN uses the latest routing information.

Default

None

Command Mode

GigabitEthernet Interface Configuration

auto-negotiate enable (on an Ethernet port)

Enable AutoNegotiation on the Ethernet port to optimally operate on the network.

Syntax

- **auto-negotiate**
- **auto-negotiate enable**
- **auto-negotiate port {slot/port[/sub-port][-slot/port[/sub-port]][,...]}**
- **auto-negotiate port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} enable**
- **default auto-negotiate**
- **default auto-negotiate enable**
- **default auto-negotiate port {slot/port[/sub-port][-slot/port[/sub-port]][,...]}**
- **default auto-negotiate port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} enable**
- **no auto-negotiate**
- **no auto-negotiate enable**
- **no auto-negotiate port {slot/port[/sub-port][-slot/port[/sub-port]][,...]}**
- **no auto-negotiate port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} enable**

Command Parameters

enable	Enables or disables AutoNegotiation for the port or other ports of the module or both.

port *{slot/port[/sub-port] [-slot/port[/sub-port]] [,...]}*	Identifies the slot and port in one of the following formats: a single slot and port (slot/port), a range of slots and ports (slot/port-slot/port), or a series of slots and ports (slot/port,slot/port,slot/port). If your platform supports channelization and the port is channelized, you must also specify the sub-port in the format slot/port/sub-port.

Default

The default is true, enabled.

Command Mode

GigabitEthernet Interface Configuration

auto-negotiation-advertisements

Configure Auto-Negotiation advertisements after you enable Auto-Negotiation.

Note:

Because of port speed differences, not all parameters appear on all hardware platforms.

Syntax

- **auto-negotiation-advertisements 10-full**
- **auto-negotiation-advertisements 10-half**
- **auto-negotiation-advertisements 100-full**
- **auto-negotiation-advertisements 100-half**
- **auto-negotiation-advertisements 1000-full**
- **auto-negotiation-advertisements 10000-full**
- **auto-negotiation-advertisements 2500-full**
- **auto-negotiation-advertisements 5000-full**
- **auto-negotiation-advertisements none**
- **auto-negotiation-advertisements port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} 10-full**
- **auto-negotiation-advertisements port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} 10-half**
- **auto-negotiation-advertisements port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} 100-full**
- **auto-negotiation-advertisements port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} 100-half**
- **auto-negotiation-advertisements port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} 1000-full**

- **auto-negotiation-advertisements port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} 10000-full**
- **auto-negotiation-advertisements port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} 2500-full**
- **auto-negotiation-advertisements port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} 5000-full**
- **auto-negotiation-advertisements port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} none**
- **default auto-negotiation-advertisements**
- **default auto-negotiation-advertisements port {slot/port[/sub-port][-slot/port[/sub-port]][,...]}**
- **no auto-negotiation-advertisements**
- **no auto-negotiation-advertisements port {slot/port[/sub-port][-slot/port[/sub-port]][,...]}**

Command Parameters

10-full	Advertises 10 Mbps full duplex.
10-half	Advertises 10 Mbps half duplex.
100-full	Advertises 100 Mbps full duplex.
100-half	Advertises 100 Mbps half duplex.
1000-full	Advertises 1000 Mbps full duplex.
10000-full	Advertises 10000 Mbps full duplex.
2500-full	Advertises 2.5 Gbps full duplex.
5000-full	Advertises 5 Gbps full duplex.
none	Configures the value to none.
port *{slot/port[/sub-port] [-slot/port[/sub-port]] [,...]}*	Identifies the slot and port in one of the following formats: a single slot and port (slot/port), a range of slots and ports (slot/port-slot/port), or a series of slots and ports (slot/port,slot/port,slot/port). If your platform supports channelization and the port is channelized, you must also specify the sub-port in the format slot/port/sub-port.

Default

None

Command Mode

GigabitEthernet Interface Configuration

auto-nni

Enable to have the node create an IS-IS interface, attach the interface to an SPBM instance, and then enable IS-IS on the port interface.

Syntax

- **auto-nni**
- **no auto-nni**

Default

None

Command Mode

GigabitEthernet Interface Configuration

auto-recover-port

Enable or disable autorecovery on a port.

Syntax

- **auto-recover-port**
- **auto-recover-port enable**
- **auto-recover-port port {slot/port[/sub-port][-slot/port[/sub-port]][,...]}**
- **auto-recover-port port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} enable**
- **default auto-recover-port**
- **default auto-recover-port enable**
- **default auto-recover-port port {slot/port[/sub-port][-slot/port[/sub-port]][,...]}**
- **default auto-recover-port port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} enable**
- **no auto-recover-port**
- **no auto-recover-port enable**
- **no auto-recover-port port {slot/port[/sub-port][-slot/port[/sub-port]][,...]}**
- **no auto-recover-port port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} enable**

Command Parameters

enable	Enables spoof detection on the port.
port *{slot/port[/sub-port] [-slot/port[/sub-port]] [,...]}*	Identifies the slot and port in one of the following formats: a single slot and port (slot/port), a range of slots and ports (slot/port-slot/port), or a series of slots and ports (slot/port,slot/port,slot/port). If your platform supports channelization and the port is channelized, you must also specify the sub-port in the format slot/port/sub-port.

Default

None

Command Mode

GigabitEthernet Interface Configuration

brouter

Configure a port as a brouter port.

Syntax

- **brouter port {slot/port[/sub-port]} vlan <2-4059> subnet {A.B.C.D/X}**
- **brouter port {slot/port[/sub-port]} vlan <2-4059> subnet {A.B.C.D/X} mac-offset <MAC-offset>**
- **brouter port {slot/port[/sub-port]} vlan <2-4059> subnet {A.B.C.D} {A.B.C.D}**
- **brouter vlan <2-4059> subnet {A.B.C.D/X}**
- **brouter vlan <2-4059> subnet {A.B.C.D/X} mac-offset <MAC-offset>**
- **brouter vlan <2-4059> subnet {A.B.C.D} {A.B.C.D}**
- **no brouter**
- **no brouter port {slot/port[/sub-port]}**

Command Parameters

mac-offset *<MAC-offset>*	Specifies a number by which to offset the MAC address from the chassis MAC address. This ensures that each IP address has a different MAC address. If you omit this variable, a unique MAC offset is automatically generated. Different hardware platforms support different ranges. To see which range is available on your switch, use the CLI command completion Help.
port *{slot/port[/sub-port]}*	Identifies a single slot and port. If your platform supports channelization and the port is channelized, you must also specify the sub-port in the format slot/port/sub-port.

subnet <{A.B.C.D/X}|{A.B.C.D}>	Assigns an IP address and mask for the management port.
vlan <*2-4059*>	Specifies the VLAN ID in the range of 2 to 4059. VLAN ID 1 is the default VLAN and you cannot create or delete VLAN ID 1. By default, the system reserves VLAN IDs 4060 to 4094 for internal use. On switches that support the vrf-scaling and spbm-config-mode boot configuration flags, if you enable these flags, the system also reserves VLAN IDs 3500 to 3998.

Default

None

Command Mode

GigabitEthernet Interface Configuration

channelize

Enable port channelization. Use this feature to configure a single port to operate as four logical interfaces.

Note:

Not all hardware platforms support this feature. For information about hardware support, see your hardware documentation.

Syntax

- **`channelize enable`**
- **`channelize port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} enable`**
- **`default channelize enable`**
- **`default channelize port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} enable`**
- **`no channelize enable`**
- **`no channelize port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} enable`**

Command Parameters

enable	Enable channelization for all ports.
port *{slot/port[/sub-port] [-slot/*	Identifies the slot and port in one of the following formats: a single slot and port (slot/port), a range of slots and ports (slot/port-slot/port), or a series of slots and ports (slot/port,slot/port,slot/port). If your platform supports

port[/sub-port]] [,...]}	channelization and the port is channelized, you must also specify the sub-port in the format slot/port/sub-port.

Default

None

Command Mode

GigabitEthernet Interface Configuration

clear mac-address-table dynamic

Clear the dynamic entries in the MAC address table.

Syntax

- **clear mac-address-table dynamic 0x00:0x00:0x00:0x00:0x00:0x00 <1-4059>**

Command Parameters

<1-4059>	Specifies the VLAN ID in the range of 1 to 4059. By default, VLAN IDs 1 to 4059 are configurable and the system reserves VLAN IDs 4060 to 4094 for internal use. On switches that support the vrf-scaling and spbm-config-mode boot configuration flags, if you enable these flags, the system also reserves VLAN IDs 3500 to 3998. VLAN ID 1 is the default VLAN and you cannot create or delete VLAN ID 1.
0x00:0x00:0x00:0x00:0x00:0x00	Specifies the MAC address.

Default

None

Command Mode

GigabitEthernet Interface Configuration

default-vlan-id

Configure the default VLAN ID for the port.

Syntax

- **default-vlan-id <0-4059>**
- **default-vlan-id port {slot/port[/sub-port][-slot/port[/sub-port]] [,...]} <0-4059>**

Command Parameters

port *{slot/port[/sub-port] [-slot/port[/sub-port]] [,...]}*	Identifies the slot and port in one of the following formats: a single slot and port (slot/port), a range of slots and ports (slot/port-slot/port), or a series of slots and ports (slot/port,slot/port,slot/port). If your platform supports channelization and the port is channelized, you must also specify the sub-port in the format slot/port/sub-port.
<0-4059>	Specifies the VLAN ID.

Default

None

Command Mode

GigabitEthernet Interface Configuration

duplex

Configure the duplex mode on the Ethernet module. This command applies to 10/100/1000 Mb/s ports.

Syntax

- **`default duplex`**
- **`default duplex port {slot/port[/sub-port][-slot/port[/sub-port]] [,...]}`**
- **`duplex { half | full }`**
- **`duplex port {slot/port[/sub-port][-slot/port[/sub-port]][,...]}`**

Command Parameters

<half|full>	Specifies half- or full-duplex mode. 1 and 10 Gb/s ports must use full-duplex mode.
port *{slot/port[/sub-port] [-slot/port[/sub-port]] [,...]}*	Identifies the slot and port in one of the following formats: a single slot and port (slot/port), a range of slots and ports (slot/port-slot/port), or a series of slots and ports (slot/port,slot/port,slot/port). If your platform supports channelization and the port is channelized, you must also specify the sub-port in the format slot/port/sub-port.

Default

The default is half.

Command Mode

GigabitEthernet Interface Configuration

eapol

Configure Extensible Authentication Protocol (EAPoL) on a specific port when you do not want EAPol applied globally.

Syntax

- **default eapol enable**
- **default eapol port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} supplicant-timeout**
- **default eapol port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} transmit-interval**
- **default eapol supplicant-timeout**
- **default eapol transmit-interval**
- **eapol port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} supplicant-timeout <1-65535>**
- **eapol port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} transmit-interval <1-65535>**
- **eapol status authorized**
- **eapol supplicant-timeout <1-65535>**
- **eapol transmit-interval <1-65535>**
- **no eapol enable**

Command Parameters

supplicant-timeout <1-65535>	Specifies the time in seconds to wait for response from supplicant for all EAP packets except EAP Request/Identity.
transmit-interval <1-65535>	Specifies the time in seconds to wait for response from supplicant for EAP Request/Identity packets.

Default

None

Command Mode

GigabitEthernet Interface Configuration

eapol fail-open-vlan

Specifies the Fail Open VLAN ID for this port. If the switch declares the RADIUS servers unreachable, then all new devices are allowed access into the configured Fail Open VLAN. 0 indicates that Fail Open VLAN is not enabled for this port.

Syntax

- **default eapol fail-open-vlan**
- **eapol fail-open-vlan <1-4059>**
- **no eapol fail-open-vlan**

Command Parameters

<1-4059>	Specifies the VLAN ID in the range of 1 to 4059. By default, VLAN IDs 1 to 4059 are configurable and the system reserves VLAN IDs 4060 to 4094 for internal use. On switches that support the vrf-scaling and spbm-config-mode boot configuration flags, if you enable these flags, the system also reserves VLAN IDs 3500 to 3998. VLAN ID 1 is the default VLAN and you cannot create or delete VLAN ID 1.

Default

None

Command Mode

GigabitEthernet Interface Configuration

eapol guest-vlan

Configure the desired Guest VLAN ID.

Syntax

- **default eapol guest-vlan**
- **eapol guest-vlan <1-4059>**
- **no eapol guest-vlan**

Command Parameters

<1-4059>	Specifies the VLAN ID in the range of 1 to 4059. By default, VLAN IDs 1 to 4059 are configurable and the system reserves VLAN IDs 4060 to 4094 for internal use. On switches that support the vrf-scaling and spbm-config-mode boot configuration flags, if you enable these flags, the system also reserves VLAN IDs 3500 to 3998. VLAN ID 1 is the default VLAN and you cannot create or delete VLAN ID 1.

Default

None

Command Mode

GigabitEthernet Interface Configuration

eapol max-request

Configures the maximum EAP requests sent to supplicant before timing out the session.

Syntax

- **default eapol max-request**
- **default eapol port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} max-request**
- **eapol max-request <1-10>**
- **eapol port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} max-request <1-10>**

Command Parameters

<1-10>	Specifies the maximum EAP requests sent to supplicant before timing out the session.
port *{slot/port[/sub-port] [-slot/port[/sub-port]] [,...]}*	Identifies the slot and port in one of the following formats: a single slot and port (slot/port), a range of slots and ports (slot/port-slot/port), or a series of slots and ports (slot/port,slot/port,slot/port). If your platform supports channelization and the port is channelized, you must also specify the sub-port in the format slot/port/sub-port.

Default

The default is 2.

Command Mode

GigabitEthernet Interface Configuration

eapol multihost eap-mac-max

Configure maximum EAPOL clients allowed on the port at one time.

Syntax

- **default eapol multihost eap-mac-max**
- **eapol multihost eap-mac-max <0-32>**

Command Parameters

<0-32>	Specifies the maximum EAPOL clients allowed on the port at one time. The default is 2.

Default

The default is 2.

Command Mode

GigabitEthernet Interface Configuration

eapol multihost eap-oper-mode

Configure the EAPoL operational mode.

Syntax

- **default eapol multihost eap-oper-mode**
- **eapol multihost eap-oper-mode {mhmv | mhsa}**

Command Parameters

mhmv | mhsa	Specifies the EAPoL operational mode.

Default

The default is MHMV.

Command Mode

GigabitEthernet Interface Configuration

eapol multihost mac-max

Configures the maximum MAC clients, both EAP and NEAP, supported on a port.

Syntax

- **default eapol multihost mac-max**
- **eapol multihost mac-max <1-8192>**

Command Parameters

mac-max <1-8192>	Specifies the maximum number of EAP and NEAP MAC addresses allowed on the port. The maximum limit is 32 MAC addresses.

Default

The default is 1.

Command Mode

GigabitEthernet Interface Configuration

eapol multihost non-eap-mac-max

Configure the maximum Non EAPOL clients allowed on the port at one time.

Syntax

- **default eapol multihost non-eap-mac-max**
- **eapol multihost non-eap-mac-max <0-8192>**

Command Parameters

<1-8192>	Specifies the maximum non-EAPoL clients allowed on the port at one time. The default is 2.

Default

The default is 2.

Command Mode

GigabitEthernet Interface Configuration

eapol multihost radius-non-eap-enable

Enable RADIUS based non-EAP authentication.

Syntax

- **default eapol multihost radius-non-eap-enable**
- **eapol multihost radius-non-eap-enable**
- **no eapol multihost radius-non-eap-enable**

Default

The default is disable.

Command Mode

GigabitEthernet Interface Configuration

eapol quiet-interval

Specifies the time interval between authentication failure and start of a new authentication.

Syntax

- **default eapol port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} quiet-interval**
- **default eapol quiet-interval**
- **eapol port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} quiet-interval <1-65535>**
- **eapol quiet-interval <1-65535>**

Command Parameters

<1-65535>	Specifies the time interval in seconds between authentication failure and start of a new authentication.
port *{slot/port[/sub-port] [-slot/port[/sub-port]] [,...]}*	Identifies the slot and port in one of the following formats: a single slot and port (slot/port), a range of slots and ports (slot/port-slot/port), or a series of slots and ports (slot/port,slot/port,slot/port). If your platform supports channelization and the port is channelized, you must also specify the sub-port in the format slot/port/sub-port.

Default

The default is 60.

Command Mode

GigabitEthernet Interface Configuration

eapol radius-dynamic-server enable

Enable EAP processing requests from the RADIUS Dynamic Authorization Server.

Syntax

- **eapol radius-dynamic-server enable**

Command Parameters

enable	Enable EAP processing requests from the RADIUS Dynamic Authorization Server.

Default

The default is enabled.

Command Mode

GigabitEthernet Interface Configuration

eapol re-authentication

Configures reauthentication.

Syntax

- **default eapol port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} re-authentication**
- **default eapol port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} re-authentication enable**

- **default eapol re-authentication**
- **default eapol re-authentication enable**
- **eapol port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} re-authentication**
- **eapol port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} re-authentication enable**
- **eapol re-authentication**
- **eapol re-authentication enable**
- **no eapol port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} re-authentication**
- **no eapol port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} re-authentication enable**
- **no eapol re-authentication**
- **no eapol re-authentication enable**

Command Parameters

port *{slot/port[/sub-port] [-slot/port[/sub-port]] [,...]}*	Identifies the slot and port in one of the following formats: a single slot and port (slot/port), a range of slots and ports (slot/port-slot/port), or a series of slots and ports (slot/port,slot/port,slot/port). If your platform supports channelization and the port is channelized, you must also specify the sub-port in the format slot/port/sub-port.
enable	Enables reauthenticating an existing supplicant at a specified time interval. The default is disabled.

Default

None

Command Mode

GigabitEthernet Interface Configuration

eapol re-authentication-period

Reauthenticates an existing supplicant at the time interval specified in ReAuthPeriod. Specifies the time interval in seconds between successive reauthentications.

Syntax

- **default eapol port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} re-authentication-period**
- **default eapol re-authentication-period**
- **eapol port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} re-authentication-period <1-65535>**

- **eapol re-authentication-period <1-65535>**

Default

The default is 3600 (1 hour).

Command Mode

GigabitEthernet Interface Configuration

eapol status

Enable Extensible Authentication Protocol (EAPoL) on an interface.

Syntax

- **default eapol port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} status**
- **eapol port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} status authorized**
- **eapol port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} status auto**
- **eapol status {authorized|auto}**
- **no eapol port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} status**

Command Parameters

authorized	Specifies the port is always authorized.
auto	Specifies that port authorization depends on the results of the EAPoL authentication by the RADIUS server.
port *{slot/port[/sub-port] [-slot/port[/sub-port]] [,...]}*	Identifies the slot and port in one of the following formats: a single slot and port (slot/port), a range of slots and ports (slot/port-slot/port), or a series of slots and ports (slot/port,slot/port,slot/port). If your platform supports channelization and the port is channelized, you must also specify the sub-port in the format slot/port/sub-port.

Default

None

Command Mode

GigabitEthernet Interface Configuration

enable-diffserv

Enable DiffServ so that the switch provides DiffServ-based QoS on that port.

Syntax

- **default enable-diffserv**
- **default enable-diffserv enable**
- **default enable-diffserv port {slot/port[/sub-port][-slot/port[/sub-port]][,...]}**
- **default enable-diffserv port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} enable**
- **enable-diffserv**
- **enable-diffserv enable**
- **enable-diffserv port {slot/port[/sub-port][-slot/port[/sub-port]][,...]}**
- **enable-diffserv port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} enable**
- **no enable-diffserv**
- **no enable-diffserv enable**
- **no enable-diffserv port {slot/port[/sub-port][-slot/port[/sub-port]][,...]}**
- **no enable-diffserv port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} enable**

Command Parameters

enable	Enables DiffServ for the specified port. The default is enabled.
port *{slot/port[/sub-port] [-slot/port[/sub-port]] [,...]}*	Identifies the slot and port in one of the following formats: a single slot and port (slot/port), a range of slots and ports (slot/port-slot/port), or a series of slots and ports (slot/port,slot/port,slot/port). If your platform supports channelization and the port is channelized, you must also specify the sub-port in the format slot/port/sub-port.

Default

None

Command Mode

GigabitEthernet Interface Configuration

encapsulation dot1q

Enable tagging on the ports before configuring Untagged VLANs.

Syntax

- **default encapsulation dot1q**
- **default encapsulation dot1q port {slot/port[/sub-port][-slot/port[/sub-port]][,...]}**
- **encapsulation dot1q**
- **encapsulation dot1q port {slot/port[/sub-port][-slot/port[/sub-port]][,...]}**
- **no encapsulation dot1q**
- **no encapsulation dot1q port {slot/port[/sub-port][-slot/port[/sub-port]][,...]}**

Command Parameters

dot1q	Sets encapsulation. dot1q enables trunking on the MLT.
port *{slot/port[/sub-port] [-slot/port[/sub-port]] [,...]}*	Identifies the slot and port in one of the following formats: a single slot and port (slot/port), a range of slots and ports (slot/port-slot/port), or a series of slots and ports (slot/port,slot/port,slot/port). If your platform supports channelization and the port is channelized, you must also specify the sub-port in the format slot/port/sub-port.

Default

None

Command Mode

GigabitEthernet Interface Configuration

energy-saver (for port)

Enables Energy Saver on a specific port or range of ports.

Syntax

- **default energy-saver port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} enable**
- **energy-saver port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} enable**
- **no energy-saver port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} enable**

Command Parameters

enable	Enables energy savings on ports.
port *{slot/port[/sub-port] [-slot/port[/sub-port]] [,...]}*	Identifies the slot and port in one of the following formats: a single slot and port (slot/port), a range of slots and ports (slot/port-slot/port), or a series of slots and ports (slot/port,slot/port,slot/port). If your platform supports channelization and the port is channelized, you must also specify the sub-port in the format slot/port/sub-port.

Default

Disabled

Command Mode

GigabitEthernet Interface Configuration

fa authentication-key (for a port)

Configure the Fabric Attach authentication key.

Syntax

- **default fa authentication-key**
- **fa authentication-key WORD<0-32>**

Command Parameters

WORD<0-32>	Configures the authentication key on the port.

Default

None

Command Mode

GigabitEthernet Interface Configuration

fa enable (for a port)

Enable Fabric Attach on a port.

Syntax

- **fa enable**
- **no fa enable**

Default

None

Command Mode

GigabitEthernet Interface Configuration

fa management (for a port)

Configure Fabric Attach management on a port.

Syntax

- **default fa management i-sid**
- **fa management i-sid<i-sid><c-vid>**
- **no fa management i-sid**

Command Parameters

c-vid <*c-vid*>	Specifies the C-VLAN value of the port on the FA server. Different hardware platforms support different customer VLAN ID ranges. Use the CLI Help to see the available range for your switch.
i-sid <*i-sid*>	Specifies the management I-SID. Different hardware platforms support different customer I-SID ranges. Use the CLI Help to see the available range for your switch.

Default

None

Command Mode

GigabitEthernet Interface Configuration

fa message-authentication (for a port)

Configure Fabric Attach message authentication on port.

Syntax

- **default no fa message-authentication**
- **fa message-authentication**
- **no fa message-authentication**

Default

None

Command Mode

GigabitEthernet Interface Configuration

fec

Configures Forward Error Correction (FEC) on either a 100 GbE port or a channelized 100 GbE port operating at 25 Gbps speed. On the 100 GbE ports, only the Clause 91 and Clause 108 options are supported. On the channelized ports, you can configure either Clause 108 for extra latency or Clause 74 for reduced latency. You can also configure the auto option to automatically configure FEC based on port speed and pluggable module type.

FEC is not supported on 100 Gbps ports operating at 40 Gbps speed or on a management port. On ports that support FEC configuration, ensure that you configure the same option at both end points. Otherwise, the link does not come up.

Syntax

- **default fec port {slot/port[/sub-port][-slot/port[/sub-port]][,...]}**
- **fec {auto|cl91|cl108|cl74}**
- **no fec port {slot/port[/sub-port][-slot/port[/sub-port]][,...]}**

Command Parameters

{auto|cl91|cl108|cl74}	Configures Forward Error Correction (FEC) on either a 100 GbE port or a channelized 100 GbE port operating at 25 Gbps speed. On the 100 GbE ports, only the Clause 91 and Clause 108 options are supported. On the channelized ports, you can configure either Clause 108 for extra latency or Clause 74 for reduced latency. You can also configure the auto option to automatically configure FEC based on port speed and pluggable module type. FEC is not supported on 100 Gbps ports operating at 40 Gbps speed or on a management port. On ports that support FEC configuration, ensure that you configure the same option at both end points. Otherwise, the link does not come up.

Default

The default is disabled.

Command Mode

GigabitEthernet Interface Configuration

high-secure enable

Protect the switch against IP packets with illegal IP addresses such as loopback addresses or a source IP address of ones, or Class D or Class E addresses from being routed.

Syntax

- **default high-secure**
- **default high-secure enable**
- **default high-secure port {slot/port[/sub-port][-slot/port[/sub-port]][,...]}**
- **default high-secure port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} enable**
- **high-secure**
- **high-secure enable**
- **high-secure port {slot/port[/sub-port][-slot/port[/sub-port]][,...]}**
- **high-secure port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} enable**
- **no high-secure**
- **no high-secure enable**
- **no high-secure port {slot/port[/sub-port][-slot/port[/sub-port]][,...]}**
- **no high-secure port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} enable**

Command Parameters

enable	Enables the high secure feature that blocks packets with illegal IP addresses. This flag is disabled by default.
port *{slot/port[/sub-port] [-slot/port[/sub-port]] [,...]}*	Identifies the slot and port in one of the following formats: a single slot and port (slot/port), a range of slots and ports (slot/port-slot/port), or a series of slots and ports (slot/port,slot/port,slot/port). If your platform supports channelization and the port is channelized, you must also specify the sub-port in the format slot/port/sub-port.

Default

None

Command Mode

GigabitEthernet Interface Configuration

ip arp-inspection

Sets the trust factor associated with a port for DAI feature.

Syntax

- **default ip arp-inspection**

- **ip arp-inspection <trusted|untrusted>**
- **no ip arp-inspection**

Command Parameters

trusted	Sets the trust factor as trusted on the port for DAI.
untrusted	Sets the trust factor as untrusted on the port for DAI.

Default

The default is untrusted.

Command Mode

GigabitEthernet Interface Configuration

ip arp-proxy enable (for a port)

Configure an ARP proxy to allow a router to answer a local ARP request for a remote destination.

Syntax

- **default ip arp-proxy**
- **default ip arp-proxy enable**
- **ip arp-proxy enable**
- **no ip arp-proxy**
- **no ip arp-proxy enable**

Default

The default is disabled.

Command Mode

GigabitEthernet Interface Configuration

ip arp-response (for a port)

Enable Address Resolution Protocol (ARP) on the switch to allow a router to answer a local ARP request.

Syntax

- **default ip arp-response**
- **ip arp-response**
- **no ip arp-response**

Default

None

Command Mode

GigabitEthernet Interface Configuration

ip dhcp-relay (for a port)

Configure Dynamic Host Configuration Protocol (DHCP) Relay on an interface. The command no ip dhcp-relay disables DHCP Relay but does not delete the DHCP entry.

Syntax

- **default ip dhcp-relay**
- **default ip dhcp-relay broadcast**
- **default ip dhcp-relay circuitId**
- **default ip dhcp-relay max-hop**
- **default ip dhcp-relay min-sec**
- **default ip dhcp-relay mode**
- **default ip dhcp-relay remoteId**
- **default ip dhcp-relay trusted**
- **ip dhcp-relay**
- **ip dhcp-relay broadcast**
- **ip dhcp-relay circuitId**
- **ip dhcp-relay clear-counter**
- **ip dhcp-relay max-hop <1-16>**
- **ip dhcp-relay min-sec <0-65535>**
- **ip dhcp-relay mode { bootp | dhcp | bootp_dhcp }**
- **ip dhcp-relay remoteId**
- **ip dhcp-relay trusted**
- **no ip dhcp-relay**
- **no ip dhcp-relay broadcast**
- **no ip dhcp-relay circuitId**
- **no ip dhcp-relay remoteId**
- **no ip dhcp-relay trusted**

Command Parameters

broadcast	Enables the device to send the server reply as a broadcast to the end station. After you disable this variable, the device sends the server reply as a unicast to the end station.
circuitId	Enables the device to insert the Option 82 Circuit ID into the packets sent to the server (enables DHCP Option 82). The default is disabled.
clear-counter	Clears the dhcp-relay counter.
max-hop <1-16>	Configures the maximum number of hops before a BootP/DHCP packet is discarded (1-16). The default is 4.
min-sec <0-65535>	Configures the minimum seconds count for Dynamic Host Configuration Protocol (DHCP). If the secs field in the BootP/DHCP packet header is greater than this value, the device relays or forwards the packet; otherwise, the packet is dropped (0- 65535). The default is 0 seconds.
mode <bootp| dhcp| bootp_dhcp>	Configures DHCP mode to forward BootP messages only, Dynamic Host Configuration Protocol (DHCP) messages only, or both. The default is both.
remoteId	Enables the device to insert the Option 82 Remote ID into the packets sent to the server (enables DHCP Option 82). The default is disabled.
trusted	Configures the circuit as trusted in an Option 82 context.

Default

None

Command Mode

GigabitEthernet Interface Configuration

ip dhcp-relay fwd-path (for a port)

Create the forwarding path from the client to the server.

Syntax

- **default ip dhcp-relay fwd-path {A.B.C.D}**
- **default ip dhcp-relay fwd-path {A.B.C.D} vrid <1-255>**
- **ip dhcp-relay fwd-path {A.B.C.D}**
- **ip dhcp-relay fwd-path {A.B.C.D} disable**
- **ip dhcp-relay fwd-path {A.B.C.D} enable**
- **ip dhcp-relay fwd-path {A.B.C.D} vrid <1-255>**

- **no ip dhcp-relay fwd-path {A.B.C.D}**
- **no ip dhcp-relay fwd-path {A.B.C.D} vrid <1-255>**

Command Parameters

{A.B.C.D}	Creates a forwarding path to the Dynamic Host Configuration Protocol (DHCP) server. A.B.C.D is the IP address of the server. The default IP address of the relay is the address of the interface. **Tip:** If the relay is a virtual router configured on this interface, you must set the vrid.
disable	Disables the forwarding path.
enable	Enables the forwarding path.
vrid <1-255>	Specifies the virtual router ID. The virtual router acts as the default router for one or more associated addresses.

Default

None

Command Mode

GigabitEthernet Interface Configuration

ip dhcp-relay fwd-path mode (for a port)

Modify Dynamic Host Configuration Protocol (DHCP) mode to forward BootP messages only, DHCP messages only, or both.

Syntax

- **default ip dhcp-relay fwd-path {A.B.C.D} mode**
- **ip dhcp-relay fwd-path {A.B.C.D} mode bootp**
- **ip dhcp-relay fwd-path {A.B.C.D} mode bootp_dhcp**
- **ip dhcp-relay fwd-path {A.B.C.D} mode dhcp**

Command Parameters

mode <bootp|dhcp|bootp_dhcp>	Configures DHCP mode to forward BootP messages only, Dynamic Host Configuration Protocol (DHCP) messages only, or both. The default is both.

Default

The default mode is both.

Command Mode

GigabitEthernet Interface Configuration

ip dhcp-snooping (for port)

Sets the trust factor associated with a port for DHCP Snooping feature.

Syntax

- **default ip dhcp-snooping**
- **ip dhcp-snooping <trusted|untrusted>**
- **no ip dhcp-snooping**

Command Parameters

trusted	Sets the trust factor as trusted on the port for DHCP Snooping.
untrusted	Sets the trust factor as untrusted on the port for DHCP Snooping.

Default

The default is untrusted.

Command Mode

GigabitEthernet Interface Configuration

ip directed-broadcast (for a port)

Configure the device to forward directed broadcasts for a VLAN.

Syntax

- **default ip directed-broadcast**
- **default ip directed-broadcast enable**
- **ip directed-broadcast**
- **ip directed-broadcast enable**
- **no ip directed-broadcast**
- **no ip directed-broadcast enable**

Command Parameters

enable	Allows the device to forward directed broadcast frames to the specified VLAN. The default setting for this feature is enabled.

Default

The default is enabled.

Command Mode

GigabitEthernet Interface Configuration

ip forward-protocol udp (on a port)

Configure UDP protocols to determine which UDP broadcasts are forwarded

Syntax

- **default ip forward-protocol udp**
- **ip forward-protocol udp**
- **no ip forward-protocol udp**

Default

None

Command Mode

GigabitEthernet Interface Configuration

ip forward-protocol udp broadcastmask (on a port)

Configure the broadcast mask on the IP forwarding list.

Syntax

- **default ip forward-protocol udp port {slot/port[/sub-port]} broadcastmask {A.B.C.D}**
- **default ip forward-protocol udp port {slot/port[/sub-port]} broadcastmask {A.B.C.D} maxttl <1-16>**
- **ip forward-protocol udp port {slot/port[/sub-port]} broadcastmask {A.B.C.D}**
- **ip forward-protocol udp port {slot/port[/sub-port]} broadcastmask {A.B.C.D} maxttl <1-16>**
- **no ip forward-protocol udp port {slot/port[/sub-port]} broadcastmask {A.B.C.D}**
- **no ip forward-protocol udp port {slot/port[/sub-port]} broadcastmask {A.B.C.D} maxttl <1-16>**

Command Parameters

broadcastmask {A.B.C.D}	Sets the interface broadcast mask (the interface broadcast mask can be different from the interface mask). A.B.C.D is an IP address in a.b.c.d format.
maxttl <1-16>	Sets the maximum time-to-live value (TTL) for the interface. The range is 1 to 16.

Default

None

Command Mode

GigabitEthernet Interface Configuration

ip forward-protocol udp maxttl (on a port)

Set the maximum time to live.

Syntax

- **default ip forward-protocol udp maxttl <1-16>**
- **ip forward-protocol udp maxttl <1-16>**
- **no ip forward-protocol udp maxttl <1-16>**

Command Parameters

maxttl <1-16>	Sets the maximum time-to-live value (TTL) for the interface. The range is 1 to 16.

Default

None

Command Mode

GigabitEthernet Interface Configuration

ip forward-protocol udp port

Configure a UDP port forward entry to add or remove a port forward entry.

Syntax

- **default ip forward-protocol udp port {slot/port[/sub-port]} broadcastmask {A.B.C.D}**
- **default ip forward-protocol udp port {slot/port[/sub-port]} broadcastmask {A.B.C.D} maxttl <1-16>**

- **default ip forward-protocol udp port {slot/port[/sub-port]} maxttl <1-16>**
- **default ip forward-protocol udp port {slot/port} portfwdlist <1-1000>**
- **ip forward-protocol udp port {slot/port[/sub-port]} broadcastmask {A.B.C.D}**
- **ip forward-protocol udp port {slot/port[/sub-port]} broadcastmask {A.B.C.D} maxttl <1-16>**
- **ip forward-protocol udp port {slot/port[/sub-port]} maxttl <1-16>**
- **ip forward-protocol udp port {slot/port[/sub-port]} portfwdlist <1-1000>**
- **no ip forward-protocol udp port {slot/port[/sub-port]} broadcastmask {A.B.C.D}**
- **no ip forward-protocol udp port {slot/port[/sub-port]} broadcastmask {A.B.C.D} maxttl <1-16>**
- **no ip forward-protocol udp port {slot/port[/sub-port]} maxttl <1-16>**
- **no ip forward-protocol udp port {slot/port[/sub-port]} portfwdlist <1-1000>**

Command Parameters

broadcastmask {A.B.C.D}	Sets the interface broadcast mask (the interface broadcast mask can be different from the interface mask). A.B.C.D is an IP address in a.b.c.d format.
maxttl <1-16>	Sets the maximum time-to-live value (TTL) for the interface. The range is 1 to 16.
portfwdlist <1-1000>	Creates a port forwarding list in the range of 1 to 1000.

Default

None

Command Mode

GigabitEthernet Interface Configuration

ip forward-protocol udp portfwdlist (on a port)

Configure the UDP port forwarding list.

Syntax

- **default ip forward-protocol udp portfwdlist <1-1000>**
- **ip forward-protocol udp portfwdlist <1-1000>**

- **no ip forward-protocol udp portfwdlist <1-1000>**

Command Parameters

portfwdlist <1-1000>	Creates a port forwarding list in the range of 1 to 1000.

Default

None

Command Mode

GigabitEthernet Interface Configuration

ip igmp (for a port)

Configure Internet Group Management Protocol (IGMP) for each interface to change default multicasting operations.

Syntax

- **default ip igmp**
- **default ip igmp compatibility-mode**
- **default ip igmp dynamic-downgrade-version**
- **default ip igmp last-member-query-interval**
- **default ip igmp port {slot/port[/sub-port][-slot/port[/sub-port]][,...]}**
- **default ip igmp query-interval**
- **default ip igmp query-max-response**
- **default ip igmp robust-value**
- **default ip igmp router-alert**
- **default ip igmp version**
- **ip igmp compatibility-mode**
- **ip igmp dynamic-downgrade-version**
- **ip igmp last-member-query-interval <0-255>**
- **ip igmp port {slot/port[/sub-port][-slot/port[/sub-port]][,...]}**
- **ip igmp query-interval <1-65535>**
- **ip igmp query-max-response <0-255>**
- **ip igmp robust-value <2-255>**
- **ip igmp router-alert**
- **ip igmp version <1-3>**

- **no ip igmp**
- **no ip igmp compatibility-mode**
- **no ip igmp dynamic-downgrade-version**
- **no ip igmp port {slot/port[/sub-port][-slot/port[/sub-port]][,...]}**
- **no ip igmp router-alert**

Command Parameters

compatibility-mode	Activates v2-v3 compatibility mode. The default value is disabled, which means IGMPv3 is not compatible with IGMPv2.
dynamic-downgrade-version	Configures if the system downgrades the version of Internet Group Management Protocol (IGMP) to handle older query messages. If the system downgrades, the host with IGMPv3 only capability does not work. If you do not configure the system to downgrade the version of IGMP, the system logs a warning. The default is enabled.
igmpv3-explicit-host-tracking	Enable igmpv3 explicit host tracking.
immediate-leave	Enable Immediate-leave.
last-member-query-interval <0-255>	Configures the maximum response time (in tenths of a second) inserted into group-specific queries sent in response to leave group messages. This value is also the time between group-specific query messages. Decreasing the value reduces the time to detect the loss of the last member of a group. Configure this value between 3-10 (equal to 0.3 - 1.0 seconds). The default is 10 tenths of a second. **Note:** You cannot configure this value for IGMPv1.
port *{slot/port[/sub-port] [-slot/port[/sub-port]] [,...]}*	Identifies the slot and port in one of the following formats: a single slot and port (slot/port), a range of slots and ports (slot/port-slot/port), or a series of slots and ports (slot/port,slot/port,slot/port). If your platform supports channelization and the port is channelized, you must also specify the sub-port in the format slot/port/sub-port.
query-interval <1-65535>	Configures the frequency (in seconds) at which the VLAN transmits host query packets. The default is 125 seconds.
query-max-response <0-255>	Configures the maximum response time (in tenths of a second) advertised in IGMPv2 general queries on this interface. Smaller values allow a router to prune groups faster. **Important:** You must configure this value lower than the query-interval. The default is 100 tenths of a second (equal to 10 seconds).

Note:

You cannot configure this value for IGMPv1.

robust-value <2-255>	Configures the expected packet loss of a network. Increase the value if you expect the network to experience packet loss. The default is 2 seconds.
router-alert	Instructs the router to ignore Internet Group Management Protocol (IGMP) packets that do not contain the router alert IP option. When disabled (default configuration), the router processes IGMP packets regardless of the status of the router alert IP option. The default is disabled.

Important:

To maximize network performance, configure this parameter according to the version of IGMP currently in use: IGMPv1-Disable IGMPv2-Enable IGMPv3-Enable.

stream-limit	Enable stream-limit.
stream-limit stream-limit-max-streams <0-65535>	Set the maximum number of streams allowed on an interface.
version <1-3>	Configures the version of IGMP that you want to configure on this interface. For IGMP to function correctly, all routers on a LAN must use the same version. The default is 2 (IGMPv2).

Default

None

Command Mode

GigabitEthernet Interface Configuration

ip igmp access-list (for a port)

Configure multicast access control for a Internet Group Management Protocol (IGMP) Ethernet port to restrict access to certain multicast streams and to protect multicast streams from spoofing (injecting data to the existing streams).

Syntax

- `default ip igmp access-list WORD<1-64> {A.B.C.D/X}`
- `ip igmp access-list WORD<1-64> {A.B.C.D/X} {deny-tx | deny-rx | deny-both | allow-only-tx | allow-only-rx | allow-only-both}`
- `no ip igmp access-list WORD<1-64> {A.B.C.D/X}`

Command Parameters

{A.B.C.D/X}	Creates an access control group entry for a specific Internet Group Management Protocol (IGMP) interface. Specifies the IP address of the host and the subnet mask used to determine the host or hosts covered by this configuration. You can use the host subnet mask to restrict access to a portion of the network for the host.
{deny-tx|deny-rx|deny-both|allow-only-tx|allow-only-rx|allow-only-both}	Indicates the action for the specified Internet Group Management Protocol (IGMP) interface. For example, if you specify deny-both, the interface denies both transmitted and received traffic
WORD<1-64>	Specifies the name of the access list from 1-64 characters.

Default

None

Command Mode

GigabitEthernet Interface Configuration

ip igmp access-list mode (for a port)

Changes the mode for an existing access list on the Ethernet port.

Syntax

- **default ip igmp access-list WORD<1-64> {A.B.C.D/X}**
- **ip igmp access-list WORD<1-64> {A.B.C.D/X} mode {deny-tx | deny-rx | deny-both | allowonly-tx | allow-only-rx | allow-only-both}**
- **no ip igmp access-list WORD<1-64> {A.B.C.D/X}**

Command Parameters

{A.B.C.D/X}	Creates an access control group entry for a specific Internet Group Management Protocol (IGMP) interface. Specifies the IP address of the host and the subnet mask used to determine the host or hosts covered by this configuration. You can use the host subnet mask to restrict access to a portion of the network for the host.
deny-tx | deny-rx | deny-both | allowonly-tx | allowonly-rx | allowonly-both	Indicates the action for the specified Internet Group Management Protocol (IGMP) interface. For example, if you specify deny-both, the interface denies both transmitted and received traffic.
WORD<1-64>	Specifies the name of the access list from 1-64 characters.

Default

None

Command Mode

GigabitEthernet Interface Configuration

ip igmp igmpv3-explicit-host-tracking (for an Ethernet port)

Track all the source and group members. You must enable explicit-host-tracking to use fast leave for IGMPv3.

Syntax

- **default ip igmp igmpv3-explicit-host-tracking**
- **ip igmp igmpv3-explicit-host-tracking**
- **no ip igmp igmpv3-explicit-host-tracking**

Default

The default is disabled.

Command Mode

GigabitEthernet Interface Configuration

ip igmp immediate-leave (for an Ethernet port)

Enable fast (immediate) leave mode to specify if a port receives a leave message from a member of a group.

Syntax

- **default ip igmp immediate-leave**
- **ip igmp immediate-leave**
- **no ip igmp immediate-leave**

Default

None

Command Mode

GigabitEthernet Interface Configuration

ip igmp stream-limit (for a port)

Configure multicast stream limitation on an Ethernet port to limit the number of concurrent multicast streams on the port.

Syntax

- **default ip igmp stream-limit**
- **default ip igmp stream-limit stream-limit-max-streams**
- **ip igmp stream-limit**
- **ip igmp stream-limit stream-limit-max-streams <0-65535>**
- **no ip igmp stream-limit**

Command Parameters

stream-limit	Enables the stream limit on the specified Ethernet port.
stream-limit-max-streams <0-65535>	Sets the maximum number of streams allowed on an interface. The value ranges from 0 to 65535.

Default

None

Command Mode

GigabitEthernet Interface Configuration

ip ipsec enable (for a port)

Enable Internet Protocol Security (IPsec) for IPv4 on a port.

Syntax

- **default ip ipsec enable**
- **ip ipsec enable**
- **no ip ipsec enable**

Default

The default is disabled.

Command Mode

GigabitEthernet Interface Configuration

ip ipsec policy (for a port)

Link an Internet Protocol Security (IPsec) IPv4 policy to an interface.

Syntax

- **default ip ipsec policy WORD<1-32>**
- **ip ipsec policy WORD<1-32>**
- **ip ipsec policy WORD<1-32> dir both**
- **ip ipsec policy WORD<1-32> dir in**
- **ip ipsec policy WORD<1-32> dir out**
- **no ip ipsec policy WORD<1-32> dir both**
- **no ip ipsec policy WORD<1-32> dir in**
- **no ip ipsec policy WORD<1-32> dir out**

Command Parameters

dir <both|in|out>	Specifies the direction to which IPsec applies. Both specifies both ingress and egress traffic, in specifies ingress traffic, and out specifies egress traffic. By default, the direction is both.
WORD<1-32>	Specifies the IPsec policy name.

Default

None

Command Mode

GigabitEthernet Interface Configuration

ip irdp address (for a port)

Configure Internet Control Message Protocol (ICMP) Router Discovery to enable hosts attached to multicast or broadcast networks to discover the IP addresses of their neighboring routers.

Syntax

- **default ip irdp**
- **default ip irdp address**
- **ip irdp address {A.B.C.D}**

Command Parameters

address <A.B.C.D>	Specifies the IP destination address use for broadcast or multicast router advertisements sent from the interface. The address is the all-systems multicast address, 224.0.0.1, or the limited-broadcast address, 255.255.255.255.

Default

The default address is 255.255.255.255.

Command Mode

GigabitEthernet Interface Configuration

ip irdp holdtime (for a port)

Configure the lifetime for advertisements.

Syntax

- **default ip irdp holdtime**
- **ip irdp holdtime <4-9000>**

Command Parameters

<4-4000>	Specifies the lifetime.

Default

The default is 1800.

Command Mode

GigabitEthernet Interface Configuration

ip irdp maxadvertinterval (for a port)

Specify the maximum time (in seconds) that elapses between unsolicited broadcast or multicast router advertisement transmissions from the router interface.

Syntax

- **default ip irdp maxadvertinterval**
- **ip irdp maxadvertinterval <4-1800>**

Command Parameters

<4-1800>	Specifies the maximum time in seconds.

Default

The default is 600 seconds.

Command Mode

GigabitEthernet Interface Configuration

ip irdp minadvertinterval (for a port)

Specify the minimum time (in seconds) that elapses between unsolicited broadcast or multicast router advertisement transmissions from the interface. The range is 3 seconds to maxadvertinterval.

Syntax

- **default ip irdp minadvertinterval**
- **ip irdp minadvertinterval <3-1800>**

Command Parameters

<3-1800>	Specifies the minimum time in seconds.

Default

The default is 450 seconds.

Command Mode

GigabitEthernet Interface Configuration

ip irdp multicast (for a port)

Specify if multicast advertisements are sent.

Syntax

- **default ip irdp multicast**
- **ip irdp multicast**
- **no ip irdp multicast**

Default

The default is enabled (true).

Command Mode

GigabitEthernet Interface Configuration

ip irdp preference (for a port)

Specify the preference (a higher number indicates more preferred) of the address as a default router address relative to other router addresses on the same subnet.

Syntax

- **default ip irdp preference**
- **ip irdp preference <-2147483648-2147483647>**

Command Parameters

<-2147483648-2147483647>	Specifies the preference value.

Default

The default is 0.

Command Mode

GigabitEthernet Interface Configuration

ip mroute (for a port)

Limit the number of multicast streams to protect a CPU from multicast data packet bursts generated by malicious applications.

Syntax

- **default ip mroute max-allowed-streams**
- **default ip mroute max-allowed-streams-timer-check**
- **default ip mroute port {slot/port[/sub-port][-slot/port[/sub-port]][,...]}**
- **default ip mroute stream-limit**
- **ip mroute max-allowed-streams <1-32768>**
- **ip mroute max-allowed-streams-timer-check <1-3600>**
- **ip mroute port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} max-allowed-streams <1-32768>**
- **ip mroute port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} max-allowed-streams-timer-check <1-3600>**
- **ip mroute port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} stream-limit**
- **ip mroute stream-limit**
- **no ip mroute port {slot/port[/sub-port][-slot/port[/sub-port]][,...]}**
- **no ip mroute stream-limit**

Command Parameters

max-allowed-streams <1-32768>	Configures the maximum number of streams on the specified port. The port is shut down if the number of streams exceeds this limit. The value is a number between 1-32768. The default value is 1984 streams. To set this option to the default value, use the default operator with the command.
max-allowed-streams-timer-check <1-3600>	Configures the sampling interval, which is used to check if the number of ingress multicast streams to the CPU is under a configured limit or if the port needs to shut down. The range is between 1-3600. The default value is 10 seconds. To set this option to the default value, use the default operator with the command.
port *{slot/port[/sub-port] [-slot/port[/sub-port]] [,...]}*	Identifies the slot and port in one of the following formats: a single slot and port (slot/port), a range of slots and ports (slot/port-slot/port), or a series of slots and ports (slot/port,slot/port,slot/port). If your platform supports channelization and the port is channelized, you must also specify the sub-port in the format slot/port/sub-port.
stream-limit	Enables stream limit on a particular interface.

Default

None

Command Mode

GigabitEthernet Interface Configuration

ip ospf advertise-when-down enable (for a port)

Enable or disable AdvertiseWhenDown. If enabled, the network on this interface is advertised as up, even if the port is down. When you configure a port with no link and enable advertise-when-down, the route is not advertised until the port is active. Then the route is advertised even when the link is down. To disable advertising based on link status, this parameter must be disabled.

Syntax

- **`default ip ospf advertise-when-down enable`**
- **`ip ospf advertise-when-down enable`**
- **`ip ospf port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} advertise-when-down enable`**
- **`no ip ospf advertise-when-down enable`**

Command Parameters

port *{slot/port[/sub-port] [-slot/port[/sub-port]] [,...]}*	Identifies the slot and port in one of the following formats: a single slot and port (slot/port), a range of slots and ports (slot/port-slot/port), or a series of slots and ports (slot/port,slot/port,slot/port). If your platform supports channelization and the port is channelized, you must also specify the sub-port in the format slot/port/sub-port.

Default

The default is disabled.

Command Mode

GigabitEthernet Interface Configuration

ip ospf area (for a port)

Configure OSPF parameters on a port to control how OSPF behaves.

Syntax

- **`default ip ospf area`**
- **`ip ospf area {A.B.C.D}`**
- **`ip ospf port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} area {A.B.C.D}`**
- **`no ip ospf area`**

Command Parameters

<A.B.C.D>	Configures the OSPF identification number for the area, typically formatted as an IP address.
port *{slot/port[/sub-port] [-slot/port[/sub-port]] [,...]}*	Identifies the slot and port in one of the following formats: a single slot and port (slot/port), a range of slots and ports (slot/port-slot/port), or a series of slots and ports (slot/port,slot/port,slot/port). If your platform supports channelization and the port is channelized, you must also specify the sub-port in the format slot/port/sub-port.

Default

None

Command Mode

GigabitEthernet Interface Configuration

ip ospf authentication-key (for a port)

Configure the eight-character simple password authentication key for the port.

Syntax

- **default ip ospf authentication-type**
- **ip ospf authentication-key WORD<0-8>**
- **ip ospf port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} authentication-key WORD<0-8>**

Command Parameters

port *{slot/port[/sub-port] [-slot/port[/sub-port]] [,...]}*	Identifies the slot and port in one of the following formats: a single slot and port (slot/port), a range of slots and ports (slot/port-slot/port), or a series of slots and ports (slot/port,slot/port,slot/port). If your platform supports channelization and the port is channelized, you must also specify the sub-port in the format slot/port/sub-port.
WORD<0-8>	Specifies the authentication key.

Default

None

Command Mode

GigabitEthernet Interface Configuration

ip ospf authentication-type (for a port)

Configure the OSPF authentication type for the port. If you choose simple, you must configure the password with the ip ospf authentiation-key WORD<0-8> command. If you choose MD5, you must configure the MD5 key with the ip ospf message-digest-key <1-255> md5 WORD<0-16> command.

Syntax

- **ip ospf authentication-type message-digest**
- **ip ospf authentication-type none**
- **ip ospf authentication-type sha-1**
- **ip ospf authentication-type sha-2**
- **ip ospf authentication-type simple**
- **ip ospf port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} authentication-type message-digest**
- **ip ospf port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} authentication-type none**

- **ip ospf port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} authentication-type sha-1**
- **ip ospf port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} authentication-type sha-2**
- **ip ospf port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} authentication-type simple**
- **no ip ospf authentication-type**

Command Parameters

message-digest	Configures the authentication-type to message-digest. If you choose MD5, you must configure the MD5 key with the ip ospf message-digest-key <1-255> md5 WORD<0-16> command. Message Digest 5 (MD5) provides standards-based authentication using 128-bit encryption. If you use MD5, each OSPF packet has a message digest appended to it. The digest must match between sending and receiving routers, or the packet is discarded.
none	Configures the authentication-type to none.
port *{slot/port[/sub-port] [-slot/port[/sub-port]] [,...]}*	Identifies the slot and port in one of the following formats: a single slot and port (slot/port), a range of slots and ports (slot/port-slot/port), or a series of slots and ports (slot/port,slot/port,slot/port). If your platform supports channelization and the port is channelized, you must also specify the sub-port in the format slot/port/sub-port.
sha-1	Configures the authentication-type to secure hash algorithm 1 (SHA-1). SHA-1 provides standards-based authentication using 128-bit encryption.
sha-2	sha-2—Specifies SHA-2, which offers the hash function SHA-256. **Note:** The parameter sha-2, an update of SHA-1, can offer six hash functions that include SHA-224, SHA-256, SHA-384, SHA-512, SHA-512/224,SHA 512/256, with hash values that are 224, 256, 384, or 512 bits. However, the current release supports only SHA-256.
simple	Configures the authentication-type to use a simple-text password. Only routers that contain the same authentication ID in their LSA can communicate with each other. Using this security mechanism is not recommended. If you choose simple, you must configure the password with the ip ospf authentiation-key WORD<0-8> command.

Default

None

Command Mode

GigabitEthernet Interface Configuration

ip ospf cost (for a port)

Configure the OSPF cost associated with this interface and advertised in router link advertisements.

Syntax

- `default ip ospf cost`
- `ip ospf cost <0-65535>`
- `ip ospf port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} cost <0-65535>`

Command Parameters

<1-65535>	Specifies the cost range.
port *{slot/port[/sub-port] [-slot/port[/sub-port]] [,...]}*	Identifies the slot and port in one of the following formats: a single slot and port (slot/port), a range of slots and ports (slot/port-slot/port), or a series of slots and ports (slot/port,slot/port,slot/port). If your platform supports channelization and the port is channelized, you must also specify the sub-port in the format slot/port/sub-port.

Default

The default is 0.

Command Mode

GigabitEthernet Interface Configuration

ip ospf dead-interval (for a port)

Configure the router OSPF dead interval-the number of seconds the OSPF neighbors of a switch must wait before assuming that the OSPF router is down. The value must be at least four times the Hello interval.

Syntax

- `default ip ospf dead-interval`
- `ip ospf dead-interval <0-2147483647>`
- `ip ospf port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} dead-interval <0-2147483647>`

Command Parameters

<0-2147483647>	Specifies the Dead interval in seconds. Dead Interval must be a multiple of Hello Interval.

port *{slot/port[/sub-port] [-slot/port[/sub-port]] [,...]}*	Identifies the slot and port in one of the following formats: a single slot and port (slot/port), a range of slots and ports (slot/port-slot/port), or a series of slots and ports (slot/port,slot/port,slot/port). If your platform supports channelization and the port is channelized, you must also specify the sub-port in the format slot/port/sub-port.

Default

The default is 40.

Command Mode

GigabitEthernet Interface Configuration

ip ospf digest-key (for a port)

Configure the Digest algorithm key which can be of type MD5, SHA-1 or SHA-2. At most, you can configure two digest keys for an interface.

Syntax

- **default ip ospf digest-key <1-255>**
- **ip ospf digest-key <1-255> WORD<0-16>**
- **no ip ospf digest-key <1-255>**

Command Parameters

<1-255>	Specifies the ID for the digest key.
<WORD> <0-16>	Specifies an alphanumeric password of up to 16 bytes (string length 0 to 16).

Default

None

Command Mode

GigabitEthernet Interface Configuration

ip ospf enable (for a port)

Enable OSPF on the port.

Syntax

- **default ip ospf**
- **default ip ospf enable**

- **default ip ospf port {slot/port[/sub-port][-slot/port[/sub-port]][,...]}**
- **ip ospf enable**
- **ip ospf port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} enable**
- **no ip ospf**
- **no ip ospf enable**
- **no ip ospf port {slot/port[/sub-port][-slot/port[/sub-port]][,...]}**

Command Parameters

port *{slot/port[/sub-port] [-slot/port[/sub-port]] [,...]}*	Identifies the slot and port in one of the following formats: a single slot and port (slot/port), a range of slots and ports (slot/port-slot/port), or a series of slots and ports (slot/port,slot/port,slot/port). If your platform supports channelization and the port is channelized, you must also specify the sub-port in the format slot/port/sub-port.

Default

The default is disabled.

Command Mode

GigabitEthernet Interface Configuration

ip ospf hello-interval (for a port)

Configure the OSPF Hello interval, which is the number of seconds between Hello packets sent on this interface.

Syntax

- **default ip ospf hello-interval**
- **ip ospf hello-interval <1-65535>**
- **ip ospf port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} hello-interval <1-65535>**

Command Parameters

<1-65535>	Specifies the Hello interval range in seconds. Dead Interval must be a multiple of Hello Interval.
port *{slot/port[/sub-port] [-slot/port[/sub-port]] [,...]}*	Identifies the slot and port in one of the following formats: a single slot and port (slot/port), a range of slots and ports (slot/port-slot/port), or a series of slots and ports (slot/port,slot/port,slot/port). If your platform supports channelization and the port is channelized, you must also specify the sub-port in the format slot/port/sub-port.

Default

The default is 10.

Command Mode

GigabitEthernet Interface Configuration

ip ospf mtu-ignore enable (for a port)

Enable maximum transmission unit (MTU) ignore. To allow the switch to accept OSPF database description (DBD) packets with a different MTU size, enable mtu-ignore. Incoming OSPF DBD packets are dropped if their MTU is greater than 1500 bytes.

Syntax

- **default ip ospf mtu-ignore enable**
- **ip ospf mtu-ignore enable**
- **ip ospf port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} mtu-ignore enable**
- **no ip ospf mtu-ignore enable**

Command Parameters

port *{slot/port[/sub-port] [-slot/port[/sub-port]] [,...]}*	Identifies the slot and port in one of the following formats: a single slot and port (slot/port), a range of slots and ports (slot/port-slot/port), or a series of slots and ports (slot/port,slot/port,slot/port). If your platform supports channelization and the port is channelized, you must also specify the sub-port in the format slot/port/sub-port.

Default

None

Command Mode

GigabitEthernet Interface Configuration

ip ospf network (for a port)

Specify the type of OSPF interface.

Syntax

- **default ip ospf network**
- **ip ospf network {broadcast | nbma | passive}**
- **ip ospf port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} network {broadcast | nbma | passive}**

Command Parameters

<broadcast|nbma|passive>	Specifies the interface type.
port *{slot/port[/sub-port] [-slot/port[/sub-port]] [,...]}*	Identifies the slot and port in one of the following formats: a single slot and port (slot/port), a range of slots and ports (slot/port-slot/port), or a series of slots and ports (slot/port,slot/port,slot/port). If your platform supports channelization and the port is channelized, you must also specify the sub-port in the format slot/port/sub-port.

Default

None

Command Mode

GigabitEthernet Interface Configuration

ip ospf poll-interval (for a port)

Configure the OSPF poll interval in seconds.

Syntax

- **default ip ospf poll-interval**
- **ip ospf poll-interval <0-2147483647>**
- **ip ospf port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} poll-interval <0-2147483647>**

Command Parameters

<0-2147483647>	Specifies the poll interval range in seconds.
port *{slot/port[/sub-port] [-slot/port[/sub-port]] [,...]}*	Identifies the slot and port in one of the following formats: a single slot and port (slot/port), a range of slots and ports (slot/port-slot/port), or a series of slots and ports (slot/port,slot/port,slot/port). If your platform supports channelization and the port is channelized, you must also specify the sub-port in the format slot/port/sub-port.

Default

The default is 120.

Command Mode

GigabitEthernet Interface Configuration

ip ospf primary-digest-key (for a port)

Changes the primary key used to encrypt outgoing packets. <1-255> is the ID for the new digest key.

Syntax

- **default ip ospf primary-digest-key**
- **ip ospf port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} primary-md5-key <1-255>**
- **ip ospf primary-digest-key <1-255>**

Command Parameters

<1-255>	Specifies the primay md5 key range.
port *{slot/port[/sub-port] [-slot/port[/sub-port]] [,...]}*	Identifies the slot and port in one of the following formats: a single slot and port (slot/port), a range of slots and ports (slot/port-slot/port), or a series of slots and ports (slot/port,slot/port,slot/port). If your platform supports channelization and the port is channelized, you must also specify the sub-port in the format slot/port/sub-port.

Default

None

Command Mode

GigabitEthernet Interface Configuration

ip ospf priority (for a port)

Configure the OSPF priority for the port during the election process for the designated router. The port with the highest priority number is the best candidate for the designated router. If you configure the priority to 0, the port cannot become either the designated router or a backup designated router.

Syntax

- **default ip ospf priority**
- **ip ospf port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} priority <0-255>**
- **ip ospf priority <0-255>**

Command Parameters

<0-255>	Specifies the priority range.
port *{slot/port[/sub-port] [-slot/*	Identifies the slot and port in one of the following formats: a single slot and port (slot/port), a range of slots and ports (slot/port-slot/port), or a series of

port[/sub-port]] [,...]}	slots and ports (slot/port,slot/port,slot/port). If your platform supports channelization and the port is channelized, you must also specify the sub-port in the format slot/port/sub-port.

Default

The default is 1.

Command Mode

GigabitEthernet Interface Configuration

ip ospf retransmit-interval (for a port)

Configure the retransmit interval for the virtual interface, the number of seconds between link-state advertisement retransmissions.

Syntax

- **`default ip ospf retransmit-interval`**
- **`ip ospf port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} retransmit-interval <0-3600>`**
- **`ip ospf retransmit-interval <0-3600>`**

Command Parameters

<0-3600>	Specifies the retransmit interval range in seconds.
port *{slot/port[/sub-port] [-slot/port[/sub-port]] [,...]}*	Identifies the slot and port in one of the following formats: a single slot and port (slot/port), a range of slots and ports (slot/port-slot/port), or a series of slots and ports (slot/port,slot/port,slot/port). If your platform supports channelization and the port is channelized, you must also specify the sub-port in the format slot/port/sub-port.

Default

None

Command Mode

GigabitEthernet Interface Configuration

ip ospf transit-delay (for a port)

Configure the transit delay for the virtual interface, which is the estimated number of seconds required to transmit a link-state update over the interface.

Syntax

- **default ip ospf transit-delay**
- **ip ospf port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} transit-delay <0-3600>**
- **ip ospf transit-delay <0-3600>**

Command Parameters

<0-3600>	Specifies the transit delay range.
port *{slot/port[/sub-port] [-slot/port[/sub-port]] [,...]}*	Identifies the slot and port in one of the following formats: a single slot and port (slot/port), a range of slots and ports (slot/port-slot/port), or a series of slots and ports (slot/port,slot/port,slot/port). If your platform supports channelization and the port is channelized, you must also specify the sub-port in the format slot/port/sub-port.

Default

None

Command Mode

GigabitEthernet Interface Configuration

ip pim (for a port)

Enable PIM and configure to perform multicasting operations.

Syntax

- **default ip pim bsr-candidate preference <0-255>**
- **default ip pim enable**
- **default ip pim hello-interval**
- **default ip pim interface-type**
- **default ip pim join-prune-interval**
- **ip pim active**
- **ip pim bsr-candidate preference <0-255>**
- **ip pim enable**
- **ip pim hello-interval <0-18724>**
- **ip pim interface-type [active | passive]**
- **ip pim join-prune-interval <1-18724>**
- **ip pim passive**
- **no ip pim bsr-candidate**

- **no ip pim enable**
- **no ip pim fast-joinprune**

Command Parameters

active	Enables PIM and sets interface type to active.
bsr-candidate <preference>	Enables BSR candidate on an interface.
enable	Configure PIM for each interface to enable the interface to perform multicasting operations.
hello-interval <0-18724>	Specifies the query interval in seconds.
hello-interval <0-18724>	Specify how long to wait (in seconds) before the PIM switch sends out the next hello message to neighboring switches.
interface-type [active | passive]	Specifies the pim interface-type on a interface.
join-prune-interval <1-18724>	Specify how long to wait (in seconds) before the PIM router sends out the next join/prune message to its upstream neighbors.
passive	Enable PIM and configure the interface type to passive simultaneously. By default, an enabled interface is active.

Default

None

Command Mode

GigabitEthernet Interface Configuration

ip pim bsr-candidate preference (for a port)

Configure additional routers as candidate BSRs (C-BSR) to provide backup protection in the event that the primary BSR fails.

Syntax

- **default ip pim bsr-candidate**
- **ip pim bsr-candidate preference <0-255>**
- **no ip pim bsr-candidate**

Command Parameters

preference <0-255>	Enables the C-BSR on this interface and configures its preference value, from 0-255, to become a BootStrap Router (BSR). The C-BSR with the highest BSR preference and address is the preferred BSR.

Default

None

Command Mode

GigabitEthernet Interface Configuration

ip pim hello-interval (for a port)

Configure the hello-interval on a interface.

Syntax

- **default ip pim hello-interval**
- **ip pim hello-interval <0-18724>**

Command Parameters

<0-18724>	Specifies the duration in seconds before the PIM router sends out the next hello message to neighboring switches.

Default

The default is 30 seconds.

Command Mode

GigabitEthernet Interface Configuration

ip pim interface-type (for a port)

Specifies whether the selected interface is active or passive. You can change the state of a PIM interface after you create the interface but only if you disable PIM on the interface. Use this feature when a high number of PIM interfaces exist and connect to end users, not to other switches.

- An active interface accepts PIM control transmitted and received traffic.
- A passive interface prevents PIM control traffic from transmitting or receiving, thereby reducing the load on a system.

Syntax

- **default ip pim interface-type**

- **ip pim interface-type active**
- **ip pim interface-type passive**

Command Parameters

<active|passive>	Specifies the interface type.

Default

The default is active.

Command Mode

GigabitEthernet Interface Configuration

ip pim join-prune-interval (for a port)

Configure the frequency at which pim join/prune messages are sent

Syntax

- **default ip pim join-prune-interval**
- **ip pim join-prune-interval <1-18724>**

Command Parameters

<1-18724>	Specifies the duration in seconds before the PIM router sends out the next join or prune message to its upstream neighbors.

Default

The default is 60 seconds.

Command Mode

GigabitEthernet Interface Configuration

ip rip advertise-when-down enable (for a port)

Enable or disable AdvertiseWhenDown. If enabled, the network on this interface is advertised as up, even if the port is down. The default is disabled.

When you configure a port with no link and enable advertise-when-down, it does not advertise the route until the port is active. Then the route is advertised even when the link is down.

To disable advertising based on link status, this parameter must be disabled.

Syntax

- **default ip rip advertise-when-down enable**

- **ip rip advertise-when-down enable**
- **no ip rip advertise-when-down enable**

Command Parameters

<enable|disable>	Enables or disables AdvertiseWhenDown. If enabled, the network on this interface is advertised as up, even if the port is down. The default is disabled. When you configure a port with no link and enable advertise-when-down, it does not advertise the route until the port is active. Then the route is advertised even when the link is down. To disable advertising based on link status, this parameter must be disabled.

Default

The default is disabled.

Command Mode

GigabitEthernet Interface Configuration

ip rip auto-aggregation (for a port)

Enable or disable automatic route aggregation on the port. When enabled, the router switch automatically aggregates routes to their natural mask when they are advertised on an interface in a different class network. The default is disabled.

Syntax

- **default ip rip auto-aggregation enable**
- **ip rip auto-aggregation enable**
- **no ip rip auto-aggregation enable**

Command Parameters

enable	Enables or disables automatic route aggregation on the port. When enabled, the router switch automatically aggregates routes to their natural mask when they are advertised on an interface in a different class network. The default is disabled.

Default

The default is disabled.

Command Mode

GigabitEthernet Interface Configuration

ip rip cost (for a port)

Configure the RIP cost for this port (link).

Syntax

- **default ip rip cost**
- **ip rip cost <1-15>**

Command Parameters

<1-15>	Configures the RIP cost for this port (link).

Default

None

Command Mode

GigabitEthernet Interface Configuration

ip rip default-listen (for a port)

Enable default listen: the switch accepts the default route learned through RIP on this interface. The default is disabled.

Syntax

- **default ip rip default-listen enable**
- **ip rip default-listen enable**
- **no ip rip default-listen enable**

Command Parameters

enable	Enables DefaultListen: the switch accepts the default route learned through RIP on this interface. The default is disabled.

Default

The default is disabled.

Command Mode

GigabitEthernet Interface Configuration

ip rip default-supply enable (for a port)

Enable default supply. If enabled, a default route must be advertised from this interface.

The default route is advertised only if it exists in the routing table. The default route will not be advertised on RIP interfaces by default. You need to redistribute the default route and then configure the default-supply at the interface for the default route to be advertised to the neighbor.

Syntax

- **default ip rip default-supply enable**
- **ip rip default-supply enable**
- **no ip rip default-supply enable**

Command Parameters

enable	Enables DefaultSupply. If enabled, a default route must be advertised from this interface. The default is false. The default route is advertised only if it exists in the routing table.

Default

The default is false.

Command Mode

GigabitEthernet Interface Configuration

ip rip enable (for a port)

Enable RIP routing on the interface.

Syntax

- **default ip rip enable**
- **ip rip enable**
- **no ip rip enable**

Command Parameters

enable	Enables RIP routing on the interface.

Default

The default is disabled.

Command Mode

GigabitEthernet Interface Configuration

ip rip holddown (for a port)

Configure the RIP holddown timer value, the length of time (in seconds) that RIP continues to advertise a network after determining that it is unreachable. The default is 120.

Syntax

- **default ip rip holddown**

- **ip rip holddown <0-360>**

Command Parameters

<0-360>	Configures the RIP holddown timer value, the length of time (in seconds) that RIP continues to advertise a network after determining that it is unreachable. The default is 120.

Default

The default is 120.

Command Mode

GigabitEthernet Interface Configuration

ip rip in-policy (for a port)

Configures the rip in-policy on specific interface.

Syntax

- **default ip rip in-policy**
- **ip rip in-policy WORD<0-64>**

Command Parameters

WORD<0-64>	Configures the policy name for inbound filtering on this RIP interface. This policy determines whether to learn a route on this interface and specifies the parameters of the route when RIP adds it to the routing table.

Default

None

Command Mode

GigabitEthernet Interface Configuration

ip rip listen (for a port)

If enabled, the switch listens for a default route without listening for all routes. Specify that the routing switch learns RIP routes through this interface. The default is enable.

Syntax

- **default ip rip listen enable**
- **ip rip listen enable**
- **no ip rip listen enable**

Command Parameters

enable	If enabled, the switch listens for a default route without listening for all routes. Specifies that the routing switch learns RIP routes through this interface. The default is enable.

Default

The default is enabled.

Command Mode

GigabitEthernet Interface Configuration

ip rip out-policy (for a port)

Configure the port RIP out-policy name for outbound filtering on this RIP interface. This policy determines whether to advertise a route from the routing table on this interface. This policy also specifies the parameters of the advertisement. Policy name is a string of length 0 to 64 characters.

Syntax

- **`default ip rip out-policy`**
- **`ip rip out-policy WORD<0-64>`**

Command Parameters

WORD<0-64>	Configures the port RIP out-policy name for outbound filtering on this RIP interface. This policy determines whether to advertise a route from the routing table on this interface. This policy also specifies the parameters of the advertisement. Policy name is a string of length 0 to 64 characters.

Default

None

Command Mode

GigabitEthernet Interface Configuration

ip rip poison enable (for a port)

Enable Poison Reverse. 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. Therefore, the receiver neighbor ignores this route because the metric 16 indicates infinite hops in the network.

If you disable Poison Reverse (no poison enable), Split Horizon is enabled. By default, Split Horizon is enabled. If Split Horizon is enabled, IP routes learned from an immediate neighbor are not advertised back to the neighbor.

These mechanisms prevent routing loops.

Syntax

- **default ip rip poison enable**
- **ip rip poison enable**
- **no ip rip poison enable**

Command Parameters

enable Enables Poison Reverse.

- 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. Therefore, the receiver neighbor ignores this route because the metric 16 indicates infinite hops in the network.
- If you disable Poison Reverse (no poison enable), Split Horizon is enabled. By default, Split Horizon is enabled. If Split Horizon is enabled, IP routes learned from an immediate neighbor are not advertised back to the neighbor.

These mechanisms prevent routing loops.

Default

The default is disabled.

Command Mode

GigabitEthernet Interface Configuration

ip rip port

Configure RIP for a port.

Syntax

- **default ip rip port {slot/port[/sub-port][-slot/port[/sub-port]][,...]}**
- **ip rip port {slot/port[/sub-port][-slot/port[/sub-port]][,...]}**
- **no ip rip port {slot/port[/sub-port][-slot/port[/sub-port]][,...]}**

Command Parameters

{slot/port[/sub-port] [-slot/port[/sub-port]] [,...]}	Identifies the slot and port in one of the following formats: a single slot and port (slot/port), a range of slots and ports (slot/port-slot/port), or a series of slots and ports (slot/port,slot/port,slot/port). If your platform supports channelization and the port is channelized, you must also specify the sub-port in the format slot/port/sub-port.

Default

None

Command Mode

GigabitEthernet Interface Configuration

ip rip receive version (for a port)

Indicate which RIP update version is accepted on this interface. The default is rip1orrip2.

Syntax

- **default ip rip receive version**
- **ip rip receive version { rip1 | rip2 | rip1orrip2 }**

Command Parameters

<rip1|rip2|rip1orrip2>	Indicates which RIP update version is accepted on this interface. The default is rip1orrip2.

Default

The default is rip1orrip 2.

Command Mode

GigabitEthernet Interface Configuration

ip rip send (for a port)

Indicate which RIP update version the router sends from this interface. ripVersion1 implies sending RIP updates that comply with RFC 1058. rip1Compatible implies broadcasting RIP2 updates using RFC 1058 route subassumption rules. The default is rip1Compatible.

Syntax

- **default ip rip send version**
- **ip rip send version { notsend | rip1 | rip1comp | rip2 }**

Command Parameters

<notsend|rip1|rip2|rip1comp|rip2>	Indicates which RIP update version the router sends from this interface. ripVersion1 implies sending RIP updates that comply with RFC 1058. rip1Compatible implies broadcasting RIP2 updates using RFC 1058 route subassumption rules. The default is rip1Compatible

Default

The default is rip1Compatible.

Command Mode

GigabitEthernet Interface Configuration

ip rip supply (for a port)

Specify that the switch advertises RIP routes through the port. The default is enable.

Syntax

- **default ip rip supply enable**
- **ip rip supply enable**
- **no ip rip supply enable**

Command Parameters

<enable|disable>	Specifies that the switch advertises RIP routes through the port. The default is enable.

Default

The default is enabled.

Command Mode

GigabitEthernet Interface Configuration

ip rip timeout (for a port)

Configure the RIP timeout interval in seconds.

Syntax

- **default ip rip timeout**
- **ip rip timeout <15-259200>**

Command Parameters

<15-259200>	Configures the RIP timeout interval in seconds.

Default

None

Command Mode

GigabitEthernet Interface Configuration

ip rip triggered (for a port)

Enable automatic triggered updates for RIP.

Syntax

- **default ip rip triggered enable**
- **ip rip triggered enable**
- **no ip rip triggered enable**

Command Parameters

enable	Enables automatic triggered updates for RIP.

Default

The default is disabled.

Command Mode

GigabitEthernet Interface Configuration

ip rvs-path-chk

Configure unicast reverse path forwarding on a port (IPV4).

Syntax

- **default ip rvs-path-chk**
- **default ip rvs-path-chk mode**
- **ip rvs-path-chk**
- **ip rvs-path-chk mode exist-only**
- **ip rvs-path-chk mode strict**
- **no ip rvs-path-chk**

Command Parameters

mode {strict| exist-only}	Specifies the mode for Unicast Reverse Path Forwarding (uRPF). • In strict mode, uRPF checks whether the source IP address of the incoming packet exists in the FIB. If the incoming interface is not the best reverse path, the packet check fails and uRPF drops the packet. • In exist-only mode, uRPF checks whether the source IP address of the incoming packet exists in the FIB. The packet is dropped only if the source address is not reachable via any interface on that router.

Default

None

Command Mode

GigabitEthernet Interface Configuration

ip source verify

Configures IP Source Guard (IPSG) on a port, for IPv4 addresses. When you enable IPSG on the port, filters are automatically installed for the IPv4 addresses that are already learned on that interface.

Syntax

- **default ip source verify**
- **ip source verify enable**
- **no ip source verify**

Default

IP Source Guard (IPSG) for IPv4 addresses is disabled by default.

Command Mode

GigabitEthernet Interface Configuration

ip spb-multicast enable (for a port)

Enables Layer 3 VSN IP multicast over Fabric Connect.

Syntax

- **default ip spb-multicast enable**
- **ip spb-multicast enable**
- **no ip spb-multicast enable**

Default

The default is disabled.

Command Mode

GigabitEthernet Interface Configuration

ip spb-pim-gw enable (for a port)

Enable SPB-PIM Gateway on a VLAN interface.

Syntax

- **default p spb-pim-gw enable**
- **ip spb-pim-gw enable**
- **no ip spb-pim-gw enable**

Default

The default is disabled.

Command Mode

GigabitEthernet Interface Configuration

ip spb-pim-gw hello-interval (for a port)

Configures the SPB-PIM Gateway VLAN HELLO interval.

Syntax

- **default ip spb-pim-gw hello-interval <0-18724>**
- **ip spb-pim-gw hello-interval <0-18724>**
- **no ip spb-pim-gw hello-interval <0-18724>**

Command Parameters

<0-18724>	Specifies the HELLO interval in seconds. The default value is 30 seconds.

Default

The default value is 30 seconds.

Command Mode

GigabitEthernet Interface Configuration

ip spb-pim-gw ip join-prune-interval (for a port)

Configures the SPB-PIM Gateway VLAN JOIN PRUNE interval.

Syntax

- **default ip spb-pim-gw ip join-prune-interval <1-18724>**
- **ip spb-pim-gw ip join-prune-interval <1-18724>**
- **no ip spb-pim-gw ip join-prune-interval <1-18724>**

Command Parameters

<1-18724> Specifies the JOIN PRUNE interval in seconds. The default value is 60 seconds.

Default

The default value is 60 seconds.

Command Mode

GigabitEthernet Interface Configuration

ip vrrp (for a port)

Configure Virtual Router Redundancy Protocol (VRRP) on a port.

Syntax

- **default ip vrrp <1-255>**
- **default ip vrrp <1-255> action**
- **default ip vrrp <1-255> adver-int**
- **default ip vrrp <1-255> backup-master enable**
- **default ip vrrp <1-255> critical-ip enable**
- **default ip vrrp <1-255> critical-ip-addr**
- **default ip vrrp <1-255> enable**
- **default ip vrrp <1-255> fast-adv enable**
- **default ip vrrp <1-255> fast-adv-int**
- **default ip vrrp <1-255> holddown-timer**
- **default ip vrrp <1-255> preempt-mode**
- **default ip vrrp <1-255> priority**
- **ip vrrp <1-255> action none**
- **ip vrrp <1-255> action preempt**
- **ip vrrp <1-255> adver-int <1-255>**
- **ip vrrp <1-255> backup-master enable**
- **ip vrrp <1-255> critical-ip enable**
- **ip vrrp <1-255> critical-ip-addr {A.B.C.D}**
- **ip vrrp <1-255> enable**
- **ip vrrp <1-255> fast-adv enable**
- **ip vrrp <1-255> fast-adv-int <200-1000>**
- **ip vrrp <1-255> holddown-timer <0-21600>**

- **ip vrrp <1-255> priority <1-255>**
- **ip vrrp <1-255> preempt-mode enable**
- **ip vrrp address <1-255> {A.B.C.D}**
- **no ip vrrp <1-255>**
- **no ip vrrp <1-255> backup-master enable**
- **no ip vrrp <1-255> critical-ip enable**
- **no ip vrrp <1-255> enable**
- **no ip vrrp <1-255> fast-adv enable**
- **no ip vrrp <1-255> preempt-mode enable**

Command Parameters

<vrid> preempt-mode enable	Enables preempt mode for vrrp (v3).
action {none|preempt}	Use the action choice option to manually override the hold-down timer and force preemption. none|preempt can be set to preempt the timer or set to none to allow the timer to keep working.
address <1-255> <A.B.C.D>	Sets the IP address of the Virtual Router Redundancy Protocol (VRRP) interface that forwards packets to the virtual IP addresses associated with the virtual router. A.B.C.D is the IP address of the master VRRP.
adver-int <1-255>	Sets the the time interval between sending Virtual Router Redundancy Protocol (VRRP) advertisement messages. The range is between 1 and 255 seconds. This value must be the same on all the participating routers. The default is 1.
backup-master enable	Enables the Virtual Router Redundancy Protocol (VRRP) backup master. This option is supported only on Split MultiLink Trunking (SMLT) ports. Do not enable Backup Master if Critical IP is enabled.
critical-ip enable	Enables the critical IP address option. Do not enable critical IP if Backup Master is enabled.
critical-ip-addr <A.B.C.D>	Sets the critical IP address for VRRP. A.B.C.D is the IP address on the local router, which is configured so that a change in its state causes a role switch in the virtual router (for example, from master to backup in case the interface goes down).
enable	Enables Virtual Router Redundancy Protocol (VRRP) on the interface.
fast-adv enable	Enables the Fast Advertisement Interval. The default is disabled.
fast-adv-int <200-1000>	Sets the Fast Advertisement Interval, in milliseconds, the time interval between sending VRRP advertisement messages. The range must be

	the same on all participating routers. The default is 200. You must enter values in multiples of 200 milliseconds.
holddown-timer<0-21600>	Modifies the behavior of the Virtual Router Redundancy Protocol (VRRP) failover mechanism by allowing the router enough time to detect the OSPF or RIP routes. 0-21600 is the time interval (in seconds) a router is delayed when changing to master state.
priority <1-255>	Sets the port Virtual Router Redundancy Protocol (VRRP) priority. 1-255 is the value used by the VRRP router. The default is 100. Assign the value 255 to the router that owns the IP address associated with the virtual router.

Default

None

Command Mode

GigabitEthernet Interface Configuration

ip vrrp address (for a port)

Specify an address to associate with the virtual router.

Syntax

- **default ip vrrp address <1-255>**
- **default ip vrrp address <1-255> {A.B.C.D}**
- **ip vrrp address <1-255> {A.B.C.D}**
- **no ip vrrp address <1-255>**
- **no ip vrrp address <1-255> {A.B.C.D}**

Command Parameters

{A.B.C.D}	Specifies an address to associate with the virtual router.
<1-255>	Specifies the virtual router ID. The virtual router acts as the default router for one or more associated addresses.

Default

None

Command Mode

GigabitEthernet Interface Configuration

ip vrrp version

Configure VRRP version on an interface.

Syntax

- **default ip vrrp version**
- **ip vrrp version [2|3]**

Command Parameters

[2|3]	Configure VRRP version 2 or 3 on an interface.

Default

The default is version 2.

Command Mode

GigabitEthernet Interface Configuration

ipv6 dhcp-relay (for a port)

Configure Dynamic Host Configuration Protocol (DHCP) Relay on an interface. The command no ipv6 dhcp-relay disables DHCP on the interface; it does not delete the entry.

Syntax

- **default ipv6 dhcp-relay**
- **default ipv6 dhcp-relay fwd-path WORD<0-255>**
- **default ipv6 dhcp-relay max-hop**
- **default ipv6 dhcp-relay remote-id**
- **ipv6 dhcp-relay**
- **ipv6 dhcp-relay fwd-path WORD<0-255>**
- **ipv6 dhcp-relay fwd-path WORD<0-255> enable**
- **ipv6 dhcp-relay fwd-path WORD<0-255> vrid WORD<1-255>**
- **ipv6 dhcp-relay max-hop <1-32>**
- **ipv6 dhcp-relay remote-id**
- **no ipv6 dhcp-relay**
- **no ipv6 dhcp-relay fwd-path WORD<0-255>**
- **no ipv6 dhcp-relay fwd-path WORD<0-255> enable**
- **no ipv6 dhcp-relay remote-id**

Command Parameters

max-hop <1-32>	Configures the maximum number of hops before a BootP/DHCP packet is discarded. The default is 32.
remoteId	Enables the Remote ID. The default is disabled.
vrid WORD<1-255>	Specifies the ID of the virtual router and is an integer from 1-255.
WORD<0-255>	Creates a forwarding path to the Dynamic Host Configuration Protocol (DHCP) server with a mode and a state. WORD<0-255> is the IPv6 address of the server. The default IP address of the relay is the address of the interface. If the relay is a Virtual Router configured on this interface, you must set the vrid. By default, the forwarding path is disabled.

Default

None

Command Mode

GigabitEthernet Interface Configuration

ipv6 fhs dhcp-guard

Enable device role verification attached to the port. By default, router is selected.

Syntax

- **default ipv6 fhs dhcp-guard attach-policy**
- **ipv6 fhs dhcp-guard attach-policy WORD<1-64>**
- **ipv6 fhs dhcp-guard device-role {client | server}**
- **no ipv6 fhs dhcp-guard attach-policy**

Command Parameters

attach-policy	Attach dhcp-guard policy to interface.
Client	Set device role as client.
device-role	Set dhcp-gurad device-role.
Server	Set device role as server.
WORD<1-64>	Specify the name of the DHCP guard policy to be attached or detached.

Default

None

Command Mode

GigabitEthernet Interface Configuration

ipv6 fhs nd-inspection enable (for a port)

Enables neighbor discovery (ND) inspection on a port or interface.

Syntax

- **default ipv6 fhs nd-inspection enable**
- **ipv6 fhs nd-inspection enable**
- **no ipv6 fhs nd-inspection enable**

Default

The default is disabled.

Command Mode

GigabitEthernet Interface Configuration

ipv6 fhs ra-guard

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

Syntax

- **default ipv6 fhs ra-guard attach-policy**
- **ipv6 fhs ra-guard attach-policy WORD<1-64>**
- **ipv6 fhs ra-guard device-role {router|host}**
- **no ipv6 fhs ra-guard attach-policy**

Command Parameters

attach-policy	Attach ra-guard policy to interface.
device-role	Set ra-guard device role.
host	Set device role as host.
router	Set device role as router.
WORD<1-64>	Specifies the policy name.

Default

None

Command Mode

GigabitEthernet Interface Configuration

ipv6 forwarding (for a port)

Configure IPv6 forwarding. By default, IPv6 forwarding is globally disabled, which means you can only use local IPv6 connections, and traffic does not traverse an IPv6 network.

Syntax

- **default ipv6 forwarding**
- **ipv6 forwarding**
- **no ipv6 forwarding**

Default

By default, forwarding is enabled on an interface. You must enable it globally before the interface configuration takes effect.

Command Mode

GigabitEthernet Interface Configuration

ipv6 interface (for a port)

Creates an IPv6 interface.

Syntax

- **default ipv6 interface**
- **ipv6 interface**
- **no ipv6 interface**

Default

None

Command Mode

GigabitEthernet Interface Configuration

ipv6 interface address (for a port)

Configure the IPv6 address for a port.

Syntax

- **ipv6 interface address WORD<0-255>**
- **no ipv6 interface address**
- **no ipv6 interface address WORD<0-255>**

Command Parameters

WORD<0-255>	Assigns an IPv6 address to the port.

Default

None

Command Mode

GigabitEthernet Interface Configuration

ipv6 interface enable (for a port)

Enable IPv6 route advertisement on a port.

Syntax

- **default ipv6 interface enable**
- **ipv6 interface enable**
- **ipv6 interface enable vlan <1-4059>**
- **no ipv6 interface enable**

Command Parameters

vlan *<1-4059>*	Specifies the VLAN ID in the range of 1 to 4059. By default, VLAN IDs 1 to 4059 are configurable and the system reserves VLAN IDs 4060 to 4094 for internal use. On switches that support the vrf-scaling and spbm-config-mode boot configuration flags, if you enable these flags, the system also reserves VLAN IDs 3500 to 3998. VLAN ID 1 is the default VLAN and you cannot create or delete VLAN ID 1.

Default

The default is disabled.

Command Mode

GigabitEthernet Interface Configuration

ipv6 interface hop-limit (for a port)

Configure the maximum number of hops before packets drop.

Syntax

- **default ipv6 interface hop-limit**
- **ipv6 interface hop-limit <1-255>**

Command Parameters

<1-255>	Configures the maximum hops.

Default

The default is 64 hops.

Command Mode

GigabitEthernet Interface Configuration

ipv6 interface link-local (for a port)

Create a link-local address for the port.

Syntax

- **ipv6 interface link-local WORD<0-19>**
- **ipv6 interface link-local WORD<0-19> address WORD<0-46>**
- **ipv6 interface link-local WORD<0-19> enable**
- **ipv6 interface link-local WORD<0-19> mac-offset <MAC-offset>**
- **ipv6 interface link-local WORD<0-19> name WORD<0-255>**
- **ipv6 interface link-local WORD<0-19> vlan <1-4059>**

Command Parameters

address WORD<0-46>	Specifies the IPv6 address.
enable	Enables route advertisement.
mac-offset <*MAC-offset*>	Specifies a number by which to offset the MAC address from the chassis MAC address. This ensures that each IP address has a different MAC address. If you omit this variable, a unique MAC offset is automatically generated. Different hardware platforms support different ranges. To see which range is available on your switch, use the CLI command completion Help.
name WORD<0-255>	Assigns a descriptive name. The network management system also configures this string.
vlan <*1-4059*>	Specifies the VLAN ID in the range of 1 to 4059. By default, VLAN IDs 1 to 4059 are configurable and the system reserves VLAN IDs 4060 to 4094 for

	internal use. On switches that support the vrf-scaling and spbm-config-mode boot configuration flags, if you enable these flags, the system also reserves VLAN IDs 3500 to 3998. VLAN ID 1 is the default VLAN and you cannot create or delete VLAN ID 1.
WORD<0-19>	Specifies the 64-bit interface ID used to calculate the actual link-local address.

Default

None

Command Mode

GigabitEthernet Interface Configuration

ipv6 interface mtu (for a port)

Configure the maximum transmission unit for the port.

Syntax

- **default ipv6 interface mtu**
- **ipv6 interface mtu <1280-9500>**

Command Parameters

<1280-9500>	Configures the maximum transmission unit for the interface: 1280-1500, 1850, or 9500.

Default

The default is 1500.

Command Mode

GigabitEthernet Interface Configuration

ipv6 interface name (for a port)

Configure an interface description for the port.

Syntax

- **ipv6 interface name WORD<0-255>**

Command Parameters

WORD<0-255>	Assigns a descriptive name to the port.

Default

None

Command Mode

GigabitEthernet Interface Configuration

ipv6 interface reachable-time (for a port)

Configure the time a neighbor is considered reachable after receiving a reachability confirmation.

Syntax

- **default ipv6 interface reachable-time**
- **ipv6 interface reachable-time <1-3600000>**

Command Parameters

<1-3600000>	Configures the time, in milliseconds, a neighbor is considered reachable after receiving a reachability confirmation.

Default

The default is 30000.

Command Mode

GigabitEthernet Interface Configuration

ipv6 interface retransmit-timer (for a port)

Configure the time, between retransmissions of Neighbor Solicitation messages to a neighbor when resolving the address or when probing the reachability of a neighbor.

Syntax

- **default ipv6 interface retransmit-timer**
- **ipv6 interface retransmit-timer <1-4294967295>**

Command Parameters

<1-4294967295>	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.

Default

The default is 1000.

Command Mode

GigabitEthernet Interface Configuration

ipv6 interface vlan (for a port)

Configure the interface as part of an IPv6 VLAN.

Syntax

- **ipv6 interface vlan <1-4059>**

Command Parameters

<1-4059>	Specifies the VLAN ID in the range of 1 to 4059. By default, VLAN IDs 1 to 4059 are configurable and the system reserves VLAN IDs 4060 to 4094 for internal use. On switches that support the vrf-scaling and spbm-config-mode boot configuration flags, if you enable these flags, the system also reserves VLAN IDs 3500 to 3998. VLAN ID 1 is the default VLAN and you cannot create or delete VLAN ID 1.

Default

None

Command Mode

GigabitEthernet Interface Configuration

ipv6 ipsec enable (for a port)

Enable Internet Protocol Security (IPsec) for IPv6 on a port.

Syntax

- **default ipv6 ipsec enable**
- **ipv6 ipsec enable**
- **no ipv6 ipsec enable**

Default

The default is disabled.

Command Mode

GigabitEthernet Interface Configuration

ipv6 ipsec policy (for a port)

Link an Internet Protocol Security (IPsec) IPv6 policy to an interface.

Syntax

- **default ipv6 ipsec policy WORD<1-32>**
- **ipv6 ipsec policy WORD<1-32>**
- **ipv6 ipsec policy WORD<1-32> dir both**
- **ipv6 ipsec policy WORD<1-32> dir in**
- **ipv6 ipsec policy WORD<1-32> dir out**
- **no ipv6 ipsec policy WORD<1-32> dir both**
- **no ipv6 ipsec policy WORD<1-32> dir in**
- **no ipv6 ipsec policy WORD<1-32> dir out**

Command Parameters

dir <both|in|out>	Specifies the direction to which IPsec applies. Both specifies both ingress and egress traffic, in specifies ingress traffic, and out specifies egress traffic. By default, the direction is both.
WORD<1-32>	Specifies the IPsec policy name.

Default

None

Command Mode

GigabitEthernet Interface Configuration

ipv6 mld last-listener-query-interval (for a port)

Configure the last listener query interval for the MLD

Syntax

- **default ipv6 mld last-member-query-interval**
- **ipv6 mld last-listener-query-interval <0-60>**
- **no ipv6 mld last-member-query-interval**

Command Parameters

<0-60>	Indicates the last listener query interval in seconds.

Default

None

Command Mode

GigabitEthernet Interface Configuration

ipv6 mld query-interval (for a port)

Configure the query interval for the MLD interface

Syntax

- **default ipv6 mld query-interval**
- **ipv6 mld query-interval <1-65535>**
- **no ipv6 mld query-interval**

Command Parameters

<1-65535> Indicates the frequency at which MLD host query packets transmit on this interface.

Default

None

Command Mode

GigabitEthernet Interface Configuration

ipv6 mld query-max-response (for a port)

Configure the query maximum response time for mld interface

Syntax

- **default ipv6 mld query-max-response**
- **ipv6 mld query-max-response <0-60>**
- **no ipv6 mld query-max-response**

Command Parameters

<0–60> Indicates the query maximum response interval time in seconds.

Default

None

Command Mode

GigabitEthernet Interface Configuration

ipv6 mld robust-value (for a port)

Configure the MLD robustness

Syntax

- **default ipv6 mld robust-value**
- **ipv6 mld robust-value <2-255>**
- **no ipv6 mld robust-value**

Command Parameters

<2-255> Specifies a numerical value for MLD snooping robustness.

Default

None

Command Mode

GigabitEthernet Interface Configuration

ipv6 mld version (for a port)

Configure MLD version

Syntax

- **default ipv6 mld version**
- **ipv6 mld version <1-2>**
- **no ipv6 mld version**

Command Parameters

<1-2> Indicates the version of MLD that runs on this interface.

Default

None

Command Mode

GigabitEthernet Interface Configuration

ipv6 nd (for a port)

Configure the neighbor discovery parameters of the interface.

Syntax

- **default ipv6 nd**
- **default ipv6 nd hop-limit**
- **default ipv6 nd mtu**
- **default ipv6 nd reachable-time**
- **default ipv6 nd retransmit-timer**
- **ipv6 nd hop-limit <0-255>**
- **ipv6 nd mtu <0-9500>**
- **ipv6 nd reachable-time <0-3600000>**
- **ipv6 nd retransmit-timer <0-4294967295>**
- **no ipv6 nd**
- **no ipv6 nd hop-limit**
- **no ipv6 nd mtu**
- **no ipv6 nd reachable-time**
- **no ipv6 nd retransmit-timer**

Command Parameters

hop-limit <0-255>	Sets the neighbor discovery hop-limit value for the interface.
mtu <0-9500>	Sets router advertisement MTU size.
reachable-time <0-3600000>	Sets router advertisement reachable time.
retransmit-timer <0-4294967295>	Sets router advertisement retransmit timer.

Default

None

Command Mode

GigabitEthernet Interface Configuration

ipv6 nd dad-ns (for a port)

Configure the number of neighbor solicitation messages from duplicate address detection.

Syntax

- **default ipv6 nd dad-ns**
- **ipv6 nd dad-ns <0-600>**

Command Parameters

<0-600>	Configures the number of neighbor solicitation messages from duplicate address detection. A value of 0 disables duplicate address detection on the specified interface. A value of 1 configures a single transmission without follow-up transmissions.

Default

The default is 1.

Command Mode

GigabitEthernet Interface Configuration

ipv6 nd hop-limit (for a port)

Configure the hop limit sent in router advertisements.

Syntax

- **default ipv6 nd hop-limit**
- **ipv6 nd hop-limit <0-255>**
- **no ipv6 nd hop-limit**

Command Parameters

hoplimit <0-255>	Specifies the current hop limit field sent in router advertisements from this interface. The value must be the current diameter of the Internet. A value of zero indicates that the advertisement does not specify a hop-limit value.

Default

The default is 64.

Command Mode

GigabitEthernet Interface Configuration

ipv6 nd managed-config-flag (for a port)

Enable M-bit (managed address configuration) on the router.

Syntax

- **default ipv6 nd managed-config-flag**
- **ipv6 nd managed-config-flag**
- **no ipv6 nd managed-config-flag**

Default

The default is disabled.

Command Mode

GigabitEthernet Interface Configuration

ipv6 nd mtu (for a port)

Configure the maximum transmission unit (MTU) for router advertisements.

Syntax

- **default ipv6 nd mtu**
- **ipv6 nd mtu <0-9500>**
- **no ipv6 nd mtu**

Command Parameters

mtu <0-9500>	Shows the MTU value sent in router advertisements on this interface. A value of zero indicates that the system sends no MTU options. Valid values are: 0, 1280-1500, 1850, or 9500.

Default

None

Command Mode

GigabitEthernet Interface Configuration

ipv6 nd other-config-flag (for a port)

Enable the O-bit (other stateful configuration) in the router advertisement. Other stateful configuration autoConfigure received information without addresses.

Syntax

- **default ipv6 nd other-config-flag**
- **ipv6 nd other-config-flag**
- **no ipv6 nd other-config-flag**

Default

The default is disabled.

Command Mode

GigabitEthernet Interface Configuration

ipv6 nd prefix (for a port)

Configure neighbor discovery prefixes. IPv6 nodes on the same link use ND to discover link-layer addresses and to obtain and advertise various network parameters and reachability information. ND combines the services provided by ARP and router discovery for IPv4. IPv6 router advertisement includes discovery prefixes.

Syntax

- **default ipv6 nd prefix WORD<0-255>**
- **default ipv6 nd prefix WORD<0-255> no-advertise**
- **default ipv6 nd prefix WORD<0-255> preferred-life**
- **default ipv6 nd prefix WORD<0-255> valid-life**
- **ipv6 nd prefix WORD<0-255> infinite**
- **ipv6 nd prefix WORD<0-255> no-advertise**
- **ipv6 nd prefix WORD<0-255> preferred-life <0-4294967295>**
- **ipv6 nd prefix WORD<0-255> valid-life <0-4294967295>**
- **no ipv6 nd prefix WORD<0-255>**
- **no ipv6 nd prefix WORD<0-255> no-advertise**
- **no ipv6 nd prefix-interface WORD<0-255>**
- **no ipv6 nd prefix-interface WORD<0-255> no-advertise**

Command Parameters

infinite	Configures the prefix as infinite.
no-advertise	Removes the prefix from the neighbor advertisement. The default for noadvertise is disabled.
preferred-life <0-4294967295>	Configures the preferred life, in seconds. The valid range is 0-4294967295. The default preferred-life is 604800.
valid-life <0-4294967295>	Configures the valid life, in seconds. The valid range is 0-4294967295. The default valid-life is 2592000.

Default

None

Command Mode

GigabitEthernet Interface Configuration

ipv6 nd prefix-interface (for a port)

Configure neighbor discovery prefixes IPv6 nodes on the same link use ND to discover link-layer addresses and to obtain and advertise various network parameters and reachability information. ND combines the services provided by Address Resolution Protocol (ARP) and router discovery for IPv4. IPv6 router advertisement includes discovery prefixes.

Syntax

- **default ipv6 nd prefix-interface WORD<0-255>**
- **default ipv6 nd prefix-interface WORD<0-255> no-advertise**
- **ipv6 nd prefix-interface WORD<0-255>**
- **ipv6 nd prefix-interface WORD<0-255> eui <1-3>**
- **ipv6 nd prefix-interface WORD<0-255> no-advertise**
- **ipv6 nd prefix-interface WORD<0-255> no-autoconfig**
- **ipv6 nd prefix-interface WORD<0-255> no-onlink**
- **no ipv6 nd prefix-interface WORD<0-255> [no-advertise]**

Command Parameters

eui <1-3>	Specifies if extended unique identifier (EUI) is used. The values are:(1) EUI not used (2) EUI with Universal/Local bit (U/L) complement enabled (3) EUI used without U/L.
no-advertise	Removes the prefix from the neighbor advertisement. The default is disabled.
no-autoconfig	Configures if the prefix is used for autonomous address configuration.
no-onlink	Configures if onlink determination uses the prefix. This value is placed in the L-bit field in the prefix information option and is a 1-bit flag.
WORD <0-255>	Specifies the IPv6 address prefix.

Default

None

Command Mode

GigabitEthernet Interface Configuration

ipv6 nd ra-lifetime (for a port)

Configure the router lifetime included in router advertisement. Other devices use this information to determine if the router can be reached.

Syntax

- **default ipv6 nd ra-lifetime**
- **ipv6 nd ra-lifetime <0-9000>**

Command Parameters

<0-9000>	Configures the router lifetime included in router advertisement. The range is 0 or <4-9000>.

Default

The default is 1800.

Command Mode

GigabitEthernet Interface Configuration

ipv6 nd reachable-time (for a port)

Configure the neighbor reachable time.

Syntax

- **ipv6 nd reachable-time <0-3600000>**

Command Parameters

reachable-time <0-3600000>	Specifies a value (in milliseconds) placed in the router advertisement message sent by the router. The value zero means unspecified (by this system). Configure the amount of time that a remote IPv6 node is considered reachable after a reachability confirmation event.

Default

None

Command Mode

GigabitEthernet Interface Configuration

ipv6 nd retransmit-timer (for a port)

Configure the time between neighbor solicitation messages.

Syntax

- **ipv6 nd retransmit-timer <0-4294967295>**

Command Parameters

retransmit-timer <0-4294967295>	Specifies a value (in milliseconds) placed in the retransmit timer field in the router advertisement message sent from this interface. The value zero means unspecified (by this system). The value configures the amount of time the system waits for the transmission to occur.

Default

None

Command Mode

GigabitEthernet Interface Configuration

ipv6 nd rtr-advert-max-interval (for a port)

Configure the maximum time allowed between sending unsolicited multicast router advertisements.

Syntax

- **default ipv6 nd rtr-advert-max-interval**
- **ipv6 nd rtr-advert-max-interval <4-1800>**

Command Parameters

<4-1800>	Specifies the maximum interval value.

Default

The default is 600.

Command Mode

GigabitEthernet Interface Configuration

ipv6 nd rtr-advert-min-interval (for a port)

Configure the minimum time allowed between sending unsolicited multicast router advertisements from the interface.

Syntax

- **default ipv6 nd rtr-advert-min-interval**
- **ipv6 nd rtr-advert-min-interval <3-1350>**

Command Parameters

<3-1350>	Configures the minimum time, in seconds.

Default

The default is 200.

Command Mode

GigabitEthernet Interface Configuration

ipv6 nd send-ra (for a port)

Enable or disables periodic router advertisement messages.

Syntax

- **default ipv6 nd send-ra**
- **ipv6 nd send-ra**
- **no ipv6 nd send-ra**

Default

The default is enabled.

Command Mode

GigabitEthernet Interface Configuration

ipv6 nd valid-life (for a port)

Modify an existing neighbor discovery prefix. Configure the valid lifetime in seconds that indicates the length of time this prefix is advertised.

Syntax

- **ipv6 nd prefix WORD<0-255> valid-life <0-4294967295>**

Command Parameters

valid-life <0-4294967295>	Configures the valid lifetime in seconds that indicates the length of time this prefix is advertised. The default is 2592000. A valid lifetime is the length of time of the preferred and depreciated state of an auto configuration address.
WORD<0-255>	Specifies the IPv6 address and prefix.

Default

The default is 2592000.

Command Mode

GigabitEthernet Interface Configuration

ipv6 ospf (for a port)

Configure OSPFv3 on an interface.

Syntax

- **default ipv6 ospf**
- **default ipv6 ospf cost**
- **default ipv6 ospf dead-interval**
- **default ipv6 ospf enable**
- **default ipv6 ospf hello-interval**
- **default ipv6 ospf link-lsa-suppression**
- **default ipv6 ospf nbma-nbr WORD<0-43>**
- **default ipv6 ospf poll-interval**
- **default ipv6 ospf priority**
- **default ipv6 ospf retransmit-interval**
- **default ipv6 ospf transit-delay**
- **ipv6 ospf cost <0-65535>**
- **ipv6 ospf dead-interval <1-65535>**
- **ipv6 ospf enable**
- **ipv6 ospf hello-interval <1-65535>**
- **ipv6 ospf nbma-nbr WORD<0-43> <0-255>**
- **ipv6 ospf nbma-nbr WORD<0-43> priority <0-255>**
- **ipv6 ospf poll-interval <0-65535>**
- **ipv6 ospf priority <0-255>**
- **ipv6 ospf retransmit-interval <1-1800>**
- **ipv6 ospf transit-delay <1-1800>**
- **no ipv6 ospf**
- **no ipv6 ospf enable**
- **no ipv6 ospf link-lsa-suppression**

- **no ipv6 ospf nbma-nbr WORD<0-43>**

Command Parameters

cost <0-65535>	Configures the OSPF metric for the interface. The switch advertises the metric in router link advertisements. The default is 1.
dead-interval <1-65535>	Specifies the dead interval, as the number of seconds to wait before determining the OSPF router is down. The default is 40.
enable	Enables the OSPF on the IPv6 interface.
hello-interval <1-65535>	Specifies the hello interval, in seconds, for hello packets sent between switches for a virtual interface in an OSPF area. The default is 10.
link-lsa-suppression	Enables link lsa suppression
nbma-nbr WORD<0-43>	Configures an NBMA neighbor. WORD<0-43> specifies the IPv6 address. Use priority <0-255> to change an existing priority value for an NBMA neighbor. Use <0-255> to assign the priority value when you create the neighbor.
poll-interval <0-65535>	Configures the polling interval for the OSPF interface in seconds. The default is 120.
priority <0-255>	Configures the OSPF priority for the interface during the election process for the designated router. The interface with the highest priority number is the designated router. The interface with the second-highest priority becomes the backup designated router. If the priority is 0, the interface cannot become either the designated router or a backup. The priority is used only during election of the designated router and backup designated router. The default is 1.
retransmit-interval <1-1800>	Specifies the retransmit interval, in seconds, for link-state advertisements. The default is 5.
transit-delay <1-1800>	Specifies the transit-delay interval, in seconds, required to transmit a link-state update packet over the virtual interface. The default is 1.

Default

None

Command Mode

GigabitEthernet Interface Configuration

ipv6 ospf area (for a port)

Configure an OSPFv3 area on an interface.

Syntax

- **ipv6 ospf area {A.B.C.D}**
- **ipv6 ospf area {A.B.C.D} cost <0-65535>**
- **ipv6 ospf area {A.B.C.D} dead-interval <1-65535>**
- **ipv6 ospf area {A.B.C.D} hello-interval <1-65535>**
- **ipv6 ospf area {A.B.C.D} network eth**
- **ipv6 ospf area {A.B.C.D} network nbma**
- **ipv6 ospf area {A.B.C.D} network p2mp**
- **ipv6 ospf area {A.B.C.D} network p2p**
- **ipv6 ospf area {A.B.C.D} network passive**
- **ipv6 ospf area {A.B.C.D} priority <0-255>**
- **ipv6 ospf area {A.B.C.D} retransmit-interval <1-1800>**
- **ipv6 ospf area {A.B.C.D} transit-delay <1-1800>**

Command Parameters

area {A.B.C.D}	Creates an IPv6 OSPF area.
cost <0-65535>	Configures the OSPF metric for the interface. The switch advertises the metric in router link advertisements. The default is 1.
dead-interval <1-65535>	Specifies the dead interval, as the number of seconds to wait before determining the OSPF router is down. The default is 40.
hello-interval <1-65535>	Specifies the hello interval, in seconds, for hello packets sent between switches for a virtual interface in an OSPF area. The default is 10.
network <eth|nbma|p2mp|p2p|passive>	Configures the type of interface as one of the following: eth: broadcast, nbma: NBMA, p2mp: point-to-multipoint, p2p:pointto-point, or passive: passive interface.
priority <0-255>	Configures the OSPF priority for the interface during the election process for the designated router. The interface with the highest priority number is the designated router. The interface with the second-highest priority becomes the backup designated router. If the priority is 0, the interface cannot become either the designated router or a backup. The priority is used only during election of the designated router and backup designated router. The default is 1.
retransmit-interval <1-1800>	Specifies the retransmit interval, in seconds, for link-state advertisements. The default is 5.

transit-delay <1-1800>	Specifies the transit-delay interval, in seconds, required to transmit a link-state update packet over the virtual interface. The default is 1.

Default

None

Command Mode

GigabitEthernet Interface Configuration

ipv6 pim enable (for a port)

Enable PIM globally on the switch.

Syntax

- **default ipv6 pim enable**
- **ipv6 pim enable**
- **no ipv6 pim enable**

Default

The default is disabled

Command Mode

GigabitEthernet Interface Configuration

ipv6 pim hello-interval (for a port)

Configure the time between hello messages.

Syntax

- **default ipv6 pim hello-interval**
- **ipv6 pim hello-interval <0-18724>**

Command Parameters

<0–18724>	Specifies the duration in seconds before the PIM router sends out the next hello message to neighboring switches.

Default

The default is 30 seconds

Command Mode

GigabitEthernet Interface Configuration

ipv6 pim join-prune-interval (for a port)

Configure the interval for join and prune messages.

Syntax

- **default ipv6 pim join-prune-interval**
- **ipv6 pim join-prune-interval <1-18724>**

Command Parameters

<1-18724>	Specifies the duration in seconds before the PIM router sends out the next join or prune message to its upstream neighbors.

Default

The default is disabled

Command Mode

GigabitEthernet Interface Configuration

ipv6 rip cost (for a port)

Configure the RIPng cost for this port (link).

Syntax

- **default ipv6 rip cost**
- **ipv6 rip cost <1-15>**

Command Parameters

<1-15>	Specifies the cost value.

Default

None

Command Mode

GigabitEthernet Interface Configuration

ipv6 rip poison enable (for a port)

Enable poison reverse.

Syntax

- **default ipv6 rip poison enable**
- **ipv6 rip poison enable**
- **no ipv6 rip poison enable**

Default

The default is disabled.

Command Mode

GigabitEthernet Interface Configuration

ipv6 rvs-path-chk

Configure unicast reverse path forwarding on a port (IPV4).

Syntax

- **default ipv6 rvs-path-chk**
- **default ipv6 rvs-path-chk mode**
- **ipv6 rvs-path-chk**
- **ipv6 rvs-path-chk mode exist-only**
- **ipv6 rvs-path-chk mode strict**
- **no ipv6 rvs-path-chk**

Command Parameters

mode {strict| exist-only}	Specifies the mode for Unicast Reverse Path Forwarding (uRPF). • In strict mode, uRPF checks whether the source IP address of the incoming packet exists in the FIB. If the incoming interface is not the best reverse path, the packet check fails and uRPF drops the packet. • In exist-only mode, uRPF checks whether the source IP address of the incoming packet exists in the FIB. The packet is dropped only if the source address is not reachable via any interface on that router.

Default

None

Command Mode

GigabitEthernet Interface Configuration

ipv6 source-guard

Configures IP Source Guard (IPSG) on a port, for IPv6 addresses. When you enable IPSG on the port, filters are automatically installed for the IPv6 addresses that are already learned on that interface.

Syntax

- **default ipv6 source-guard enable**
- **ipv6 source-guard enable**
- **ipv6 source-guard max-allowed-addr <2-10>**
- **ipv6 source-guard overflow-count clear**
- **no ipv6 source-guard enable**

Command Parameters

enable	Enables IP Source Guard on a port, for IPv6 addresses. When you enable IPSG on the port, filters are automatically installed for the IPv6 addresses that are already learned on that interface.
max-allowed-addr <2-10>	Configures the maximum number of IPv6 addresses allowed on the port. The default value is 4.
overflow-count clear	Clears the IP Source Guard overflow counters. Overflow counters consists of IPv6 addresses that are not added to IP Source Guard due to lack of filter resources. On the switch, the total number of filters cannot exceed 256. This limit includes the filters for IP Source Guard and the manually created ACLs.

Default

IP Source Guard (IPSG) for IPv6 addresses is disabled by default.

Command Mode

GigabitEthernet Interface Configuration

ipv6 vrrp (for a port)

Configure Virtual Router Redundancy Protocol (VRRP) to provide fast failover of a default router for IPv6 LAN hosts. VRRP supports a virtual IPv6 address shared between two or more routers that connect the common subnet to the enterprise network. VRRP for IPv6 provides a faster switchover to an alternate default router than is possible using the ND protocol.

Syntax

- **default ipv6 vrrp <1-255>**
- **default ipv6 vrrp <1-255> accept-mode enable**

- **default ipv6 vrrp <1-255> action**
- **default ipv6 vrrp <1-255> adver-int**
- **default ipv6 vrrp <1-255> backup-master enable**
- **default ipv6 vrrp <1-255> critical-ipv6 enable**
- **default ipv6 vrrp <1-255> critical-ipv6-addr**
- **default ipv6 vrrp <1-255> enable**
- **default ipv6 vrrp <1-255> fast-adv enable**
- **default ipv6 vrrp <1-255> fast-adv-int**
- **default ipv6 vrrp <1-255> holddown-timer**
- **default ipv6 vrrp <1-255> preempt-mode**
- **default ipv6 vrrp <1-255> priority**
- **ipv6 vrrp <1-255> accept-mode enable**
- **ipv6 vrrp <1-255> action none**
- **ipv6 vrrp <1-255> action preempt**
- **ipv6 vrrp <1-255> adver-int <1..40>**
- **ipv6 vrrp <1-255> backup-master enable**
- **ipv6 vrrp <1-255> critical-ipv6 enable**
- **ipv6 vrrp <1-255> critical-ipv6-addr WORD<0-46>**
- **ipv6 vrrp <1-255> enable**
- **ipv6 vrrp <1-255> fast-adv enable**
- **ipv6 vrrp <1-255> fast-adv-int <200-1000>**
- **ipv6 vrrp <1-255> holddown-timer <0-21600>**
- **ipv6 vrrp <1-255> preempt-mode enable**
- **ipv6 vrrp <1-255> priority <1-255>**
- **no ipv6 vrrp <1-255>**
- **no ipv6 vrrp <1-255> accept-mode enable**
- **no ipv6 vrrp <1-255> backup-master enable**
- **no ipv6 vrrp <1-255> critical-ipv6 enable**
- **no ipv6 vrrp <1-255> enable**
- **no ipv6 vrrp <1-255> fast-adv enable**
- **no ipv6 vrrp <1-255> preempt-mode enable**

Command Parameters

<1-255>	Specifies a number that uniquely identifies a virtual router on an interface. The virtual router acts as the default router for one or more assigned addresses.
<1-255> preempt-mode enable	Enable IPv6 vrrp preempt mode.
accept-mode enable	Controls whether a master router accepts packets addressed to the IPv6 address of the address owner as its own if it is not the IPv6 address owner. The default accept-mode enable is disabled.
action <none| preempt>	Lists options to override the holddown timer manually and force preemption. None does not override the timer. preempt preempts the timer. This parameter applies only if the holddown timer is active.
adver-int <1-40>	Specifies the time interval, in seconds, between sending advertisement messages. Only the master router sends advertisements. The default is 1.
backup-master enable	Uses the backup Virtual Router Redundancy Protocol (VRRP) switch for traffic forwarding. This option reduces the traffic on the IST link. The default backupmaster enable is disabled.
critical-ip enable	Enables or disables the use of critical IP. When disabled, the Virtual Router Redundancy Protocol (VRRP) ignores the availability of the address configured as critical IP. This address must be a local address.
critical-ip-addr WORD<0-46>	Specifies an IP interface on the local router configured so that a change in its state causes a role switch in the virtual router (for example, from master to backup) in case the interface stops responding. The default critical-ip enable is disabled.
enable	Enables IPv6 Virtual Router Redundancy Protocol (VRRP). The default is disabled.
fast-adv enable	Enables or disables the fast advertisement interval. When disabled, the regular advertisement interval is used. The default fast-adv-int is 200.
fast-adv-int <200-1000>	Configures the interval between Virtual Router Redundancy Protocol (VRRP) advertisement messages. You must configure the same value on all participating routers. This unit of measure must be in multiples of 200 milliseconds.
holddown-timer<0-21600>	Configures the amount of time, in seconds, to wait before preempting the current Virtual Router Redundancy Protocol (VRRP) master. The default holddown timer is 0.
priority <1-255>	Specifies the priority value used by this Virtual Router Redundancy Protocol (VRRP) router. The value 255 is reserved for the router that

owns the IP addresses associated with the virtual router. The default priority is 100.

Default

None

Command Mode

GigabitEthernet Interface Configuration

ipv6 vrrp address (for a port)

Specify a link-local address to associate with the virtual router. Optionally, you can also assign global unicast IPv6 addresses to associate with the virtual router. Network prefixes for the virtual router are derived from the global IPv6 addresses assigned to the virtual router.

Syntax

- **default ipv6 vrrp address <1-255>**
- **ipv6 vrrp address <1-255> global WORD<0-225>**
- **ipv6 vrrp address <1-255> link-local WORD<0-127>**
- **no ipv6 vrrp address <1-255>**
- **no ipv6 vrrp address <1-255> global WORD<0-225>**

Command Parameters

<1-255>	Specifies the virtual router ID. The virtual router acts as the default router for one or more associated addresses.
global WORD<0-255>	Specifies a global IPv6 address to associate with the virtual router.
link-local WORD<0-127>	Specifies a link-local IPv6 address to associate with the virtual router.

Default

None

Command Mode

GigabitEthernet Interface Configuration

i-sid (for a port)

Create Switched UNI (S-UNI) service instance identifiers (I-SID).

Syntax

- `i-sid <1-16777215> elan`

Command Parameters

<1-16777215>	Specifies the I-sid number.
elan	Create an elan based service.

Default

None

Command Mode

GigabitEthernet Interface Configuration

isis (on a port)

Create an Intermediate-System-to-Intermediate-System (IS-IS) circuit and interface on the selected ports.

Syntax

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

Command Parameters

enable	Enables the Intermediate-System-to-Intermediate-System (IS-IS) circuit and interface on the selected ports.

Default

None

Command Mode

GigabitEthernet Interface Configuration

isis hello-auth (on a port)

Specify the authentication type used for Intermediate-System-to-Intermediate-System (IS-IS) hello packets on the interface. The type can be one of the following: none, hmac-md5, or hmac-sha-256.

Syntax

- **default isis hello-auth**
- **isis hello-auth type { none | simple | hmac-md5 | hmac-sha-256 }**
- **isis hello-auth type { none | simple | hmac-md5 | hmac-sha-256 } key WORD<1-16>**
- **isis hello-auth type { none | simple | hmac-md5 | hmac-sha-256 } key WORD<1-16> key-id <1-255>**
- **no isis hello-auth**

Command Parameters

key WORD<1-16>	Specifies the authentication key (password) used by the receiving router to verify the packet.
key-id <1-255>	Specifies the optional key ID.
type { none | simple | hmac-md5 | hmac-sha-256}	Specifies the authentication type used for IS-IS hello packets on the interface. The type can be one of the following: none, simple, hmac-md5, or hmac-sha-256. The default type is none. Use the no or default options to set the hello-auth type to none. • If simple is selected, you can also specify a key value. Simple password authentication uses a text password in the transmitted packet. The receiving router uses an authentication key (password) to verify the packet. • If hmac-md5 is selected, you can also specify a key value and key-id. 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. • If hmac-sha-256 is selected, you can also specify a key value and key-id. With SHA-256 authentication, the switch adds an HMAC-SHA256 digest to each Hello packet. The switch that receives the Hello packet computes the digest of the packet and compares it with the received digest. If the digests match, the packet is accepted. If the digests do not match, the receiving switch discards the packet.

Default

The default is no authentication type (none).

Command Mode

GigabitEthernet Interface Configuration

isis l1-dr-priority (on a port)

Configure the Level 1 Intermediate-System-to-Intermediate-System (IS-IS) designated router priority to the specified value.

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 Intermediate-System-to-Intermediate-System (IS-IS) designated router priority to the specified value.

Default

The default Level 1 designated router priority value is 64.

Command Mode

GigabitEthernet Interface Configuration

isis l1-hello-interval (on a port)

Configure the hello interval to change how often hello packets are sent out from an interface level.

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

The default Level 1 hello interval value is 9 seconds.

Command Mode

GigabitEthernet Interface Configuration

isis l1-hello-multiplier (on a port)

Configure the hello multiplier to specify how many hellos the switch must miss before it considers the adjacency with a neighboring switch down.

Syntax

- **default isis l1-hello-multiplier**

- **isis l1-hello-multiplier <1-600>**
- **no isis l1-hello-multiplier**

Command Parameters

<1-600>	Configures the Level 1 hello multiplier.

Default

The default Level 1 hello-multiplier value is 3 seconds.

Command Mode

GigabitEthernet Interface Configuration

isis spbm (on a port)

Enable the Shortest Path Bridging MAC (SPBM) instance on the Intermediate-System-to-Intermediate-System (IS-IS) interfaces.

Syntax

- **default isis spbm <1-100> interface-type**
- **default isis spbm <1-100> l1-metric**
- **isis spbm <1-100>**
- **isis spbm <1-100> interface-type { broadcast | pt-pt }**
- **isis spbm <1-100> l1-metric <1-16777215>**
- **no isis spbm <1-100>**
- **no isis spbm <1-100> interface-type**
- **no isis spbm <1-100> l1-metric**

Command Parameters

<1-100>	Specifies the Shortest Path Bridging MAC (SPBM) instance ID.
interface-type { broadcast | pt-pt }	Configures the Shortest Path Bridging MAC (SPBM) instance interface type.
l1-metric <1-16777215>	Configures the cost for the Shortest Path Bridging MAC (SPBM) instance.

Default

None

Command Mode

GigabitEthernet Interface Configuration

lacp aggregation enable

Configures the port as aggregatable. Use the no operator to remove this configuration.

Syntax

- **default lacp aggregation enable**
- **lacp aggregation enable**
- **no lacp aggregation enable**

Default

The default is disabled.

Command Mode

GigabitEthernet Interface Configuration

lacp aggr-wait-time

Configure the aggregation wait time (in milliseconds) for the port.

Syntax

- **lacp aggr-wait-time <200-2000>**

Command Parameters

<200-2000>	Specifies the Aggregation time in milliseconds. The default is 2000.

Default

The default value is 2000.

Command Mode

GigabitEthernet Interface Configuration

lacp enable (for a port)

Enable LACP for the port.

Syntax

- **default lacp**
- **default lacp enable**
- **lacp enable**
- **no lacp**

- **no lacp enable**

Default

The default is disabled.

Command Mode

GigabitEthernet Interface Configuration

lacp fast-periodic-time

Configure the fast-periodic time (in milliseconds) for the port.

Syntax

- **default lacp fast-periodic-time**
- **lacp fast-periodic-time <200-20000>**

Command Parameters

<200-20000>	Specifies the Fast periodic time value in milliseconds. The default is 20000 ms.

Default

The default is 20000 ms.

Command Mode

GigabitEthernet Interface Configuration

lacp key

Configure the aggregation key for the port.

Syntax

- **default lacp key**
- **lacp key <1-512,defVal>**

Command Parameters

<1-512,defVal>	Specifies the aggregation key for this port.

Default

The default is 0.

Command Mode

GigabitEthernet Interface Configuration

lacp mode

Configure the Link Aggregation Control Protocol (LACP) mode to be active or passive.

Syntax

- **default lacp mode**
- **lacp mode active**
- **lacp mode passive**

Command Parameters

active	Specifies the Link Aggregation Control Protocol (LACP) mode to be active.
passive	Specifies the Link Aggregation Control Protocol (LACP) mode to be passive.

Default

The default is passive.

Command Mode

GigabitEthernet Interface Configuration

lacp partner-key

Configure the partner administrative key.

Syntax

- **default lacp partner-key**
- **lacp partner-key <0-65535>**

Command Parameters

<0-65535>	Specifies the partner administrative key.

Default

The default is 0.

Command Mode

GigabitEthernet Interface Configuration

lacp partner-port

Configure the partner administrative port value.

Syntax

- **default lacp partner-port**
- **lacp partner-port <0-65535>**

Command Parameters

<0-65535>	Specifies the partner administrative port value.

Default

None

Command Mode

GigabitEthernet Interface Configuration

lacp partner-port-priority

Configure the partner administrative port priority value.

Syntax

- **default lacp partner-port-priority**
- **lacp partner-port-priority <0-65535>**

Command Parameters

<0-65535>	Specifies the partner administrative port priority value.

Default

The default is 0.

Command Mode

GigabitEthernet Interface Configuration

lacp partner-state

Configure the partner administrative state bitmask. Specify the partner administrative state bitmap in the range 0x0-0xff. The bit to state mapping is Exp, Def, Dis, Col, Syn, Agg, Time, and Act.

For example, to set the two partner-state parameters Act = true Agg = true specify a value of 0x05 (bitmap = 00000101).

Syntax

- **default lacp partner-state**

- **lacp partner-state <0-255 | 0x0-0xff>**

Command Parameters

<0-255 | 0x0-0xff>	Specifies the partner administrative state bitmask.

Default

None

Command Mode

GigabitEthernet Interface Configuration

lacp partner-system-id

Configure the partner administrative system ID.

Syntax

- **default lacp partner-system-id**
- **lacp partner-system-id <0x00:0x00:0x00:0x00:0x00:0x00>**

Command Parameters

<0x00:0x00:0x00:0x00:0x00:0x00>	Specifies the partner adminstration system ID.

Default

None

Command Mode

GigabitEthernet Interface Configuration

lacp partner-system-priority

Configure the partner administrative system priority value.

Syntax

- **default lacp partner-system-priority**
- **lacp partner-system-priority <0-65535>**

Command Parameters

<0-65535>	Specifies the partner administrative system priority value.

Default

The default value is 32768.

Command Mode

GigabitEthernet Interface Configuration

lacp priority

Configure the port priority.

Syntax

- **default lacp priority**
- **lacp priority <0-65535>**

Command Parameters

<0-65535>	Specifies the port priority.

Default

The default value is 32768.

Command Mode

GigabitEthernet Interface Configuration

lacp slow-periodic-time

Configure the slow periodic time.

Syntax

- **default lacp slow-periodic-time**
- **lacp slow-periodic-time <10000-30000>**

Command Parameters

<10000-30000>	Specifies the slow periodic time for this port.

Default

The default value is 1000 ms.

Command Mode

GigabitEthernet Interface Configuration

lacp system-priority

Configure the LACP system priority.

Syntax

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

Command Parameters

<0-65535>	Specifies the system priority for this port.

Default

The default value is 32768.

Command Mode

GigabitEthernet Interface Configuration

lacp timeout-scale

Configure the timeout scale.

Syntax

- **default lacp timeout-scale**
- **lacp timeout-scale <2-10>**

Command Parameters

<2-10>	Specifies the timeout scale for this port.

Default

The default is 3.

Command Mode

GigabitEthernet Interface Configuration

lacp timeout-time

Configure the timeout to either long or short.

Syntax

- **default lacp timeout-time**

- **lacp timeout-time long**
- **lacp timeout-time short**

Command Parameters

{long | short}	Specifies the timeout.

Default

The default is long.

Command Mode

GigabitEthernet Interface Configuration

lldp location-identification civic-address

Configures civic address location information of local Link Layer Discovery Protocol-Media Endpoint Discovery (LLDP-MED) on specific ports.

Note:

If you try to configure a civic-address with a large number of arguments, 26 or more, the command fails and a software message informs you to split the command into multiple smaller commands.

Syntax

- **default lldp location-identification civic-address**
- **lldp location-identification civic-address country-code WORD<2-2> (additional-code additional-information apartment block building city city-district county floor house-number house-number-suffix landmark leading-street-direction name place-type pobox postal community-name postal-zip-code room-number state street street suffix trailing-street-suffix) WORD<0-255>**
- **no lldp location-identification civic-address**

Command Parameters

additional-code WORD<0-255>	Specifies the location information parameters.
additional-information WORD<0-255>	Example: South Wing
apartment WORD<0-255>	Example: Apt 42
block WORD<0-255>	Specifies a block, for example, 3
building WORD<0-255>	Example: Low Library.

city WORD<0-255>	Specifies a city, for example, Sunnyvale
city-district WORD<0-255>	Specifies a city district, for example, Santa Clara
country-code WORD<2–2>	Specifies a country using a 2 character string, example US (United States), CA (Canada).
county WORD<0-255>	Specifies a county, for example, Alameda
floor WORD<0-255>	Example: 8
house-number WORD<0-255>	Specifies a house number, for example, 123.
house-number-suffix WORD<0-255>	Specifies a house number suffix, for example, A, 1/2.
landmark WORD<0-255>	Specifies a landmark, for example, Columbia University.
leading-street-direction WORD<0-255>	Specifies a leading street direction, for example, N
name WORD<0-255>	Example: Joe’s Barbershop
place-type WORD<0-255>	Example: office
pobox WORD<0-255>	Example: 12345
postal-community-name WORD<0-255>	Example: Leonia
postal-zip-code WORD<0-255>	Specifies a postal or zip code, for example, 95054
room-number WORD<0-255>	Example: 450F
state WORD<0-255>	Specifies a state, for example, NJ, FL
street WORD<0-255>	Specifies a street, for example, Great America Parkway
street-suffix WORD<0-255>	Specifies a street suffix, for example, Ave, Blvd
trailing-street-suffix WORD<0-255>	Specifies a trailing street suffix, for example, SW

Default

None

Command Mode

GigabitEthernet Interface Configuration

lldp location-identification coordinate

Configures coordinate based location information of local LLDP-MED on specific ports.

Syntax

- `default lldp location-identification coordinate`
- `lldp location-identification coordinate (altitude WORD<1-13> {floors | meters} datum {NAD83/MLLW | NAD83/NAVD88 | WGS84} latitude WORD<1-14> {NORTH | SOUTH} longitude WORD<1-14> {EAST | WEST})`
- `no lldp location-identification coordinate`

Command Parameters

{floors | meters}	Specifies the value.
altitude WORD<1–13>	Specifies the value for altitude.
datum {NAD83/MLLW | NAD83/ NAVD88 | WGS84}	Specifies the type of reference datum.
latitude WORD<1-14>	Specifies the latitude in degrees, and its relation to the equator from North or South.
longitude WORD<1-14>	Specifies the longitude in degrees, and its relation to the prime meridian from East or West.

Default

None

Command Mode

GigabitEthernet Interface Configuration

lldp location-identification ecs-elin

Configure emergency call service location of local LLDP-MED on specific ports.

Syntax

- `default lldp location-identification ecs-elin`
- `lldp location-identification ecs-elin WORD<10-25>`
- `no lldp location-identification ecs-elin`

Command Parameters

WORD<10–25>	Specifies the emergency line information number for emergency call service.

Default

None

Command Mode

GigabitEthernet Interface Configuration

lldp med-network-policies

Configures LLDP-MED network policies on specific ports.

Syntax

- **default lldp med-network-policies {guest-voice | guest-voice-signaling | softphone-voice | streaming-video | video-conferencing | video-signaling | voice | voice-signaling}**
- **lldp med-network-policies {guest-voice | guest-voice-signaling | softphone-voice | streaming-video | video-conferencing | video-signaling | voice | voice-signaling} [dscp <0-63>] [priority <0-7>] [tagging {tagged|untagged}] [vlan-id <0-4059>]**
- **no lldp med-network-policies {guest-voice | guest-voice-signaling | softphone-voice | streaming-video | video-conferencing | video-signaling | voice | voice-signaling}**

Command Parameters

{guest-voice | guest-voice-signaling | softphone-voice | streaming-video | videoconferencing | video-signaling | voice | voice-signaling}	Specifies the type of LLDP-MED network policy.
dscp <0-63>	Specifies the Layer 3 DiffServ Code Point (DSCP) value, as defined in IETF RFC 2474 and RFC 2475.
priority <0-7>	Specifies the priority level, as defined in IEEE 802.1D.
tagging {tagged | untagged}	Specifies the type of VLAN tagging to apply on the selected ports.
vlan-id <*0-4059*>	Specifies the VLAN ID for the port, as defined in IEEE 802.1Q. If you configure priority tagged frames, the system recognizes only the 802.1D priority level and uses a value of 0 for the VLAN ID of the ingress port.

Default

None

Command Mode

GigabitEthernet Interface Configuration

lock

Lock a port to prevent other users from changing port parameters or modifying port action.

Syntax

- **default lock**
- **default lock enable**
- **default lock port {slot/port[/sub-port][-slot/port[/sub-port]][,...]}**
- **lock**
- **lock enable**
- **no lock**
- **no lock enable**

Command Parameters

port *{slot/port[/sub-port] [-slot/port[/sub-port]] [,...]}*	Identifies the slot and port in one of the following formats: a single slot and port (slot/port), a range of slots and ports (slot/port-slot/port), or a series of slots and ports (slot/port,slot/port,slot/port). If your platform supports channelization and the port is channelized, you must also specify the sub-port in the format slot/port/sub-port.

Default

None

Command Mode

GigabitEthernet Interface Configuration

macsec cipher-suite

Configures the MACsec cipher suite on a switch port for enhanced traffic security. MACsec supports two cipher suites, the GCM-AES-128 with a maximum key length of 128 bits and the GCM-AES-256 with a maximum key length of 256 bits.

Configuring a MACsec cipher suite is optional and is not supported on all hardware platforms.

Syntax

- **default macsec cipher-suite**

- **macsec cipher-suite gcm-aes-128**
- **macsec cipher-suite gcm-aes-256**
- **no macsec cipher-suite**

Command Parameters

{gcm-aes-128 | gcm-aes-256}	Specifies the MACsec encryption cipher suite.

Default

The default is the 128-bit cipher suite.

Command Mode

GigabitEthernet Interface Configuration

macsec confidentiality-offset

Encrypts the data following the Ethernet header based on the provided offset.

Syntax

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

Command Parameters

<30-50>	Enter the value of confidentiality offset to be achieved. Only 30 and 50 are valid values.

Default

None

Command Mode

GigabitEthernet Interface Configuration

macsec connectivity-association (to a port)

Associate a port with a connectivity-association (CA).

Syntax

- **macsec connectivity-association WORD<5-15>**
- **no macsec connectivity-association WORD<5-15>**

Command Parameters

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

Default

None

Command Mode

GigabitEthernet Interface Configuration

macsec enable

Enable MACsec on the specified port.

Syntax

- **`macsec enable`**
- **`no macsec enable`**

Default

None

Command Mode

GigabitEthernet Interface Configuration

macsec encryption

Enable encryption for the frames transmitted on MACsec enabled port.

Syntax

- **`macsec encryption`**
- **`no macsec encryption`**

Command Parameters

encryption	Enables encryption for the frames transmitted on MACsec enabled port.

Default

None

Command Mode

GigabitEthernet Interface Configuration

mac-security limit-learning

Limit MAC address learning to limit the number of forwarding database entries to protect the FDB.

Syntax

- **default mac-security limit-learning enable**
- **default mac-security limit-learning port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} enable**
- **default mac-security port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} limit-learning enable**
- **default mac-security port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} limit-learning port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} enable**
- **default mac-security port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} limit-learning port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} max-addrs**
- **mac-security limit-learning enable**
- **mac-security limit-learning max-addrs <1-32000>**
- **mac-security port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} limit-learning enable**
- **mac-security port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} limit-learning max-addrs <1-32000>**
- **no mac-security limit-learning**
- **no mac-security limit-learning enable**
- **no mac-security port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} limit-learning**
- **no mac-security port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} limit-learning enable**

Command Parameters

enable	Limits the MAC learning for the port.
limit-learning max-addrs <1-32000>	Specifies the maximum number of MAC addresses to learn.
port *{slot/port[/sub-port] [-slot/port[/sub-port]] [,...]}*	Identifies the slot and port in one of the following formats: a single slot and port (slot/port), a range of slots and ports (slot/port-slot/port), or a series of slots and ports (slot/port,slot/port,slot/port). If your platform supports channelization and the port is channelized, you must also specify the sub-port in the format slot/port/sub-port.

Default

None

Command Mode

GigabitEthernet Interface Configuration

mef-uni enable (for a port)

Enable mef-union port (s).

Syntax

- **default mef-uni enable**
- **mef-uni enable**
- **no mef-uni enable**

Default

The default is enabled

Command Mode

GigabitEthernet Interface Configuration

name (for a port)

Specify the name of the port that needs to be changed and have same settings for all the ports.

Syntax

- **default name**
- **default name port {slot/port[/sub-port][-slot/port[/sub-port]][,...]}**
- **name port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} WORD<0-42>**
- **name WORD<0-42>**
- **no name**
- **no name port {slot/port[/sub-port][-slot/port[/sub-port]][,...]}**

Command Parameters

port *{slot/port[/sub-port] [-slot/port[/sub-port]] [,...]}*	Identifies the slot and port in one of the following formats: a single slot and port (slot/port), a range of slots and ports (slot/port-slot/port), or a series of slots and ports (slot/port,slot/port,slot/port). If your platform supports channelization and the port is channelized, you must also specify the sub-port in the format slot/port/sub-port.
WORD <0-42>	Specifies the new port name.

Default

None

Command Mode

GigabitEthernet Interface Configuration

poe poe-limit

Configure port power limit.

Syntax

- **default poe-limit**
- **poe poe-limit <3-32>**
- **poe poe-limit port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} <3-32>**

Command Parameters

{slot/port[/sub-port] [-slot/port[/sub-port]] [,...]}	Identifies the slot and port in one of the following formats: a single slot and port (slot/port), a range of slots and ports (slot/port-slot/port), or a series of slots and ports (slot/port,slot/port,slot/port). If your platform supports channelization and the port is channelized, you must also specify the sub-port in the format slot/port/sub-port.
<3-32>	Specifies the power limit in watts.

Default

The default is 32 watts.

Command Mode

GigabitEthernet Interface Configuration

poe poe-priority

Configure PoE port priority.

Syntax

- **default poe poe-priority**
- **default poe poe-priority {slot/port[/sub-port][-slot/port[/sub-port]][,...]} {critical|high|low}**
- **poe poe-priority <critical|high|low>**

- **poe poe-priority port {slot/port[/sub-port][-slot/port[/sub-port]] [,...]} {critical|high|low}**

Command Parameters

{critical|high|low}	Configures the port priority.
port *{slot/port[/sub-port] [-slot/port[/sub-port]] [,...]}*	Identifies the slot and port in one of the following formats: a single slot and port (slot/port), a range of slots and ports (slot/port-slot/port), or a series of slots and ports (slot/port,slot/port,slot/port). If your platform supports channelization and the port is channelized, you must also specify the sub-port in the format slot/port/sub-port.

Default

The default is low.

Command Mode

GigabitEthernet Interface Configuration

poe poe-shutdown

Disable power on the port.

Syntax

- **default poe poe-shutdown**
- **default poe poe-shutdown port {slot/port[/sub-port][-slot/port[/sub-port]][,...]}**
- **poe poe-shutdown**
- **poe poe-shutdown port {slot/port[/sub-port][-slot/port[/sub-port]] [,...]}**

Command Parameters

port *{slot/port[/sub-port] [-slot/port[/sub-port]] [,...]}*	Identifies the slot and port in one of the following formats: a single slot and port (slot/port), a range of slots and ports (slot/port-slot/port), or a series of slots and ports (slot/port,slot/port,slot/port). If your platform supports channelization and the port is channelized, you must also specify the sub-port in the format slot/port/sub-port.

Default

The default is false.

Command Mode

GigabitEthernet Interface Configuration

policy-vlan-precedence

Use this command to indicate whether source MAC or IP subnet VLAN classification takes precedence.

Syntax

- **default policy-vlan-precedence**
- **default policy-vlan-precedence port {slot/port[/sub-port][-slot/port[/sub-port]][,...]}**
- **policy-vlan-precedence port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} source-mac**
- **policy-vlan-precedence port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} subnet**
- **policy-vlan-precedence source-mac**
- **policy-vlan-precedence subnet**

Command Parameters

{source-mac| subnet}	Indicates that the source MAC-based or subnet-based VLAN classification takes precedence.
port *{slot/port[/sub-port] [-slot/port[/sub-port]] [,...]}*	Identifies the slot and port in one of the following formats: a single slot and port (slot/port), a range of slots and ports (slot/port-slot/port), or a series of slots and ports (slot/port,slot/port,slot/port). If your platform supports channelization and the port is channelized, you must also specify the sub-port in the format slot/port/sub-port.

Default

None

Command Mode

GigabitEthernet Interface Configuration

private-vlan

Sets the Private VLAN port type.

Syntax

- **default private-vlan**
- **no private-vlan**
- **private-vlan <isolated|promiscuous|trunk>**

Command Parameters

<isolated|promiscuous|trunk>	Sets Private VLAN port type to isolated, promiscuous, or trunk.

Default

None

Command Mode

GigabitEthernet Interface Configuration

protocol-vlan

Enable protocol-based VLAN on the port.

Syntax

- **default protocol-vlan**
- **default protocol-vlan enable**
- **default protocol-vlan port {slot/port[/sub-port][-slot/port[/sub-port]][,...]}**
- **no protocol-vlan**
- **no protocol-vlan enable**
- **no protocol-vlan port {slot/port[/sub-port][-slot/port[/sub-port]][,...]}**
- **protocol-vlan**
- **protocol-vlan enable**
- **protocol-vlan port {slot/port[/sub-port][-slot/port[/sub-port]][,...]}**

Command Parameters

enable	Enables or disables protocol-based VLAN for the port.
port *{slot/port[/sub-port] [-slot/port[/sub-port]] [,...]}*	Identifies the slot and port in one of the following formats: a single slot and port (slot/port), a range of slots and ports (slot/port-slot/port), or a series of slots and ports (slot/port,slot/port,slot/port). If your platform supports channelization and the port is channelized, you must also specify the sub-port in the format slot/port/sub-port.

Default

The default is enabled.

Command Mode

GigabitEthernet Interface Configuration

qos 802.1p-override

Configure a port as untrusted to determine the Layer 2 Quality of Service (QoS) actions the switch performs. An untrusted port (override enabled) overrides 802.1p bit markings.

Syntax

- **default qos 802.1p-override**
- **default qos 802.1p-override enable**
- **no qos 802.1p-override**
- **no qos 802.1p-override enable**
- **qos 802.1p-override**
- **qos 802.1p-override enable**

Command Parameters

enable	If you configure this variable, it overrides incoming 802.1p bits; if you do not configure this variable, it honors and handles incoming 802.1p bits. The default is disable (Layer 2 trusted).

Default

The default is disabled.

Command Mode

GigabitEthernet Interface Configuration

qos if-policer

Configures ingress police or ingress rate-limit on ports.

Note:

Not all platforms support this command. For more information, see Release Notes for XA1400 Series.

Syntax

- **default qos if-policer**
- **default qos if-policer port {slot/port[/sub-port][-slot/port[/sub-port]][,...]}**
- **no qos if-policer**
- **no qos if-policer port {slot/port[/sub-port][-slot/port[/sub-port]][,...]}**
- **qos if-policer peak-rate <64-10000000> svc-rate <64-10000000>**

- **qos if-policer port {slot/port[/sub-port][-slot/port[/sub-port]] [,...]} peak-rate <64-10000000> svc-rate <64-10000000>**

Command Parameters

peak-rate <64-10000000>	Specifies the peak rate limit in Kbps. The range is 64-10000000.
port *{slot/port[/sub-port] [-slot/port[/sub-port]] [,...]}*	Identifies the slot and port in one of the following formats: a single slot and port (slot/port), a range of slots and ports (slot/port-slot/port), or a series of slots and ports (slot/port,slot/port,slot/port). If your platform supports channelization and the port is channelized, you must also specify the sub-port in the format slot/port/sub-port.
svc-rate <64-10000000>	Specifies the service rate limit in Kbps. The range is 64-10000000.

Default

None

Command Mode

GigabitEthernet Interface Configuration

qos if-rate-limiting

Configures ingress port rate limiting in kbps.

Note:

Not all platforms support the this command. For more information, see Release Notes for XA1400 Series.

Syntax

- **default qos if-rate-limiting [port {slot/port[/sub-port][-slot/port[/sub-port]][,...]}]**
- **no qos if-rate-limiting [port {slot/port[/sub-port][-slot/port[/sub-port]][,...]}]**
- **qos if-rate-limiting [port {slot/port[/sub-port][-slot/port[/sub-port]][,...]}] rate <1000-40000000>**

Command Parameters

port *{slot/port[/sub-port] [-slot/port[/sub-port]] [,...]}*	Identifies the slot and port in one of the following formats: a single slot and port (slot/port), a range of slots and ports (slot/port-slot/port), or a series of slots and ports (slot/port,slot/port,slot/port). If your platform supports channelization and the port is channelized, you must also specify the sub-port in the format slot/port/sub-port.

rate <1000-40000000>	Specifies the ingress rate limit in Kbps. The range is 1000–40000000.

Default

None

Command Mode

GigabitEthernet Interface Configuration

qos if-shaper

Configure port-based shaping to rate-limit all outgoing traffic to a specific rate.

Syntax

- **default qos if-shaper**
- **default qos if-shaper port {slot/port[/sub-port][-slot/port[/sub-port]][,...]}**
- **no qos if-shaper**
- **no qos if-shaper port {slot/port[/sub-port][-slot/port[/sub-port]][,...]}**
- **qos if-shaper port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} shape-rate <shape-rate>**
- **qos if-shaper shape-rate <shape-rate>**

Command Parameters

port *{slot/port[/sub-port] [-slot/port[/sub-port]] [,...]}*	Identifies the slot and port in one of the following formats: a single slot and port (slot/port), a range of slots and ports (slot/port-slot/port), or a series of slots and ports (slot/port,slot/port,slot/port). If your platform supports channelization and the port is channelized, you must also specify the sub-port in the format slot/port/sub-port.
shape-rate *<shape-rate>*	Configures the shaping rate in Kb/s. The upper limit of this range is determined on a per-platform basis, depending on the port with the highest speed available on the platform. If you try to configure a limit that is too high for the port speed, the switch displays the following message: `Error: port slot/port, The QOS Egress shaper rate can not exceed the port capability`. The default is 0, which means shaping is disabled on the port.

Default

The default is disabled.

Command Mode

GigabitEthernet Interface Configuration

qos level

Configure the default port QoS level to assign a default QoS level for all traffic (providing the packet does not match an ACL that remarks the packet).

Syntax

- **default qos level**
- **default qos level port {slot/port[/sub-port]}**
- **qos level <0-6>**
- **qos level port {slot/port[/sub-port]} <0-6>**

Command Parameters

<0-6>	Specifies the default Quality of Service (QoS) level for the port traffic. QoS level 7 is reserved for network control traffic.
port *{slot/port[/sub-port]}*	Identifies a single slot and port. If your platform supports channelization and the port is channelized, you must also specify the sub-port in the format slot/port/sub-port.

Default

The default value is 1.

Command Mode

GigabitEthernet Interface Configuration

rate-limit

Configure broadcast and multicast bandwidth limiting to limit the amount of ingress broadcast and multicast traffic on a port. The switch drops traffic that violates the bandwidth limit.

Syntax

- **default rate-limit broadcast**
- **default rate-limit multicast**
- **default rate-limit port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} broadcast**
- **default rate-limit port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} multicast**
- **no rate-limit broadcast**
- **no rate-limit multicast**
- **no rate-limit port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} broadcast**

- **no rate-limit port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} multicast**
- **rate-limit broadcast {<1-65535> | <50-65000000>}**
- **rate-limit broadcast <1-65535>**
- **rate-limit multicast {<1-65535> | <50-65000000>}**
- **rate-limit multicast <1-65535>**
- **rate-limit port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} broadcast {<1-65535> | <50-65000000>}**
- **rate-limit port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} multicast {<1-65535> | <50-65000000>}**

Command Parameters

<1-65535>	Specifies the bandwidth limit for broadcast and multicast traffic from 1-65535 packets per second.
broadcast {<1-65535> | <50-65000000>}	Rate limit for broadcast. Range depends on hardware platform.
multicast {<1-65535> | <50-65000000>}	Rate limit for multicast. Range depends on hardware platform.
port *{slot/port[/sub-port] [-slot/port[/sub-port]] [,...]}*	Identifies the slot and port in one of the following formats: a single slot and port (slot/port), a range of slots and ports (slot/port-slot/port), or a series of slots and ports (slot/port,slot/port,slot/port). If your platform supports channelization and the port is channelized, you must also specify the sub-port in the format slot/port/sub-port.

Default

The default is disabled (no rate limit).

Command Mode

GigabitEthernet Interface Configuration

rmon (for a port)

Configure Remote Network Monitoring (RMON) on a particular port.

Syntax

- **default rmon**
- **no rmon**
- **rmon**

Default

The default is disabled.

Command Mode

GigabitEthernet Interface Configuration

sflow counter-interval

Configure the counter sampling interval values at port level to determine how often the sFlow agent polls and exports counters for a configured interface.

Syntax

- **default sflow counter-interval**
- **no sflow counter-interval**
- **sflow counter-interval <1-3600>**

Command Parameters

<1-3600>	Specifies the polling interval for a slot.

Default

The default is 0 (disabled).

Command Mode

GigabitEthernet Interface Configuration

sflow max-header-size

Specifies the maximum number of bytes to be copied from the sampled packet.

Syntax

- **default sflow max-header-size**
- **sflow max-header-size <64-256>**

Command Parameters

<64-256>	Identifies the maximum number of bytes to be copied from the sampled packet.

Default

The default is 128.

Command Mode

GigabitEthernet Interface Configuration

sflow sampling-rate

Configures the packet sampling rate on a port.

Syntax

- **default sflow sampling-rate**
- **no sflow sampling-rate**
- **sflow sampling-rate <1024-1000000>**

Command Parameters

<1024-1000000>	Configures the packet sampling rate on a port.

Default

The default is 0, which means sFlow is disabled on the port.

Command Mode

GigabitEthernet Interface Configuration

shutdown

Disable an Ethernet module before you remove it from the chassis to minimize traffic loss. Traffic does not flow on a disabled module.

Syntax

- **default shutdown**
- **default shutdown port {slot/port[/sub-port][-slot/port[/sub-port]][,...]}**
- **no shutdown**
- **no shutdown port {slot/port[/sub-port][-slot/port[/sub-port]][,...]}**
- **shutdown**
- **shutdown port {slot/port[/sub-port][-slot/port[/sub-port]][,...]}**

Command Parameters

port <*{slot/port[/sub-port] [-slot/port[/sub-port]] [,...]}*>	Identifies the slot and port in one of the following formats: a single slot and port (slot/port), a range of slots and ports (slot/port-slot/port), or a series of slots and ports (slot/port,slot/port,slot/port). If your platform supports channelization and the port is channelized, you must also specify the sub-port in the format slot/port/sub-port.

Default

None

Command Mode

GigabitEthernet Interface Configuration

slpp (for a port)

Enable Simple Loop Prevention Protocol (SLPP) by port to detect a loop and automatically stop it.

Syntax

- **default slpp**
- **default slpp packet-rx**
- **default slpp packet-rx-threshold**
- **default slpp port {slot/port[/sub-port][-slot/port[/sub-port]][,...]}**
- **default slpp port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} packet-rx**
- **default slpp port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} packet-rx-threshold**
- **no slpp**
- **no slpp packet-rx**
- **no slpp port {slot/port[/sub-port][-slot/port[/sub-port]][,...]}**
- **no slpp port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} packet-rx**
- **slpp packet-rx**
- **slpp packet-rx-threshold <1-500>**
- **slpp port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} packet-rx**
- **slpp port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} packet-rx-threshold <1-500>**

Command Parameters

{slot/port[/sub-port] [-slot/port[/sub-port]] [,...]}	Identifies the slot and port in one of the following formats: a single slot and port (slot/port), a range of slots and ports (slot/port-slot/port), or a series of slots and ports (slot/port,slot/port,slot/port). If your platform supports channelization and the port is channelized, you must also specify the sub-port in the format slot/port/sub-port.
packet-rx	Enables or disables SLPP packet reception on the port. The default is disabled.

packet-rx-threshold <1-500>	Specifies the SLPP reception threshold on the ports, expressed as an integer. The packet reception threshold specifies the number of SLPP packets the port receives before it is administratively disabled. **Caution:** Configure the rx-threshold above 50 ms only on lightly loaded switches. If you configure the rx-threshold to a value greater than 50 ms on a heavily loaded switch and a loop occurs, the system can experience high CPU utilization. The default is 1.

Default

None

Command Mode

GigabitEthernet Interface Configuration

slpp-guard (for a port)

Configures SLPP guard for switch ports.

Syntax

- **default slpp-guard**
- **default slpp-guard port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} enable**
- **default slpp-guard port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} timeout**
- **default slpp-guard timeout**
- **no slpp-guard**
- **no slpp-guard enable**
- **no slpp-guard port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} enable**
- **no slpp-guard port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} timeout**
- **no slpp-guard timeout**
- **slpp-guard enable**
- **slpp-guard port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} enable**
- **slpp-guard port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} timeout**
- **slpp-guard timeout <0 | 10-65535>**

Command Parameters

{slot/port[/sub-port] [-slot/port[/sub-port]] [,...]}	Identifies the slot and port in one of the following formats: a single slot and port (slot/port), a range of slots and ports (slot/port-slot/port), or a series of slots and ports (slot/port,slot/port,slot/port). If your platform supports channelization and the port is channelized, you must also specify the sub-port in the format slot/port/sub-port.
enable	Enables SLPP Guard on a port. The default is disabled.
timeout <0 | 10–65535>	Specifies the time period, in seconds, for which {Conref}SLPP Guard disables the port. After the timeout period expires, the switch reenables 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

The default is disabled.

Command Mode

GigabitEthernet Interface Configuration

snmp trap link-status

Enable link trap on the port.

Syntax

- **default snmp trap link-status**
- **default snmp trap link-status port {slot/port[/sub-port][-slot/port[/sub-port]][,...]}**
- **no snmp trap link-status**
- **no snmp trap link-status port {slot/port[/sub-port][-slot/port[/sub-port]][,...]}**
- **snmp trap link-status**
- **snmp trap link-status enable**
- **snmp trap link-status port {slot/port[/sub-port][-slot/port[/sub-port]][,...]}**
- **snmp trap link-status port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} enable**

Command Parameters

enable	Enables or disables link-trap status for the port.

port *{slot/port[/sub-port] [-slot/port[/sub-port]] [,...]}*	Identifies the slot and port in one of the following formats: a single slot and port (slot/port), a range of slots and ports (slot/port-slot/port), or a series of slots and ports (slot/port,slot/port,slot/port). If your platform supports channelization and the port is channelized, you must also specify the sub-port in the format slot/port/sub-port.

Default

The default is enabled.

Command Mode

GigabitEthernet Interface Configuration

source-mac-vlan

Enable source MAC-based VLAN on the port.

Syntax

- **default source-mac-vlan**
- **default source-mac-vlan enable**
- **default source-mac-vlan port {slot/port[/sub-port][-slot/port[/sub-port]][,...]}**
- **no source-mac-vlan**
- **no source-mac-vlan enable**
- **no source-mac-vlan port {slot/port[/sub-port][-slot/port[/sub-port]][,...]}**
- **source-mac-vlan**
- **source-mac-vlan enable**
- **source-mac-vlan port {slot/port[/sub-port][-slot/port[/sub-port]][,...]}**

Command Parameters

enable	Enables or disables source MAC-based VLAN for the port.
port *{slot/port[/sub-port] [-slot/port[/sub-port]] [,...]}*	Identifies the slot and port in one of the following formats: a single slot and port (slot/port), a range of slots and ports (slot/port-slot/port), or a series of slots and ports (slot/port,slot/port,slot/port). If your platform supports channelization and the port is channelized, you must also specify the sub-port in the format slot/port/sub-port.

Default

The default is enabled.

Command Mode

GigabitEthernet Interface Configuration

spanning-tree bpduguard

Configures spanning-tree BPDU Guard configuration.

Syntax

- **spanning-tree bpduguard enable**
- **spanning-tree bpduguard port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} enable**
- **spanning-tree bpduguard port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} timeout <0–65535>**
- **spanning-tree bpduguard timeout <0-65535>**

Command Parameters

enable	Enables BPDU Guard on the port. The default is disabled.
port *{slot/port[/sub-port] [-slot/port[/sub-port]] [,...]}*	Identifies the slot and port in one of the following formats: a single slot and port (slot/port), a range of slots and ports (slot/port-slot/port), or a series of slots and ports (slot/port,slot/port,slot/port). If your platform supports channelization and the port is channelized, you must also specify the sub-port in the format slot/port/sub-port.
timeout <0-65535>	Specifies the value to use for port-state recovery. After a BPDU guard disables a port, the port remains in the disabled state until this timer expires. You can configure a value from 10 to 65535. The default is 120 seconds.

Default

The default is disabled.

Command Mode

GigabitEthernet Interface Configuration

spanning-tree mstp cost

Configure the contribution of this port to the path cost value for the link.

Syntax

- **default spanning-tree mstp cost**
- **spanning-tree mstp cost <1-200000000>**

Command Parameters

<1-200000000>	Specifies the cost value. The default is 2000000.

Default

The default is 2000000.

Command Mode

GigabitEthernet Interface Configuration

spanning-tree mstp edge-port

Configure the port as an edge port.

Syntax

- **default spanning-tree mstp edge-port**
- **spanning-tree mstp edge-port { false | true }**

Command Parameters

<false|true>	Enables or disables the port as an edge port.

Default

The default is disabled (false).

Command Mode

GigabitEthernet Interface Configuration

spanning-tree mstp force-port-state

Enable the force-port-state flag.

Syntax

- **default spanning-tree mstp force-port-state**
- **no spanning-tree mstp force-port-state**
- **no spanning-tree mstp force-port-state enable**
- **spanning-tree mstp force-port-state enable**

Default

The default is enabled.

Command Mode

GigabitEthernet Interface Configuration

spanning-tree mstp hello-time (on a port)

Configure the hello-time delay for the port.

Syntax

- **default spanning-tree mstp hello-time**
- **spanning-tree mstp hello-time <100-1000>**

Command Parameters

<100-1000> Configures the hello-time for a port in one hundredths of a second. The default is 2.

Default

The default is 2.

Command Mode

GigabitEthernet Interface Configuration

spanning-tree mstp msti (on a port)

Configure Multiple Spanning Tree Protocol (MSTP) to set the MSTP configuration version.

Syntax

- **default spanning-tree mstp msti <1-63> cost**
- **default spanning-tree mstp msti <1-63> force-port-state enable**
- **default spanning-tree mstp msti <1-63> port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} cost**
- **default spanning-tree mstp msti <1-63> port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} force-port-state enable**
- **default spanning-tree mstp msti <1-63> port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} priority**
- **default spanning-tree mstp msti <1-63> priority**
- **no spanning-tree mstp msti <1-63> force-port-state enable**
- **no spanning-tree mstp msti <1-63> port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} force-port-state enable**
- **spanning-tree mstp msti <1-63> cost <1-200000000>**
- **spanning-tree mstp msti <1-63> force-port-state enable**
- **spanning-tree mstp msti <1-63> port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} cost <1-200000000>**
- **spanning-tree mstp msti <1-63> port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} force-port-state enable**

- **spanning-tree mstp msti <1-63> port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} priority <0-240>**
- **spanning-tree mstp msti <1-63> priority <0-240>**

Command Parameters

<1-63>	Specifies the instance parameter.
cost <1-200000000>	Configures the path cost for the port
force-port-state enable	Enables MSTI learning for the port.
port *{slot/port[/sub-port][-slot/port[/sub-port]][,...]}*	Identifies the slot and port in one of the following formats: a single slot and port (slot/port), a range of slots and ports (slot/port-slot/port), or a series of slots and ports (slot/port,slot/port,slot/port). If your platform supports channelization and the port is channelized, you must also specify the sub-port in the format slot/port/sub-port.
priority <0-65535>	Configures the MSTP bridge priority. Allowed values are 4096, 8192, 12288, 16384, 20480, 24576, 28672, 32768, 36864, 40960,45056, 49152, 53248, 57344, 61440.

Default

None

Command Mode

GigabitEthernet Interface Configuration

spanning-tree mstp p2p

Specify the point-to-point status of the LAN segment attached to this port.

Syntax

- **default spanning-tree mstp p2p**
- **spanning-tree mstp p2p auto**
- **spanning-tree mstp p2p force-false**
- **spanning-tree mstp p2p force-true**

Command Parameters

<auto| force-false| false-true>	A value of force-true indicates that this port is treated as if it connects to a point-to-point link. A value of force-false indicates that this port is treated as having a shared media connection. A value of auto indicates that this port is considered to have a point-to-point link if it is an aggregator and all of its members are aggregatable, or if the MAC entity is

configured for full-duplex operation, either through autonegotation or by management means.
The default is auto.

Default

The default is auto.

Command Mode

GigabitEthernet Interface Configuration

spanning-tree mstp port

Configure all Multiple Spanning Tree Protocol (MSTP) parameters for a port.

Syntax

- **default spanning-tree mstp**
- **default spanning-tree mstp port {slot/port[/sub-port]}**
- **default spanning-tree mstp port {slot/port[/sub-port]} cost**
- **default spanning-tree mstp port {slot/port[/sub-port]} edge-port**
- **default spanning-tree mstp port {slot/port[/sub-port]} force-port-state**
- **default spanning-tree mstp port {slot/port[/sub-port]} hello-time**
- **default spanning-tree mstp port {slot/port[/sub-port]} p2p**
- **default spanning-tree mstp port {slot/port[/sub-port]} priority**
- **default spanning-tree mstp port {slot/port[/sub-port]} protocol-migration**
- **no spanning-tree mstp**
- **no spanning-tree mstp port {slot/port[/sub-port]}**
- **spanning-tree mstp port {slot/port[/sub-port]} cost <1-200000000>**
- **spanning-tree mstp port {slot/port[/sub-port]} edge-port { false | true }**
- **spanning-tree mstp port {slot/port[/sub-port]} force-port-state enable**
- **spanning-tree mstp port {slot/port[/sub-port]} hello-time <100-1000>**
- **spanning-tree mstp port {slot/port[/sub-port]} p2p auto**
- **spanning-tree mstp port {slot/port[/sub-port]} p2p force-false**
- **spanning-tree mstp port {slot/port[/sub-port]} p2p force-true**
- **spanning-tree mstp port {slot/port[/sub-port]} priority <0-240>**
- **spanning-tree mstp port {slot/port[/sub-port]} protocol-migration false**

- **spanning-tree mstp port {slot/port[/sub-port]} protocol-migration true**

Command Parameters

<0-240>	Specifies the four most significant bits of the port identifier. The values configured for port priority must be in steps of 16.
<100-1000>	Configures the hello-time for a port in one hundredths of a second.
<1-200000000>	Specifies the cost value.
<auto|force-false|false-true>	A value of force-true indicates that this port is treated as if it connects to a point-to-point link. A value of force-false indicates that this port is treated as having a shared media connection. A value of auto indicates that this port is considered to have a point-to-point link if it is an aggregator and all of its members are aggregatable, or if the MAC entity is configured for full-duplex operation, either through autonegotation or by management means.
edge-port <false|true>	Enables or disables the port as an edge port. The default is disabled (false).
port *{slot/port[/sub-port]}*	Identifies a single slot and port. If your platform supports channelization and the port is channelized, you must also specify the sub-port in the format slot/port/sub-port.
protocol-migration <false|true>	Configures the protocol migration state of this port. The default is false.

Default

None

Command Mode

GigabitEthernet Interface Configuration

spanning-tree mstp priority (on a port)

Specify the four most significant bits of the port identifier for a given spanning tree instance that can be modified independently for each spanning tree instance supported by the bridge.

Syntax

- **default spanning-tree mstp priority**
- **spanning-tree mstp priority <0-240>**

Command Parameters

<0-240> Specifies the four most significant bits of the port identifier. The values configured for port priority must be in steps of 16.

Default

The default is 128.

Command Mode

GigabitEthernet Interface Configuration

spanning-tree mstp protocol-migration

Initiates or terminates protocol migration for the port. If enabled, the port transmits BPDUs without instance information.

Syntax

- **default spanning-tree mstp protocol-migration**
- **spanning-tree mstp protocol-migration false**
- **spanning-tree mstp protocol-migration true**

Command Parameters

<false|true> Configures the protocol migration state of this port.

Default

The default is false.

Command Mode

GigabitEthernet Interface Configuration

spanning-tree rstp cost

Configure the contribution of this port to the path cost value for the link.

Syntax

- **default spanning-tree rstp cost**
- **spanning-tree rstp cost <1-200000000>**

Command Parameters

<1-200000000> Specifies the cost value.

Default

The default is 2000000.

Command Mode

GigabitEthernet Interface Configuration

spanning-tree rstp edge-port

Configure the port as an edge port.

Syntax

- **default spanning-tree rstp edge-port**
- **spanning-tree rstp edge-port { false | true }**

Command Parameters

<false|true>	Enables or disables the port as an edge port.

Default

The default is disabled (false).

Command Mode

GigabitEthernet Interface Configuration

spanning-tree rstp p2p

Specify the point-to-point status of the LAN segment attached to this port.

Syntax

- **default spanning-tree rstp p2p**
- **spanning-tree rstp p2p auto**
- **spanning-tree rstp p2p force-false**
- **spanning-tree rstp p2p force-true**

Command Parameters

<auto|force-false|false-true>	A value of force-true indicates that this port is treated as if it connects to a point-to-point link. A value of force-false indicates that this port is treated as having a shared media connection. A value of auto indicates that this port is considered to have a point-to-point link if it is an aggregator and all of its members are aggregatable, or if the MAC entity is

configured for full-duplex operation, either through autonegotation or by management means.

Default

The default is auto.

Command Mode

GigabitEthernet Interface Configuration

spanning-tree rstp port

Configure all Rapid Spanning Tree Protocol (RSTP) parameters for a port.

Syntax

- **default spanning-tree rstp**
- **default spanning-tree rstp**
- **default spanning-tree rstp port {slot/port[/sub-port]}**
- **no spanning-tree rstp**
- **no spanning-tree rstp port {slot/port[/sub-port]}**
- **spanning-tree rstp port {slot/port[/sub-port]} cost <1-200000000>**
- **spanning-tree rstp port {slot/port[/sub-port]} edge-port { false | true }**
- **spanning-tree rstp port {slot/port[/sub-port]} p2p auto**
- **spanning-tree rstp port {slot/port[/sub-port]} p2p force-false**
- **spanning-tree rstp port {slot/port[/sub-port]} p2p force-true**
- **spanning-tree rstp port {slot/port[/sub-port]} priority <0-240>**
- **spanning-tree rstp port {slot/port[/sub-port]} protocol-migration false**
- **spanning-tree rstp port {slot/port[/sub-port]} protocol-migration true**
- **spanning-tree rstp port {slot/port[/sub-port]} stp enable**

Command Parameters

cost <1-200000000>	Specifies the cost value. The default is 2000000.
edge-port <false|true>	Enables or disables the port as an edge port. The default is disabled (false).
p2p <auto|force-false|false-true>	A value of force-true indicates that this port is treated as if it connects to a point-to-point link.

	A value of force-false indicates that this port is treated as having a shared media connection. A value of auto indicates that this port is considered to have a point-to-point link if it is an aggregator and all of its members are aggregatable, or if the MAC entity is configured for full-duplex operation, either through autonegotation or by management means. The default is auto.
port *{slot/port[/sub-port]}*	Identifies a single slot and port. If your platform supports channelization and the port is channelized, you must also specify the sub-port in the format slot/port/sub-port.
priority <0-240>	Specifies the four most significant bits of the port identifier. The values configured for port priority must be in steps of 16. The default is 128.
protocol-migration <false|true>	Configures the protocol migration state of this port. The default is false.
stp enable	Enables STP for the port. The default is disabled.

Default

None

Command Mode

GigabitEthernet Interface Configuration

spanning-tree rstp priority (on a port)

Specify the four most significant bits of the port identifier for a given spanning tree instance that can be modified independently for each spanning tree instance supported by the bridge.

Syntax

- **`default spanning-tree rstp priority`**
- **`spanning-tree rstp priority <0-240>`**

Command Parameters

<0-240>	Specifies the four most significant bits of the port identifier. Assigns RSTP bridge priority in a range of 0-240. The values configured for port priority must be in steps of 16.

Default

The default is 128.

Command Mode

GigabitEthernet Interface Configuration

spanning-tree rstp protocol-migration

Initiate or terminate protocol migration for the port. If enabled, the port transmits BPDUs without instance information.

Syntax

- **default spanning-tree rstp protocol-migration**
- **spanning-tree rstp protocol-migration false**
- **spanning-tree rstp protocol-migration true**

Command Parameters

<false|true>	Configures the protocol migration state of this port.

Default

The default is false.

Command Mode

GigabitEthernet Interface Configuration

spanning-tree rstp stp

Enable STP on the port.

Syntax

- **default spanning-tree rstp stp**
- **no spanning-tree rstp stp enable**
- **spanning-tree rstp stp enable**

Default

The default value is enabled.

Command Mode

GigabitEthernet Interface Configuration

speed

Configure the speed of the port on the Ethernet modules.

Note:

Not all parameters appear on all hardware platforms.

Syntax

- **default speed**
- **default speed port {slot/port[/sub-port][-slot/port[/sub-port]][,...]}**
- **speed 10**
- **speed 100**
- **speed port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} 10**
- **speed port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} 100**

Command Parameters

{slot/port[/sub-port] [-slot/port[/sub-port]] [,...]}	Identifies the slot and port in one of the following formats: a single slot and port (slot/port), a range of slots and ports (slot/port-slot/port), or a series of slots and ports (slot/port,slot/port,slot/port). If your platform supports channelization and the port is channelized, you must also specify the sub-port in the format slot/port/sub-port.
<10|100>	Specifies the port speed. Not applicable to 1 Gigabit or 10 GigabitEthernet modules.

Default

None

Command Mode

GigabitEthernet Interface Configuration

subnet-vlan

Enable subnet-based VLAN on the port.

Note:

This command does not appear on all hardware platforms.

Syntax

- **default subnet-vlan**
- **default subnet-vlan enable**
- **default subnet-vlan port {slot/port[/sub-port][-slot/port[/sub-port]][,...]}**
- **no subnet-vlan**
- **no subnet-vlan enable**
- **no subnet-vlan port {slot/port[/sub-port][-slot/port[/sub-port]][,...]}**

- **subnet-vlan**
- **subnet-vlan enable**
- **subnet-vlan port {slot/port[/sub-port][-slot/port[/sub-port]][,...]}**

Command Parameters

enable	Enables or disables subnet-based VLAN for the port.
port *{slot/port[/sub-port] [-slot/port[/sub-port]] [,...]}*	Identifies the slot and port in one of the following formats: a single slot and port (slot/port), a range of slots and ports (slot/port-slot/port), or a series of slots and ports (slot/port,slot/port,slot/port). If your platform supports channelization and the port is channelized, you must also specify the sub-port in the format slot/port/sub-port.

Default

The default is enabled.

Command Mode

GigabitEthernet Interface Configuration

spoof-detect

Configure the spoof detection to prevent an IP spoofing.

Syntax

- **default spoof-detect**
- **default spoof-detect enable**
- **default spoof-detect port {slot/port[/sub-port][-slot/port[/sub-port]][,...]}**
- **no spoof-detect**
- **no spoof-detect enable**
- **no spoof-detect port {slot/port[/sub-port][-slot/port[/sub-port]][,...]}**
- **no spoof-detect port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} enable**
- **spoof-detect**
- **spoof-detect enable**
- **spoof-detect port {slot/port[/sub-port][-slot/port[/sub-port]][,...]}**

Command Parameters

enable	Enables spoof detection on the port.

port *{slot/port[/sub-port] [-slot/port[/sub-port]] [,...]}*	Identifies the slot and port in one of the following formats: a single slot and port (slot/port), a range of slots and ports (slot/port-slot/port), or a series of slots and ports (slot/port,slot/port,slot/port). If your platform supports channelization and the port is channelized, you must also specify the sub-port in the format slot/port/sub-port.

Default

The default is disabled.

Command Mode

GigabitEthernet Interface Configuration

tagged-frames-discard

Discards tagged frames on the port.

Syntax

- **default tagged-frames-discard**
- **default tagged-frames-discard enable**
- **default tagged-frames-discard port {slot/port[/sub-port][-slot/port[/sub-port]][,...]}**
- **default tagged-frames-discard port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} enable**
- **no tagged-frames-discard**
- **no tagged-frames-discard enable**
- **no tagged-frames-discard port {slot/port[/sub-port][-slot/port[/sub-port]][,...]}**
- **no tagged-frames-discard port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} enable**
- **tagged-frames-discard**
- **tagged-frames-discard enable**
- **tagged-frames-discard port {slot/port[/sub-port][-slot/port[/sub-port]][,...]}**
- **tagged-frames-discard port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} enable**

Command Parameters

enable	Discards tagged frames on the port.
port *{slot/port[/sub-port] [-slot/*	Identifies the slot and port in one of the following formats: a single slot and port (slot/port), a range of slots and ports (slot/port-slot/port), or a series of

port[/sub-port]] [,...]}	slots and ports (slot/port,slot/port,slot/port). If your platform supports channelization and the port is channelized, you must also specify the sub-port in the format slot/port/sub-port.

Default

The default is disabled.

Command Mode

GigabitEthernet Interface Configuration

tx-flow-control

Enable TX flow control to allow TX to transmit the MAC control PAUSE frames to indicate congestion on the receive side of the port interface. Flow control can only be enabled on 1 Gbit/s and 10 Gbit/s ports. Flow control cannot be enabled for ports that run at less than 1 Gbit/s.

Syntax

- **default tx-flow-control**
- **default tx-flow-control enable**
- **default tx-flow-control port {slot/port[/sub-port][-slot/port[/sub-port]][,...]}**
- **default tx-flow-control port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} enable**
- **no tx-flow-control**
- **no tx-flow-control enable**
- **no tx-flow-control port {slot/port[/sub-port][-slot/port[/sub-port]][,...]}**
- **no tx-flow-control port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} enable**
- **tx-flow-control**
- **tx-flow-control enable**
- **tx-flow-control port {slot/port[/sub-port][-slot/port[/sub-port]][,...]}**
- **tx-flow-control port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} enable**

Command Parameters

enable	Enables the TX flow control on the module.
port *{slot/port[/sub-port] [-slot/*	Identifies the slot and port in one of the following formats: a single slot and port (slot/port), a range of slots and ports (slot/port-slot/port), or a series of

port[/sub-port]] [,...]}	slots and ports (slot/port,slot/port,slot/port). If your platform supports channelization and the port is channelized, you must also specify the sub-port in the format slot/port/sub-port.

Default

The default is disabled.

Command Mode

GigabitEthernet Interface Configuration

untagged-frames-discard

Configure a tagged port to discard all untagged packets so that the frame is not classified into the default VLAN for the port.

Syntax

- **`default untagged-frames-discard`**
- **`default untagged-frames-discard port {slot/port[/sub-port][-slot/port[/sub-port]][,...]}`**
- **`no untagged-frames-discard`**
- **`no untagged-frames-discard port {slot/port[/sub-port][-slot/port[/sub-port]][,...]}`**
- **`untagged-frames-discard`**
- **`untagged-frames-discard port {slot/port[/sub-port][-slot/port[/sub-port]][,...]}`**

Command Parameters

port *{slot/port[/sub-port] [-slot/port[/sub-port]] [,...]}*	Identifies the slot and port in one of the following formats: a single slot and port (slot/port), a range of slots and ports (slot/port-slot/port), or a series of slots and ports (slot/port,slot/port,slot/port). If your platform supports channelization and the port is channelized, you must also specify the sub-port in the format slot/port/sub-port.

Default

None

Command Mode

GigabitEthernet Interface Configuration

untag-port-default-vlan

Untag the default VLAN on the port.

Syntax

- **default untag-port-default-vlan**
- **default untag-port-default-vlan enable**
- **default untag-port-default-vlan port {slot/port[/sub-port][-slot/port[/sub-port]][,...]}**
- **no untagged-frames-discard**
- **no untagged-frames-discard port {slot/port[/sub-port][-slot/port[/sub-port]][,...]}**
- **no untag-port-default-vlan**
- **no untag-port-default-vlan enable**
- **no untag-port-default-vlan port {slot/port[/sub-port][-slot/port[/sub-port]][,...]}**
- **untag-port-default-vlan**
- **untag-port-default-vlan enable**
- **untag-port-default-vlan port {slot/port[/sub-port][-slot/port[/sub-port]][,...]}**

Command Parameters

enable	Untags the default VLAN for the port.
port *{slot/port[/sub-port] [-slot/port[/sub-port]] [,...]}*	Identifies the slot and port in one of the following formats: a single slot and port (slot/port), a range of slots and ports (slot/port-slot/port), or a series of slots and ports (slot/port,slot/port,slot/port). If your platform supports channelization and the port is channelized, you must also specify the sub-port in the format slot/port/sub-port.

Default

The default is disabled.

Command Mode

GigabitEthernet Interface Configuration

vlacp

Configure Virtual Link Aggregation Control Protocol (VLACP) on a port to ensure there is end-to-end reachability.

Syntax

- **default vlacp**
- **default vlacp ethertype**
- **default vlacp fast-periodic-time**
- **default vlacp funcmac-addr**
- **default vlacp slow-periodic-time**
- **default vlacp timeout**
- **default vlacp timeout-scale**
- **no vlacp**
- **vlacp enable**
- **vlacp ethertype <1536-65535 | 0x600-0xffff>**
- **vlacp fast-periodic-time <100-20000>**
- **vlacp funcmac-addr 0x00:0x00:0x00:0x00:0x00:0x00**
- **vlacp slow-periodic-time <10000-30000>**
- **vlacp timeout long**
- **vlacp timeout short**
- **vlacp timeout-scale <2-10>**

Command Parameters

enable	Enables VLACP for this port.
ethertype <0X600-0Xffff>	Sets the VLACP protocol identification for this port.
fast-periodic-time <100-20000>	Sets the fast periodic time (in milliseconds) for this port.
funcmac-addr <0x00:0x00:0x00:0x00:0x00:0x00>	Sets the multicast MAC address used for the VLACPDU. Specify a MAC address in the format 0x00:0x00:0x00:0x00:0x00:0x00.
slow-periodic-time <10000-30000>	Sets the slow periodic time (in milliseconds) for a specific port type.
timeout {long|short}	Sets the port to use the long or short timeout: • Long sets the port to use the timeout-scale value multiplied by the slow-periodic-time. • Short sets the port to use the timeout-scale value multiplied by the fast-periodic-time. For example, if you specify a short timeout, set the timeout-scale value to 3, and the fast-periodic-time to 400 ms, the timer will expire within 1000 to 1200 ms. To

	set this option to the default value, use the default operator with the command.
timeout-scale <2-10>	Sets a timeout scale for this port used to calculate the timeout. The default value is 3. To set this option to the default value, use the default operator with the command.

Default

None

Command Mode

GigabitEthernet Interface Configuration

vrf (for a port)

Associate a port to a Virtual Router Forwarding (VRF) so that the port becomes a member of the VRF instance.

Syntax

- `no vrf`
- `vrf WORD<1-16>`

Command Parameters

vrf WORD<1-16>	Specifies the VRF name.

Default

None

Command Mode

GigabitEthernet Interface Configuration

Chapter 9: Global Configuration

access-policy

Configure an access policy to control access to the switch. You can define network stations that are explicitly allowed to access the switch or network stations that are explicitly forbidden to access the switch.

For each service, you can also specify the level of access; for example, read-only or read/write/all. Use the command without parameters to globally enable access policies.

Syntax

- **access-policy**
- **access-policy <1-65535>**
- **default access-policy**
- **default access-policy <1-65535>**
- **no access-policy**
- **no access-policy <1-65535>**

Command Parameters

<1-65535>	Specifies the policy ID.

Default

None

Command Mode

Global Configuration

access-policy <1-65535> accesslevel

Restrain access to criteria specified in the access policy. If true, the system accepts only the currently configured access level. If false, the system accepts access up to the configured access level.

Syntax

- **access-policy <1-65535> accesslevel { ro | rwa | rw }**
- **default access-policy <1-65535> accesslevel**

Command Parameters

{ ro | rwa | rw }	Specifies the access level.
<1-65535>	Specifies the policy ID.

Default

The default value is ro.

Command Mode

Global Configuration

access-policy <1-65535> access-strict

Specify the level of access if you configure the policy to allow access. The access-strict command ties to the accesslevel command. If you enable access-strict, the access policy looks at the accesslevel value, and only applies to that access level. If you disable access-strict (false), the policy looks at the value for accesslevel, and then the system applies the policy to anyone with equivalent rights or higher.

Syntax

- **access-policy <1-65535> access-strict**
- **default access-policy <1-65535> access-strict**
- **no access-policy <1-65535> access-strict**

Command Parameters

<1-65535>	Specifies the policy ID.

Default

The default value is disabled (false).

Command Mode

Global Configuration

access-policy <1-65535> enable

Activate the access policy.

Syntax

- **access-policy <1-65535> enable**
- **default access-policy <1-65535> enable**
- **no access-policy <1-65535> enable**

Command Parameters

<1-65535>	Specifies the policy ID.

Default

The default is disabled (off).

Command Mode

Global Configuration

access-policy <1-65535> ftp

Activate or disable FTP for the specified policy. Because FTP derives its login and password from the CLI management filters, FTP works for read-write-all (rwa) and readwrite (rw) access but not for the read-only (ro) access.

Syntax

- **access-policy <1-65535> ftp**
- **default access-policy <1-65535> ftp**
- **no access-policy <1-65535> ftp**

Command Parameters

<1-65535>	Specifies the policy ID.

Default

The default is disabled.

Command Mode

Global Configuration

access-policy <1-65535> host

Specify the trusted host address as an IP address for remote login access.

Syntax

- **access-policy <1-65535> host WORD<0-46>**

- **default access-policy <1-65535> host**
- **no access-policy <1-65535> host**

Command Parameters

<1-65535>	Specifies the policy ID.
WORD<0-46>	Specifies the IPv4 or IPv6 address.

Default

None

Command Mode

Global Configuration

access-policy <1-65535> http

Activate the HTTP for this access policy.

Syntax

- **access-policy <1-65535> http**
- **default access-policy <1-65535> http**
- **no access-policy <1-65535> http**

Command Parameters

<1-65535>	Specifies the policy ID.

Default

The default is disabled.

Command Mode

Global Configuration

access-policy <1-65535> mode

Specify whether the designated network address is allowed access to the system through the specified access service.

Syntax

- **access-policy <1-65535> mode { allow | deny }**
- **default access-policy <1-65535> mode**

Command Parameters

{ allow | deny }	Allows or denies access to the designated network address.
<1-65535>	Specifies the policy ID.

Default

The default is allow.

Command Mode

Global Configuration

access-policy <1-65535> name

Specify a name expressed as a string.

Syntax

- **access-policy <1-65535> name WORD<0-15>**
- **default access-policy <1-65535> name**

Command Parameters

<1-65535>	Specifies the policy ID.

Default

None

Command Mode

Global Configuration

access-policy <1-65535> network

Specify the IP address and subnet mask that can access the system through the specified access service.

Syntax

- **access-policy <1-65535> network WORD<1-46> <0-128>**
- **default access-policy <1-65535> network**
- **no access-policy <1-65535> network**

Command Parameters

<1-65535>	Specifies the policy ID.
WORD<1-46> <0-128>	Specifies the IP address and subnet mask

Default

None

Command Mode

Global Configuration

access-policy <1-65535> precedence

Specify a precedence value for a policy, expressed as a number from 1-128. The precedence value determines which policy the system uses if multiple policies apply. Lower numbers take higher precedence.

Syntax

- **access-policy <1-65535> precedence <1-128>**
- **default access-policy <1-65535> precedence**

Command Parameters

<1-128>	Specifies a precedence value for a policy.
<1-65535>	Specifies the policy ID.

Default

The default is 10.

Command Mode

Global Configuration

access-policy <1-65535> rlogin

Activate remote logon for the access policy.

Syntax

- **access-policy <1-65535> rlogin**
- **default access-policy <1-65535> rlogin**
- **no access-policy <1-65535> rlogin**

Command Parameters

<1-65535>	Specifies the policy ID.

Default

The default is disabled.

Command Mode

Global Configuration

access-policy <1-65535> snmp-group

Add a Simple Network Management Protocol version 3 (SNMP-v3) group under the access policy.

Syntax

- **access-policy <1-65535> snmp-group WORD<1-32> { snmpv1 | snmpv2c | usm }**
- **no access-policy <1-65535> snmp-group WORD<1-32> { snmpv1 | snmpv2c | usm }**

Command Parameters

{ snmpv1 | snmpv2c | usm }	Configures the security model.
<1-65535>	Specifies the policy ID.
WORD<1-32>	Specifies the name of the group.

Default

None

Command Mode

Global Configuration

access-policy <1-65535> snmpv3

Activate Simple Network Management Protocol (SNMP) version 3 for the access policy.

Syntax

- **access-policy <1-65535> snmpv3**
- **default access-policy <1-65535> snmpv3**
- **no access-policy <1-65535> snmpv3**

Command Parameters

<1-65535>	Specifies the policy ID.

Default

The default is disabled.

Command Mode

Global Configuration

access-policy <1-65535> ssh

Activate Secure Shell (SSH) for the access policy.

Syntax

- **access-policy <1-65535> ssh**
- **default access-policy <1-65535> ssh**
- **no access-policy <1-65535> ssh**

Command Parameters

<1-65535>	Specifies the policy ID.

Default

The default is disabled.

Command Mode

Global Configuration

access-policy <1-65535> telnet

Activate Telnet for the access policy.

Syntax

- **access-policy <1-65535> telnet**
- **default access-policy <1-65535> telnet**
- **no access-policy <1-65535> telnet**

Command Parameters

<1-65535>	Specifies the policy ID.

Default

The default is disabled.

Command Mode

Global Configuration

access-policy <1-65535> tftp

Activate the Trivial File Transfer Protocol (TFTP) for this access policy.

Syntax

- **access-policy <1-65535> tftp**
- **default access-policy <1-65535> tftp**
- **no access-policy <1-65535> tftp**

Command Parameters

<1-65535>	Specifies the policy ID.

Default

The default is disabled.

Command Mode

Global Configuration

access-policy <1-65535> username

Specify the trusted host user name for remote login access.

Syntax

- **access-policy <1-65535> username WORD<0-30>**
- **default access-policy <1-65535> username**

Command Parameters

<1-65535>	Specifies the policy ID.
WORD<0-30>	Specifies the username.

Default

None

Command Mode

Global Configuration

access-policy by-mac

Configure access-policies by MAC address to allow or deny local MAC addresses on the network management port after an access policy is activated. If the source MAC does not match a configured entry, then the default action is taken.

Syntax

- **access-policy by-mac 0x00:0x00:0x00:0x00:0x00:0x00 { allow | deny }**
- **access-policy by-mac action { allow | deny }**
- **default access-policy by-mac <0x00:0x00:0x00:0x00:0x00:0x00>**
- **default access-policy by-mac action**
- **no access-policy by-mac <0x00:0x00:0x00:0x00:0x00:0x00>**

Command Parameters

<0x00:0x00:0x00:0x00:0x00:0x00> <allow|deny>	Adds a MAC address to the policy. Enter the MAC address in hexadecimal format. Specify the action to take for the MAC address.
action <allow|deny>	Specifies the action for a MAC address that does not match the policy.

Default

The default action is allow.

Command Mode

Global Configuration

application

Enter Application mode.

Syntax

- **application**

Default

None

Command Mode

Global Configuration

app-telemetry enable

Enables Application Telemetry.

Syntax

- `no app-telemetry enable`

Default

The default value is disable.

Command Mode

Global Configuration

auto-recover-delay

Set the time delay for the automatic recovery of ports.

Syntax

- `auto-recover-delay <5-3600>`
- `default auto-recover-delay`
- `no auto-recover-delay <5-3600>`

Command Parameters

<5-3600>	Specifies the range to be set for the auto-recovery of ports in seconds. The range varies between 5 to 3600 seconds.

Default

The default is 30.

Command Mode

Global Configuration

autotopology

Configure the SynOptics Network Management Protocol (SONMP) to allow a network management station (NMS) formulate a map that shows the interconnections between Layer 2 devices in a network.

Syntax

- **autotopology**
- **default autotopology**
- **no autotopology**

Default

The default status is enabled.

Command Mode

Global Configuration

banner

Configure the CLI logon banner to display a warning message to users before authentication.

Syntax

- **banner custom**
- **banner displaymotd**
- **banner motd WORD<1-1516>**
- **banner static**
- **banner WORD<1-80>**
- **default banner**
- **default banner displaymotd**
- **default banner motd**
- **no banner**
- **no banner displaymotd**
- **no banner motd**

Command Parameters

custom	Activates the custom banner.
displaymotd	Activates or disables the message of the day.

motd WORD<1-1516>	Creates a message of the day to display with the logon banner. To provide a string with spaces, include the text in quotation marks ("").
static	Activates static banner.
WORD<1-80>	Adds lines of text to the CLI logon banner.

Default

The default configuration uses the default banner with no message of the day.

Command Mode

Global Configuration

boot config choice

Change the boot source order to change the order in which the system accesses the configuration files. If you change the primary source, the system uses your configuration first, and then accesses the default locations. If the default locations do not contain a configuration or backup configuration file, the system loads the default configuration.

Syntax

- **boot config choice primary backup-config-file WORD<0-255>**
- **boot config choice primary config-file WORD<0-255>**
- **default boot config choice primary**
- **default boot config choice primary backup-config-file**

Command Parameters

{backup-config-file | config-file}	Specifies that the boot source uses either the configuration file or a backup configuration file.
WORD<0-255>	Identifies the configuration file. WORD<0-255> is the device and file name, up to 255 characters including the path, in one of the following formats: a.b.c.d:<file>, or /intflash/<file>.

Default

By default, the primary source is the internal flash.

Command Mode

Global Configuration

boot config flags advanced-feature-bandwidth-reservation

Enables the switch to support advanced features such as SPB, SMLT, and vIST by reserving ports as loopback ports.

Syntax

- **boot config flags advanced-feature-bandwidth-reservation high**
- **boot config flags advanced-feature-bandwidth-reservation low**
- **default boot config flags advanced-feature-bandwidth-reservation**
- **no boot config flags advanced-feature-bandwidth-reservation**

Command Parameters

high	Reserves the maximum bandwidth for the advanced features. Depending on the hardware platform, the number of reserved ports is different.
low	Reserves less bandwidth to support minimum functionality for advanced features. Depending on the hardware platform, the number of reserved ports is different.

Default

The boot flag is enabled by default in the low level configuration, which means the switch operates in Full Feature mode but with less bandwidth to support minimum functionality for advanced features.

Command Mode

Global Configuration

Usage Guidelines

This feature is not supported on all hardware platforms. If your switch does not have this boot flag, it is because the hardware reserves the bandwidth automatically with no user interaction. For more information about feature support, seeRelease Notes for XA1400 Series.

You must save the configuration and restart the switch for a configuration change to take effect.

You must ensure your configuration does not include reserved ports before you enable this feature. If the configuration includes reserved ports after you enable this feature and restart the switch, the switch aborts loading the configuration.

boot config flags block-snmp

Activate or disable Simple Network Management Protocol (SNMP) management.

Syntax

- **boot config flags block-snmp**
- **default boot config flags block-snmp**

- **no boot config flags block-snmp**

Default

The default is disabled.

Command Mode

Global Configuration

boot config flags debug-config

Activate or disable run-time debugging of the configuration file.

Syntax

- **boot config flags debug-config**
- **boot config flags debug-config console**
- **boot config flags debug-config file**
- **default boot config flags debug-config**
- **no boot config flags debug-config**

Command Parameters

console	Displays the line-by-line configuration file processing and result of the execution on the console while the device loads the configuration file.
file	Logs the line-by-line configuration file processing and result of the execution to the debug file while the device loads the configuration file. The system logs the debug config output to `/intflash/debugconfig_primary.txt`for the primary configuration file. The system logs the debug config output to `/intflash/ debugconfig_backup.txt` for the backup configuration, if the backup configuration file loads.

Default

The default is disabled.

Command Mode

Global Configuration

Usage Guidelines

After you enable debug-config and save the configuration, the debug output either displays on the console or logs to an output file the next time the switch reboots. You do not have to restart the switch after you enable debug-config unless you want to immediately debug the configuration.

boot config flags debugmode

Control whether the switch stops in debug mode following a fatal error. Debug mode provides information equivalent to the trace commands. If you enable this flag, the switch does not restart following a fatal error.

Important:

Do not change this flag unless directed by support.

Syntax

- **boot config flags debugmode**
- **default boot config flags debugmode**
- **no boot config flags debugmode**

Default

The default is disabled.

Command Mode

Global Configuration

Usage Guidelines

You must save the configuration and reboot the switch for a configuration change to take effect.

boot config flags dvr-leaf-mode

Enables an SPB node to be configured as a DvR Leaf.

Syntax

- **boot config flags dvr-leaf-mode**
- **default boot config flags dvr-leaf-mode**
- **no boot config flags dvr-leaf-mode**

Default

The default is disabled.

Command Mode

Global Configuration

boot config flags enhancedsecure-mode

Enable enhanced secure mode. If you enable enhanced secure mode the switch provides role-based access levels, stronger password requirements, and stronger rules on password length,

password complexity, password change intervals, password reuse, and password maximum age use.

Syntax

- **boot config flags enhancedsecure-mode jitc**
- **boot config flags enhancedsecure-mode non-jitc**
- **default boot config flags enhancedsecure-mode**
- **no boot config flags enhancedsecure-mode**

Command Parameters

{jitc | non-jitc}	Enables either the JITC or non-JITC enhanced secure mode.

Default

The default is disabled.

Command Mode

Global Configuration

Usage Guidelines

You must save the configuration and reboot the switch for a configuration change to take effect.

Note:

When you migrate your switch from enhanced secure mode enabled to disabled, or from disabled to enabled, you must build a new configuration.

Do not use a configuration created in either enhanced secure mode disabled or enabled and expect it to transfer over to the new mode.

The configuration file cannot be guaranteed if you transfer between enhanced secure mode enabled to disabled, or from enhanced secure mode disabled to enabled.

boot config flags factorydefaults

Specify whether the switch uses the factory default settings at startup.

Syntax

- **boot config flags factorydefaults**
- **no boot config flags factorydefaults**

Default

The default is disabled.

Command Mode

Global Configuration

Usage Guidelines

This flag resets to the default setting after the CPU restarts. If you change this flag, you must restart the switch.

boot config flags factorydefaults fabric

Specify whether the switch uses the fabric factory default settings at startup.

Syntax

- **boot config flags factorydefaults fabric**

Default

The default is disabled.

Command Mode

Global Configuration

Usage Guidelines

You must reboot the switch for a change to take effect. This flag resets to the default setting after the CPU restarts.

boot config flags flow-control-mode

Activate or disable flow control globally. When disabled, the system does not generate nor configure the transmission of flow control messages.

Syntax

- **boot config flags flow-control-mode**
- **default boot config flags flow-control-mode**
- **no boot config flags flow-control-mode**

Default

The default is disabled.

Command Mode

Global Configuration

boot config flags ftpd

Activate or disable the FTP server on the switch. To enable FTP, ensure that the tftpd flags is disabled.

Syntax

- **boot config flags ftpd**
- **default boot config flags ftpd**
- **no boot config flags ftpd**

Default

The default is disabled.

Command Mode

Global Configuration

boot config flags ha-cpu

Enable high availability of the CPU.

Syntax

- **boot config flags ha-cpu**
- **default boot config flags ha-cpu**
- **no boot config flags ha-cpu**

Default

None

Command Mode

Global Configuration

boot config flags hsecure

Activate or disable High Secure mode. The hsecure command provides the following password behavior: 10 character enforcement, aging time, failed login attempt limitation, and designated IP address filtration.

Syntax

- **boot config flags hsecure**
- **default boot config flags hsecure**

- **no boot config flags hsecure**

Default

The default is disabled.

Command Mode

Global Configuration

Usage Guidelines

If you enable High Secure mode, you must restart the switch to enforce secure passwords. If you operate the switch in High Secure mode, the switch prompts a password change if you enter invalid-length passwords.

boot config flags insight-port-connect-type

Determines the connection type the Insight port can use with virtual machine (VM) virtual ports.

Syntax

- **boot config flags insight-port-connect-type ovs-sriov**
- **boot config flags insight-port-connect-type vtd**
- **default boot config flags insight-port-connect-type**

Command Parameters

ovs-sriov	Configures the port to support Open vSwitch (OVS) or Single Root I/O Virtualization (SR-IOV) connection types with the VM virtual ports.
vtd	Configures the port to support Virtualization Technology for Directed I/O (VT-d) connection type with the VM virtual port. The VT-d connection type supports only one VM virtual port.

Default

The default connection type is VT-d.

Command Mode

Global Configuration

Usage Guidelines

This command applies to hardware platforms that provide only one physical Insight port.

You must save the configuration and reboot the switch for a configuration change to take effect.

You must enable trunking on the Insight port when you use SR-IOV and OVS connection types.

boot config flags ipv6-egress-filter

Enables IPv6 egress filters.

Syntax

- **boot config flags ipv6-egress-filter**
- **default boot config flags ipv6-egress-filter**
- **no boot config flags ipv6-egress-filter**

Default

The default is disabled.

Command Mode

Global Configuration

Usage Guidelines

You must save the configuration and reboot the switch for a configuration change to take effect.

boot config flags ipv6-mode

Activate or disable IPv6 mode.

Syntax

- **boot config flags ipv6-mode**
- **default boot config flags ipv6-mode**
- **no boot config flags ipv6-mode**

Default

The default is disabled.

Command Mode

Global Configuration

Usage Guidelines

This command does not apply to all hardware platforms. For more information about feature support, see Release Notes for XA1400 Series.

boot config flags linerate-directed-broadcast

Enables or disables datapath support for IP Directed Broadcast using port 1/46.

Syntax

- **boot config flags linerate-directed-broadcast**
- **default boot config flags linerate-directed-broadcast**
- **no boot config flags linerate-directed-broadcast**

Command Parameters

false	Disables datapath support for IP Directed Broadcast on port 1/46.
true	Enables datapath support for IP Directed Broadcast on port 1/46.

Default

The default is disabled.

Command Mode

Global Configuration

Usage Guidelines

This command does not apply to all hardware platforms. For more information about feature support, see Release Notes for XA1400 Series.

You must save the configuration and reboot the switch for a configuration change to take effect.

Note:

After setting this flag and saving the configuration, the software cannot be upgraded or downgraded to a software release that does not contain this directed broadcast hardware assist functionality.

boot config flags logging

The system names log files according to the following:

- File names appear in 8.3 (xxxxxxxx.sss) format.
- The first 6 characters of the file name contain the last three bytes of the chassis base MAC address.
- The next two characters in the file name specify the slot number of the CPU that generated the logs.
- The last three characters in the file name are the sequence number of the log file.

The system generates multiple sequence numbers for the same chassis and same slot if the system reaches the maximum log file size.

Syntax

- **boot config flags logging**

- **default boot config flags logging**
- **no boot config flags logging**

Default

The default is enabled.

Command Mode

Global Configuration

boot config flags nni-mstp

Activate or disable MSTP and allow non SPBM B-VLAN configuration on SPBM NNI ports.

Syntax

- **boot config flags nni-mstp**
- **default boot config flags nni-mstp**
- **no boot config flags nni-mstp**

Default

The default is disabled.

Command Mode

Global Configuration

boot config flags reboot

Activate or disable automatic reboot on a fatal error. The reboot command is equivalent to the debugmode command.

Important:

Do not change this parameter unless directed to do so by Technical Support.

Syntax

- **boot config flags reboot**
- **default boot config flags reboot**
- **no boot config flags reboot**

Default

The default is enabled.

Command Mode

Global Configuration

Usage Guidelines

You must save the configuration and reboot the switch for a configuration change to take effect.

boot config flags rlogind

Activate or disable the remote login (rlogin) and remote shell (rsh) server.

Syntax

- **boot config flags rlogind**
- **default boot config flags rlogind**
- **no boot config flags rlogind**

Default

The default is disabled.

Command Mode

Global Configuration

boot config flags spanning-tree-mode

Specify the Multiple Spanning Tree Protocol (MSTP) or Rapid Spanning Tree Protocol (RSTP) mode. If you do not specify a protocol, the switch uses the default mode.

Syntax

- **boot config flags spanning-tree-mode mstp**
- **boot config flags spanning-tree-mode rstp**
- **default boot config flags spanning-tree-mode**
- **no boot config flags spanning-tree-mode**

Default

The default is MSTP.

Command Mode

Global Configuration

Usage Guidelines

You must save the configuration and reboot the switch for a configuration change to take effect.

boot config flags spbm-config-mode

Enable SPBM configuration mode.

Syntax

- **boot config flags spbm-config-mode**
- **default boot config flags spbm-config-mode**
- **no boot config flags spbm-config-mode**

Default

The default value is enabled.

Command Mode

Global Configuration

boot config flags sshd

Activate or disable the Secure Shell (SSH) server service.

Syntax

- **boot config flags sshd**
- **default boot config flags sshd**
- **no boot config flags sshd**

Default

The default is disabled.

Command Mode

Global Configuration

boot config flags syslog-rfc5424-format

Enables syslog and logging to use the RFC 5424 formatting. With this formatting, the syslog header has a timestamp conforming to RFC 3339, which helps identify the syslog generation time by indicating the year, milliseconds, and timezone, as well as the hostname from which the message is generated.

Syntax

- **boot config flags syslog-rfc5424-format**
- **default boot config flags syslog-rfc5424-format**

- **no boot config flags syslog-rfc5424-format**

Default

The default is disabled.

Command Mode

Global Configuration

boot config flags telnetd

Activate or disable the Telnet server service.

Syntax

- **boot config flags telnetd**
- **default boot config flags telnetd**
- **no boot config flags telnetd**

Default

The default is disabled.

Command Mode

Global Configuration

boot config flags tftpd

Activate or disable Trivial File Transfer Protocol (TFTP) server service.

Syntax

- **boot config flags tftpd**
- **default boot config flags tftpd**
- **no boot config flags tftpd**

Default

The default is disabled.

Command Mode

Global Configuration

boot config flags trace-logging

Activate or disable the creation of trace logs.

Important:

Do not change this parameter unless directed to do so by Technical Support.

Syntax

- **boot config flags trace-logging**
- **default boot config flags trace-logging**
- **no boot config flags trace-logging**

Default

The default is disabled.

Command Mode

Global Configuration

boot config flags urpf-mode

Enable the urpf-mode boot flag.

Syntax

- **boot config flags urpf-mode**
- **default boot config flags urpf-mode**
- **no boot config flags urpf-mode**

Default

The default is disbaled.

Command Mode

Global Configuration

Usage Guidelines

You must save the configuration and reboot the switch for a configuration change to take effect.

boot config flags verify-config

Activates syntax checking of the configuration file.

When you enable the verify-config flags, the primary configuration file is pre-checked for syntax errors. If the system finds an error, the system loads the backup configuration file.

If you disable the verify-config flags, the system ignores any lines with errors during loading of the primary configuration file.

If the primary configuration file is not present or cannot be found, the system tries to load the backup file. The system does not check the backup file for syntax errors. The system ignores any lines with errors during the loading of the backup configuration file.

If no backup file exists, the system defaults to factory defaults.

Syntax

- **boot config flags verify-config**
- **default boot config flags verify-config**
- **no boot config flags verify-config**

Default

The default is enabled.

Command Mode

Global Configuration

boot config flags vrf-scaling

Increases the maximum number of VRFs and Layer 3 VSNs that the switch supports. Platforms that do not support this boot configuration flag automatically support the maximum number of VRFs without additional VLAN reservation. For information about feature support, see Release Notes for XA1400 Series.

Syntax

- **boot config flags vrf-scaling**
- **default boot config flags vrf-scaling**
- **no boot config flags vrf-scaling**

Default

The default is disbaled.

Command Mode

Global Configuration

boot config flags vxlan-gw-full-interworking-mode

Activate or disable VXLAN Gateway in Full Interworking Mode, which supports SPB, SMLT, and vIST.

Syntax

- **boot config flags vxlan-gw-full-interworking-mode**
- **default boot config flags vxlan-gw-full-interworking-mode**
- **no boot config flags vxlan-gw-full-interworking-mode**

Default

None

Command Mode

Global Configuration

boot config host

Configure the remote host logon to modify parameters for FTP and TFTP access. Use the default parameters for TFTP transfers. If you want to use FTP as transfer mechanism, you must change the password to a valid value.

Syntax

- **boot config host ftp-debug**
- **boot config host password WORD<0-16>**
- **boot config host tftp-debug**
- **boot config host tftp-hash**
- **boot config host tftp-rexmit <1-120>**
- **boot config host tftp-timeout <1-120>**
- **boot config host user WORD<0-16>**
- **default boot config host ftp-debug**
- **default boot config host tftp-debug**
- **default boot config host tftp-hash**
- **default boot config host tftp-rexmit**
- **default boot config host tftp-timeout**
- **default boot config host user**
- **no boot config host ftp-debug**
- **no boot config host tftp-debug**
- **no boot config host tftp-hash**

Command Parameters

ftp-debug	Enables or disables the debug mode on FTP. If you enable the debug mode, debug messages appear on the management console screen. The default is disabled.
password WORD<0-16>	Configures the password to enable FTP transfers. WORD<0-16> is the password, up to 16 characters. After you configure this password, you can use only FTP for remote host logon. **Important:** This password must match the password for the FTP server or the FTP operation fails. Also, if you configure the password to a valid value, then all copying to and from the network uses FTP instead of TFTP. If the user name or password is incorrect, copying over the network fails.
tftp-debug	Enables or disables debug mode on TFTP or TFTPD. If you enable the debug mode, debug messages appear on the management console screen. The default is disabled.
tftp-hash	Enables or disables the TFTP hash bucket display. The default is disabled.
tftp-rexmit <1-120>	Configures the TFTP retransmission timeout in seconds. The default is 2.
tftp-timeout <1-120>	Configures the TFTP timeout in seconds. The default is 6.
user WORD<0-16>	Configures the remote user logon. WORD<0-16> is the user logon name (up to 16 characters). The default is target.

Default

None

Command Mode

Global Configuration

boot config loadconfigtime

Set the timeout for loading the configuration file.

Syntax

- **boot config loadconfigtime <0-300>**
- **default boot config loadconfigtime**

Command Parameters

<0-300>	Specifies the timeout for loading the configuration file in seconds.

Default

The default is 60 seconds.

Command Mode

Global Configuration

boot config logfile

Configure logfile parameters.

- The log file is named using an 8.3 (xxxxxxxx.sss) format.
- The first six characters of the file name contain the last three bytes of the chassis base MAC address.
- The next two characters specify the slot number of the CP that generated the logs.
- The last three characters denote the sequence number of the log file.

Multiple sequence numbers are generated for the same chassis and same slot, if the maximum log file size is reached.

Syntax

- **`boot config logfile <64-500> <500-16384> <10-90>`**
- **`default boot config logfile`**

Command Parameters

<10-90>	Specifies the maximum percentage, from 10-90%, of space on the external storage device the log file can use. The switch does not support this parameter.
<500-16384>	Specifies the maximum size of the log file from 500-16384 KB.
<64-500>	Specifies the minimum free memory space on the external storage device from 64-500 KB. The switch does not support this parameter.

Default

None

Command Mode

Global Configuration

boot config multicast

Configure multicast parameters. This parameter does not appear on all hardware platforms. For information about feature support, see Release Notes for XA1400 Series.

Syntax

- **boot config multicast**
- **default boot config multicast**

Default

None

Command Mode

Global Configuration

boot config sio console baud

Configure the serial port devices to define connection settings for the console port.

Syntax

- **boot config sio console baud <9600 - 115200> {<1-8> | SF1 | SF2 | SF3}**
- **default boot config sio console baud**

Command Parameters

<9600-115200> {<1-8> | SF1 | SF2 | SF3}	Configures the baud rate for the port. The default baud rate differs depending on hardware platform.

Default

None

Command Mode

Global Configuration

certifcate subject

Configure the device subject parameters to identify the device, such as the name, Email ID, company, department, and location.

Syntax

- **certifcate subject common-name WORD<0-64>**
- **certifcate subject country WORD<0-128>**

- **certifcate subject e-mail WORD<0-254>**
- **certifcate subject locality WORD<0-128>**
- **certifcate subject organization WORD<0-64>**
- **certifcate subject province WORD<0-128>**
- **certifcate subject unit WORD<0-64>**
- **default certifcate subject**
- **no certifcate subject**
- **no certifcate subject common-name**
- **no certifcate subject country**
- **no certifcate subject e-mail**
- **no certifcate subject locality**
- **no certifcate subject organization**
- **no certifcate subject province**
- **no certifcate subject unit**

Command Parameters

common-name WORD<0–64>	Specifies the name of the subject sending the Certificate Signing Request to the Certificate Authority.
country WORD<0–128>	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 ca

Configures the certificate authority and perform related actions. You can configure only one CA in a device at a time.

Syntax

- **certificate ca WORD<1–45>**
- **certificate ca WORD<1–45> action caauth**
- **certificate ca WORD<1–45> action enroll validity-days <7–1185>**
- **certificate ca WORD<1–45> action get-crl**
- **certificate ca WORD<1–45> action install**
- **certificate ca WORD<1–45> action noop**
- **certificate ca WORD<1–45> action remove**
- **certificate ca WORD<1–45> action renew validity-days <7–1185>**
- **certificate ca WORD<1–45> ca-url WORD<0–1000>**
- **certificate ca WORD<1–45> common-name WORD<0–64>**
- **certificate ca WORD<1–45> install-file root-ca-filename WORD<1–80>**
- **certificate ca WORD<1–45> key-name<0–64>**
- **certificate ca WORD<1–45> use-post <true|false>**
- **certificate ca WORD<1–45> use-post false**
- **certificate ca WORD<1–45> use-post true**
- **default certificate ca**
- **no certificate ca WORD<1–45>**
- **no certificate ca WORD<1–45> action**
- **no certificate ca WORD<1–45> ca-url**
- **no certificate ca WORD<1–45> common-name**
- **no certificate ca WORD<1–45> key-name**
- **no certificate ca WORD<1–45> use-post**

Command Parameters

action caauth	Authenticates the trustpoint CA by getting the certificate of the CA and stores the CA certificate locally.
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. The validity-days specifies the number of days for which the certificate remains valid. The default value is 365 days.

action get-crl	Gets the Certificate Revocation List from the CDP and stores into a file.
action install	Installs the subject certificate obtained from the given trustpoint CA.
action noop	Specifies that no operation should be performed after configuring trustpoint.
action remove	Releases the locally stored certificate associated with the trustpoint CA post revocation.
action renew [challengepassword WORD<0-128>]	This password is provided offline by the CA during the end entity registration. The length of the password is from 0 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 remains valid. The default value is 365 days.
ca-url WORD<0–1000>	Specifies the trusted CA url.
common-name WORD<0–64>	Specifies the name of the owner of the device or user.
install-file [rootca-filename WORD<1–80>]	Installs the Root CA file obtained offline from the CA.
key-name WORD<0–45>	Specifies the key pair generated by the command that was first associated with the CA trustpoint.
use-post <true|false>	Specify the HTTP request style. The default value is True.
WORD<1–45>	Specifies the name of the certification authority. It should be alphanumeric and case-sensitive with maximum length is 45 characters.

Default

None

Command Mode

Global Configuration

certificate generate-csr

Generate certificate signing request (CSR) and store it into a file.

Syntax

- **certificate generate-csr**

Default

None

Command Mode

Global Configuration

certificate generate-keypair

Generate the private and public key pair for the specific cryptography type.

Syntax

- **certificate generate-keypair type rsa size <2048>**
- **default certificate generate-keypair**
- **no certificate generate-keypair**

Command Parameters

size 2048	Specifies the size or modulus of key-pair to be generated. The value should be 2048.
type rsa	Specifies type of cryptography algorithm used to generate the key-pair.

Default

None

Command Mode

Global Configuration

certificate install-file

Install CA, Root CA, subject certificate, or CRL file obtained offline from the certification authority (CA).

Syntax

- **certificate install-file offline-ca-filename WORD<1-80>**
- **certificate install-file offline-crl-filename WORD<1-80>**
- **certificate install-file offline-root-ca-filename WORD<1-80>**
- **certificate install-file offline-subject-filename WORD<1-80>**
- **no certificate install-file offline-ca-filename WORD<1-80>**

- **no certificate install-file offline-crl-filename WORD<1-80>**
- **no certificate install-file offline-root-ca-filename WORD<1-80>**
- **no certificate install-file offline-subject-filename WORD<1-80>**

Command Parameters

offline-ca-filename WORD<1-80>	Specifies the CA file name obtained from the CA.
offline-crl-filename WORD<1-80>	Specifies the CRL file obtained from the CA
offline-root-ca-filename WORD<1-80>	Specifies the Root CA file name obtained from the CA.
offline-subject-filename WORD<1-80>	Specifies the subject certificate file name obtained from the CA.

Default

None

Command Mode

Global Configuration

cfm cmac enable

Enables CFM for C-VLANs, which creates the MD, MA, and MEP, and then associate the MEP and MIP level to C-VLANs.

Syntax

- **cfm cmac enable**
- **no cfm cmac enable**

Default

The default is disabled

Command Mode

Global Configuration

cfm cmac level <0-7>

Configures the maintenance level for the MEP and MIP associated with C-VLANs.

Syntax

- **cfm cmac level <0-7>**

- **default cfm cmac level**

Command Parameters

<0-7> Specifies the global C-MAC CFM maintenance level for the chassis within the range of 0 to 7.

Default

The default is 4.

Command Mode

Global Configuration

cfm cmac mepid <1-8191>

Assigns a global MEP ID for all CFM CMAC MEPs.

Syntax

- **cfm cmac mepid <1-8191>**
- **default cfm cmac mepid**

Command Parameters

<1-8191> Specifies the global MEP ID within the range of 1 to 8191.

Default

The default is 1.

Command Mode

Global Configuration

cfm maintenance-association

Create the Connectivity Fault Management (CFM) Maintenance-Association (MA).

Syntax

- **cfm maintenance-association WORD<1-22> WORD<1-22>**
- **cfm maintenance-association WORD<1-22> WORD<1-22> index <1-2147483647>**
- **no cfm maintenance-association WORD<1-22> WORD<1-22>**

Command Parameters

index <1-2147483647> Specifies a Maintenance-Association (MA) entry index.

WORD<1-22>	Creates the Connectivity Fault Management (CFM) Maintenance-Association (MA).

Default

The default is disabled.

Command Mode

Global Configuration

cfm maintenance-domain

Create the Connectivity Fault Management (CFM) Maintenance-Domain (MD).

Syntax

- **cfm maintenance-domain WORD<1-22>**
- **cfm maintenance-domain WORD<1-22> index <1-2147483647>**
- **cfm maintenance-domain WORD<1-22> index <1-2147483647> maintenance-level <0-7>**
- **cfm maintenance-domain WORD<1-22> level <0-7>**
- **cfm maintenance-domain WORD<1-22> maintenance-level <0-7>**
- **cfm maintenance-domain WORD<1-22> maintenance-level <0-7> index <1-2147483647>**
- **no cfm maintenance-domain WORD<1-22>**

Command Parameters

index <1-2147483647>	Specifies a Maintenance-Domain (MD) entry index.
level <0-7>	Specifies the Maintenance-Domain (MD) level for an existing Maintenance-Domain (MD).
maintenance-level <0-7>	Specifies the Maintenance-Domain (MD) maintenance level when creating the Maintenance-Domain (MD).
WORD<0-22>	Specifies the Maintenance-Domain (MD) name.
WORD<0-22>	Specifies the Maintenance-Association (MA) name.

Default

None

Command Mode

Global Configuration

cfm maintenance-endpoint

Create the Connectivity Fault Management (CFM) Maintenance-Endpoint (MEP).

Syntax

- **cfm maintenance-endpoint WORD<1-22> WORD<1-22> <1-8191>**
- **cfm maintenance-endpoint WORD<1-22> WORD<1-22> <1-8191> enable**
- **cfm maintenance-endpoint WORD<1-22> WORD<1-22> <1-8191> state enable**
- **no cfm maintenance-endpoint WORD<1-22> WORD<1-22> <1-8191>**
- **no cfm maintenance-endpoint WORD<1-22> WORD<1-22> <1-8191> enable**

Command Parameters

<1-8191>	Specifies the Maintenance Endpoint (MEP) ID.
enable	Enables an existing Maintenance Endpoint (MEP). Use this parameter with the no option to disable an existing MEP.
state enable	Enables the Maintenance Endpoint (MEP) when creating the MEP. Use the no option to disable the Maintenance Endpoint.
WORD<1-22>	Specifies the Maintenance-Domain (MD) name.
WORD<1-22>	Specifies the Maintenance-Association (MA) name.

Default

None

Command Mode

Global Configuration

cfm spbm enable

Enables CFM for B-VLANs, which creates the MD, MA, and MEP, and then associate the MEP and MIP level to B-VLANs.

Syntax

- **cfm spbm enable**
- **no cfm spbm enable**

Default

The default is disabled.

Command Mode

Global Configuration

cfm spbm level

Configures the maintenance level for every CFM SPBM MEP and MIP level on all SPBM VLANs.

Syntax

- **cfm spbm level <0-7>**
- **default cfm spbm level**

Command Parameters

<0-7> Specifies the maintenance level for every CFM SPBM MEP and MIP level on all SPBM VLANs. The default is 4.

Default

The default is 4.

Command Mode

Global Configuration

cfm spbm mepid

Assigns a global MEP ID for all CFM SPBM MEPs.

Syntax

- **cfm spbm mepid <1-8191>**
- **default cfm spbm mepid**

Command Parameters

<1-8191> Specifies the global MEP ID for all CFM SPBM MEPs. The default is 1.

Default

The default is 1.

Command Mode

Global Configuration

clear ipv6 fhs snooping

Clears all SBT entries or a particular dynamic SBT entry.

Syntax

- **clear ipv6 fhs snooping**
- **clear ipv6 fhs snooping vlan <1-4059>**
- **clear ipv6 fhs snooping vlan <1-4059> ipv6-address WORD<0-46>**

Command Parameters

ipv6-address WORD<0-46>	Clears a specific snooping entry based on its IPv6 address.
vlan <*1-4059*>	Clears snooping entries by VLAN. Specifies the VLAN ID in the range of 1 to 4059. By default, VLAN IDs 1 to 4059 are configurable and the system reserves VLAN IDs 4060 to 4094 for internal use. On switches that support the vrf-scaling and spbm-config-mode boot configuration flags, if you enable these flags, the system also reserves VLAN IDs 3500 to 3998. VLAN ID 1 is the default VLAN and you cannot create or delete VLAN ID 1.

Default

None

Command Mode

Global Configuration

clear ipv6 fhs statistics dhcp-guard

Clears the DHCP-guard statistics.

Syntax

- **clear ipv6 fhs statistics dhcp-guard {slot/port[/sub-port][-slot/port[/sub-port]][,...]}**

Command Parameters

{slot/port[/sub-port] [-slot/port[/sub-port]] [,...]}	Identifies the slot and port in one of the following formats: a single slot and port (slot/port), a range of slots and ports (slot/port-slot/port), or a series of slots and ports (slot/port,slot/port,slot/port). If your platform supports channelization and the port is channelized, you must also specify the sub-port in the format slot/port/sub-port.

Default

None

Command Mode

Global Configuration

clear ipv6 fhs statistics nd-inspection

Clear the Neighbor Discovery inspection statistics on either a single port or a set of ports or all ports.

Syntax

- **clear ipv6 fhs statistics nd-inspection**
- **clear ipv6 fhs statistics nd-inspection {slot/port[/sub-port][-slot/port[/sub-port]][,...]}**

Command Parameters

{slot/port[/sub-port] [-slot/port[/sub-port]] [,...]}	Identifies the slot and port in one of the following formats: a single slot and port (slot/port), a range of slots and ports (slot/port-slot/port), or a series of slots and ports (slot/port,slot/port,slot/port). If your platform supports channelization and the port is channelized, you must also specify the sub-port in the format slot/port/sub-port.

Default

None

Command Mode

Global Configuration

clear ipv6 fhs statistics ra-guard

Clears the RA-guard statistics.

Syntax

- **clear ipv6 fhs statistics ra-guard {slot/port[/sub-port][-slot/port[/sub-port]][,...]}**

Command Parameters

{slot/port[/sub-port] [-slot/port[/sub-port]] [,...]}	Identifies the slot and port in one of the following formats: a single slot and port (slot/port), a range of slots and ports (slot/port-slot/port), or a series of slots and ports (slot/port,slot/port,slot/port). If your platform supports channelization and the port is channelized, you must also specify the sub-port in the format slot/port/sub-port.

Default

None

Command Mode

Global Configuration

cli password

Configure new passwords for each access level, or change the logon or password for the different access levels of the switch. After you receive the switch, use default passwords to initially access CLI. If you use Simple Network Management Protocol version 3 (SNMPv3), you can change encrypted passwords.

Syntax

- **cli password WORD<1-20> layer1**
- **cli password WORD<1-20> layer2**
- **cli password WORD<1-20> layer3**
- **cli password WORD<1-20> read-only**
- **cli password WORD<1-20> read-write**
- **cli password WORD<1-20> read-write-all**

Command Parameters

<layer1|layer2|layer3|read-only|read-write|read-write-all>	Changes the password for the specific access level. • The read-only default logon is ro and the default password is ro. • The Layer 1 read/write logon is l1 and the default password is l1. • The Layer 2 read/write logon is l2 and the default password is l2. • The Layer 3 read/write logon is l3 and the default password is l3. • The read/write logon is rw and the default password is rw. • The read/write/all logon is rwa and the default password is rwa.
WORD<1-20>	Specifies the user login name.

Default

None

Command Mode

Global Configuration

cli timeout

Configure the idle timeout period before automatic logoff for CLI and Telnet sessions.

Syntax

- **cli timeout <30-65535>**
- **default cli timeout**

Command Parameters

<30-65535>	Configures the timeout value, in seconds, to wait for a Telnet or CLI login session before terminating the connection.

Default

The default is 900 seconds.

Command Mode

Global Configuration

clilog

Use CLI logging to track all CLI commands executed and for fault management purposes. CLI commands are logged to the system log file as CLILOG module.

Syntax

- **clilog enable**
- **clilog maxfilesize <64-256000>**
- **clilog syslog-host enable**
- **default clilog**
- **default clilog enable**
- **default clilog maxfilesize**
- **default clilog syslog-host enable**
- **no clilog enable**
- **no clilog syslog-host enable**

Default

The default is disabled.

Command Mode

Global Configuration

clock time-zone

Configure the time zone to use an internal system clock to maintain accurate time. The time zone data in Linux includes daylight changes for all time zones from 1901 to 2038. You do not need to configure daylight saving time.

Syntax

- **clock time-zone**
- **clock time-zone WORD<1-10> [WORD<1-20>][WORD<1-20>]**
- **default clock time-zone**
- **no clock time-zone**

Command Parameters

WORD<1-10>	Specifies a directory name or a time zone name in /usr/share/zoneinfo, for example, Africa, Australia, Antarctica, or US. To see a list of options, enter clock time-zone at the command prompt without variables.
WORD<1-20> **WORD<1-20>**	The first instance of WORD<1-20> is the area within the timezone. The value represents a time zone data file in /usr/share/zoneinfo/WORD<1-10>/ , for example, Shanghai in Asia. The second instance of WORD<1-20>is the subarea. The value represents a time zone data file in /usr/share/zoneinfo/WORD<1-10>/WORD<1-20>/, for example, Vevay in America/Indiana. To see a list of options, enter clock time-zone at the command prompt without variables.

Default

The default is Coordinated Universal Time (UTC).

Command Mode

Global Configuration

debug ip pim

Configures debug commands for pim messages globally.

Syntax

- **debug ip pim assert**
- **debug ip pim bstrap**
- **debug ip pim group {A.B.C.D}**
- **debug ip pim hello**
- **debug ip pim join-prune**
- **debug ip pim pimdbglog**
- **debug ip pim pimdbgtrace**
- **debug ip pim rcv-dbg-trace**
- **debug ip pim register**

- **debug ip pim regstop**
- **debug ip pim rp-adv**
- **debug ip pim send-dbg-trace**
- **debug ip pim source {A.B.C.D}**

Command Parameters

assert	Set assert debug trace to true.
bstrap	Set bstrap trace to true.
group {A.B.C.D}	Set group value to specific multicast group value.
hello	Set hello debug trace to true.
join-prune	Set joinprune debug trace to true.
pimdbglog	Set pim debug log to true.
pimdbgtrace	Set pim debug trace to true.
rcv-dbg-trace	Set rcv debug trace to true.
register	Set register debug trace to true.
regstop	Set register stop debug trace to true.
rp-adv	Set rp-adv debug trace to true.
send-dbg-trace	Set send trace to true.
source {A.B.C.D}	Set source value to specific source ip-addr.

Default

None

Command Mode

Global Configuration

dvr apply redistribute direct

Applies the configuration of DvR route redistribution for direct routes.

Syntax

- **dvr apply redistribute direct**
- **dvr apply redistribute direct vrf WORD<1-16>**

Command Parameters

none	Applies DvR route redistribution configuration of direct routes on the GRT.
vrf WORD<1-16>	Applies DvR route redistribution configuration of direct routes for the specified VRF.

Default

none

Command Mode

Global Configuration

dvr apply redistribute static

Applies the configuration of DvR route redistribution for static routes.

Syntax

- **dvr apply redistribute static**
- **dvr apply redistribute static vrf WORD<1-16>**

Command Parameters

none	Applies DvR route redistribution configuration of static routes on the GRT.
vrf WORD<1-16>	Applies DvR route redistribution configuration of static routes for the specified VRF.

Default

none

Command Mode

Global Configuration

dvr controller

Configures a switch as the DvR Controller of a DvR domain, whose domain ID you specify. Configuring a switch as the Controller enables DvR globally on the node.

Syntax

- **default dvr controller inject-default-route-disable**
- **dvr controller <1-255>**

- **dvr controller inject-default-route-disable**
- **no dvr controller**
- **no dvr controller inject-default-route-disable**

Command Parameters

<1-255> Configures a switch as the DvR Controller of a DvR domain, whose domain ID you specify. Configuring a switch as the Controller enables DvR globally on the node.

Default

none

Command Mode

Global Configuration

dvr controller <1-255> inject-default-route-disable

Disables injection of default routes for the GRT on the DvR Controller.

Syntax

- **default dvr controller <1-255> inject-default-route-disable**
- **dvr controller <1-255> inject-default-route-disable**

Default

The default is enable

Command Mode

Global Configuration

dvr leaf

Configures a switch as the DvR Leaf in a DvR domain, whose domain ID you specify. Configuring a switch as the DvR Leaf enables DvR globally on the node.

Syntax

- **dvr leaf <1-255>**
- **no dvr leaf**

Command Parameters

<1-255> Configures a switch as the DvR Leaf in a DvR domain, whose domain ID you specify. Configuring a switch as the DvR Leaf enables DvR globally on the node.

Default

none

Command Mode

Global Configuration

dvr leaf <1-255> virtual-ist {A.B.C.D/X} {A.B.C.D} peer-ip {A.B.C.D} cluster-id <1-1000>

Configures vIST on a DvR Leaf node pair. When you configure vIST on a DvR Leaf node pair, the switch generates an I-SID from the configured cluster ID. This I-SID is unique across the SPB network as long as the cluster ID is unique across the SPB network, for the vIST pair.

You can configure only one instance of vIST on the Leaf node pair. To configure vIST, both nodes must be Leaf nodes. You cannot configure vIST, for example, on a Controller-Leaf node pair. Also both the nodes must belong to the same DvR domain.

vIST configuration over Leaf nodes in different domains is not supported.

Syntax

- **dvr leaf <1-255> virtual-ist {A.B.C.D/X} {A.B.C.D} peer-ip {A.B.C.D} cluster-id <1-1000>**

Command Parameters

none	Configures vIST on a DvR Leaf node pair

Default

none

Command Mode

Global Configuration

dvr leaf <1-255> virtual-ist {A.B.C.D} {A.B.C.D} peer-ip {A.B.C.D} cluster-id <1-1000>

Configures vIST on a DvR Leaf node pair. When you configure vIST on a DvR Leaf node pair, the switch generates an I-SID from the configured cluster ID. This I-SID is unique across the SPB network as long as the cluster ID is unique across the SPB network, for the vIST pair.

You can configure only one instance of vIST on the Leaf node pair. To configure vIST, both nodes must be Leaf nodes. You cannot configure vIST, for example, on a Controller-Leaf node pair. Also both the nodes must belong to the same DvR domain.

vIST configuration over Leaf nodes in different domains is not supported.

Syntax

- **dvr leaf <1-255> virtual-ist {A.B.C.D} {A.B.C.D} peer-ip {A.B.C.D} cluster-id <1-1000>**

Command Parameters

none	Configures vIST on a DvR Leaf node pair

Default

none

Command Mode

Global Configuration

dvr redistribute direct

Enables route redistribution of direct routes on the GRT. The route type is internal.

Syntax

- **dvr redistribute direct enable**
- **dvr redistribute direct metric <0-65535>**
- **dvr redistribute direct route-map**

Command Parameters

enable	Enables route redistribution of direct routes on the GRT. The route type is internal.
metric <0-65535>	Configures the route redistribution metric for direct routes on the GRT.
route-map	Configures the route policy for route redistribution of direct routes, on the GRT.

Default

The default is disable

Command Mode

Global Configuration

dvr redistribute static

Enables route redistribution of static routes on the GRT. The route type is internal.

Syntax

- **dvr redistribute static enable**
- **dvr redistribute static metric <0-65535>**
- **dvr redistribute static route-map**

Command Parameters

enable	Enables route redistribution of static routes on the GRT. The route type is external.
metric <0-65535>	Configures the route redistribution metric for static routes on the GRT.
route-map	Configures the route policy for route redistribution of static routes, on the GRT.

Default

The default is disable

Command Mode

Global Configuration

eapol enable

Configure Extensible Authentication Protocol (EAPoL) on the switch.

Syntax

- **default eapol enable**
- **eapol enable**
- **no eapol enable**

Default

None

Command Mode

Global Configuration

eapol multihost non-eap-pwd-fmt

Configure the RADIUS password format for non-eap authentication for a radius server.

Syntax

- **default eapol multihost non-eap-pwd-fmt**

- **eapol multihost non-eap-pwd-fmt**
- **eapol multihost non-eap-pwd-fmt ip-addr**
- **eapol multihost non-eap-pwd-fmt keystring**
- **eapol multihost non-eap-pwd-fmt mac-addr**
- **eapol multihost non-eap-pwd-fmt padding**
- **eapol multihost non-eap-pwd-fmt port-number**

Command Parameters

ip-addr	Management ip-address of the switch.
key WORD<1-32>	Key string used in password format.
mac-addr	MAC address of the client.
padding	A dot(.) is used as delimiter.
port-number	IfIndex of the port on which MAC is received.

Default

None

Command Mode

Global Configuration

end

Use this command to return to the Privileged EXEC mode from Global Configuration mode or higher.

Syntax

- **end**

Default

None

Command Mode

Global Configuration

energy-saver (global)

Configures the Energy Saver feature on the switch.

Syntax

- **default energy-saver efficiency-mode**
- **default energy-saver enable**
- **default energy-saver poe-power-saving**
- **energy-saver efficiency-mode**
- **energy-saver enable**
- **energy-saver poe-power-saving**
- **no energy-saver efficiency-mode**
- **no energy-saver enable**
- **no energy-saver poe-power-saving**

Command Parameters

efficiency-mode	Enables efficiency mode on the switch. • Efficiency mode enables Energy Saver globally and on all ports; it also enables PoE power saving. • Efficiency mode creates a weekday schedule that starts at 6:00 p.m. and ends at 7:30 a.m. • During the weekend Energy Saver is always activated.
enable	Enables Energy Saver on the switch.
poe-power-saving	Enables PoE power savings on the switch.

Default

Disabled

Command Mode

Global Configuration

energy-saver schedule

Configures a scheduled time interval during which the switch will operate in low power state.

Syntax

- **default energy-saver schedule {friday | monday | saturday | sunday | thursday | tuesday | wednesday | weekday | weekend} <hhmm>**
- **energy-saver schedule {friday | monday | saturday | sunday | thursday | tuesday | wednesday | weekday | weekend} <hhmm> activate**
- **energy-saver schedule {friday | monday | saturday | sunday | thursday | tuesday | wednesday | weekday | weekend} <hhmm> deactivate**

- **no energy-saver schedule {friday | monday | saturday | sunday | thursday | tuesday | wednesday | weekday | weekend} <hhmm>**

Command Parameters

{friday | monday | saturday | sunday |thursday | tuesday | wednesday | weekday | weekend}	Specifies the day(s) to enable Energy Saver feature on the switch.
<hhmm>	Specifies the hour and minutes to enable Energy Saver feature on the switch.
activate	Activates the scheduled event.
deactivate	Deactivates the scheduled event.

Default

Disabled

Command Mode

Global Configuration

fa assignment-timeout

Configure the Fabric Attach assignment time-out in seconds.

Syntax

- **default fa assignment-timeout**
- **fa assignment-timeout <30-480>**

Command Parameters

<30-480>	Specifies the Fabric Attach assignment timeout in seconds. The default value is 240 seconds.

Default

None

Command Mode

Global Configuration

fa discovery-timeout

Configure the Fabric Attach discovery time-out in seconds.

Syntax

- **default fa fa discovery-timeout**
- **fa discovery-timeout <30-480>**

Command Parameters

<30-480>	Specifies the Fabric Attach discovery timeout in seconds. The default value is 240 seconds.

Default

None

Command Mode

Global Configuration

fa enable

Enable Fabric Attach globally.

Syntax

- **fa enable**
- **no fa enable**

Default

None

Command Mode

Global Configuration

fa zero-touch-client

Configure Fabric Attach zero touch for client.

Syntax

- **fa zero-touch-client standard <camera|ona-sdn|ona-spb-over-ip|phone|router|security-device|srvr-endpt|switch|video|virtual-switch|wap-type1|wap-type2> i-sid <1–15999999>**
- **fa zero-touch-client standard camera i-sid <1–15999999>**
- **fa zero-touch-client standard ona-sdn i-sid <1–15999999>**
- **fa zero-touch-client standard ona-spb-over-ip i-sid <1–15999999>**
- **fa zero-touch-client standard phone i-sid <1–15999999>**

- **fa zero-touch-client standard router i-sid <1–15999999>**
- **fa zero-touch-client standard security-device i-sid <1–15999999>**
- **fa zero-touch-client standard srvr-endpt i-sid <1–15999999>**
- **fa zero-touch-client standard switch i-sid <1–15999999>**
- **fa zero-touch-client standard video i-sid <1–15999999>**
- **fa zero-touch-client standard virtual-switch i-sid <1–15999999>**
- **fa zero-touch-client standard wap-type1 i-sid <1–15999999>**
- **fa zero-touch-client standard wap-type2 i-sid <1–15999999>**
- **no fa zero-touch-client standard camera i-sid <1–15999999>**
- **no fa zero-touch-client standard ona-sdn i-sid <1–15999999>**
- **no fa zero-touch-client standard ona-spb-over-ip i-sid <1–15999999>**
- **no fa zero-touch-client standard phone i-sid <1–15999999>**
- **no fa zero-touch-client standard router i-sid <1–15999999>**
- **no fa zero-touch-client standard security-device i-sid <1–15999999>**
- **no fa zero-touch-client standard srvr-endpt i-sid <1–15999999>**
- **no fa zero-touch-client standard switch i-sid <1–15999999>**
- **no fa zero-touch-client standard video i-sid <1–15999999>**
- **no fa zero-touch-client standard virtual-switch i-sid <1–15999999>**
- **no fa zero-touch-client standard wap-type1 i-sid <1–15999999>**
- **no fa zero-touch-client standard wap-type2 i-sid <1–15999999>**

Command Parameters

camera	Specifies the cliet type as IP Camera.
i-sid <1–15999999>	Specifies the Client I-SID for I-SID/VLAN binding generation.
ona-sdn	Specifies the cliet type as ONA (SDN).
ona-spb-over-ip	Specifies the cliet type as ONA (SpbOlp).
phone	Specifies the cliet type as IP Phone.
router	Specifies the cliet type as Router.
security-device	Specifies the cliet type as Security Device.
srvr-endpt	Specifies the cliet type as Server Endpoint.
standard	Specifies the Standard (pre-defined) client type.
switch	Specifies the cliet type as Switch.

video	Specifies the cliet type as IP Video.
virtual-switch	Specifies the cliet type as Virtual Switch.
wap-type1	Specifies the cliet type as Wireless AP (Type 1).
wap-type2	Specifies the cliet type as Wireless AP (Type 2).

Default

The default value is enable.

Command Mode

Global Configuration

filter acl

Use an access control list (ACL) to specify an ordered list of ACEs, or filter rules.

Syntax

- **default filter acl <acl-id>**
- **default filter acl <acl-id> enable**
- **default filter acl <acl-id> name**
- **filter acl <acl-id> enable**
- **filter acl <acl-id> name WORD<0-32>**
- **filter acl <acl-id> type <inVlan | inPort | outPort |inVsn>**
- **filter acl <acl-id> type <inVlan | inPort | outPort |inVsn> name WORD<0-32>**
- **filter acl <acl-id> type <inVlan | inPort | outPort |inVsn> pktType ipv6**
- **filter acl <acl-id> type inVsn matchType <both | terminatingNNIOnly | uniOnly>**
- **filter acl <acl-id> type inVsn matchType <both | terminatingNNIOnly | uniOnly> pkType ipv6**
- **no filter acl <acl-id>**
- **no filter acl <acl-id> enable**

Command Parameters

<acl-id>	Specifies the ACL ID. Use the CLI Help to see the available range for your switch.

matchType <both | terminatingNNIOnly | uniOnly>	For inVsn ACL types, specifies the type of port to associate with the ACL.
name WORD<0-32>	Specifies an optional descriptive name for the ACL.
pktType ipv6	Specifies the packet type as IPv6.
type <inVlan|inPort|outPort| inVsn>	Specifies the access control list (ACL) type. The values inVlan, inPort, and inVsn are ingress ACLs, and outPort is an egress ACL.

Default

None

Command Mode

Global Configuration

filter acl ace

Use an access control entry (ACE) to define a packet pattern and the desired behavior for packets that carry the pattern.

Syntax

- **default filter acl ace <acl-id> <ace-id>**
- **default filter acl ace <acl-id> <ace-id> enable**
- **default filter acl ace <acl-id> <ace-id> name**
- **filter acl ace <acl-id> <ace-id>**
- **filter acl ace <acl-id> <ace-id> enable**
- **filter acl ace <acl-id> <ace-id> name WORD<1-32>**
- **no filter acl ace <acl-id> <ace-id>**
- **no filter acl ace <acl-id> <ace-id> enable**

Command Parameters

<ace-id>	Specifies the ACE ID. Different hardware platforms support different ACE ID ranges. Use the CLI Help to see the available range for your switch.
<acl-id>	Specifies the ACL ID. Use the CLI Help to see the available range for your switch.
enable	Enables an access control entry (ACE) within an access control list (ACL). After you enable an ACE, to make changes, first disable it.

name WORD<1-32>	Specifies an optional descriptive name for the access control entry (ACE) that uses 1-32 characters.

Default

None

Command Mode

Global Configuration

filter acl ace action

Configure the access control entry (ACE) action mode as deny or permit.

Syntax

- **default filter acl ace action <acl-id> <ace-id> { permit | deny } internal-qos**
- **default filter acl ace action <acl-id> <ace-id> { permit | deny } monitor-dst-mlt**
- **default filter acl ace action <acl-id> <ace-id> { permit | deny } monitor-dst-mlt count**
- **default filter acl ace action <acl-id> <ace-id> { permit | deny } monitor-dst-mlt count redirect-next-hop**
- **default filter acl ace action <acl-id> <ace-id> { permit | deny } monitor-dst-mlt redirect-next-hop**
- **default filter acl ace action <acl-id> <ace-id> { permit | deny } monitor-dst-mlt redirect-next-hop unreachable**
- **default filter acl ace action <acl-id> <ace-id> { permit | deny } monitor-dst-ports**
- **default filter acl ace action <acl-id> <ace-id> { permit | deny } redirect-next-hop**
- **default filter acl ace action <acl-id> <ace-id> { permit | deny } remark-dot1p**
- **default filter acl ace action <acl-id> <ace-id> { permit | deny } remark-dscp**
- **default filter acl ace action <acl-id> <ace-id> { permit | deny }**
- **default filter acl ace action <acl-id> <ace-id> { permit | deny } count**
- **filter acl ace action <acl-id> <ace-id> { permit | deny }**
- **filter acl ace action <acl-id> <ace-id> { permit | deny } count**
- **filter acl ace action <acl-id> <ace-id> { permit | deny } internal-qos <0-7>**

- **filter acl ace action <acl-id> <ace-id> { permit | deny } monitor-dst-mlt <1-512>**
- **filter acl ace action <acl-id> <ace-id> { permit | deny } monitor-dst-ports {slot/port[/sub-port][-slot/port[/sub-port]][,...]}**
- **filter acl ace action <acl-id> <ace-id> { permit | deny } redirect-next-hop WORD<1-45>**
- **filter acl ace action <acl-id> <ace-id> { permit | deny } remark-dot1p <0-7>**
- **filter acl ace action <acl-id> <ace-id> { permit | deny } remark-dscp <0-256 | 0-256>**
- **filter acl ace action <acl-id> <ace-id> { permit | deny } redirect-next-hop WORD<1-45> [count | unreachable | vrf {WORD <1-16>}]**
- **filter acl ace action <acl-id> <ace-id> { permit | deny } redirect-next-hop WORD<1-45> unreachable { permit | deny }**
- **filter acl ace action <acl-id> <ace-id> { permit | deny } redirect-next-hop WORD<1-45> unreachable { permit | deny } count**
- **filter acl ace action <acl-id> <ace-id> { permit | deny } redirect-next-hop WORD<1-45> vrf WORD <1-16> unreachable { permit | deny }**
- **filter acl ace action <acl-id> <ace-id> { permit | deny } redirect-next-hop WORD<1-45> vrf WORD <1-16> unreachable { permit | deny } count**
- **no filter acl ace action <acl-id> <ace-id> { permit | deny }**
- **no filter acl ace action <acl-id> <ace-id> { permit | deny } count**
- **no filter acl ace action <acl-id> <ace-id> { permit | deny } internal-qos**
- **no filter acl ace action <acl-id> <ace-id> { permit | deny } monitor-dst-mlt**
- **no filter acl ace action <acl-id> <ace-id> { permit | deny } monitor-dst-mlt count**
- **no filter acl ace action <acl-id> <ace-id> { permit | deny } monitor-dst-mlt count [log [redirect-next-hop]]**
- **no filter acl ace action <acl-id> <ace-id> { permit | deny } monitor-dst-mlt count redirect-next-hop**
- **no filter acl ace action <acl-id> <ace-id> { permit | deny } monitor-dst-mlt log**
- **no filter acl ace action <acl-id> <ace-id> { permit | deny } monitor-dst-mlt log redirect-next-hop**
- **no filter acl ace action <acl-id> <ace-id> { permit | deny } monitor-dst-mlt redirect-next-hop**
- **no filter acl ace action <acl-id> <ace-id> { permit | deny } monitor-dst-ports**

- **no filter acl ace action <acl-id> <ace-id> { permit | deny } remark-dscp**
- **no filter acl ace action <acl-id> <ace-id> { permit | deny } redirect-next-hop**
- **no filter acl ace action <acl-id> <ace-id> { permit | deny } remark-dot1p**

Command Parameters

<ace-id>	Specifies the ACE ID. Different hardware platforms support different ACE ID ranges. Use the CLI Help to see the available range for your switch.
<acl-id>	Specifies the ACL ID. Use the CLI Help to see the available range for your switch.
<permit|deny>	Configures the action mode for security access control entries (ACEs). Each ACE has a mode of permit or deny the matched traffic. You can use filters to configure metering of permitted traffic. **Note:** For each Security ACE, you must define one or more actions as well as the associated action mode (permit or deny). Otherwise, the security ACE cannot be enabled. There is no default configuration for Security ACEs. With QoS ACEs, the action mode is not configurable. QoS ACEs are always set to action mode permit.
count	Enables the ability to count matching packets. Use this parameter with either a security or QoS access control entry (ACE). The default is disabled.
internal-qos	Configures the Quality of Service (QoS) level. The default value is 1. This variable is not supported on all hardware platforms. For more information, see Release Notes for XA1400 Series.
monitor-dst-mlt <1-512>	Configures mirroring to a destination MLT group. This action is a security action.
monitor-dst-ports *{slot/port[/sub-port] [-slot/port[/sub-port]] [,...]}*	Configures mirroring to a destination port or ports. This action is a security action. Identifies the slot and port in one of the following formats: a single slot and port (slot/port), a range of slots and ports (slot/port-slot/port), or a series of slots and ports (slot/port,slot/port,slot/port). If your platform supports channelization and the port is channelized, you must also specify the sub-port in the format slot/port/sub-port.
redirect-next-hop WORD<1-15>	Specifies the next-hop IP address for redirect mode (a.b.c.d). This action is a security action.

remark-dot1p <0-7>	Specifies the new 802.1 priority bit for matching packets: zero, one, two, three, four, five, six, or seven. This action is a QoS action. This variable is not supported on all hardware platforms. For more information, see Release Notes for XA1400 Series.
remark-dscp <0-63>	Specifies the new Per-Hop Behavior (PHB) for matching packets: • phbcs0 • phbcs1 • phbaf11 • phbaf12 • phbaf13 • phbcs2 • phbaf21 • phbaf22 • phbaf23 • phbcs3 • phbaf31 • phbaf32 • phbaf33 • phbcs4 • phbaf41 • phbaf42 • phbaf43 • phbcs5 • phbef • phbcs6 • phbcs7 This action is a QoS action. This variable is not supported on all hardware platforms. For more information, see Release Notes for XA1400 Series.

Default

The default to configure ACE actions to meter flows after a packet matches an ACE is disabled.

Command Mode

Global Configuration

filter acl ace arp

Use access control entry (ACE) ARP entries so that the filter looks for ARP requests or responses.

Syntax

- **default filter acl ace arp <acl-id> <ace-id>**
- **filter acl ace arp <acl-id> <ace-id> operation eq arprequest**
- **filter acl ace arp <acl-id> <ace-id> operation eq arpresponse**
- **no filter acl ace arp <acl-id> <ace-id>**
- **no filter acl ace arp <acl-id> <ace-id> operation**

Command Parameters

<ace-id>	Specifies the ACE ID. Different hardware platforms support different ACE ID ranges. Use the CLI Help to see the available range for your switch.
<acl-id>	Specifies the ACL ID. Use the CLI Help to see the available range for your switch.
operation eq <arprequest| arpresponse>	Specifies an ARP operation type of arpRequest or arpResponse. For ARP, only one operator and attribute exist (eq and operation).

Default

None

Command Mode

Global Configuration

filter acl ace ethernet

Use Ethernet access control entries (ACEs) to filter on Ethernet parameters.

Syntax

- **default filter acl ace ethernet <acl-id> <ace-id>**
- **filter acl ace ethernet <acl-id> <ace-id> dst-mac eq WORD<1-1024>**
- **filter acl ace ethernet <acl-id> <ace-id> dst-mac mask WORD<1-1024> WORD<1-1024>**
- **filter acl ace ethernet <acl-id> <ace-id> ether-type eq WORD<1-200>**
- **filter acl ace ethernet <acl-id> <ace-id> port eq {slot/port[/sub-port]}**
- **filter acl ace ethernet <acl-id> <ace-id> src-mac eq WORD<1-1024>**

- **filter acl ace ethernet <acl-id> <ace-id> src-mac mask WORD<1-1024> WORD<1-1024>**
- **filter acl ace ethernet <acl-id> <ace-id> vlan-id eq <1-4059>**
- **filter acl ace ethernet <acl-id> <ace-id> vlan-id mask <1-4059> <0-0xFFF | 0x0-0x0>**
- **filter acl ace ethernet <acl-id> <ace-id> vlan-tag-prio eq <0-7>**
- **filter acl ace ethernet <acl-id> <ace-id> vlan-tag-prio mask <0-7> <0-0x7 | 0x0-0x0>**
- **no filter acl ace ethernet <acl-id> <ace-id>**
- **no filter acl ace ethernet <acl-id> <ace-id> dst-mac**
- **no filter acl ace ethernet <acl-id> <ace-id> ether-type**
- **no filter acl ace ethernet <acl-id> <ace-id> port**
- **no filter acl ace ethernet <acl-id> <ace-id> src-mac**
- **no filter acl ace ethernet <acl-id> <ace-id> vlan-id**
- **no filter acl ace ethernet <acl-id> <ace-id> vlan-tag-prio**

Command Parameters

<ace-id>	Specifies the ACE ID. Different hardware platforms support different ACE ID ranges. Use the CLI Help to see the available range for your switch.
<acl-id>	Specifies the ACL ID. Use the CLI Help to see the available range for your switch.
dst-mac <eq|mask> WORD<1-1024>	The <eq|mask> parameter specifies an operator for a field match condition. The WORD<1-1024> parameter specifies a list of destination MAC addresses separated by a comma or a range of MAC addresses specified from low to high; for example, [AA:BB:CC:DD:EE:FF].
ether-type <eq> WORD<1-200>	The <eq> parameter specifies an operator for a field match condition: equal to. The WORD<1-200> parameter specifies an ether-type name: • ip • arp • ipx802dot3 • ipx802dot2 • ipxSnap • ipxEthernet2 • appleTalk • AppleTalk-Arp • sna802dot2

- snaEthernet2
- netBios
- xns
- vines
- rarp
- PPPoE-discovery
- PPPoE-session

port eq *{slot/port[/sub-port]}*	Identifies a single slot and port. If your platform supports channelization and the port is channelized, you must also specify the sub-port in the format slot/port/sub-port.
src-mac <eq|mask> WORD<1-1024>	The <eq|mask> parameter specifies an operator for a field match condition: equal to. The WORD<1-1024> parameter specifies a list of source MAC addresses separated by separated by a comma, or a range of MAC addresses specified from low to high; for example, [AA:BB:CC:DD:EE:FF].
vlan-id <eq|mask> *<1-4059>*	Specifies the VLAN ID in the range of 1 to 4059. By default, VLAN IDs 1 to 4059 are configurable and the system reserves VLAN IDs 4060 to 4094 for internal use. On switches that support the vrf-scaling and spbm-config-mode boot configuration flags, if you enable these flags, the system also reserves VLAN IDs 3500 to 3998. VLAN ID 1 is the default VLAN and you cannot create or delete VLAN ID 1.
vlan-tag-prio <eq|mask> <0-7>	The <eq|mask> parameter specifies an operator for a field match condition. The <0-7> parameter specifies a VLAN tag priority from 0-7 or undefined.

Default

None

Command Mode

Global Configuration

filter acl ace ip

Use IP access control entries (ACEs) to filter on the source IP address, destination IP address, DiffServ Code Point (DSCP), protocol, IP options, and IP fragmentation parameters.

Syntax

- **`default filter acl ace ip <acl-id> <ace-id>`**
- **`filter acl ace ip <acl-id> <ace-id> dscp eq <0-63 | 0-63>`**

- **filter acl ace ip <acl-id> <ace-id> dst-ip eq {A.B.C.D}**
- **filter acl ace ip <acl-id> <ace-id> dst-ip mask {A.B.C.D} <0-32>**
- **filter acl ace ip <acl-id> <ace-id> dst-ip mask {A.B.C.D} {A.B.C.D}**
- **filter acl ace ip <acl-id> <ace-id> dst-ip range {A.B.C.D} {A.B.C.D}**
- **filter acl ace ip <acl-id> <ace-id> ip-frag-flag eq { noFragment | anyFragment }**
- **filter acl ace ip <acl-id> <ace-id> ip-options any**
- **filter acl ace ip <acl-id> <ace-id> ip-protocol-type eq WORD<1-256>**
- **filter acl ace ip <acl-id> <ace-id> src-ip eq {A.B.C.D}**
- **filter acl ace ip <acl-id> <ace-id> src-ip mask {A.B.C.D} <0-32>**
- **filter acl ace ip <acl-id> <ace-id> src-ip mask {A.B.C.D} {A.B.C.D}**
- **filter acl ace ip <acl-id> <ace-id> dscp mask <0-63 | 0-63> <0-0x40 | 0x0-0x0>**
- **filter acl ace ip <acl-id> <ace-id> dst-ip eq WORD <1-1024>**
- **no filter acl ace ip <acl-id> <ace-id> dscp**
- **no filter acl ace ip <acl-id> <ace-id> dst-ip**
- **no filter acl ace ip <acl-id> <ace-id> ip-frag-flag**
- **no filter acl ace ip <acl-id> <ace-id> ip-options**
- **no filter acl ace ip <acl-id> <ace-id> ip-protocol-type**
- **no filter acl ace ip <acl-id> <ace-id> src-ip**
- **no filter acl ace ip <acl-id> <ace-id>**

Command Parameters

<ace-id>	Specifies the ACE ID. Different hardware platforms support different ACE ID ranges. Use the CLI Help to see the available range for your switch.
<acl-id>	Specifies the ACL ID. Use the CLI Help to see the available range for your switch.
dscp <eq|mask> WORD <0-256>	The <eq|mask> parameter specifies an operator for a field match condition. The equals to parameter specifies the PHB name or DSCP value {0 to 256, where 256 => disable}, or: • phbcs0 • phbcs1 • phbaf11 • phbaf12 • phbaf13 • phbcs2

- phbaf21
- phbaf22
- phbaf23
- phbcs3
- phbaf31
- phbaf32
- phbaf33
- phbcs4
- phbaf41
- phbaf42
- phbaf43
- phbcs5
- phbcs6
- phbef
- phbcs7

dst-ip <eq|mask> WORD <1-1024>

The <eq|mask> parameter specifies an operator for a field match condition.
The WORD<1-1024> parameter specifies the destination IP address list in one of the following formats:

- a.b.c.d
- [w.x.y.z-p.q.r.s]
- [l.m.n.o/mask]
- [a.b.c.d/len]

ip-frag-flag eq <noFragment| anyFragment>

The eq parameter specifies an operator for a field match condition: equal to.
The ip-frag-flag parameter specifies a match option for IP fragments: noFragment or anyFragment.

ip-options any

Matches to an IP option. Any is the only option.

ip-protocol-type <eq> WORD <1-256>

The <eq> parameter specifies an operator for a field match condition: equal to.
The WORD<1-256> parameter specifies one or more IP protocol types:

- (1-256)
- icmp
- tcp
- udp
- ipsecesp

- ipsecah
- ospf
- vrrp
- undefined

src-ip <eq|mask> WORD <1-1024>

The <eq|mask> parameter specifies an operator for a field match condition: equal to, not equal to, less than or equal to, greater than or equal to.
The WORD<1-1024> parameter specifies a source IP address list in one of the following formats:

- a.b.c.d
- [w.x.y.z-p.q.r.s]
- [l.m.n.o/mask]
- [a.b.c.d/len]

Default

None

Command Mode

Global Configuration

filter acl ace ipv6

Use access control entry (ACE) IPv6 entries to filter on IPv6 parameters.

Syntax

- **filter acl ace ipv6 <acl-id> <ace-id> dst-ipv6 {eq | mask} WORD<0-255> [WORD<0-255>]**
- **filter acl ace ipv6 <acl-id> <ace-id> nxt-hdr eq {fragment | hop-by-hop | icmpv6 | ipsecah | ipsecesp | noHdr | routing | tcp | udp | undefined}**
- **filter acl ace ipv6 <acl-id> <ace-id> src-ipv6 {eq | mask} WORD<0-255> [WORD<0-255>]**
- **filter acl ace ipv6 <acl-id> <ace-id> traffic-class eq <0-255>**
- **no filter acl ace ipv6 <acl-id> <ace-id>**
- **no filter acl ace ipv6 <acl-id> <ace-id> dst-ipv6**
- **no filter acl ace ipv6 <acl-id> <ace-id> nxt-hdr**
- **no filter acl ace ipv6 <acl-id> <ace-id> src-ipv6**
- **no filter acl ace ipv6 <acl-id> <ace-id> traffic-class**

Command Parameters

<ace-id>	Specifies the ACE ID. Different hardware platforms support different ACE ID ranges. Use the CLI Help to see the available range for your switch.
<acl-id>	Specifies the ACL ID. Use the CLI Help to see the available range for your switch.
dst-ipv6 {eq | mask} WORD<0-255>	The <eq|mask> parameter specifies an operator for a field match condition. The WORD<0-255> parameter specifies a list of destination IPv6 addresses separated by a comma, or a range of IPv6 addresses specified from low to high; for example, [AA:BB:CC:DD:EE:FF].
nxt-hdr eq <fragment | hop-by-hop | icmpv6 | ipsecah | ipsecesp | noHdr | routing | tcp | udp | undefined>	Specify next header of IP header.
src-ipv6 {eq | mask} WORD<0-255>	The <eq|mask> parameter specifies an operator for a field match condition: equal to. The WORD<0-255> parameter specifies a list of source IPv6 addresses separated by a comma, or a range of IPv6 addresses specified from low to high; for example, [AA:BB:CC:DD:EE:FF].
traffic-class eq <0-255>	Specify traffic class attribute of IPv6 header.

Default

None

Command Mode

Global Configuration

filter acl ace protocol

Use protocol access control entries (ACEs) to filter on the TCP source port, UDP source port, TCP destination port, UDP destination port, ICMP message type, and TCP flags.

Syntax

- **`default filter acl ace protocol <acl-id> <ace-id>`**
- **`filter acl ace protocol <acl-id> <ace-id> dst-port eq WORD<1-60>`**
- **`filter acl ace protocol <acl-id> <ace-id> dst-port mask WORD<1-60> <0x0-0xFFFF>`**
- **`filter acl ace protocol <acl-id> <ace-id> icmp-msg-type eq WORD<1-200>`**

- **filter acl ace protocol <acl-id> <ace-id> icmpv6-msg-type eq WORD<1-200>**
- **filter acl ace protocol <acl-id> <ace-id> src-port eq <0-65535>**
- **filter acl ace protocol <acl-id> <ace-id> tcp-flags eq WORD<1-50>**
- **filter acl ace protocol <acl-id> <ace-id> tcp-flags mask WORD<1-50> <0-0x3F | 0x0-0x0>**
- **filter acl ace protocol <acl-id> <ace-id> routing-type eq <0-2>**
- **filter acl ace protocol <acl-id> <ace-id> src-port mask <0-65535> <0x0-0xFFFF>**
- **no filter acl ace protocol <acl-id> <ace-id>**
- **no filter acl ace protocol <acl-id> <ace-id> dst-port**
- **no filter acl ace protocol <acl-id> <ace-id> icmp-msg-type**
- **no filter acl ace protocol <acl-id> <ace-id> src-port**
- **no filter acl ace protocol <acl-id> <ace-id> tcp-flags**
- **no filter acl ace protocol <acl-id> <ace-id> routing-type**

Command Parameters

<ace-id>	Specifies the ACE ID. Different hardware platforms support different ACE ID ranges. Use the CLI Help to see the available range for your switch.
<acl-id>	Specifies the ACL ID. Use the CLI Help to see the available range for your switch.
dst-port <eq|mask> WORD<1-60>	The <eq|mask> parameter specifies an operator for a field match condition: equal to. The WORD<1-60> parameter specifies the destination port for the TCP protocol: (0-65535), or {echo| ftpdata| ftpcontrol| ssh| telnet| dns| http| bgp| hdot323| bootpServer| boorpClient| tftp| rip| rtp| rctp| undefined}.
icmp-msg-type <eq> WORD <1-200>	Specifies the Internet Control Message Protocol (ICMP) message type attribute of the protocol. The <eq> parameter specifies an operator for a field match condition: equal to. The WORD<1-200> parameter specifies one or more IP protocol types (0-255), or {echoreply|destunreach| sourcequench| redirect| echo-request| routeradv|routerselect| time-exceeded| param-problem| timestamp-request|timestamp-reply| addressmask-request| addressmask-reply| traceroute}.
icmpv6-msg-type <eq> WORD <1-200>	Specifies the ICMPv6 message type attribute of the protocol. The <eq> parameter specifies an operator for a field match condition: equal to. The WORD<1-200> parameter specifies one or more Icmpmsg type {0-255} or {destUnreach | pktTooBig | timeExceeded | paramProblem |

	echoRequest | echoReply | mcastListenReq | mcastListenRpt | mcastListenDone | routerSolicit | routerAdvert | neighborSolicit | neighborAdvert | redirectMsg | nodeInfoReq | nodeInfoRsp | v2McastListenRpt}.
routing-type eq <0-2>	This parameter represents the routing type attribute.
src-port <eq|mask> WORD<1-65535>	The <eq|mask> parameter specifies an operator for a field match condition. The WORD <1-65535> parameter specifies the destination port for the TCP protocol {0-65535}.
tcp-flags <eq|mask> WORD<1-50>	Specifies TCP-flags attribute of the protocol. The <eq|mask> parameter specifies an operator for a field match condition. The WORD <1-50> parameter specifies one or more TCP flags: {none| fin| syn| rst| push| ack| urg|undefined}. The tcp-flags and icmp-msg-type command options support lists.

Default

None

Command Mode

Global Configuration

filter acl i-sid

For inVsn ACL filter types, specify the I-SID associated with the customer VLAN (Layer 2 VSN) or the customer VRF (Layer 3 VSN).

Syntax

- `filter acl i-sid <acl-id> <0-15999999>`

Command Parameters

<0-15999999>	Specifies the I-SID associated with the customer VLAN (Layer 2 VSN), the customer VRF (Layer 3 VSN), or the IP Shortcut. The I-SID must already be configured on the fabric node.
<acl-id>	Specifies the ACL ID. Use the CLI Help to see the available range for your switch.

Default

None

Command Mode

Global Configuration

filter acl port

Associate ports with, or remove ports from, an ACL so that filters do or do not apply to port traffic, respectively.

Syntax

- **default filter acl port <acl-id> {slot/port[/sub-port][-slot/port[/sub-port]][,...]}**
- **filter acl port <acl-id> {slot/port[/sub-port][-slot/port[/sub-port]][,...]}**
- **no filter acl port <acl-id> {slot/port[/sub-port][-slot/port[/sub-port]][,...]}**

Command Parameters

{slot/port[/sub-port] [-slot/port[/sub-port]] [,...]}	Identifies the slot and port in one of the following formats: a single slot and port (slot/port), a range of slots and ports (slot/port-slot/port), or a series of slots and ports (slot/port,slot/port,slot/port). If your platform supports channelization and the port is channelized, you must also specify the sub-port in the format slot/port/sub-port.
<acl-id>	Specifies the ACL ID. Use the CLI Help to see the available range for your switch.

Default

None

Command Mode

Global Configuration

filter acl set

Configure an access control list (ACL) filter.

Syntax

- **default filter acl set <acl-id> default-action**
- **default filter acl set <acl-id> global-action**
- **default filter acl set <acl-id> global-action monitor-dst-mlt**
- **default filter acl set <acl-id> global-action monitor-dst-ports**
- **filter acl set <acl-id> default-action deny**
- **filter acl set <acl-id> default-action deny control-packet-action deny**
- **filter acl set <acl-id> default-action deny control-packet-action permit**

- **filter acl set <acl-id> default-action permit**
- **filter acl set <acl-id> global-action monitor-dst-mlt <1-512>**
- **filter acl set <acl-id> global-action monitor-dst-ports{slot/port[/sub-port][-slot/port[/sub-port]][,...]}**
- **no filter acl set <acl-id> global-action monitor-dst-mlt**
- **no filter acl set <acl-id> global-action monitor-dst-ports**

Command Parameters

{slot/port[/sub-port][-slot/port[/sub-port]][,...]}	Identifies the slot and port in one of the following formats: a single slot and port (slot/port), a range of slots and ports (slot/port-slot/port), or a series of slots and ports (slot/port,slot/port,slot/port). If your platform supports channelization and the port is channelized, you must also specify the sub-port in the format slot/port/sub-port.
<acl-id>	Specifies the ACL ID. Use the CLI Help to see the available range for your switch.
default-action <permit|deny>	Specifies the action to be taken when none of the access control entries (ACEs) match. The options are deny or permit.
global-action {monitor-dst-mlt<1-512>|monitor-dst-ports}	Specifies the action to be taken for all access control entry (ACE) matches. The options are: monitor-dst-mlt <1-512>| monitor-dst-ports **{slot/port[/sub-port][-slot/port[/sub-port]][,...]}**.

Default

The default action is deny.

Command Mode

Global Configuration

filter acl vlan

Associate VLANs with, or remove VLANs from, an access control list (ACL) so that filters do or do not apply to VLAN traffic, respectively.

Syntax

- **default filter acl vlan <acl-id> <1-4059>**
- **filter acl vlan <acl-id> <1-4059>**
- **no filter acl vlan <acl-id> <1-4059>**

Command Parameters

<1-4059>	Specifies the VLAN ID in the range of 1 to 4059. By default, VLAN IDs 1 to 4059 are configurable and the system reserves VLAN IDs 4060 to 4094 for internal use. On switches that support the vrf-scaling and spbm-config-mode boot configuration flags, if you enable these flags, the system also reserves VLAN IDs 3500 to 3998. VLAN ID 1 is the default VLAN and you cannot create or delete VLAN ID 1.
<acl-id>	Specifies the ACL ID. Use the CLI Help to see the available range for your switch.

Default

None

Command Mode

Global Configuration

ike policy

Use this command to create the IKE Phase 1 policy

Syntax

- **default ike policy WORD<1-32> auth-method**
- **default ike policy WORD<1-32> dpd-timeout**
- **default ike policy WORD<1-32> p2-pfs enable use-ike-group enable**
- **default ike policy WORD<1-32> profile**
- **default ike policy WORD<1-32> revocation-check-method**
- **ike policy WORD<1-32> auth-method digital-certificate peer-name WORD <1-64>**
- **ike policy WORD<1-32> auth-method digital-certificate revocation-check-method <crl>**
- **ike policy WORD<1-32> auth-method digital-certificate revocation-check-method <none>**
- **ike policy WORD<1-32> auth-method digital-certificate revocation-check-method <ocsp>**
- **ike policy WORD<1-32> auth-method pre-shared-key**
- **ike policy WORD<1-32> dpd-timeout <1-4294967295>**
- **ike policy WORD<1-32> enable**
- **ike policy WORD<1-32> laddr WORD<1-256>**
- **ike policy WORD<1-32> p2-pfs dh-group <any>**
- **ike policy WORD<1-32> p2-pfs dh-group <modp1024>**

- **ike policy WORD<1–32> p2–pfs dh-group <modp2048>**
- **ike policy WORD<1–32> p2–pfs dh-group <modp768>**
- **ike policy WORD<1–32> p2–pfs disable**
- **ike policy WORD<1–32> p2–pfs disable use-ike-group**
- **ike policy WORD<1–32> p2–pfs enable**
- **ike policy WORD<1–32> profile WORD<1–32>**
- **ike policy WORD<1–32> raddr WORD<1–256>**
- **no ike policy <1–32> p2–pfs**
- **no ike policy WORD<1-32> auth-method digital-certificate peer-name**
- **no ike policy WORD<1-32> enable**
- **no ike policy WORD<1-32> profile**

Command Parameters

auth-method	Specifies the authentication method. The default is pre-shared key.
dh-group <modp768|modp1024|modp2048|any>	Configures the Diffie-Hellman (DH) group to be used for Phase 2 perfect forward secrecy (PFS). The default value is modp2048.
digital-certificate	Configures the authentication method as digital-certificate.
dpd-timeout <0-4294967295>	Configure the Dead-Peer Detection timeout in seconds for the IKE Phase 1 policy. The default is 300 seconds.
enable	Enables the admin state of IKE Phase 1 policy.
laddr WORD<1–256>	Specifies the local IPv4 or IPv6 address.
p2–pfs <enable|disable>	Enables the Phase 2 perfect forward secrecy.
peer-name WORD <1-64>	Specifies peer identity name for IKE phase 1.
pre-shared-key WORD<0–32>	Configures the authentication method as pre-shared-key.
profile WORD<1–32>	Specifies the name of the IKE Phase 1 profile to be used for the policy.
raddr WORD<1–256>	Specifies the remote IPv4 or IPv6 address.
revocation-method <crl|none|ocsp>	Specifies the revocation check method.
use-ike-group <enable|disable>	Specifies whether to use or not use the IKE Phase 1 DH group for Phase 2 PFS. The default is enable.

WORD<1–32>	Specifies the name of the IKE Phase 1 policy.

Default

None

Command Mode

Global Configuration

ike profile

Use this command to configure an IKE Phase 1 profile.

Syntax

- **default ike profile WORD<1–32> dh-group**
- **default ike profile WORD<1–32> encrypt-algo**
- **default ike profile WORD<1–32> encrypt-key-len**
- **default ike profile WORD<1–32> hash-algo**
- **default ike profile WORD<1–32> lifetime-sec**
- **ike profile WORD<1–32>**
- **ike profile WORD<1–32> dh-group <any>**
- **ike profile WORD<1–32> dh-group <modp1024>**
- **ike profile WORD<1–32> dh-group <modp2048>**
- **ike profile WORD<1–32> dh-group <modp768>**
- **ike profile WORD<1–32> encrypt-algo <3DesCbc>**
- **ike profile WORD<1–32> encrypt-algo <aesCbc?**
- **ike profile WORD<1–32> encrypt-algo <any>**
- **ike profile WORD<1–32> encrypt-algo <desCbc>**
- **ike profile WORD<1–32> encrypt-key-len <128>**
- **ike profile WORD<1–32> encrypt-key-len <192>**
- **ike profile WORD<1–32> encrypt-key-len <256>**
- **ike profile WORD<1–32> hash-algo <any>**
- **ike profile WORD<1–32> hash-algo <md5>**
- **ike profile WORD<1–32> hash-algo <sha>**
- **ike profile WORD<1–32> hash-algo <sha256>**
- **ike profile WORD<1–32> lifetime-sec <0-4294967295>**
- **no ike profile WORD<1–32>**

Command Parameters

dh-group <modp768|modp1024|modp2048|any>	Specifies the Diffie-Hellman (DH) group. DH groups categorize the key used in the key exchange process, by its strength. The key from a higher group number is more secure. The default value is modp2048.
encrypt-algo <desCbc|3DesCbc|aesCbc|any>	Specifies the type of encryption algorithm. The default value is aesCbc.
encrypt-key-len <128|192|256>	Specifies the length of the encryption key. The default is 256.
hash-algo <md5|sha|sha256|any>	Specifies the type of hash algorithm. The default value is sha256.
lifetime-sec <0-4294967295>	Specifies the lifetime value in seconds. The lifetime ensures that the peers renegotiate the SAs just before the expiry of the lifetime value, to ensure that Security Associations are not compromised. The default value is 86400 seconds.
WORD<1–32>	Specifies the IKE profile name.

Default

None

Command Mode

Global Configuration

ike v2-profile

Use this command to configure an IKE Phase 2 profile.

Syntax

- **default ike v2-profile WORD<1–32> dh-group**
- **default ike v2-profile WORD<1–32> encrypt-algo**
- **default ike v2-profile WORD<1–32> encrypt-key-len**
- **default ike v2-profile WORD<1–32> hash-algo**
- **default ike v2-profile WORD<1–32> integrity-algo**
- **default ike v2-profile WORD<1–32> lifetime-sec**
- **ike v2-profile WORD<1–32>**
- **ike v2-profile WORD<1–32> dh-group <any>**
- **ike v2-profile WORD<1–32> dh-group <modp1024>**

- **ike v2-profile WORD<1-32> dh-group <modp2048>**
- **ike v2-profile WORD<1-32> dh-group <modp768>**
- **ike v2-profile WORD<1-32> encrypt-algo <3DesCbc>**
- **ike v2-profile WORD<1-32> encrypt-algo <aesCbc>**
- **ike v2-profile WORD<1-32> encrypt-algo <any>**
- **ike v2-profile WORD<1-32> encrypt-algo <desCbc>**
- **ike v2-profile WORD<1-32> encrypt-key-len <128|192|256>**
- **ike v2-profile WORD<1-32> hash-algo <any>**
- **ike v2-profile WORD<1-32> hash-algo <md5>**
- **ike v2-profile WORD<1-32> hash-algo <sha>**
- **ike v2-profile WORD<1-32> hash-algo <sha256>**
- **ike v2-profile WORD<1-32> integrity-algo <aes-xcbc>**
- **ike v2-profile WORD<1-32> integrity-algo <any>**
- **ike v2-profile WORD<1-32> integrity-algo <hmac-md5>**
- **ike v2-profile WORD<1-32> integrity-algo <hmac-sha>**
- **ike v2-profile WORD<1-32> integrity-algo <hmac-sha256>**
- **ike v2-profile WORD<1-32> lifetime-sec <0-4294967295>**
- **no ike v2-profile WORD<1-32>**

Command Parameters

dh-group <modp768|modp1024|modp2048|any	Specifies the Diffie-Hellman (DH) group. DH groups categorize the key used in the key exchange process, by its strength. The key from a higher group number is more secure. The default value is modp2048.
encrypt-algo <desCbc|3DesCbc|aesCbc|any>	Specifies the type of encryption algorithm. The default value is aesCbc.
encrypt-key-len <128|192|256>	Specifies the length of the encryption key. The default is 256.
hash-algo <md5|sha|sha256|any>	Specifies the type of hash algorithm. The default value is sha256.
integrity-algo <hmac-md5|hmac-sha|hmacsha256|aes-xcbc|any>	Specifies the type of integrity algorithm. The default is sha256.
lifetime-sec <0-4294967295>	Specifies the lifetime value in seconds. The lifetime ensures that the peers renegotiate the SAs just before the expiry of the lifetime value, to ensure that Security Associations are not compromised. The default value is 86400 seconds.

WORD<1–32>	Specifies the IKE v2–profile name.

Default

None

Command Mode

Global Configuration

interface GigabitEthernet

Use this command to enter Interface Configuration mode for a GigabitEthernet slot and port.

Syntax

- `interface GigabitEthernet {slot/port[/sub-port][-slot/port[/sub-port]][,...]}`

Command Parameters

{slot/port[/sub-port] [-slot/port[/sub-port]] [,...]}	Identifies the slot and port in one of the following formats: a single slot and port (slot/port), a range of slots and ports (slot/port-slot/port), or a series of slots and ports (slot/port,slot/port,slot/port). If your platform supports channelization and the port is channelized, you must also specify the sub-port in the format slot/port/sub-port.

Default

None

Command Mode

Global Configuration

interface Loopback

Use this command to enter Interface Configuration mode for a loopback interface.

Syntax

- `interface Loopback <1-256>`

Command Parameters

<1-256>	Specifies the loopback ID.

Default

None

Command Mode

Global Configuration

interface mgmtEthernet

Use this command to enter Interface Configuration mode for a management interface. This mode only applies to hardware with a dedicated, physical management interface.

Syntax

- **interface mgmtEthernet mgmt**

Default

None

Command Mode

Global Configuration

interface mlt

Use this command to enter Interface Configuration mode for an MLT.

Syntax

- **interface mlt <1-512>**

Command Parameters

<1-512>	Specifies the MLT ID.

Default

None

Command Mode

Global Configuration

interface vlan

Use this command to enter Interface Configuration mode for a VLAN.

Syntax

- **interface Vlan <1-4059>**

Command Parameters

<1-4059>	Specifies the VLAN ID in the range of 1 to 4059. By default, VLAN IDs 1 to 4059 are configurable and the system reserves VLAN IDs 4060 to 4094 for internal use. On switches that support the vrf-scaling and spbm-config-mode boot configuration flags, if you enable these flags, the system also reserves VLAN IDs 3500 to 3998. VLAN ID 1 is the default VLAN and you cannot create or delete VLAN ID 1.

Default

None

Command Mode

Global Configuration

ip alternative-route (globally)

Enable the alternative route feature globally.

Syntax

- **`default ip alternative-route`**
- **`ip alternative-route`**
- **`no ip alternative-route`**

Command Parameters

alternative-route	Enables or disables the Alternative Route feature. The default value is enabled. If the alternative-route parameter is disabled, all existing alternative routes are removed. When the parameter is enabled, all alternative routes are re-added.

Default

The default is enabled.

Command Mode

Global Configuration

ip arp

Configure ARP static entries to modify the ARP parameters on the device. The only way to change a static ARP is to delete the static ARP entry and create a new entry with new information.

Syntax

- **`default ip arp {A.B.C.D}`**

- **default ip arp request-threshold**
- **default ip arp timeout**
- **ip arp {A.B.C.D} 0x00:0x00:0x00:0x00:0x00:0x00 {slot/port[/sub-port][-slot/port[/sub-port]][,...]} vid <1-4059>**
- **ip arp {A.B.C.D} 0x00:0x00:0x00:0x00:0x00:0x00 {slot/port[/sub-port][-slot/port[/sub-port]][,...]}**
- **ip arp request-threshold <50-1000>**
- **ip arp timeout <1-32767>**
- **no ip arp {A.B.C.D}**

Command Parameters

{A.B.C.D}	Specifies the IP address.
{slot/port[/sub-port] [-slot/port[/sub-port]] [,...]}	Identifies the slot and port in one of the following formats: a single slot and port (slot/port), a range of slots and ports (slot/port-slot/port), or a series of slots and ports (slot/port,slot/port,slot/port). If your platform supports channelization and the port is channelized, you must also specify the sub-port in the format slot/port/sub-port.
0x00:0x00:0x00:0x00:0x00:0x00	Specifies the MAC address in hexadecimal format. The MAC address parameter does not accept MAC addresses beginning with 01:00:5e (01:00:5e:00:00:00 to 01:00:5e:ff:ff:ff inclusive).
timeout <1-32767>	Configures the timeout value.
vid <*1-4059*>	Specifies the VLAN ID in the range of 1 to 4059. By default, VLAN IDs 1 to 4059 are configurable and the system reserves VLAN IDs 4060 to 4094 for internal use. On switches that support the vrf-scaling and spbm-config-mode boot configuration flags, if you enable these flags, the system also reserves VLAN IDs 3500 to 3998. VLAN ID 1 is the default VLAN and you cannot create or delete VLAN ID 1.

Default

None

Command Mode

Global Configuration

ip arp multicast-mac-flooding

Determine whether ARP entries for multicast MAC addresses are associated with the VLAN or the port interface on which they were learned. Links the ARP entry for the Network Load Balancer (NLB) cluster to the multicast group ID (MGID) of the VLAN.

Syntax

- **default ip arp multicast-mac-flooding**
- **default ip arp multicast-mac-flooding enable**
- **ip arp multicast-mac-flooding**
- **ip arp multicast-mac-flooding enable**
- **no ip arp multicast-mac-flooding**
- **no ip arp multicast-mac-flooding enable**

Default

The default is disabled.

Command Mode

Global Configuration

ip arp static-mcast

Configure Layer 3 multicast MAC filtering to route an IP frame to a unicast IP address and flood it with a destination multicast MAC address. You must manually define a static ARP entry that associates an IP address with a multicast MAC address, flooding ports, and a multilink trunk.

Syntax

- **default ip arp static-mcast {A.B.C.D}**
- **ip arp static-mcast {A.B.C.D} <0x00:0x00:0x00:0x00:0x00:0x00> vid <1-4059> [port {slot/port[/sub-port][-slot/port[/sub-port]][,...]}] [WORD<1-16>]**
- **no ip arp static-mcast {A.B.C.D}**

Command Parameters

{slot/port[/sub-port] [-slot/port[/sub-port]] [,...]}	Specifies the port that receives the multicast flooding. Identifies the slot and port in one of the following formats: a single slot and port (slot/port), a range of slots and ports (slot/port-slot/port), or a series of slots and ports (slot/port,slot/port,slot/port). If your platform supports channelization and the port is channelized,

	you must also specify the sub-port in the format slot/port/sub-port.
<0x00:0x00:0x00:0x00:0x00:0x00>	Specifies the MAC address in hexadecimal format. The MAC address parameter does not accept MAC addresses beginning with 01:00:5e (01:00:5e:00:00:00 to 01:00:5e:ff:ff:ff inclusive).
A.B.C.D	Specifies the IP address.
vid <*1-4059*>	Specifies the VLAN ID in the range of 1 to 4059. By default, VLAN IDs 1 to 4059 are configurable and the system reserves VLAN IDs 4060 to 4094 for internal use. On switches that support the vrf-scaling and spbm-config-mode boot configuration flags, if you enable these flags, the system also reserves VLAN IDs 3500 to 3998. VLAN ID 1 is the default VLAN and you cannot create or delete VLAN ID 1.
WORD<1-16>	Specifies the multilink trunk ID.

Default

None

Command Mode

Global Configuration

ip as-list

Use an asynchronous (AS) path list to restrict the routing information a router learns or advertises to and from a neighbor. The AS path list acts as a filter that Match AS paths.

Syntax

- **`ip as-list <1-1024> memberId <0-65535> <permit|deny> as-path WORD<0-1536>`**

Command Parameters

<permit|deny>	Permits or denies access for matching conditions.
as-list <1-1024>	Creates the specified AS-path list entry.
as-path WORD <0-1536>	Specifies an integer value between 0 and 1536 placed within quotation marks "."
memberId <0-65535>	Adds a regular expression entry to the specified AS-path list. It is an integer value between 0 and 65 535.

Default

None

Command Mode

Global Configuration

ip community-list

Use community lists to specify permitted routes by using their BGP community. This list acts as a filter that Match communities or AS numbers

Syntax

- **ip community-list <1-1024> memberId <0-65535> <permit|deny> community-string WORD<0-256>**
- **no ip community-list <1-1024>**
- **no ip community-list <1-1024> community-string WORD<0-256>**
- **no ip community-list <1-1024> memberid <0-65535>**

Command Parameters

<permit|deny>	Sets the access mode, which permits or denies access for matching conditions.
community-list <1-1024>	Creates the specified community list entry. <1-1024> specifies the list id.
community-string WORD<0-256>	Specifies an alphanumeric string value with a string length of 0 to 1536 characters. This string value is either an AS num: community-value or a well-known community string. Well known communities include: internet no-export no-advertise local-as (known as NO_EXPORT_SUBCONFED).
memberId <0-65535>	Adds an entry to the community list. <0-65535> is an integer value that represents the member ID in the community list.

Default

None

Command Mode

Global Configuration

ip dhcp-relay fwd-path

Create the forwarding path from the client to the server.

Syntax

- **default ip dhcp-relay fwd-path <A.B.C.D> <A.B.C.D>**
- **ip dhcp-relay fwd-path {A.B.C.D} {A.B.C.D}**
- **no ip dhcp-relay fwd-path <A.B.C.D> <A.B.C.D>**

Command Parameters

fwd-path <A.B.C.D> <A.B.C.D>	Configures the forwarding path from the client to the server. A.B.C.D is the IP address configured on an interface (a locally configured IP address) to forward or relay BootP or Dynamic Host Configuration Protocol (DHCP). The relay can also be a VRRP address. A.B.C.D is the IP address of the DHCP server in the network. If this IP address corresponds to the locally configured IP network, the DHCP packet is broadcast out from the interface.

Default

None

Command Mode

Global Configuration

ip dhcp-relay fwd-path enable

Enable the forwarding path from the client to the server.

Syntax

- **default ip dhcp-relay fwd-path {A.B.C.D} {A.B.C.D}**
- **default ip dhcp-relay fwd-path {A.B.C.D} {A.B.C.D} mode**
- **ip dhcp-relay fwd-path {A.B.C.D} {A.B.C.D} disable**
- **ip dhcp-relay fwd-path {A.B.C.D} {A.B.C.D} enable**
- **no ip dhcp-relay fwd-path {A.B.C.D} {A.B.C.D} enable**

Command Parameters

disable	Disables Dynamic Host Configuration Protocol (DHCP) relaying on the path from the IP address to the server.
fwd-path <A.B.C.D> <A.B.C.D> enable	Enables Dynamic Host Configuration Protocol (DHCP) relaying on the path from the IP address to the server. A.B.C.D is the IP address configured on an interface (a locally configured IP address). A.B.C.D is the IP address of the DHCP server in the network. If this IP address corresponds to the locally configured IP network, the DHCP packet is broadcast out from the interface.

Default

The ip dhcp-relay fwd-path default state is disabled.

Command Mode

Global Configuration

ip dhcp-relay fwd-path mode

Modify Dynamic Host Configuration Protocol (DHCP) mode to forward BootP messages only, DHCP messages only, or both.

Syntax

- **default ip dhcp-relay fwd-path <A.B.C.D> <A.B.C.D> mode**
- **ip dhcp-relay fwd-path {A.B.C.D} {A.B.C.D} mode bootp**
- **ip dhcp-relay fwd-path {A.B.C.D} {A.B.C.D} mode bootp_dhcp**
- **ip dhcp-relay fwd-path {A.B.C.D} {A.B.C.D} mode dhcp**

Command Parameters

fwd-path <A.B.C.D> <A.B.C.D> mode <bootp|bootp-dhcp|dhcp>	Modifies the Dynamic Host Configuration Protocol (DHCP) mode to forward BootP messages only, DHCP messages only, or both. The default is both. mode is {bootp | bootp_dhcp | dhcp}.

Default

The default mode is both.

Command Mode

Global Configuration

ip dhcp-snooping binding

Adds static binding entry to the DHCP binding table.

Syntax

- **ip dhcp-snooping binding <1-4059> 0x00:0x00:0x00:0x00:0x00:0x00 ip {A.B.C.D} port {slot/port[sub-port]}**
- **ip dhcp-snooping binding <1-4059> 0x00:0x00:0x00:0x00:0x00:0x00 ip {A.B.C.D} port {slot/port[sub-port]} [expiry <0-2147483646>]**
- **no ip dhcp-snooping binding <1-4059> 0x00:0x00:0x00:0x00:0x00:0x00**

Command Parameters

<1-4059>	Specifies the VLAN ID.
0x00:0x00:0x00:0x00:0x00:0x00	Specifies the MAC address of the DHCP client.
expiry <0-2147483646>	Specifies the expiry time (in seconds) for the DHCP client.
ip {A.B.C.D}	Specifies the IP address of the DHCP client.
port {slot/port[sub-port]}	Specifies the switch port to which the DHCP client connects.

Default

None

Command Mode

Global Configuration

ip dhcp-snooping enable

Enables DHCP Snooping globally.

Syntax

- **default ip dhcp-snooping enable**
- **ip dhcp-snooping enable**
- **no ip dhcp-snooping enable**

Default

Disabled

Command Mode

Global Configuration

ip domain-name

Configure the Domain Name Service (DNS) to establish the mapping between a name and an IP address.

Syntax

- **default ip domain-name**
- **ip domain-name WORD<0-255>**
- **no ip domain-name**

Command Parameters

WORD<0-255>	Configures the default domain name.

Default

None

Command Mode

Global Configuration

ip ecmp

Enable Equal Cost Multipath protocol (ECMP). If the ECMP parameter is disabled, all existing ECMP routes are removed. When ECMP is enabled, all ECMP routes are re-added.

Syntax

- **default ip ecmp**
- **default ip ecmp**
- **default ip ecmp max-path**
- **ip ecmp**
- **ip ecmp max-path <ECMP-Paths>**
- **ip ecmp pathlist-1 WORD<0-64>**
- **ip ecmp pathlist-2 WORD<0-64>**
- **ip ecmp pathlist-3 WORD<0-64>**
- **ip ecmp pathlist-4 WORD<0-64>**
- **ip ecmp pathlist-5 WORD<0-64>**
- **ip ecmp pathlist-6 WORD<0-64>**
- **ip ecmp pathlist-7 WORD<0-64>**
- **ip ecmp pathlist-8 WORD<0-64>**
- **no ip ecmp**
- **no ip ecmp pathlist-1**
- **no ip ecmp pathlist-2**
- **no ip ecmp pathlist-3**
- **no ip ecmp pathlist-4**
- **no ip ecmp pathlist-5**
- **no ip ecmp pathlist-6**
- **no ip ecmp pathlist-7**

- **no ip ecmp pathlist-8**

Command Parameters

max-path *<ECMP-Paths>*	Configures the maximum number of ECMP paths. Different hardware platforms can support a different number of ECMP paths. For more information on the maximum number of ECMP paths supported on your switch, see the scaling information in Release Notes for XA1400 Series.
pathlist-1 WORD<0-64>	Configures one equal-cost path to the same destination prefix. To remove the policy, enter a blank string. To configure this parameter, you must globally enable Equal Cost Multipath (ECMP).
pathlist-2 WORD<0-64>	Configures up to two equal-cost paths to the same destination prefix. To remove the policy, enter a blank string. To configure this parameter, you must globally enable Equal Cost Multipath (ECMP).
pathlist-3 WORD<0-64>	Configures up to three equal-cost paths to the same destination prefix. To remove the policy, enter a blank string. To configure this parameter, you must globally enable Equal Cost Multipath (ECMP).
pathlist-4 WORD<0-64>	Configures up to four equal-cost paths to the same destination prefix. To remove the policy, enter a blank string. To configure this parameter, you must globally enable Equal Cost Multipath (ECMP).
pathlist-5 WORD<0-64>	Configures up to five equal-cost paths to the same destination prefix. To remove the policy, enter a blank string. To configure this parameter, you must globally enable Equal Cost Multipath (ECMP).
pathlist-6 WORD<0-64>	Configures up to six equal-cost paths to the same destination prefix. To remove the policy, enter a blank string. To configure this parameter, you must globally enable Equal Cost Multipath (ECMP).
pathlist-7 WORD<0-64>	Configures up to seven equal-cost paths to the same destination prefix. To remove the policy, enter a blank string. To configure this parameter, you must globally enable Equal Cost Multipath (ECMP).
pathlist-8 WORD<0-64>	Configures up to eight equal-cost paths to the same destination prefix. To remove the policy, enter a blank string. To configure this parameter, you must globally enable Equal Cost Multipath (ECMP).

Default

The default is disabled.

Command Mode

Global Configuration

ip forward-protocol udp

Configure UDP protocols to determine which UDP broadcasts are forwarded.

Syntax

- **default ip forward-protocol udp**
- **default ip forward-protocol udp <1-65535>**
- **ip forward-protocol udp <1-65535> WORD<1-15>**
- **no ip forward-protocol udp <1-65535>**

Command Parameters

<1-65535> WORD/1-15 <1-15>	Creates a new UDP protocol. <1-65535>WORD <1-15>is the UDP protocol name as a string.

Default

None

Command Mode

Global Configuration

ip forward-protocol udp portfwd

Configure a UDP port forward entry to add or remove a port forward entry.

Syntax

- **default ip forward-protocol udp portfwd <1-65535> {A.B.C.D}**
- **ip forward-protocol udp portfwd <1-65535> {A.B.C.D}**
- **no ip forward-protocol udp portfwd <1-65535> {A.B.C.D}**

Command Parameters

<1-65535> <A.B.C.D>	Adds a UDP protocol port to the specified port forwarding list. 1-65535 is a UDP protocol port in the range of 1 to 65535. A.B.C.D is an IP address in a.b.c.d format.

Default

None

Command Mode

Global Configuration

ip forward-protocol udp portfwdlist

Configure the UDP port forwarding list.

Syntax

- **default ip forward-protocol udp portfwdlist <1-1000>**
- **default ip forward-protocol udp portfwdlist <1-1000> <1-65535> {A.B.C.D}**
- **ip forward-protocol udp portfwdlist <1-1000>**
- **ip forward-protocol udp portfwdlist <1-1000> <1-65535> {A.B.C.D}**
- **ip forward-protocol udp portfwdlist <1-1000> name WORD<0-15>**
- **no ip forward-protocol udp portfwdlist <1-1000> <1-65535> {A.B.C.D}**
- **no ip forward-protocol udp portfwdlist <1-1000>**

Command Parameters

{A.B.C.D}	A.B.C.D is an IP address in a.b.c.d format.
<1-1000>	Creates a UDP port forwarding list in the range of 1 to 1000.
name WORD<0-15>	Specifies a name for the forwarding list.

Default

None

Command Mode

Global Configuration

ip gratuitous-arp

Enable Gratuitous Address Resolution Protocol (ARP) on a global level. When Gratuitous ARP is enabled, the switch allows all Gratuitous ARP requests. If you disable Gratuitous ARP, the switch only allows Gratuitous ARP packets associated with Routed Split Multi-Link Trunking (RSMLT) or Virtual Router Redundancy Protocol (VRRP), and the switch discards all other Gratuitous ARP request packets.

Syntax

- **default ip gratuitous-arp**
- **ip gratuitous-arp**
- **no ip gratuitous-arp**

Default

The default is enabled.

Command Mode

Global Configuration

ip icmp

Enable Internet Control Message Protocol (ICMP) redirect and unreachable messages.

Syntax

- **default ip icmp**
- **default ip icmp echo-broadcast-request**
- **default ip icmp unreachable**
- **ip icmp echo-broadcast-request**
- **ip icmp unreachable**
- **no ip icmp**
- **no ip icmp echo-broadcast-request**
- **no ip icmp unreachable**

Command Parameters

echo-broadcast-request	Enables or disables the processing of IPv4 ICMP messages sent to a broadcast address. The default value is enabled.
unreachable	Enables the switch to send Internet Control Message Protocol (ICMP) unreachable messages. When enabled, generates Internet Control Message Protocol (ICMP) network unreachable messages if the destination network is not reachable from this router. These messages help determine if the routing switch is reachable over the network. The default is disabled.

Default

The default is disabled.

Command Mode

Global Configuration

ip icmp echo-broadcast-request (globally)

Enables or disables the processing of IPv4 ICMP messages sent to a broadcast address globally.

Syntax

- **default ip icmp echo-broadcast-request**
- **ip icmp echo-broadcast-request**
- **no ip icmp echo-broadcast-request**

Command Parameters

echo broadcast-request	Enables or disables the processing of IPv4 ICMP messages sent to a broadcast address globally. The default value is enabled.

Default

The default is enabled.

Command Mode

Global Configuration

ip igmp (globally)

Configure the Internet Group Management Protocol (IGMP) commands to establish and manage the multicast groups.

Syntax

- **default ip igmp ssm-map {A.B.C.D} {A.B.C.D}**
- **default ip igmp ssm-map {A.B.C.D} {A.B.C.D} [enable]**
- **ip igmp generate-log**
- **ip igmp generate-trap**
- **ip igmp immediate-leave-mode <multiple-user|one-user>**
- **ip igmp ssm [dynamic-learning] [group-range {A.B.C.D/X}]**
- **ip igmp ssm-map {A.B.C.D} {A.B.C.D} [enable]**
- **ip igmp ssm-map all**
- **no ip igmp ssm-map {A.B.C.D} {A.B.C.D}**
- **no ip igmp ssm-map {A.B.C.D} {A.B.C.D} [enable]**

Command Parameters

generate-log	Sets the Internet Group Management Protocol (IGMP) log.
generate-trap	Sets the Internet Group Management Protocol (IGMP) trap.
immediate-leave-mode <multiple-user|one-user	Enables immediate leave mode to users which is either a single user or multiple users.

ssm [dynamic-learning] [group-range {A.B.C.D/X}]	Enables and sets the Source Specific Multicast (SSM) features. The parameter dynamic-learning enables SSM dynamic learning. The parameter group-range {A.B.C.D/X} configures the range group address and mask. The SSM range parameter extends the default SSM range of 232/8 to include an IP multicast address. You can configure existing applications without having to change their group configurations. This parameter specifies an IP multicast address within the range of 224.0.0.0 and 239.255.255.255. The default is 232.0.0.0. The address mask is the IP address mask of the multicast group. The default is 255.0.0.0.
ssm-map {A.B.C.D} {A.B.C.D} [enable]	Enables the Source Specific Multicast (SSM) map table for a specific entry or creates a static entry for a specific group. The parameter {A.B.C.D} {A.B.C.D} creates a static SSM channel table entry by specifying the group and source IP addresses. The first IP address is an IP multicast address within the SSM range. The second IP address is the source IP address and it it is an IP host address that sends traffic to the group. The default for {A.B.C.D}{A.B.C.D} enable is enable for each entry. The default is enable for each entry.
ssm-map all	Enables the Source Specific Multicast (SSM) map table for all static entries.
ssm-map{A.B.C.D} {A.B.C.D}[enable]	Enables the Source Specific Multicast (SSM) map table for a specific entry or creates a static entry for a specific group. The parameter {A.B.C.D} {A.B.C.D} creates a static SSM channel table entry by specifying the group and source IP addresses. The first IP address is an IP multicast address within the SSM range. The second IP address is the source IP address and it it is an IP host address that sends traffic to the group. The default for {A.B.C.D}{A.B.C.D} enable is enable for each entry. The default is enable for each entry.

Default

None

Command Mode

Global Configuration

ip igmp generate-log

Set igmp log.

Syntax

- **ip igmp generate-log**

Default

None

Command Mode

Global Configuration

ip ipfix aging-interval

Specifies (in seconds) the flow record aging interval.

Syntax

- **default ip ipfix aging-interval**
- **ip ipfix aging-interval <1-60>**
- **no ip ipfix aging-interval**

Command Parameters

<1-60>	Specifies, in seconds, the flow record aging interval.

Default

The default value is 40 seconds.

Command Mode

Global Configuration

ip ipfix collector

Configure a collector for Internet Protocol Flow Information eXport (IPFIX).

Syntax

- **ip ipfix collector <1–1> {A.B.C.D} exporter-ip {A.B.C.D} [dest-port <1-65535>] [src-port <1-65535>] [export-interval <1-120>] [initial-burst <1-10>]**

Command Parameters

{A.B.C.D}	Specifies the IP address of the collector.
<1–1>	Specifies the IPFIX collector ID.
exporter-ip {A.B.C.D}	Specifies the IP address of the exporter.
dest-port <1-65535>	Specifies the destination port receiving flow information.
src-port <1-65535>	Specifies the source port sending flow information.

export-interval	Specifies, in seconds, the frequency of template packet exports to the collector. The default value is 60 seconds.
initial-burst	Specifies the number of template packets sent when the collector becomes reachable. The default value is 5.

Default

None

Command Mode

Global Configuration

ip ipfix enable

Enable IPFIX globally.

Syntax

- **default ip ipfix enable**
- **ip ipfix enable**
- **no ip ipfix enable**

Default

The default value is disable.

Command Mode

Global Configuration

ip ipfix observation-domain

Assign a unique ID to an IPFIX observation domain.

Syntax

- **default ip ipfix observation-domain**
- **ip ipfix observation-domain <0-4294967295>**
- **no ip ipfix observation-domain**

Command Parameters

<0-4294967295>	Specifies the observation domain ID. The default is 0.

Default

The default value is 0.

Command Mode

Global Configuration

ip irdp

Enable Router Discovery globally so that the switch supports Router Discovery.

Syntax

- **default ip irdp**
- **default ip irdp enable**
- **ip irdp**
- **ip irdp enable**
- **no ip irdp**
- **no ip irdp enable**

Command Parameters

enable	Enables the router discovery protocol on the switch.

Default

None

Command Mode

Global Configuration

ip isid-list

Create an I-SID list to use with IS-IS accept policies.

Syntax

- **ip isid-list WORD<1-32> <0-16777215>**
- **ip isid-list WORD<1-32> list WORD<1-1024>**
- **no ip isid-list WORD<1-32> <0-16777215>**
- **no ip isid-list WORD<1-32> list WORD<1-1024>**

Command Parameters

<1-16777215>	Specifies an I-SID value.
list WORD<1-1024>	Specifies the of I-SID values.

WORD<1-32>	Specifies a name for the I-SID list.

Default

None

Command Mode

Global Configuration

ip max-routes-trap enable

Enable the switch to send a trap when the maximum number of routes is exceeded.

Syntax

- **default ip max-routes-trap enable**
- **ip max-routes-trap enable**
- **no ip max-routes-trap enable**

Default

The default is disabled.

Command Mode

Global Configuration

ip more-specific-non-local-route

Enable the more-specific-non-local-route feature. If enabled, the switch can enter a more specific nonlocal route into the routing table.

Syntax

- **default ip more-specific-non-local-route**
- **default ip more-specific-non-local-route enable**
- **ip more-specific-non-local-route**
- **ip more-specific-non-local-route enable**
- **no ip more-specific-non-local-route**
- **no ip more-specific-non-local-route enable**

Command Parameters

enable	Enable more-specific-non-local-route

Default

The default is disabled.

Command Mode

Global Configuration

ip mroute resource-usage (globally)

Configure the resource usage counters to query the number of ingress and egress IP multicast streams traversing your switch and enable traps and log messages on the console.

Syntax

- **default ip mroute resource-usage egress-threshold ingress-threshold**
- **default ip mroute resource-usage ingress-threshold**
- **ip mroute resource-usage egress-threshold <0-32767> [ingress-threshold <0-32767>]**
- **ip mroute resource-usage ingress-threshold <0-32767>**
- **ip mroute resource-usage log-msg [trap-msg]**

Command Parameters

egress-threshold <0-32767>	Configures the egress record threshold (S,G). A notification message is sent if this value is exceeded. The integer is a value between 0-32767. To set this option to the default value, use the default operator with the command. The default is 0.
ingress-threshold <0-32767>	Configures the ingress record threshold (peps). A notification message is sent if this value is exceeded. the integer is a value between 0-32767. To set this option to the default value, use the default operator with the command. The default is 0.
log-msg	Configures the notification method for sending only a log message after the threshold level is exceeded. Use the no operator to later remove this configuration. To set this option to the default value, use the default operator with the command. The default is disabled.
trap-msg	Configures the notification method for sending only a trap message after the threshold level is exceeded. Use the no operator to later remove this configuration. To set this option to the default value, use the default operator with the command. The default is disabled.

Default

None

Command Mode

Global Configuration

ip mroute resource-usage egress-threshold

Configure the resource usage counters to query the number of ingress and egress IP multicast streams traversing your switch.

Syntax

- **ip mroute resource-usage egress-threshold <0-32767> ingress-threshold <0-32767>**

Command Parameters

egress-threshold <0-32767>	Configures the egress record threshold (S,G). A notification message is sent if this value is exceeded. The integer is a value between 0-32767. To set this option to the default value, use the default operator with the command. The default is 0.
ingress-threshold <0-32767>	Configures the ingress record threshold (peps). A notification message is sent if this value is exceeded. The integer is a value between 0-32767. To set this option to the default value, use the default operator with the command. The default is 0.

Default

None

Command Mode

Global Configuration

ip mroute resource-usage log-msg trap-msg

Enable traps and log messages on the console.

Syntax

- **ip mroute resource-usage log-msg trap-msg**

Command Parameters

log-msg	Configures the notification method for sending only a log message after the threshold level is exceeded. Use the no operator to later remove this configuration. To set this option to the default value, use the default operator with the command. The default is disabled.
trap-msg	Configures the notification method for sending only a trap message after the threshold level is exceeded. Use the no operator to later remove this configuration. To set this option to the default value, use the default operator with the command. The default is disabled.

Default

None

Command Mode

Global Configuration

ip mroute static-source-group

Configure static source-group entries in the Protocol Independent Multicast (PIM) multicast routing table.

Syntax

- **ip mroute static-source-group <A.B.C.D> <A.B.C.D/X>**
- **no ip mroute static-source-group <A.B.C.D> <A.B.C.D/X>**

Command Parameters

<A.B.C.D>	Specifies the group IP address.
A.B.C.D/X	Specifies the multicast source IP address and subnet mask for the static source group entry. You cannot create duplicate groups. How you configure the source address depends on the protocol and mode you use. Use the no operator to remove this configuration.

Default

None

Command Mode

Global Configuration

ip mroute stats enable

Enable the collection of multicast routing process statistics.

Syntax

- **default ip mroute stats enable**
- **ip mroute stats enable**
- **no ip mroute stats enable**

Default

The default is disabled.

Command Mode

Global Configuration

ip mroute stream-limit (globally)

Limit the number of multicast streams to protect a Central Processor Unit (CPU) from multicast data packet bursts generated by malicious applications.

Syntax

- **default ip mroute stream-limit**
- **ip mroute stream-limit**
- **no ip mroute stream-limit**

Default

None

Command Mode

Global Configuration

ip msdp apply redistribute (globally)

Apply MSDP redistribution filters.

Syntax

- **default ip msdp apply redistribute**
- **ip msdp apply redistribute**
- **no ip msdp apply redistribute**

Default

None

Command Mode

Global Configuration

ip msdp connect—retry (globally)

Configure the connect-retry period to specify the amount of time, in seconds, between connection attempts for peering sessions.

Syntax

- **default ip msdp connect—retry {A.B.C.D} <1-65535>**
- **ip msdp connect—retry {A.B.C.D} <1-65535>**
- **no ip msdp connect—retry {A.B.C.D} <1-65535>**

Command Parameters

{A.B.C.D}	Specifies the MSDP peer IP address.
<1-65535>	Specifies the connect-retry interval in seconds. The default is 30 seconds.

Default

The default is 30 seconds.

Command Mode

Global Configuration

ip msdp enable

Enable Multicast Source Discovery Protocol (MSDP).

Syntax

- **default ip msdp enable**
- **ip msdp enable**
- **no ip msdp enable**

Default

The default is disabled.

Command Mode

Global Configuration

ip msdp keepalive (globally)

Configure keepalive messages to adjust the interval in seconds at which an MSDP peer sends keep alive messages.

Syntax

- **default ip msdp keepalive {A.B.C.D} <0-21845> <0-65535>**
- **ip msdp keepalive {A.B.C.D} <0-21845> <0-65535>**
- **no ip msdp keepalive {A.B.C.D} <0-21845> <0-65535>**

Command Parameters

{A.B.C.D}	Specifies the MSDP peer IP address.
<0-21845>	Specifies the keep alive interval in seconds. The default is 60 seconds.
<0-65535>	Specifies the hold time interval in seconds. The default is 75 seconds. 0 seconds means the peer never expires. Values 1 and 2 are not allowed.

Default

The default is 60 seconds.

Command Mode

Global Configuration

ip msdp md5-authentication (globally)

Configure Message Digest (MD) 5 authentication to secure control messages on the TCP connection between MSDP peers.

Syntax

- **default ip msdp md5-authentication**
- **ip msdp md5-authentication**
- **ip msdp md5-authentication {A.B.C.D} [enable]**
- **no ip msdp md5-authentication {A.B.C.D} [enable]**

Command Parameters

{A.B.C.D}	Specifies the MSDP peer IP address.
enable	Enables MD5 authentication.

Default

The default is disabled.

Command Mode

Global Configuration

ip msdp mesh-group (globally)

Configure mesh groups to reduce SA flooding. A mesh group does not forward SA messages to other group members.

Syntax

- **default ip msdp mesh-group WORD<1-64> {A.B.C.D}**
- **ip msdp mesh-group WORD<1-64> {A.B.C.D}**
- **no ip msdp mesh-group WORD<1-64> {A.B.C.D}**

Command Parameters

{A.B.C.D}	Specifies the MSDP peer IP address.
WORD<1-64>	Specifies the mesh group name.

Default

None

Command Mode

Global Configuration

ip msdp originator-id (globally)

Configure the originator ID to set the Rendezvous Point (RP) address inside the Source Active (SA) message.

Syntax

- **default ip msdp originator-id {A.B.C.D}**
- **ip msdp originator-id {A.B.C.D}**
- **no ip msdp originator-id {A.B.C.D}**

Command Parameters

{A.B.C.D}	Specifies the MSDP source IP address.

Default

None

Command Mode

Global Configuration

ip msdp password peer (globally)

Configure the case sensitive password for MD5 authentication

Syntax

- **default ip msdp password peer {A.B.C.D}**
- **ip msdp password peer {A.B.C.D} WORD<1-80>**
- **no ip msdp password peer {A.B.C.D} WORD<1-80>**

Command Parameters

{A.B.C.D}	Specifies the MSDP peer IP address.
WORD<1-80>	Specifies the MD5 authentication password.

Default

None

Command Mode

Global Configuration

ip msdp redistribute (globally)

Filter SPB routes to filter which (S,G,RP) entries sent out to all MSDP peers.

Syntax

- **default ip msdp redistribute**
- **ip msdp redistribute**
- **no ip msdp redistribute**

Default

None

Command Mode

Global Configuration

ip msdp redistribute route-policy (globally)

Create the route policy name.

Syntax

- **default ip msdp redistribute route-policy WORD<1-64>**
- **ip msdp redistribute route-policy WORD<1-64>**
- **no ip msdp redistribute route-policy WORD<1-64>**

Command Parameters

WORD<1-64>	Specifies the route policy name.

Default

None

Command Mode

Global Configuration

ip msdp sa-filter in (globally)

Create the inbound filter.

Syntax

- **default ip msdp sa-filter in {A.B.C.D}**
- **default ip msdp sa-filter in {A.B.C.D} route-policy WORD<1-64>**
- **ip msdp sa-filter in {A.B.C.D}**
- **ip msdp sa-filter in {A.B.C.D} route-policy WORD<1-64>**
- **no ip msdp sa-filter in {A.B.C.D}**
- **no ip msdp sa-filter in {A.B.C.D} route-policy WORD<1-64>**

Command Parameters

{A.B.C.D}	Specifies the MSDP peer IP address.
route-policy WORD<1-64>	Specifies the route policy name for an inbound filter.

Default

None

Command Mode

Global Configuration

ip msdp sa-filter out (globally)

Create the outbound filter.

Syntax

- **default ip msdp sa-filter out {A.B.C.D}**
- **default ip msdp sa-filter out {A.B.C.D} route-policy WORD<1-64>**

- **ip msdp sa-filter out {A.B.C.D}**
- **ip msdp sa-filter out {A.B.C.D} route-policy WORD<1-64>**
- **no ip msdp sa-filter out {A.B.C.D}**
- **no ip msdp sa-filter out {A.B.C.D} route-policy WORD<1-64>**

Command Parameters

{A.B.C.D}	Specifies the MSDP peer IP address.
route-policy WORD<1-64>	Specifies the route policy name for an outbound filter.

Default

None

Command Mode

Global Configuration

ip msdp sa-limit (globally)

Specifies the maximum number of SA messages to keep in SA cache.

Syntax

- **default ip msdp sa-limit {A.B.C.D} <0-6144>**
- **ip msdp sa-limit {A.B.C.D} <0-6144>**
- **no ip msdp sa-limit {A.B.C.D} <0-6144>**

Command Parameters

{A.B.C.D}	Specifies the MSDP peer IP address.
<0-6144>	Specifies the maximum number of SA messages to keep in SA cache. The default is 6144 messages.

Default

The default is 6144.

Command Mode

Global Configuration

ip msdp ttl-threshold (globally)

Configure the time-to-live (TTL) threshold to limit which multicast data packets the router encapsulated in SA Messaged forwarded to an MSDP peer.

Syntax

- **default ip msdp ttl-threshold {A.B.C.D} <1-255>**
- **ip msdp ttl-threshold {A.B.C.D} <1-255>**
- **no ip msdp ttl-threshold {A.B.C.D} <1-255>**

Command Parameters

{A.B.C.D}	Specifies the MSDP peer IP address.
<1-255>	Specifies the Time-To-Live value. The default is 1.

Default

The default is 1.

Command Mode

Global Configuration

ip name-server

Add addresses for DNS servers.

Syntax

- **default ip name-server primary**
- **default ip name-server secondary**
- **default ip name-server tertiary**
- **ip name-server primary WORD<0-46>**
- **ip name-server secondary WORD<0-46>**
- **ip name-server tertiary WORD<0-46>**
- **no ip name-server primary**
- **no ip name-server secondary**
- **no ip name-server tertiary**

Command Parameters

<primary|secondary|tertiary>WORD<0-46>	Configures the primary, secondary, or tertiary DNS server address. Enter the IP address in a.b.c.d format for IPv4 (string length 0-46). You can specify the IP address for only one server at a time; you cannot specify all three servers in one command.

Default

None

Command Mode

Global Configuration

ip pim (globally)

Configure PIM to create a PIM instance, and enable or disable PIM globally on the switch and change default global parameters.

Syntax

- **default ip pim**
- **default ip pim bootstrap-period**
- **default ip pim disc-data-timeout**
- **default ip pim enable**
- **default ip pim fast-joinprune**
- **default ip pim fwd-cache-timeout**
- **default ip pim join-prune-interval**
- **default ip pim register-suppression-timeout**
- **default ip pim rp-c-adv-timeout**
- **default ip pim unicast-route-change-timeout**
- **ip pim**
- **ip pim bootstrap-period <5-32757>**
- **ip pim disc-data-timeout <5-65535>**
- **ip pim enable**
- **ip pim fast-joinprune**
- **ip pim fwd-cache-timeout <10-86400>**
- **ip pim join-prune-interval <1-18724>**
- **ip pim register-suppression-timeout <6-65535>**
- **ip pim rp-c-adv-timeout <5-26214>**
- **ip pim unicast-route-change-timeout <2-65535>**
- **no ip pim**
- **no ip pim enable**
- **no ip pim fast-joinprune**

Command Parameters

bootstrap-period <5-32757>	Specify the interval (in seconds) that the elected bootstrap router (BSR) waits between originating bootstrap messages.
disc-data-timeout <5-65535>	Specify how long (in seconds) to discard data until the join is received from the rendezvous point (RP). An IP multicast discard record is created after a register packet is sent, until the the timer expires or a join is received.
enable	Activates PIM on the switch globally.
fast-joinprune	Enable the fast join prune interval.
fwd-cache-timeout <10-86400>	Specify the forward cache timeout value.
join-prune-interval <1-18724>	Specify how long to wait (in seconds) before the PIM router sends out the next join/prune message to its upstream neighbors.
register-suppression-timeout <6-65535>	Specify how long (in seconds) the designated router (DR) suppresses sending registers to the RP. The timer starts after the DR receives a register-stop message from the RP.
rp-c-adv-timeout <5-26214>	Specify how often (in seconds) a router configured as a candidate RP (C-RP) sends C-RP advertisement messages. After this timer expires, the C-RP router sends an advertisement message to the elected BSR.
unicast-route-change-timeout <2-65535>	Specify how often (in seconds) the switch polls the routing table manager (RTM) for unicast routing information updates for PIM. Lowering this value increases how often the switch polls the RTM. This can affect the performance of the switch, especially when a high volume of traffic flows through the switch.

Default

The default is disabled.

Command Mode

Global Configuration

ip pim mode

Configure the mode of this interface globally. After you change from one mode to another, an information message appears to remind you that traffic does not stop immediately.

Syntax

- **`default ip pim mode`**

- **ip pim mode sparse**
- **ip pim mode ssm**

Command Parameters

<ssm| sparse>	Specifies the mode. Configures Source Specific Multicast (SSM) to optimize PIM-SM by simplifying the many-to-many model (servers-to-receivers).

Default

The default is sparse.

Command Mode

Global Configuration

ip pim rp-candidate group

Configure a candidate rendezvous point (C-RP) to serve as backup to the RP router.

Syntax

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

Command Parameters

{A.B.C.D} {A.B.C.D}	Specifies the IP address and group mask of the multicast group. When combined, they identify the prefix that the local router uses to advertise itself as a C-RP router.
rp {A.B.C.D}	Specifies the IP address of the C-RP router. This address must be one of the local PIM-SM enabled interfaces.

Default

None

Command Mode

Global Configuration

ip pim static-rp

Adds a static rendezvous point (RP) entry and activates static RP.

Syntax

- **default ip pim static-rp**
- **ip pim static-rp <A.B.C.D/X> <A.B.C.D>**
- **no ip pim static-rp**

Command Parameters

<A.B.C.D/X>	Specifies the IP address and address mask of the multicast group. When combined, the IP address and address mask identify the range of the multicast addresses that the RP handles.
<A.B.C.D>	Specifies the IP address of the static RP.

Default

The default is disabled.

Command Mode

Global Configuration

ip pim virtual-neighbor

Configure a virtual neighbor when the next hop for a static route cannot run PIM.

Syntax

- **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>	The first IP address indicates the IP address of the selected interface.
<A.B.C.D>	The second IP address indicates the IP address of the neighbor.

Default

None

Command Mode

Global Configuration

ip prefix-list

Allows or denies specific route updates. A prefix list policy specifies route prefixes to match. When there is a match, the route is used. Configure a prefix list and apply the list to any IP route policy.

Syntax

- **ip prefix-list WORD<1-64> {A.B.C.D/X}**
- **ip prefix-list WORD<1-64> {A.B.C.D/X} ge <0-32>**
- **ip prefix-list WORD<1-64> {A.B.C.D/X} id <1-2147483647>**
- **ip prefix-list WORD<1-64> {A.B.C.D/X} le <0-32>**
- **ip prefix-list WORD<1-64> name WORD<1-64>**
- **no ip prefix-list WORD<1-64>**
- **no ip prefix-list WORD<1-64> {A.B.C.D/X}**

Command Parameters

<A.B.C.D/X>	Adds a prefix entry to the prefix list. A.B.C.D/X is the IP address and mask. Use the no operator to remove a prefix entry from the prefix list: no ip prefix-list WORD<1-64> <A.B.C.D/X>
ge<0-32>	Specifies the minimum length to match. Lower bound and higher bound mask lengths together can define a range of networks.
id<1-2147483647>	Specifies the prefix list ID.
le<0-32>	Specifies the maximum length to match. Lower bound and higher bound mask lengths together can define a range of networks.
name WORD<1-64>	Renames the specified prefix list. The name length is from 1 to 64 characters.

Default

None

Command Mode

Global Configuration

ip route (globally)

You can configure routing switches with a static default route, or they can learn it through a dynamic routing protocol.

Syntax

- **default ip route {A.B.C.D} {A.B.C.D} {A.B.C.D}**
- **default ip route {A.B.C.D} {A.B.C.D} {A.B.C.D} dynamic**
- **default ip route {A.B.C.D} {A.B.C.D} {A.B.C.D} enable**
- **default ip route {A.B.C.D} {A.B.C.D} {A.B.C.D} local-next-hop enable**

- **default ip route {A.B.C.D} {A.B.C.D} {A.B.C.D} preference**
- **ip route {A.B.C.D} {A.B.C.D} {A.B.C.D} enable**
- **ip route {A.B.C.D} {A.B.C.D} {A.B.C.D} enable next-hop-vrf WORD<1-16>**
- **ip route {A.B.C.D} {A.B.C.D} {A.B.C.D} local-next-hop enable**
- **ip route {A.B.C.D} {A.B.C.D} {A.B.C.D} preference <1-255>**
- **ip route {A.B.C.D} {A.B.C.D} {A.B.C.D} preference <1-255> next-hop-vrf WORD<1-16>**
- **ip route {A.B.C.D} {A.B.C.D} {A.B.C.D} weight <1-65535>**
- **ip route {A.B.C.D} {A.B.C.D} {A.B.C.D} weight <1-65535> local-next-hop enable**
- **ip route {A.B.C.D} {A.B.C.D} {A.B.C.D} weight <1-65535> next-hop-vrf WORD<1-16>**
- **ip route {A.B.C.D} {A.B.C.D} {A.B.C.D} weight <1-65535> preference <1-255>**
- **no ip route {A.B.C.D} {A.B.C.D} {A.B.C.D}**
- **no ip route {A.B.C.D} {A.B.C.D} {A.B.C.D} dynamic**
- **no ip route {A.B.C.D} {A.B.C.D} {A.B.C.D} dynamic next-hop-vrf WORD<1-16>**
- **no ip route {A.B.C.D} {A.B.C.D} {A.B.C.D} enable**
- **no ip route {A.B.C.D} {A.B.C.D} {A.B.C.D} enable next-hop-vrf WORD<1-16>**
- **no ip route {A.B.C.D} {A.B.C.D} {A.B.C.D} local-next-hop enable**
- **no ip route {A.B.C.D} {A.B.C.D} {A.B.C.D} next-hop-vrf WORD<1-16>**
- **no ip route {A.B.C.D} {A.B.C.D} {A.B.C.D} preference**

Command Parameters

{A.B.C.D}	The first and second <A.B.C.D> specify the IP address and mask for the route destination. 255.255.255.255 is the black hole route. Configures a black hole static route to the destination a router advertises to avoid routing loops when aggregating or injecting routes to other routers. The default route specifies a route to all networks for which there are no explicit routes in the Forwarding Information Base or the routing table. The default route has a prefix length of zero (RFC 1812).
enable	Adds a static or default route to the router or VRF.
local-next-hop enable	Enables the local next hop for this static route.
next-hop-vrf WORD<1-16>	Specifies the next-hop VRF instance by name.

preference <1-255>	Specifies the route preference.
weight <1-65535>	Specifies the static route cost.

Default

None

Command Mode

Global Configuration

ip route preference protocol ebgp

Configure the global route preference.

Syntax

- **default ip route preference protocol ebgp**
- **ip route preference protocol ebgp <0-255>**

Command Parameters

<0-255>	Configures the preference value for the specified protocol. If two protocols have the same configured value, the default value is used.

Default

The default is 45.

Command Mode

Global Configuration

ip route preference protocol ibgp

Configure the global route preference.

Syntax

- **default ip route preference protocol ibgp**
- **ip route preference protocol ibgp <0-255>**

Command Parameters

<0-255>	Configures the preference value for the specified protocol. If two protocols have the same configured value, the default value is used.

Default

The default is 175.

Command Mode

Global Configuration

ip route preference protocol ospf-extern1

Configure the global route preference.

Syntax

- **default ip route preference protocol ospf-extern1**
- **ip route preference protocol ospf-extern1 <0-255>**

Command Parameters

<0-255>	Configures the preference value for the specified protocol. If two protocols have the same configured value, the default value is used.

Default

The default is 120.

Command Mode

Global Configuration

ip route preference protocol ospf-extern2

Configure the global route preference.

Syntax

- **default ip route preference protocol ospf-extern2**
- **ip route preference protocol ospf-extern2 <0-255>**

Command Parameters

<0-255>	Configures the preference value for the specified protocol. If two protocols have the same configured value, the default value is used.

Default

The default is 125.

Command Mode

Global Configuration

ip route preference protocol ospf-inter

Configure the global route preference.

Syntax

- **default ip route preference protocol ospf-inter**
- **ip route preference protocol ospf-inter <0-255>**

Command Parameters

<0-255>	Configures the preference value for the specified protocol. If two protocols have the same configured value, the default value is used.

Default

The default is 25.

Command Mode

Global Configuration

ip route preference protocol ospf-intra

Configure the global route preference.

Syntax

- **default ip route preference protocol ospf-intra**
- **ip route preference protocol ospf-intra <0-255>**

Command Parameters

<0-255>	Configures the preference value for the specified protocol. If two protocols have the same configured value, the default value is used.

Default

The default is 20.

Command Mode

Global Configuration

ip route preference protocol rip

Configure the global route preference.

Syntax

- **default ip route preference protocol rip**
- **ip route preference protocol rip <0-255>**

Command Parameters

<0-255> Configures the preference value for the specified protocol. If two protocols have the same configured value, the default value is used.

Default

The default is 100.

Command Mode

Global Configuration

ip route preference protocol spbm-level1

Configure the global route preference.

Syntax

- **default ip route preference protocol spbm-level1**
- **ip route preference protocol spbm-level1 <0-255>**

Command Parameters

<0-255> Configures the preference value for the specified protocol. If two protocols have the same configured value, the default value is used.

Default

The default is 7.

Command Mode

Global Configuration

ip route preference protocol static

Configure the global route preference.

Syntax

- **default ip route preference protocol static**
- **ip route preference protocol static <0-255>**

Command Parameters

<0-255>	Configures the preference value for the specified protocol. If two protocols have the same configured value, the default value is used.

Default

The default is 5.

Command Mode

Global Configuration

ip routing

Enable IP forwarding (routing) on a global level so that the router supports routing. You can use the IP address of any router interface for IP-based network management.

Syntax

- **default ip routing**
- **ip routing**
- **no ip routing**

Default

None

Command Mode

Global Configuration

ip rsmlt edge-support

Configure Routed Split MultiLink trunking (RSMLT)-edge to store the RSMLT peer MAC/IP address-pair in its local config file and restore the configuration if the peer does not restore after a simultaneous reboot of both RSMLT-peer switches. The configuration applies to both IPv4.

Syntax

- **default ip rsmlt edge-support**
- **ip rsmlt edge-support**
- **no ip rsmlt edge-support**
- **no ip rsmlt peer-address <1-4059>**

Command Parameters

edge-support	Enables RSMLT-edge support.

Default

The default is disabled.

Command Mode

Global Configuration

ip source-route

Enables IPv4 source routing globally.

Syntax

- **default ip source-route**
- **ip source-route**
- **no ip source-route**

Default

Disabled

Command Mode

Global Configuration

ip spb-pim-gw foreign-source (globally)

Configures a static foreign source.

Syntax

- **default ip spb-pim-gw foreign-source {A.B.C.D} group {A.B.C.D}**
- **ip spb-pim-gw foreign-source {A.B.C.D} group {A.B.C.D}**
- **no ip spb-pim-gw foreign-source {A.B.C.D} group {A.B.C.D}**

Command Parameters

{A.B.C.D}	Specifies the multicast foreign source IP address.
group {A.B.C.D}	Specifies the group IP address.

Default

None

Command Mode

Global Configuration

ip supernet

Enable or disable supernetting. If supernetting is globally enabled, the switch can learn routes with a route mask of less then eight bits. Routes with a mask length less than eight bits cannot have ECMP paths, even if the ECMP feature is globally enabled.

Syntax

- `default ip supernet`
- `ip supernet`
- `no ip supernet`

Default

The default is disabled.

Command Mode

Global Configuration

ip ttl

Configure the IP routing protocol stack to specify which routing features the switch can use.

Syntax

- `default ip ttl`
- `ip ttl <1-255>`
- `no ip ttl`

Command Parameters

ttl<1-255>	Configures the default time-to-live (TTL) value for a routed packet. The TTL is the maximum number of seconds before a packet is discarded. The default value of 255 is used whenever a time is not supplied in the datagram header.

Default

The default value is 255.

Command Mode

Global Configuration

ip vrf

Creates a VRF instance.

Syntax

- **default ip vrf WORD<1-16> max-routes**
- **default ip vrf WORD<1-16> max-routes-trap enable**
- **default ip vrf WORD<1-16> vrf-trap enable**
- **ip vrf WORD<1-16>**
- **ip vrf WORD<1-16> max-routes <0-15744 | 0-15488 | 0-252000>**
- **ip vrf WORD<1-16> max-routes-trap enable**
- **ip vrf WORD<1-16> name WORD<0-16>**
- **ip vrf WORD<1-16> vrfid <1-511>**
- **ip vrf WORD<1-16> vrf-trap enable**
- **no ip vrf WORD<1-16>**
- **no ip vrf WORD<1-16> max-routes-trap enable**
- **no ip vrf WORD<1-16> vrf-trap enable**

Command Parameters

ipv6-max-routes <0-7744>	Configures the maximum number of IPv6 routes allowed for the VRF.
ipv6-max-routes-trap enable	Enables SNMP trap generation based on the configured number of maximum IPv6 routes.
max-routes <0-15744 | 0-15488 | 0-252000>	Specifies the maximum number of IPv4 routes for the VRF. Depending on the hardware platform, the parameter range can be one of the following: • <0-15744> • <0-15488> • <0-252000> The default is 10000. The maximum number of routes allowed for the GlobalRouter is 16,000 or 256,000 depending on your hardware platform.
max-routes-trap enable	Enables the sending of traps after the maximum number of routes is reached. The default is enabled.
name WORD<1-16>	Renames the VRF instance.
vrfid <1-511>	Specifies a VRF ID. The switch supports 512 VRFs.

vrf-trap enable	Enables the device to send VRF-related traps. The default is enabled.
WORD<1-16>	Specifies the name for the VRF.

Default

None

Command Mode

Global Configuration

ipsec policy

Create and configure an Internet Protocol Security (IPsec) policy.

Syntax

- **default ipsec policy WORD<1-32>**
- **ipsec policy WORD<1-32>**
- **ipsec policy WORD<1-32> action drop**
- **ipsec policy WORD<1-32> action permit**
- **ipsec policy WORD<1-32> laddr WORD<1-32>**
- **ipsec policy WORD<1-32> protocol icmp**
- **ipsec policy WORD<1-32> protocol icmpv6**
- **ipsec policy WORD<1-32> protocol ospfv3**
- **ipsec policy WORD<1-32> protocol tcp sport <1-65535> dport <1-65535>**
- **ipsec policy WORD<1-32> protocol tcp sport <1-65535> dport any**
- **ipsec policy WORD<1-32> protocol udp**
- **ipsec policy WORD<1-32> protocol udp sport <1-65535> dport <1-65535>**
- **ipsec policy WORD<1-32> protocol udp sport <1-65535> dport any**
- **ipsec policy WORD<1-32> raddr WORD<1-32>**
- **no ipsec policy WORD<1-32>**

Command Parameters

action <drop|permit>	Specifies the action the policy takes. The default is permit.
dport<1-65535|<any>	Specifies the destination port for TCP and UDP. You can specify any port as the destination port. The default is any.

laddr WORD<1-32>	Specifies the local address. This field is optional. laddr is an optional parameter that allows you to have multiple local addresses for each remote address. If you do not configure this parameter, then the IPv6 address 0::0 is the default, which configures this parameter to any address.
protocol <icmp|icmpv6|ospfv3|tcp|udp>	Specifies the protocol. The default is TCP.
raddr WORD<1-32>	Specifies the remote address. Use the address 0::0 to configure raddr to any, which allows the parameter to act as a wildcard entry with any destination acceptable.
sport <1-65535>	Specifies the source port for TCP and UDP.
WORD<1–32>	Specifies the policy ID

Default

The default is disabled.

Command Mode

Global Configuration

ipsec policy admin enable

Enable an Internet Protocol Security (IPsec) policy.

Syntax

- **ipsec policy WORD<1-32> admin enable**
- **no ipsec policy WORD<1-32> admin enable**

Command Parameters

WORD<1-32>	Specifies the IPsec policy name.

Default

The default is disabled.

Command Mode

Global Configuration

ipsec policy security-association

Link an Internet Protocol Security (IPsec) policy to an IPsec security association.

Syntax

- **default ipsec policy WORD<1-32> security-association WORD<1-32>**
- **ipsec policy WORD<1-32> security-association WORD<1-32>**
- **no ipsec policy WORD<1-32> security-association WORD<1-32>**

Default

None

Command Mode

Global Configuration

ipsec security-association

Create and configure an Internet Protocol Security (IPsec) security association.

Syntax

- **default ipsec security-association WORD<1-32>**
- **ipsec security-association WORD<1-32>**
- **ipsec security-association WORD<1-32> auth-algo AES-XCBC-MAC**
- **ipsec security-association WORD<1-32> auth-algo AES-XCBC-MAC auth-key WORD<1-256> KeyLength <1-256>**
- **ipsec security-association WORD<1-32> auth-algo MD5**
- **ipsec security-association WORD<1-32> auth-algo MD5 auth-key WORD<1-256> KeyLength <1-256>**
- **ipsec security-association WORD<1-32> auth-algo SHA1**
- **ipsec security-association WORD<1-32> auth-algo SHA1 auth-key WORD<1-256> KeyLength <1-256>**
- **ipsec security-association WORD<1-32> auth-algo SHA2**
- **ipsec security-association WORD<1-32> auth-algo SHA2 auth-key WORD<1-256> KeyLength <1-256>**
- **ipsec security-association WORD<1-32> encap-proto AH**
- **ipsec security-association WORD<1-32> encap-proto ESP**
- **ipsec security-association WORD<1-32> Encrpt-algo 3DES**
- **ipsec security-association WORD<1-32> Encrpt-algo 3DES EncrptKey WORD<1-256> KeyLength <1-256>**

- **ipsec security-association WORD<1-32> Encrpt-algo AES-CBC**
- **ipsec security-association WORD<1-32> Encrpt-algo AES-CBC EncrptKey WORD<1–256> KeyLength <1-256>**
- **ipsec security-association WORD<1-32> Encrpt-algo AES-CTR**
- **ipsec security-association WORD<1-32> Encrpt-algo AES-CTR EncrptKey WORD<1–256> KeyLength <1-256>**
- **ipsec security-association WORD<1-32> Encrpt-algo NULL**
- **ipsec security-association WORD<1-32> Encrpt-algo NULL EncrptKey WORD<1–256> KeyLength <1-256>**
- **ipsec security-association WORD<1-32> key-mode automatic**
- **ipsec security-association WORD<1-32> key-mode manual**
- **ipsec security-association WORD<1-32> lifetime Bytes <1-4294967295>**
- **ipsec security-association WORD<1-32> lifetime seconds <1-4294967295>**
- **ipsec security-association WORD<1-32> mode transport**
- **ipsec security-association WORD<1-32> spi <1-4294967295>**
- **no ipsec security-association WORD<1-32>**

Command Parameters

auth-algo <AES-XCBC-MAC| 32 MD5|SHA1| SHA2>	The authentication algorithm parameter specifies the authorization algorithm, which includes one of the following values: • AES-XCBC-MAC • MD5 • SHA1 • SHA2 The default authentication algorithm name is MD5.
auth-key WORD<1-256> [KeyLength WORD<1-256>]	The parameter auth-key specifies the authentication key. KeyLength specifies the KeyLength value that can be a string of 1 to 256 characters. The default KeyLength is 128. The KeyLength values are as follows: • 3DES is 48 • AES-CBC is 32, 48, or 64 • AES-CTR is 32
encap-proto <AH|ESP>	Specifies the encapsulation protocol. AH specifies the authentication header and ESP specifies the encapsulation security payload. If you configure the encapsulation protocol as AH, you cannot configure the encryption algorithms and other encryption-related attributes. You can only access the encryption algorithm parameters if you configure the encapsulation protocol to ESP. The default value is ESP.

Encrpt-algo <3DES| AES24 CBC|AES-CTR| NULL>	Specifies the encryption algorithm avlue as one of the following: • 3DES-CBC • AES-CBC • AES-CTR • NULL The default encryption algorithm value is AES-CBC. You can only access the encryption algorithm parameters if you configure the encapsulation protocol to ESP.
EncrptKey WORD<1-256> [KeyLength WORD<1-256>]	EncrptKey specifies the encryption key. KeyLength specifies the KeyLength value that can be a string of 1 to 256 characters. The default KeyLength is 128. The KeyLength values are as follows: • 3DES is 48 • AES-CBC is 32, 48, or 64 • AES-CTR is 32
key-mode <automatic| manual>	Specifies the key-mode as one of the following: automatic or manual. The default is manual.
lifetime <Bytes <1-4294967295>| seconds <1-4294967295>	Specifies the lifetime value in seconds or kilobytes.The default lifetime value in seconds is 8 hours. The default value in bytes is 4608000 kilobytes.
mode <transport| tunnel>	Specifies the mode value in either transport or tunnel. Transport mode encapsulates the IP payload and provides a secure connection between two end points. The software only supports transport mode. Tunnel mode encapsulates the entire IP packet and provides a secure tunnel. This software does not support tunnel mode. The default is transport mode.
policy WORD<1-32>	Specifies the policy ID.
spi <1-4294967295>	Specifies the security parameters index (SPI) value,which is a unique value. SPI is a tag IPsec adds to the IP header. The tag enables the system that receives the IP packet to determine under which security association to process the received packet. For IPsec to function, each peer must have the same SPI value configured on both peers for a particular policy.
WORD<1-32>	Specifies the security association.
WORD<1-32>	Specifies the security association and creates the security association.

Default

None

Command Mode

Global Configuration

ipv6 alternative-route

Enable IPv6 alternative route.

Syntax

- **default ipv6 alternative-route**
- **ipv6 alternative-route**
- **no ipv6 alternative-route**

Default

The default is enabled.

Command Mode

Global Configuration

ipv6 autoconfig

Enable or disable IPv6 autoconfiguration.

Syntax

- **ipv6 autoconfig**

Default

The default is disabled.

Command Mode

Global Configuration

ipv6 dhcp-relay fwd-path

Create the forwarding path from the client to the server.

Syntax

- **default ipv6 dhcp-relay fwd-path WORD<0-255> WORD<0-255>**
- **ipv6 dhcp-relay fwd-path WORD<0-255> WORD<0-255>**
- **ipv6 dhcp-relay fwd-path WORD<0-255> WORD<0-255> enable**
- **no ipv6 dhcp-relay fwd-path WORD<0-255> WORD<0-255>**
- **no ipv6 dhcp-relay fwd-path WORD<0-255> WORD<0-255> enable**

Command Parameters

enable	Enables the forwarding path to the server.
WORD<0-255>	Configures the forwarding path from the client to the server. The first WORD<0-255> is the IP address configured on an interface (a locally configured IP address) to forward or relay BootP or DHCP. This address is the relay agent. The relay can be a VRRP address.
WORD<0-255>	The second WORD<0-255> is the IP address of the DHCP server in the network. If this IP address corresponds to the locally configured IP network the system generates an error because IPv6 does not include broadcast.

Default

The default is disabled.

Command Mode

Global Configuration

ipv6 ecmp

IPv6 ECMP configuration.

Syntax

- **default ipv6 ecmp enable**
- **default ipv6 ecmp max-path**
- **ipv6 ecmp enable**
- **ipv6 ecmp max-path <ECMP-Paths>**
- **no ipv6 ecmp enable**

Command Parameters

enable	Enables IPv6 ECMP globally.
max-path *<ECMP-Paths>*	Configures the maximum number of ECMP paths. Different hardware platforms can support a different number of ECMP paths. For more information on the

maximum number of ECMP paths supported on your switch, see the scaling information in Release Notes for XA1400 Series.

Default

Disabled

Command Mode

Global Configuration

ipv6 fhs dhcp-guard enable

Enable DHCP-guard globally.

Syntax

- **default ipv6 fhs dhcp-guard enable**
- **ipv6 fhs dhcp-guard enable**
- **no ipv6 fhs dhcp-guard enable**

Default

The default is disabled

Command Mode

Global Configuration

ipv6 fhs dhcp-guard policy

Configure DHCP-guard policy.

Syntax

- **ipv6 fhs dhcp-guard policy WORD<1-64>**
- **no ipv6 fhs dhcp-guard policy WORD<1-64>**

Command Parameters

WORD<1-64>	Specifies the policy name.

Default

None

Command Mode

Global Configuration

ipv6 fhs enable

Enable First Hop Security (FHS) globally.

Syntax

- **default ipv6 fhs enable**
- **ipv6 fhs enable**
- **no ipv6 fhs enable**

Default

The default is disabled

Command Mode

Global Configuration

ipv6 fhs ipv6-access-list

Create an FHS IP access list or add IP prefixes to an existing IP access list.

Syntax

- **default ipv6 fhs ipv6-access-list [WORD<1-64>] [WORD<0-46>] [ge|le| mode]**
- **ipv6 fhs ipv6-access-list [WORD<1-64>] [WORD<0-46>] [ge<0-128>] [le<0-128>] [mode <allow | deny>]**
- **no ipv6 fhs ipv6-access-list [WORD<1-64>] [WORD<0-46>]**

Command Parameters

ge <0-128>	Specifies the minimum IPv6 mask length. By default, the value is equal to the configured prefix length.
le <0-128>	Specifies the maximum IPv6 mask length. By default, the value is equal to the configured prefix length.
mode <allow | deny>	Specifies the access mode. By default, the value is allow.
WORD<0-46>	Specifies the IPv6 address or the prefix length to be added to the IP access list.
WORD<1-64>	Specifies the IP access list name.

Default

None

Command Mode

Global Configuration

ipv6 fhs mac–access-list

Create an FHS MAC access list or add MAC addresses to an existing MAC access list.

Syntax

- **default ipv6 fhs mac-access-list WORD<1-64> <0x00:0x00:0x00:0x00:0x00:0x00> [mode]**
- **ipv6 fhs mac-access-list WORD<1-64> <0x00:0x00:0x00:0x00:0x00:0x00> [mode <allow | deny>]**
- **no ipv6 fhs mac-access-list WORD<1-64> <0x00:0x00:0x00:0x00:0x00:0x00>**

Command Parameters

0x00:0x00:0x00:0x00:0x00:0x00	Specifies the MAC address to be added or deleted.
mode <allow | deny>	Specifies the access mode. By default, the value is allow.
WORD<1–64>	Specifies the MAC access list name.

Default

None

Command Mode

Global Configuration

ipv6 fhs nd-inspection enable (globally)

Enables neighbor discovery (ND) inspection globally.

Syntax

- **default ipv6 fhs nd-inspection enable**
- **ipv6 fhs nd-inspection enable**
- **no ipv6 fhs nd-inspection enable**

Default

The default is disabled.

Command Mode

Global Configuration

ipv6 fhs ra-guard enable

Enable RA-guard globally.

Syntax

- **default ipv6 fhs ra-guard enable**
- **ipv6 fhs ra-guard enable**
- **no ipv6 fhs ra-guard enable**

Default

None

Command Mode

Global Configuration

ipv6 fhs ra-guard policy

Create the RA-guard policy.

Syntax

- **ipv6 fhs ra-guard policy WORD<1-64>**
- **no ipv6 fhs ra-guard policy WORD<1-64>**

Command Parameters

WORD<1-64>	Specifies the name of the RA-guard policy to be created or deleted.

Default

None

Command Mode

Global Configuration

ipv6 fhs snooping static-binding

Enables IPv6 snooping globally. This command enables learning SBT entries on all the VLANs where IPv6 DHCP snooping is configured. The no form of this command can be used only for deleting static SBT entries.

Syntax

- **ipv6 fhs snooping static-binding ipv6-address WORD<0-46> vlan <1-4059> mac-address <0x00:0x00:0x00:0x00:0x00:0x00> port {slot/port[/sub-port]}**
- **no ipv6 fhs snooping static-binding ipv6-address WORD<0-46> vlan <1-4059>**

Command Parameters

ipv6-address WORD<0-46>	Specifies the IPv6 address of the binding entry.
mac-address <0x00:0x00:0x00:0x00:0x00:0x00>	Specifies the MAC address of the binding entry.
port *{slot/port[/sub-port]}*	Specifies the port of the binding entry. Identifies a single slot and port. If your platform supports channelization and the port is channelized, you must also specify the sub-port in the format slot/port/sub-port.
vlan *<1-4059>*	Specifies the VLAN ID in the range of 1 to 4059. By default, VLAN IDs 1 to 4059 are configurable and the system reserves VLAN IDs 4060 to 4094 for internal use. On switches that support the vrf-scaling and spbm-config-mode boot configuration flags, if you enable these flags, the system also reserves VLAN IDs 3500 to 3998. VLAN ID 1 is the default VLAN and you cannot create or delete VLAN ID 1.

Default

None

Command Mode

Global Configuration

ipv6 forwarding (globally)

Configure IPv6 forwarding.

Syntax

- `default ipv6 forwarding`
- `ipv6 forwarding`
- `no ipv6 forwarding`

Default

By default, forwarding is globally enabled.

Command Mode

Global Configuration

ipv6 hop-limit

Insert a value into the hop-limit field of the IPv6 header.

Syntax

- **default ipv6 hop-limit <0-255>**
- **ipv6 hop-limit <0-255>**

Command Parameters

<0-255> Inserts a value into the hop-limit field of IPv6 header in the range of 0 to 255.

Default

The default hop limit is 64.

Command Mode

Global Configuration

ipv6 icmp addr-unreach

Enables or disables ICMP network address unreachable messages.

Syntax

- **default ipv6 icmp addr-unreach**
- **ipv6 icmp addr-unreach**
- **no ipv6 icmp addr-unreach**

Default

The default is enabled.

Command Mode

Global Configuration

ipv6 icmp echo multicast-request (globally)

Enables or disables the processing of IPv6 ICMP messages sent to a multicast address globally.

Syntax

- **default ipv6 icmp echo multicast-request**
- **ipv6 icmp echo multicast-request**
- **no ipv6 icmp echo multicast-request**

Command Parameters

echo multicast-request	Enables or disables the processing of IPv6 ICMP messages sent to a multicast address globally. The default value is enabled.

Default

The default is enabled.

Command Mode

Global Configuration

ipv6 icmp error-interval

Configure the interval (in milliseconds) for sending ICMPv6 error messages.

Syntax

- **default ipv6 icmp error-interval**
- **ipv6 icmp error-interval <0-2147483647>**

Command Parameters

<1-2147483647>	Configures the interval (in milliseconds) for sending ICMPv6 error messages. An entry of 0 seconds results in no sent ICMPv6 error messages.

Default

The default error interval is 1000.

Command Mode

Global Configuration

ipv6 icmp error-quota

Configure the number of Internet Control Message Protocol (ICMP) error messages that can be sent during the ICMP error interval.

Syntax

- **default ipv6 icmp error-quota**
- **ipv6 icmp error-quota <0-2000000>**

Command Parameters

<0-2000000>	Configures the number of internet Control Message Protocol (ICMP) error messages that the system can send during the ICMP error interval. A value of zero instructs the system not to send any ICMP error messages.

Default

The default error quota is 50.

Command Mode

Global Configuration

ipv6 icmp port-unreach

Enables or disables ICMP port unreachable messages.

Syntax

- **default ipv6 icmp port-unreach**
- **ipv6 icmp port-unreach**
- **no ipv6 icmp port-unreach**

Default

The default is enabled.

Command Mode

Global Configuration

ipv6 icmp unreach-msg

Enable Internet Control Message Protocol (ICMP) network unreachable messages.

Syntax

- **default ipv6 icmp unreach-msg**
- **ipv6 icmp unreach-msg**
- **no ipv6 icmp unreach-msg**

Default

By default ICMP network unreachable messages are disabled.

Command Mode

Global Configuration

ipv6 interface address <IPv6addr/prefixlen>

Create CLIPv6 interface and associates it with the given IPv6 address.

Syntax

- **ipv6 interface address <IPv6addr/prefixlen>**
- **no ipv6 interface address <IPv6address/prefixlen>**

Default

None

Command Mode

Global Configuration

ipv6 isis apply accept

Applies the configured IPv6 IS-IS accept policies.

Syntax

- **ipv6 isis apply accept vrf WORD<1-16>**

Command Parameters

vrf WORD<1-16>	Applies the configured IPv6 IS-IS accept policies for the specified VRF.

Default

None

Command Mode

Global Configuration

ipv6 max-routes-trap

Enables SNMP trap generation after the maximum number of IPv6 routes are reached.

Syntax

- **default ipv6 max-routes-trap enable**
- **ipv6 max-routes-trap enable**
- **no ipv6 max-routes-trap enable**

Default

The default is enabled.

Command Mode

Global Configuration

ipv6 mld generate-log

Enable MLD log status

Syntax

- **default ipv6 mld generate-log**
- **ipv6 mld generate-log**
- **no ipv6 mld generate-log**

Default

None

Command Mode

Global Configuration

ipv6 mld generate-trap

Enable MLD traps generation

Syntax

- **default ipv6 mld generate-trap**
- **ipv6 mld generate-trap**
- **no ipv6 mld generate-trap**

Default

None

Command Mode

Global Configuration

ipv6 mroute stats enable

Enable collection of IPv6 multicast route statistics

Syntax

- **default ipv6 mroute stats enable**
- **ipv6 mroute stats enable**
- **no ipv6 mroute stats enable**

Default

The default is enabled.

Command Mode

Global Configuration

ipv6 neighbor

Comands to configure IPv6 neighbors globally.

Syntax

- **ipv6 neighbor WORD<0-128> port {slot/port[/sub-port]} mac 0x00:0x00:0x00:0x00:0x00:0x00 vlan <1-4059>**
- **no ipv6 neighbor WORD<0-128> port {slot/port[/sub-port]}**
- **no ipv6 neighbor WORD<0-128> vlan <1-4059>**

Command Parameters

mac 0x00:0x00:0x00:0x00:0x00:0x00	Specifies the MAC address.
port *{slot/port[/sub-port]}*	Identifies a single slot and port. If your platform supports channelization and the port is channelized, you must also specify the sub-port in the format slot/port/sub-port.
vlan *<1-4059>*	Specifies the VLAN ID in the range of 1 to 4059. By default, VLAN IDs 1 to 4059 are configurable and the system reserves VLAN IDs 4060 to 4094 for internal use. On switches that support the vrf-scaling and spbm-config-mode boot configuration flags, if you enable these flags, the system also reserves VLAN IDs 3500 to 3998. VLAN ID 1 is the default VLAN and you cannot create or delete VLAN ID 1.
WORD<0-128>	Ipv6 address in hex colon format.

Default

None

Command Mode

Global Configuration

ipv6 pim disc-data-timeout

Configure the timeout to discard data.

Syntax

- **default ipv6 pim disc-data-timeout**
- **ipv6 pim disc-data-timeout <5-65535>**

Command Parameters

<5-65535> Specifies the duration in seconds to discard data until the switch receives the join message from the rendezvous point (RP). An IP multicast discard record is created after a register packet is sent, until the timer expires or the switch receives a join message.

Default

The default is 60.

Command Mode

Global Configuration

ipv6 pim enable

Enable PIM globally on the switch.

Syntax

- **default ipv6 pim enable**
- **ipv6 pim enable**
- **no ipv6 pim enable**

Default

The default is disabled.

Command Mode

Global Configuration

ipv6 pim fwd-cache-timeout

Configure the forward cache timeout.

Syntax

- **default ipv6 pim fwd-cache-timeout**

- **ipv6 pim fwd-cache-timeout <10-86400>**

Command Parameters

<10-86400>	Specifies the forward cache timeout value.

Default

The default is 210.

Command Mode

Global Configuration

ipv6 pim join-prune-interval

Configure the interval for join and prune messages.

Syntax

- **default ipv6 pim join-prune-interval**
- **ipv6 pim join-prune-interval <1-18724>**

Command Parameters

<1-18724>	Specifies the duration in seconds before the PIM router sends out the next join or prune message to its upstream neighbors.

Default

The default is 60.

Command Mode

Global Configuration

ipv6 pim mode

Configure the PIM mode.

Syntax

- **default ipv6 pim mode**
- **ipv6 pim mode sparse**
- **ipv6 pim mode ssm**

Command Parameters

sparse	Configures the PIM mode on the switch

ssm	Configures the PIM mode on the switch

Default

The default is sparse.

Command Mode

Global Configuration

ipv6 pim register-suppression-timeout

Specify how long to suppress register messages.

Syntax

- **default ipv6 pim register-suppression-timeout**
- **ipv6 pim register-suppression-timeout <10-65535>**

Command Parameters

<10-65535>	Specifies the duration in seconds the designated router (DR) suppresses sending registers to the RP. The timer starts after the DR receives a register-stop message from the RP.

Default

The default is 60.

Command Mode

Global Configuration

ipv6 pim static-rp

Enable IPv6 static RP function.

Syntax

- **default ipv6 pim static-rp**
- **ipv6 pim static-rp**
- **ipv6 pim static-rp WORD<0-255> WORD<0-255>**
- **no ipv6 pim static-rp**

Command Parameters

WORD<0-255>	Specifies the IPv6 address and address mask of the multicast group. When combined, the IPv6 address and address mask identify the range of the multicast addresses that the RP handles.

Default

The default is disabled.

Command Mode

Global Configuration

ipv6 pim unicast-route-change-timeout

Configure the polling interval for the routing table manager (RTM).

Syntax

- **default ipv6 pim unicast-route-change-timeout**
- **ipv6 pim unicast-route-change-timeout <2-65535>**

Command Parameters

<2-65535>	Specifies the duration in seconds the switch polls the RTM for unicast routing information updates for PIM.

Default

The default is 5.

Command Mode

Global Configuration

ipv6 prefix-list

Use prefix lists to allow or deny specific route updates. A prefix list policy specifies route prefixes to match. When there is a match, the route is used. Configure a prefix list and apply the list to a route policy.

Syntax

- **ipv6 prefix-list WORD<1-64> name WORD<1-64>**
- **ipv6 prefix-list WORD<1-64> WORD<1-256> ge <0- 128>**
- **ipv6 prefix-list WORD<1-64> WORD<1-256> id <1-2147483647>**
- **ipv6 prefix-list WORD<1-64> WORD<1-256> le <0-128>**

- **no ipv6 prefix-list WORD<1-64> [WORD<1-256>]**

Command Parameters

ge <0-128>	Specifies the minimum length to match. Lower bound and higher bound mask lengths together can define a range of networks.
id <1-2147483647>	Specifies the prefix list ID.
le <0-128>	Specifies the maximum length to match. Lower bound and higher bound mask lengths together can define a range of networks.
name WORD<1-64>	Renames the specified prefix list. The name length is from 1 to 64 characters.
WORD<1-256>	Specifies the IPv6 address and length.
WORD<1-64>	Adds a prefix entry to the prefix list. WORD<1-64> is the prefix-list name. WORD<1-256> is the IPv6 address and length. <ge|le><0- 128> is the minimum and maximum length to match. Lower bound and higher bound mask lengths together can define a range of networks.

Default

None

Command Mode

Global Configuration

ipv6 route

Configure a static route to destination IPv6 address prefixes.

Syntax

- **default ipv6 route WORD<0-46>**
- **default ipv6 route WORD<0-46> enable next-hop WORD<0-46>**
- **default ipv6 route WORD<0-46> enable port {slot/port[/sub-port]}**
- **default ipv6 route WORD<0-46> enable tunnel <1-2000>**
- **default ipv6 route WORD<0-46> enable vlan <1-4059>**
- **default ipv6 route WORD<0-46> preference**
- **default ipv6 route WORD<0-46> preference next-hop WORD<0-46>**
- **default ipv6 route WORD<0-46> preference port {slot/port[/sub-port]}**
- **default ipv6 route WORD<0-46> preference tunnel <1-2000>**
- **default ipv6 route WORD<0-46> preference vlan <1-4059>**

- **ipv6 route WORD<0-46> cost <1-65535>**
- **ipv6 route WORD<0-46> cost <1-65535> next-hop WORD<0-46>**
- **ipv6 route WORD<0-46> cost <1-65535> port {slot/port[/sub-port]}**
- **ipv6 route WORD<0-46> cost <1-65535> preference <1-255>**
- **ipv6 route WORD<0-46> cost <1-65535> tunnel <1-2000>**
- **ipv6 route WORD<0-46> cost <1-65535> vlan <1-4059>**
- **ipv6 route WORD<0-46> enable**
- **ipv6 route WORD<0-46> enable next-hop WORD<0-46>**
- **ipv6 route WORD<0-46> enable port {slot/port[/sub-port]}**
- **ipv6 route WORD<0-46> enable tunnel <1-2000>**
- **ipv6 route WORD<0-46> enable vlan <1-4059>**
- **ipv6 route WORD<0-46> preference <1-255>**
- **ipv6 route WORD<0-46> preference <1-255> next-hop WORD<0-46>**
- **ipv6 route WORD<0-46> preference <1-255> port {slot/port[/sub-port]}**
- **ipv6 route WORD<0-46> preference <1-255> tunnel <1-2000>**
- **ipv6 route WORD<0-46> preference <1-255> vlan <1-4059>**
- **no ipv6 route WORD<0-46>**
- **no ipv6 route WORD<0-46> enable**
- **no ipv6 route WORD<0-46> enable next-hop WORD<0-46>**
- **no ipv6 route WORD<0-46> enable port {slot/port[/sub-port]}**
- **no ipv6 route WORD<0-46> enable tunnel <1-2000>**
- **no ipv6 route WORD<0-46> enable vlan <1-4059>**
- **no ipv6 route WORD<0-46> next-hop WORD<0-46>**
- **no ipv6 route WORD<0-46> port {slot/port[/sub-port]}**
- **no ipv6 route WORD<0-46> tunnel <1-2000>**
- **no ipv6 route WORD<0-46> vlan <1-4059>**

Command Parameters

cost <1-65535>	Specifies the cost or distance ratio to reach the destination for this node. The default cost is 1.
enable	Enables the static route on the port. The default state for a new static route is enable.
next-hop WORD<0-46>	Specifies the IPv6 address of the next hop on this route. You do not need to specify the next hop if the devices directly connect to one another. Configure the next hop if the two nodes do not share the same network prefix but reside on the same link.

port *{slot/port[/sub-port]}*	Specifies the port to which this entry applies. You must specify the port if the next hop is a link-local address. Identifies a single slot and port. If your platform supports channelization and the port is channelized, you must also specify the sub-port in the format slot/port/sub-port.
preference <1-255>	Specifies the routing preference of the destination IPv6 address. The default preference is 5.
tunnel <1-2000>	Specifies the tunnel to which this entry applies.
vlan *<1-4059>*	Specifies the VLAN ID in the range of 1 to 4059. By default, VLAN IDs 1 to 4059 are configurable and the system reserves VLAN IDs 4060 to 4094 for internal use. On switches that support the vrf-scaling and spbm-config-mode boot configuration flags, if you enable these flags, the system also reserves VLAN IDs 3500 to 3998. VLAN ID 1 is the default VLAN and you cannot create or delete VLAN ID 1.
WORD<0-46>	Specifies the IPv6 destination network address.

Default

The default state for a new static route is enable.

Command Mode

Global Configuration

ipv6 route preference protocol

Specifies the route preference.

Syntax

- **default ipv6 route preference protocol ospfv3-extern1**
- **default ipv6 route preference protocol ospfv3-extern2**
- **default ipv6 route preference protocol ospfv3-inter**
- **default ipv6 route preference protocol ospfv3-intra**
- **default ipv6 route preference protocol spbm-level1**
- **default ipv6 route preference protocol static**
- **ipv6 route preference protocol ospfv3-extern1**
- **ipv6 route preference protocol ospfv3-extern2**
- **ipv6 route preference protocol ospfv3-inter**
- **ipv6 route preference protocol ospfv3-intra**

- **ipv6 route preference protocol spbm-level1**
- **ipv6 route preference protocol static**

Command Parameters

{static | ospfv3-intra | ospfv3-inter | ospfv3-extern1 | ospfv3-extern2 | spbm-level1}	Specifies the protocol type.
<0-255>	Specifies the default preference value for the given protocol.

Default

None

Command Mode

Global Configuration

ipv6 route static

Enable static routes globally. If you disable static routes globally, the system removes all enabled static routes from the RTM and does not add new static routes to the RTM.

Syntax

- **default ipv6 route static enable**
- **ipv6 route static enable**
- **no ipv6 route static enable**

Command Parameters

enable	Enables the static routes globally.
static	Modifies IPv6 static route parameters.

Default

The default is enabled.

Command Mode

Global Configuration

ipv6 source-route

Enables IPv6 source routing globally.

Syntax

- **default ipv6 source-route**
- **ipv6 source-route**
- **no ipv6 source-route**

Default

Disabled

Command Mode

Global Configuration

ipv6 tunnel

Configure a tunnel for IPv6 VLANs or brouter ports to communicate through an IPv4 network.

Syntax

- **default ipv6 tunnel <1-2000>**
- **default ipv6 tunnel <1-2000> hop-limit**
- **ipv6 tunnel <1-2000> hop-limit <0-255>**
- **ipv6 tunnel <1-2000> source {A.B.C.D} address WORD<0-46> destination {A.B.C.D}**
- **no ipv6 tunnel <1-2000>**

Command Parameters

<1-2000>	Specifies the tunnel ID.
address WORD<0-46>	Specifies the IPv6 address and length for the local VLAN or brouter port.
destination{A.B.C.D}	Configures the address of the remote endpoint of the tunnel.
hop-limit <0-255>	Configures the maximum number of hops in the tunnel.
source {A.B.C.D}	Configures the address of the local endpoint of the tunnel, or 0.0.0.0 (for IPv4) or :: (for IPv6) if the device is free to choose its addresses at tunnel establishment.

Default

The default hop-limit is 255.

Command Mode

Global Configuration

i-sid

Service Instance Identifier commands.

Syntax

- **default i-sid**
- **i-sid <0-16777215>**
- **i-sid <1-16777215> elan-transparent**
- **no i-sid**
- **no i-sid <1-16777215>**

Command Parameters

<0-16777215>	Specifies the service instance identifier (I-SID).
<1-16777215>	Specifies the Transparent UNI based service instance identifier (I-SID).
elan-transparent	Specifies the elan-transparent (Transparent UNI) based service.

Default

None

Command Mode

Global Configuration

i-sid (T-UNI based)

Create a Transparent UNI based service instance identifier (I-SID).

Syntax

- **i-sid <1-16777215> elan-transparent**
- **no i-sid <1-16777215>**

Command Parameters

<1-16777215>	Specifies the Transparent UNI based service instance identifier (I-SID).
elan-transparent	Specifies the elan-transparent (Transparent UNI) based service.

Default

None

Command Mode

Global Configuration

i-sid mac-address-entry

Service Instance Identifier FDB commands.

Syntax

- **i-sid mac-address-entry <1-16777215> flush**
- **i-sid mac-address-entry <1-16777215> sync**

Command Parameters

<1-16777215>	Specifies the FDB based service instance identifier (I-SID).
flush	Flushes MAC address on an i-sid
sync	Sync forwarding database with the other aggregation switch

Default

None

Command Mode

Global Configuration

lacp (globally)

Configure Link Aggregation Control Protocol (LACP) parameters globally. When the LACP system priority is set globally, it applies to all LACP-enabled aggregators and ports.

Syntax

- **default lacp**
- **default lacp aggr-wait-time**
- **default lacp enable**
- **default lacp fast-periodic-time**
- **default lacp slow-periodic-time**
- **default lacp system-priority**
- **default lacp timeout-scale**
- **lacp aggr-wait-time <200-2000>**
- **lacp enable**
- **lacp fast-periodic-time <200-20000>**
- **lacp slow-periodic-time <10000-30000>**
- **lacp smlt-sys-id 0x00:0x00:0x00:0x00:0x00:0x00**

- `lacp system-priority <0-65535>`
- `lacp timeout-scale <2-10>`
- `no lacp`
- `no lacp enable`

Command Parameters

aggr-wait-time <200-2000>	Sets the aggregation wait time (in milliseconds) globally. The default value is 2000.
enable	Enables the Link Aggregation Control Protocol (LACP) globally.
fast-periodic-time <200-20000>	Sets the fast-periodic time (in milliseconds) globally. The default is 20000 ms.
slow-periodic-time <10000-30000>	Sets the slow periodic time globally. The default value is 1000 ms.
smlt-sys-id <0x00:0x00:0x00:0x00:0x00:0x00>	Sets the LACP system ID globally. Enter a MAC address in the following format: 0x00:0x00:0x00:0x00:0x00:0x00.
system-priority <0-65535>	Sets the global LACP system priority. The default value is 32768.
timeout-scale <2-10>	Sets the timeout scale globally. The default value is 3.

Default

The default is disabled.

Command Mode

Global Configuration

license-grant

Grant license to IO slot. This command is not available on all hardware platforms. For more information about feature support, see.Release Notes for XA1400 Series

Syntax

- `license-grant {slot[-slot][,...]}`
- `no license-grant {slot[-slot][,...]}`

Command Parameters

{slot[-slot][,...]}	Specifies the slot. Valid IO slots are 1-8.

Default

None

Command Mode

Global Configuration

link-flap-detect

Configure link flap detection to control link state changes on a physical port.

Syntax

- **default link-flap-detect**
- **default link-flap-detect auto-port-down**
- **default link-flap-detect frequency**
- **default link-flap-detect interval**
- **default link-flap-detect send-trap**
- **link-flap-detect auto-port-down**
- **link-flap-detect frequency <1-9999>**
- **link-flap-detect interval <2-600>**
- **link-flap-detect send-trap**
- **no link-flap-detect auto-port-down**
- **no link-flap-detect send-trap**

Command Parameters

auto-port-down	Activates automatic disabling of the port if the link-flap threshold is exceeded. The default is disabled.
frequency <1-9999>	Configures the number of changes that are allowed during the time specified by the interval command. The default is 20.
interval <2-600>	Configures the link-flap-detect interval in seconds. The default is 60.
send-trap	Activates sending traps. The default is enabled.

Default

None

Command Mode

Global Configuration

link-state group

Configures the Link-state tracking (LST) group.

Syntax

- **default link-state group <1-48> enable**
- **link-state group <1-48> downstream interface gigabitEthernet {slot/port[/sub-port][-slot/port[/sub-port]][,...]}**
- **link-state group <1-48> downstream mlt <1-512>**
- **link-state group <1-48> enable**
- **link-state group <1-48> upstream interface gigabitEthernet {slot/port[/sub-port][-slot/port[/sub-port]][,...]}**
- **link-state group <1-48> upstream mlt <1-512>**
- **no link-state group <1-48> enable**

Command Parameters

<1-48>	Specifies the link-state group ID.
downstream	Specifies a downsteam interface for the LST group.
enable	Enables the command.
interface gigabitEthernet *{slot/port[/sub-port] [-slot/port[/sub-port]] [,...]}*	Specifies the slot and port for the upstream or downtream LST group. Identifies the slot and port in one of the following formats: a single slot and port (slot/port), a range of slots and ports (slot/port-slot/port), or a series of slots and ports (slot/port,slot/port,slot/port). If your platform supports channelization and the port is channelized, you must also specify the sub-port in the format slot/port/sub-port.
mlt <1-512>	Specifies an MLT ID for the upsteam or downstream LST group.
upstream	Specifies an upstream interface for the LST group.

Default

None

Command Mode

Global Configuration

lldp tx-hold-multiplier

Configure the time to live value in seconds.

Syntax

- **lldp tx-hold-multiplier <2-10>**

Command Parameters

<2-10>	Specifies the Tx hold multiplier in seconds.

Default

Default value is 4 seconds.

Command Mode

Global Configuration

lldp tx-interval

Configure the interval in seconds in which LLDP frames are transmitted.

Syntax

- **lldp tx-interval <5-32768>**
- **lldp tx-interval <5-32768> tx-hold-multiplier <2-10>**

Command Parameters

tx-hold-multiplier <2-10>	Specifies the Tx hold multiplier in seconds.
<5-32768>	Specifies the global Tx interval in seconds.

Default

Default value is 30 seconds.

Command Mode

Global Configuration

load-license

Load a license file to unlock the licensed features.

Syntax

- **load-license WORD<0-63>**

Command Parameters

WORD<0-63>	Specifies the license filename. This parameter does not apply to all hardware platforms.

Default

None

Command Mode

Global Configuration

logging level

Determine what messages the system records in the log.

Syntax

- **`default logging level <0-4>`**
- **`logging level <0-4>`**

Command Parameters

level <0-4>	Shows and configures the logging level. The level is one of the following values: • 0 = Information; all messages are recorded. • 1 = Warning; only warning and more serious messages are recorded. • 2 = Error; only error and more serious messages are recorded. • 3 = Manufacturing; this parameter is not available for customer use. • 4 = Fatal; only fatal messages are recorded.

Default

None

Command Mode

Global Configuration

logging screen

Configure the system to display log messages on screen.

Syntax

- **`default logging screen`**

- **logging screen**
- **no logging screen**

Command Parameters

screen	Configures the system to display the log messages on screen.

Default

None

Command Mode

Global Configuration

logging transferFile

Configure the remote host address for log transfer. The system transfers the current log file to a remote host when the log file size reaches the configured maximum size.

Syntax

- **logging transferFile <1-10> address {A.B.C.D}**
- **no logging transferFile <1-10> address {A.B.C.D}**

Command Parameters

<1-10>	Specifies the file ID to transfer.
address <A.B.C.D>	Specifies the IP address of the host to which to transfer the log file. The remote host must be reachable or the configuration fails.

Default

None

Command Mode

Global Configuration

logging transferFile filename-prefix

Create the filename on the remote host. The system transfers the current log file to a remote host when the log file size reaches the configured maximum size.

Syntax

- **default logging transferFile <1-10> filename-prefix**
- **logging transferFile <1-10> filename-prefix WORD<0-200>**

Command Parameters

<1-10>	Specifies the file ID to transfer.
filename-prefix WORD<0-2005>	Specifies the name of the file on the remote host. If you do not configure a name, the current log file name is the default.

Important:

Configuring this option is not recommended. If you configure this option, the previously transferred log file is overwritten on the remote server.

Default

None

Command Mode

Global Configuration

logging write

Write to the log file automatically created by the system.

Syntax

- `logging write WORD<1-1536>`

Command Parameters

write WORD<1-1536>	Writes the designated string to the log file. WORD<1-1536> is the string or command that you append to the log file. If the string contains spaces, you must enclose the string in quotation marks (").

Default

None

Command Mode

Global Configuration

logical-intf isis

Create a logical IS-IS interface.

Syntax

- `logical-intf isis <1-255> dest-ip {A.B.C.D} name WORD<1-16>`

- **logical-intf isis <1–255> vid {vlan-id[-vlan-id][,...]} primary-vid <2-4059> mlt PT_MLT<1-512>**
- **logical-intf isis <1–255> vid {vlan-id[-vlan-id][,...]} primary-vid <2-4059> port {slot/port[/sub-port]} name WORD<1-16>**
- **no logical-intf isis <1-255>**

Command Parameters

<1-255>	Specifies the ISIS logical interface ID.
dest-ip {A.B.C.D}	Specifies the destination IP address for the logical interface.
mlt PT_MLT<1-512>	Specifies the MLT ID that the logical interface is connected to in an L2 network.
name WORD<1-16>	Specifies the administratively-assigned name of this logical interface, which can be up to 16 characters.
port *{slot/port[/sub-port]}*	Identifies a single slot and port. If your platform supports channelization and the port is channelized, you must also specify the sub-port in the format slot/port/sub-port.
primary-vid *<2-4059>*	Specifies the primary tunnel VLAN ID associated with this L2 IS-IS logical interface. Specifies the VLAN ID in the range of 2 to 4059. VLAN ID 1 is the default VLAN and you cannot create or delete VLAN ID 1. By default, the system reserves VLAN IDs 4060 to 4094 for internal use. On switches that support the vrf-scaling and spbm-config-mode boot configuration flags, if you enable these flags, the system also reserves VLAN IDs 3500 to 3998.
vid *{vlan-id [-vlan-id] [,...]}*	Specifies the list of VLANs that are associated with this logical interface. The VLAN ID is in one of the following formats: A single VLAN ID (vlan-id), a range of VLAN IDs [(vlan-id)-(vlan-id)] or a series of VLAN IDs (vlan-id, vlan-id, vlan-id).

Default

None

Command Mode

Global Configuration

login-message

Change the login prompt for CLI.

Syntax

- **default login-message**
- **login-message WORD<1-1513>**
- **no login-message**

Command Parameters

WORD<1-1513>	Changes the CLI logon prompt. WORD<1-1513> is an American Standard Code for Information Interchange (ASCII) string from 1-1513 characters.

Default

The default is Login.

Command Mode

Global Configuration

mac-address-table

Configure MAC address table settings.

Syntax

- **default mac-address-table aging-time**
- **mac-address-table aging-time <10-1000000>**

Command Parameters

aging-time <10-1000000>	Configure MAC address table aging time.

Default

The default is 600.

Command Mode

Global Configuration

macsec connectivity-association (globally)

Create and configure a connectivity-association (CA).

Syntax

- **macsec connectivity-association WORD<5-15> connectivity-association-key WORD<10-32> [key-parity {even | odd}]**
- **no macsec connectivity-association WORD<5-15> connectivity-association-key WORD<10-32>**

Command Parameters

key-parity	Specifies Tx key parity using the following values: • even — generates even-numbered keys • odd — generates odd-numbered keys If you do not specify a value for key-parity, the system defaults to 2 AN mode.
WORD<10-32>	Specifies the value of the connectivity-association key (CAK). It is a 10 to 32 character hexadecimal string representing the 16 byte CAK.
WORD<5-15>	Specifies a new connectivity-association name. It is a 15 character alphanumeric string.

Default

None

Command Mode

Global Configuration

max-logins

Configure the number of supported rlogin sessions.

Syntax

- **`default max-logins`**
- **`max-logins <0-8>`**

Command Parameters

<0-8>	Configures the maximum number of inbound remote CLI logon sessions.

Default

The default is 8.

Command Mode

Global Configuration

mgmt clip

Creates a management CLIP instance.

Syntax

- **mgmt clip**
- **mgmt clip vrf WORD<1-16>**
- **no mgmt clip**

Command Parameters

vrf WORD<1-16>	Associates the management CLIP with a specific VRF. If you do not specify a VRF, the management CLIP uses the GRT. You cannot use mgmtrouter as the VRF.

Default

None

Command Mode

Global Configuration

mgmt vlan

Creates a management VLAN instance.

Syntax

- **mgmt vlan**
- **mgmt vlan <2-4059>**
- **no mgmt vlan**

Command Parameters

<2-4059>	Associates the management VLAN with an existing port-based VLAN. Specifies the VLAN ID in the range of 2 to 4059. VLAN ID 1 is the default VLAN and you cannot create or delete VLAN ID 1. By default, the system reserves VLAN IDs 4060 to 4094 for internal use. On switches that support the vrf-scaling and spbm-config-mode boot configuration flags, if you enable these flags, the system also reserves VLAN IDs 3500 to 3998.

Default

None

Command Mode

Global Configuration

mirror-by-port

Use port mirroring to aid in diagnostic and security operations.

Syntax

- **default mirror-by-port <1-479>**
- **default mirror-by-port <1-479> enable**
- **default mirror-by-port <1-479> mode**
- **default mirror-by-port mirror-port <1-479> {slot/port[/sub-port][-slot/port[/sub-port]][,...]}**
- **default mirror-by-port monitor-mlt <1-479> <1-512>**
- **default mirror-by-port monitor-port <1-479> {slot/port[/sub-port][-slot/port[/sub-port]][,...]}**
- **mirror-by-port <1-479> in-port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} monitor-mlt <1-512>**
- **mirror-by-port <1-479> in-port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} monitor-mlt <1-512> enable**
- **mirror-by-port <1-479> in-port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} monitor-mlt <1-512> enable remote-mirror-vlan-id <1-4059>**
- **mirror-by-port <1-479> in-port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} monitor-mlt <1-512> mode both**
- **mirror-by-port <1-479> in-port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} monitor-mlt <1-512> mode rx**
- **mirror-by-port <1-479> in-port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} monitor-mlt <1-512> mode tx**
- **mirror-by-port <1-479> in-port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} monitor-mlt <1-512> remote-mirror-vlan-id <1-4059>**
- **mirror-by-port <1-479> in-port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} monitor-mlt <1-512> remote-mirror-vlan-id <1-4059> enable**
- **mirror-by-port <1-479> in-port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} out-port {slot/port[/sub-port][-slot/port[/sub-port]][,...]}**
- **mirror-by-port <1-479> in-port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} out-port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} enable**
- **mirror-by-port <1-479> in-port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} out-port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} mode both**
- **mirror-by-port <1-479> in-port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} out-port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} mode rx**

- **mirror-by-port <1-479> in-port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} out-port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} mode tx**
- **mirror-by-port <1-479> in-port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} monitor-mlt <1-512> remote-mirror-vlan-id <1-4059>**
- **mirror-by-port <1-479> mode both**
- **mirror-by-port <1-479> mode rx**
- **mirror-by-port <1-479> mode tx**
- **mirror-by-port <1-479> enable**
- **mirror-by-port <1-479> in-port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} { monitor-mlt <1-512>|out-port {slot/port[/sub-port][-slot/port[/sub-port]][,...]}}**
- **mirror-by-port mirror-port <1-479> {slot/port[/sub-port][-slot/port[/sub-port]][,...]}**
- **mirror-by-port monitor-mlt <1-479> <1-512>**
- **mirror-by-port monitor-port <1-479> {slot/port[/sub-port][-slot/port[/sub-port]][,...]}**
- **no mirror-by-port <1-479>**
- **no mirror-by-port <1-479> enable**
- **no mirror-by-port mirror-port <1-479> {slot/port[/sub-port][-slot/port[/sub-port]][,...]}**
- **no mirror-by-port monitor-mlt <1-479> <1-512>**
- **no mirror-by-port monitor-port <1-479> {slot/port[/sub-port][-slot/port[/sub-port]][,...]}**

Command Parameters

<1-479>	Specifies the mirror-by-port entry ID in the range of 1 to 479.
enable	Enables or disables a mirroring instance already created in the mirror-by-port table.
in-port *{slot/port[/sub-port] [-slot/port[/sub-port]] [,...]}* | monitor-mlt <1-512> |out-port *{slot/port[/sub-port] [-slot/port[/sub-port]] [,...]}*	Creates a new mirror-by-port table entry. • in-port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} specifies the mirrored port. • monitor-mlt <1-512> specifies the mirroring MLT ID from 1–512. • out-port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} specifies the mirroring port. {slot/port[/sub-port][-slot/port[/sub-port]][,...]} Identifies the slot and port in one of the following formats: a single slot and port (slot/port), a range of slots and ports (slot/port-slot/port), or a series of slots and ports (slot/port,slot/port,slot/port). If your platform supports

	channelization and the port is channelized, you must also specify the sub-port in the format slot/port/sub-port.
mirror-port <1-479> *{slot/port[/sub-port] [-slot/port[/sub-port]] [,...]}*	Modifies the mirrored port. Before you can modify an existing entry, you must disable the entry: no mirror-by-port <1-479> enable. {slot/port[/sub-port][-slot/port[/sub-port]][,...]} Identifies the slot and port in one of the following formats: a single slot and port (slot/port), a range of slots and ports (slot/port-slot/port), or a series of slots and ports (slot/port,slot/port,slot/port). If your platform supports channelization and the port is channelized, you must also specify the sub-port in the format slot/port/sub-port.
mode <both|tx|rx>	Sets the mirroring mode. The default is rx. both mirrors both egress and ingress packets. tx mirrors egress packets. rx mirrors ingress packets.
monitor-ip <1-479> {A.B.C.D} [dscp <0-63>] [ttl <2-255>]	Creates a mirroring instance for Layer 3 mirroring. The destination must be an IP address {A.B.C.D}. The default DSCP is 0 and the default TTL is 255.
monitor-isid-offset <1-1000>	Specifies the offset ID that is mapped to the actual monitor I-SID where packets are mirrored. Monitor I-SID = base monitor I-SID + offset ID. The base monitor I-SID is 16776000.
monitor-mlt <1-479> <1-512>	Modifies the monitoring MLT; <1-479> <1-512> specifies the port mirroring entry id and the MLT ID. Before you can modify an existing entry, you must disable the entry: no mirror-by-port <1-479> enable .
monitor-port <1-479> {*{slot/port[/sub-port] [-slot/port[/sub-port]] [,...]}*}	Modifies the monitoring ports. Before you can modify an existing entry, you must disable the entry: no mirror-by-port <1-479> enable. {slot/port[/sub-port][-slot/port[/sub-port]][,...]} Identifies the slot and port in one of the following formats: a single slot and port (slot/port), a range of slots and ports (slot/port-slot/port), or a series of slots and ports (slot/port,slot/port,slot/port). If your platform supports channelization and the port is channelized, you must also specify the sub-port in the format slot/port/sub-port.
monitor-vlan <1-479> *<1-4059>*	Modifies the monitoring VLAN. Before you can modify an existing entry, you must disable the entry: no mirror-by-port <1-479> enable . Specifies the VLAN ID in the range of 1 to 4059. By default, VLAN IDs 1 to 4059 are configurable and the system reserves VLAN IDs 4060 to 4094 for internal use. On switches that support the vrf-scaling and spbm-config-mode boot configuration flags, if you enable these flags, the system also reserves VLAN IDs 3500 to 3998. VLAN ID 1 is the default VLAN and you cannot create or delete VLAN ID 1.

qos <0-5>	Specifies the Quality of Service (QoS) profiles for the system. Monitoring I-SID supports six different QoS levels, each QoS level can be configured individually. Default value is 1.
remote-mirror-vlan-id *<1-4059>*	Sets the remote mirror VLAN ID. Specifies the VLAN ID in the range of 1 to 4059. By default, VLAN IDs 1 to 4059 are configurable and the system reserves VLAN IDs 4060 to 4094 for internal use. On switches that support the vrf-scaling and spbm-config-mode boot configuration flags, if you enable these flags, the system also reserves VLAN IDs 3500 to 3998. VLAN ID 1 is the default VLAN and you cannot create or delete VLAN ID 1.

Default

The default DSCP is 0. The default TTL is 64.

Command Mode

Global Configuration

mlt

Configure a MultiLink Trunking (MLT) to set up MLTs on the switch.

Syntax

- **mlt <1-512>**
- **mlt <1-512> enable**
- **mlt <1-512> encapsulation dot1q**
- **mlt <1-512> member {slot/port[/sub-port][-slot/port[/sub-port]][,...]}**
- **mlt <1-512> name WORD<0-20>**
- **mlt <1-512> vlan <1-4059>**
- **mlt <1-512>**
- **mlt <1-512> private-vlan {isolated|promiscuous|trunk}**
- **no mlt <1-512>**
- **no mlt <1-512> encapsulation dot1q**
- **no mlt <1-512> member {slot/port[/sub-port][-slot/port[/sub-port]][,...]}**
- **no mlt <1-512> name**
- **no mlt <1-512> private-vlan**
- **no mlt <1-512> vlan <1-4059>**

Command Parameters

<1-512>	Specifies the MLT ID in the range of 1-512.
enable	Creates and enables a new MLT.
encapsulation dot1q	Sets encapsulation. dot1q enables trunking on the MLT.
member{*{slot/port[/sub-port] [-slot/port[/sub-port]] [,...]}*}	Adds ports to this MLT. Identifies the slot and port in one of the following formats: a single slot and port (slot/port), a range of slots and ports (slot/port-slot/port), or a series of slots and ports (slot/port,slot/port,slot/port). If your platform supports channelization and the port is channelized, you must also specify the sub-port in the format slot/port/sub-port.
name <0-20>	Changes the name for this MLT in the range of 0-20 characters.
private-vlan {isolated| promiscuous|trunk}	Specifies the private VLAN port type for this MLT.
vlan *<1-4059>*	Specifies the VLAN ID in the range of 1 to 4059. By default, VLAN IDs 1 to 4059 are configurable and the system reserves VLAN IDs 4060 to 4094 for internal use. On switches that support the vrf-scaling and spbm-config-mode boot configuration flags, if you enable these flags, the system also reserves VLAN IDs 3500 to 3998. VLAN ID 1 is the default VLAN and you cannot create or delete VLAN ID 1.

Default

None

Command Mode

Global Configuration

mlt <1-512> member

Add ports to an MultiLink Trunking (MLT) link aggregation group (LAG) to add an existing VLAN to a link aggregation configuration.

Syntax

- **mlt <1-512> member {slot/port[/sub-port][-slot/port[/sub-port]][,...]}**
- **mlt <1-512> member {slot/port[/sub-port][-slot/port[/sub-port]][,...]} vlan <1-4059>**
- **no mlt <1-512> member {slot/port[/sub-port][-slot/port[/sub-port]] [,...]}**

Command Parameters

{slot/port[/sub-port] [-slot/port[/sub-port]] [,...]}	Identifies the slot and port in one of the following formats: a single slot and port (slot/port), a range of slots and ports (slot/port-slot/port), or a series of slots and ports (slot/port,slot/port,slot/port). If your platform supports channelization and the port is channelized, you must also specify the sub-port in the format slot/port/sub-port.
<1-512>	Specifies the MLT ID in the range of 1 to 512.
vlan *<1-4059>*	Specifies the VLAN ID in the range of 1 to 4059. By default, VLAN IDs 1 to 4059 are configurable and the system reserves VLAN IDs 4060 to 4094 for internal use. On switches that support the vrf-scaling and spbm-config-mode boot configuration flags, if you enable these flags, the system also reserves VLAN IDs 3500 to 3998. VLAN ID 1 is the default VLAN and you cannot create or delete VLAN ID 1.

Default

None

Command Mode

Global Configuration

monitor-by-isid

Create or modify a monitor based on the I-SID entry.

Syntax

- **default monitor-by-isid <1–1000> enable**
- **monitor-by-isid <1–1000> egress-mlt <1–512>**
- **monitor-by-isid <1–1000> egress-ports {slot/port[/sub-port][-slot/port[/sub-port]][,...]}**
- **monitor-by-isid <1–1000> enable**
- **monitor-by-isid <1–1000> map-to-vid <1–4093>**
- **monitor-by-isid <1–1000> monitor-isid-offset <1-1000> {egress-mlt <1–512> egress-ports {slot/port[/sub-port][-slot/port[/sub-port]][,...]} map-to-vid <1–4093>}**
- **no monitor-by-isid <1–1000> egress-mlt**
- **no monitor-by-isid <1–1000> egress-ports**
- **no monitor-by-isid <1–1000> enable**
- **no monitor-by-isid <1–1000> map-to-vid**

Command Parameters

<1-1000>	Specifies the session ID.
egress-mlt <1-512>	Specifies the MLT to which the analyzers connect.
egress-ports *{slot/port[/sub-port] [-slot/port[/sub-port]] [,...]}*	Specifies the port to which the analyzers connect. Identifies the slot and port in one of the following formats: a single slot and port (slot/port), a range of slots and ports (slot/port-slot/port), or a series of slots and ports (slot/port,slot/port,slot/port). If your platform supports channelization and the port is channelized, you must also specify the sub-port in the format slot/port/sub-port.
enable	Enables monitoring for the specific I-SID entry.
map-to-vid <1-4093>	Maps the mirrored packet to a specified VLAN ID for analysis. This parameter is optional. **Note:** If you use the Insight port 1/s1 as the analyzer port on the monitoring BEB for remote mirroring, you must associate it to VLAN ID 4091.
monitor-isid-offset <1-1000>	Specifies the offset ID that is mapped to the actual monitor I-SID where packets are mirrored. Monitor I-SID = Base monitor I-SID + Offset ID. The base monitor I-SID is 16776000.

Default

None

Command Mode

Global Configuration

monitor-statistics

Change monitor timer commands.

Syntax

- **default monitor-statistics**
- **default monitor-statistics duration**
- **default monitor-statistics interval**
- **monitor-statistics duration <1-1800>**
- **monitor-statistics interval <1-600>**

Command Parameters

duration <1-1800>	Change monitor time duration.
interval <1-600>	Change monitor time interval.

Default

None

Command Mode

Global Configuration

monitor-statistics duration

Change monitor time duration.

Syntax

- **monitor-statistics duration <1-1800>**

Command Parameters

<1-1800>	Monitors statistics time duration in seconds.

Default

None

Command Mode

Global Configuration

monitor-statistics interval

Change monitor time interval.

Syntax

- **monitor-statistics interval <1-600>**

Command Parameters

<1-600>	Monitor statistics time interval in seconds.

Default

None

Command Mode

Global Configuration

multicast software-forwarding

Enables the IP multicast software forwarding feature. If you enable this feature, the system forwards the initial packets of an IP multicast data stream it receives and creates a corresponding hardware record for subsequent packets.

Syntax

- **multicast software-forwarding**

Default

The default is disabled.

Command Mode

Global Configuration

ntp

Enable Network Time Protocol (NTP) globally.

Syntax

- **default ntp**
- **no ntp**
- **ntp**

Default

The default is disabled.

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 <1-65534>**
- **default ntp authentication-key <1-65534> type**
- **no ntp authentication-key <1-65534>**
- **ntp authentication-key <1-65534> type <md5|sha1>**
- **ntp authentication-key <1-65534> WORD<0-20> type <md5|sha1>**
- **ntp authentication-key <1-65534> WORD<0-20>**

Command Parameters

<1-65534>	Creates the key ID.
type <md5|sha1>	Specifies the type of authentication, whether MD5 or SHA1. The default is MD5 authentication.
WORD<0-20>	Specifies the secret key.

Default

The default configuration removes the secret key.

Command Mode

Global Configuration

ntp interval <1-2185>

Specifies the interval value in minutes.

Syntax

- **default ntp interval**
- **ntp interval <1-2185>**

Default

The default for NTPv3 is 15 minutes. The default for NTPv4 is 2 minutes.

Command Mode

Global Configuration

ntp master <1-16>

Configures the Network Time Protocol (NTP) in master mode.

Syntax

- **ntp master**
- **ntp master <1-16>**
- **default ntp master**
- **default ntp master stratum**
- **no ntp master**

Default

The default is disabled.

Command Mode

Global Configuration

ntp restrict

Configures the Network Time Protocol (NTP) IPv4 or IPv6 restrict entry.

Syntax

- **ntp restrict WORD<0-255>**
- **no ntp restrict WORD<0-255>**

Command Parameters

WORD<0-255>	Specifies the IPv4 or IPv6 address.

Default

The default is none.

Command Mode

Global Configuration

ntp server

Add an IP address for a Network Time Protocol (NTP) server or modify existing NTP server parameters. For NTPv3, you can configure a maximum of 10 IPv4 NTP servers. For NTPv4, you can configure a maximum of 10 IPv4 NTP servers and 10 IPv6 NTP servers.

Syntax

- **default ntp server WORD<0-255>**
- **default ntp server WORD<0-255> auth-enable**

- **default ntp server WORD<0-255> authentication-key**
- **default ntp server WORD<0-255> enable**
- **default ntp server WORD<0-255> source-ip**
- **no ntp server WORD<0-255>**
- **no ntp server WORD<0-255> source-ip**
- **no ntp server WORD<0-255> auth-enable**
- **no ntp server WORD<0-255> enable**
- **ntp server WORD<0-255>**
- **ntp server WORD<0-255> auth-enable**
- **ntp server WORD<0-255> authentication-key <0-65534>**
- **ntp server WORD<0-255> enable**
- **ntp server WORD<0-255> source-ip**

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 <0-65534>	Specifies the key ID value used to generate the MD5 or SHA1 digest for the Network Time Protocol (NTP) server. The default authentication key is 0, which indicates disabled authentication.
enable	Activates the Network Time Protocol (NTP) server.
source-ip WORD <0-46>	Specifies the source IP for the server. If you do not configure source-ip, by default, the source-ip entry is initialized to 0.0.0.0. The IP address specified can be any local interface. This parameter applies only to NTPv3.
WORD<0-255>	Specifies the IPv4 or IPv6 address of the NTP server.

Default

The default configuration does not use MD5 authentication.

Command Mode

Global Configuration

ntp version

Configures the NTP version to either NTPv3 or NTPv4.

Syntax

- **default ntp version**
- **ntp version 3**
- **ntp version 4**

Default

The default is NTPv3.

Command Mode

Global Configuration

ovsdb

Enters OVSDB configuration mode

Syntax

- **ovsdb**

Default

None

Command Mode

Global Configuration

password

Configure password options.

Syntax

- **default password**
- **default password default-lockout-time**
- **default password lockout WORD<0-46>**
- **default password lockout WORD<0-46> time**
- **default password password-history**
- **no password lockout WORD<0-46>**
- **password default-lockout-time <60-65000>**
- **password lockout WORD<0-46>**
- **password lockout WORD<0-46> time <60-65000>**

- **password password-history <3-32>**

Command Parameters

access level WORD<2-8>	Permits or blocks this access level. The available access level values are as follows:l1 l2 l3 ro rw rwa. The default access level is allow all.
aging-time day <1-365>	Configures the expiration period for passwords in days, from 1-365. The default aging time is 90 days.
default-lockout-time <60-65000>	Changes the default lockout time after three invalid attempts. Configures the lockout time, in seconds, and is in the 60-65000 range. The default lockout time is 60 seconds.
lockout WORD<0-46> time <60-65000>	Configures the host lockout time. WORD<0-46> is the host IP address in the format a.b.c.d. <60-65000> is the lockout-out time, in seconds, in the 60-65000 range.
min-passwd-len <10-20>	Configures the minimum length for passwords in high-secure mode. The default minimum password length is 10 characters.
password-history <3-32>	Specifies the number of previous passwords the switch stores. You cannot reuse a password that is stored in the password history. The default password history is 3.

Default

None

Command Mode

Global Configuration

password access-level

Enable CLI access levels to control the configuration actions of various users

Syntax

- **default password access-level**
- **no password access-level WORD<2-8>**
- **password access-level WORD<2-8>**
- **password access-level WORD<2-8> default-lockout-time <60-65000>**
- **password access-level WORD<2-8> min-passwd-len <10-20>**
- **password access-level WORD<2-8> aging-time <1-365>**
- **password access-level WORD<2-8> password-history <3-32>**

Command Parameters

access level WORD<2-8>	Allows or blocks this access level.
aging-time day <1-365>	Configures the expiration period for passwords in days, from 1-365.
default-lockout-time <60-65000>	Changes the default lockout time after three invalid attempts. Configures the lockout time, in seconds, and is in the 60-65000 range.
min-passwd-len <10-20>	Configures the minimum length for passwords in high-secure mode.
password-history <3-32>	Specifies the number of previous passwords the switch stores. You cannot reuse a password that is stored in the password history.
WORD<2-8>	Permits or blocks this access level. The available access levels are: • l1 • l2 • l3 • ro • rw • rwa

Default

By default, all access levels are permitted.

Command Mode

Global Configuration

password aging-time

Configure the duration of your password for when it expires.

Note:

If you enable enhanced secure mode using the boot config flag enhancedsecure-mode command, the aging-time can be configurable for each user level: Administrator, Privilege, Operator, Auditor, and Security.

If you configure the aging time for each user level, the aging time must be more than the global change interval value and the pre-pass notification value.

If you do not enable enhanced secure mode, the aging time is a global value for all users.

Syntax

- **default password aging-time**
- **default password aging-time user WORD<1-255>**
- **password aging-time day <1-365> user WORD<1-255>**
- **password aging-time day <1-365>**

Command Parameters

day <1-365>	Configures the password expiry date. The default is 90 days.
user WORD<1-255>	Specifies the user name.

Default

The default is 90 days.

Command Mode

Global Configuration

password change-interval

Specify the time interval between consecutive password changes.

Note:

You can only access this command after you enable enhanced secure mode using the boot config flag enhancedsecure-mode command.

Syntax

- **default password change-interval**
- **password change-interval <1-999>**

Command Parameters

<1-999>	Configures the minimum interval between consecutive password changes in hours. The default is 24 hours.

Default

The default is 24 hours.

Command Mode

Global Configuration

password create-user

Configure multiple users in each role based on their user names. You can configure the following roles: administrator, security, auditor, operator, privilege. An administrator role also exists, but only one administrator can exist, and is the user who can configure user access.

Note:

You can only access this command after you enable enhanced secure mode using the boot config flags enhancedsecure-mode command.

Syntax

- **password create-user auditor WORD<1-255>**
- **password create-user operator WORD<1-255>**
- **password create-user privilege WORD<1-255>**
- **password create-user security WORD<1-255>**

Command Parameters

{auditor | operator | privilege | security}	The administrator is the highest level, and has access to all of the configurations and show commands, can view the log file and security commands. Only one administrator can exists for the system. The privilege level has access to all of the commands the administrator has access to, and is known as the emergency-admin. A user at the privilege level always has to be authenticated within the switch locally, with no RADIUS or TACACS+ authentication allowed. The privilege level must login to the switch through the console port only. The operator level has access to all configurations for packet forwarding on Layer 2 and Layer 3, and has access to show commands to view the configuration, but cannot view the audit logs access security, or password commands. The security level has access only to security settings and can view configurations. The auditor can view log files, and can view all configurations, but password configurations.
WORD<1-255>	Specifies the user name of the person to connect a particular user role level with a username.

Default

None

Command Mode

Global Configuration

password default-lockout-time

Change the default lockout time after three invalid attempts.

Syntax

- **default password default-lockout-time**
- **default password default-lockout-time min-passwd-len**
- **default password default-lockout-time min-passwd-len password-history**
- **default password default-lockout-time password-history**
- **password default-lockout-time <60-65000>**
- **password default-lockout-time <60-65000> min-passwd-len <10-20>**
- **password default-lockout-time <60-65000> min-passwd-len <10-20> password-history <3-32>**
- **password default-lockout-time <60-65000> password-history <3-32>**

Command Parameters

<60-65000>	Changes the default lockout time after three invalid attempts. Configures the lockout time, in seconds, and is in the 60-65000 range. The default lockout time is 60 seconds.
min-passwd-len <10-20>	Set the minimum length of passwords in hsecure mode.
password-history <3-32>	Specifies the number of previous passwords the switch stores. You cannot reuse a password that is stored in the password history. The default password history is 3.

Default

None

Command Mode

Global Configuration

password delete-user

Delete a user.

Syntax

- **password delete-user WORD<1-255>**

Command Parameters

WORD<1-255>	Specifies the user name of the person to connect a particular user role level with a username.

Default

None

Command Mode

Global Configuration

password lockout

Lock out the host ip address

Syntax

- **default password lockout WORD<0-46>**
- **default password lockout WORD<0-46> time**
- **no password lockout WORD<0-46>**
- **password lockout WORD<0-46>**
- **password lockout WORD<0-46> time <60-65000>**

Command Parameters

lockout WORD<0-46>	Specifies the host IP address in the format a.b.c.d.
time <60-65000>	Specifies the lockout-out time, in seconds, in the 60-65000 range.

Default

None

Command Mode

Global Configuration

password max-sessions

Specify the number of password attempts before lockout.

Syntax

- **default password max-sessions user-name WORD<1-255>**
- **password max-sessions <1-8> user-name WORD<1-255>**

Command Parameters

max-sessions <1-8>	Specifies the number of logon attempts.
user-name WORD<1-255>	Specifies the user name

Default

The default is 3.

Command Mode

Global Configuration

password min-passwd-len

Configure the minimum password length in enhanced secure mode. The minimum length is 8 characters in enhanced secure ON mode.

Note:

You can only access this command after you enable enhanced secure mode using the boot config flags enhancedsecure-mode command.

Syntax

- `default password min-passwd-len`
- `password min-passwd-len <8-32>`

Command Parameters

<8-32>	Configures the minimum character length required. The default is 8 in enhanced secure ON mode. In enhanced secure mode, if you configure anything lower than 8 characters, the switch displays an error message.

Default

The default is 8 characters in enhanced secure ON mode.

Command Mode

Global Configuration

password password-history

Configure the minimum number of previous passwords to remember.

Note:

You can only access this command after you enable enhanced secure mode using the boot config flags enhancedsecure-mode command.

Syntax

- `default password password-history`
- `password password-history <1-99>`

Command Parameters

<1-99> Configures the minimum number of previous passwords to remember. The default is 3.

Default

The default is 3.

Command Mode

Global Configuration

password password-rule

Configure the password complexity rule options. To meet the minimum password rule, you must have at least one of each of the following characters: uppercase, lowercase, numeric, and special character.

Note:

You can only access this command after you enable enhanced secure mode using the boot config flags enhancedsecure-mode command.

Syntax

- `default password password-rule`
- `password password-rule <1-2> <1-2> <1-2> <1-2>`

Command Parameters

<1-2> The first <1-2> configures the minimum uppercase characters required.
<1-2> The second <1-2> configures the minimum number of lowercase characters required.
<1-2> The third <1-2> configures the minimum number of lowercase characters required.
The fourth <1-2> configures the minimum number of special characters required.
The default for each of these variables is 1.

Default

The default is 1111.

Command Mode

Global Configuration

password post-expiry-notification-interval

Configure the system to provide a notification after the password expiry date at various intervals.

Note:

You can only access this command after you enable enhanced secure mode using the boot config flags enhancedsecure-mode command.

Syntax

- **`default password post-expiry-notification-interval`**
- **`password post-expiry-notification-interval <1-99> <1-99> <1-99>`**

Command Parameters

<1-99>	The first <1-99> configures the first post password expiry notification. The default is one day after the expiration.
<1-99>	The second <1-99> value configures the second post password expiry notification. The default is 7 days after the notification.
<1-99>	The third <1-99> configures the third post password expiry notification. The default is 30 days after the expiration.

Default

The default values for the three notifications are one day after the expiration, 7 days after the expiration, 30 days after the expiration.

Command Mode

Global Configuration

password post-pass-expiry-notification-interval

Configure the system to provide a notification after the password expiry date at various intervals.

Note:

You can only access this command after you enable enhanced secure mode using the boot config flags enhancedsecure-mode command.

Syntax

- **`default password post-pass-expiry-notification-interval`**
- **`password post-pass-expiry-notification-interval <1-99> <1-99> <1-99>`**

Command Parameters

<1-99>	The first <1-99> configures the first post password expiry notification. The default is one day after the expiration.
<1-99>	The second <1-99> value configures the second post password expiry notification. The default is 7 days after the notification.
<1-99>	The third <1-99> configures the third post password expiry notification. The default is 30 days after the expiration.

Default

The default values for the three notifications are one day after the expiration, 7 days after the expiration, 30 days after the expiration.

Command Mode

Global Configuration

password pre-expiry-notification-interval

Configure the system to provide a notification of the password expiry date at various intervals.

Note:

You can only access this command after you enable enhanced secure mode using the boot config flags enhancedsecure-mode command.

Syntax

- **`default password pre-expiry-notification-interval`**
- **`password pre-expiry-notification-interval <1-99> <1-99> <1-99>`**

Default

The default values for the three notifications are at 30 days before the expiration, 7 days before the expiration, and then on the day of expiration.

Command Mode

Global Configuration

password pre-pass-expiry-notification-interval

Configure the system to provide a notification of the password expiry date at various intervals.

Note:

You can only access this command after you enable enhanced secure mode using the boot config flags enhancedsecure-mode command.

Syntax

- **default password pre-pass-expiry-notification-interval**
- **password pre-pass-expiry-notification-interval <1-99> <1-99> <1-99>**

Command Parameters

<1-99> **<1-99>** **<1-99>**	The first <1-99> configures the first pre-password expiry notification. The default is 30 days after the expiration. The second <1-99> value configures the second pre-password expiry notification. The default is 7 days after the notification. The third <1-99> configures the third pre-password expiry notification. The default is the day of the notification.

Default

The default values for the three notifications are at 30 days before the expiration, 7 days before the expiration, and then on the day of expiration.

Command Mode

Global Configuration

password set-password

Enable the setting of a new password in case the password expires.

Syntax

- **password set-password user-name WORD<1-255>**

Command Parameters

user-name WORD<1-255>	Specifies the username.

Default

None

Command Mode

Global Configuration

passwordprompt

Change the password prompt for CLI sessions.

Syntax

- **default passwordprompt**

- **no passwordprompt**
- **passwordprompt WORD<1-1510>**

Command Parameters

WORD <1-1510>	Changes the CLI password prompt. WORD <1-1510> is an ASCII string from 1-1510 characters.

Default

The default is Password.

Command Mode

Global Configuration

pluggable-optical-module

Configure Digital Diagnostic Monitoring to get information concerning the status of the transmitted and received signals to allow better fault isolation and error detection.

Syntax

- **default pluggable-optical-module ddm-alarm-portdown**
- **default pluggable-optical-module ddm-monitor**
- **default pluggable-optical-module ddm-monitor-interval**
- **default pluggable-optical-module ddm-traps-send**
- **no pluggable-optical-module ddm-alarm-portdown**
- **no pluggable-optical-module ddm-monitor**
- **no pluggable-optical-module ddm-traps-send**
- **pluggable-optical-module ddm-alarm-portdown**
- **pluggable-optical-module ddm-monitor**
- **pluggable-optical-module ddm-monitor-interval <5-60>**
- **pluggable-optical-module ddm-traps-send**
- **pluggable-optical-module reset {slot/port[/sub-port]}**

Command Parameters

ddm-alarm-portdown	Sets the port down when an alarm occurs. When enabled, the port goes down when any alarm occurs.
ddm-monitor	Enables the monitoring of the digital diagnostic monitoring (DDM). When enabled, you see the internal performance condition (temperature, voltage, bias, Tx power and Rx power) of the pluggable transceiver. The default is disable.

ddm-monitor-interval <5-60>	Configures the digital diagnostic monitoring (DDM) monitor interval in the range of 5 to 60 in seconds. If any alarm occurs, the user gets the log message before the specific interval configured by the user. The default value is 5 seconds.
ddm-traps-send	Enables or disables the sending of trap messages. When enabled, the trap message is sent to the Device manager, any time the alarm occurs. The default is enable.
reset *{slot/port[/sub-port]}*	Reset a transceiver to simulate removal and reinsertion of the transceiver, which can be helpful in troubleshooting. For example, if authentication of the transceiver fails, you can reset the transceiver to begin the authentication process again. Before you use this command, ensure the port is administratively down to avoid link flaps. Identifies a single slot and port. If your platform supports channelization and the port is channelized, you must also specify the sub-port in the format slot/port/sub-port.

Default

The default is disable.

Command Mode

Global Configuration

poe poe-pd-detect-type

Configure the PD detection mode.

Syntax

- **default poe poe-pd-detect-type**
- **poe poe-pd-detect-type 802dot3af**
- **poe poe-pd-detect-type 802dot3af_and_legacy**
- **poe poe-pd-detect-type 802dot3at**
- **poe poe-pd-detect-type 802dot3at_and_legacy**

Command Parameters

802dot3af	Sets PD detection mode in 802.3af.
802dot3af_and_legacy	Sets PD detection mode in 802.3af and legacy.
802dot3at	Sets PD detection mode in 802.3at.
802dot3at_and_legacy	Sets PD detection mode in 802.3at and legacy. The default is 802dot3at_and_legacy.

Default

The default is 802dot3at_and_legacy.

Command Mode

Global Configuration

poe poe-power-usage-threshold

Configure the power usage threshold.

Syntax

- **default poe poe-power-usage-threshold**
- **poe poe-power-usage-threshold <1-99>**

Command Parameters

<1-99> Specifies the PoE usage threshold in the range of 1-99 percent.

Default

The default is 80 percentage

Command Mode

Global Configuration

portlock enable

Enable port locking for the security of the ports from any modifications.

Syntax

- **default portlock enable**
- **no portlock enable**
- **portlock enable**

Default

None

Command Mode

Global Configuration

prompt

Change the root level prompt or the system name for run-time mode.

Syntax

- **default prompt**
- **no prompt**
- **prompt WORD <0-255>**

Command Parameters

WORD <0-255>	Specifies the box level or root level prompt in the range of 0 to 255.

Default

None

Command Mode

Global Configuration

qos egressmap

Modify the egress mappings to change traffic priorities. However, it is recommended that you use the default mappings.

Syntax

- **default qos egressmap 1p**
- **default qos egressmap ds**
- **qos egressmap 1p <0-7> <0-7>**
- **qos egressmap 1p <0-7> <0-7> ds <0-7> WORD <1-6>**
- **qos egressmap ds <0-7> WORD<1-6>**

Command Parameters

<0-7>	Specifies the Quality of Service (QoS) level in the range of 0 to 7.
1p <0-7>	Maps the Quality of Service (QoS) level to IEEE 802.1p priority. Each QoS level has a default IEEE 1P value: • level 0-1 • level 1-0 • level 2-2 • level 3-3 • level 4-4

- level 5-5
- level 6-6
- level 7-7

ds <0-7> Maps Quality of Service (QoS) level to Differentiated Services Code Point (DSCP).

WORD<1-6> Specifies the DiffServ code point in hexadecimal, binary, or decimal.

Default

None

Command Mode

Global Configuration

qos ingressmap

Modify the ingress mappings to change traffic priorities. However, it is recommended that you use the default mappings.

Syntax

- **default qos ingressmap 1p**
- **default qos ingressmap ds**
- **qos ingressmap 1p <0-7> <0-7>**
- **qos ingressmap ds <0-63> <0-7>**
- **qos ingressmap1p <0-7> <0-7> ds <0-63> <0-7>**

Command Parameters

1p <0-7> <0-7> Maps the IEEE 802.1p bit to Quality of Service (QoS) level. Each QoS level has a default IEEE 1P value:

- level 0-1
- level 1-0
- level 2-2
- level 3-3
- level 4-4
- level 5-5
- level 6-6
- level 7-7

ds <0-63> <0-7>	Maps the Differentiated Services Code Point (DSCP) to Quality of Service (QoS) level.

Default

None

Command Mode

Global Configuration

qos queue-profile <1-6>

Configure a queue profile

Syntax

- **no qos queue-profile <1-6>**
- **qos queue-profile <1-6> apply**
- **qos queue-profile <1-6> member add {slot/port[/sub-port][-slot/port[/sub-port]][,...]}**
- **qos queue-profile <1-6> member remove {slot/port[/sub-port][-slot/port[/sub-port]][,...]}**
- **qos queue-profile <1-6> name WORD<0-64>**

Command Parameters

apply	Applies queue profile settings.
member add *{slot/port[/sub-port] [-slot/port[/sub-port]] [,...]}*	Adds a port member. Identifies the slot and port in one of the following formats: a single slot and port (slot/port), a range of slots and ports (slot/port-slot/port), or a series of slots and ports (slot/port,slot/port,slot/port). If your platform supports channelization and the port is channelized, you must also specify the sub-port in the format slot/port/sub-port.
member remove *{slot/port[/sub-port] [-slot/port[/sub-port]] [,...]}*	Removes a port member. Identifies the slot and port in one of the following formats: a single slot and port (slot/port), a range of slots and ports (slot/port-slot/port), or a series of slots and ports (slot/port,slot/port,slot/port). If your platform supports channelization and the port is channelized, you must also specify the sub-port in the format slot/port/sub-port.
name WORD<0-64>	Changes the queue profile name.

Default

None

Command Mode

Global Configuration

qos queue-profile queue <1-6> <0-7>

Configure a queue of a specific queue profile.

Syntax

- **default qos queue-profile queue <1-6> <0-7> min-weight <1-100>**
- **default qos queue-profile queue <1-6> <0-7> rate-limit-enable**
- **no qos queue-profile queue <1-6> <0-7> min-weight <1-100>**
- **no qos queue-profile queue <1-6> <0-7> rate-limit-enable**
- **qos queue-profile queue <1-6> <0-7> min-weight <1-100>**
- **qos queue-profile queue <1-6> <0-7> rate-limit-enable**

Command Parameters

min-weight <1-100>	Configures the minimum weight of a specific queue.
rate-limit-enable	Enables rate limiting on a weighted queue.

Default

None

Command Mode

Global Configuration

radius

Configure the switch to authenticate users identity through a central database.

Syntax

- **default radius**
- **default radius access-priority-attribute**
- **default radius access-priority-attribute accounting**
- **default radius access-priority-attribute attribute-value**
- **default radius access-priority-attribute clear-stat**
- **default radius access-priority-attribute include-cli-commands**

- **default radius accounting attribute-value**
- **default radius accounting enable**
- **default radius accounting include-cli-commands**
- **default radius auth-info-attr-value**
- **default radius clear-stat**
- **default radius cli-commands-attribute**
- **default radius enable**
- **default radius maxserver**
- **default radius mcast-addr-attr-value**
- **default radius sourceip-flag**
- **no radius**
- **no radius accounting**
- **no radius accounting enable**
- **no radius accounting include-cli-commands**
- **no radius cli-cmd-count**
- **no radius cli-profile**
- **no radius enable**
- **radius**
- **radius access-priority-attribute <192-240>**
- **radius accounting attribute-value <192-240>**
- **radius accounting enable**
- **radius accounting include-cli-commands**
- **radius auth-info-attr-value <0-255>**
- **radius clear-stat**
- **radius cli-commands-attribute <192-240>**
- **radius enable**
- **radius maxserver <1-10>**

Command Parameters

access-priority-attribute <192-240>	Specifies the value of the Access Priority attribute in the range of 192 to 240 and the default is 192.
accounting {attribute-value <192-240>|enable|include-cli-commands}	Enables Remote Dial-In User Services (RADIUS) accounting. The default is false.

auth-info-attr-value <0-255>	Specifies the value of the authentication-information attribute in the range of 0 to 255. The default is 91.
clear-stat	Clears the Remote Dial-In User Services (RADIUS) statistics.
cli-commands-attribute <192-240>	Specifies the value of the CLI commands attribute in the range of 192 to 240 and the default is 195.
command-access-attribute <192-240>	Specifies the value of the command access attribute in the range of 192 to 240 and the default is 194.
maxserver<1-10>	Specific to Remote Dial-In User Services (RADIUS) authentication. Sets the maximum number of servers allowed for the device. The range is between 1 and 10. The default is 10.
mcast-addr-attr-value <0-255>	Specifies the value of the multicast address attribute in the range of 0 to 255. The default is 90.

Default

None

Command Mode

Global Configuration

radius access-priority-attribute

Configure radius access priority.

Syntax

- **default radius access-priority-attribute**
- **radius access-priority-attribute <192-240>**

Command Parameters

<192-240>	Specifies the value of the Access Priority attribute in the range of 192 to 240. The default is 192.

Default

The default value of access-priority-attribute is 192.

Command Mode

Global Configuration

radius accounting attribute-value

Configure radius accounting attribute.

Syntax

- **default radius accounting attribute-value**
- **radius accounting attribute-value <192-240>**

Command Parameters

<192-240>	CLI Command attribute value.

Default

The default value of the attribute-value is 193.

Command Mode

Global Configuration

radius accounting enable

Enable or disable radius accounting.

Syntax

- **default radius accounting enable**
- **no radius accounting enable**
- **radius accounting enable**

Default

The default value is disabled.

Command Mode

Global Configuration

radius accounting include-cli-commands

Enable or disable to include the CLI commands to the radius accounting.

Syntax

- **default radius accounting include-cli-commands**
- **no radius accounting include-cli-commands**
- **radius accounting include-cli-commands**

Default

The default value of include-cli-commands is disabled.

Command Mode

Global Configuration

radius auth-info-attr-value

Set the authentication information attribute value.

Syntax

- **default radius auth-info-attr-value**
- **radius auth-info-attr-value <0-255>**

Command Parameters

<0-255>	Specifies the value of the authentication-information attribute in the range of 0 to 255. The default is 91.

Default

The default value of auth-info-attr-value is 91.

Command Mode

Global Configuration

radius clear-stat

Clear the radius statistics.

Syntax

- **radius clear-stat**

Default

None

Command Mode

Global Configuration

radius cli-cmd-count

Configure a Remote Access Dial-In User Services (RADIUS) accounting interim request to create a log whenever more than forty CLI commands are executed.

Syntax

- **default radius cli-cmd-count**
- **radius cli-cmd-count <1-40>**

Command Parameters

<1-40> Specifies a value of the CLI command count in the range of 1 to 40.

Default

The default value is 40.

Command Mode

Global Configuration

radius cli-profile

Use Remote Access Dial-In User Services (RADIUS) CLI profiling to grant or deny CLI command access to users being authenticated by way of the RADIUS server.

Syntax

- **default radius cli-profile**
- **no radius cli-profile**
- **radius cli-profile**

Default

The default is disabled/false.

Command Mode

Global Configuration

radius command-access-attribute

Configure Remote Access Dial-In User Services (RADIUS) authentication and RADIUS accounting attributes to determine the size of the packets received.

Syntax

- **default radius command-access-attribute**

- **radius command-access-attribute <192-240>**

Command Parameters

command-access-attribute <192-240>	Specifies the Remote Dial-In User Services (RADIUS) authentication attribute value is an integer value of the CLI command count in the range of 192 to 240.

Default

The default value is 194.

Command Mode

Global Configuration

radius dynamic-server client

Configure a client to process dynamic session changes.

Syntax

- **default radius dynamic-server client WORD<0-46>**
- **default radius dynamic-server client WORD<0-46> enable**
- **default radius dynamic-server client WORD<0-46> port**
- **default radius dynamic-server client WORD<0-46> secret**
- **no radius dynamic-server client WORD<0-46>**
- **no radius dynamic-server client WORD<0-46> enable**
- **no radius dynamic-server client WORD<0-46> port**
- **no radius dynamic-server client WORD<0-46> secret**
- **radius dynamic-server client WORD<0-46> enable**
- **radius dynamic-server client WORD<0-46> port <1024-65535>**
- **radius dynamic-server client WORD<0-46> port <1024-65535> enable**
- **radius dynamic-server client WORD<0-46> port <1024-65535> secret WORD<0-16>**
- **radius dynamic-server client WORD<0-46> port <1024-65535> secret WORD<0-16> enable**
- **radius dynamic-server client WORD<0-46> secret WORD<0-16>**
- **radius dynamic-server client WORD<0-46> secret WORD<0-16> enable**

Command Parameters

enable	Enables the RADIUS Dynamic Authorization client.

port <1024-65535>	Specifies the port value.
secret WORD<0-16>	Specifies a value for secret key.
WORD<0-46>	Specifies the client address.

Default

None

Command Mode

Global Configuration

radius enable

Enable or disable Remote Access Dial-In User Services (RADIUS) authentication globally on the device to allow further configuration to take place.

Syntax

- **default radius enable**
- **no radius enable**
- **radius enable**

Default

The default value is disabled.

Command Mode

Global Configuration

radius maxserver

Configure the maximum number of servers allowed to be configured

Syntax

- **default radius maxserver**
- **radius maxserver <1-10>**

Command Parameters

<1-10>	Number of maximum server allowed to be configured.

Default

The default value is 10.

Command Mode

Global Configuration

radius mcast-addr-attr-value

Configure the multicast address attribute value.

Syntax

- **default radius mcast-addr-attr-value**
- **radius mcast-addr-attr-value <0-255>**

Default

The default value is 90.

Command Mode

Global Configuration

radius reachability keep-alive-timer

Specifies, in seconds, the interval between checks when radius server is reachable.

Syntax

- **default radius reachability keep-alive-timer**
- **radius reachability keep-alive-timer <30-600>**

Command Parameters

<30-600>	Specifies, in seconds, the interval between checks when radius server is reachable. The default is 180 seconds.

Default

The default is 180 seconds.

Command Mode

Global Configuration

radius reachability mode

Specifies status-server mode or use-radius mode. Statusserver mode provides a standard-compliant method for RADIUS reachability. Use-radius mode requires the configuration of dummy packets that are sent to RADIUS servers.

Syntax

- **radius reachability mode status-server**
- **radius reachability mode use-radius**

Command Parameters

use-radius	Use dummy radius packets to check radius reachability.

Default

The default is use-radius mode.

Command Mode

Global Configuration

radius reachability password

Configure the radius request password.

Syntax

- **default radius reachability password**
- **radius reachability password WORD<1-16>**

Command Parameters

WORD<1-16>	Configures the RADIUS request password.

Default

The default is extremenetworks

Command Mode

Global Configuration

radius reachability unreachable-timer

Specifies, in seconds, the interval between checks when radius server is unreachable.

Syntax

- **default radius reachability unreachable-timer**
- **radius reachability unreachable-timer <30-600>**

Command Parameters

<30-600>	Specifies, in seconds, the interval between checks when radius server is unreachable. The default is 60 seconds.

Default

The default is 60 seconds.

Command Mode

Global Configuration

radius reachability username

Configure the RADIUS request username.

Syntax

- **default radius reachability username**
- **radius reachability username WORD<1-16>**

Command Parameters

WORD<1-16>	Configures the RADIUS request username.

Default

The default is extremenetworks.

Command Mode

Global Configuration

radius server host

Add a Remote Access Dial-In User Services (RADIUS) server to allow RADIUS service on the switch.

Syntax

- **default radius server host WORD<0-46> used-by cli**
- **default radius server host WORD<0-46> used-by cli acct-enable**
- **default radius server host WORD<0-46> used-by cli acct-port**

- **default radius server host WORD<0-46> used-by cli enable**
- **default radius server host WORD<0-46> used-by cli key**
- **default radius server host WORD<0-46> used-by cli port**
- **default radius server host WORD<0-46> used-by cli priority**
- **default radius server host WORD<0-46> used-by cli retry**
- **default radius server host WORD<0-46> used-by cli source-ip**
- **default radius server host WORD<0-46> used-by cli timeout**
- **default radius server host WORD<0-46> used-by eapol**
- **default radius server host WORD<0-46> used-by snmp**
- **default radius server host WORD<0-46> used-by web**
- **no radius server host WORD<0-46> used-by cli**
- **no radius server host WORD<0-46> used-by cli acct-enable**
- **no radius server host WORD<0-46> used-by cli acct-port**
- **no radius server host WORD<0-46> used-by cli enable**
- **no radius server host WORD<0-46> used-by snmp**
- **no radius server host WORD<0-46> used-by web**
- **radius server host WORD<0-46> key WORD<0-32>**
- **radius server host WORD<0-46> key WORD<0-32> acct-enable**
- **radius server host WORD<0-46> key WORD<0-32> acct-port <1-65536>**
- **radius server host WORD<0-46> key WORD<0-32> enable**
- **radius server host WORD<0-46> key WORD<0-32> port <1-65536>**
- **radius server host WORD<0-46> key WORD<0-32> priority <1-10>**
- **radius server host WORD<0-46> key WORD<0-32> retry <0-6>**
- **radius server host WORD<0-46> key WORD<0-32> source-ip WORD<0-46>**
- **radius server host WORD<0-46> key WORD<0-32> timeout <1-20>**
- **radius server host WORD<0-46> key WORD<0-32> used-by cli**
- **radius server host WORD<0-46> key WORD<0-32> used-by snmp**
- **radius server host WORD<0-46> key WORD<0-32> used-by web**
- **radius server host WORD<0-46> used-by cli**
- **radius server host WORD<0-46> used-by cli acct-enable**
- **radius server host WORD<0-46> used-by cli acct-port <1-65536>**
- **radius server host WORD<0-46> used-by cli enable**
- **radius server host WORD<0-46> used-by cli key WORD<0-20>**
- **radius server host WORD<0-46> used-by cli port <1-65536>**

- **radius server host WORD<0-46> used-by cli priority <1-10>**
- **radius server host WORD<0-46> used-by cli retry <0-6>**
- **radius server host WORD<0-46> used-by cli source-ip WORD<0-46>**
- **radius server host WORD<0-46> used-by cli timeout <1-20>**
- **radius server host WORD<0-46> used-by snmp**
- **radius server host WORD<0-46> used-by snmp acct-enable**
- **radius server host WORD<0-46> used-by snmp acct-port <1-65536>**
- **radius server host WORD<0-46> used-by snmp enable**
- **radius server host WORD<0-46> used-by snmp key WORD<0-20>**
- **radius server host WORD<0-46> used-by snmp port <1-65536>**
- **radius server host WORD<0-46> used-by snmp priority <1-10>**
- **radius server host WORD<0-46> used-by snmp retry <0-6>**
- **radius server host WORD<0-46> used-by snmp source-ip WORD<0-46>**
- **radius server host WORD<0-46> used-by snmp timeout <1-20>**
- **radius server host WORD<0-46> used-by web**
- **radius server host WORD<0-46> used-by web acct-enable**
- **radius server host WORD<0-46> used-by web acct-port <1-65536>**
- **radius server host WORD<0-46> used-by web enable**
- **radius server host WORD<0-46> used-by web key WORD<0-20>**
- **radius server host WORD<0-46> used-by web port <1-65536>**
- **radius server host WORD<0-46> used-by web priority <1-10>**
- **radius server host WORD<0-46> used-by web retry <0-6>**
- **radius server host WORD<0-46> used-by web source-ip WORD<0-46>**
- **radius server host WORD<0-46> used-by web timeout <1-20>**

Command Parameters

acct-enable	Enables Remote Dial-In User Services (RADIUS) accounting on this server. The default for acct-enable is enabled.
acct-port <1-65536>	Specify a UDP port of the Remote Dial-In User Services (RADIUS) accounting server. The default is 1816.
enable	Enables this server.
host WORD <0-46>	Create a host server. Remote Dial-In User Services (RADIUS) supports IPv4 addresses. WORD <0-46> specifies an address in A.B.C.D or x:x:x:x:x:x:x:x format.
key WORD<-32>	Specify a secret key in the range of 0-20 characters.

port <1-65536>	Specify a UDP port of the Remote Dial-In User Services (RADIUS) server.
priority <1-10>	Specify the priority value for this server. The default is 10.
retry <0-6>	Specify the maximum number of authentication retries. The default is 3.
source-ip WORD <0-46>	Specify a configured IP address as the source address when transmitting RADIUS packets. Remote Dial-In User Services (RADIUS) supports IPv4 addresses. WORD <0-46> specifies an address in A.B.C.D or x:x:x:x:x:x:x:x format.
timeout <1-20>	Specify the number of seconds before the authentication request times out. The default is 3.
used-by {cli|snmp|web}	Specify how the server functions: cli-configure the server for CLI authentication. snmp-configure the server for Simple Network Management Protocol (SNMP) authentication. web-configure the server for web authentication. The default for used-by is cli.

Default

None

Command Mode

Global Configuration

radius sourceip-flag

Configure the source IP address if the outgoing interface on the switch fails so that configuration changes be made to define the new Remote Access Dial-In User Services (RADIUS) Client on the RADIUS Server.

Syntax

- **`default radius sourceip-flag`**
- **`no radius sourceip-flag`**
- **`radius sourceip-flag`**

Default

The default is disabled/false.

Command Mode

Global Configuration

radius-snmp

Enable Remote Access Dial-In User Services (RADIUS) accounting to log all of the activity of each remote user in a session on the centralized RADIUS accounting server.

Syntax

- **default radius-snmp**
- **default radius-snmp abort-session-timer**
- **default radius-snmp acct-enable**
- **default radius-snmp re-auth-timer**
- **default radius-snmp user**
- **no radius-snmp**
- **no radius-snmp acct-enable**
- **radius-snmp**
- **radius-snmp abort-session-timer <30-65535>**
- **radius-snmp acct-enable**
- **radius-snmp re-auth-timer <30-65535>**
- **radius-snmp user WORD<0-20>**

Command Parameters

abort-session-timer <30-65535>	Specifies the timer to be used for sending a stop accounting message for this particular Simple Network Management Protocol (SNMP) session. The timer value ranges from 30 to 65535. This default is 180.
acct-enable	Enables Remote Dial-In User Services (RADIUS) accounting globally. RADIUS accounting cannot be enabled unless a valid server is configured. This feature is disabled by default.
re-auth-timer <30-65535>	Timer to be sent for re-authentication the Simple Network Management Protocol (SNMP) session. The timer value ranges from 30 to 65535. The default is 180.
user WORD<0-20>	Specifies the username for the Simple Network Management Protocol (SNMP) access. WORD<0-20> specifies the username in a range of 0 to 20 characters. The default is snmp_user.

Default

The default value is disabled.

Command Mode

Global Configuration

rmon alarm

Creates an alarm interface.

Syntax

- **default rmon alarm <1-65535>**
- **default rmon alarm <1-65535> owner**
- **no rmon alarm <1-65535>**
- **rmon alarm <1-65535> WORD<1-1536> <1-3600> { absolute | delta }**
- **rmon alarm <1-65535> WORD<1-1536> <1-3600> { absolute | delta } falling-threshold <-2147483647-2147483647> event <1-65535>**
- **rmon alarm <1-65535> WORD<1-1536> <1-3600> { absolute | delta } falling-threshold <-2147483647-2147483647> event <1-65535> owner WORD<1-127>**
- **rmon alarm <1-65535> WORD<1-1536> <1-3600> { absolute | delta } falling-threshold <-2147483647-2147483647> event <1-65535> rising-threshold <-2147483647-2147483647> event <1-65535>**
- **rmon alarm <1-65535> WORD<1-1536> <1-3600> { absolute | delta } falling-threshold <-2147483647-2147483647> event <1-65535> rising-threshold <-2147483647-2147483647> event <1-65535> owner WORD<1-127>**
- **rmon alarm <1-65535> WORD<1-1536> <1-3600> { absolute | delta } owner WORD<1-127>**
- **rmon alarm <1-65535> WORD<1-1536> <1-3600> { absolute | delta } rising-threshold <-2147483647-2147483647> event <1-65535>**
- **rmon alarm <1-65535> WORD<1-1536> <1-3600> { absolute | delta } rising-threshold <-2147483647-2147483647> event <1-65535> falling-threshold <-2147483647-2147483647> event <1-65535>**
- **rmon alarm <1-65535> WORD<1-1536> <1-3600> { absolute | delta } rising-threshold <-2147483647-2147483647> event <1-65535> falling-threshold <-2147483647-2147483647> event <1-65535> owner WORD<1-127>**
- **rmon alarm <1-65535> WORD<1-1536> <1-3600> { absolute | delta } rising-threshold <-2147483647-2147483647> event <1-65535> owner WORD<1-127>**

Command Parameters

{absolute | delta}	Specifies the sample type.
<1-3600>	Specifies the sampling interval.
<1-65535>	Specifies the interface index number from 1-65535.
event <1-65535>	Specifies the event number.

falling-threshold <-2147483647-2147483647>	Specifies the falling threshold value for the sampled statistic.
owner WORD<1-127>	Specifies the name of the owner. The default value is CLI if the entry is configured using CLI. The default is SNMP if the entry is configured using EDM or SNMP.
rising-threshold <-2147483647-2147483647>	Specifies the rising threshold value for the samples statistic.
WORD<1-536>	Specifies the variable name or OID, case sensitive.

Default

None

Command Mode

Global Configuration

rmon event

Creates an event.

Syntax

- **default rmon event <1-65535>**
- **default rmon event <1-65535> community**
- **default rmon event <1-65535> description**
- **default rmon event <1-65535> owner**
- **no rmon event <1-65535>**
- **no rmon event <1-65535> log**
- **rmon event <1-65535>**
- **rmon event <1-65535> community WORD<1-127>**
- **rmon event <1-65535> description WORD<0-127>**
- **rmon event <1-65535> log**
- **rmon event <1-65535> owner WORD<1-127>**
- **rmon event <1-65535> trap**

Command Parameters

<1-65535>	Specifies the event index number.

community WORD<1-127>	Specifies the SNMP community where you can send SNMP traps, with a string length 1 to 127. You can set the community, but the trap is not filtered out. The trap is sent to all configured snmp-server hosts, regardless of the value of this field.
description WORD<0-127>	Specifies the event description.
log	Specifies if this event stores a log when the event is triggered by the alarm.
owner WORD<1-127>	Specifies the name of the event owner. The default value is CLI if the entry is configured using CLI. The default is SNMP if the entry is configured using EDM or SNMP.
trap	Specifies if this event will send a trap when the event is triggered by the alarm. The trap will be sent to all the snmp-server hosts configured in the snmp table.

Default

None

Command Mode

Global Configuration

rmon history

Creates a history control interface.

Syntax

- **default rmon history <1-65535>**
- **default rmon history <1-65535> buckets**
- **default rmon history <1-65535> interval**
- **default rmon history <1-65535> owner**
- **no rmon history <1-65535>**
- **rmon history <1-65535> {slot/port[/sub-port][-slot/port[/sub-port]] [,...]}**
- **rmon history <1-65535> {slot/port[/sub-port][-slot/port[/sub-port]] [,...]} buckets <1-65535>**
- **rmon history <1-65535> {slot/port[/sub-port][-slot/port[/sub-port]] [,...]} interval <1-3600>**
- **rmon history <1-65535> {slot/port[/sub-port][-slot/port[/sub-port]] [,...]} owner WORD<1-127>**

Command Parameters

{slot/port[/sub-port] [-slot/port[/sub-port]] [,...]}	Identifies the slot and port in one of the following formats: a single slot and port (slot/port), a range of slots and ports (slot/port-slot/port), or a series of slots and ports (slot/port,slot/port,slot/port). If your platform supports channelization and the port is channelized, you must also specify the sub-port in the format slot/port/sub-port.
<1-65535>	Specifies the index number of the history control interface.
buckets <1-65535>	Specifies the number of buckets requested. The default is 50.
interval <1-3600>	Specifies the the time interval in seconds over which the data is sampled for each bucket. The default is 1800.
owner WORD<1-127>	Specifies the name of the entry owner. The default value is CLI if the entry is configured using CLI. The default is SNMP if the entry is configured using EDM or SNMP.

Default

None

Command Mode

Global Configuration

rmon stats

Creates an ether-stats control interface.

Syntax

- **default rmon stats <1-65535>**
- **default rmon stats <1-65535> owner**
- **no rmon stats <1-65535>**
- **rmon stats <1-65535> {slot/port[/sub-port][-slot/port[/sub-port]] [,...]}**
- **rmon stats <1-65535> {slot/port[/sub-port][-slot/port[/sub-port]] [,...]} owner WORD<1-127>**
- **rmon stats <1-65535> owner WORD<1-127>**

Command Parameters

{slot/port[/sub-port] [-slot/port[/sub-port]] [,...]}	Identifies the slot and port in one of the following formats: a single slot and port (slot/port), a range of slots and ports (slot/port-slot/port), or a series of slots and ports (slot/port,slot/port,slot/port). If your platform

	supports channelization and the port is channelized, you must also specify the sub-port in the format slot/port/sub-port.
<1-65535>	Specifies the index number of the ether stats control interface.
owner WORD<1-127>	Specifies the name of the entry owner. The default value is CLI if the entry is configured using CLI. The default is SNMP if the entry is configured using EDM or SNMP.

Default

None

Command Mode

Global Configuration

rmon util-method

Controls whether port utilization is calculated in half or full duplex.

Syntax

- **default rmon util-method**
- **rmon util-method <half|full>**

Command Parameters

<half|full>	Controls whether port utilization is calculated in half or full duplex.

Default

The default is half.

Command Mode

Global Configuration

route-map

Configure and enable a route policy so that the switch can control routes that certain packets can take.

Syntax

- **default route-map WORD<1-64> <1-65535>**
- **no route-map WORD<1-64> <1-65535>**
- **route-map WORD<1-64> <1-65535>**

- **route-map WORD<1-64> <1-65535> { permit | deny }**

Command Parameters

<1-65535>	Specifies the sequence number for the route policy.
<permit|deny>	Permit or deny the route.
WORD<1-64>	Specifies the policy name.

Default

None

Command Mode

Global Configuration

router bgp

Access the router configuration mode to configure the Border Gateway Protocol (BGP) commands.

Syntax

- **router bgp**
- **router bgp WORD<0-11>**
- **router bgp WORD<0-11> enable**

Command Parameters

enable	Enables BGP on the router.
WORD <0-11>	Specifies the AS number. You cannot enable BGP until you change the local AS to a value other than 0.

Default

None

Command Mode

Global Configuration

router bgp as-4-byte enable

Globally enable 4-byte autonomous system numbers.

Syntax

- **default router bgp as-4-byte enable**
- **no router bgp as-4-byte enable**
- **router bgp as-4-byte enable**

Default

The default is disabled.

Command Mode

Global Configuration

router bgp as-dot enable

Globally enable the AS dot representation for 4-byte AS numbers.

Syntax

- **default router bgp as-dot enable**
- **no router bgp as-dot enable**
- **router bgp as-dot enable**

Default

The default is disabled.

Command Mode

Global Configuration

router isis

Enter Intermediate-System-to-Intermediate-System (IS-IS) Router Configuration mode.

Syntax

- **default router isis**
- **no router isis**
- **router isis**

Default

The default is disabled.

Command Mode

Global Configuration

router isis enable

Enable Intermediate-System-to-Intermediate-System (IS-IS) globally. If you use the default or no format of this command, you disable IS-IS globally.

Syntax

- **default router isis enable**
- **no router isis enable**
- **router isis enable**

Default

The default is disabled.

Command Mode

Global Configuration

router ospf

Enable OSPF for the switch. If you do not use an optional parameter with the command, you enter the OSPF Router Configuration mode.

Syntax

- **default router ospf**
- **default router ospf enable**
- **default router ospf ipv6-enable**
- **no router ospf**
- **no router ospf enable**
- **no router ospf ipv6-enable**
- **router ospf**
- **router ospf enable**
- **router ospf ipv6-enable**

Command Parameters

enable	Enables OSPF routing on the switch.
ipv6-enable	Enables OSPFv3 for IPv6 routing.

Default

None

Command Mode

Global Configuration

router rip enable

Enable RIP globally.

Syntax

- **default router rip enable**
- **no router rip enable**
- **router rip**
- **router rip enable**
- **router rip enable vrf <1-511>**

Command Parameters

enable	Globally enables RIP on the VRF or switch.
vrf <1-511>	Enables RIP for a particular VRF. <1-511> denotes the range of the VRF id.

Default

None

Command Mode

Global Configuration

router rip ipv6-enable

Enable RIPng globally.

Syntax

- **default router rip ipv6-enable**
- **no router rip ipv6-enable**
- **router rip ipv6-enable**

Default

The default is disabled.

Command Mode

Global Configuration

router vrf

Enable VRF for the switch.

Syntax

- **router vrf WORD <1-16>**

Command Parameters

WORD<0-16>	Specifies the VRF name.

Default

None

Command Mode

Global Configuration

router vrrp

Enable VRRP for the switch.

Syntax

- **router vrrp**

Default

None

Command Mode

Global Configuration

run spbm

Configure all SPBM, CFM, IS-IS and interface level settings in one command.

Syntax

- **run spbm**
- **run spbm clean**

Command Parameters

clean	Run SPBM clean command.

Default

None

Command Mode

Global Configuration

run spbm interface

Configures IS-IS SPBM port and MLT interfaces.

Syntax

- **run spbm interface**
- **run spbm interface clean**

Command Parameters

clean	Deletes specified IS-IS port and MLT interfaces.

Default

None

Command Mode

Global Configuration

run vms layer-2 switch

Runs Layer-2 vms commands. This command is not available on all hardware platforms. For more information about feature support, see Release Notes for XA1400 Series.

Syntax

- **run vms layer-2 switch <5-99>**
- **run vms layer-2 switch <5-99> syntax**

Command Parameters

<5-99>	Specifies a switch value, which is then used as a common element to configure switch parameters such as nickname, VLAN ID, SPB and IP parameters.
syntax	Displays all the commands executed by the script onto the console. Using this parameter enables you to see any errors that the script encounters.

Default

None

Command Mode

Global Configuration

run vms layer-3 switch

Configures basic parameters to quickly deploy a video surveillance system. This command is not available on all hardware platforms. For more information about feature support, see Release Notes for XA1400 Series.

The Layer 3 Video Surveillance install script performs the same function as the run vms endura script. However, the switch continues to support the run vms endura script for backward compatibility.

Syntax

- `run vms layer-3 switch <5-99>`

Command Parameters

<5-99>	Specifies a switch value in the range 5 to 99, which is used to seed unique values in the configuration script. This value is then used as a common element to configure switch parameters such as nickname, VLAN ID, SPB and IP parameters.

Default

None

Command Mode

Global Configuration

sflow agent-ip

Specifies the agent IP address (IPv4).

Syntax

- `no sflow agent-ip`
- `sflow agent-ip {A.B.C.D}`

Command Parameters

sflow agent-ip {A.B.C.D}	Specifies the agent IP address (IPv4).

Default

None

Command Mode

Global Configuration

sflow collector

Configure an sFlow collector to determine the device to which the sFlow agent sends sFlow datagrams.

Syntax

- **default sflow collector <1-2>**
- **default sflow collector <1-2> port**
- **default sflow collector <1-2> timeout**
- **no sflow collector <1-2>**
- **no sflow collector <1-2> address {A.B.C.D}**
- **no sflow collector <1-2> owner WORD<1-20>**
- **sflow collector <1-2>**
- **sflow collector <1-2> address {A.B.C.D}**
- **sflow collector <1-2> address {A.B.C.D} vrf WORD<1-16>**
- **sflow collector <1-2> owner WORD<1-20>**
- **sflow collector <1-2> port <1-65535>**
- **sflow collector <1-2> timeout <1-65535>**

Command Parameters

<1-2>	Specifies the ID to export sFlow datagrams to the collector ID.
address {A.B.C.D}	Specifies the collector IP address.
owner WORD<1–20>	Specifies the sFlow collector name.
port <1–65535>	Specifies the destination UDP port. The default port is 6343.
timeout <1–65535>	Specifies the time remaining (in seconds) before the collector is released. The default is 0, which means you are not using the collector.
vrf	Specifies the name of the VRF used to reach the collector.

Default

None

Command Mode

Global Configuration

sflow enable

Globally enables sFlow.

Syntax

- **default sflow enable**
- **no sflow enable**
- **sflow enable**

Default

None

Command Mode

Global Configuration

slot shutdown

Slot shutdown.

Syntax

- **default slot shutdown {slot[-slot][,...]}**
- **no slot shutdown {slot[-slot][,...]}**
- **slot shutdown {slot[-slot][,...]}**

Command Parameters

{slot[-slot][,...]}	Specifies the slot number. The valid slot numbers differ depending on hardware platform. For more information about slot numbers, see your hardware documentation.

Default

None

Command Mode

Global Configuration

slpp (globally)

Enable the Simple Loop Prevention Protocol (SLPP) globally and for a VLAN to detect a loop and automatically stop it. The VLAN configuration controls the boundary of SLPP-PDU transmission.

Syntax

- **default slpp**
- **default slpp enable**
- **default slpp tx-interval**
- **no slpp**
- **no slpp enable**
- **no slpp vid <1-4059>**
- **slpp enable**
- **slpp tx-interval <500-5000>**
- **slpp vid <1-4059>**

Command Parameters

enable	Enables or disables the SLPP operation. You must enable the SLPP operation to enable the SLPP packet transmit and receive process. If you disable the SLPP operation, the system sends no SLPP packets and discards received SLPP packets. The default is disabled.
tx-interval <500-5000>	Configures the SLPP packet transmit interval, expressed in milliseconds, in a range from 500-5000. The default is 500.
vid <*1-4059*>	Specifies the VLAN ID in the range of 1 to 4059. By default, VLAN IDs 1 to 4059 are configurable and the system reserves VLAN IDs 4060 to 4094 for internal use. On switches that support the vrf-scaling and spbm-config-mode boot configuration flags, if you enable these flags, the system also reserves VLAN IDs 3500 to 3998. VLAN ID 1 is the default VLAN and you cannot create or delete VLAN ID 1.

Default

None

Command Mode

Global Configuration

slpp-guard ethertype

Configures Set SLPP-guard ethertype.

Syntax

- **default slpp-guard ethertype**
- **slpp-guard ethertype <0x0600–0xffff>**

Command Parameters

<0x0600-0xffff>	Specifies a hexadecimal value ranging from 0x0600– 0xffff. The default value is 0x8102.

Default

The default value is 0x8102.

Command Mode

Global Configuration

smtp

Configures SMTP to generate email notifications for component failures, critical conditions, or general system health status.

Syntax

- **default smtp enable**
- **no smpt enable**
- **smpt enable**
- **smtp domain-name WORD<1–254>**
- **smtp event-id add WORD<1-1100**
- **smtp event-id remove WORD<1-1100>**
- **smtp port <1–65535>**
- **smtp receiver-email add WORD<3-1274>**
- **smtp receiver-email remove WORD<3-1274>**
- **smtp sender-email WORD<3-254>**
- **smtp server WORD<1-256>**
- **smtp status-send-timer <0 | 30-43200>**

Command Parameters

status-send-timer <0 | 30-43200>	Specifies the interval, in seconds, at which the switch sends status information. The default is 30 seconds. A value of 0 means the switch does not send status information.
domain-name WORD<1-254>	Specifies the hostname or IPv4 address.
enable	Enables SMTP.

event id {add | remove} WORD<1-1100>	Add or remove log event to the list of events that generate email notification. You can specify multiple event IDs in a single command by separating them with a comma. The event ID can be up to 10 digits in hexadecimal format.
port <1-65535>	Specifies the SMTP server TCP port number. The default is 25.
receiver-mail {add | remove} WORD<3-1274>	Adds or removes an email address to the recipient list. The recipients receive the email notification generated by the switch. The maximum length for the address is 254 characters.
sender-mail WORD<3-254>	Specifies the email address that appears in the From field of the message that the switch generates. By default, the switch uses <SystemName>@default.com.
server WORD<1-256>	Specifies the SMTP server address. You can use either a hostname or IPv4 address. If you use a hostname, you must configure the DNS client on the switch.

Default

The default is disabled.

Command Mode

Global Configuration

snmplog

Use SNMP trap logging to log to the system log file. This allows you to send SNMP logs to a system log server.

Syntax

- **default snmplog**
- **default snmplog enable**
- **no snmplog enable**
- **snmplog enable**

Default

The default is disabled.

Command Mode

Global Configuration

snmp-server authentication-trap enable

Activate the generation of authentication traps.

Syntax

- **default snmp-server authentication-trap**
- **no snmp-server authentication-trap**
- **snmp-server authentication-trap enable**

Default

The default is disabled/false.

Command Mode

Global Configuration

snmp-server community

Create a community to use in forming a relationship between an SNMP agent and one or more SNMP managers. You require SNMP community strings to access the system using SNMP-based management software.

Syntax

- **no snmp-server community WORD<1-32>**
- **no snmp-server community-by-index WORD<1-32>**
- **snmp-server community WORD<1-32> group WORD<0-32>**
- **snmp-server community WORD<1-32> group WORD<0-32> secname WORD<1-32>**
- **snmp-server community WORD<1-32> index WORD<1-32> secname WORD<1-32>**
- **snmp-server community WORD<1-32> index WORD<1-32> secname WORD<1-32> context WORD<0-32>**
- **snmp-server community WORD<1-32> secname WORD<1-32>**
- **snmp-server community WORD<1-32> secname WORD<1-32> context WORD<0-32>**

Command Parameters

community-by-index WORD<1-32>	Specifies the community string by index to delete.
context WORD<0-32>	Specifies the context in which management information is accessed when you use the specified community string.
group WORD<0-32>	Specifies the group name.

index WORD<0-32>	Specifies the unique index value of a row in this table.
secname WORD<0-32>	Maps the community string to the security name in the VACM Group Member Table. The range is 0-32 characters.
WORD<1-32>	Specifies a community string, from 1-32 characters.

Default

None

Command Mode

Global Configuration

snmp-server contact

Configure the contact information for the system.

Syntax

- **default snmp-server contact**
- **no snmp-server contact**
- **snmp-server contact WORD<0-255>**

Command Parameters

WORD<0-255>	Changes the sysContact information for the switch. WORD<0-255> is an ASCII string from 0-255 characters (for example a phone extension or e-mail address.)

Default

None

Command Mode

Global Configuration

snmp-server force-iphdr-sender enable

Configure the SNMP and IP sender flag to the same value.

Syntax

- **default snmp-server force-iphdr-sender**
- **default snmp-server force-iphdr-sender enable**
- **no snmp-server force-iphdr-sender**

- **no snmp-server force-iphdr-sender enable**
- **snmp-server force-iphdr-sender enable**

Default

None

Command Mode

Global Configuration

snmp-server force-trap-sender enable

Send the configured source address (sender IP as the sender network in the notification message.

Syntax

- **default snmp-server force-trap-sender**
- **default snmp-server force-trap-sender enable**
- **no snmp-server force-trap-sender**
- **no snmp-server force-trap-sender enable**
- **snmp-server force-trap-sender enable**

Default

None

Command Mode

Global Configuration

snmp-server group

Create a new user group member to logically group users who require the same level of access. Create new access for a group in the View-based Access Control Model (VACM) table to provide access to managed objects.

Syntax

- **no snmp-server group WORD<1-32>**
- **no snmp-server group WORD<1-32> WORD<0-32>**
- **snmp-server group WORD<1-32> WORD<0-32> auth-no-priv**
- **snmp-server group WORD<1-32> WORD<0-32> auth-no-priv notify-view WORD<0-32>**
- **snmp-server group WORD<1-32> WORD<0-32> auth-no-priv read-view WORD<0-32>**

- **snmp-server group WORD<1-32> WORD<0-32> auth-no-priv write-view WORD<0-32>**
- **snmp-server group WORD<1-32> WORD<0-32> auth-priv**
- **snmp-server group WORD<1-32> WORD<0-32> auth-priv notify-view WORD<0-32>**
- **snmp-server group WORD<1-32> WORD<0-32> auth-priv read-view WORD<0-32>**
- **snmp-server group WORD<1-32> WORD<0-32> auth-priv write-view WORD<0-32>**
- **snmp-server group WORD<1-32> WORD<0-32> no-auth-no-priv**
- **snmp-server group WORD<1-32> WORD<0-32> no-auth-no-priv notify-view WORD<0-32>**
- **snmp-server group WORD<1-32> WORD<0-32> no-auth-no-priv read-view WORD<0-32>**
- **snmp-server group WORD<1-32> WORD<0-32> no-auth-no-priv write-view WORD<0-32>**

Command Parameters

auth-no-priv	Assigns the minimum level of security required to gain the access rights allowed by this conceptual row. If the auth-no-priv parameter is included, it creates one entry for SNMPv3 access.
auth-priv	Assigns the minimum level of security required to gain the access rights allowed by this conceptual row. If the auth-priv parameter is included, it creates one entry for SNMPv3 access.
group WORD<1-32>	Assigns the group name for data access. The range is 1-32 characters. Use the no operator to remove this configuration.
no-auth-no-priv	Assigns the minimum level of security required to gain the access rights allowed by this conceptual row. If the no-auth-no-priv parameter is included, it creates three entries, one for SNMPv1, one for SNMPv2c access, and one for SNMPv3c access.
notify-view WORD<0-32>	Specifies the view name in the range of 0-32 characters.
read-view WORD<0-32>	Specifies the view name in the range of 0-32 characters.
WORD<1-32> WORD<1-32>	The first WORD<1-32> specifies the group name for data access. The second WORD<1-32> specifies the context name. If you use a particular group name value but with different context names, you create multiple entries for different contexts for the same group. You can omit the context name and use the default. If the context name value ends in the wildcard character (*), the resulting entries match a context name that begins with that context. For example, a context name value of foo* matches contexts starting with foo, such as foo6 and foofofum.

Use the no operator to remove this configuration.

write-view WORD<0-32>	Specifies the view name in the range of 0-32 characters.

Default

None

Command Mode

Global Configuration

snmp-server host v1

Configure an SNMP host so that the switch can forward SNMP traps to a host for monitoring.

Syntax

- **no snmp-server host WORD<1-256> port <1-65535> v1 WORD<1-32>**
- **no snmp-server host WORD<1-256> v1 WORD<1-32>**
- **snmp-server host WORD<1-256> port <1-65535> v1 WORD<1-32>**
- **snmp-server host WORD<1-256> port <1-65535> v1 WORD<1-32> filter WORD<1-32>**
- **snmp-server host WORD<1-256> v1 WORD<1-32>**
- **snmp-server host WORD<1-256> v1 WORD<1-32> filter WORD<1-32>**

Command Parameters

filter WORD<1-32>	Specifies a filter profile name.
port<1-65535>	Specifies the host server port number.
v1 WORD <1-32> [filter WORD<1-32>]	Specifies the SNMP v1 security name.
WORD<1-256>	Specifies either an IPv4 or IPv6 address.

Default

None

Command Mode

Global Configuration

snmp-server host v2

Configure an SNMPv2 host so that the switch can forward SNMP traps to a host for monitoring.

Syntax

- **default snmp-server host WORD<1-256> port <1-65535> v2c WORD<1-32>**
- **default snmp-server host WORD<1-256> port <1-65535> v2c WORD<1-32> mms**
- **default snmp-server host WORD<1-256> port <1-65535> v2c WORD<1-32> retries**
- **default snmp-server host WORD<1-256> port <1-65535> v2c WORD<1-32> timeout**
- **default snmp-server host WORD<1-256> v2c WORD<1-32>**
- **default snmp-server host WORD<1-256> v2c WORD<1-32> mms**
- **default snmp-server host WORD<1-256> v2c WORD<1-32> retries**
- **default snmp-server host WORD<1-256> v2c WORD<1-32> timeout**
- **no snmp-server host WORD<1-256> port <1-65535> v2c WORD<1-32>**
- **no snmp-server host WORD<1-256> v2c WORD<1-32>**
- **snmp-server host WORD<1-256> port <1-65535> v2c WORD<1-32>**
- **snmp-server host WORD<1-256> port <1-65535> v2c WORD<1-32> filter WORD<1-32>**
- **snmp-server host WORD<1-256> port <1-65535> v2c WORD<1-32> inform**
- **snmp-server host WORD<1-256> port <1-65535> v2c WORD<1-32> inform mms <0-2147483647>**
- **snmp-server host WORD<1-256> port <1-65535> v2c WORD<1-32> inform retries <0-255>**
- **snmp-server host WORD<1-256> port <1-65535> v2c WORD<1-32> inform timeout <1-2147483647>**
- **snmp-server host WORD<1-256> v2c WORD<1-32>**
- **snmp-server host WORD<1-256> v2c WORD<1-32> filter WORD<1-32>**
- **snmp-server host WORD<1-256> v2c WORD<1-32> inform**
- **snmp-server host WORD<1-256> v2c WORD<1-32> inform mms <0-2147483647>**
- **snmp-server host WORD<1-256> v2c WORD<1-32> inform retries <0-255>**
- **snmp-server host WORD<1-256> v2c WORD<1-32> inform timeout <1-2147483647>**

Command Parameters

filter WORD<1-32>	Specifies a filte profile name.
inform	Specifies the notify type.

mms <0-2147483647>	Specifies the maximum message size.
port <1-65535>	Specifies the port number that needs to be changed.
retries <0-255>	Specifies the number of retries.
timeout <1-2147483647>	Specifies the timeout value.
v2c WORD<1-32>	Specifies the SNMPv2 security name
WORD<1-256>	Specifies the IPv4 or IPv6 host address.

Default

None

Command Mode

Global Configuration

snmp-server host v3

Configure an SNMPv3 host so that the switch can forward SNMP traps to a host for monitoring.

Syntax

- **default snmp-server host WORD<1-256> port <1-65535> v3 WORD<1-32>**
- **default snmp-server host WORD<1-256> port <1-65535> v3 WORD<1-32> retries**
- **default snmp-server host WORD<1-256> port <1-65535> v3 WORD<1-32> timeout**
- **default snmp-server host WORD<1-256> v3 WORD<1-32>**
- **default snmp-server host WORD<1-256> v3 WORD<1-32> retries**
- **default snmp-server host WORD<1-256> v3 WORD<1-32> timeout**
- **no snmp-server host WORD<1-256> port <1-65535> v3 WORD<1-32>**
- **no snmp-server host WORD<1-256> v3 WORD<1-32>**
- **snmp-server host WORD<1-256> port <1-65535> v3 { noAuthNoPriv | authNoPriv | authPriv } WORD<1-32>**
- **snmp-server host WORD<1-256> port <1-65535> v3 { noAuthNoPriv | authNoPriv | authPriv } WORD<1-32> filter WORD<1-32>**
- **snmp-server host WORD<1-256> port <1-65535> v3 { noAuthNoPriv | authNoPriv | authPriv } WORD<1-32> inform**
- **snmp-server host WORD<1-256> port <1-65535> v3 { noAuthNoPriv | authNoPriv | authPriv } WORD<1-32> inform retries <0-255>**

- **snmp-server host WORD<1-256> port <1-65535> v3 { noAuthNoPriv | authNoPriv | authPriv } WORD<1-32> inform timeout <1-2147483647>**
- **snmp-server host WORD<1-256> v3 { noAuthNoPriv | authNoPriv | authPriv } WORD<1-32>**
- **snmp-server host WORD<1-256> v3 { noAuthNoPriv | authNoPriv | authPriv } WORD<1-32> filter WORD<1-32>**
- **snmp-server host WORD<1-256> v3 { noAuthNoPriv | authNoPriv | authPriv } WORD<1-32> inform**
- **snmp-server host WORD<1-256> v3 { noAuthNoPriv | authNoPriv | authPriv } WORD<1-32> inform retries <0-255>**
- **snmp-server host WORD<1-256> v3 { noAuthNoPriv | authNoPriv | authPriv } WORD<1-32> inform timeout <1-2147483647>**

Command Parameters

{noAuthNoPriv|authNoPriv|authPriv}	Specifies the security level.
filter WORD<1-32>	Specifies a filter profile name.
inform	Specifies the notify type.
mms <0-2147483647>	Specifies the maximum message size.
port <1-65535>	Specifies the port number that needs to be changed.
retries <0-255>	Specifies the number of retries.
timeout <1-2147483647>	Specifies the timeout value.
v3c WORD<1-32>	Specifies the SNMPv3 security name
WORD<1-256>	Specifies the IPv4 or IPv6 host address.

Default

None

Command Mode

Global Configuration

snmp-server location

Configure the sysLocation information for the system. <WORD 0-255> is an ASCII string from 0-255 characters.

Syntax

- **default snmp-server location**
- **no snmp-server location**
- **snmp-server location WORD<0-255>**

Command Parameters

WORD <0255>	Specifies an ASCII string from 0-255 characters.

Default

None

Command Mode

Global Configuration

snmp-server login-success-trap enable

Configure the generation of login success traps.

Syntax

- **default snmp-server login-success-trap**
- **no snmp-server login-success-trap**
- **snmp-server login-success-trap enable**

Default

The default is disabled/false.

Command Mode

Global Configuration

snmp-server name

Configure the sysName information for the system. WORD<0-255> is an ASCII string from 0-255 characters.

Syntax

- **default snmp-server name**
- **no snmp-server name**
- **snmp-server name WORD<0-255>**

Command Parameters

WORD <0255>	Specifies an ASCII string from 0-255 characters.

Default

None

Command Mode

Global Configuration

snmp-server notify-filter

Configure the notify table to select management targets to receive notifications, as well as the type of notification to send to each management target.

Syntax

- **no snmp-server notify-filter WORD<1-32> WORD<1-32>**
- **snmp-server notify-filter WORD<1-32> WORD<1-32>**

Command Parameters

WORD<1-32>	The first WORD<1-32> specifies the name of the filter profile.
WORD<1-32>	The second WORD<1-32> identifies the filter subtree OID. If the Subtree OID uses a '+' prefix (or no prefix), this indicates include. The '-' prefix, this indicates exclude.

Default

None

Command Mode

Global Configuration

snmp-server sender-ip

Configure the IP interface from which the SNMP traps originate if the switch has multiple interfaces. This command applies to in-band management cases only. In case of out-of-band management, any configuration of the command is ignored.

Syntax

- **snmp-server sender-ip {A.B.C.D} {w.x.y.z}**

Command Parameters

{A.B.C.D} {w.x.y.z} For in-band management case: Specifies the source IP address (w.x.y.z) to use when sending the Trap notification packet to the SNMP server <A.B.C.D>. This command only applies when the force-trap-sender parameter is enabled. Moreover, the source IP (w.x.y.z) must be a CLIP address.

Note:

If the source IP address is either specified as 0.0.0.0 or is not a CLIP address, the source IP address is ignored and the switch automatically uses the IP address of the local interface that is closest (from an IP routing table perspective) to the destination SNMP server and the settings from this command are ignored.

If the reachability to the SNMP server is over an IS-IS/SPB IP shortcut NNI, the switch automatically uses the IS-IS IP source address and the settings from this command are ignored.

Default

None

Command Mode

Global Configuration

snmp-server user

Create a user on the local system in the USM table to authorize a user on a particular SNMP engine.

Syntax

- **no snmp-server user engine-id WORD<16-97> WORD<1-32>**
- **no snmp-server user WORD<1-32>**
- **snmp-server user engine-id WORD<16-97> WORD<1-32>**
- **snmp-server user engine-id WORD<16-97> WORD<1-32> { md5 | sha } WORD<1-32>**
- **snmp-server user engine-id WORD<16-97> WORD<1-32> { md5 | sha } WORD<1-32> aes WORD<1-32>**
- **snmp-server user engine-id WORD<16-97> WORD<1-32> { md5 | sha } WORD<1-32> des WORD<1-32>**
- **snmp-server user WORD<1-32>**
- **snmp-server user WORD<1-32> { md5 | sha } WORD<1-32>**
- **snmp-server user WORD<1-32> { md5 | sha } WORD<1-32> aes WORD<1-32>**
- **snmp-server user WORD<1-32> { md5 | sha } WORD<1-32> aes WORD<1-32> notify-view WORD<0-32>**

- **snmp-server user WORD<1-32> { md5 | sha } WORD<1-32> aes WORD<1-32> read-view WORD<0-32>**
- **snmp-server user WORD<1-32> { md5 | sha } WORD<1-32> aes WORD<1-32> write-view WORD<0-32>**
- **snmp-server user WORD<1-32> { md5 | sha } WORD<1-32> des WORD<1-32>**
- **snmp-server user WORD<1-32> { md5 | sha } WORD<1-32> des WORD<1-32> notify-view WORD<0-32>**
- **snmp-server user WORD<1-32> { md5 | sha } WORD<1-32> des WORD<1-32> read-view WORD<0-32>**
- **snmp-server user WORD<1-32> { md5 | sha } WORD<1-32> des WORD<1-32> write-view WORD<0-32>**
- **snmp-server user WORD<1-32> { md5 | sha } WORD<1-32> notify-view WORD<0-32>**
- **snmp-server user WORD<1-32> { md5 | sha } WORD<1-32> read-view WORD<0-32>**
- **snmp-server user WORD<1-32> { md5 | sha } WORD<1-32> write-view WORD<0-32>**
- **snmp-server user WORD<1-32> group WORD<1-32>**
- **snmp-server user WORD<1-32> group WORD<1-32> { md5 | sha } WORD<1-32>**
- **snmp-server user WORD<1-32> group WORD<1-32> { md5 | sha } WORD<1-32> aes WORD<1-32>**
- **snmp-server user WORD<1-32> group WORD<1-32> { md5 | sha } WORD<1-32> des WORD<1-32>**
- **snmp-server user WORD<1-32> md5 WORD<1-32>**
- **snmp-server user WORD<1-32> notify-view WORD<0-32>**
- **snmp-server user WORD<1-32> read-view WORD<0-32>**
- **snmp-server user WORD<1-32> write-view WORD<0-32>**

Command Parameters

{aes|des} WORD<1-32>	Specifies a privacy protocol. If no value is entered, no authentication capability exists. WORD<1-32> assigns a privacy password. If no value is entered, no privacy capability exists. You must set authentication before you can set the privacy option.
{md5|sha} WORD<1-32>	Specifies an authentication protocol. If no value is entered, no authentication capability exists. WORD<1-32> specifies an authentication password. If no value is entered, no authentication capability exists.
engine-id WORD<1-32>	Assigns a Simple Network Management Protocol version 3 (SNMPv3) engine ID. Use the no operator to remove this configuration.
group WORD<1-32>	Specifies the group access name.

notify-view WORD<1-32>	The first instance is a noAuth view. The second instance is an auth view and the last instance is an authPriv view.
read-view WORD<1-32>	Specifies the view name. The first instance is a noAuth view. The second instance is an auth view and the last instance is an authPriv view.
write-view WORD<1-32>	Specifies the view name. The first instance is a noAuth view. The second instance is an auth view and the last instance is an authPriv view.

Default

None

Command Mode

Global Configuration

snmp-server view

Create a new entry in the MIB view table. The default Layer 2 MIB view cannot modify SNMP settings. However, a new MIB view created with Layer 2 permission can modify SNMP settings.

Syntax

- `no snmp-server view WORD<1-32> WORD<1-32>`
- `snmp-server view WORD <1-32> WORD <1-32>`

Command Parameters

WORD <1-32>	Specifies a new entry with this group name. The range is 1-32 characters.
WORD <1-32> WORD<1-32>	Specifies the prefix that defines the set of MIB objects accessible by this SNMP entity. The range is 1-32 characters.

Default

None

Command Mode

Global Configuration

spanning-tree mstp forward-time

Configure the MSTP forward delay for the bridge.

Syntax

- **default spanning-tree mstp forward-time**
- **spanning-tree mstp forward-time <400-3000>**

Command Parameters

<400-3000> Configures the MSTP forward delay for the bridge, in hundredths of a second.

Default

None

Command Mode

Global Configuration

spanning-tree mstp max-age

Assign the MSTP maximum age time for the bridge

Syntax

- **default spanning-tree mstp max-age**
- **spanning-tree mstp max-age <600-4000>**

Command Parameters

<600-4000> Assigns the MSTP maximum age time for the bridge, in one hundredths of a second.

Default

The default is 2000.

Command Mode

Global Configuration

spanning-tree mstp max-hop

Assign the maximum hop count for the bridge.

Syntax

- **default spanning-tree mstp max-hop**
- **spanning-tree mstp max-hop <100-4000>**

Command Parameters

<100-4000>	Assigns the MSTP bridge maximum hop count. The range is 100 to 4000 one hundredths of a second.

Default

The default is 2000.

Command Mode

Global Configuration

spanning-tree mstp msti (globally)

Configure Multiple Spanning Tree Protocol (MSTP) to set the MSTP configuration version.

Syntax

- **default spanning-tree mstp msti <1-63>**
- **default spanning-tree mstp msti <1-63> priority**
- **spanning-tree mstp msti <1-63> priority <0-65535>**

Command Parameters

<1-63>	Specifies the instance parameter.
priority <0-65535>	Configures the MSTP bridge priority. Allowed values are: • 4096 • 8192 • 12288 • 16384 • 20480 • 24576 • 28672 • 32768 • 36864 • 40960 • 45056 • 49152 • 53248 • 57344

- 61440

Default

None

Command Mode

Global Configuration

spanning-tree mstp pathcost-type

Assign the Multiple Spanning Tree Protocol (MSTP) default pathcost version.

Syntax

- **default spanning-tree mstp pathcost-type**
- **spanning-tree mstp pathcost-type bits16**
- **spanning-tree mstp pathcost-type bits32**

Command Parameters

<bits16|bits32>	Specifies the pathcost value.

Default

The default is 32 bits.

Command Mode

Global Configuration

spanning-tree mstp priority (globally)

Assign the Multiple Spanning Tree Protocol (MSTP) bridge priority.

Syntax

- **default spanning-tree mstp priority**
- **spanning-tree mstp priority <0-61440>**

Command Parameters

<0-61440>	Assigns the MSTP bridge priority. The values configured for port priority must be in steps of 4096.

Default

The default is 32768.

Command Mode

Global Configuration

spanning-tree mstp region

Assign the Multiple Spanning Tree Protocol (MSTP) region.

Syntax

- **default spanning-tree mstp region**
- **default spanning-tree mstp region config-id-sel**
- **default spanning-tree mstp region region-name**
- **default spanning-tree mstp region region-version**
- **spanning-tree mstp region config-id-sel <0-255>**
- **spanning-tree mstp region region-name WORD<1-32>**
- **spanning-tree mstp region region-version <0-65535>**

Command Parameters

config-id-sel <0-255>	Assigns the MSTP region configuration ID number.
region-name WORD<1-32>	Assigns the MSTP region name.
region-version <0-65535>	Assigns the MSTP region version.

Default

The default region and version is 0.

Command Mode

Global Configuration

spanning-tree mstp tx-holdcount

Assign the Multiple Spanning Tree Protocol (MSTP) transmit hold count.

Syntax

- **default spanning-tree mstp tx-holdcount**
- **spanning-tree mstp tx-holdcount <1-10>**

Command Parameters

<1-10>	Assigns the MSTP transmit hold count.

Default

The default is 3.

Command Mode

Global Configuration

spanning-tree mstp version

Assigns the bridge version.

Syntax

- **default spanning-tree mstp version**
- **spanning-tree mstp version mstp**
- **spanning-tree mstp version rstp**
- **spanning-tree mstp version stp-compatible**

Command Parameters

mstp	Configures the version as MSTP.
rstp	Configures the version as RSTP.
stp-compatible	Configures the version as STP compatible. Although STP and MSTP are variations of the same spanning tree protocol, they communicate information differently. A switch in MSTI mode cannot recognize the spanning tree groups running on a chassis configured with Nortel STP. MSTP spanning tree groups are not the same as Nortel STP spanning tree groups. Using a switch in MSTP mode with another chassis in STP mode can create a loop in the network. You must configure protocol migration to true on all spanning-tree enabled interfaces when you change the spanning tree version from STP-compatible to MSTP for those interfaces to work in the proper mode.

Default

The default is MSTP.

Command Mode

Global Configuration

spanning-tree rstp forward-time

Configure the Rapid Spanning Tree Protocol (RSTP) forward delay for the bridge.

Syntax

- **default spanning-tree rstp forward-time**
- **spanning-tree rstp forward-time <400-3000>**

Command Parameters

<400-3000>	Configures the RSTP forward delay for the bridge, in hundredths of a second.

Default

The default is 1500 (15 seconds).

Command Mode

Global Configuration

spanning-tree rstp group-stp enable

Enable or disables Rapid Spanning Tree Protocol (RSTP) for a specific STG.

Syntax

- **default spanning-tree rstp group-stp enable**
- **no spanning-tree rstp group-stp enable**
- **spanning-tree rstp group-stp enable**

Default

The default value is enabled.

Command Mode

Global Configuration

spanning-tree rstp hello-time

Configure the hello-time delay for the bridge.

Syntax

- **default spanning-tree rstp hello-time**
- **spanning-tree rstp hello-time <100-1000>**

Command Parameters

<100-1000>	Configures the hello-time for a port in one hundredths of a second.

Default

The default is 200 (2 seconds).

Command Mode

Global Configuration

spanning-tree rstp max-age

Assign the Rapid Spanning Tree Protocol (RSTP) maximum age time for the bridge

Syntax

- **default spanning-tree rstp max-age**
- **spanning-tree rstp max-age <600-4000>**

Command Parameters

<600-4000>	Assigns the RSTP maximum age time for the bridge, in one hundredths of a second.

Default

The default value is 2000 (2 seconds).

Command Mode

Global Configuration

spanning-tree rstp pathcost-type

Assign the Rapid Spanning Tree Protocol (RSTP) default pathcost version.

Syntax

- **default spanning-tree rstp pathcost-type**
- **spanning-tree rstp pathcost-type bits16**
- **spanning-tree rstp pathcost-type bits32**

Command Parameters

<bits16|bits32>	Specifies the pathcost value.

Default

The default is 32 bits.

Command Mode

Global Configuration

spanning-tree rstp priority (globally)

Assign the Rapid Spanning Tree Protocol (RSTP) bridge priority.

Syntax

- **default spanning-tree rstp priority**
- **spanning-tree rstp priority <0-61440>**

Command Parameters

<0-61440> Assigns the RSTP bridge priority in a range of 0 to 61440 in steps of 4096.

Default

The default is 32768.

Command Mode

Global Configuration

spanning-tree rstp tx-holdcount

Assign the Rapid Spanning Tree Protocol (RSTP) transmit hold count.

Syntax

- **default spanning-tree rstp tx-holdcount**
- **spanning-tree rstp tx-holdcount <1-10>**

Command Parameters

<1-10> Assigns the RSTP transmit hold count.

Default

The default is 6.

Command Mode

Global Configuration

spanning-tree rstp version

Configure the Rapid Spanning Tree Protocol (RSTP) to set the RSTP configuration.

Syntax

- **default spanning-tree rstp version**
- **spanning-tree rstp version rstp**
- **spanning-tree rstp version stp-compatible**

Command Parameters

rstp	Configures the version as RSTP.
stp-compatible	Configures the version as STP-compatible.

Default

The default is RSTP.

Command Mode

Global Configuration

spanning-tree tc-receive-alarm-threshold count

Specifies the number of packets used to establish the threshold rate.

Syntax

- **default spanning-tree tc-receive-alarm-threshold count**
- **spanning-tree tc-receive-alarm-threshold count <1-1000>**

Command Parameters

count <1-1000>	Specifies the number of packets used to establish the threshold rate. The default is 2.

Default

The default is 2.

Command Mode

Global Configuration

spanning-tree tc-receive-alarm-threshold interval

Specifies the time interval (in minutes) used to establish the threshold rate.

Syntax

- **default spanning-tree tc-receive-alarm-threshold interval**
- **spanning-tree tc-receive-alarm-threshold interval <1-15>**

Command Parameters

interval <1-15>	Specifies the time interval (in minutes) used to establish the threshold rate. The default is 1.

Default

The default is 1.

Command Mode

Global Configuration

spbm

Enable Shortest Path Bridging MAC (SPBM) globally.

Syntax

- **default spbm**
- **no spbm**
- **spbm**

Default

The default is disabled.

Command Mode

Global Configuration

spbm ethertype

Configure the ethertype for Shortest Path Bridging MAC (SPBM).

Syntax

- **default spbm ethertype**
- **spbm ethertype 0x8100**
- **spbm ethertype 0x88a8**

Command Parameters

0x8100	Configures the ethertype to 0x8100.
0x88a8	Configures the ethertype to 0x88a8.

Default

The default is 0x8100.

Command Mode

Global Configuration

spbm nick-name server

Enable a dynamic nickname server.

Syntax

- **no spbm nick-name server**
- **spbm nick-name server**

Default

Disabled

Command Mode

Global Configuration

spbm nick-name server range

Configure a nickname allocation range.

Syntax

- **default spbm nick-name server range**
- **spbm nick-name server range <a-f>**

Command Parameters

a-f	Specifies a nickname allocation range.

Default

The default nickname allocation range is a (A.00.00-A.FF.FF).

Command Mode

Global Configuration

ssh (configuration)

Modify Secure Shell (SSH) configuration parameters to support public and private key encryption connections.

Syntax

- **default ssh**
- **default ssh dsa-auth**
- **default ssh max-sessions**
- **default ssh pass-auth**
- **default ssh port**
- **default ssh rsa-auth**
- **default ssh secure**
- **default ssh timeout**
- **default ssh version**
- **default ssh x509v3-auth enable**
- **default ssh x509v3-auth revocation-check-method**
- **default ssh x509v3-auth username overwrite**
- **default ssh x509v3-auth username strip-domain**
- **default ssh x509v3-auth username use-domain**
- **no ssh**
- **no ssh authentication-type**
- **no ssh authentication-type aead-aes-128-gcm-ssh**
- **no ssh authentication-type aead-aes-256-gcm-ssh**
- **no ssh authentication-type hmac-sha1**
- **no ssh authentication-type hmac-sha2-256**
- **no ssh dsa-auth**
- **no ssh dsa-host-key**
- **no ssh dsa-user-key WORD<1-15>**
- **no ssh encryption-type**
- **no ssh encryption-type 3des-cbc**
- **no ssh encryption-type aead-aes-128-gcm-ssh**
- **no ssh encryption-type aead-aes-256-gcm-ssh**
- **no ssh encryption-type aes128-cbc**
- **no ssh encryption-type aes128-ctr**
- **no ssh encryption-type aes192-cbc**

- **no ssh encryption-type aes192-ctr**
- **no ssh encryption-type aes256-cbc**
- **no ssh encryption-type aes256-ctr**
- **no ssh encryption-type blowfish-cbc**
- **no ssh encryption-type rijndael128-cbc**
- **no ssh encryption-type rijndael192-cbc**
- **no ssh key-exchange-method**
- **no ssh key-exchange-method diffie-hellman-group14-sha1**
- **no ssh key-exchange-method diffie-hellman-group1-sha1**
- **no ssh pass-auth**
- **no ssh rsa-auth**
- **no ssh rsa-host-key**
- **no ssh rsa-user-key WORD<1-15>**
- **no ssh secure**
- **no ssh x509v3-auth enable**
- **no ssh x509v3-auth username overwrite**
- **no ssh x509v3-auth username strip-domain**
- **no ssh x509v3-auth username use-domain**
- **ssh**
- **ssh authentication-type aead-aes-128-gcm-ssh**
- **ssh authentication-type aead-aes-256-gcm-ssh**
- **ssh authentication-type hmac-sha1**
- **ssh authentication-type hmac-sha2-256**
- **ssh dsa-auth**
- **ssh dsa-host-key**
- **ssh dsa-host-key <1024-1024>**
- **ssh dsa-user-key WORD<1-15>**
- **ssh dsa-user-key WORD<1-15> size <1024-1024>**
- **ssh encryption-type 3des-cbc**
- **ssh encryption-type aead-aes-128-gcm-ssh**
- **ssh encryption-type aead-aes-256-gcm-ssh**
- **ssh encryption-type aes128-cbc**
- **ssh encryption-type aes128-ctr**
- **ssh encryption-type aes192-cbc**

- **ssh encryption-type aes192-ctr**
- **ssh encryption-type aes256-cbc**
- **ssh encryption-type aes256-ctr**
- **ssh encryption-type blowfish-cbc**
- **ssh encryption-type rijndael128-cbc**
- **ssh encryption-type rijndael192-cbc**
- **ssh key-exchange-method diffie-hellman-group14-sha1**
- **ssh key-exchange-method diffie-hellman-group1-sha1**
- **ssh max-sessions <0-8>**
- **ssh pass-auth**
- **ssh port <22, 1024..49151>**
- **ssh rsa-auth**
- **ssh rsa-host-key**
- **ssh rsa-host-key <1024-2048>**
- **ssh rsa-user-key WORD<1-15>**
- **ssh secure**
- **ssh timeout <1-120>**
- **ssh version v2only**
- **ssh x509v3-auth enable**
- **ssh x509v3-auth revocation-check-method none**
- **ssh x509v3-auth revocation-check-method ocsp**
- **ssh x509v3-auth username overwrite**
- **ssh x509v3-auth username strip-domain**
- **ssh x509v3-auth username use-domain WORD<1-254>**

Command Parameters

authentication-type [aead-aes-128-gcm-ssh] [aead-aes-256-gcm-ssh] [hmac-sha1] [hmac-sha2-256]	Specifies the authentication type.
dsa-auth	Enables or disables the DSA authentication.
dsa-host-key <1024-1024>	Generates an SSH DSA host key. The range of the host key size is 512 to 1024. The default is 1024. The range depends on your hardware.

dsa-user-key WORD<1-15> <1024-1024>]	Creates the DSA user key file. WORD<1-15> specifies the user access level. If you configured enhanced secure mode the access levels are: admin|operator|auditor|security|priv. In enhanced secure mode access level is role based. If you do not enable enhanced secure mode, the valid user access levels are:. • rwa for read-write-all • rw for read-write • ro for read-only • rwl3 for read-write for Layer 3 • rwl2 for read-write for Layer 2 • rwl1 for Layer 1 The default size is 1024 bits. The range depends on your hardware.
key-exchange-method [diffie-hellman-group1-sha1][diffie-hellman-group14-sha1]	Specifies the key-exchange type.
max-sessions <0-8>	Specifies the maximum number of SSH sessions allowed. A value from 0 to 8. Default is 4.
pass-auth	Enables password authentication.
port <22, 1024..49151>	Sets the Secure Shell (SSH) connection port. <22,1024..49151> is the TCP port number. The default is 22.
rsa-auth	Enable RSA authentication.
rsa-host-key <1024-2048>	Generates the SSH RSA host key. The range of the SSH host key size is 512 to 2048. The default is 2048.
rsa-user-key [<1024–2048>]	Generates a new SSH RSA user key.
secure	Enables Secure Shell (SSH) in secure mode and immediately disables the access services SNMP, FTP, TFTP, rlogin, and Telnet. After ssh secure is enabled, you can choose to enable individual non-secure protocols. However, after you save the configuration and restart the system, the non-secure protocol is again disabled, even though it is shown as enabled in the configuration file. After you enable ssh secure, you cannot enable non-secure protocols by disabling ssh secure.
encryption-type [3des-cbc] [aead-aes-128-gcm-ssh]	Specifies the encryption-type.

[aead-aes-256-gcm-ssh] [aes128-cbc][aes128-ctr] [aes192-cbc][aes192-ctr] [aes256-cbc][aes256-ctr] [blowfish-cbc] [rijndael128-cbc][rijndael192-cbc]	
timeout <1-120>	The Secure Shell (SSH) connection authentication timeout in seconds. Default is 60 seconds.
version <v2only>	Sets the Secure Shell (SSH) version. The default is v2only.
x509v3-auth {[enable] [revocation-check-method <none | ocsp>][username <overwrite | strip-domain | use-domain WORD<1-254>]}	Specifies the Secure Shell (SSH) X.509 V3 authentication configuration.

Default

The default is disabled.

Command Mode

Global Configuration

ssh client

Configures the SSH client parameter.

Syntax

- **default ssh client enable**
- **no ssh client enable**
- **ssh client enable**

Command Parameters

enable	Enables SSH client.

Default

Enabled

Command Mode

Global Configuration

ssh keyboard-interactive-auth

Configures the SSH server to use keyboard-interactive authentication. By default, keyboard-interactive authentication is disabled and the SSH server uses password authentication.

Syntax

- **default ssh keyboard-interactive-auth**
- **no ssh keyboard-interactive-auth**
- **ssh keyboard-interactive-auth**

Default

The default is disabled.

Command Mode

Global Configuration

ssh rekey

Configure SSH rekey parameters on the switch. SSH Rekeying is a SSHv2 feature that allows the SSH server/client to force a key-exchange between server and client while changing the encryption and integrity keys.

Syntax

- **default ssh rekey enable**
- **no ssh rekey enable**
- **ssh rekey enable**

Command Parameters

enable	Enables SSH rekey on the switch.

Default

The default is disabled.

Command Mode

Global Configuration

ssh rekey data-limit

Configures SSH rekey data limit in GB.

Syntax

- **default ssh rekey data-limit**
- **ssh rekey data-limit <1-6>**

Command Parameters

<1-6>	Specifies the SSH rekey data limit in GB.

Default

The default is 1 GB.

Command Mode

Global Configuration

ssh rekey time-interval

Sets SSH rekey time interval in hours.

Syntax

- **default ssh rekey time-interval**
- **ssh rekey time-interval <1-6>**

Command Parameters

<1-6>	Specifies the SSH rekey time interval in hours.

Default

The default is 1 hour.

Command Mode

Global Configuration

ssh sftp

SSH is enabled when SFTP is disabled.

Syntax

- **default ssh sftp**
- **no ssh sftp enable**
- **ssh sftp enable**

Command Parameters

enable	Enables or disables ssh sftp. The default is enabled.

Default

The default is enabled.

Command Mode

Global Configuration

ssl certificate

Create and install a new self-signed SSL server certificate.

Syntax

- **ssl certificate**
- **ssl certificate validity-period-in-days <30-3650>**

Command Parameters

validity-period-in-days <30-3650>	Number of days for which the certificate remains valid.

Default

The default is 365.

Command Mode

Global Configuration

ssl reset

Install current SSL server certificate.

Syntax

- **ssl reset**

Command Parameters

reset	Install current SSL server certificate; if missing, create and install a new self-signed certificate.

Default

None

Command Mode

Global Configuration

sys clipId-topology-ip

Configure the circuitless IP (CLIP) ID as the topology IP.

Syntax

- **default sys clipId-topology-ip**
- **no sys clipId-topology-ip**
- **sys clipId-topology-ip <1-256>**

Command Parameters

<1-256>	Specifies the CLIP interface ID.

Default

The default is 0.

Command Mode

Global Configuration

sys control tcp-timestamp

Enable TCP Timestamp. The Timestamp option is enabled by default. You can disable the timestamp by using the command **no sys control tcp-timestamp** to avoid the security risks associated with the TCP Timestamp option when it is enabled.

Syntax

- **default sys control tcp-timestamp**
- **no sys control tcp-timestamp**
- **sys control tcp-timestamp**

Default

The default is enabled. The system displays the following warning message when a new configuration is applied:

```
Warning: Existing TCP connections won't be affected. A config save and
reboot is required to apply this configuration for all TCP connections.
```

Command Mode

Global Configuration

sys force-msg

Use the force message control option to extend the message control feature functionality to the software and hardware log messages.

To enable the message control feature, you must specify an action, control interval, and maximum message number. After you enable the feature, the log messages, which get repeated and cross the maximum message number in the control interval, trigger the force message feature.

You can either suppress the message or send a trap notification, or both.

Syntax

- **no sys force-msg WORD<4-4>**
- **sys force-msg WORD<4-4>**

Command Parameters

WORD<4-4>	Adds a forced message control pattern. WORD<4-4> is a string of 4 characters. You can add a four-byte pattern into the force-msg table. The software and the hardware log messages that use the first four bytes matching one of the patterns in the force-msg table undergo the configured message control action. You can specify up to 32 different patterns in the force-msg table, including a wildcard pattern (****). If you specify the wildcard pattern, all messages undergo message control.

Default

None

Command Mode

Global Configuration

sys force-topology-ip-flag

Activate or disable the flag that Configure the CLIP ID as the topology IP.

Syntax

- **default sys force-topology-ip-flag**
- **default sys force-topology-ip-flag enable**
- **no sys force-topology-ip-flag**
- **no sys force-topology-ip-flag enable**
- **sys force-topology-ip-flag**
- **sys force-topology-ip-flag enable**

Default

The default is disabled.

Command Mode

Global Configuration

sys msg-control

Configure system message control to suppress duplicate error messages on the console and to determine the action to take if they occur.

Syntax

- **default sys msg-control**
- **default sys msg-control action**
- **default sys msg-control control-interval**
- **default sys msg-control max-msg-num**
- **no sys msg-control**
- **sys msg-control**
- **sys msg-control action both**
- **sys msg-control action send-trap**
- **sys msg-control action suppress-msg**
- **sys msg-control control-interval <1-30>**
- **sys msg-control max-msg-num <2-500>**

Command Parameters

action <both|send-trap| suppress-msg>	Configures the message control action. You can either suppress the message or send a trap notification, or both. The default is suppress-msg.
control-interval <1-30>	Configures the message control interval in minutes. The default control-interval is 5.
max-msg-num <2-500>	Configures the number of occurrences of a message after which the control action occurs. The default is 5 messages.

Default

None

Command Mode

Global Configuration

sys mtu

Enable support for jumbo frames on the switch.

Syntax

- **default sys mtu**
- **sys mtu <1522-9600>**

Command Parameters

<1522-9600>	Activates Jumbo frame support for the data path. The value can be 1522, 1950, or 9600 bytes. 1950 or 9600 bytes activate Jumbo frame support.

Default

The default value is 1950.

Command Mode

Global Configuration

sys name

Configure system identification to specify the name of the switch.

Syntax

- **default sys name**
- **sys name WORD<0-255>**

Command Parameters

name WORD<0-255>	Configures the system or root level prompt name for the switch. WORD<0-255> is an ASCII string from 1-255 characters (for example, LabSC7 or Closet4).

Default

The default differs depending on hardware platform.

Command Mode

Global Configuration

sys power slot

Enable power management. This command is not available on all hardware platforms.

Syntax

- **default sys power slot <1-4|1-8|SF1-SF3>**
- **no sys power slot <1-4|1-8|SF1-SF3>**
- **sys power slot <1-4|1-8|SF1-SF3>**

Command Parameters

<1-4|1-8|SF1-SF3>	Identifies the slot to supply power to.

Default

None

Command Mode

Global Configuration

sys power slot-priority

Configure the priority of slots to shut down if there isn't enough power available. This command is not available on all hardware platforms.

Syntax

- **default sys power slot-priority <3-8>**
- **sys power slot priority <3-8>**

Command Parameters

<3-8>	Identifies the slot to prioritize.

Default

None

Command Mode

Global Configuration

sys security-console

Configure the serial management ports to drop a connection that is interrupted for any reason. If you enable serial port dropping, the serial management ports drop the connection for the following reasons: modem power failure, link disconnection, and loss of the carrier.

Serial ports interrupted due to link disconnection, power failure, or other reasons force out the user and end the user session. Ending the user session ensures a maintenance port is not available with an active session that can allow unauthorized use by someone other than the authenticated user,

and prevents the physical hijacking of an active session by unplugging the connected cable and plugging in another.

Syntax

- **sys security-console**

Default

The default is disabled if enhanced secure mode is disabled. The default is enabled if enhanced secure mode is enabled.

Command Mode

Global Configuration

sys software auto-commit

Enable the auto-commit feature for software upgrades.

If you enable the auto-commit option, the system automatically commits to the new software version after the commit timer expires.

If you do not enable the auto-commit option, you must enter the software commit command before the commit timer expires to commit the new software version otherwise the system restarts automatically to the previous (committed) version.

Syntax

- **default sys software auto-commit enable**
- **no sys software auto-commit enable**
- **sys software auto-commit enable**

Default

The default is enabled.

Command Mode

Global Configuration

sys software commit-time

Configure the commit feature for software upgrades to allows maximum time to ensure that the upgrade is successful. You must enter the software commit command before the commit timer expires to commit the new software version otherwise the system restarts automatically to the previous (committed) version.

Syntax

- **default sys software commit-time**
- **sys software commit-time <10-60>**

Command Parameters

<10-60>	Specifies the commit timer in minutes.

Default

The default is 10 minutes.

Command Mode

Global Configuration

sys system-default

Reset the switch to the default passwords and configuration.

Note:

You can only access this command after you enable enhanced secure mode using the boot config flags enhancedsecure-mode command. Only the user with the administrator role can use the command. After the administrator issues the command, the administrator must reboot the switch.

Syntax

- **sys system-default**

Default

None

Command Mode

Global Configuration

sys usb disable

Disable the USB drive.

Note:

You can only access this command after you enable enhanced secure mode using the boot config flags enhancedsecure-mode command. Only the user with the administrator role can use the command. After the administrator issues the command, the administrator must reboot the switch.

Syntax

- **default sys usb disable**
- **no sys usb disable**
- **sys usb disable**

Default

None

Command Mode

Global Configuration

sys usb enable

Enable the USB drive.

Note:

You can only access this command after you enable enhanced secure mode using the boot config flags enhancedsecure-mode command. Only the user with the administrator role can use the command. After the administrator issues the command, the administrator must reboot the switch.

Syntax

- **default sys usb enable**
- **no usb enable**
- **sys usb enable**

Default

None

Command Mode

Global Configuration

syslog enable

The syslog commands enable or disable sending the logging message to remote syslog server.

Syntax

- **default syslog enable**
- **no syslog enable**
- **syslog enable**

Command Parameters

enable	Enables the sending of syslog messages on the switch.

Default

The default is disabled.

Command Mode

Global Configuration

syslog host

Configure the syslog host and related parameters for sending the logging the message.

Syntax

- **default syslog host <1-10>**
- **default syslog host <1-10> enable**
- **default syslog host <1-10> facility**
- **default syslog host <1-10> maperror**
- **default syslog host <1-10> mapfatal**
- **default syslog host <1-10> mapinfo**
- **default syslog host <1-10> mapwarning**
- **default syslog host <1-10> severity**
- **default syslog host <1-10> udp-port**
- **default syslog host <1-10>**
- **default syslog host <1-10> secure-forwarding mode**
- **default syslog host <1-10> secure-forwarding tcp-port**
- **no syslog host <1-10>**
- **no syslog host <1-10> enable**
- **no syslog host <1-10> secure-forwarding mode tls server-cert-nam**
- **syslog host <1-10>**
- **syslog host <1-10> address WORD<0-46>**
- **syslog host <1-10> enable**
- **syslog host <1-10> facility { local0 | local1 | local2 | local3 | local4 | local5 | local6 | local7 }**
- **syslog host <1-10> maperror { emergency | alert | critical | error | warning | notice | info | debug }**

- **syslog host <1-10> mapfatal { emergency | alert | critical | error | warning | notice | info | debug }**
- **syslog host <1-10> mapinfo { emergency | alert | critical | error | warning | notice | info | debug }**
- **syslog host <1-10> mapwarning { emergency | alert | critical | error | warning | notice | info | debug }**
- **syslog host <1-10> secure-forwarding mode none**
- **syslog host <1-10> secure-forwarding mode tls server-cert-name WORD<1-64>**
- **syslog host <1-10> severity { info | warning | error | fatal }**
- **syslog host <1-10> severity { info | warning | error | fatal } { info | warning | error | fatal }**
- **syslog host <1-10> severity { info | warning | error | fatal } { info | warning | error | fatal } { info | warning | error | fatal }**
- **syslog host <1-10> severity { info | warning | error | fatal } { info | warning | error | fatal } { info | warning | error | fatal } { info | warning | error | fatal }**
- **syslog host <1-10> udp-port <514-530>**
- **syslog host <1–10> secure-forwarding tcp-port <1025–49151>**

Command Parameters

address WORD<0-46>	Configures a host location for the syslog host. WORD<0-46> is the IP address of the UNIX system syslog host.
enable	Enables the syslog host.
facility {local0|local1|local2|local3|local4|local5|local6|local7}	Specifies the UNIX facility used in messages to the syslog host. {local0|local1|local2|local3|local4|local5|local6|local7} is the UNIX system syslog host facility (LOCAL0 to LOCAL7).
host	Specifies host settings.
maperror {emergency|alert|critical|error|warning|notice|info|debug}	Specifies the syslog severity to use for Error messages.
mapfatal {emergency|alert|critical|error|warning|notice|info|debug}	Specifies the syslog severity to use for Fatal messages.
mapinfo {emergency|alert|critical|error|warning|notice|info|debug}	Specifies the syslog severity level to use for Information messages.

mapwarning {emergency|alert|critical|error|warning|notice|info|debug}	Specifies the syslog severity to use for Warning messages.
secure-forwarding mode {none | tls server-certname WORD<1-64>}	Specifies the mode of secure forwarding of syslog on the host. The default mode is none, that is, tls mode is disabled by default.
secure-forwarding tcp-port <1025–49151>	Set the tcp-port for secure forwarding of syslog for host. The default tcp-port is 1025. The tcp-port 6000 cannot be used, as it is used as an internal port for Internal Spanning Tree (IST).
severity <info|warning|error|fatal>	Specifies the severity levels for which syslog messages should be sent for the specified modules.
udp-port <514-530>	Specifies the UDP port number on which to send syslog messages to the syslog host. This is the UNIX system syslog host port number (514 to 530).

Default

None

Command Mode

Global Configuration

syslog ip-header-type

Configure the syslog message IP header type.

Syntax

- **`syslog ip-header-type circuitless-ip`**
- **`syslog ip-header-type default`**

Command Parameters

circuitless-ip	Set the ip address in syslog header to circuitless-ip
default	Set the ip address in syslog header to default

Default

The default is default.

Command Mode

Global Configuration

syslog max-hosts <1-10>

Specify the maximum number of syslog hosts supported.

Syntax

- **default syslog max-hosts**
- **syslog max-hosts <1-10>**

Default

The default is 5.

Command Mode

Global Configuration

syslog root-cert

Configure the root certificate for a syslog client.

Syntax

- **no syslog root-cert install-filename <file-name>**
- **syslog root-cert install-filename <file-name>**

Command Parameters

install-filename <file-name>	Specifies the name of the root certificate to be installed on the store.

Default

None

Command Mode

Global Configuration

tacacs accounting

Determines for which applications TACACS+ collects accounting information. Use TACACS+ accounting to track the services that users access and the amount of network resources that users consume.

Syntax

- **default tacacs accounting cli**
- **no tacacs accounting cli**

- **tacacs accounting disable**
- **tacacs accounting disable cli**
- **tacacs accounting enable cli**

Command Parameters

cli	Specifies the command line as the application.
disable	Disables the accounting function for the specified application.
enable	Enables the accounting function for the specified application.

Default

None. If unassigned, TACACS+ does not perform the accounting function.

Command Mode

Global Configuration

tacacs authentication

Determines which applications TACACS+ authenticates.

Syntax

- **default tacacs authentication all**
- **default tacacs authentication cli**
- **default tacacs authentication web**
- **no tacacs authentication all**
- **no tacacs authentication cli**
- **no tacacs authentication web**
- **tacacs authentication all**
- **tacacs authentication cli**
- **tacacs authentication web**

Command Parameters

all	TACACS+ authenticates all applications.
cli	TACACS+ authenticates command line connections.
web	TACACS+ authenticates web connections.

Default

The default value is cli.

Command Mode

Global Configuration

tacacs authorization

Enables command authorization for a particular privilege level. Use this option to limit the use of certain commands to different users. To use TACACS+ authorization, you must also use TACACS+ authentication.

Syntax

- **default tacacs authorization**
- **no tacacs authorization enable**
- **no tacacs authorization level <1-6>**
- **tacacs authorization disable**
- **tacacs authorization enable**
- **tacacs authorization level <1-6>**
- **tacacs authorization level all**
- **tacacs authorization level none**

Command Parameters

disable	Disables command authorization.
enable	Enables command authorization.
level <1-6>	Enables command authorization for a specific privilege level.
level all	Enables command authorization for all privilege levels.
level none	Disables command authorization for all privilege levels.

Default

The default is disabled.

Command Mode

Global Configuration

tacacs protocol enable

Globally enables or disables TACACS+.

Syntax

- **default tacacs protocol enable**
- **no tacacs protocol enable**
- **tacacs protocol enable**

Default

The default is disabled.

Command Mode

Global Configuration

tacacs server host

Configures the entry for the primary TACACS+ server.

Syntax

- **default tacacs server {A.B.C.D}**
- **default tacacs server {A.B.C.D} port**
- **default tacacs server {A.B.C.D} single-connection**
- **default tacacs server {A.B.C.D} single-connection source source-ip-interface enable**
- **default tacacs server {A.B.C.D} source source-ip-interface enable**
- **default tacacs server {A.B.C.D} timeout**
- **default tacacs server host {A.B.C.D} source {A.B.C.D}**
- **no tacacs server {A.B.C.D}**
- **no tacacs server {A.B.C.D} single-connection**
- **no tacacs server {A.B.C.D} source source-ip-interface enable**
- **tacacs server host {A.B.C.D}**
- **tacacs server host {A.B.C.D} key WORD<0-128>**
- **tacacs server host {A.B.C.D} port <1-65535>**
- **tacacs server host {A.B.C.D} port <1-65535> source {A.B.C.D} source-ip-interface enable**
- **tacacs server host {A.B.C.D} single-connection**
- **tacacs server host {A.B.C.D} source {A.B.C.D}**
- **tacacs server host {A.B.C.D} source {A.B.C.D} source-ip-interface enable**
- **tacacs server host {A.B.C.D} timeout <10-30>**

Command Parameters

{A.B.C.D}	Specifies the IP address of the primary TACACS+ server.
Key WORD<0-128>	Configures the secret key to share with this TACACS+ server. If the key length is zero, that indicates no encryption is used.
port <1-65535>	Configures the TCP port on which the client establishes a connection to the server. A value of 0 indicates that the system specified default value is used. The default is 49.
single-connection	Specifies if the TCP connection between the device and the TACACS+ server is a single connection. If you do not enable the single-connection parameter, the system uses the default connection type that opens and closes a connection for each communication session.
Source {A.B.C.D}	Configures the IP address of the interface to use with this server. If you do not configure an address, the system uses 0.0.0.0 as the default.
source-ip-interface enable	Enables the source address. You must enable this parameter if you configure a valid source IP address. The default is disabled.
timeout <10-30>	Configures the maximum time, in seconds, to wait for this TACACS+ server to reply. The default is 10 seconds.

Default

None

Command Mode

Global Configuration

tacacs server secondary-host

Configures the entry for the secondary TACACS+ server.

Syntax

- **default tacacs server {A.B.C.D}**
- **default tacacs server {A.B.C.D} port**
- **default tacacs server {A.B.C.D} single-connection**
- **default tacacs server {A.B.C.D} single-connection source source-ip-interface enable**
- **default tacacs server {A.B.C.D} source source-ip-interface enable**
- **default tacacs server {A.B.C.D} timeout**
- **no tacacs server {A.B.C.D}**

- **no tacacs server {A.B.C.D} single-connection**
- **no tacacs server {A.B.C.D} source source-ip-interface enable**
- **tacacs server secondary-host {A.B.C.D}**
- **tacacs server secondary-host {A.B.C.D} key WORD<0-128>**
- **tacacs server secondary-host {A.B.C.D} port <1-65535>**
- **tacacs server secondary-host {A.B.C.D} single-connection**
- **tacacs server secondary-host {A.B.C.D} source {A.B.C.D} source-ip-interface enable**
- **tacacs server secondary-host {A.B.C.D} timeout <10-30>**

Command Parameters

{A.B.C.D}	Specifies the IP address of the secondary TACACS+ server.
Key WORD<0-128>	Configures the secret key to share with this TACACS+ server. If the key length is zero, that indicates no encryption is used.
port <1-65535>	Configures the TCP port on which the client establishes a connection to the server. A value of 0 indicates that the system specified default value is used. The default is 49.
single-connection	Specifies if the TCP connection between the device and the TACACS+ server is a single conection. If you do not enable the single-connection parameter, the system uses the default connection type that opens and closes a connection for each communication session.
Source {A.B.C.D}	Configures the IP address of the interface to use with this server. If you do not configure an address, the system uses 0.0.0.0 as the default.
Source-ip-interface enable	Enables the source address. You must enable this parameter if you configure a valid source IP address. The default is disabled.
Timeout <10-30>	Configures the maximum time, in seconds, to wait for this TACACS+ server to reply. The default is 10 seconds.

Default

None

Command Mode

Global Configuration

tacacs switch

Changes the privilege level to determine what commands a user can access through TACACS+ server authorization. You must configure separate profiles in the TACACS+ server configuration file for switch level.

Syntax

- **tacacs switch back**
- **tacacs switch level**
- **tacacs switch level <1-15>**

Command Parameters

back	Returns the privilege level to the original level.
level <1-15>	Selects a specific privilege level. The switch supports levels 1 through 6: • (1) read-only • (2) Layer 1 read-write • (3) Layer 2 read-write • (4) Layer 3 read-write • (5) read-write • (6) read-write-all • and level 15.

Default

None

Command Mode

Global Configuration

telnet-access sessions

Configures the number of supported inbound Telnet sessions.

Syntax

- **default telnet-access sessions**
- **telnet-access sessions <0-8>**

Command Parameters

<0-8>	Configures the allowable number of inbound Telnet sessions.

Default

The default is 8.

Command Mode

Global Configuration

udp checksum

Enable the User Datagram Protocol (UDP) checksum calculation on the switch.

Syntax

- **default udp checksum**
- **no udp checksum**
- **udp checksum**

Default

The default is enabled.

Command Mode

Global Configuration

username

Change user profile.

Syntax

- **default username WORD<1-20> level l1**
- **default username WORD<1-20> level l2**
- **default username WORD<1-20> level l3**
- **default username WORD<1-20> level ro**
- **default username WORD<1-20> level rw**
- **default username WORD<1-20> level rwa**
- **no username WORD<1-20> enable**
- **username add WORD<1-20> level ro enable**
- **username add WORD<1-20> level rw enable**
- **username add WORD<1-20> level rwa enable**
- **username WORD<1-20> level l1**

- **username WORD<1-20> level l2**
- **username WORD<1-20> level l3**
- **username WORD<1-20> level ro**
- **username WORD<1-20> level rw**
- **username WORD<1-20> level rwa**

Command Parameters

<WORD>	Username.
add	Create a user.
level	The level assigned to the new user.
ro	Read-only user name reset to default.
rw	Read-write user name reset to default.
rwa	Change read write all enable password.

Default

None

Command Mode

Global Configuration

virtual-ist

Virtual interswitch trunk (VIST) improves upon the Layer 2 and Layer 3 resiliency by using a virtualized IST channel through the SPBM cloud.

Syntax

- **default virtual-ist peer-ip**
- **no virtual-ist peer-ip**
- **virtual-ist peer-ip {A.B.C.D} vlan <1-4059>**

Command Parameters

peer-ip {A.B.C.D}	Specifies the peer IP address—the IP address of the IST VLAN on the other aggregation switch.
vlan *<1-4059>*	Specifies the VLAN ID in the range of 1 to 4059. By default, VLAN IDs 1 to 4059 are configurable and the system reserves VLAN IDs 4060 to 4094 for internal use. On switches that support the vrf-scaling and spbm-config-mode boot configuration

flags, if you enable these flags, the system also reserves VLAN IDs 3500 to 3998. VLAN ID 1 is the default VLAN and you cannot create or delete VLAN ID 1.

Default

None

Command Mode

Global Configuration

virtual-service (globally)

Configures virtual service on the switch.

Syntax

- **default virtual-service WORD<1-80> mem-size**
- **default virtual-service WORD<1-80> num-cores**
- **no virtual-service WORD<1-80> disk WORD<1-32>**
- **no virtual-service WORD<1-80> enable**
- **no virtual-service WORD<1-80> vport WORD<1-32> connect-type**
- **no virtual-service WORD<1-80> vport WORD<1-32> vlan <1-4096>**
- **virtual-service WORD<1-80> disk WORD<1-32> size <1-30>**
- **virtual-service WORD<1-80> enable**
- **virtual-service WORD<1-80> mem-size <1-50000>**
- **virtual-service WORD<1-80> num-cores <1-6>**
- **virtual-service WORD<1-80> vport WORD<1-32>**
- **virtual-service WORD<1-80> vport WORD<1-32> connect-type {ovs | sriov | vtd}**
- **virtual-service WORD<1-80> vport WORD<1-32> vlan <1-4096>**

Command Parameters

connect-type {ovs | sriov | vtd}	Specifies the connection type for the virtual port created. The default is VT-d. The switch supports the following maximums for virtual ports: • Open vSwitch (OVS) - 16 • Single Root Input/Output Virtualization (SR-IOV) - 16 • Virtualization Technology for Directed Input/Output (VT-d) - 1
disk WORD<1-32>	Specifies the disk assigned to the virtual service.
enable	Enables the virtual service.

mem-size <1-50000>	Specifies the memory size in Megabytes assigned to the virtual service. The default value is 1024 Megabytes.
num-cores <1-6>	Specifies the number of cores assigned to the virtual service. The default value is 1.
size <1-30>	Specifies the size of the disk in Gigabytes.
vlan <1-4096>	Specifies the VLAN ID used by the virtual port.
vport WORD<1-32>	Specifies the name of the virtual port.
WORD<1-80>	Specifies the virtual service name.

Default

None

Command Mode

Global Configuration

vlacp enable

Enable or disable the Virtual Link Aggregation Control Protocol (VLACP) globally to reset all port level settings on the chassis.

Syntax

- **`default vlacp enable`**
- **`default vlacp enable`**
- **`no vlacp enable`**
- **`vlacp enable`**

Command Parameters

enable	Enables the Virtual Link Aggregation Control Protocol (VLACP) globallly.

Default

None

Command Mode

Global Configuration

vlan action

Perform a general VLAN action to initiate a specific function on a VLAN, such as clearing learned MAC addresses or ARP entries from the forwarding database.

Syntax

- **vlan action <1-4059> { none | flushMacFdb | flushArp | flushIp | flushDynMemb | triggerRipUpdate | all }**

Command Parameters

all	Sets action to all.
flushArp	Flush ARP tables for a VLAN.
flushDynMemb	Flush dynamic port members from the active port-members list on a policy-based VLAN. This command also removes the MAC addressess learned on those ports for the VLAN.
flushIp	Flush IP Routing tables.
flushMacFdb	Flush the MAC FDB.
none	Sets action to none.
triggerRipUpdate	Sets action to triggerRipUpdate.

Default

None

Command Mode

Global Configuration

vlan agetime

Configure the agetime for dynamic VLAN membership.

Syntax

- **default vlan agetime <2-4059>**
- **vlan agetime <2-4059> <0-1000000>**

Command Parameters

<0-1000000>	Specifies the agetime, in seconds.
<2-4059>	Specifies the VLAN ID in the range of 2 to 4059. VLAN ID 1 is the default VLAN and you cannot create or delete VLAN ID 1. By default, the system reserves VLAN

IDs 4060 to 4094 for internal use. On switches that support the vrf-scaling and spbm-config-mode boot configuration flags, if you enable these flags, the system also reserves VLAN IDs 3500 to 3998.

Default

The default is 600 seconds.

Command Mode

Global Configuration

vlan create

Create a VLAN by port, protocol, or SPBM. Optionally, you can choose to assign the VLAN a name and color. VLANs 4060-4094 are used internally. Create a VLAN with a value between 2 and 4059.

Syntax

- **vlan create <2-4059> name WORD<0-64> type port-mstprstp <0-63>**
- **vlan create <2-4059> name WORD<0-64> type port-mstprstp <0-63> color <0-32>**
- **vlan create <2-4059> name WORD<0-64> type protocol-mstprstp <0-63> ipv6**
- **vlan create <2-4059> name WORD<0-64> type protocol-mstprstp <0-63> ipv6 color <0-32>**
- **vlan create <2-4059> name WORD<0-64> type spbm-bvlan**
- **vlan create <2-4059> name WORD<0-64> type spbm-bvlan color <0-32>**
- **vlan create <2-4059> type port-mstprstp <0-63>**
- **vlan create <2-4059> type port-mstprstp <0-63> color <0-32>**
- **vlan create <2-4059> type protocol-mstprstp <0-63> ipv6**
- **vlan create <2-4059> type protocol-mstprstp <0-63> ipv6 color <0-32>**
- **vlan create <2-4059> type spbm-bvlan**
- **vlan create <2-4059> type spbm-bvlan color <0-32>**
- **vlan create <2-4059> name WORD<0-64> type pvlan-mstprstp <0-63> secondary <2-4059>**
- **vlan create <2-4059> name WORD<0-64> type pvlan-mstprstp <0-63> secondary <2-4059> color <0-32>**
- **vlan create <2-4059> type pvlan-mstprstp <0-63> secondary <2-4059> color <0-32>**

Command Parameters

<2-4059>	Specifies the VLAN ID in the range of 2 to 4059. VLAN ID 1 is the default VLAN and you cannot create or delete VLAN ID 1. By default, the system reserves VLAN IDs 4060 to 4094 for internal use. On switches that support the vrf-scaling and spbm-config-mode boot configuration flags, if you enable these flags, the system also reserves VLAN IDs 3500 to 3998.
color <0-32>	Specifies the color of the VLAN.
name WORD<0-64>	Specifies the VLAN name in the range of 0-64. This parameter is optional. **Note:** Do not use the name Mgmt when you specify a name for the VLAN that you create. The switch creates a management VLAN at boot up with the assigned name Mgmt. The show command does not show the management VLAN.
port-mstprstp <0-63>	Specifies the VLAN type as created by port. <0-63> specifies the instance ID.
protocol-mstprstp <0-63>	Specifies the VLAN type as created by protocol. <0-63> specifies the instance ID.
pvlan-mstprstp <0-63>	Specifies the VLAN type as private for use in Etree deployments. <0-63> specifies the instance ID.
spbm-bvlan	Specifies the VLAN type as the backbone VLAN (B-VLAN) for Shortest Path Bridging MAC (SPBM).
type ipsubnet-mstprstp <0-63> <A.B.C.D/X> [color <0-32]	Creates a VLAN by IP subnet: • <0-63> is the STP instance ID in the range of 0-63 • A.B.C.D/X is the subnet address or mask {a.b.c.d/x | a.b.c.d/x.x.x.x} • color <0-32> is the color of the VLAN in the range of 0 to 32
type port-mstprstp <0-63> [color <0-32>]	Creates a VLAN by port: 0-63 is the STP instance ID from 0 to 63. color <0-32> is the color of the VLAN in the range of 0 to 32.
type protocol-mstprstp <0-63> {appleTalk | decLat | decOther | ip | ipv6 | ipx802dot2 | ipx802dot3 | ipxEthernet2 | ipxsnap | netBios | PPPoE | rarp | sna802dot2 |	Creates a VLAN by protocol: • 0-63 is the STP instance ID • appleTalk is the apple talk protocol • decLat is the declat protocol • decOther is the decother protocol • ip is the Ip version 4 protocol • ipx802dot2 specifies the Novell Internetwork Packet Exchange (IPX) on IEEE 802.2 frames

snaEthernet2 | vines | xns} [color <0-32>]	• ipx802dot3 specifies the Novell Internetwork Packet Exchange (IPX) on Ethernet 802.3 frames • ipxEthernet2 specifies the Novell IPX on Ethernet type 2 frames • ipxsnap specifies the Novell IPX on Ethernet Standard Network Access Protocol (SNAP) frames • netbios is the Netbios protocol • PPPoE is the Point-to-Point Protocol Over Ethernet • rarp is the Rarp protocol • sna802dot2 is the Sna802dot2 protocol • snaethernet2 is the Snaethernet2 protocol • vines is the Vines protocol • xns is the Xns protocol • color <0-32> is the color of the VLAN in the range of 0 to 32
type protocol-mstprstp <0-63> userDefined {0x0000 | <decimal value>} [color] <0-32>] [encap {ethernet-ii | llc | snap}]	Creates a VLAN using a user defined protocol. • <0-63> is the STP instance ID in the range of 0-63 • {0x0000|<decimal value>} is the protocol ID in hexadecimal or decimal value • color <0-32> is the color of the VLAN in the range of 0 to 32 • encap specifies the frame encapsulation header type
type pvlan-mstprstp <0-63> secondary <2-4059> color <0-32>	Creates a Private VLAN by port for a secondary VLAN ID. VLAN ID 1 is the default VLAN and you cannot create or delete VLAN ID 1. By default, the system reserves VLAN IDs 4060 to 4094 for internal use. If you enable VRF scaling and SPBM mode, the system also reserves VLAN IDs 3500 to 3998.
type srcmac-mstprstp <0-63> [color<0-32>]	Creates a VLAN by source MAC address: 0-63 is the STP instance ID in the range of 0-63. color <0-32> is the color of the VLAN in the range of 0 to 32.

Default

None

Command Mode

Global Configuration

vlan delete

Delete a VLAN.

Syntax

- **no vlan <2-4059>**
- **vlan delete <2-4059>**

Command Parameters

<2-4059>	Specifies the VLAN ID in the range of 2 to 4059. VLAN ID 1 is the default VLAN and you cannot create or delete VLAN ID 1. By default, the system reserves VLAN IDs 4060 to 4094 for internal use. On switches that support the vrf-scaling and spbm-config-mode boot configuration flags, if you enable these flags, the system also reserves VLAN IDs 3500 to 3998.

Default

None

Command Mode

Global Configuration

vlan i-sid

Map a customer VLAN (C-VLAN) to a service instance identifier to create a Layer 2 VSN. The C-VLAN cannot be a backbone VLAN (B-VLAN).

Syntax

- **default vlan i-sid <1-4059>**
- **no vlan i-sid <1-4059>**
- **vlan i-sid <1-4059> <0-16777215>**

Command Parameters

<0-16777215>	Specifies the service instance identifier (I-SID). You cannot use I-SID 0x00ffffff. The system reserves this I-SID to advertise the virtual BMAC in an SMLT dual-homing environment.
<1-4059>	Specifies the VLAN ID in the range of 1 to 4059. By default, VLAN IDs 1 to 4059 are configurable and the system reserves VLAN IDs 4060 to 4094 for internal use. On switches that support the vrf-scaling and spbm-config-mode boot configuration flags, if you enable these flags, the system also reserves VLAN IDs 3500 to 3998. VLAN ID 1 is the default VLAN and you cannot create or delete VLAN ID 1.

Default

The default I-SID is 0.

Command Mode

Global Configuration

vlan mac-address-entry

Modify or flush the entries in the forwarding database (FDB).

Syntax

- **vlan mac-address-entry <1-4059> flush**
- **vlan mac-address-entry <1-4059> sync**

Command Parameters

<1-4059>	Specifies the VLAN ID in the range of 1 to 4059. By default, VLAN IDs 1 to 4059 are configurable and the system reserves VLAN IDs 4060 to 4094 for internal use. On switches that support the vrf-scaling and spbm-config-mode boot configuration flags, if you enable these flags, the system also reserves VLAN IDs 3500 to 3998. VLAN ID 1 is the default VLAN and you cannot create or delete VLAN ID 1.
flush	Flushes the FDB.
sync	Synchronizes the switch forwarding database with the forwarding database of the other aggregation switch.

Default

None

Command Mode

Global Configuration

vlan mac-address-static

Configure the static members of a VLAN to set the VLAN static member parameters.

Syntax

- **no vlan mac-address-static <1-4059> <0x00:0x00:0x00:0x00:0x00:0x00>**
- **vlan mac-address-static <1-4059> <0x00:0x00:0x00:0x00:0x00:0x00> {slot/port[/sub-port][-slot/port[/sub-port]][,...]}**

Command Parameters

{slot/port[/sub-port] [-slot/port[/sub-port]] [,...]}	Identifies the slot and port in one of the following formats: a single slot and port (slot/port), a range of slots and ports (slot/port-slot/port), or a series of slots and ports (slot/port,slot/port,slot/port). If your platform supports channelization and the port is channelized, you must also specify the sub-port in the format slot/port/sub-port.

<0x00:0x00:0x00:0x00:0x00:0x00>	Adds a static member to a VLAN bridge:
<1-4059>	Specifies the VLAN ID in the range of 1 to 4059. By default, VLAN IDs 1 to 4059 are configurable and the system reserves VLAN IDs 4060 to 4094 for internal use. On switches that support the vrf-scaling and spbm-config-mode boot configuration flags, if you enable these flags, the system also reserves VLAN IDs 3500 to 3998. VLAN ID 1 is the default VLAN and you cannot create or delete VLAN ID 1.

Default

None

Command Mode

Global Configuration

vlan members

Add ports to a VLAN.

Syntax

- **vlan members <1-4059> {slot/port[/sub-port][-slot/port[/sub-port]][,...]}**
- **vlan members <1-4059> {slot/port[/sub-port][-slot/port[/sub-port]][,...]} { portmember | static | notallowed }**
- **vlan members add <1-4059> {slot/port[/sub-port][-slot/port[/sub-port]][,...]}**
- **vlan members add <1-4059> {slot/port[/sub-port][-slot/port[/sub-port]][,...]} { portmember | static | notallowed }**
- **vlan members remove <1-4059> {slot/port[/sub-port][-slot/port[/sub-port]][,...]}**
- **vlan members remove <1-4059> {slot/port[/sub-port][-slot/port[/sub-port]][,...]} { portmember | static | notallowed }**

Command Parameters

{slot/port[/sub-port] [-slot/port[/sub-port]] [,...]}	Identifies the slot and port in one of the following formats: a single slot and port (slot/port), a range of slots and ports (slot/port-slot/port), or a series of slots and ports (slot/port,slot/port,slot/port). If your platform supports channelization and the port is channelized, you must also specify the sub-port in the format slot/port/sub-port.
<1-4059>	Specifies the VLAN ID in the range of 1 to 4059. By default, VLAN IDs 1 to 4059 are configurable and the system reserves VLAN IDs 4060 to 4094 for

internal use. On switches that support the vrf-scaling and spbm-config-mode boot configuration flags, if you enable these flags, the system also reserves VLAN IDs 3500 to 3998. VLAN ID 1 is the default VLAN and you cannot create or delete VLAN ID 1.

notallowed	Selects the port type to not-allowed.
portmember	Select the port type to port member.
static	Selects the port type to static.

Default

None

Command Mode

Global Configuration

vlan mlt

Add an MLT to a VLAN.

Syntax

- **vlan mlt <1-4059> <1-512>**

Command Parameters

<1-4059>	Specifies the VLAN ID in the range of 1 to 4059. By default, VLAN IDs 1 to 4059 are configurable and the system reserves VLAN IDs 4060 to 4094 for internal use. On switches that support the vrf-scaling and spbm-config-mode boot configuration flags, if you enable these flags, the system also reserves VLAN IDs 3500 to 3998. VLAN ID 1 is the default VLAN and you cannot create or delete VLAN ID 1.
<1-512>	Specifies the MLT ID.

Default

None

Command Mode

Global Configuration

vlan name

Change the name of a VLAN.

Syntax

- **vlan name <2-4059> WORD<0-64>**

Command Parameters

<2-4059>	Specifies the VLAN ID in the range of 2 to 4059. VLAN ID 1 is the default VLAN and you cannot create or delete VLAN ID 1. By default, the system reserves VLAN IDs 4060 to 4094 for internal use. On switches that support the vrf-scaling and spbm-config-mode boot configuration flags, if you enable these flags, the system also reserves VLAN IDs 3500 to 3998.
<LINE>	New name for VLAN

Default

None

Command Mode

Global Configuration

vlan nodal-mep

Add nodal Maintenance Endpoints (MEPs) to the VLAN. The Nodal B-VLAN MEPs created on the CP and function as if they are connected to the virtual interface of the given B-VLAN. Because of this, they are supported for both port and MLT based B-VLANs. To support this behavior, a MAC entry is added to the forwarding database (FDB) and a new CFM data path table containing the B-VLAN and MP level are added to direct CFM frames to the CP as required.

Syntax

- **no vlan nodal-mep <1-4059> WORD<0-22> WORD<0-22> <1-8191>**
- **vlan nodal-mep <1-4059> WORD<0-22> WORD<0-22> <1-8191>**

Command Parameters

<1-4059>	Specifies the VLAN ID in the range of 1 to 4059. By default, VLAN IDs 1 to 4059 are configurable and the system reserves VLAN IDs 4060 to 4094 for internal use. On switches that support the vrf-scaling and spbm-config-mode boot configuration flags, if you enable these flags, the system also reserves VLAN IDs 3500 to 3998. VLAN ID 1 is the default VLAN and you cannot create or delete VLAN ID 1.
<1-8191>	Specifies the nodal Maintenance Endpoints (MEPs) to add to the VLAN.
WORD<0-22> **WORD<0-22>**	The first parameter, specifies the Maintenance-Domain (MD) name. The second parameter, specifies the Maintenance-Association (MA) name.

Default

None

Command Mode

Global Configuration

vlan nodal-mip-level

Add a nodal Maintenance Intermediate Point level to the VLAN. The Nodal MIP is associated with a B-VLAN. VLAN and level are sufficient to specify the Nodal MIP entity. The Nodal MIP MAC address is the SPBM system ID for the node on which it resides. If the fastpath sends a message to the CP, the MIP responds if it is not the target and the MEP responds if it is the target.

Syntax

- **no vlan nodal-mip-level <1-4059> WORD<0-15>**
- **vlan nodal-mip-level <1-4059> WORD<0-15>**

Command Parameters

<1-4059>	Specifies the VLAN ID in the range of 1 to 4059. By default, VLAN IDs 1 to 4059 are configurable and the system reserves VLAN IDs 4060 to 4094 for internal use. On switches that support the vrf-scaling and spbm-config-mode boot configuration flags, if you enable these flags, the system also reserves VLAN IDs 3500 to 3998. VLAN ID 1 is the default VLAN and you cannot create or delete VLAN ID 1.
WORD<0-15>	Adds the nodal Maintenance Intermediate Point (MIP) level.

Default

None

Command Mode

Global Configuration

vlan ports

Modify VLAN port settings.

Syntax

- **vlan ports {slot/port[/sub-port][-slot/port[/sub-port]][,...]} tagging tagAll**
- **vlan ports {slot/port[/sub-port][-slot/port[/sub-port]][,...]} tagging untagAll**

Command Parameters

{slot/port[/sub-port] [-slot/port[/sub-port]] [,...]}	Identifies the slot and port in one of the following formats: a single slot and port (slot/port), a range of slots and ports (slot/port-slot/port), or a series of slots and ports (slot/port,slot/port,slot/port). If your platform supports channelization and the port is channelized, you must also specify the sub-port in the format slot/port/sub-port.
<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
name <LINE>	Set VLAN port name
priority <0-7>	Set VLAN port priority
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
untagAll	Disable tagging on this port
untagPvidOnly	Disable tagging of packets matching the Pv

Default

None

Command Mode

Global Configuration

vlan rmon

Enable RMON on this VLAN.

Syntax

- **default vlan rmon <1-4059>**
- **no vlan rmon <1-4059>**
- **vlan rmon <1-4059>**

Command Parameters

<1-4059>	Specifies the VLAN ID in the range of 1 to 4059. By default, VLAN IDs 1 to 4059 are configurable and the system reserves VLAN IDs 4060 to 4094 for internal use. On switches that support the vrf-scaling and spbm-config-mode boot configuration flags, if you enable these flags, the system also reserves VLAN IDs 3500 to 3998. VLAN ID 1 is the default VLAN and you cannot create or delete VLAN ID 1.

Default

The default is disabled.

Command Mode

Global Configuration

vlan srcmac

Add MAC address for a VLAN.

Syntax

- **default vlan srcmac <2-4059> 0x00:0x00:0x00:0x00:0x00:0x00**
- **no vlan srcmac <2-4059> 0x00:0x00:0x00:0x00:0x00:0x00**
- **vlan srcmac <2-4059> 0x00:0x00:0x00:0x00:0x00:0x00**

Command Parameters

<0x00:0x00:0x00:0x00:0x00:0x00>	Specifies the source MAC address.
<0-4059>	Specifies the VLAN ID in the range of 2 to 4059. VLAN ID 1 is the default VLAN and you cannot create or delete VLAN ID 1. By default, the system reserves VLAN IDs 4060 to 4094 for internal use. On switches that support the vrf-scaling and spbm-config-mode boot configuration flags, if you enable these flags, the system also reserves VLAN IDs 3500 to 3998.

Default

None

Command Mode

Global Configuration

vlan static-mcastmac

Add VLAN static multicast MAC entries.

Syntax

- **default vlan static-mcastmac <1-4059> [0x00:0x00:0x00:0x00:0x00:0x00] [mlt WORD<1-256>]**
- **default vlan static-mcastmac <1-4059> [0x00:0x00:0x00:0x00:0x00:0x00] [mlt WORD<1-256>]**
- **default vlan static-mcastmac <1-4059> ports{slot/port[/sub-port][-slot/port[/sub-port]][,...]} [0x00:0x00:0x00:0x00:0x00:0x00]**
- **no vlan static-mcastmac <1-4059> 0x00:0x00:0x00:0x00:0x00:0x00**
- **no vlan static-mcastmac <1-4059> ports {slot/port[/sub-port][-slot/port[/sub-port]][,...]} [0x00:0x00:0x00:0x00:0x00:0x00]**
- **vlan static-mcastmac <1-4059> ports {slot/port[/sub-port][-slot/port[/sub-port]][,...]} [0x00:0x00:0x00:0x00:0x00:0x00]**
- **vlan static-mcastmac <1-4059>[0x00:0x00:0x00:0x00:0x00:0x00][{slot/port[/sub-port][-slot/port[/sub-port]][,...]}] [mlt WORD<1-256>]**

Command Parameters

{slot/port [-slot/port] [,...]}	Identifies the slot and port in one of the following formats: a single slot and port (slot/port), a range of slots and ports (slot/port-slot/port), or a series of slots and ports (slot/port,slot/port,slot/port). If your platform supports channelization and the port is channelized, you must also specify the sub-port in the format slot/port/sub-port.
<1-256>	Specifies the MLT ID.
<1-4059>	Identifies the slot and port in one of the following formats: a single slot and port (slot/port), a range of slots and ports (slot/port-slot/port), or a series of slots and ports (slot/port,slot/port,slot/port). If your platform supports channelization and the port is channelized, you must also specify the sub-port in the format slot/port/sub-port.
0x00:0x00:0x00:0x00:0x00:0x00	Specifies the MAC address.

Default

None

Command Mode

Global Configuration

vnid

Create a VNID instance.

Syntax

- `no vnid <1–16777215> i-sid <1–16777215>`
- `vnid <1–16777215> i-sid <1–16777215>`

Command Parameters

<1–16777215> i-sid <1–16777215>	Uses this VNID and I-SID information to create a VNID instance and enter VXLAN Configuration Mode. A VNID must not have the same value as an ISID.

Note:

The command prompt changes to #vxlan to indicate that you are now in VXLAN Configuration mode for the VNID specified in vnid <1–16777215>.

Default

None

Command Mode

Global Configuration

vnid mac-address-entry

Flush all the learned MAC addresses from the forwarding database of the selected VNID.

Syntax

- `vnid mac-address-entry <1–16777215> flush`

Command Parameters

<1–16777215> flush	Flush all the learned MAC addresses from the forwarding database of the selected VNID.

Default

None

Command Mode

Global Configuration

vtep (configuration)

Configure the remote VTEP IP address.

Note:

The remote VTEP IP address cannot be a local, broadcast, or multicast IP address.

Syntax

- `no vtep <1–500> ip <A.B.C.D> [name WORD<1–64>]`
- `vtep <1–500> ip <A.B.C.D> [name WORD<1–64>]`

Command Parameters

<1–500> ip <A.B.C.D> [name WORD<1–64>]	Specifies an index value and an IP address that uniquely identifies this remote VTEP. Optionally, you can assign a specific name to this tunnel. By default, the switch assigns a name in this format: VTEP-<#ID>-<IP address>

Default

None

Command Mode

Global Configuration

vtep source-ip

Configure the VTEP source IP address.

Syntax

- `no vtep source-ip <A.B.C.D> [vrf WORD<1-16>]`
- `vtep source-ip <A.B.C.D> [vrf WORD<1-16>]`

Command Parameters

<A.B.C.D> [vrf WORD<1-16>]	Specifies the VXLAN tunnel end point (VTEP) source IP address, which can be on the GRT or a VRF.

Default

None

Command Mode

Global Configuration

web-server

Enable the Web management interface to provide management access to the switch using a Web browser. Configure the TFTP server location of the Help files for the Web interface.

Syntax

- **default web-server**
- **default web-server def-display-rows**
- **default web-server enable**
- **default web-server http-port**
- **default web-server https-port**
- **default web-server inactivity-timeout**
- **default web-server password min-password-len**
- **default web-server secure-only**
- **default web-server tls-min-ver**
- **no web-server enable**
- **no web-server read-only-user enable**
- **no web-server secure-only**
- **web-server def-display-rows <10-100>**
- **web-server enable**
- **web-server help-tftp WORD<0-256>**
- **web-server http-port <80-49151>**
- **web-server https-port <443-49151>**
- **web-server inactivity-timeout <30-65535>**
- **web-server password min-password-len <1-32>**
- **web-server password ro WORD<1-20> WORD<1-32>**
- **web-server password rw WORD<1-20> WORD<1-32>**
- **web-server password rwa WORD<1-20> WORD<1-32>**
- **web-server secure-only**
- **web-server tls-min-ver tlsv10**
- **web-server tls-min-ver tlsv11**
- **web-server tls-min-ver tlsv12**

Command Parameters

def-display-rows <10-100>	Configures the web server default display row width. The default is 30.
enable	Enables the web interface. You must enable the web interface before you can connect to the system using Enterprise Device Manager (EDM).
help-tftp WORD<0-256>	Specifies the path to the TFTP server that stores the HTML Help files for the Web server. WORD<0-256> is a string of 0-256 characters. Specifies the file name in the following format: a.b.c.d:/
http-port <80-49151>	Configures the web server HTTP port. The default is 80. To select another port for HTTP, you can discover the ports that TCP already use. Use the show ip tcp connections command to list the ports already in use, and then select a port that does not appear in the command output.
https-port <443-49151>	Specifies the HTTPS port of the web server. You can select a value of 443 or 1024 to 49151. The default is 443. To select another port for HTTPS, you can discover the ports that TCP already use. Use the show ip tcp connections command to list the ports already in use, and then select a port that does not appear in the command output.
inactivity-timeout <30-65535>	Changes the web-server login session inactivity timeout. The default is 900 seconds (15 minutes)
password {ro|rw|rwa} WORD<1-20> WORD<1-32>	Specifies the username and the password for the access level. The access level can be read-only, read-write access, or read-write-all.
password min-password-len <1-32>	Configures the minimum password length. By default, the minimum password length is 8 characters.
secure-only	Enables secure-only access to the web server. The default value for the secure-only option is enabled. By default the web server is configured with the secure-only option, which requires you to use https to access EDM. To access EDM using http, you must disable the secure-only option, by using: no web-server secure-only. The default is enabled.
tls-min-ver <tlsv10|tlsv11|tlsv12>	Configures the minimum version of the TLS protocol supported by the web-server. The default is tlsv12.

Default

The Web server is disabled, by default.

Command Mode

Global Configuration

Chapter 10: IS-IS Router Configuration

accept (for the GRT)

Configure an Intermediate-System-to-Intermediate-System (IS-IS) accept policy instance to apply to all routes from all Backbone Edge Bridges (BEBs) for the Global Routing Table (GRT).

Syntax

- **accept backbone-route-map WORD<1-64>**
- **accept i-sid <1-16777215>**
- **accept i-sid <1-16777215> backbone-route-map WORD<1-64>**
- **accept i-sid <1-16777215> enable**
- **accept i-sid <1-16777215> route-map WORD<1-64>**
- **accept isid-list WORD<1-32>**
- **accept isid-list WORD<1-32> backbone-route-map WORD<1-64>**
- **accept isid-list WORD<1-32> enable**
- **accept isid-list WORD<1-32> route-map WORD<1-64>**
- **accept route-map WORD<1-64>**
- **accept route-map WORD<1-64> backbone-route-map WORD <1-64>**
- **no accept backbone-route-map**
- **no accept i-sid <1-16777215>**
- **no accept i-sid <1-16777215> backbone-route-map**
- **no accept i-sid <1-16777215> enable**
- **no accept i-sid <1-16777215> route-map**
- **no accept isid-list WORD<1-32>**
- **no accept isid-list WORD<1-32> backbone-route-map**
- **no accept isid-list WORD<1-32> enable**
- **no accept isid-list WORD<1-32> route-map**
- **no accept route-map**

Command Parameters

backbone-route-map WORD<1-64>	Configures the backbone-route-map for DVR routes.
enable	Enables an IS-IS accept policy.
i-sid <1-16777215>	Specifies a service instance identifier (I-SID) number that represents a local or remote Layer 3 VSN for the IS-IS accept policy.
isid-list WORD <1-32>	Specifies a name for a list of I-SID numbers that represent local or remote Layer 3 VSN for the IS-IS accept policy.
route-map WORD<1-64>	Configures the IS-IS route policy by name.

Default

None

Command Mode

IS-IS Router Configuration

accept adv-rtr (for the GRT)

Use an IS-IS accept policy instance to apply to a specific advertising advertising Backbone Edge Bridge (BEB) for the Global Routing Table (GRT).

Syntax

- **accept adv-rtr <x.xx.xx>**
- **accept adv-rtr <x.xx.xx> backbone-route-map WORD<1-64>**
- **accept adv-rtr <x.xx.xx> enable**
- **accept adv-rtr <x.xx.xx> i-sid <1-16777215>**
- **accept adv-rtr <x.xx.xx> i-sid <1-16777215> backbone-route-map WORD<1-64>**
- **accept adv-rtr <x.xx.xx> i-sid <1-16777215> enable**
- **accept adv-rtr <x.xx.xx> i-sid <1-16777215> route-map WORD<1-64>**
- **accept adv-rtr <x.xx.xx> isid-list WORD<1-32>**
- **accept adv-rtr <x.xx.xx> isid-list WORD<1-32> backbone-route-map WORD<1-64>**
- **accept adv-rtr <x.xx.xx> isid-list WORD<1-32> enable**
- **accept adv-rtr <x.xx.xx> isid-list WORD<1-32> route-map WORD<1-64>**
- **accept adv-rtr <x.xx.xx> route-map WORD<1-64>**

- **no accept adv-rtr <x.xx.xx>**
- **no accept adv-rtr <x.xx.xx> backbone-route-map**
- **no accept adv-rtr <x.xx.xx> enable**
- **no accept adv-rtr <x.xx.xx> i-sid <1-16777215>**
- **no accept adv-rtr <x.xx.xx> i-sid <1-16777215> backbone-route-map**
- **no accept adv-rtr <x.xx.xx> i-sid <1-16777215> enable**
- **no accept adv-rtr <x.xx.xx> i-sid <1-16777215> route-map**
- **no accept adv-rtr <x.xx.xx> isid-list WORD<1-32>**
- **no accept adv-rtr <x.xx.xx> isid-list WORD<1-32> enable**
- **no accept adv-rtr <x.xx.xx> route-map**

Command Parameters

<x.xx.xx>	Specifies the Shortest Path Bridging MAC (SPBM) nickname at a level for each advertising BEB.
adv-rtr <x.xx.xx>	Specifies the Shortest Path Bridging MAC (SPBM) nickname for an advertising BEB for the IS-IS accept policy.
backbone-route-map WORD<1-64>	Configures the backbone-route-map for DVR routes.
enable	Enables an IS-IS accept policy.
i-sid <0-16777215>	Specifies a service instance identifier (I-SID) number that represents a local or remote Layer 3 VSN for the IS-IS accept policy.
isid-list WORD <1-32>	Specifies a name for a list of I-SID numbers that represent local or remote Layer 3 VSN for the IS-IS accept policy.
route-map WORD<1-64>	Configures the IS-IS route policy by name.

Default

None

Command Mode

IS-IS Router Configuration

accept i-sid (for the GRT)

Configure an Intermediate-System-to-Intermediate-System (IS-IS) accept policy instance to apply to a specific Service Instance Identifier (I-SID) for the Global Routing Table (GRT).

Syntax

- **accept i-sid <1-16777215>**
- **accept i-sid <1-16777215> backbone-route-map WORD<1-64>**
- **accept i-sid <1-16777215> enable**
- **accept i-sid <1-16777215> route-map WORD<1-64>**
- **no accept i-sid <1-16777215>**
- **no accept i-sid <1-16777215> backbone-route-map**
- **no accept i-sid <1-16777215> enable**
- **no accept i-sid <1-16777215> route-map**

Command Parameters

backbone-route-map WORD<1-64>	Configures the backbone-route-map for DVR routes.
enable	Enables an IS-IS accept policy.
i-sid <1-16777215>	Specifies a service instance identifier (I-SID) number that represents a local or remote Layer 3 VSN for the IS-IS accept policy.
route-map WORD<1-64>	Configures the IS-IS route policy by name.

Default

None

Command Mode

IS-IS Router Configuration

accept isid-list (for the GRT)

Configure an Intermediate-System-to-Intermediate-System (IS-IS) accept policy instance to apply to a specific list of Service Instance Identifiers (I-SIDs) for the Global Routing Table (GRT).

Syntax

- **accept isid-list <1-16777215>**
- **accept isid-list <1-16777215> backbone-route-map WORD<1-64>**
- **accept isid-list <1-16777215> enable**
- **accept isid-list <1-16777215> route-map WORD<1-64>**
- **no accept isid-list <1-16777215>**
- **no accept isid-list <1-16777215> backbone-route-map**

- **no accept isid-list <1-16777215> enable**
- **no accept isid-list <1-16777215> route-map**

Command Parameters

backbone-route-map WORD<1-64>	Configures the backbone-route-map for DVR routes.
enable	Enables an IS-IS accept policy.
isid-list WORD <1-32>	Specifies a name for a list of I-SID numbers that represent local or remote Layer 3 VSN for the IS-IS accept policy.
route-map WORD<1-64>	Configures the IS-IS route policy by name.

Default

None

Command Mode

IS-IS Router Configuration

accept route-map

Configure an Intermediate-System-to-Intermediate-System (IS-IS) accept policy instance to apply using a specific route-map for the Global Routing Table (GRT).

Syntax

- **accept route-map WORD<1-64>**
- **no accept route-map**

Command Parameters

WORD<1-64>	Configures the IS-IS route policy by name.

Default

None

Command Mode

IS-IS Router Configuration

backbone

Configures a non-DvR BEB to join the DvR backbone so that it can receive redistributed DvR host routes from all DvR Controllers in the SPB network.

Syntax

- **backbone enable**
- **no backbone enable**

Command Parameters

enable	Configures a non-DvR BEB to join the DvR backbone.

Default

none

Command Mode

IS-IS Router Configuration

csnp-interval

Configure the Complete Sequence Number Packets (CSNP) interval in seconds. This command is a system level parameter that applies to Level 1 CSNP generation on all interfaces.

Syntax

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

Command Parameters

<1-600>	Configures the interval, in seconds.

Default

The default CSNP interval is 10 seconds.

Command Mode

IS-IS Router Configuration

inband-mgmt-ip

Configure a management IP address (IPv4 address) for in-band management of a Leaf node. This IP address is treated as a CLIP address. This configuration is required only on a DvR Leaf node.

Syntax

- **inband-mgmt-ip {A.B.C.D}**

Command Parameters

{A.B.C.D}	Configures a management IP address (IPv4 address) for in-band management of a DvR Leaf node. This IP address is treated as a CLIP address.

Default

none

Command Mode

IS-IS Router Configuration

ip-source-address

Configure the circuitless IP (CLIP) interface as the source address for SPBM IP Shortcuts. Assigns a source IP address for locally generated IP packets whose egress port is an SPBM NNI port.

The source-address value must be a locally configured loopback IP address. The IS-IS automatically advertises the source-address to other SPBM edge routers when you enable IP shortcuts. You must first configure a valid source-address before you enable IP shortcuts.

Syntax

- **ip-source-address {A.B.C.D}**
- **no ip-source-address**

Command Parameters

<A.B.C.D>	Specifies the circuitless IP (CLIP) interface as the source address for SPBM IP shortcuts.

Default

None

Command Mode

IS-IS Router Configuration

ip-tunnel-source-address

Configure the IP tunnel source address.

Syntax

- **ip-tunnel-source-address {A.B.C.D} {slot/port[/sub-port][-slot/port[/sub-port]][,...]} vrf WORD<1-16>**
- **ip-tunnel-source-address {A.B.C.D} vrf WORD<1-16>**

- **no ip-tunnel-source-address**

Command Parameters

{A.B.C.D}	Specifies the IS-IS IPv4 tunnel source address.
{slot/port[/sub-port] [-slot/port[/sub-port]] [,...]}	Identifies the slot and port in one of the following formats: a single slot and port (slot/port), a range of slots and ports (slot/port-slot/port), or a series of slots and ports (slot/port,slot/port,slot/port). If your platform supports channelization and the port is channelized, you must also specify the sub-port in the format slot/port/sub-port.
vrf WORD<1-16>	Specifies the VRF name associated with the IP tunnel.

Default

None

Command Mode

IS-IS Router Configuration

ipv6 accept (IS-IS)

Configure an IPv6 Intermediate-System-to-Intermediate-System (IS-IS) accept policy instance to apply to all IPv6 routes from all Backbone Edge Bridges (BEBs).

Syntax

- **ipv6 accept i-sid <1-16777215>**
- **ipv6 accept i-sid <1-16777215> enable**
- **ipv6 accept i-sid <1-16777215> route-map WORD<1-64>**
- **ipv6 accept isid-list WORD<1-32>**
- **ipv6 accept isid-list WORD<1-32> enable**
- **ipv6 accept isid-list WORD<1-32> route-map WORD<1-64>**
- **ipv6 accept route-map WORD<1-64>**
- **no ipv6 accept backbone-route-map**
- **no ipv6 accept i-sid <1-16777215>**
- **no ipv6 accept i-sid <1-16777215> enable**
- **no ipv6 accept i-sid <1-16777215> route-map**
- **no ipv6 accept isid-list WORD<1-32>**
- **no ipv6 accept isid-list WORD<1-32> enable**
- **no ipv6 accept isid-list WORD<1-32> route-map**
- **no ipv6 accept route-map**

Command Parameters

enable	Enables an IPv6 IS-IS accept policy.
i-sid <1-16777215>	Specifies a service instance identifier (I-SID) number that represents a local or remote IPv6 Layer 3 VSN for the IPv6 IS-IS accept policy.
isid-list WORD <1-32>	Specifies a name for a list of I-SID numbers that represent local or remote IPv6 Layer 3 VSN for the IPv6 IS-IS accept policy.
route-map WORD<1-64>	Configures the IPv6 IS-IS route policy by name.

Default

None

Command Mode

IS-IS Router Configuration

ipv6 accept adv-rtr (for IS-IS)

Use an IPv6 IS-IS accept policy instance to apply to a specific advertising Backbone Edge Bridge (BEB).

Syntax

- **ipv6 accept adv-rtr <x.xx.xx>**
- **ipv6 accept adv-rtr <x.xx.xx> enable**
- **ipv6 accept adv-rtr <x.xx.xx> i-sid <1-16777215>**
- **ipv6 accept adv-rtr <x.xx.xx> i-sid <1-16777215> enable**
- **ipv6 accept adv-rtr <x.xx.xx> i-sid <1-16777215> route-map WORD<1-64>**
- **ipv6 accept adv-rtr <x.xx.xx> isid-list WORD<1-32>**
- **ipv6 accept adv-rtr <x.xx.xx> isid-list WORD<1-32> enable**
- **ipv6 accept adv-rtr <x.xx.xx> isid-list WORD<1-32> route-map WORD<1-64>**
- **ipv6 accept adv-rtr <x.xx.xx> route-map WORD<1-64>**
- **no ipv6 accept adv-rtr <x.xx.xx>**
- **no ipv6 accept adv-rtr <x.xx.xx> enable**
- **no ipv6 accept adv-rtr <x.xx.xx> i-sid <1-16777215>**
- **no ipv6 accept adv-rtr <x.xx.xx> i-sid <1-16777215> enable**
- **no ipv6 accept adv-rtr <x.xx.xx> i-sid <1-16777215> route-map**

- **no ipv6 accept adv-rtr <x.xx.xx> isid-list WORD<1-32>**
- **no ipv6 accept adv-rtr <x.xx.xx> isid-list WORD<1-32> enable**
- **no ipv6 accept adv-rtr <x.xx.xx> route-map**

Command Parameters

<x.xx.xx>	Specifies the Shortest Path Bridging MAC (SPBM) nickname at a level for each advertising BEB.
enable	Enables an IPv6 IS-IS accept policy for the specific advertising Backbone Edge Bridge (BEB).
i-sid <0-16777215>	Specifies a service instance identifier (I-SID) number that represents a local or remote IPv6 Layer 3 VSN for the IS-IS accept policy for the specific advertising Backbone Edge Bridge (BEB).
isid-list WORD <1-32>	Specifies a name for a list of I-SID numbers that represent local or remote IPv6 Layer 3 VSN for the IS-IS accept policy for the specific advertising Backbone Edge Bridge (BEB).
route-map WORD<1-64>	Configures the IS-IS route policy by name for the specific advertising Backbone Edge Bridge (BEB).

Default

None

Command Mode

IS-IS Router Configuration

ipv6 redistribute (for GRT)

Ipv6 configurations.

Syntax

- **default ipv6 redistribute {bgp | direct | ospf | rip |static} [enable]**
- **ipv6 redistribute bgp {enable | metric <0-65535> | metric-type [type1] [type2] | route-map WORD<1-64>}**
- **ipv6 redistribute direct {enable | metric <0-65535> | metric-type [type1][type2] | route-map WORD<1-64>}**
- **ipv6 redistribute static {enable | metric <0-65535> | metric-type [type1][type2] | route-map WORD<1-64>}**
- **no ipv6 redistribute {bgp | direct | ospf | rip |static} [enable]**

Command Parameters

{bgp | direct | ospf | rip |static}	Specifies the type of IPv6 route to redistribute to the IS-IS routing domain.
{enable | metric <0-65535> | metric-type [type1] [type2] | route-map WORD<1-64>}	Enables redistribution.

Default

None

Command Mode

IS-IS Router Configuration

ipv6 redistribute (for ISIS)

Enable redistribution to redistribute IPv6 routes into an ISIS routing domain.

Syntax

- **`default ipv6 redistribute {bgp | direct | ospf | rip |static} [enable]`**
- **`ipv6 redistribute direct {enable | metric <0-65535> | metric-type [type1][type2] | route-map WORD<1-64>}`**
- **`ipv6 redistribute ospf {enable | metric <0-65535> | metric-type [type1][type2] | route-map WORD<1-64>}`**
- **`ipv6 redistribute static {enable | metric <0-65535> | metric-type [type1][type2] | route-map WORD<1-64>}`**
- **`no ipv6 redistribute {bgp | direct | ospf | rip |static} [enable]`**

Command Parameters

{bgp | direct | ospf | rip |static}	Specifies the type of IPv6 route to redistribute to the ISIS routing domain.
{enable | metric <0-65535> | metric-type [type1] [type2] | route-map WORD<1-64>}	Enables redistribution.

Default

The default is disabled.

Command Mode

IS-IS Router Configuration

ipv6 redistribute bgp enable (For IS-IS)

Enable IPv6 BGP redistribute.

Syntax

- **default ipv6 redistribute bgp enable**
- **ipv6 redistribute bgp enable**
- **no ipv6 redistribute bgp enable**

Default

None

Command Mode

IS-IS Router Configuration

ipv6-source-address

Configure the circuitless IP (CLIP) interface as the source address for SPBM IPv6 Shortcuts. Assigns a source IPv6 address for locally generated IPv6 packets whose egress port is an SPBM NNI port.

The source-address value must be a locally configured loopback IPv6 address. The IS-IS automatically advertises the source-address to other SPBM edge routers when you enable IPv6 shortcuts. You must first configure a valid source-address before you enable IPv6 shortcuts.

Syntax

- **ipv6-source-address WORD<0-46>**

Command Parameters

WORD<0-46>	Enter isis ipv6 source address.

Default

None

Command Mode

IS-IS Router Configuration

ipv6-source-address <ipv6-addr>

Assign a source IPv6 address for locally generated IPv6 packets that have an SPBM NNI port as an egress port.

The IPv6-source-address value must be a locally configured loopback IPv6 address. The IPv6 source address is automatically advertised by ISIS to other SPBM edge routers when IPv6 Shortcuts is enabled. IPv6 shortcuts cannot be enabled without first configuring a valid IPv6-source-address.

Syntax

- **ipv6-source-address <ipv6-addr>**
- **no ipv6-source-address <ipv6-addr>**

Default

None

Command Mode

IS-IS Router Configuration

is-type

Configure the router type globally. This release supports only Level 1 (l1) Intermediate-System-to-Intermediate-System (IS-IS).

Syntax

- **default is-type**
- **is-type l1**
- **is-type l12**
- **no is-type**

Command Parameters

l1 Configures the router type as Level 1 Intermediate-System-to-Intermediate-System (IS-IS).

l12 Configures the router type as Level 1 and Level 2 Intermediate-System-to-Intermediate-System (IS-IS). You cannot use this parameter in this release.

Default

The default router type is Level 1 (l1).

Command Mode

IS-IS Router Configuration

manual-area

Configure an Intermediate-System-to-Intermediate-System (IS-IS) manual area, 1-13 bytes in the format <xx.xxx.xxx…xxxx>. You must configure a manual area to use IS-IS. In this release, only one manual area is supported. Use the no format of this command to remove the area.

Syntax

- **manual-area xx.xxxx.xxxx...xxxx - 1...13 bytes**
- **no manual-area xx.xxxx.xxxx...xxxx - 1...13 bytes**

Command Parameters

xx.xxxx.xxxx...xxxx - 1...13 bytes	Configures the manual area in a size up to 13 octets. The current release supports one area. For Intermediate-System-to-Intermediate-System (IS-IS) to operate, you must configure at least one area.

Default

None

Command Mode

IS-IS Router Configuration

max-lsp-gen-interval

Configure the maximum level, in seconds, between generated Link State Packets (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 time interval at which the generated Link State Packet (LSP) is refreshed.

Default

The default maximum interval value is 900.

Command Mode

IS-IS Router Configuration

metric

Configure the metric type that you can configure on an Intermediate-System-to-Intermediate-System (IS-IS) interface.

Syntax

- **default metric**
- **metric { narrow | wide }**
- **no metric**

Command Parameters

narrow	Configures the metric type as narrow. The switch only supports wide.
wide	Configures the metric type as wide. The switch only supports wide.

Default

The default IS-IS metric type is wide.

Command Mode

IS-IS Router Configuration

overload

Configure the overload condition. If the overload bit parameter is configured, the switch sets the overload bit in the Link State Packet (LSP). The setting affects Level 1 LSPs.

The overload parameter works in conjunction with the overload-on-startup parameter. When the overload-on-startup timer expires, the Shortest Path Bridging MAC (SPBM) node clears the overload bit and re-advertises its LSP.

When an LSP with an overload bit is received, the switch ignores the LSP in its SPF calculation. By default, overload is set to false. If overload is set to true, the switch cannot be a transit node, but it can still receive traffic destined to the switch.

Syntax

- **default overload**
- **no overload**
- **overload**

Default

The default is disabled.

Command Mode

IS-IS Router Configuration

overload-on-startup

Configure the Intermediate-System-to-Intermediate-System (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 Intermediate-System-to-Intermediate-System (IS-IS) overload-on-startup value in seconds. The overload-on-startup value is used as a timer to control when to send out Link State Packets (LSPs) with the overload bit cleared after IS-IS startup.

Default

The default overload-on-startup value is 20 seconds.

Command Mode

IS-IS Router Configuration

psnp-interval

Configure the Partial Sequence Number Packets (PSNP) interval in seconds. This command is a system level parameter that applies to Level 1 PSNP generation on all interfaces.

Syntax

- **default psnp-interval**
- **psnp-interval <1-120>**

Command Parameters

<1-120>	Configures the interval, in seconds. This is a system level parameter that applies for Level 1 Partial Sequence Number Packet (PSNP) generation on all interfaces. A longer interval reduces overhead, while a shorter interval speeds up convergence.

Default

The default PSNP value is 2 seconds.

Command Mode

IS-IS Router Configuration

redistribute bgp (for IS-IS)

Control the redistribution of routes from the global router into the Shortest Path Bridging MAC (SPBM) Intermediate-System-to-Intermediate-System (IS-IS) domain.

Syntax

- **default redistribute bgp enable**
- **default redistribute bgp metric**
- **default redistribute bgp metric-type**
- **default redistribute bgp route-map**
- **default redistribute bgp subnets**
- **no redistribute bgp**
- **no redistribute bgp enable**
- **no redistribute bgp metric**
- **no redistribute bgp metric-type**
- **no redistribute bgp route-map**
- **no redistribute bgp subnets**
- **redistribute bgp**
- **redistribute bgp enable**
- **redistribute bgp metric <0-65535>**
- **redistribute bgp metric-type external**
- **redistribute bgp metric-type internal**
- **redistribute bgp route-map WORD<0-64>**
- **redistribute bgp subnets allow**
- **redistribute bgp subnets suppress**

Command Parameters

enable	Enables the redistribution of the BGP into the Shortest Path Bridging MAC (SPBM) network. The prefix "default" before the command sets the isis redistribute bgp enable to default.
enable	Enables the redistribution of the specified protocol into the Shortest Path Bridging MAC (SPBM) network.
metric <0-65535>	Configures the metric (cost) to apply to redistributed routes. The default is 1.
metric-type external	Configures the type of route to import into the BGP. The prefix "default" before the command sets the isis redistribute metric-type to default. The default is internal.

metric-type external	Configures the type of route to import into the protocol. The default is internal.
metric-type internal	Configures the type of route to import into the BGP. The prefix "default" before the command sets the isis redistribute metric-type to default. The default is internal.
metric-type internal	Configures the type of route to import into the protocol. The default is internal.
route-map WORD<0-64>	Configures the route policy to apply to redistributed routes.
subnets allow	Indicates whether the subnets are advertised individually or aggregated to their classful subnet. Choose allow to advertise the subnets individually with the learned or configured mask of the subnet. The default is allow.
subnets allow	Indicates whether the subnets are advertised individually or aggregated to their classful subnet. Choose allow to advertise the subnets individually with the learned or configured mask of the subnet. The prefix "default" before the command sets the isis redistribute subnets to default. The default is allow.
subnets suppress	Indicates whether the subnets are advertised individually or aggregated to their classful subnet. Choose allow to advertise the subnets individually with the learned or configured mask of the subnet. The default is allow.
subnets suppress	Indicates whether the subnets are advertised individually or aggregated to their classful subnet. Choose allow to advertise the subnets individually with the learned or configured mask of the subnet. The prefix "default" before the command sets the isis redistribute subnets to default. The default is allow.

Default

By default, route redistribution is disabled.

Command Mode

IS-IS Router Configuration

redistribute direct (for IS-IS)

Control the redistribution of routes from the global router into the Shortest Path Bridging MAC (SPBM) Intermediate-System-to-Intermediate-System (IS-IS) domain.

Syntax

- **default redistribute direct enable**
- **default redistribute direct metric**
- **default redistribute direct metric-type**

- **default redistribute direct route-map**
- **default redistribute direct subnets**
- **no redistribute direct**
- **no redistribute direct enable**
- **no redistribute direct metric**
- **no redistribute direct metric-type**
- **no redistribute direct route-map**
- **no redistribute direct subnets**
- **redistribute direct**
- **redistribute direct enable**
- **redistribute direct metric <0-65535>**
- **redistribute direct metric-type external**
- **redistribute direct metric-type internal**
- **redistribute direct route-map WORD<0-64>**
- **redistribute direct subnets allow**
- **redistribute direct subnets suppress**

Command Parameters

enable	Enables route redistribution of the direct protocol. The prefix "default" before the command sets the isis redistribute direct enable to default.
metric <0-65535>	Configures the metric (cost) to apply to redistributed routes. The default is 1.
metric-type external	Configures the type of route to import into the protocol. The default is internal.
metric-type internal	Configures the type of route to import into the direct protocol. The prefix "default" before the command sets the isis redistribute metric-type to default. The default is internal.
route-map WORD<0-64>	Configures the route policy to apply to redistributed routes.
subnets allow	Indicates whether the subnets are advertised individually or aggregated to their classful subnet. Choose allow to advertise the subnets individually with the learned or configured mask of the subnet. The default is allow.
subnets suppress	Indicates whether the subnets are advertised individually or aggregated to their classful subnet. Choose allow to advertise the subnets individually with the learned or configured mask of the subnet. The default is allow.

Default

By default, route redistribution is disabled.

Command Mode

IS-IS Router Configuration

redistribute ospf (for IS-IS)

Control the redistribution of routes from the global router into the Shortest Path Bridging MAC (SPBM) Intermediate-System-to-Intermediate-System (IS-IS) domain.

Syntax

- **default redistribute ospf enable**
- **default redistribute ospf metric**
- **default redistribute ospf metric-type**
- **default redistribute ospf route-map**
- **default redistribute ospf subnets**
- **no redistribute ospf**
- **no redistribute ospf enable**
- **no redistribute ospf metric**
- **no redistribute ospf metric-type**
- **no redistribute ospf route-map**
- **no redistribute ospf subnets**
- **redistribute ospf**
- **redistribute ospf enable**
- **redistribute ospf metric <0-65535>**
- **redistribute ospf metric-type external**
- **redistribute ospf metric-type internal**
- **redistribute ospf route-map WORD<0-64>**
- **redistribute ospf subnets allow**
- **redistribute ospf subnets suppress**

Command Parameters

enable	Enables the redistribution of the OSPF protocol into the Shortest Path Bridging MAC (SPBM) network.
metric <0-65535>	Configures the metric (cost) to apply to redistributed routes. The default is 1.

metric-type external	Configures the type of route to import into the protocol. The default is internal.
metric-type internal	Configures the type of route to import into the protocol. The default is internal.
route-map WORD<0-64>	Configures the route policy to apply to redistributed routes.
subnets allow	Indicates whether the subnets are advertised individually or aggregated to their classful subnet. Choose allow to advertise the subnets individually with the learned or configured mask of the subnet. The default is allow.
subnets suppress	Indicates whether the subnets are advertised individually or aggregated to their classful subnet. Choose allow to advertise the subnets individually with the learned or configured mask of the subnet. The default is allow.

Default

By default, route redistribution is disabled.

Command Mode

IS-IS Router Configuration

redistribute rip (for IS-IS)

Control the redistribution of routes from the global router into the Shortest Path Bridging MAC (SPBM) Intermediate-System-to-Intermediate-System (IS-IS) domain.

Syntax

- **default redistribute rip enable**
- **default redistribute rip metric**
- **default redistribute rip metric-type**
- **default redistribute rip route-map**
- **default redistribute rip subnets**
- **no redistribute rip**
- **no redistribute rip enable**
- **no redistribute rip metric**
- **no redistribute rip metric-type**
- **no redistribute rip route-map**
- **no redistribute rip subnets**
- **redistribute rip**

- **redistribute rip enable**
- **redistribute rip metric <0-65535>**
- **redistribute rip metric-type external**
- **redistribute rip metric-type internal**
- **redistribute rip route-map WORD<0-64>**
- **redistribute rip subnets allow**
- **redistribute rip subnets suppress**

Command Parameters

enable	Enables route redistribution.
metric <0-65535>	Configures the metric (cost) to apply to redistributed routes. The default is 1.
metric-type external	Configures the type of route to import into the protocol. The default is internal.
metric-type internal	Configures the type of route to import into the protocol.
route-map WORD<0-64>	Configures the route policy to apply to redistributed routes.
subnets allow	Indicates whether the subnets are advertised individually or aggregated to their classful subnet. Choose allow to advertise the subnets individually with the learned or configured mask of the subnet. The default is allow.
subnets suppress	Indicates whether the subnets are advertised individually or aggregated to their classful subnet. Choose allow to advertise the subnets individually with the learned or configured mask of the subnet. The default is allow.

Default

By default, route redistribution is disabled.

Command Mode

IS-IS Router Configuration

redistribute static (for IS-IS)

Control the redistribution of routes from the global router into the Shortest Path Bridging MAC (SPBM) Intermediate-System-to-Intermediate-System (IS-IS) domain.

Syntax

- **default redistribute static enable**
- **default redistribute static metric**
- **default redistribute static metric-type**
- **default redistribute static route-map**
- **default redistribute static subnets**
- **no redistribute static**
- **no redistribute static enable**
- **no redistribute static metric**
- **no redistribute static metric-type**
- **no redistribute static route-map**
- **no redistribute static subnets**
- **redistribute static**
- **redistribute static enable**
- **redistribute static metric <0-65535>**
- **redistribute static metric-type external**
- **redistribute static metric-type internal**
- **redistribute static route-map WORD<0-64>**
- **redistribute static subnets allow**
- **redistribute static subnets suppress**

Command Parameters

enable	Enables route redistribution.
metric <0-65535>	Configures the metric (cost) to apply to redistributed routes. The default is 1.
metric-type external	Configures the type of route to import into the protocol. The default is internal.
metric-type internal	Configures the type of route to import into the protocol. The default is internal.
route-map WORD<0-64>	Configures the route policy to apply to redistributed routes.
subnets allow	Indicates whether the subnets are advertised individually or aggregated to their classful subnet. Choose allow to advertise the subnets individually with the learned or configured mask of the subnet. The default is allow.

subnets suppress	Indicates whether the subnets are advertised individually or aggregated to their classful subnet. Choose allow to advertise the subnets individually with the learned or configured mask of the subnet. The default is allow.

Default

By default, route redistribution is disabled.

Command Mode

IS-IS Router Configuration

retransmit-lsp-interval

Configure the minimum time between retransmission of a Link State Packet (LSP). This defines how fast the switch resends the same LSP. This is a system level parameter that applies for Level 1 retransmission of LSPs.

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 a Link State Packet (LSP). This defines how fast the switch resends the same LSP. This is a system level parameter that applies for Level1 retransmission of LSPs.

Default

The default is 5 seconds.

Command Mode

IS-IS Router Configuration

spbm <1-100>

Create the Shortest Path Bridging MAC (SPBM) instance globally. This release supports only one instance. Use the no form of the command to delete the instance globally.

Syntax

- **no spbm <1-100>**
- **spbm <1-100>**

Command Parameters

<1-100>	Specifies the Shortest Path Bridging MAC (SPBM) instance ID. Creates the SPBM instance. In this release only one SPBM instance is supported.

Default

None

Command Mode

IS-IS Router Configuration

spbm <1-100> b-vid

Add the backbone VLAN (B-VLAN) to the Shortest Path Bridging MAC (SPBM) instance, globally. You can configure a maximum of two B-VLANs. If you add only one B-VLAN to the SPBM instance, it becomes the primary B-VLAN. If you configure two B-VLANs, you must configure one as the primary B-VLAN. Use the no format to remove a B-VLAN from the global SPBM instance.

Syntax

- **no spbm <1-100> b-vid List of VLAN Ids {vlan-id[-vlan-id][,...]}**
- **no spbm <1-100> b-vid List of VLAN Ids {vlan-id[-vlan-id][,...]} primary <1-4059>**
- **spbm <1-100> b-vid List of VLAN Ids {vlan-id[-vlan-id][,...]}**
- **spbm <1-100> b-vid List of VLAN Ids {vlan-id[-vlan-id][,...]} primary <1-4059>**

Command Parameters

{vlan-id[-vlan-id][,...]}	Specifies the VLANs to add to the Shortest Path Bridging MAC (SPBM) instance as Backbone VLANs (B-VLANs). Sets the IS-IS SPBM instance data VLANs.
<1-100>	Specifies the Shortest Path Bridging MAC (SPBM) instance ID.
primary *<1-4059>*	Specifies the primary BVLAN by VLAN ID. Specifies the VLAN ID in the range of 1 to 4059. By default, VLAN IDs 1 to 4059 are configurable and the system reserves VLAN IDs 4060 to 4094 for internal use. On switches that support the vrf-scaling and spbm-config-mode boot configuration flags, if you enable these flags, the system also reserves VLAN IDs 3500 to 3998. VLAN ID 1 is the default VLAN and you cannot create or delete VLAN ID 1.

Default

None

Command Mode

IS-IS Router Configuration

spbm <1-100> ip

Configure Shortest Path Bridging MAC (SPBM) IP shortcuts.

Syntax

- **default spbm <1-100> ip enable**
- **no spbm <1-100> ip enable**
- **spbm <1-100> ip enable**

Command Parameters

<1-100>	Specifies the Shortest Path Bridging MAC (SPBM) instance ID.
ip enable	Enables Shortest Path Bridging MAC (SPBM) IP shortcuts.

Default

The default is disabled.

Command Mode

IS-IS Router Configuration

spbm <1-100> ipv6

Configure Shortest Path Bridging MAC (SPBM) IPv6 shortcuts.

Syntax

- **default spbm <1-100> ipv6 enable**
- **no spbm <1-100> ipv6 enable**
- **spbm <1-100> ipv6 enable**

Command Parameters

<1-100>	Specifies the Shortest Path Bridging MAC (SPBM) instance ID.
enable	Enables Shortest Path Bridging MAC (SPBM) IPv6 shortcuts.

Default

The default is disabled.

Command Mode

IS-IS Router Configuration

spbm <1-100> lsdb-trap

Enable a trap when the Shortest Path Bridging MAC (SPBM) Link State Database (LSDB) changes.

Syntax

- **default spbm <1-100> lsdb-trap enable**
- **no spbm <1-100> lsdb-trap enable**
- **spbm <1-100> lsdb-trap enable**

Command Parameters

<1-100>	Specifies the Shortest Path Bridging MAC (SPBM) instance ID.
enable	Enables a trap when the Shortest Path Bridging MAC (SPBM) Link State Database (LSDB) changes.

Default

The default is disabled.

Command Mode

IS-IS Router Configuration

spbm <1-100> multicast

Enables SPBM multicast globally.

Syntax

- **default spbm <1-100> multicast enable**
- **no spbm <1-100> multicast enable**
- **spbm <1-100> multicast enable**

Command Parameters

<1-100>	Specifies the Shortest Path Bridging MAC (SPBM) instance ID.
enable	Enables SPBM multicast globally.

Default

The default is disabled.

Command Mode

IS-IS Router Configuration

spbm <1-100> multicast fwd-cache-timeout

Configures the timeout value for the Global Router.

Syntax

- **default spbm <1-100> multicast fwd-cache-timeout**
- **no spbm <1-100> multicast fwd-cache-timeout**
- **spbm <1-100> multicast fwd-cache-timeout <10-86400>**

Command Parameters

<10-86400>	fwd-cache-timeout value in seconds.
<1-100>	Specifies the Shortest Path Bridging MAC (SPBM) instance ID. Creates the SPBM instance. In this release only one SPBM instance is supported.

Default

The default is 210 seconds.

Command Mode

IS-IS Router Configuration

spbm <1-100> multicast spb-pim-gw controller

Configures SPB-PIM gateway controller.

Syntax

- **default spbm <1-100> multicast spb-pim-gw controller enable**
- **no spbm <1-100> multicast spb-pim-gw controller enable**
- **spbm <1-100> multicast spb-pim-gw controller enable**

Command Parameters

enable	Enables the SPB-PIM Gateway Controller.

Default

The default is disabled.

Command Mode

IS-IS Router Configuration

spbm <1-100> nick-name

Configure a global nick-name for the Shortest Path Bridging MAC (SPBM) instance. The system uses the nick-name to calculate the multicast address for the node.

Syntax

- **default spbm <1-100> nick-name**
- **no spbm <1-100> nick-name**
- **spbm <1-100> nick-name x.xx.xx - 2.5 bytes**

Command Parameters

<1-100>	Specifies the SPBM instance ID.
nick-name x.xx.xx - 2.5 bytes	Specifies the system nick-name (2.5 bytes in the format <x.xx.xx>).

Default

By default, no nickname exists.

Command Mode

IS-IS Router Configuration

spbm <1-100> smlt-peer-system-id

Configure the system ID of the interswitch trunk (IST) peer, so that if it goes down, the local peer can take over forwarding for the failed peer. You must configure this command to use Shortest Path Bridging MAC (SPBM) in a Split MultiLink Trunking (SMLT) environment. The device with the lower system ID is the primary device.

Syntax

- **spbm <1-100> smlt-peer-system-id xxxx.xxxx.xxxx - 6 bytes**

Command Parameters

<1-100>	Specifies the SPBM instance ID. SMLT peer system ID is part of the required configuration. You must configure the SMLT peer system ID as the nodal MAC of the peer device. In the Intermediate-System-to-Intermediate-System (IS-IS) network, the nodal MAC of devices should be eight apart from each other.
xxxx.xxxx.xxxx - 6 bytes	Specifies the nodal MAC of the peer device as the system ID. Nodal MACs of devices in the Intermediate-System-to-Intermediate-System (IS-IS) network must be 8 apart from each other. Split MultiLink Trunking (SMLT) peer system ID is part of the required configuration. If SMLT virtual Backbone MAC (B-MAC) is not configured, it is

derived from the configured SMLT peer system ID and the nodal MAC of the device (IS-IS system ID).
SMLT split Backbone Edge Bridge (BEB) is also derived from the SMLT peer system ID and nodal MAC of the device.
The device with the lower system ID is primary, the device with the higher system ID is secondary.

Default

None

Command Mode

IS-IS Router Configuration

spbm <1-100> smlt-virtual-bmac

Configure the virtual Backbone MAC (B-MAC) address, which is shared and advertised by both peers. Configuration of this command is optional.

Syntax

- **spbm <1-100> smlt-virtual-bmac 0x00:0x00:0x00:0x00:0x00:0x00**

Command Parameters

<1-100>	Specifies the SPBM instance ID.
0x00:0x00:0x00:0x00:0x00:0x00	Specifies the virtual MAC address. SMLT virtual B-MAC is the optional configuration. If SMLT virtual B-MAC is not configured, the system derives SMLT virtual B-MAC from the configured SMLT peer system ID and the nodal MAC of the device (IS-IS system ID). The system compares the nodal MAC of the device with the SMLT peer system ID configured and takes the small one, plus 0x01, as the SMTL virtual B-MAC. The system also derives SMLT split BEB from the SMLT peer system ID and nodal MAC of the device. The device with the lower system ID is primary, the device with the higher system ID is secondary.

Default

None

Command Mode

IS-IS Router Configuration

spbm <1-100> stp-multi-homing

Sets the MSTP-Fabric Connect Multi Homing support on the switch.

Syntax

- **default spbm <1-100> stp-multi-homing enable**
- **no spbm <1-100> stp-multi-homing enable**
- **spbm <1-100> stp-multi-homing enable**

Command Parameters

enable	Enables MSTP-Fabric Connect Multi Homing on the specific SPBM instance.

Default

Disabled

Command Mode

IS-IS Router Configuration

spf-delay

Configure 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.

Syntax

- **default spf-delay**
- **no spf-delay**
- **spf-delay <0-5000>**

Command Parameters

<0-5000>	Configures the delay, in milliseconds.

Default

The default is 100 milliseconds.

Command Mode

IS-IS Router Configuration

sys-name

Configure the name for the system.

Syntax

- **default sys-name**
- **no sys-name**
- **sys-name WORD<0-255>**

Command Parameters

WORD<0-255>	Specifies the system name.

Default

By default, the system name is the host name at the system level.

Command Mode

IS-IS Router Configuration

system-id

Configure a system ID. You must configure a system ID before you enable IS-IS. You cannot delete the system ID but you can change it if you first disable IS-IS.

Syntax

- **default system-id**
- **no system-id**
- **system-id xxxx.xxxx.xxxx - 6 bytes**
- **system-id xxxx.xxxx.xxxx - 6 bytes**

Command Parameters

xxxx.xxxx.xxxx - 6 bytes	Specifies the system ID in 6 octets.

Default

The default system ID is the node Backbone MAC.

Command Mode

IS-IS Router Configuration

Chapter 11: Logical Interface Configuration

auth-key

Configure the IPsec authentication key on a logical device.

Syntax

- **auth-key WORD<1-32>**
- **no auth-key**

Command Parameters

WORD<1-32>	Configures the authentication key value.

Default

None

Command Mode

Logical Interface Configuration

egress-shaping-rate

Configures the egress shaping rate on a logical interface.

Note:

DEMO FEATURE - Egress Tunnel Shaping is a demonstration feature. Demonstration features are provided for testing purposes. Demonstration features are not for use in a production environment.

Syntax

- **default egress-shaping-rate**
- **egress-shaping-rate <1-1000>**
- **no egress-shaping-rate**

Command Parameters

<1-1000>	The shaper bandwidth in Mbps.

Default

The default value is 0. Egress Tunnel Shaping is disabled.

Command Mode

Logical Interface Configuration

ipsec

Enable IPsec on a logical interface.

Syntax

- **ipsec**
- **no ipsec**
- **default ipsec**

Default

None

Command Mode

Logical Interface Configuration

isis enable

Create an IS-IS circuit and interface on the selected logical interface.

Syntax

- **default isis enable**
- **isis**
- **isis enable**
- **no isis**
- **no isis enable**

Default

None

Command Mode

Logical Interface Configuration

isis hello-auth

Specify the authentication type used for IS-IS hello packets on the logical interface. The type can be one of the following: none, hmac-md5, or hmac-sha-256.

Syntax

- **default isis hello-auth**
- **isis hello-auth type { none | simple | hmac-md5 | hmac-sha-256 }**
- **isis hello-auth type { none | simple | hmac-md5 | hmac-sha-256 } key WORD<1-16>**
- **isis hello-auth type { none | simple | hmac-md5 | hmac-sha-256 } key WORD<1-16> key-id <1-255>**
- **no isis hello-auth**

Command Parameters

key WORD<1-16>	Specifies the authentication key (password) used by the receiving router to verify the packet.
key-id <1-255>	Specifies the optional key ID.
type { none | simple | hmac-md5 | hmac-sha-256}	Specifies the authentication type used for IS-IS hello packets on the interface. The type can be one of the following: none, simple, hmac-md5, or hmac-sha-256. The default type is none. Use the no or default options to set the hello-auth type to none. • If simple is selected, you can also specify a key value. Simple password authentication uses a text password in the transmitted packet. The receiving router uses an authentication key (password) to verify the packet. • If hmac-md5 is selected, you can also specify a key value and key-id. 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. • If hmac-sha-256 is selected, you can also specify a key value and key-id. With SHA-256 authentication, the switch adds an HMAC-SHA256 digest to each Hello packet. The switch that receives the Hello packet computes the digest of the packet and compares it with the received digest. If the digests match, the packet is accepted. If the digests do not match, the receiving switch discards the packet.

Default

The default is no authentication type (none).

Command Mode

Logical Interface Configuration

isis l1-dr-priority

Configure the Level 1 IS-IS designated router priority to the specified value.

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

The default Level 1 designated router priority value is 64.

Command Mode

Logical Interface Configuration

isis l1-hello-interval

Configure the hello interval to change how often hello packets are sent out from an interface level.

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

The default Level 1 hello interval value is 9 seconds.

Command Mode

Logical Interface Configuration

isis l1-hello-multiplier

Configure the hello multiplier to specify how many hellos the switch must miss before it considers the adjacency with a neighboring switch down.

Syntax

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

Command Parameters

<1-600>	Configures the Level 1 hello multiplier.

Default

The default Level 1 hello-multiplier value is 3.

Command Mode

Logical Interface Configuration

isis spbm

Enable the SPBM instance on the logical interface.

Syntax

- **default isis spbm <1-100> interface-type**
- **default isis spbm <1-100> l1-metric**
- **isis spbm <1-100>**
- **isis spbm <1-100> interface-type { broadcast | pt-pt }**
- **isis spbm <1-100> l1-metric <1-16777215>**
- **no isis spbm <1-100>**
- **no isis spbm <1-100> interface-type**
- **no isis spbm <1-100> l1-metric**

Command Parameters

<1-100>	Specifies the SPBM instance ID.
interface-type { broadcast | pt-pt }	Configures the SPBM instance interface type.
l1-metric <1-16777215>	Configures the cost for the SPBM instance.

Default

None

Command Mode

Logical Interface Configuration

Chapter 12: Loopback Interface Configuration

ip address (loopback)

Configure a circuitless IP interface (CLIP) when you want to provide a virtual interface that is not associated with a physical port. You can use a CLIP interface to provide uninterrupted connectivity to your switch.

Syntax

- `ip address <1-256> {A.B.C.D/X}`
- `ip address <1-256> {A.B.C.D/X} vrf WORD<1-16>`
- `ip address <1-256> {A.B.C.D} {A.B.C.D}`
- `ip address {A.B.C.D/X}`
- `ip address {A.B.C.D/X} vrf WORD<1-16>`
- `ip address {A.B.C.D} {A.B.C.D}`
- `no ip address <1-256> {A.B.C.D}`
- `no ip address <1-256> {A.B.C.D} vrf WORD<1-16>`
- `no ip address {A.B.C.D}`
- `no ip address {A.B.C.D} vrf WORD<1-16>`

Command Parameters

[vrf WORD<1-16>]	Specifies an associated VRF by name.
{A.B.C.D/X}	Specifies the IP address and subnet mask.
{A.B.C.D}	Specifies the IP address.
<1-256>	Specifies the interface identification number for the circuitless IP (CLIP).

Default

None

Command Mode

Loopback Interface Configuration

ip area (loopback)

Designate an area for the circuitless IP (CLIP) interface.

Syntax

- **default ip area**
- **default ip area <1-256>**
- **default ip area vrf WORD<1-16>**
- **ip area <1-256> {A.B.C.D}**
- **ip area <1-256> {A.B.C.D} vrf WORD<1-16>**
- **ip area {A.B.C.D}**
- **ip area {A.B.C.D} vrf WORD<1-16>**
- **no ip area**
- **no ip area <1-256>**
- **no ip area vrf WORD<1-16>**

Command Parameters

{A.B.C.D}	Specifies the IP address of the OSPF area that is associated with the CLIP.
<1-256>	Specifies the interface identification number for the CLIP.
vrf WORD<1-16>	Specifies an associated VRF by name.

Default

None

Command Mode

Loopback Interface Configuration

ip dhcp-relay (for loopback)

Configure Dynamic Host Configuration Protocol (DHCP) Relay on an interface. The command no ip dhcp-relay disables DHCP Relay but does not delete the DHCP entry.

Syntax

- **default ip dhcp-relay fwd-path {A.B.C.D} {A.B.C.D}**
- **default ip dhcp-relay fwd-path {A.B.C.D} {A.B.C.D} mode**
- **ip dhcp-relay fwd-path {A.B.C.D} {A.B.C.D}**
- **ip dhcp-relay fwd-path {A.B.C.D} {A.B.C.D} disable**

- **ip dhcp-relay fwd-path {A.B.C.D} {A.B.C.D} enable**
- **ip dhcp-relay fwd-path {A.B.C.D} {A.B.C.D} mode { bootp | bootp_dhcp | dhcp }**
- **no ip dhcp-relay fwd-path {A.B.C.D} {A.B.C.D}**
- **no ip dhcp-relay fwd-path {A.B.C.D} {A.B.C.D} enable**

Command Parameters

{A.B.C.D} {A.B.C.D}	The first IP address is the IP address of the dhcp-relay agent, while the second one is the IP address of the server.
<bootp|dhcp|bootp_dhcp>	Configures DHCP mode to forward BootP messages only, DHCP messages only, or both. The default is both.

Default

None

Command Mode

Loopback Interface Configuration

ip ipsec enable (for a loopback interface)

Enable Internet Protocol Security (IPsec) for IPv4 on a loopback interface.

Syntax

- **default ip ipsec enable**
- **ip ipsec enable**
- **no ip ipsec enable**

Default

The default is disabled.

Command Mode

Loopback Interface Configuration

ip ipsec policy (for a loopback interface)

Link an Internet Protocol Security (IPsec) IPv4 policy to a loopback interface.

Syntax

- **default ip ipsec policy WORD<1-32>**

- **ip ipsec policy WORD<1-32>**
- **ip ipsec policy WORD<1-32> dir both**
- **ip ipsec policy WORD<1-32> dir in**
- **ip ipsec policy WORD<1-32> dir out**
- **no ip ipsec policy WORD<1-32> dir both**
- **no ip ipsec policy WORD<1-32> dir in**
- **no ip ipsec policy WORD<1-32> dir out**

Command Parameters

dir <both|in|out>	Specifies the direction to which IPsec applies. Both specifies both ingress and egress traffic, in specifies ingress traffic, and out specifies egress traffic. By default, the direction is both.
WORD<1-32>	Specifies the IPsec policy name.

Default

None

Command Mode

Loopback Interface Configuration

ip ospf (loopback)

Enable OSPF for the circuitless IP (CLIP) interface.

Syntax

- **default ip ospf**
- **default ip ospf <1-256>**
- **default ip ospf vrf WORD<1-16>**
- **ip ospf**
- **ip ospf <1-256>**
- **ip ospf vrf WORD<1-16>**
- **no ip ospf**
- **no ip ospf <1-256>**
- **no ip ospf vrf WORD<1-16>**

Command Parameters

<1-256>	Specifies the interface identification number for the CLIP.

vrf WORD<1-16>	Specifies an associated VRF by name.

Default

The default is disabled.

Command Mode

Loopback Interface Configuration

ip pim (loopback)

Enable PIM for the circuitless IP (CLIP) interface.

Syntax

- **default ip pim**
- **default ip pim <1-256>**
- **default ip pim <1-256> bsr-candidate vrf WORD<1-16>**
- **default ip pim bsr-candidate**
- **default ip pim bsr-candidate vrf WORD<1-16>**
- **default ip pim vrf WORD<1-16>**
- **ip pim**
- **ip pim <1-256>**
- **ip pim <1-256> bsr-candidate preference <0-255> vrf WORD<1-16>**
- **ip pim bsr-candidate preference <0-255>**
- **ip pim bsr-candidate preference <0-255> vrf WORD<1-16>**
- **ip pim vrf WORD<1-16>**
- **no ip pim**
- **no ip pim <1-256>**
- **no ip pim <1-256> bsr-candidate vrf WORD<1-16>**
- **no ip pim bsr-candidate**
- **no ip pim bsr-candidate vrf WORD<1-16>**
- **no ip pim vrf WORD<1-16>**

Command Parameters

<0-255>	Specifies the preference value.
<1-256>	Specifies the interface ID.

bsr-candidate preference <0-255>	Enables the CLIP interface as a candidate bootstrap router and configure a preference value. The C-BSR with the highest BSR preference and address is the preferred BootStrap Router (BSR).
vrf WORD<1-16>	Specifies the VRF name.

Default

The default is -1, which indicates that the current interface is not a C-BSR.

Command Mode

Loopback Interface Configuration

ipv6 interface address (loopback)

Create an IPv6 loopback interface address.

Syntax

- **ipv6 interface address WORD<0-255>**
- **no ipv6 interface address WORD<0-255>**

Command Parameters

WORD<0-255>	Assigns an IPv6 address to the Loopback Interface.

Default

None

Command Mode

Loopback Interface Configuration

ipv6 ipsec enable (for a loopback interface)

Enable Internet Protocol Security (IPsec) for IPv6 on a loopback interface.

Syntax

- **default ipv6 ipsec enable**
- **ipv6 ipsec enable**
- **no ipv6 ipsec enable**

Default

The default is disabled.

Command Mode

Loopback Interface Configuration

ipv6 ipsec policy (for a loopback interface)

Link an Internet Protocol Security (IPsec) IPv6 policy to a loopback interface.

Syntax

- **default ipv6 ipsec policy WORD<1-32>**
- **ipv6 ipsec policy WORD<1-32>**
- **ipv6 ipsec policy WORD<1-32> dir both**
- **ipv6 ipsec policy WORD<1-32> dir in**
- **ipv6 ipsec policy WORD<1-32> dir out**
- **no ipv6 ipsec policy WORD<1-32> dir both**
- **no ipv6 ipsec policy WORD<1-32> dir in**
- **no ipv6 ipsec policy WORD<1-32> dir out**

Command Parameters

dir <both|in|out>	Specifies the direction to which IPsec applies. Both specifies both ingress and egress traffic, in specifies ingress traffic, and out specifies egress traffic. By default, the direction is both.
WORD<1-32>	Specifies the IPsec policy name.

Default

None

Command Mode

Loopback Interface Configuration

migrate-to-mgmt (for a loopback interface)

Designate an existing loopback IP address as a Segmented Management Instance. This action moves the IP interface from the VOSS routing stack to the management stack to use with management applications. You cannot migrate interfaces used for routing purposes, for example, where you configure Layer 3 routing protocols.

Syntax

- **migrate-to-mgmt**

- **no migrate-to-mgmt**

Default

None

Command Mode

Loopback Interface Configuration

Chapter 13: Management Instance Configuration

enable (for a Management Instance)

Enables a Segmented Management Instance.

Syntax

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

Default

The default is disabled.

Command Mode

Management Instance Configuration

ip address (for a Mangement Instance)

Adds an IPv4 address to a Segmented Management Instance.

Syntax

- `ip address {A.B.C.D/X}`
- `ip address {A.B.C.D} {A.B.C.D}`
- `no ip address`

Command Parameters

{A.B.C.D/X}	Specifies the address and mask.
{A.B.C.D} {A.B.C.D}	Specifies the address and mask.

Default

None

Command Mode

Management Instance Configuration

ip route (for a Management Instance)

Configures an IPv4 static route for a management VLAN.

Syntax

- **default ip route {A.B.C.D/X} next-hop {A.B.C.D} weight**
- **default ip route {A.B.C.D/X} next-hop {A.B.C.D}**
- **default ip route {A.B.C.D} {A.B.C.D} next-hop {A.B.C.D}**
- **default ip route {A.B.C.D} {A.B.C.D} next-hop {A.B.C.D} weight**
- **ip route {A.B.C.D/X} next-hop {A.B.C.D} weight <1-65535>**
- **ip route {A.B.C.D/X} next-hop {A.B.C.D}**
- **ip route {A.B.C.D} {A.B.C.D} next-hop {A.B.C.D}**
- **ip route {A.B.C.D} {A.B.C.D} next-hop {A.B.C.D} weight <1-65535>**
- **no ip route {A.B.C.D/X} next-hop {A.B.C.D} weight**
- **no ip route {A.B.C.D/X} next-hop {A.B.C.D}**
- **no ip route {A.B.C.D} {A.B.C.D} next-hop {A.B.C.D}**
- **no ip route {A.B.C.D} {A.B.C.D} next-hop {A.B.C.D} weight**

Command Parameters

{A.B.C.D/X}	Specifies the address and mask.
{A.B.C.D} {A.B.C.D}	Specifies the address and mask.
next-hop {A.B.C.D}	Specifies the next hop address for the static route. Use an IP in the same subnet as the management VLAN IP address.
weight <1-65535>	Specifies the static route cost. The default is 200.

Default

None

Command Mode

Management Instance Configuration

ipv6 address (for a Management Instance)

Adds an IPv6 address to a Segmented Management Instance.

Syntax

- **ipv6 address WORD<0-255>**
- **no ipv6 address**

Command Parameters

WORD<0-255>	Specifies the address and prefix length.

Default

None

Command Mode

Management Instance Configuration

ipv6 route (for a Management Instance)

Configures an IPv6 static route for a management VLAN.

Syntax

- **default ipv6 route WORD<0-255> next-hop WORD<0-255>**
- **default ipv6 route WORD<0-255> next-hop WORD<0-255> weight**
- **ipv6 route WORD<0-255>**
- **ipv6 route WORD<0-255> next-hop WORD<0-255>**
- **ipv6 route WORD<0-255> next-hop WORD<0-255> weight <1-65535>**
- **ipv6 route WORD<0-255> weight <1-65535>**
- **no ipv6 route WORD<0-255> next-hop WORD<0-255>**
- **no ipv6 route WORD<0-255> next-hop WORD<0-255> weight**

Command Parameters

next-hop WORD<0-255>	Specifies the next hop address for the static route. Use an IP in the same subnet as the management VLAN IP address.
weight <1-65535>	Specifies the static route cost. The default is 200.
WORD<0-255>	Specifies the address and prefix length.

Default

None

Command Mode

Management Instance Configuration

Chapter 14: mgmtEthernet Interface Configuration

auto-negotiate (for the management port)

Configure auto-negotiation for the Ethernet management port.

Note:

This command does not apply to all hardware platforms.

Syntax

- `auto-negotiate enable`
- `default auto-negotiate enable`
- `no auto-negotiate enable`

Command Parameters

{slot/port[/sub-port] [-slot/port[/sub-port]] [,...]}	Identifies the slot and port in one of the following formats: a single slot and port (slot/port), a range of slots and ports (slot/port-slot/port), or a series of slots and ports (slot/port,slot/port,slot/port). If your platform supports channelization and the port is channelized, you must also specify the sub-port in the format slot/port/sub-port.

Default

The default is enabled.

Command Mode

mgmtEthernet Interface Configuration

duplex (for the management port)

Configure the duplex mode for the Ethernet management port.

Note:

This command does not apply to all hardware platforms.

Syntax

- `default duplex [port {slot/port[/sub-port][-slot/port[/sub-port]] [,...]}]`
- `duplex [port {slot/port[/sub-port][-slot/port[/sub-port]] [,...]}]<half|full>`

Command Parameters

<half|full>	Specifies half- or full-duplex mode. 1 and 10 Gb/s ports must use full-duplex mode.
port *{slot/port[/sub-port] [-slot/port[/sub-port]] [,...]}*	Identifies the slot and port in one of the following formats: a single slot and port (slot/port), a range of slots and ports (slot/port-slot/port), or a series of slots and ports (slot/port,slot/port,slot/port). If your platform supports channelization and the port is channelized, you must also specify the sub-port in the format slot/port/sub-port.

Default

The default is half-duplex mode.

Command Mode

mgmtEthernet Interface Configuration

ip address (for the management port)

Configure the IP address for the Ethernet management port.

Note:

This command does not apply to all hardware platforms.

Syntax

- `ip address {A.B.C.D A.B.C.D|A.B.C.D/X}`
- `ip address port {slot/port} {A.B.C.D/X}`
- `ip address port {slot/port} {A.B.C.D} {A.B.C.D}`
- `no ip address {A.B.C.D}`

Command Parameters

{A.B.C.D A.B.C.D| A.B.C.D/X}	Assigns an IP address and mask for the management port. **Important:** You cannot assign an address of 0.0.0.0/0. You can specify the mask in either dotted decimal notation or as a decimal number.

Default

None

Command Mode

mgmtEthernet Interface Configuration

ip ipsec enable (for a mgmt port)

Enable Internet Protocol Security (IPsec) for IPv4 on a managent port.

Note:

This command only applies to hardware with a dedicated, physical management interface..

Syntax

- `default ip ipsec enable`
- `ip ipsec enable`
- `no ip ipsec enable`

Default

The default is disabled.

Command Mode

mgmtEthernet Interface Configuration

ip ipsec policy (for a management interface)

Link an Internet Protocol Security (IPsec) IPv4 policy to a management interface.

Syntax

- `default ip ipsec policy WORD<1-32>`
- `ip ipsec policy WORD<1-32>`
- `ip ipsec policy WORD<1-32> dir both`
- `ip ipsec policy WORD<1-32> dir in`
- `ip ipsec policy WORD<1-32> dir out`
- `no ip ipsec policy WORD<1-32> dir both`
- `no ip ipsec policy WORD<1-32> dir in`
- `no ip ipsec policy WORD<1-32> dir out`

Command Parameters

dir <both|in|out>	Specifies the direction to which IPsec applies. Both specifies both ingress and egress traffic, in specifies ingress traffic, and out specifies egress traffic. By default, the direction is both.
WORD<1-32>	Specifies the IPsec policy name.

Default

None

Command Mode

mgmtEthernet Interface Configuration

ipv6 interface address (for the management port)

Configure the IPv6 address for the Ethernet management port.

Note:

This command does not apply to all hardware platforms.

Syntax

- `ipv6 interface address WORD<0-255> eui <1-3>`
- `no ipv6 interface address WORD<0-255>`

Command Parameters

WORD<0-255> eui <1-3>	Assigns an IPv6 address, prefix length, and extended unique identifier to the to the management port.

Default

None

Command Mode

mgmtEthernet Interface Configuration

ipv6 interface enable (for the management port)

Enable IPv6 route advertisement on the Ethernet management port.

Note:

This command does not apply to all hardware platforms.

Syntax

- **default ipv6 interface enable**
- **ipv6 interface enable**
- **no ipv6 interface enable**

Default

The default is disabled.

Command Mode

mgmtEthernet Interface Configuration

ipv6 interface hop-limit (for the management port)

Configure the maximum number of hops before packets drop.

Note:

This command does not apply to all hardware platforms.

Syntax

- **default ipv6 interface hop-limit**
- **ipv6 interface hop-limit <1-255>**

Command Parameters

<1-255>	Configures the maximum hops.

Default

The default is 30 hops.

Command Mode

mgmtEthernet Interface Configuration

ipv6 interface link-local (for the management port)

Create a link-local address for the Ethernet management port.

Note:

This command does not apply to all hardware platforms.

Syntax

- **ipv6 interface link-local WORD<0-19>**

Command Parameters

WORD<0-19>	Specifies the link-local address for the management port.

Default

None

Command Mode

mgmtEthernet Interface Configuration

ipv6 interface mtu (for the management port)

Configure the maximum transmission unit for the Ethernet management port.

Note:

This command does not apply to all hardware platforms.

Syntax

- **default ipv6 interface mtu**
- **ipv6 interface mtu <1280-1500>**

Command Parameters

<1280-1500>	Configures the maximum transmission unit for the interface.

Default

The default is 1500.

Command Mode

mgmtEthernet Interface Configuration

ipv6 interface name (for the management port)

Configure an interface description for the Ethernet management port.

Note:

This command does not apply to all hardware platforms.

Syntax

- **ipv6 interface name WORD<0-255>**

Command Parameters

WORD<0-255>	Assigns a descriptive name to the management port.

Default

None

Command Mode

mgmtEthernet Interface Configuration

ipv6 interface process-redirect (for the management port)

Configure process-redirect messages to honor or ignore redirect messages for the management port. Redirect messages are visible only when Stateless Address Autoconfiguration is configured on switches capable of routing IPv6 traffic.

Syntax

- **ipv6 interface process-redirect**

Default

None

Command Mode

mgmtEthernet Interface Configuration

ipv6 interface reachable-time (for the management port)

Configure the time a neighbor is considered reachable after receiving a reachability confirmation.

Note:

This command does not apply to all hardware platforms.

Syntax

- **default ipv6 interface reachable-time**
- **ipv6 interface reachable-time <0-3600000>**

Command Parameters

<0-3600000>	Configures the time, in milliseconds, a neighbor is considered reachable after receiving a reachability confirmation.

Default

The default is 30000.

Command Mode

mgmtEthernet Interface Configuration

ipv6 interface retransmit-timer (for the management port)

Configure the time, between retransmissions of Neighbor Solicitation messages to a neighbor when resolving the address or when probing the reachability of a neighbor.

Note:

This command does not apply to all hardware platforms.

Syntax

- **default ipv6 interface retransmit-timer**
- **ipv6 interface retransmit-timer <0-3600000>**

Command Parameters

<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.

Default

The default is 1000.

Command Mode

mgmtEthernet Interface Configuration

ipv6 ipsec enable (for a mgmt port)

Enable Internet Protocol Security (IPsec) for IPv6 on a managent port.

Note:

This command only applies to hardware with a dedicated, physical management interface.

Syntax

- **default ipv6 ipsec enable**
- **ipv6 ipsec enable**
- **no ipv6 ipsec enable**

Default

The default is disabled.

Command Mode

mgmtEthernet Interface Configuration

ipv6 ipsec policy (for a management interface)

Link an Internet Protocol Security (IPsec) IPv6 policy to a management interface.

Syntax

- **default ipv6 ipsec policy WORD<1-32>**
- **ipv6 ipsec policy WORD<1-32>**
- **ipv6 ipsec policy WORD<1-32> dir both**
- **ipv6 ipsec policy WORD<1-32> dir in**
- **ipv6 ipsec policy WORD<1-32> dir out**
- **no ipv6 ipsec policy WORD<1-32> dir both**
- **no ipv6 ipsec policy WORD<1-32> dir in**
- **no ipv6 ipsec policy WORD<1-32> dir out**

Command Parameters

dir <both|in|out>	Specifies the direction to which IPsec applies. • Both specifies both ingress and egress traffic • in specifies ingress traffic • out specifies egress traffic By default, the direction is both.
WORD<1-32>	Specifies the IPsec policy name.

Default

None

Command Mode

mgmtEthernet Interface Configuration

ipv6 nd dad-ns (for the management port)

Configure the number of neighbor solicitation messages from duplicate address detection.

Note:

This command does not apply to all hardware platforms.

Syntax

- **default ipv6 nd dad-ns**
- **ipv6 nd dad-ns <0-600>**

Command Parameters

<0-600> Configures the number of neighbor solicitation messages from duplicate address detection.

- A value of 0 disables duplicate address detection on the specified interface
- A value of 1 configures a single transmission without follow-up transmissions

Default

The default is 1.

Command Mode

mgmtEthernet Interface Configuration

shutdown (for the management port)

Disable the Ethernet management port.

Note:

This command does not apply to all hardware platforms.

Syntax

- **default shutdown**
- **no shutdown**
- **shutdown**

Default

The default is enabled.

Command Mode

mgmtEthernet Interface Configuration

speed (for the management port)

Configure the speed for the Ethernet management (mgmt) port.

Note:

This command does not apply to all hardware platforms.

Syntax

- **default speed**
- **speed <10|100>**

Command Parameters

<10|100>	Configures the connection speed for ports to 10 or 100 Mb/s.

Default

None

Command Mode

mgmtEthernet Interface Configuration

Chapter 15: MLT Interface Configuration

default svlan-porttype

Set svlan port type to default.

Syntax

- **default svlan-porttype**

Default

None

Command Mode

MLT Interface Configuration

fa authentication-key (for a MLT)

Configure the Fabric Attach authentication key.

Syntax

- **default fa authentication-key**
- **fa authentication-key WORD<0-32>**

Command Parameters

WORD<0-32>	Configures the authentication key on the MLT.

Default

None

Command Mode

MLT Interface Configuration

fa enable (for a MLT)

Enable Fabric Attach on a MLT.

Syntax

- `fa enable`
- `no fa enable`

Default

None

Command Mode

MLT Interface Configuration

fa management (for an MLT)

Configure Fabric Attach management on a MLT.

Syntax

- `default fa management i-sid`
- `fa management i-sid <1-16777215> <c-vid>`
- `no fa management i-sid`

Command Parameters

<c-vid>	Specifies the customer VLAN ID. Different hardware platforms support different customer VLAN ID ranges. Use the CLI Help to see the available range for your switch.
i-sid <1-16777215>	Specifies the management I-SID.

Default

None

Command Mode

MLT Interface Configuration

fa message-authentication (for an MLT)

Configure Fabric Attach message authentication on an MLT.

Syntax

- **default no fa message-authentication**
- **fa message-authentication**
- **no fa message-authentication**

Default

None

Command Mode

MLT Interface Configuration

flex-uni (for an MLT)

Configure Switched UNI on a MLT.

Syntax

- **flex-uni enable**
- **default flex-uni enable**
- **no flex-uni enable**

Command Parameters

enable	Enables Switched UNI on an MLT.

Default

The default is disabled.

Command Mode

MLT Interface Configuration

ip dhcp-relay (for an MLT)

Configure Dynamic Host Configuration Protocol (DHCP) Relay on an interface. The command no ip dhcp-relay disables DHCP Relay but does not delete the DHCP entry.

Syntax

- **default ip dhcp-relay fwd-path {A.B.C.D} {A.B.C.D}**
- **default ip dhcp-relay broadcast**
- **default ip dhcp-relay circuitId**
- **default ip dhcp-relay fwd-path {A.B.C.D}**

- **default ip dhcp-relay fwd-path {A.B.C.D} {A.B.C.D} mode**
- **default ip dhcp-relay fwd-path {A.B.C.D} mode**
- **default ip dhcp-relay fwd-path {A.B.C.D} vrid <1-255>**
- **default ip dhcp-relay max-hop**
- **default ip dhcp-relay min-sec**
- **default ip dhcp-relay mode**
- **default ip dhcp-relay remoteId**
- **default ip dhcp-relay trusted**
- **ip dhcp-relay broadcast**
- **ip dhcp-relay circuitId**
- **ip dhcp-relay fwd-path {A.B.C.D}**
- **ip dhcp-relay fwd-path {A.B.C.D} {A.B.C.D}**
- **ip dhcp-relay fwd-path {A.B.C.D} {A.B.C.D} disable**
- **ip dhcp-relay fwd-path {A.B.C.D} {A.B.C.D} enable**
- **ip dhcp-relay fwd-path {A.B.C.D} {A.B.C.D} mode { bootp | bootp_dhcp | dhcp }**
- **ip dhcp-relay fwd-path {A.B.C.D} disable**
- **ip dhcp-relay fwd-path {A.B.C.D} enable**
- **ip dhcp-relay fwd-path {A.B.C.D} mode bootp**
- **ip dhcp-relay fwd-path {A.B.C.D} mode bootp_dhcp**
- **ip dhcp-relay fwd-path {A.B.C.D} mode dhcp**
- **ip dhcp-relay fwd-path {A.B.C.D} vrid <1-255>**
- **ip dhcp-relay max-hop <1-16>**
- **ip dhcp-relay min-sec <0-65535>**
- **ip dhcp-relay mode { bootp | dhcp | bootp_dhcp }**
- **ip dhcp-relay remoteId**
- **ip dhcp-relay trusted**
- **no ip dhcp-relay**
- **no ip dhcp-relay broadcast**
- **no ip dhcp-relay circuitId**
- **no ip dhcp-relay fwd-path {A.B.C.D}**
- **no ip dhcp-relay fwd-path {A.B.C.D} {A.B.C.D}**
- **no ip dhcp-relay fwd-path {A.B.C.D} {A.B.C.D} enable**
- **no ip dhcp-relay fwd-path {A.B.C.D} vrid <1-255>**
- **no ip dhcp-relay remoteId**

- **no ip dhcp-relay trusted**

Command Parameters

{A.B.C.D}	Creates a forwarding path to the DHCP server with a mode and a state. A.B.C.D is the IP address of the server. The default IP address of the relay is the address of the interface. **Tip:** If the relay is a Virtual Router configured on this interface, you must set the vrid.
{A.B.C.D} {A.B.C.D}	The first IP address is the IP address of the dhcp-relay agent, while the second one is the IP address of the server.
<bootp|dhcp| bootp_dhcp>	Configures DHCP mode to forward BootP messages only, DHCP messages only, or both. The default is both.
broadcast	Enables the device to send the server reply as a broadcast to the end station. After you disable this variable, the device sends the server reply as a unicast to the end station.
circuitId	Enables the device to insert the Option 82 Circuit ID into the packets sent to the server (enables DHCP Option 82).
max-hop <1-16>	Configures the maximum number of hops before a BootP/DHCP packet is discarded (1-16). The default is 4.
min-sec <0-65535>	Configures the minimum seconds count for DHCP. If the secs field in the BootP/DHCP packet header is greater than this value, the device relays or forwards the packet; otherwise, the packet is dropped (0- 65535). The default is 0 seconds.
mode <bootp| dhcp| bootp_dhcp>	Configures DHCP mode to forward BootP messages only, DHCP messages only, or both. The default is both.
remoteId	Enables the device to insert the Option 82 Remote ID into the packets sent to the server (enables DHCP Option 82).
trusted	Configures the circuit as trusted in an Option 82 context.

Default

None

Command Mode

MLT Interface Configuration

ip dhcp-snooping (for MLT)

Sets the trust factor associated with an MLT for DHCP Snooping feature.

Syntax

- **default ip dhcp-snooping**
- **ip dhcp-snooping <trusted|untrusted>**
- **no ip dhcp-snooping**

Command Parameters

trusted	Sets the trust factor as trusted on the MLT for DHCP Snooping.
untrusted	Sets the trust factor as untrusted on the MLT for DHCP Snooping.

Default

The default is untrusted.

Command Mode

MLT Interface Configuration

i-sid (for a mlt)

Create Switched UNI (S-UNI) service instance identifiers (I-SID).

Syntax

- **i-sid <1-16777215> elan**

Command Parameters

<1-16777215>	Specifies the service instance identifiers (I-SID) number.
elan	Create an Elan based service.

Default

None

Command Mode

MLT Interface Configuration

isis (on an MLT)

Create an Intermediate-System-to-Intermediate-System (IS-IS) circuit and interface on the selected MultiLink Trunking (MLT) instance.

Syntax

- **default isis enable**
- **isis**
- **isis enable**
- **no isis**
- **no isis enable**

Command Parameters

enable	Enables the Intermediate-System-to-Intermediate-System (IS-IS) circuit and interface on the selected MLT.

Default

None

Command Mode

MLT Interface Configuration

isis hello-auth (on an MLT)

Configure the authentication type used for Intermediate-System-to-Intermediate-System (IS-IS) hello packets on the interface.

Syntax

- **default isis hello-auth**
- **isis hello-auth type { none | simple | hmac-md5 | hmac-sha-256 }**
- **isis hello-auth type { none | simple | hmac-md5 | hmac-sha-256 } key WORD<1-16>**
- **isis hello-auth type { none | simple | hmac-md5 | hmac-sha-256 } key WORD<1-16> key-id <1-255>**
- **no isis hello-auth**

Command Parameters

key WORD<1-16>	Specifies the authentication key (password) used by the receiving router to verify the packet.
key-id <1-255>	Specifies the optional key ID.

type { none | simple | hmac-md5 | hmac-sha-256 }

Specifies the authentication type used for IS-IS hello packets on the interface. The type can be one of the following: none, simple, hmac-md5, or hmac-sha-256.

- If simple is selected, you can also specify a key value. Simple password authentication uses a text password in the transmitted packet. The receiving router uses an authentication key (password) to verify the packet.
- If hmac-md5 is selected, you can also specify a key value and key-id. 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.
- If hmac-sha-256 is selected, you can also specify a key value and key-id. With SHA-256 authentication, the switch adds an HMAC-SHA256 digest to each Hello packet. The switch that receives the Hello packet computes the digest of the packet and compares it with the received digest. If the digests match, the packet is accepted. If the digests do not match, the receiving switch discards the packet.

The default type is none. Use the no or default options to set the hello-auth type to none.

Default

The default is no authentication type (none).

Command Mode

MLT Interface Configuration

isis l1-dr-priority (on an MLT)

Configure the Level 1 Intermediate-System-to-Intermediate-System (IS-IS) designated router priority to the specified value.

Syntax

- `isis l1-dr-priority <0-127>`
- `no isis l1-dr-priority`

Command Parameters

<0-127> Configures the Level 1 Intermediate-System-to-Intermediate-System (IS-IS) designated router priority to the specified value.

Default

The default Level 1 designated router priority value is 64.

Command Mode

MLT Interface Configuration

isis l1-hello-interval (on an MLT)

Configure the hello interval to change how often hello packets are sent out from an interface level.

Syntax

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

Command Parameters

<1-600>	Configures the Level 1 hello interval.

Default

The default Level 1 hello interval value is 9 seconds.

Command Mode

MLT Interface Configuration

isis l1-hello-multiplier (on an MLT)

Configure the hello multiplier to specify how many hellos the switch must miss before it considers the adjacency with a neighboring switch down.

Syntax

- **isis l1-hello-multiplier <1-600>**
- **no isis l1-hello-multiplier**

Command Parameters

<1-600>	Configures the Level 1 hello multiplier.

Default

The default Level 1 hello-multiplier value is 3 seconds.

Command Mode

MLT Interface Configuration

isis spbm (on an MLT)

Configure Shortest Path Bridging MAC (SPBM) on an Intermediate-System-to-Intermediate-System (IS-IS) interface on a MultiLink Trunking (MLT) instance.

Syntax

- **default isis spbm <1-100> interface-type**
- **default isis spbm <1-100> l1-metric**
- **isis spbm <1-100>**
- **isis spbm <1-100> interface-type { broadcast | pt-pt }**
- **isis spbm <1-100> l1-metric <1-16777215>**
- **no isis spbm <1-100>**
- **no isis spbm <1-100> interface-type**
- **no isis spbm <1-100> l1-metric**

Command Parameters

<1-100>	Specifies the Shortest Path Bridging MAC (SPBM) instance ID.
interface-type { broadcast | pt-pt }	Configures the Shortest Path Bridging MAC (SPBM) instance interface type.
l1-metric <1-16777215>	Configures the cost for the Shortest Path Bridging MAC (SPBM) instance.

Default

None

Command Mode

MLT Interface Configuration

lacp (on an MLT)

Configure a MultiLink Trunking (MLT) with Link Aggregation Control Protocol (LACP) to use the dynamic link aggregation function.

Syntax

- **default lacp**
- **default lacp key**
- **default lacp system-priority**
- **lacp enable**

- **lacp enable key <0-512> system-priority <0-65535>**
- **lacp key <0-512>**
- **lacp system-priority <0-65535>**
- **no lacp**
- **no lacp enable**

Command Parameters

enable	Enables Link Aggregation Control Protocol (LACP) on the MLT interface. The default is disabled.
key <0-512>	Sets the Link Aggregation Control Protocol (LACP) aggregator key for a specific MLT. <0-512> specifies the Link Aggregation Control Protocol (LACP) actor admin key. The default key value is 0
system-priority <0-65535>	Sets the Link Aggregation Control Protocol (LACP) system priority for a specific MLT. <0-65535> specifies the system priority. The default system-priority is 32768.

Default

None

Command Mode

MLT Interface Configuration

mef-uni enable (for a mlt)

Enable mef-union port (s).

Syntax

- **default mef-uni enable**
- **mef-uni enable**
- **no mef-uni enable**

Default

The default is enabled.

Command Mode

MLT Interface Configuration

virtual-ist (on an MLT)

Virtual interswitch trunk (VIST) improves upon the Layer 2 and Layer 3 resiliency by using a virtualized IST channel through the SPBM cloud.

Syntax

- **`virtual-ist enable`**

Command Parameters

enable	Enables vIST on the specified MLT ID.

Default

None

Command Mode

MLT Interface Configuration

Chapter 16: OSPF Router Configuration

accept adv-rtr (for OSPF)

Use a route policy to define how the switch Redistribute external routes from a specified source into an OSPF domain. The policy defines which route types the switch accepts and Redistribute.

Syntax

- `accept adv-rtr {A.B.C.D}`
- `accept adv-rtr {A.B.C.D} enable`
- `accept adv-rtr {A.B.C.D} metric-type { type1 | type2 | any }`
- `accept adv-rtr {A.B.C.D} route-map WORD<0-64>`
- `default accept adv-rtr {A.B.C.D}`
- `default accept adv-rtr {A.B.C.D} enable`
- `default accept adv-rtr {A.B.C.D} metric-type`
- `default accept adv-rtr {A.B.C.D} route-map`
- `no accept adv-rtr {A.B.C.D}`
- `no accept adv-rtr {A.B.C.D} enable`

Command Parameters

{A.B.C.D}	Specifies the IP address.
enable	Enables an OSPF accept entry for a specified advertising router.
metric-type <type1|type2|any>	Indicates the OSPF external type. This parameter describes which types of OSPF external routes match this entry. any means match all external routes. type1 means match external type 1 only. type2 means match external type 2 only.
route-map WORD<0-64>	Specifies the name of the route policy to use for filtering external routes advertised by the specified advertising router before accepting into the routing table.

Default

None

Command Mode

OSPF Router Configuration

area

Import information from other areas to learn their OSPF relationships and create normal, stubby, or not-so-stubby areas (NSSA). Place stubby or NSSAs at the edge of an OSPF routing domain.

Syntax

- **area {A.B.C.D}**
- **area {A.B.C.D} default-cost <0-16777215>**
- **area {A.B.C.D} import external**
- **area {A.B.C.D} import noexternal**
- **area {A.B.C.D} import nssa**
- **area {A.B.C.D} import-summaries enable**
- **area {A.B.C.D} stub**
- **default area {A.B.C.D}**
- **default area {A.B.C.D} default-cost**
- **default area {A.B.C.D} import**
- **default area {A.B.C.D} import-summaries enable**
- **default area {A.B.C.D} stub**
- **no area {A.B.C.D}**
- **no area {A.B.C.D} import-summaries enable**

Command Parameters

default-cost <0-16777215>	Stub area default metric for this stub area, which is the cost from 0 to 16 777 215. This is the metric value applied at the indicated type of service.
import <external|noexternal|nssa>	Specifies the type of area: external - Stub and NSSA (not so stubby area) are both false. noexternal-Configures the area as stub area. nssa - Configures the area as NSSA.
import-summaries enable	Configures the area support to import summary advertisements into a stub area. This parameter must be used only if the area is a stub area.
stub	Configures the import external option for this area as stub. A stub area has only one exit point (router interface) from the area.

Default

None

Command Mode

OSPF Router Configuration

area range

Use aggregate area ranges to reduce the number of link-state advertisements that are required within the area. You can also control advertisements.

Syntax

- **area range {A.B.C.D} {A.B.C.D/X} { summary-link | nssa-extlink } advertise-metric <0-65535>**
- **area range {A.B.C.D} {A.B.C.D/X} { summary-link | nssa-extlink } advertise-mode { summarize | suppress | no-summarize }**
- **default area range {A.B.C.D} {A.B.C.D/X} { summary-link | nssa-extlink }**
- **default area range {A.B.C.D} {A.B.C.D/X} { summary-link | nssa-extlink } advertise-metric**
- **default area range {A.B.C.D} {A.B.C.D/X} { summary-link | nssa-extlink } advertise-mode**
- **no area range {A.B.C.D} {A.B.C.D/X} { summary-link | nssa-extlink }**

Command Parameters

<A.B.C.D> <A.B.C.D/X>	<A.B.C.D> identifies an OSPF area and <A.B.C.DX> is the IP address and subnet mask of the range, respectively.
<summary-link| nssaextlink>	Specifies the LSA type. If you configure the range as type nssaextlink then you cannot configure the advertise-metric.
advertise-metric <0-65535>	Changes the advertised metric cost of the OSPF area range.
advertise-mode <summarize|suppress| nosummarize	Changes the advertisement mode of the range.

Default

None

Command Mode

OSPF Router Configuration

area virtual-link

Use manual virtual interfaces to provide a backup link for vital OSPF traffic with a minimum of resource use.

Syntax

- **area virtual-link {A.B.C.D} {A.B.C.D}**
- **area virtual-link {A.B.C.D} {A.B.C.D} authentication-key WORD<0-8>**
- **area virtual-link {A.B.C.D} {A.B.C.D} authentication-type message-digest**
- **area virtual-link {A.B.C.D} {A.B.C.D} authentication-type none**
- **area virtual-link {A.B.C.D} {A.B.C.D} authentication-type sha 1**
- **area virtual-link {A.B.C.D} {A.B.C.D} authentication-type sha 2**
- **area virtual-link {A.B.C.D} {A.B.C.D} authentication-type simple**
- **area virtual-link {A.B.C.D} {A.B.C.D} dead-interval <0-2147483647>**
- **area virtual-link {A.B.C.D} {A.B.C.D} hello-interval <1-65535>**
- **area virtual-link {A.B.C.D} {A.B.C.D} primary-digest-key <1-255>**
- **area virtual-link {A.B.C.D} {A.B.C.D} retransmit-interval <0-3600>**
- **area virtual-link {A.B.C.D} {A.B.C.D} transit-delay <0-3600>**
- **area virtual-link digest-key {A.B.C.D} {A.B.C.D} <1-255> key WORD<0-16>**
- **default area virtual-link {A.B.C.D} {A.B.C.D}**
- **default area virtual-link {A.B.C.D} {A.B.C.D} authentication-type**
- **default area virtual-link {A.B.C.D} {A.B.C.D} dead-interval**
- **default area virtual-link {A.B.C.D} {A.B.C.D} hello-interval**
- **default area virtual-link {A.B.C.D} {A.B.C.D} primary-digest-key**
- **default area virtual-link {A.B.C.D} {A.B.C.D} retransmit-interval**
- **default area virtual-link {A.B.C.D} {A.B.C.D} transit-delay**
- **default area virtual-link digest-key {A.B.C.D} {A.B.C.D} <1-255>**
- **no area virtual-link {A.B.C.D} {A.B.C.D}**
- **no area virtual-link digest-key {A.B.C.D} {A.B.C.D} <1-255>**

Command Parameters

<1-255>	Specifies the key ID.
<A.B.C.D> <A.B.C.D>	Creates a virtual interface area identifier. <A.B.C.D> <A.B.C.D> specify the area ID and the virtual interface ID, respectively.
authentication-key WORD<0-8>	Configures the authentication key of up to eight characters.
authentication-type <none|simple|	Configures the authentication type for the OSPF area. authentication-type is: none, simple password, MD5 authentication, SHA 1, or SHA 2. If simple, all OSPF updates received by the interface must contain the

message-digest|sha 1| sha 2>	authentication key specified by the area authentication-key command. If MD5, they must contain the MD5 key. The default is none.
dead-interval <0-2147483647>	Configures the dead interval, in seconds, for the virtual interface, the number of seconds that a router Hello packets are not seen before its neighbors declare the router down. This value must be at least four times the Hello interval value. The default is 60.
digest-key	Creates a digest-key.
hello-interval <1-65535>	Configures the Hello interval, in seconds, on the virtual interface for the length of time (in seconds) between the Hello packets that the router sends on the interface. The default is 10.
key WORD<0-16>	Specifies the digest key range.
primary-digest-key <1-255>	Changes the primary key used to encrypt outgoing packets. <1-255> is the ID for the message digest key.
retransmit-interval <0-3600>	Configures the retransmit interval for the virtual interface, the number of seconds between link-state advertisement retransmissions. The range is from 0 to 3600.
transit-delay <0-3600>	Configures the transit delay for the virtual interface, the estimated number of seconds required to transmit a link-state update over the interface. The range is from 0 to 3600.

Default

None

Command Mode

OSPF Router Configuration

as-boundary-router enable

Configure the router as an autonomous system boundary router (ASBR).

Syntax

- **as-boundary-router enable**
- **default as-boundary-router**
- **default as-boundary-router enable**
- **no as-boundary-router**
- **no as-boundary-router enable**

Default

The default is disabled.

Command Mode

OSPF Router Configuration

auto-vlink

Use automatic virtual links to provide an automatic, dynamic backup link for vital OSPF traffic. Automatic virtual links require more system resources than manually configured virtual links.

Syntax

- **auto-vlink**
- **default auto-vlink**
- **no auto-vlink**

Default

None

Command Mode

OSPF Router Configuration

bad-lsa-ignore enable

Configures the switch to accept bad LSAs, for example, with a hole in the mask. If you use the no operator with this command, the switch ignores bad LSAs.

Syntax

- **bad-lsa-ignore enable**
- **default bad-lsa-ignore**
- **default bad-lsa-ignore enable**
- **no bad-lsa-ignore**
- **no bad-lsa-ignore enable**

Default

The default is disabled.

Command Mode

OSPF Router Configuration

default-cost

Configures the default OSPF metrics.

Syntax

- **default default-cost**
- **default default-cost ethernet**
- **default default-cost fast-ethernet**
- **default default-cost forty-gig-ethernet**
- **default default-cost gig-ethernet**
- **default default-cost hundred-gig-ethernet**
- **default default-cost ten-gig-ethernet**
- **default default-cost twentyfive-gig-ethernet**
- **default default-cost vlan**
- **default-cost ethernet <1-65535>**
- **default-cost fast-ethernet <1-65535>**
- **default-cost forty-gig-ethernet <1-65535>**
- **default-cost gig-ethernet <1-65535>**
- **default-cost hundred-gig-ethernet <1-65535>**
- **default-cost ten-gig-ethernet <1-65535>**
- **default-cost twentyfive-gig-ethernet <1-65535>**
- **default-cost vlan <1-65535>**

Command Parameters

ethernet <1-65535>	Configures the OSPF default metrics for 10 Mb/s Ethernet. The default is 100.
fast-ethernet <1-65535>	Configures the OSPF default metrics for 100 Mb/s (Fast) Ethernet. The default is 10.
forty-gig-ethernet <1-65535>	Configures the OSPF default metrics for 40 Gigabit Ethernet. The default is 1.
gig-ethernet <1-65535>	Configures the OSPF default metrics for Gigabit Ethernet. The default is 1.
hundred-gig-ethernet <1-65535>	Configures the OSPF default metrics for 100 Gigabit Ethernet. The default is 1.
ten-gig-ethernet <1-65535>	Configures the OSPF default metrics for 10 Gigabit Ethernet. The default is 1.

twentyfive-gig-ethernet <1-65535>	Configures the OSPF default metrics for 25 Gigabit Ethernet. On a channelized 100 Gbps port, the default-cost for each 25 Gbps channel is 1

Default

None

Command Mode

OSPF Router Configuration

helper-mode-disable

Disable helper mode.

Syntax

- **default helper-mode-disable**
- **helper-mode-disable**
- **no helper-mode-disable**

Default

The default is enabled when OSPF is configured.

Command Mode

OSPF Router Configuration

host-route

Use host routes when the switch resides in a network that uses routing protocols other than OSPF.

Syntax

- **default host-route {A.B.C.D}**
- **default host-route {A.B.C.D} metric**
- **host-route {A.B.C.D}**
- **host-route {A.B.C.D} metric <0-65535>**
- **no host-route {A.B.C.D}**

Command Parameters

<A.B.C.D>	Specifies the IP address of the host router in a.b.c.d format.

metric <0-65535>	Configures the metric (cost) for the host route.

Default

None

Command Mode

OSPF Router Configuration

ip area virtual-link ipsec

Create the Internet Protocol Security (IPsec) policy under the OSPF virtual link.

Syntax

- **ip area virtual-link {A.B.C.D} {A.B.C.D} ipsec**
- **no ip area virtual-link {A.B.C.D} {A.B.C.D} ipsec**

Command Parameters

{A.B.C.D} {A.B.C.D}	The first IP address specifies the area IP address, and the second IP address specifies the virtual-link IP address.

Default

None

Command Mode

OSPF Router Configuration

ip area virtual-link ipsec action

Configure the action of the Internet Protocol Security (IPsec) policy under the OSPF virtual link.

Syntax

- **default ip area virtual-link {A.B.C.D} {A.B.C.D} ipsec action**
- **ip area virtual-link {A.B.C.D} {A.B.C.D} ipsec action drop**
- **ip area virtual-link {A.B.C.D} {A.B.C.D} ipsec action permit**
- **no ip area virtual-link {A.B.C.D} {A.B.C.D} ipsec action**

Command Parameters

{A.B.C.D} {A.B.C.D}	The first IP address specifies the area IP address, and the second IP address specifies the virtual-link IP address.

action <drop|permit>	Specifies the action of the IPsec policy under the OSPF virtual link to permit or drop traffic. The default is permit.

Default

The default is permit.

Command Mode

OSPF Router Configuration

ip area virtual-link ipsec direction

Configure the direction of the Internet Protocol Security (IPsec) policy under the OSPF virtual link.

Syntax

- **default ip area virtual-link {A.B.C.D} {A.B.C.D} ipsec direction**
- **ip area virtual-link {A.B.C.D} {A.B.C.D} ipsec direction both**
- **ip area virtual-link {A.B.C.D} {A.B.C.D} ipsec direction in**
- **ip area virtual-link {A.B.C.D} {A.B.C.D} ipsec direction out**
- **no ip area virtual-link {A.B.C.D} {A.B.C.D} ipsec direction**

Command Parameters

{A.B.C.D} {A.B.C.D}	The first IP address specifies the area IP address, and the second IP address specifies the virtual-link IP address.
<both|in|out>	Specifies the direction of the traffic of the IPsec policy under the OSPF virtual link.

Default

None

Command Mode

OSPF Router Configuration

ip area virtual-link ipsec enable

Enable the Internet Protocol Security (IPsec) policy created under the OSPF virtual link.

Syntax

- **default ip area virtual-link {A.B.C.D} {A.B.C.D} ipsec enable**
- **ip area virtual-link {A.B.C.D} {A.B.C.D} ipsec enable**

- **no ip area virtual-link {A.B.C.D} {A.B.C.D} ipsec enable**

Command Parameters

{A.B.C.D} {A.B.C.D}	The first IP address specifies the area IP address, and the second IP address specifies the virtual-link IP address.

Default

The default is disabled.

Command Mode

OSPF Router Configuration

ip area virtual-link ipsec security-association

Link the Internet Protocol Security (IPsec) security association to the OSPF virtual link.

Syntax

- **default ip area virtual-link {A.B.C.D} {A.B.C.D} ipsec security-association WORD<0-32>**
- **ip area virtual-link {A.B.C.D} {A.B.C.D} ipsec security-association WORD<0-32>**
- **no ip area virtual-link {A.B.C.D} {A.B.C.D} ipsec security-association WORD<0-32>**

Command Parameters

{A.B.C.D} {A.B.C.D}	The first IP address specifies the area IP address, and the second IP address specifies the virtual-link IP address.
WORD<0-32>	Specifies the name of the security association.

Default

None

Command Mode

OSPF Router Configuration

ipv6 area

Create and configure an OSPFv3 IPv6 area.

Syntax

- **default ipv6 area {A.B.C.D}**
- **default ipv6 area {A.B.C.D} default-cost**
- **default ipv6 area {A.B.C.D} import**
- **default ipv6 area {A.B.C.D} import-summaries enable**
- **ipv6 area {A.B.C.D}**
- **ipv6 area {A.B.C.D} default-cost <0-16777215>**
- **ipv6 area {A.B.C.D} import external**
- **ipv6 area {A.B.C.D} import noexternal**
- **ipv6 area {A.B.C.D} import nssa**
- **ipv6 area {A.B.C.D} import-summaries enable**
- **ipv6 area {A.B.C.D} translator-role <1-2>**
- **ipv6 area {A.B.C.D} type nssa**
- **ipv6 area {A.B.C.D} type stub**
- **no ipv6 area {A.B.C.D}**
- **no ipv6 area {A.B.C.D} import-summaries enable**

Command Parameters

{A.B.C.D}	Specifies the area address.
default-cost <0-16777215>	Specifies the stub metric for the area. The default-cost default is 10.
import <external|noexternal|nssa>	Configures the area support for importing advertisements. The default is external.
import-summaries enable	Configures the area support for importing summary advertisements into a stub area. Use this entry only for a stub area. The default is enabled.
translator-role {1|2}	Indicates a Not-So-Stubby-Area (NSSA) border router ability to perform translation of type-7 LSAs into type-5 LSAs. Configure this value to 2 to make it a candidate. You can configure this parameter only when you first create the area. The default translator-role is 1.
type {nssa|stub}	Configures the type of area. A Not-So-Stubby-Area (NSSA) prevents flooding of normal route advertisements into the area by replacing them with a default route. A stub area uses only one exit point (router interface) out of the area. You can configure this parameter only when you first create the area. By default, the area is neither a stub area or NSSA (Not-So-Stubby Area).

Default

None

Command Mode

OSPF Router Configuration

ipv6 area range

Create and configure an area address range on the OSPF router to reduce the number of ABR advertisements into other OSPF areas.

Syntax

- **default ipv6 area range {A.B.C.D} WORD<0-255> inter-area-prefix-link [advertise-metric]**
- **default ipv6 area range {A.B.C.D} WORD<0-255> nssa-extlink [advertise-metric]**
- **ipv6 area range {A.B.C.D} WORD<0-255> advertise-mode advertise**
- **ipv6 area range {A.B.C.D} WORD<0-255> advertise-mode not-advertise**
- **ipv6 area range {A.B.C.D} WORD<0-255> inter-area-prefix-link advertise-metric <0-65535>**
- **ipv6 area range {A.B.C.D} WORD<0-255> inter-area-prefix-link advertise-mode advertise**
- **ipv6 area range {A.B.C.D} WORD<0-255> inter-area-prefix-link advertise-mode not-advertise**
- **ipv6 area range {A.B.C.D} WORD<0-255> nssa-extlink advertise-metric <0-65535>**
- **ipv6 area range {A.B.C.D} WORD<0-255> nssa-extlink advertise-mode advertise**
- **ipv6 area range {A.B.C.D} WORD<0-255> nssa-extlink advertise-mode not-advertise**
- **no ipv6 area range {A.B.C.D} WORD<0-255> inter-area-prefix-link**
- **no ipv6 area range {A.B.C.D} WORD<0-255> nssa-extlink**

Command Parameters

{A.B.C.D}	Specifies the area address.
advertise-metric <0-65535>	Specifies the advertise metric value and LSA type. The default advertise-metric is 0.
advertise-mode <advertise|not-advertise>	Configures if the area advertises into other OSPF areas. The default avertise-mode is advertise.
inter-area-prefix-link	Configures the area to use this LSA type.

nssa-extlink	Configures the area to use this LSA type.
WORD<0-255>	Specifies the IPv6 address and prefix.

Default

None

Command Mode

OSPF Router Configuration

ipv6 area virtual-link

Configure an OSPF virtual interface to the ABR if a remote OSPF ABR uses no connection to the backbone area but needs to be part of the same routing domain in which the switch resides.

Syntax

- **default ipv6 area virtual-link {A.B.C.D} {A.B.C.D}**
- **default ipv6 area virtual-link {A.B.C.D} {A.B.C.D} dead-interval**
- **default ipv6 area virtual-link {A.B.C.D} {A.B.C.D} hello-interval**
- **default ipv6 area virtual-link {A.B.C.D} {A.B.C.D} retransmit-interval**
- **default ipv6 area virtual-link {A.B.C.D} {A.B.C.D} transit-delay**
- **ipv6 area virtual-link {A.B.C.D} {A.B.C.D}**
- **ipv6 area virtual-link {A.B.C.D} {A.B.C.D} dead-interval <1-65535>**
- **ipv6 area virtual-link {A.B.C.D} {A.B.C.D} hello-interval <1-65535>**
- **ipv6 area virtual-link {A.B.C.D} {A.B.C.D} retransmit-interval <1-1800>**
- **ipv6 area virtual-link {A.B.C.D} {A.B.C.D} transit-delay <1-1800>**
- **no ipv6 area virtual-link {A.B.C.D} {A.B.C.D}**

Command Parameters

{A.B.C.D} {A.B.C.D}	Specifies the area address and the virtual link address.
dead-interval <1-65535>	Specifies the dead interval, as the number of seconds to wait before determining the OSPF router is down. The default dead-interval is 60.
hello-interval <1-65535>	Specifies the hello interval, in seconds, for hello packets sent between switches for a virtual interface in an OSPF area. The default hello interval is 10.

retransmit-interval <1-1800>	Specifies the retransmit interval, in seconds, for link-state advertisements. The default retransmit-interval is 5.
transit-delay <1-1800>	Specifies the transit-delay interval, in seconds, required to transmit a link-state update packet over the virtual interface. The default transit-delay is 1.

Default

The default is disabled.

Command Mode

OSPF Router Configuration

ipv6 area virtual-link ipsec

Create the Internet Protocol Security (IPsec) policy under the OSPF virtual link.

Syntax

- **ipv6 area virtual-link {A.B.C.D} {A.B.C.D} ipsec**
- **no ipv6 area virtual-link {A.B.C.D} {A.B.C.D} ipsec**

Command Parameters

{A.B.C.D} {A.B.C.D}	The first IP address specifies the area IP address, and the second IP address specifies the virtual-link IP address.

Default

None

Command Mode

OSPF Router Configuration

ipv6 area virtual-link ipsec action

Configure the action of the Internet Protocol Security (IPsec) policy under the OSPF virtual link.

Syntax

- **default ipv6 area virtual-link {A.B.C.D} {A.B.C.D} ipsec action**
- **ipv6 area virtual-link {A.B.C.D} {A.B.C.D} ipsec action drop**
- **ipv6 area virtual-link {A.B.C.D} {A.B.C.D} ipsec action permit**
- **no ipv6 area virtual-link {A.B.C.D} {A.B.C.D} ipsec action**

Command Parameters

{A.B.C.D} {A.B.C.D}	The first IP address specifies the area IP address, and the second IP address specifies the virtual-link IP address.
action <drop| permit>	Specifies the action of the IPsec policy under the OSPF virtual link to permit or drop traffic. The default is permit.

Default

The default is permit.

Command Mode

OSPF Router Configuration

ipv6 area virtual-link ipsec direction

Configure the direction of the Internet Protocol Security (IPsec) policy under the OSPF virtual link.

Syntax

- **default ipv6 area virtual-link {A.B.C.D} {A.B.C.D} ipsec direction**
- **ipv6 area virtual-link {A.B.C.D} {A.B.C.D} ipsec direction both**
- **ipv6 area virtual-link {A.B.C.D} {A.B.C.D} ipsec direction in**
- **ipv6 area virtual-link {A.B.C.D} {A.B.C.D} ipsec direction out**
- **no ipv6 area virtual-link {A.B.C.D} {A.B.C.D} ipsec direction**

Command Parameters

{A.B.C.D} {A.B.C.D}	The first IP address specifies the area IP address, and the second IP address specifies the virtual-link IP address.
<both|in|out>	Specifies the direction of the traffic of the IPsec policy under the OSPF virtual link.

Default

None

Command Mode

OSPF Router Configuration

ipv6 area virtual-link ipsec enable

Enable the Internet Protocol Security (IPsec) policy created under the OSPF virtual link.

Syntax

- **default ipv6 area virtual-link {A.B.C.D} {A.B.C.D} ipsec enable**
- **ipv6 area virtual-link {A.B.C.D} {A.B.C.D} ipsec enable**
- **no ipv6 area virtual-link {A.B.C.D} {A.B.C.D} ipsec enable**

Command Parameters

{A.B.C.D} {A.B.C.D}	The first IP address specifies the area IP address, and the second IP address specifies the virtual-link IP address.

Default

The default is disabled.

Command Mode

OSPF Router Configuration

ipv6 area virtual-link ipsec security-association

Link the Internet Protocol Security (IPsec) security association to the OSPF virtual link.

Syntax

- **default ipv6 area virtual-link {A.B.C.D} {A.B.C.D} ipsec security-association WORD<0-32>**
- **ipv6 area virtual-link {A.B.C.D} {A.B.C.D} ipsec security-association WORD<0-32>**
- **no ipv6 area virtual-link {A.B.C.D} {A.B.C.D} ipsec security-association WORD<0-32>**

Command Parameters

{A.B.C.D} {A.B.C.D}	The first IP address specifies the area IP address, and the second IP address specifies the virtual-link IP address.
WORD<0-32>	Specifies the name of the security association.

Default

None

Command Mode

OSPF Router Configuration

ipv6 as-boundary-router

Enable or disable the boundary-router on the router interface.

Syntax

- **default ipv6 as-boundary-router [enable]**
- **ipv6 as-boundary-router**
- **ipv6 as-boundary-router enable**
- **no ipv6 as-boundary-router [enable]**

Command Parameters

enable	Enables the boundary-router.

Default

The default is disabled.

Command Mode

OSPF Router Configuration

ipv6 redistribute (for OSPF)

Enable redistribution to redistribute IPv6 routes into an OSPFv3 routing domain.

Syntax

- **default ipv6 redistribute {bgp | direct | ospf | rip |static} [enable]**
- **ipv6 redistribute direct {enable | metric <0-65535> | metric-type [type1][type2] | route-map WORD<1-64>}**
- **ipv6 redistribute isis {enable | metric <0-65535> | metric-type [type1][type2] | route-map WORD<1-64>}**
- **ipv6 redistribute static {enable | metric <0-65535> | metric-type [type1][type2] | route-map WORD<1-64>}**
- **no ipv6 redistribute {bgp | direct | ospf | rip |static} [enable]**

Command Parameters

{bgp | direct | ospf | rip |static}	Specifies the type of IPv6 route to redistribute to the OSPFv3 routing domain.
{enable | metric <0-65535> | metric-type [type1] [type2] | route-map WORD<1-64>}	Enables redistribution.

Default

The default is disabled.

Command Mode

OSPF Router Configuration

ipv6 redistribute bgp enable (For OSPF)

Enable IPv6 BGP redistribute.

Syntax

- **ipv6 redistribute bgp enable**
- **no ipv6 redistribute bgp enable**

Default

None

Command Mode

OSPF Router Configuration

ipv6 router-id

Configure the OSPF router ID.

Syntax

- **default ipv6 router-id**
- **ipv6 router-id {A.B.C.D}**

Command Parameters

{A.B.C.D}	Specifies the address for the router ID.

Default

None

Command Mode

OSPF Router Configuration

ipv6 tunnel (for OSPF)

Configure OSPF parameters for an IPv6 tunnel.

Syntax

- **default ipv6 tunnel <1-2000>**
- **default ipv6 tunnel <1-2000> dead-interval**
- **default ipv6 tunnel <1-2000> hello-interval**
- **default ipv6 tunnel <1-2000> metric**
- **default ipv6 tunnel <1-2000> poll-interval**
- **default ipv6 tunnel <1-2000> priority**
- **default ipv6 tunnel <1-2000> retransmit-interval**
- **default ipv6 tunnel <1-2000> transmit-delay**
- **ipv6 tunnel <1-2000> area {A.B.C.D}**
- **ipv6 tunnel <1-2000> dead-interval <1-65535>**
- **ipv6 tunnel <1-2000> enable**
- **ipv6 tunnel <1-2000> hello-interval <1-65535>**
- **ipv6 tunnel <1-2000> metric <0-65535>**
- **ipv6 tunnel <1-2000> poll-interval <0-65535>**
- **ipv6 tunnel <1-2000> priority <0-255>**
- **ipv6 tunnel <1-2000> retransmit-interval <1-1800>**
- **ipv6 tunnel <1-2000> transmit-delay <1-1800>**
- **no ipv6 tunnel <1-2000>**
- **no ipv6 tunnel <1-2000> enable**

Command Parameters

{A.B.C.D}	Specifies the area address.
<1-2000>	Specifies the tunnel ID.
dead-interval <1-65535>	Specifies the dead interval, as the number of seconds to wait before determining the OSPF router is down. The default dead-interval is 40.
hello-interval <1-65535>	Specifies the hello interval, in seconds, for hello packets sent between switches for an interface in an OSPF area. The default hello-interval is 10.
metric <0-65535>	Configures the OSPF metric for the tunnel. The switch advertises the metric in router link advertisements. The default metric is 100.

poll-interval <0-65535>	Configures the polling interval, in seconds, for the OSPF tunnel. The default pollinterval is 120.
priority <0-255>	Configures the OSPF priority for the interface during the election process for the designated router. The interface with the highest priority number is the designated router. The interface with the second-highest priority becomes the backup designated router. If the priority is 0, the interface cannot become either the designated router or a backup. The default priority is 1.
retransmit-interval <1-1800>	Specifies the retransmit interval, in seconds, for link-state advertisements. The default retransmit-interval is 5.
transmit-delay <1-1800>	Specifies the transmit-delay interval, in seconds, required to transmit a link-state update packet over the virtual interface. The default transmit-delay is 1.

Default

None

Command Mode

OSPF Router Configuration

neighbor (for OSPF)

Configure NBMA neighbors so that the interface can participate in Designated Router election. All OSPF neighbors that you manually configure are NBMA neighbors.

Syntax

- **`default neighbor {A.B.C.D}`**
- **`neighbor {A.B.C.D} priority <0-255>`**
- **`network {A.B.C.D}`**
- **`no neighbor {A.B.C.D}`**

Command Parameters

<A.B.C.D>	Identifies an OSPF area in IP address format A.B.C.D.
priority <0-255>	Changes the priority level of the neighbor.

Default

None

Command Mode

OSPF Router Configuration

network (for OSPF)

Enable OSPF on a network.

Syntax

- **default network {A.B.C.D}**
- **network {A.B.C.D}**
- **network {A.B.C.D} area {A.B.C.D}**
- **no network {A.B.C.D}**

Command Parameters

{A.B.C.D}	Specifies the IP address of the network.
area {A.B.C.D}	Specifies the OSPF area.

Default

None

Command Mode

OSPF Router Configuration

redistribute (for OSPF)

Redistribute learned routes into OSPF.

Syntax

- **default redistribute { bgp| direct | isis | ospf | rip | static }**
- **default redistribute { bgp| direct | isis | ospf | rip | static } enable**
- **default redistribute { bgp| direct | isis | ospf | rip | static } enable vrf-src WORD<0-16>**
- **default redistribute { bgp| direct | isis | ospf | rip | static } metric**
- **default redistribute { bgp| direct | isis | ospf | rip | static } route-map**
- **default redistribute { bgp| direct | isis | ospf | rip | static } vrf-src WORD<0-16>**
- **default redistribute { bgp| direct | isis | ospf | rip | static } metric-type**
- **default redistribute { bgp| direct | isis | ospf | rip | static } subnets**

- **no redistribute { bgp| direct | isis | ospf | rip | static }**
- **no redistribute { bgp| direct | isis | ospf | rip | static } route-map**
- **no redistribute { bgp| direct | isis | ospf | rip | static } vrf-src WORD<0-16>**
- **no redistribute { bgp| direct | isis | ospf | rip | static } enable**
- **no redistribute { bgp| direct | isis | ospf | rip | static } enable vrf-src WORD<0-16>**
- **redistribute { bgp| direct | isis | ospf | rip | static }**
- **redistribute { bgp| direct | isis | ospf | rip | static } metric-type { type1 | type2 } vrf-src WORD<0-16>**
- **redistribute { bgp| direct | isis | ospf | rip | static } enable**
- **redistribute { bgp| direct | isis | ospf | rip | static } metric <0-65535>**
- **redistribute { bgp| direct | isis | ospf | rip | static } metric vrf-src WORD<0-16>**
- **redistribute { bgp| direct | isis | ospf | rip | static } metric-type { type1 | type2 }**
- **redistribute { bgp| direct | isis | ospf | rip | static } route-map WORD<0-64>**
- **redistribute { bgp| direct | isis | ospf | rip | static } subnets { allow | suppress }**
- **redistribute { bgp| direct | isis | ospf | rip | static } vrf-src WORD<0-16>**

Command Parameters

**{ bgp| direct	isis	ospf	rip	static }**	Specifies the protocol type. The possible values are bgp, direct, isis, ospf, rip, or static.
enable	Enables route redistribution of Intermediate-System-to-Intermediate-System (IS-IS) learned IP routes into OSPF.
metric <0-65535>	Configures the metric (cost) to apply to redistributed routes. The default is 1.
**metric-type { type1	type2 }**	Configures the type of route to import into the OSPF protocol.
route-map WORD<0-64>	Configures the route policy to apply to redistributed routes.
**subnets { allow	suppress }**	Indicates whether the subnets are advertised individually or aggregated to their classful subnet. Choose allow to advertise the subnets individually with the learned or configured mask of the subnet. The default is allow.

vrf-src WORD<0-16>	Specifies the source VRF instance. This parameter is not required for redistribution within the same VRF.

Default

By default, route redistribution is disabled.

Command Mode

OSPF Router Configuration

rfc1583-compatibility enable

Controls the preference rules used when the router chooses among multiple autonomous system external (ASE) LSAs which advertise the same destination. If enabled, the preference rule is the same as that specified by RFC1583. If disabled, the preference rule is as described in RFC2328, which can prevent routing loops when ASE LSAs for the same destination originate from different areas.

Syntax

- **default rfc1583-compatibility**
- **default rfc1583-compatibility enable**
- **no rfc1583-compatibility**
- **no rfc1583-compatibility enable**
- **rfc1583-compatibility enable**

Default

The default is disabled.

Command Mode

OSPF Router Configuration

router-id (for OSPF)

Configure OSPF parameters on the switch to control how OSPF behaves on the system. The switch uses global parameters to communicate with other OSPF routers. Globally configure OSPF before you configure OSPF for an interface, port, or VLAN.

Syntax

- **default router-id**
- **no router-id**
- **router-id {A.B.C.D}**

Command Parameters

router-id <A.B.C.D>	Configures the OSPF router ID IP address, where A.B.C.D is the IP address.

Default

None

Command Mode

OSPF Router Configuration

show ip ospf

Display OSPF configuration information to ensure accuracy.

Syntax

- **show ip ospf**
- **show ip ospf vrf WORD <1-16>**
- **show ip ospf vrfids WORD <0-512>**

Command Parameters

vrf WORD <1-16>	Specifies a VRF by name.
vrfids WORD <0-512>	Specifies a range of VRF IDs.

Default

None

Command Mode

OSPF Router Configuration

timers basic holddown (for OSPF)

Configures the OSPF hold-down timer value, the length of time (in seconds) that OSPF continues to advertise a network after determining that it is unreachable.

Syntax

- **default timers basic**
- **default timers basic holddown**
- **timers basic holddown <3-60>**

Command Parameters

<3-60>	Configures the holddown timer value.

Default

The default is 120 seconds.

Command Mode

OSPF Router Configuration

trap

Enable OSPF traps.

Syntax

- **default trap**
- **default trap enable**
- **no trap**
- **no trap enable**
- **trap enable**

Command Parameters

enable	Enables OSPF traps.

Default

The default value is disable.

Command Mode

OSPF Router Configuration

Chapter 17: OVSDB Configuration

controller

Configures the Network Virtualization Controller for OVSDB.

Syntax

- `controller <1-100> ip address <A.B.C.D> protocol ssl`
- `controller <1-100> ip address <A.B.C.D> protocol ssl port <1-65535>`
- `controller <1-100> ip address <A.B.C.D> protocol tcp`
- `controller <1-100> ip address <A.B.C.D> protocol tcp port <1-65535>`
- `no controller <1-100>`

Command Parameters

<1-100>	Specifies the OVSDB controller ID.
ip address <A.B.C.D>	Specifies an IPv4 address for the OVSDB controller.
port <1-65535>	Specifies a port number for the OVSDB controller.
protocol ssl	Specifies SSL communications protocol for the OVSDB controller.
protocol tcp	Specifies TCP communications protocol for the OVSDB controller.

Default

None

Command Mode

OVSDB Configuration

install-cert-file

Specifices the certificate file path and file name for OVSDB.

Syntax

- `install-cert-file WORD<1-128>`

- **no install-cert-file**

Command Parameters

WORD <1-128>	Specifies the path and file name of the OVSDB certificate.

Default

None

Command Mode

OVSDB Configuration

managed-interface i-sids

Configure an I-SID as the management interface for OVSDB.

Syntax

- **managed-interface i-sids WORD <1-1024>**

Command Parameters

WORD <1-1024>	Specifies the I-SIDs to create an OVSDB managed interface.

Default

None

Command Mode

OVSDB Configuration

private-key

Specifies the path and filename of the private key for OVSDB.

Syntax

- **no private-key**
- **private key WORD <1-128>**

Command Parameters

WORD <1-128>	Specifies the path and file name of the OVSDB private key.

Default

None

Command Mode

OVSDB Configuration

replication

Configures OVSDB replication.

Syntax

- `default replication`
- `no replication`
- `replication peer-ip <A.B.C.D> local-ip <A.B.C.D>`

Command Parameters

local-ip <A.B.C.D>	Specifies an IPv4 address for the primary local OVSDB controller.
peer-ip <A.B.C.D>	Specifies an IPv4 address for the secondary peer OVSDB controller.

Default

None

Command Mode

OVSDB Configuration

Chapter 18: Privileged EXEC

!(command number)

Executes a previously used command that appears in the output of the show history command. Specify the number that appears before the command in the show history output. You must be in the correct mode to reuse the command.

Syntax

- `!(command number)`

Default

None

Command Mode

Privileged EXEC

attribute

Modify MS-DOS file attributes to enable file transfer.

Syntax

- `attribute WORD<1-1536> + | - | R`
- `attribute WORD<1-99> + | - | R`

Command Parameters

+ | - | R	Set or remove read-only permission.
WORD<1-99>	Specifies the file name.

Default

None

Command Mode

Privileged EXEC

backup

Use this command to backup all files, including the directory of the internal flash, to the USB flash or to create a backup zip.

Syntax

- **backup configure WORD<1-99>**
- **backup intflash**

Command Parameters

configure WORD<1-99>	Copies all configuration files and packages them into a single .zip file. License files are not backed up.
intflash	Copies all files from the internal flash to the USB drive at /usb/intflash. You must disable logging to the compact flash you want to restore before you can use the backup. The system verifies that the USB flash device has enough available space to perform the backup operation. If the USB flash device does not have enough available space, an error message appears. The backup command uses the following filepath on the USB flash device: /usb/intflash/ intflashbackup_yyyymmddhhmmss.tgz. **Note:** This command does not apply to all hardware platforms. On some platforms, the USB port cannot be used for file transfer. For more information, see your hardware documentation.

Default

None

Command Mode

Privileged EXEC

boot

Restart the switch to implement configuration changes or recover from a system failure. When you restart the system, you can specify an optional configuration file to use to load the device. If no config file is specified, the run-time CLI uses the configuration file specified by the boot config choice command. The image booted is that specified by the software activate command.

Syntax

- **boot**
- **boot [config WORD<1-99>] [-y]**
- **boot config WORD<1-99>**

- **boot -y**

Command Parameters

-y	Suppresses the confirmation message before the switch restarts. If you omit this parameter, you must confirm the action before the switch restarts.
config WORD<1-99>	Specifies the software configuration device and file name in the following format:/intflash/<file>. The filename, including the directory structure, can include up to 99 characters.

Default

None

Command Mode

Privileged EXEC

cd

Change current file system directory path.

Syntax

- **cd WORD<1-99>**

Command Parameters

<1-99>	Specifies the directory location.

Default

None

Command Mode

Privileged EXEC

clear alarm

Clear the alarm database to remove old information after a condition is resolved or to reset statistics.

Syntax

- **clear alarm database**
- **clear alarm database alarm-id WORD<0-100>**
- **clear alarm statistics**

Command Parameters

database	Clears the alarm database.
database alarm-id WORD<0-100>	Specifies an alarm ID to clear.
statistics	Clears the alarm database statistics.

Default

None

Command Mode

Privileged EXEC

clear app-telemetry counter

Clear the Application Telemetry status counters.

Syntax

- **clear app-telemetry counter**
- **clear app-telemetry counter id <number>**
- **clear app-telemetry counter name <rule>**

Command Parameters

id <1-2000>	Clears the counters for the specified rule number.
name WORD<1-32>	Clears the counters for the specified rule name.

Default

None

Command Mode

Privileged EXEC

clear eapol non-eap

Clears the Non-EAP session that is learned on the switch.

Syntax

- **clear eapol non-eap**
- **clear eapol non-eap {slot/port[/sub-port][-slot/port[/sub-port]] [,...]}**

- **clear eapol non-eap {slot/port[/sub-port][-slot/port[/sub-port]] [,...]} 0x00:0x00:0x00:0x00:0x00:0x00**
- **clear eapol non-eap 0x00:0x00:0x00:0x00:0x00:0x00**

Command Parameters

{slot/port[/sub-port] [-slot/port[/sub-port]] [,...]}	Specifies the port list on which the Non-EAP MAC is learnt. Identifies the slot and port in one of the following formats: a single slot and port (slot/port), a range of slots and ports (slot/port-slot/port), or a series of slots and ports (slot/port,slot/port,slot/port). If your platform supports channelization and the port is channelized, you must also specify the sub-port in the format slot/port/sub-port.
0x00:0x00:0x00:0x00:0x00:0x00	Specifies the MAC-Address on the Non-EAP session.

Default

None

Command Mode

Privileged EXEC

clear filter acl

Clear Access Control List (ACL) statistics if you no longer require previous statistics or log information.

Syntax

- **clear filter acl log**
- **clear filter acl statistics <acl-id>**
- **clear filter acl statistics <acl-id> <ace-id>**
- **clear filter acl statistics <acl-id> qos**
- **clear filter acl statistics <acl-id> security**
- **clear filter acl statistics all**
- **clear filter acl statistics default**
- **clear filter acl statistics default <acl-id>**
- **clear filter acl statistics global**
- **clear filter acl statistics global <acl-id>**

Command Parameters

<acl-id>	Specifies the ACL ID. Use the CLI Help to see the available range for your switch.
<ace-id>	Specifies the ACE ID. Different hardware platforms support different ACE ID ranges. Use the CLI Help to see the available range for your switch.
all	Clears all statistics for all access control entries.
default *<acl-id>*	Clears traffic statistics for an access control entry (ACE).
global *<acl-id>*	Clears global statistics for an access control entry (ACE).
qos	Clears access control list (ACL) statistics for QoS access control entries (ACEs).
security	Clears access control list (ACL) statistics for Security ACEs.

Default

None

Command Mode

Privileged EXEC

clear ip arp interface

Clear the ARP timers.

Syntax

- **clear ip arp interface gigabitethernet {slot/port[/sub-port][-slot/port[/sub-port]][,...]}**
- **clear ip arp interface vlan <1-4059>**

Command Parameters

gigabitethernet *{slot/port[/sub-port][-slot/port[/sub-port]] [,...]}*	Identifies the slot and port in one of the following formats: a single slot and port (slot/port), a range of slots and ports (slot/port-slot/port), or a series of slots and ports (slot/port,slot/port,slot/port). If your platform supports channelization and the port is channelized, you must also specify the sub-port in the format slot/port/sub-port.
vlan *<1-4059>*	Specifies the VLAN ID in the range of 1 to 4059. By default, VLAN IDs 1 to 4059 are configurable and the system reserves VLAN IDs 4060 to 4094 for internal use. On switches that support the vrf-scaling and spbm-config-mode boot configuration flags, if you enable these flags, the system also

reserves VLAN IDs 3500 to 3998. VLAN ID 1 is the default VLAN and you cannot create or delete VLAN ID 1.

Default

None

Command Mode

Privileged EXEC

clear ip dhcp-relay

Clear dhcp-relay counter.

Syntax

- **clear ip dhcp-relay counters**
- **clear ip dhcp-relay counters interface gigabitethernet {slot/port[/sub-port][-slot/port[/sub-port]][,...]}**
- **clear ip dhcp-relay counters interface vlan <1-4059>**
- **clear ip dhcp-relay counters vrf WORD<1-16>**
- **clear ip dhcp-relay counters vrfid <0-511>**

Command Parameters

{slot/port[/sub-port] [-slot/port[/sub-port]] [,...]}	Identifies the slot and port in one of the following formats: a single slot and port (slot/port), a range of slots and ports (slot/port-slot/port), or a series of slots and ports (slot/port,slot/port,slot/port). If your platform supports channelization and the port is channelized, you must also specify the sub-port in the format slot/port/sub-port.
counters	Clear dhcp-relay counters/statistics. No interface specified, it will clear all interface on GlobalRouter.
vlan <*1-4059*>	Clear Ip dhcp-relay statistics by vlan. Specifies the VLAN ID in the range of 1 to 4059. By default, VLAN IDs 1 to 4059 are configurable and the system reserves VLAN IDs 4060 to 4094 for internal use. On switches that support the vrf-scaling and spbm-config-mode boot configuration flags, if you enable these flags, the system also reserves VLAN IDs 3500 to 3998. VLAN ID 1 is the default VLAN and you cannot create or delete VLAN ID 1.
vrf WORD<1-16>	Clear vrf Ip dhcp-relay statistics.
vrfid <0-511>	Enter Vrf Id.

Default

None

Command Mode

Privileged EXEC

clear ip dhcp-relay counters

Clear the Ip Dhcp Relay counter.

Syntax

- **clear ip dhcp-relay counters interface gigabitethernet {slot/port[/sub-port][-slot/port[/sub-port]][,...]}**
- **clear ip dhcp-relay counters vrf WORD<1-16>**
- **clear ip dhcp-relay counters vrfid <0-511>**

Command Parameters

<0-511>	Specifies the VRF ID.
gigabitethernet *{slot/port[/sub-port] [-slot/port[/sub-port]] [,...]}*	Clear IP routes on the Interface Gigabit Ethernet. Identifies the slot and port in one of the following formats: a single slot and port (slot/port), a range of slots and ports (slot/port-slot/port), or a series of slots and ports (slot/port,slot/port,slot/port). If your platform supports channelization and the port is channelized, you must also specify the sub-port in the format slot/port/sub-port.
WORD<1-16>	Specifies the VRF name.

Default

None

Command Mode

Privileged EXEC

clear ip dhcp-snooping binding

Clears entries from the DHCP Snooping binding table.

Syntax

- **clear ip dhcp-snooping binding dynamic**
- **clear ip dhcp-snooping binding static**

Command Parameters

dynamic	Clears dynamic entries from the DHCP Snooping binding table.
static	Clears static entries from the DHCP Snooping binding table.

Default

None

Command Mode

Privileged EXEC

clear ip mdsp sa-cache

Clears the MSDP foreign cache entries.

Syntax

- **clear ip msdp sa-cache vrf WORD<0-16>**
- **clear ip msdp sa-cache vrfids WORD<0-512>**

Command Parameters

group <prefix/len>	Specifies the group IP address of the SA cache entry.
peer {A.B.C.D}	Specifies the peer address.
RP {A.B.C.D}	Specifies the RP address of the SA cache entry.
source <prefix/len>	Specifies the source IP address of the SA cache entry.
vrf WORD<0-16>	Specifies the VRF name.
vrfids WORD<0–512>	Specifies the VRF ID.

Default

None

Command Mode

Privileged EXEC

clear ip mdsp sa-cache peer

Clears the MSDP cache for a specific peer.

Syntax

- **clear ip msdp sa-cache peer {A.B.C.D} vrf WORD<0-16>**
- **clear ip msdp sa-cache peer {A.B.C.D} vrfids WORD<0-512>**

Default

None

Command Mode

Privileged EXEC

clear ip mroute stats

Clear IP multicast route statistics.

Syntax

- **clear ip mroute stats**

Default

None

Command Mode

Privileged EXEC

clear ip msdp peer

Clears the peer connection to clear the TCP connection to the specified MSDP peer and resets all MSDP message counters.

Syntax

- **clear ip msdp peer {A.B.C.D} vrf WORD<0-16>**
- **clear ip msdp peer {A.B.C.D} vrfids WORD<0-512>**

Command Parameters

{A.B.C.D}	Specifies the MSDP peer IP address.
vrf WORD<0–16>	Specifies the VRF name.
vrfids WORD<0–512>	Specifies the VRF ID.

Default

None

Command Mode

Privileged EXEC

clear ip msdp statistics

Clear IP MSDP statistics counters.

Syntax

- **clear ip msdp statistics**
- **clear ip msdp statistics {A.B.C.D}**
- **clear ip msdp statistics {A.B.C.D} vrf WORD<0-16>**
- **clear ip msdp statistics {A.B.C.D} vrfids WORD<0-512>**
- **clear ip msdp statistics vrf WORD<0-16>**
- **clear ip msdp statistics vrfids WORD<0-512>**

Command Parameters

{A.B.C.D}	Specifies the peer address.
vrf WORD<0-16>	Specifies the VRF name.
vrfids WORD<0–512>	Specifies the VRF ID.

Default

None

Command Mode

Privileged EXEC

clear ip ospf stats

Clear IP OSPF statistics.

Syntax

- **clear ip ospf stats vrf <WORD<1-16>**
- **clear ip ospf stats vrfid <0-511>**

Command Parameters

vrf WORD<1-16>	Specifies the VRF name.

vrfid <0-511>	Specifies the VRF ID.

Default

None

Command Mode

Privileged EXEC

clear ip route

Clear the routing table.

Syntax

- **clear ip route gigabitethernet {slot/port[/sub-port]}**
- **clear ip route vlan <1-4059>**

Command Parameters

gigabitethernet *{slot/port[/sub-port]}*	Clear IP routes on the Interface Gigabit Ethernet. Identifies a single slot and port. If your platform supports channelization and the port is channelized, you must also specify the sub-port in the format slot/port/sub-port.
vlan *<1-4059>*	Clear IP routes on the Interface Vlan. Specifies the VLAN ID in the range of 1 to 4059. By default, VLAN IDs 1 to 4059 are configurable and the system reserves VLAN IDs 4060 to 4094 for internal use. On switches that support the vrf-scaling and spbm-config-mode boot configuration flags, if you enable these flags, the system also reserves VLAN IDs 3500 to 3998. VLAN ID 1 is the default VLAN and you cannot create or delete VLAN ID 1.

Default

None

Command Mode

Privileged EXEC

clear ip vrrp

Clear the Virtual Router Redundancy Protocol (VRRP) configuration.

Syntax

- `clear ip vrrp gigabitethernet {slot/port[/sub-port][-slot/port[/sub-port]][,...]} vrid <1-255>`
- `clear ip vrrp vlan <1-4059> vrid <1-255>`

Command Parameters

gigabitethernet *{slot/port[/sub-port][-slot/port[/sub-port]] [,...]}*	Identifies the slot and port in one of the following formats: a single slot and port (slot/port), a range of slots and ports (slot/port-slot/port), or a series of slots and ports (slot/port,slot/port,slot/port). If your platform supports channelization and the port is channelized, you must also specify the sub-port in the format slot/port/sub-port.
vlan *<1-4059>*	Specifies the VLAN ID in the range of 1 to 4059. By default, VLAN IDs 1 to 4059 are configurable and the system reserves VLAN IDs 4060 to 4094 for internal use. On switches that support the vrf-scaling and spbm-config-mode boot configuration flags, if you enable these flags, the system also reserves VLAN IDs 3500 to 3998. VLAN ID 1 is the default VLAN and you cannot create or delete VLAN ID 1.
vrid <1-255>	Specifies the ID of the virtual router.

Default

None

Command Mode

Privileged EXEC

clear ipsec stats all

Clear the Internet Protocol Security (IPsec) system statistics counters.

Syntax

- `clear ipsec stats all`

Default

None

Command Mode

Privileged EXEC

clear ipv6 dcache

Clear the destination cache.

Syntax

- `clear ipv6 dcache [vrf WORD<1-16> | vrfids WORD<0-512>]`
- `clear ipv6 dcache gigabitethernet {slot/port[/sub-port]} [vrf WORD<1-16> | vrfids WORD<0-512>]`
- `clear ipv6 dcache mgmtethernet mgmt`
- `clear ipv6 dcache tunnel <1-2000>`
- `clear ipv6 dcache vlan <1-4059> [vrf WORD<1-16> | vrfids WORD<0-512>]`

Command Parameters

gigabitethernet *{slot/port[/sub-port]}*	Identifies a single slot and port. If your platform supports channelization and the port is channelized, you must also specify the sub-port in the format slot/port/sub-port.
mgmtethernet mgmt	Identifies a management port.
tunnel <1-2000>	Specifies the tunnel ID.
vlan <*1-4059*>	Specifies the VLAN ID in the range of 1 to 4059. By default, VLAN IDs 1 to 4059 are configurable and the system reserves VLAN IDs 4060 to 4094 for internal use. On switches that support the vrf-scaling and spbm-config-mode boot configuration flags, if you enable these flags, the system also reserves VLAN IDs 3500 to 3998. VLAN ID 1 is the default VLAN and you cannot create or delete VLAN ID 1.
vrf WORD<1-16>	Clears the interface information for a particular VRF name.
vrfids WORD<0-512>	Clears the interface information for the particular VRF ids

Default

None

Command Mode

Privileged EXEC

clear ipv6 mroute stats

Clear IPv6 multicast route statistics.

Syntax

- `clear ipv6 mroute stats`

Default

None

Command Mode

Privileged EXEC

clear ipv6 neighbor-cache

Clear the neighbor cache.

Syntax

- **clear ipv6 neighbor-cache [vrf WORD<1-16> | vrfids WORD<0-512>]**
- **clear ipv6 neighbor-cache gigabitEthernet {slot/port[/sub-port]} [vrf WORD<1-16> | vrfids WORD<0-512>]**
- **clear ipv6 neighbor-cache mgmtethernet mgmt**
- **clear ipv6 neighbor-cache vlan <1-4059> [vrf WORD<1-16> | vrfids WORD<0-512>]**

Command Parameters

gigabitethernet *{slot/port[/sub-port]}*	Identifies a single slot and port. If your platform supports channelization and the port is channelized, you must also specify the sub-port in the format slot/port/sub-port.
mgmtethernet mgmt	Identifies a management port.
vlan *<1-4059>*	Specifies the VLAN ID in the range of 1 to 4059. By default, VLAN IDs 1 to 4059 are configurable and the system reserves VLAN IDs 4060 to 4094 for internal use. On switches that support the vrf-scaling and spbm-config-mode boot configuration flags, if you enable these flags, the system also reserves VLAN IDs 3500 to 3998. VLAN ID 1 is the default VLAN and you cannot create or delete VLAN ID 1.
vrf WORD<1-16>	Clears the interface information for a particular VRF name.
vrfids WORD<0-512>	Clears the interface information for the particular VRF ids

Default

The default is disabled.

Command Mode

Privileged EXEC

clear ipv6 ospf stats

Clear the IPv6 OSPF statistics.

Syntax

- **clear ipv6 ospf stats [vrf WORD<1-16>] [vrfids WORD<0-512>]**
- **clear ipv6 ospf stats vrf WORD<1-16>**
- **clear ipv6 ospf stats vrfids WORD<0-512>**

Command Parameters

vrf <WORD 1-16>	Specifies the VRF name.
vrfids <WORD 0-512>	Specifies VRF IDs.

Default

None

Command Mode

Privileged EXEC

clear ipv6 route static

Clear IPv6 static routes.

Syntax

- **clear ipv6 route static [vrf WORD<1-16> | vrfids WORD<0-512>]**

Command Parameters

vrf WORD<1-16>	Clears the interface information for a particular VRF name.
vrfids WORD<0-512>	Clears the interface information for the particular VRF ids

Default

None

Command Mode

Privileged EXEC

clear ipv6 statistics

Use this command to clear IPv6 statistics.

Syntax

- **clear ipv6 statistics all [vrf WORD<1-16> | vrfids WORD<0-512>]**
- **clear ipv6 statistics interface [vrf WORD<1-16> | vrfids WORD<0-512>]**
- **clear ipv6 statistics interface general [vrf WORD<1-16> | vrfids WORD<0-512>]**
- **clear ipv6 statistics interface general gigabitethernet {slot/port[/sub-port]} [vrf WORD<1-16> | vrfids WORD<0-512>]**
- **clear ipv6 statistics interface general loopback <1-256>**
- **clear ipv6 statistics interface general mgmtethernet mgmt**
- **clear ipv6 statistics interface general tunnel <1-2000>**
- **clear ipv6 statistics interface general vlan <1-4059>**
- **clear ipv6 statistics interface icmp**
- **clear ipv6 statistics interface icmp gigabitethernet {slot/port[/sub-port]}**
- **clear ipv6 statistics interface icmp loopback <1-256>**
- **clear ipv6 statistics interface icmp mgmtethernet mgmt**
- **clear ipv6 statistics interface icmp tunnel <1-2000>**
- **clear ipv6 statistics interface icmp vlan <1-4059>**
- **clear ipv6 statistics tcp [vrf WORD<1-16> | vrfids WORD<0-512>]**
- **clear ipv6 statistics udp [vrf WORD<1-16> | vrfids WORD<0-512>]**

Command Parameters

all	Clears all statistics.
general	Clears general statistics.
gigabitEthernet *{slot/port[/sub-port]}*	Clears statistics for a brouter interface. Identifies a single slot and port. If your platform supports channelization and the port is channelized, you must also specify the sub-port in the format slot/port/sub-port.
icmp	Clears Internet Control Message Protocol (ICMP) statistics.
loopback <1-256>	Identifies a loopback interface.
mgmtethernet mgmt	Clears statistics for a management port.
tcp	Clears TCP statistics.
tunnel <1-2000>	Clears statistics for a tunnel.
udp	Clears UDP statistics.

vlan <*1-4059*>	Clears statistics for a tunnel. Specifies the VLAN ID in the range of 1 to 4059. By default, VLAN IDs 1 to 4059 are configurable and the system reserves VLAN IDs 4060 to 4094 for internal use. On switches that support the vrf-scaling and spbm-config-mode boot configuration flags, if you enable these flags, the system also reserves VLAN IDs 3500 to 3998. VLAN ID 1 is the default VLAN and you cannot create or delete VLAN ID 1.
vrf WORD<1-16>	Clears the interface information for a particular VRF name.
vrfids WORD<0-512>	Clears the interface information for the particular VRF ids

Default

None

Command Mode

Privileged EXEC

clear ipv6 vrrp

Clears the IPv6 VRRP configuration.

Syntax

- **clear ipv6 vrrp gigabitethernet {slot/port[/sub-port][-slot/port[/sub-port]][,...]} vrid <1-255>**
- **clear ipv6 vrrp vlan <1-4059> vrid <1-255>**

Command Parameters

gigabitethernet *{slot/port[/sub-port][-slot/port[/sub-port]] [,...]}*	Identifies the slot and port in one of the following formats: a single slot and port (slot/port), a range of slots and ports (slot/port-slot/port), or a series of slots and ports (slot/port,slot/port,slot/port). If your platform supports channelization and the port is channelized, you must also specify the sub-port in the format slot/port/sub-port.
vlan <*1-4059*>	Specifies the VLAN ID in the range of 1 to 4059. By default, VLAN IDs 1 to 4059 are configurable and the system reserves VLAN IDs 4060 to 4094 for internal use. On switches that support the vrf-scaling and spbm-config-mode boot configuration flags, if you enable these flags, the system also reserves VLAN IDs 3500 to 3998. VLAN ID 1 is the default VLAN and you cannot create or delete VLAN ID 1.
vrid <1-255>	Specifies the ID of the virtual router.

Default

None

Command Mode

Privileged EXEC

clear isis lsdb

Clear the Intermediate-System-to-Intermediate-System (IS-IS) Link State Database (LSDB). The command clears learned Link State Packets (LSPs) only. The command does not clear local generated LSPs. As soon as the platform clears the LSDB the LSP synchronization process starts immediately and the LSDB synchronizes with its neighbors.

Syntax

- **clear isis lsdb**

Default

None

Command Mode

Privileged EXEC

clear isis stats

Clear Intermediate-System-to-Intermediate-System (IS-IS) statistics.

Syntax

- **clear isis stats**
- **clear isis stats error-counters**
- **clear isis stats packet-counters**

Command Parameters

error-counters	Clears the IS-IS stats error-counters.
packet-counters	Clears the IS-IS stats packet-counters.

Default

None

Command Mode

Privileged EXEC

clear khi

Clear the forwarding health and CPP statistics information.

Syntax

- **clear khi cpp port-statistics**

Command Parameters

cpp port-statistics	Clears statistics for control packets that go to the control processor.

Default

None

Command Mode

Privileged EXEC

clear lacp

Clear link aggregation information and statistics.

Syntax

- **clear lacp link-aggregate <1-512>**
- **clear lacp stats**
- **clear lacp stats port {slot/port[/sub-port][-slot/port[/sub-port]][,...]}**

Command Parameters

link-aggregate <1-512>	Specifies the MLT ID.
port *{slot/port[/sub-port] [-slot/port[/sub-port]] [,...]}*	Identifies the slot and port in one of the following formats: a single slot and port (slot/port), a range of slots and ports (slot/port-slot/port), or a series of slots and ports (slot/port,slot/port,slot/port). If your platform supports channelization and the port is channelized, you must also specify the sub-port in the format slot/port/sub-port.
stats	Clears lacp stats.

Default

None

Command Mode

Privileged EXEC

clear logging

Clear the log file.

Syntax

- **clear logging**

Default

None

Command Mode

Privileged EXEC

clear mac-address-table

Clear the entries in the MAC address table.

Syntax

- **clear mac-address-table port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} address WORD<17-17>**
- **clear mac-address-table port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} address WORD<17-17> interface vlan <1-4059>**

Command Parameters

address WORD<17-17>	Specifies the MAC address.
interface vlan *<1-4059>*	Specifies the VLAN ID in the range of 1 to 4059. By default, VLAN IDs 1 to 4059 are configurable and the system reserves VLAN IDs 4060 to 4094 for internal use. On switches that support the vrf-scaling and spbm-config-mode boot configuration flags, if you enable these flags, the system also reserves VLAN IDs 3500 to 3998. VLAN ID 1 is the default VLAN and you cannot create or delete VLAN ID 1.
port *{slot/port[/sub-port] [-slot/port[/sub-port]] [,...]}*	Identifies the slot and port in one of the following formats: a single slot and port (slot/port), a range of slots and ports (slot/port-slot/port), or a series of slots and ports (slot/port,slot/port,slot/port). If your platform supports channelization and the port is channelized, you must also specify the sub-port in the format slot/port/sub-port.

Default

None

Command Mode

Privileged EXEC

clear mgmt statistics

Reset the statistics counters for a Segmented Management Instance.

Syntax

- **clear mgmt statistics**
- **clear mgmt statistics clip**
- **clear mgmt statistics vlan**

Command Parameters

clip	Shows information specific to the management CLIP.
vlan	Shows information specific to the management VLAN.

Default

None

Command Mode

Privileged EXEC

clear mlt

Clear interswitch trunking (IST) statistics.

Syntax

- **clear mlt ist stats**

Default

None

Command Mode

Privileged EXEC

clear qos

Clear quality of service (QoS) information.

Syntax

- **clear qos cosq-stats**
- **clear qos cosq-stats cpu-port**

- **clear qos cosq-stats interface**
- **clear qos cosq-stats interface {slot/port[/sub-port][-slot/port[/sub-port]][,...]}**
- **clear qos statistics policy**
- **clear qos statistics policy <1-16000>**
- **clear qos statistics policy slot {slot/port[/sub-port][-slot/port[/sub-port]][,...]}**

Command Parameters

<1-16000>	Specifies a policy ID.
cosq-stats	Clear qos cos queue statistics
cosq-stats cpu-port	Clear Qos Cosq Stats on cpu port.
cosq-stats interface	Clear Qos Cosq Stats on port.
cosq-stats interface ***{slot/port[/sub-port] [-slot/port[/sub-port]] [,...]}***	Clear Qos Cosq Stats on port for the specified gigabit address. Identifies the slot and port in one of the following formats: a single slot and port (slot/port), a range of slots and ports (slot/port-slot/port), or a series of slots and ports (slot/port,slot/port,slot/port). If your platform supports channelization and the port is channelized, you must also specify the sub-port in the format slot/port/sub-port.

Default

None

Command Mode

Privileged EXEC

clear qos cosq-stats

Clear qos cos queue statistics.

Syntax

- **clear qos cosq-stats**
- **clear qos cosq-stats cpu-port**
- **clear qos cosq-stats interface**
- **clear qos cosq-stats interface {slot/port[/sub-port][-slot/port[/sub-port]][,...]}**

Command Parameters

{slot/port[/sub-port] [-slot/port[/sub-port]] [,...]}	Identifies the slot and port in one of the following formats: a single slot and port (slot/port), a range of slots and ports (slot/port-slot/port), or a series of slots and ports (slot/port,slot/port,slot/port). If your platform supports channelization and the port is channelized, you must also specify the sub-port in the format slot/port/sub-port.

Default

None

Command Mode

Privileged EXEC

clear radius statistics

Clear server statistics.

Syntax

- **clear radius statistics**

Default

None

Command Mode

Privileged EXEC

clear sflow statistics

Clear sFlow statistics.

Syntax

- **clear sflow statistics**
- **clear sflow statistics collector <1-2>**

Command Parameters

collector <1-2>	Clear the sFlow statistics for the specified collector.

Default

None

Command Mode

Privileged EXEC

clear slpp

Clear SLPP Information.

Syntax

- **clear slpp stats**
- **clear slpp stats port {slot/port[/sub-port][-slot/port[/sub-port]] [,...]}**

Command Parameters

stats	Clear SLPP Stats.
stats port *{slot/port[/sub-port] [-slot/port[/sub-port]] [,...]}*	Clear SLPP Stats for the specified port. Identifies the slot and port in one of the following formats: a single slot and port (slot/port), a range of slots and ports (slot/port-slot/port), or a series of slots and ports (slot/port,slot/port,slot/port). If your platform supports channelization and the port is channelized, you must also specify the sub-port in the format slot/port/sub-port.

Default

None

Command Mode

Privileged EXEC

clear slpp stats

Clear slpp statistics.

Syntax

- **clear slpp stats**

Default

None

Command Mode

Privileged EXEC

clear telnet

Close open Telnet sessions.

Syntax

- `clear telnet <0-7>`

Command Parameters

<0-7>	Specifies the Telnet session ID to close.

Default

None

Command Mode

Privileged EXEC

clear trace

Clear the trace file.

Syntax

- `clear trace`

Default

None

Command Mode

Privileged EXEC

clear virtual-ist stats

Clear stats for vIST.

Syntax

- `clear virtual-ist stats`

Default

None

Command Mode

Privileged EXEC

configure

Log on to Global Configuration mode.

Syntax

- **configure**
- **configure network**
- **configure network address {A.B.C.D}**
- **configure network address {A.B.C.D} filename WORD<1-239>**
- **configure network filename WORD<1-239>**
- **configure network filename WORD<1-239> address {A.B.C.D}**
- **configure terminal**

Command Parameters

network	Configures the device from a TFTP network host.
network address {A.B.C.D} filename WORD<1-239>	Specifies an address of the TFTP server.
network filename WORD<1-239> address {A.B.C.D}	Specifies the filename of the configuration file.
terminal	Configures the device from a terminal.

Default

None

Command Mode

Privileged EXEC

copy

Copy files as part of an upgrade procedure to back up files or to move files to another location.

Syntax

- **copy clilog WORD<1-255>**
- **copy running-config startup-config**
- **copy WORD<1-255> WORD<1-255>**
- **copy WORD<1-255> WORD<1-255> -y**

Command Parameters

clilog WORD<1-255>	Copies the log file to a specific location. You can specify the name and location for the log file in one of the following formats: a.b.c.d:<file>, /intflash/<file>, and /usb/<file>.
running-config startup-config	Copies running and start-up configuration.
WORD<1-255> WORD<1-255>	Source filename, a.b.c.d:<file> | /intflash/<file> | /usb/<file>.
-y	Suppresses the confirmation message before the file copies. If you omit this parameter, you are asked to confirm the action before the switch copies the file.

Default

None

Command Mode

Privileged EXEC

cp

Use this command to copy files.

Syntax

- **cp WORD<1-255> WORD<1-255>**
- **cp WORD<1-255> WORD<1-255> -y**

Command Parameters

WORD <1-255> WORD <1-255>	The first WORD<1-255>specifies the file to copy. The second WORD<1-255> uses one of the following formats: /intflash/ <file> . Word<1-255> is a string of 1-255 characters.
-y	Suppresses the confirmation message before the file copies. If you omit this parameter, you are asked to confirm the action before the switch copies the file.

Default

None

Command Mode

Privileged EXEC

delete

Use this command to delete files.

Syntax

- **delete WORD<1-255>**
- **delete WORD<1-255> -y**

Command Parameters

WORD<1-255>	Specifies the name and location of the file to delete in the following formats: /intflash/<file>, and /usb/<file>. WORD<1-255> is a string of 1-255 characters.
WORD<1-255> -y	Remove file or directory, with wildcard pattern.
-y	Suppresses the confirmation message before the file copies. If you omit this parameter, you are asked to confirm the action before the switch deletes the file.

Default

None

Command Mode

Privileged EXEC

dir

View the free space and files in flash memory.

Syntax

- **dir**
- **dir -l**
- **dir -r**
- **dir WORD<1-99>**

Command Parameters

-l	Details, dir -l [-r]
-r	Recursive, dir -r
WORD<1-99>	Directory path name, dir <path> [-l] [-r]

Default

None

Command Mode

Privileged EXEC

disable

Turns off privileged commands and returns you to the User Exec prompt.

Syntax

- **disable**
- **disable <0-15>**

Command Parameters

<0-15>	Privilege level to go to.

Default

None

Command Mode

Privileged EXEC

dos-chkdsk

Check MS DOS file system for any inconsistencies. If at the end of the output for the dos-chkdsk WORD<1-99> you see: 1) Correct 2) Don't correct, then run the dos-chkdsk WORD<1-99> repair command.

Syntax

- **dos-chkdsk WORD<1-99>**
- **dos-chkdsk WORD<1-99> repair**

Command Parameters

WORD<1-99>	Specifies the device name to repair.
WORD<1-99> repair	Repairs the errors found.

Default

None

Command Mode

Privileged EXEC

dos-format

Format the external flash or USB.

Syntax

- **dos-format WORD<1-99>**

Command Parameters

WORD<1-99>	Specifies the device name to format.

Default

None

Command Mode

Privileged EXEC

editing

Simple vi line editor to modify script files

Syntax

- **editing WORD<1-99>**

Command Parameters

WORD<1-99>	Device name, /intflash.

Default

None

Command Mode

Privileged EXEC

energy-saver

Activates Energy Saver manually on the switch.

Syntax

- **energy-saver activate**
- **energy-saver deactivate**

Command Parameters

activate	Activates Energy Saver manually on the switch.
deactivate	Deactivates Energy Saver manually on the switch.

Default

Deactivated

Command Mode

Privileged EXEC

flight-recorder

Perform various functions on the flight recorder data on the switch.

Syntax

- `flight-recorder all {slot [-slot][,...]}`
- `flight-recorder archive {slot [-slot][,...]}`
- `flight-recorder snapshot {slot [-slot][,...]}`
- `flight-recorder trace {slot [-slot][,...]}`

Command Parameters

all {slot[-slot][,...]}	Creates flight recorder snapshot, trace, and archive. {slot[-slot][,...]} specifies the slot number. Valid slot is 1.
archive {slot [-slot][,...]}	Creates tarball of flight recorder files, log files, config file and others. {slot [-slot][,...]} specifies the slot number.
snapshot {slot [-slot][,...]}	Takes the snapshot of flight recorder PMEM data. {slot[-slot][,...]} specifies the slot number.
trace {slot [-slot][,...]}	Takes the snapshot of always-on-trace data. {slot [-slot][,...]} specifies the slot number.

Default

None

Command Mode

Privileged EXEC

grep

Use this Unix command to search files for lines that match a given expression.

Syntax

- **grep error WORD<1-99>**
- **grep WORD<0-1536> WORD<1-99>**

Command Parameters

error WORD <1-99>	Searches for an error in a file. WORD<1-99> specifies a filename, /intflash/<file>.
WORD<0-1536> WORD<1-99>	Searches files for lines that match a given expression. WORD<0-1536> specifies the string to match.

Default

None

Command Mode

Privileged EXEC

maintenance system-action

Displays the system action.

Syntax

- **maintenance system-action WORD<1-99> execute WORD<1-99>**
- **maintenance system-action WORD<1-99> execute WORD<1-99> WORD<0-99>**

Default

None

Command Mode

Privileged EXEC

mkdir

Make directory on filesystem.

Syntax

- **mkdir WORD<1-99>**

Command Parameters

WORD<1-99>	Directory path name.

Default

None

Command Mode

Privileged EXEC

monitor ip mroute stats

Monitor IP multicast route statistics.

Syntax

- **monitor ip mroute stats [WORD<7-160> {A.B.C.D[,E.F.G.H][,...]}]**

Command Parameters

WORD<7-160> {A.B.C.D[,E.F.G.H][,...]}	Monitor IP multicast route statistics.

Default

None

Command Mode

Privileged EXEC

monitor ip vrrp statistics

Display IP multicast statistics for the Virtual Router Redundancy Protocol (VRRP).

Syntax

- **monitor ip vrrp statistics gigabitethernet**
- **monitor ip vrrp statistics gigabitethernet {slot/port[/sub-port][-slot/port[/sub-port]][,...]}**
- **monitor ip vrrp statistics gigabitethernet {slot/port[/sub-port][-slot/port[/sub-port]][,...]} verbose**
- **monitor ip vrrp statistics gigabitethernet verbose**

Command Parameters

gigabitethernet *{slot/port[/sub-port] [-slot/port[/sub-port]] [,...]}*	Identifies the slot and port in one of the following formats: a single slot and port (slot/port), a range of slots and ports (slot/port-slot/port), or a series of slots and ports (slot/port,slot/port,slot/port). If your platform supports channelization and the port is channelized, you must also specify the sub-port in the format slot/port/sub-port.
verbose	Specifies the complete list of configuration information.

Default

None

Command Mode

Privileged EXEC

monitor ipv6 mroute stats

Monitor Ipv6 multicast route statistics.

Syntax

- **monitor ipv6 mroute stats [WORD<7-400> {Ipv6address[,Ipv6address] [,...]}]**

Command Parameters

WORD<7-400> {Ipv6address[,Ipv6address][,...]}	Monitor IPv6 multicast route statistics.

Default

None

Command Mode

Privileged EXEC

monitor mlt error collision

Monitor MultiLink Trunking (MLT) collision error information.

Syntax

- **monitor mlt error collision**
- **monitor mlt error collision <1-512>**

Command Parameters

<1-512>	Specifies the MLT ID.

Default

None

Command Mode

Privileged EXEC

monitor mlt error main

Monitor MultiLink Trunking (MLT) general error information.

Syntax

- **monitor mlt error main**
- **monitor mlt error main <1-512>**

Command Parameters

<1-512>	Specifies the MLT ID.

Default

None

Command Mode

Privileged EXEC

monitor mlt stats interface main

Show MultiLink Trunking (MLT) interface statistics.

Syntax

- **monitor mlt stats interface main**
- **monitor mlt stats interface main <1-512>**

Command Parameters

<1-512>	Specifies the MLT ID.

Default

None

Command Mode

Privileged EXEC

monitor mlt stats interface utilization

Show MultiLink Trunking (MLT) interface statistics utilization.

Syntax

- **monitor mlt stats interface utilization**
- **monitor mlt stats interface utilization <1-512>**

Command Parameters

<1-512>	Specifies the MLT ID.

Default

None

Command Mode

Privileged EXEC

monitor ports error

Monitor port error information.

Syntax

- **monitor ports error {slot/port[/sub-port][-slot/port[/sub-port]] [,...]} collision**
- **monitor ports error {slot/port[/sub-port][-slot/port[/sub-port]] [,...]} collision from {slot/port[/sub-port][-slot/port[/sub-port]] [,...]}**
- **monitor ports error {slot/port[/sub-port][-slot/port[/sub-port]] [,...]} main**
- **monitor ports error {slot/port[/sub-port][-slot/port[/sub-port]] [,...]} main from {slot/port[/sub-port][-slot/port[/sub-port]][,...]}**
- **monitor ports error {slot/port[/sub-port][-slot/port[/sub-port]] [,...]} ospf**
- **monitor ports error {slot/port[/sub-port][-slot/port[/sub-port]] [,...]} ospf from {slot/port[/sub-port][-slot/port[/sub-port]][,...]}**
- **monitor ports error {slot/port[/sub-port][-slot/port[/sub-port]] [,...]} verbose**

- **monitor ports error {slot/port[/sub-port][-slot/port[/sub-port]] [,...]} verbose from {slot/port[/sub-port][-slot/port[/sub-port]] [,...]}**
- **monitor ports error collision**
- **monitor ports error collision from {slot/port[/sub-port][-slot/port[/sub-port]][,...]}**
- **monitor ports error main**
- **monitor ports error main from {slot/port[/sub-port][-slot/port[/sub-port]][,...]}**
- **monitor ports error ospf**
- **monitor ports error ospf from {slot/port[/sub-port][-slot/port[/sub-port]][,...]}**
- **monitor ports error verbose**
- **monitor ports error verbose from {slot/port[/sub-port][-slot/port[/sub-port]][,...]}**

Command Parameters

{{slot/port[/sub-port] [-slot/port[/sub-port]] [,...]}	Identifies the slot and port in one of the following formats: a single slot and port (slot/port), a range of slots and ports (slot/port-slot/port), or a series of slots and ports (slot/port,slot/port,slot/port). If your platform supports channelization and the port is channelized, you must also specify the sub-port in the format slot/port/sub-port.
collision	Monitors port collision error information.
main	Monitors port general error information.
ospf	Monitors ports general Open Shortest Path First (OSPF) information.
verbose	Monitors port extended error information.
verbose	Monitors port extended error information on a particular slot and port or particular slots and ports.

Default

None

Command Mode

Privileged EXEC

monitor ports statistics

Monitor port statistics.

Syntax

- **monitor ports statistics {slot/port[/sub-port][-slot/port[/sub-port]][,...]} bridging**
- **monitor ports statistics {slot/port[/sub-port][-slot/port[/sub-port]][,...]} bridging from {slot/port[/sub-port][-slot/port[/sub-port]][,...]}**
- **monitor ports statistics {slot/port[/sub-port][-slot/port[/sub-port]][,...]} dhcp-relay**
- **monitor ports statistics {slot/port[/sub-port][-slot/port[/sub-port]][,...]} dhcp-relay from {slot/port[/sub-port][-slot/port[/sub-port]][,...]}**
- **monitor ports statistics {slot/port[/sub-port][-slot/port[/sub-port]][,...]} interface**
- **monitor ports statistics {slot/port[/sub-port][-slot/port[/sub-port]][,...]} interface main from {slot/port[/sub-port][-slot/port[/sub-port]][,...]}**
- **monitor ports statistics {slot/port[/sub-port][-slot/port[/sub-port]][,...]} interface utilization**
- **monitor ports statistics {slot/port[/sub-port][-slot/port[/sub-port]][,...]} interface utilization from {slot/port[/sub-port][-slot/port[/sub-port]][,...]}**
- **monitor ports statistics {slot/port[/sub-port][-slot/port[/sub-port]][,...]} interface verbose**
- **monitor ports statistics {slot/port[/sub-port][-slot/port[/sub-port]][,...]} interface verbose from {slot/port[/sub-port][-slot/port[/sub-port]][,...]}**
- **monitor ports statistics {slot/port[/sub-port][-slot/port[/sub-port]][,...]} ospf main**
- **monitor ports statistics {slot/port[/sub-port][-slot/port[/sub-port]][,...]} ospf main from {slot/port[/sub-port][-slot/port[/sub-port]][,...]}**
- **monitor ports statistics {slot/port[/sub-port][-slot/port[/sub-port]][,...]} ospf verbose**
- **monitor ports statistics {slot/port[/sub-port][-slot/port[/sub-port]][,...]} ospf verbose from {slot/port[/sub-port][-slot/port[/sub-port]][,...]}**
- **monitor ports statistics {slot/port[/sub-port][-slot/port[/sub-port]][,...]} rmon**
- **monitor ports statistics {slot/port[/sub-port][-slot/port[/sub-port]][,...]} rmon from {slot/port[/sub-port][-slot/port[/sub-port]][,...]}**
- **monitor ports statistics {slot/port[/sub-port][-slot/port[/sub-port]][,...]} routing**

- **monitor ports statistics {slot/port[/sub-port][-slot/port[/sub-port]][,...]} routing from {slot/port[/sub-port][-slot/port[/sub-port]][,...]}**

Command Parameters

{{slot/port[/sub-port] [-slot/port[/sub-port]] [,...]}}	Identifies the slot and port in one of the following formats: a single slot and port (slot/port), a range of slots and ports (slot/port-slot/port), or a series of slots and ports (slot/port,slot/port,slot/port). If your platform supports channelization and the port is channelized, you must also specify the sub-port in the format slot/port/sub-port.
bridging	Monitor port bridging statistics.
dhcp-relay	Monitors port DHCP-relay statistics.
from *{slot/port[/sub-port] [-slot/port[/sub-port]] [,...]}*	Monitors port statistics from a particular starting point. Identifies the slot and port in one of the following formats: a single slot and port (slot/port), a range of slots and ports (slot/port-slot/port), or a series of slots and ports (slot/port,slot/port,slot/port). If your platform supports channelization and the port is channelized, you must also specify the sub-port in the format slot/port/sub-port.
interface	Monitor port interface statistics.
ospf	Monitor ports statistics for open shortest path first (OSPF) performance.
rmon	Monitor port remote monitoring (RMON) statistics.
routing	Monitor port Dynamic Host Configuration Protocol (DHCP) routing statistics.
verbose	Provides additional information when used with a command.

Default

None

Command Mode

Privileged EXEC

monitor ports statistics bridging

Monitor port bridging statistics.

Syntax

- **monitor ports statistics bridging**
- **monitor ports statistics bridging from {slot/port[/sub-port][-slot/port[/sub-port]][,...]}**

Command Parameters

from *{slot/port[/sub-port] [-slot/port[/sub-port]] [,...]}*	Monitors port bridging statistics. Identifies the slot and port in one of the following formats: a single slot and port (slot/port), a range of slots and ports (slot/port-slot/port), or a series of slots and ports (slot/port,slot/port,slot/port). If your platform supports channelization and the port is channelized, you must also specify the sub-port in the format slot/port/sub-port.

Default

None

Command Mode

Privileged EXEC

monitor ports statistics dhcp-relay

Monitor port dhcp-relay statistics.

Syntax

- **`monitor ports statistics dhcp-relay`**
- **`monitor ports statistics dhcp-relay from {slot/port[/sub-port][-slot/port[/sub-port]][,...]}`**

Command Parameters

from *{slot/port[/sub-port] [-slot/port[/sub-port]] [,...]}*	Monitors port bridging statistics from a particular starting port. Identifies the slot and port in one of the following formats: a single slot and port (slot/port), a range of slots and ports (slot/port-slot/port), or a series of slots and ports (slot/port,slot/port,slot/port). If your platform supports channelization and the port is channelized, you must also specify the sub-port in the format slot/port/sub-port.

Default

None

Command Mode

Privileged EXEC

monitor ports statistics interface

Monitor port interface statistics.

Syntax

- **monitor ports statistics interface main**
- **monitor ports statistics interface main from {slot/port[/sub-port][-slot/port[/sub-port]][,...]}**
- **monitor ports statistics interface utilization**
- **monitor ports statistics interface utilization from {slot/port[/sub-port][-slot/port[/sub-port]][,...]}**
- **monitor ports statistics interface verbose**
- **monitor ports statistics interface verbose from {slot/port[/sub-port][-slot/port[/sub-port]][,...]}**

Command Parameters

from *{slot/port[/sub-port] [-slot/port[/sub-port]] [,...]}*	Monitors port DHCP-relay statistics. Identifies the slot and port in one of the following formats: a single slot and port (slot/port), a range of slots and ports (slot/port-slot/port), or a series of slots and ports (slot/port,slot/port,slot/port). If your platform supports channelization and the port is channelized, you must also specify the sub-port in the format slot/port/sub-port.
main	Monitors port interface statistics.
utilization	Monitors port interface utilization statistics.
utilization from *{slot/port[/sub-port] [-slot/port[/sub-port]] [,...]}*	Monitors port DHCP-relay statistics from a particular starting port. Identifies the slot and port in one of the following formats: a single slot and port (slot/port), a range of slots and ports (slot/port-slot/port), or a series of slots and ports (slot/port,slot/port,slot/port). If your platform supports channelization and the port is channelized, you must also specify the sub-port in the format slot/port/sub-port.
verbose	Monitors port interface statistics.
verbose from *{slot/port[/sub-port] [-slot/port[/sub-port]] [,...]}*	Specifies the slot and port. Identifies the slot and port in one of the following formats: a single slot and port (slot/port), a range of slots and ports (slot/port-slot/port), or a series of slots and ports (slot/port,slot/port,slot/port). If your platform supports channelization and the port is channelized, you must also specify the sub-port in the format slot/port/sub-port.

Default

None

Command Mode

Privileged EXEC

monitor ports statistics ospf

Monitor ports statistics for open shortest path first (OSPF) performance.

Syntax

- **monitor ports statistics ospf main**
- **monitor ports statistics ospf main from {slot/port[/sub-port][-slot/port[/sub-port]][,...]}**
- **monitor ports statistics ospf verbose**
- **monitor ports statistics ospf verbose from {slot/port[/sub-port][-slot/port[/sub-port]][,...]}**

Command Parameters

main	Monitors ports statistics for OSPF main command.
main from *{slot/port[/sub-port] [-slot/port[/sub-port]] [,...]}*	Monitors port interface statistics. Identifies the slot and port in one of the following formats: a single slot and port (slot/port), a range of slots and ports (slot/port-slot/port), or a series of slots and ports (slot/port,slot/port,slot/port). If your platform supports channelization and the port is channelized, you must also specify the sub-port in the format slot/port/sub-port.
verbose	Monitors ports statistics for OSPF verbose command.
verbose from *{slot/port[/sub-port] [-slot/port[/sub-port]] [,...]}*	Monitors port interface statistics from a particular starting port. Identifies the slot and port in one of the following formats: a single slot and port (slot/port), a range of slots and ports (slot/port-slot/port), or a series of slots and ports (slot/port,slot/port,slot/port). If your platform supports channelization and the port is channelized, you must also specify the sub-port in the format slot/port/sub-port.

Default

None

Command Mode

Privileged EXEC

monitor ports statistics rmon

Monitor port remote monitoring (RMON) statistics.

Syntax

- **monitor ports statistics rmon**

- **monitor ports statistics rmon from {slot/port[/sub-port][-slot/port[/sub-port]][,...]}**

Command Parameters

from *{slot/port[/sub-port][-slot/port[/sub-port]] [,...]}*	Monitors port interface utilization statistics. Identifies the slot and port in one of the following formats: a single slot and port (slot/port), a range of slots and ports (slot/port-slot/port), or a series of slots and ports (slot/port,slot/port,slot/port). If your platform supports channelization and the port is channelized, you must also specify the sub-port in the format slot/port/sub-port.

Default

None

Command Mode

Privileged EXEC

monitor ports statistics routing

Monitor port Dynamic Host Configuration Protocol (DHCP) routing statistics.

Syntax

- **monitor ports statistics routing**
- **monitor ports statistics routing from {slot/port[/sub-port][-slot/port[/sub-port]][,...]}**

Command Parameters

from *{slot/port[/sub-port][-slot/port[/sub-port]] [,...]}*	Monitors port interface utilization statistics from a particular starting port. Identifies the slot and port in one of the following formats: a single slot and port (slot/port), a range of slots and ports (slot/port-slot/port), or a series of slots and ports (slot/port,slot/port,slot/port). If your platform supports channelization and the port is channelized, you must also specify the sub-port in the format slot/port/sub-port.

Default

None

Command Mode

Privileged EXEC

more

Display contents of file.

Syntax

- **more WORD<1-99>**
- **more WORD<1-99> { binary | ascii }**

Command Parameters

{ binary | ascii }	Filename, a.b.c.d:<file> | /intflash/<file> | /usb/<file>.
WORD<1-99>	Specifies the file name in the following format: /usb/<file>. The file name, including the directory structure, can include up to 99 characters.

Default

None

Command Mode

Privileged EXEC

mv

Move or rename file or directory, with wildcard pattern.

Syntax

- **mv /intflash/<srcfile> /usb/<destfile>**
- **mv WORD<1-255> WORD<1-255>**

Command Parameters

/intflash/<srcfile>	Specifies the name of the configuration or log file on the internal flash memory. For example, test.cfg or test.log. The file name, including the directory structure, can include up to 255 characters.
/usb/<destfile>	Specifies the name of the configuration or log file when moved to the USB device. The destination file name must be lower case and have a file extension of .cfg or .log. For example, test.cfg or test.log. The file name, including the directory structure, can include up to 255 characters.
WORD<1-255> WORD<1-255>	Filename, /intflash/<file> | /usb/<file>.

Default

None

Command Mode

Privileged EXEC

pwd

Print current filesystem directory path.

Syntax

- **pwd**

Default

None

Command Mode

Privileged EXEC

rename

Use this command to rename a file.

Syntax

- **rename WORD<1-255> WORD<1-255>**

Command Parameters

WORD<1-255> **WORD<1-255>**	Specifies the file name to rename in the following format:/intflash/ <file> or /usb/<file>. Word<1-255> is a string of 1-255 characters.

Default

None

Command Mode

Privileged EXEC

reset

Reset the platform to reload system parameters from the most recently saved configuration file.

Syntax

- **reset**

- **reset [-y] [-coredump]**
- **reset -coredump**
- **reset -y**

Command Parameters

-coredump	Creates an ssio core file and a cbcp-main.x core file before resetting the switch.
-y	Suppresses the confirmation message before the switch resets. If you omit this parameter, you must confirm the action before the switch resets.

Default

None

Command Mode

Privileged EXEC

restore

Restore the internal flash from the USB device or restore configuration files stored in a backup zip file. You must disable logging to the compact flash you want to restore before you can use the restore command.

Syntax

- **restore configure WORD<1-99>**
- **restore intflash**

Command Parameters

configure WORD<1-99>	Specifies the backup configuration files to be restored.
intflash	Specifies the internal flash to be restored from the USB device.

Default

None

Command Mode

Privileged EXEC

rlogin

Login remotely to a remote host.

Syntax

- **rlogin {A.B.C.D}**

Command Parameters

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

Default

None

Command Mode

Privileged EXEC

rsh

Execute a shell command on a remote machine.

Syntax

- **rsh {A.B.C.D} -l WORD<0-1536> WORD<1-1536>**
- **rsh {A.B.C.D} -l WORD<0-1536> WORD<1-1536> WORD<0-1536>**
- **rsh {A.B.C.D} -l WORD<0-1536> WORD<1-1536> WORD<0-1536> WORD<0-1536>**
- **rsh {A.B.C.D} -l WORD<0-1536> WORD<1-1536> WORD<0-1536> WORD<0-1536> WORD<0-1536>**
- **rsh {A.B.C.D} -l WORD<0-1536> WORD<1-1536> WORD<0-1536> WORD<0-1536> WORD<0-1536> WORD<0-1536>**
- **rsh {A.B.C.D} -l WORD<0-1536> WORD<1-1536> WORD<0-1536> WORD<0-1536> WORD<0-1536> WORD<0-1536> WORD<0-1536>**
- **rsh {A.B.C.D} -l WORD<0-1536> WORD<1-1536> WORD<0-1536> WORD<0-1536> WORD<0-1536> WORD<0-1536> WORD<0-1536> WORD<0-1536>**
- **rsh {A.B.C.D} -l WORD<0-1536> WORD<1-1536> WORD<0-1536> WORD<0-1536> WORD<0-1536> WORD<0-1536> WORD<0-1536> WORD<0-1536> WORD<0-1536>**

Command Parameters

{A.B.C.D} -l WORD<0-1536> WORD<1-1536> WORD<0-1536> WORD<0-1536> WORD<0-1536>	Specifies the command to execute on the remote host: Param1 for rsh command. String length {0-1536} Param2 for rsh command. String length {0-1536} Param3 for rsh command. String length {0-1536} Param4 for rsh command. String length {0-1536} Param5 for rsh command. String length {0-1536} Param6 for rsh command. String length {0-1536} Param7 for rsh command. String length {0-1536}

{A.B.C.D} -l WORD<0-1536> WORD<1-1536> WORD<0-1536> WORD<0-1536> WORD<0-1536> WORD<0-1536>	Specifies the user login name.
{A.B.C.D} -l WORD<0-1536> WORD<1-1536> WORD<0-1536> WORD<0-1536> WORD<0-1536> WORD<0-1536>	Specifies the IP address in the {A.B.C.D} format.
-l	Specifies the user login name.

Default

None

Command Mode

Privileged EXEC

save config

Save configuration information.

Syntax

- **save config**
- **save config backup WORD<1-99>**
- **save config file WORD<1-99>**
- **save config file WORD<1-99> verbose**
- **save config verbose**

Command Parameters

backup WORD<1-99>	Saves the specified file name and identifies the file as a backup file.
file WORD<1-99>	Specifies the file name.
verbose	Save current and default configuration.

Default

None

Command Mode

Privileged EXEC

save log

Save the log files, assuming the files use the default file names.

Syntax

- **save log**
- **save log file WORD<1-99>**

Command Parameters

file WORD<1-99>	Specifies the file name in one of the following formats: a.b.c.d: <file>, or / intflash/ <file>. WORD<1-99> is a string of 1-99 characters.

Default

None

Command Mode

Privileged EXEC

save trace

Save the trace file to the card for retrieval.

Syntax

- **save trace**
- **save trace file WORD<1-99>**

Command Parameters

file WORD<1-99>	Specifies the file name in one of the following formats: a.b.c.d: <file>,or / intflash/ <file> .

Default

None

Command Mode

Privileged EXEC

show access-policy

Show access policy configurations.

Syntax

- **show access-policy**
- **show access-policy by-mac**
- **show access-policy snmp-group**
- **show access-policy WORD<0-15>**

Command Parameters

by-mac	Show access policy by-mac information.
snmp-group	Show access-policy snmp-group information.
WORD<0-15>	Specifies an acess policy name.

Default

None

Command Mode

Privileged EXEC

show alarm

Display the contents of the alarm log buffers.

Syntax

- **show alarm database**
- **show alarm database alarm-id WORD<0-32>**
- **show alarm database alarm-status WORD<0-32>**
- **show alarm database alarm-type WORD<0-32>**
- **show alarm database event-code <0x0-0x00FFFFFF | 0x0-0x0>**
- **show alarm database module WORD<0-100>**
- **show alarm database severity WORD<0-25>**
- **show alarm statistics**

Command Parameters

database	Shows the alarm database.
database alarm-id WORD<0-32>	Shows the alarms associated with alarm ID.
database alarm-status WORD<0-32>	Shows the alarms associated with alarm status

database alarm-type WORD<0-32>	Shows the alarms associated with type.
database event-code <0x0-0x00FFFFFF | 0x0-0x0>	Shows the alarms associated with event code.
database module WORD<0-100>	Shows the alarms associated with module.
database severity WORD<0-25>	Shows the alarms associated with severity.
statistics	Shows the alarm database statistics.

Default

None

Command Mode

Privileged EXEC

show boot config

Display the configuration to view current or changed settings for the boot parameters.

Syntax

- **show boot config choice**
- **show boot config flags**
- **show boot config general**
- **show boot config host**
- **show boot config running-config**
- **show boot config running-config verbose**
- **show boot config sio**
- **show boot config sio {<1-8> | SF1 | SF2 | SF3}**

Command Parameters

choice	Shows the current boot configuration choices.
flags	Shows the current flag settings.
general	Shows system information.
host	Shows the current host configuration.
running-config	Displays the current boot configuration.

sio {<1-8> | SF1 | SF2 | SF3}	Specifies the current configuration of the serial port. Range depends on hardware platform.
verbose	Includes all possible information. If you omit verbose, the system displays only the values that you changed from their default value.

Default

None

Command Mode

Privileged EXEC

show boot config choice

Make copies of the configuration files before you upgrade the switch software.

Syntax

- **`show boot config choice`**

Default

None

Command Mode

Privileged EXEC

show boot config flags

Check the status of the boot configuration flags.

Syntax

- **`show boot config flags`**

Default

None

Command Mode

Privileged EXEC

Usage Guidelines

Flag support can vary across hardware models.

Command Output

The **`show boot config flags`** command displays the following information:

Output field	Description
flags advanced-feature-bandwidth-reservation	Shows if the switch supports advanced features by reserving ports as loopback ports. If enabled, the value is low. If disabled, the value is false.
flags block-snmp	Shows if the switch permits Simple Network Management Protocol (SNMP) access. If enabled, the value is true. If disabled, the value is false.
flags debug-config	Shows if the switch can debug the configuration file while loading the configuration at system boot up. If disabled, the value is false. If enabled, the value shows if the debug information will be stored in a file or displayed on the console.
flags debugmode	Shows is you can enable TRACE on any port by prompting the selection on the console during boot up. If enabled, the value is true. If disabled, the value is false.
flags dvr-leaf-mode	Shows if you can configure the switch as a DvR Leaf. If enabled, the value is true. If disabled, the value is false.
flags enhancedsecure-mode	Shows if the switch operates in enhanced secure mode. If disabled, the value is false. If enabled, the value indicates either the JITC or non-JITC sub-mode.
flags factorydefaults	Shows whether the switch uses the fabric or non-fabric factory default settings at startup. If enabled, the value is true. If disabled, the value is false.
flags flow-control-mode	Shows if flow control is enabled globally. If enabled, the value is true. If disabled, the value is false.
flags ftpd	Shows if the FTP server is enabled on the switch. If enabled, the value is true. If disabled, the value is false.
flags ha-cpu	Shows if the switch operates in High Availability-CPU (HA-CPU) mode. If enabled, the value is true. If disabled, the value is false.
flags hsecure	Shows if the switch operates in High Secure mode. If enabled, the value is true. If disabled, the value is false.
flags insight-port-connect-type	Shows the connection type the Insight port can use with virtual machine (VM) virtual ports.
flags ipv6-egress-filter	Shows if IPv6 egress filters are enabled on the switch. If enabled, the value is true. If disabled, the value is false.
flags ipv6-mode	Shows if IPv6 mode is enabled on the switch. If enabled, the value is true. If disabled, the value is false.
flags linerate-directed-broadcast	Shows if the switch supports IP Directed Broadcast in hardware without requiring CPU intervention. If enabled, the value is true. If disabled, the value is false.
flags logging	Shows if system logging is enabled on the switch. If enabled, the value is true. If disabled, the value is false.
flags nni-mstp	Shows if you can configure MSTP and VLANs on NNI ports. If enabled, the value is true. If disabled, the value is false.

Table continues…

Output field	Description
flags reboot	Shows if the switch automatically reboots after a fatal error. If enabled, the value is true. If disabled, the value is false.
flags rlogind	Shows if the rlogin and rsh server is enabled on the switch. If enabled, the value is true. If disabled, the value is false.
flags savetostandby	Shows if the switch automatically saves the configuration file to the standby CPU. If enabled, the value is true. If disabled, the value is false.
flags spanning-tree-mode	Shows the Spanning Tree mode enabled on the switch.
flags spbm-config-mode	Shows if you can configure SPB and IS-IS on the switch. If enabled, the value is true. If disabled, the value is false.
flags sshd	Shows if the SSHv2 server is enabled on the switch. If enabled, the value is true. If disabled, the value is false.
flags syslog-rfc5424-format	Shows if the format of the syslog and logging outputs conform to RFC 5424. If enabled, the value is true. If disabled, the value is false.
flags telnetd	Shows if the Telnet server is enabled on the switch. If enabled, the value is true. If disabled, the value is false.
flags tftpd	Shows if the Trivial File Transfer Protocol server is enabled on the switch. If enabled, the value is true. If disabled, the value is false.
flags trace-logging	Shows if the switch creates trace logs. If enabled, the value is true. If disabled, the value is false.
flags urpf-mode	Shows if Unicast Reverse Path Forwarding (uRPF) is enabled globally. If enabled, the value is true. If disabled, the value is false.
flags verify-config	Shows if syntax checking of the configuration file is enabled on the switch. If enabled, the value is true. If disabled, the value is false.
flags vrf-scaling	Shows if the switch can support an increased number of VRFs and Layer 3 VSNs. If enabled, the value is true. If disabled, the value is false.
flags vxlan-gw-full-interworking-mode	Shows if VXLAN Gateway is enabled in Full Interworking Mode, If enabled, the value is true. If VXLAN Gateway operates in Base Interworking mode, the value is false.

Example

The following example displays a configuration for each flag.

```
Switch:1#show boot config flags
flags advanced-feature-bandwidth-reservation low
flags block-snmp false
flags debug-config false
flags debugmode false
flags dvr-leaf-mode false
flags enhancedsecure-mode false
flags factorydefaults false
flags flow-control-mode true
flags ftpd true
flags ha-cpu true
flags hsecure false
flags insight-port-connect-type vtd
flags ipv6-egress-filter true
flags ipv6-mode false
flags linerate-directed-broadcast false
```

```
flags logging true
flags nni-mstp false
flags reboot true
flags rlogind false
flags savetostandby true
flags spanning-tree-mode mstp
flags spbm-config-mode true
flags sshd true
flags syslog-rfc5424-format true
flags telnetd true
flags tftpd true
flags trace-logging false
flags urpf-mode true
flags verify-config true
flags vrf-scaling true
flags vxlan-gw-full-interworking-mode false
```

show eapol multihost-session-stats interface

Display the manage mode parameters for the specified interface type.

Syntax

- **show eapol multihost-session-stats interface**
- **show eapol multihost-session-stats interface gigabitEthernet {slot/port[/sub-port][-slot/port[/sub-port]][,...]}**
- **show eapol multihost-session-stats interface vlan <1-4059>**
- **show eapol multihost-session-stats interface vlan <1-4059> {slot/port[/sub-port][-slot/port[/sub-port]][,...]}**

Command Parameters

gigabitethernet *{slot/port[/sub-port][-slot/port[/sub-port]] [,...]}*	Identifies the slot and port in one of the following formats: a single slot and port (slot/port), a range of slots and ports (slot/port-slot/port), or a series of slots and ports (slot/port,slot/port,slot/port). If your platform supports channelization and the port is channelized, you must also specify the sub-port in the format slot/port/sub-port.
vlan *<1-4059>*	Specifies the VLAN ID in the range of 1 to 4059. By default, VLAN IDs 1 to 4059 are configurable and the system reserves VLAN IDs 4060 to 4094 for internal use. On switches that support the vrf-scaling and spbm-config-mode boot configuration flags, if you enable these flags, the system also reserves VLAN IDs 3500 to 3998. VLAN ID 1 is the default VLAN and you cannot create or delete VLAN ID 1.

Default

None

Command Mode

Privileged EXEC

show eapol session interface

View EAPoL session statistics to manage network performance.

Syntax

- **show eapol session interface [gigabitethernet {slot/port[/sub-port][-slot/port[/sub-port]][,...]}] [vlan <1-4059>]**

Command Parameters

gigabitethernet *{slot/port[/sub-port] [-slot/port[/sub-port]] [,...]}*	Identifies the slot and port in one of the following formats: a single slot and port (slot/port), a range of slots and ports (slot/port-slot/port), or a series of slots and ports (slot/port,slot/port,slot/port). If your platform supports channelization and the port is channelized, you must also specify the sub-port in the format slot/port/sub-port.
vlan *<1-4059>*	Specifies the VLAN ID in the range of 1 to 4059. By default, VLAN IDs 1 to 4059 are configurable and the system reserves VLAN IDs 4060 to 4094 for internal use. On switches that support the vrf-scaling and spbm-config-mode boot configuration flags, if you enable these flags, the system also reserves VLAN IDs 3500 to 3998. VLAN ID 1 is the default VLAN and you cannot create or delete VLAN ID 1.

Default

None

Command Mode

Privileged EXEC

show eapol summary

Display the total number of EAP and NEAP clients without having to display all clients.

Syntax

- **show eapol summary {{slot/port[/sub-port][-slot/port[/sub-port]][,...]}}**
- **show eapol summary verbose**

Command Parameters

{{slot/port[/sub-port] [-slot/port[/sub-port]] [,...]}}	Identifies the slot and port in one of the following formats: a single slot and port (slot/port), a range of slots and ports (slot/port-slot/port), or a series of slots and ports (slot/port,slot/port,slot/port). If your platform supports channelization and the port is channelized, you must also specify the sub-port in the format slot/port/sub-port.

verbose	Displays extended eapol summary information.

Default

None

Command Mode

Privileged EXEC

show energy-saver

Displays Energy Saver settings and status on the switch.

Syntax

- **show energy-saver global**
- **show energy-saver interface {slot/port[/sub-port][-slot/port[/sub-port]][,...]}**
- **show energy-saver savings**
- **show energy-saver schedule**

Command Parameters

global	Displays global Energy Saver settings on the switch.
interface *{slot/port[/sub-port] [-slot/port[/sub-port]] [,...]}*	Displays per-port Energy Saver settings and status on the switch. Identifies the slot and port in one of the following formats: a single slot and port (slot/port), a range of slots and ports (slot/port-slot/port), or a series of slots and ports (slot/port,slot/port,slot/port). If your platform supports channelization and the port is channelized, you must also specify the sub-port in the format slot/port/sub-port.
savings	Displays Energy Saver power savings on the switch.
schedule	Displays information about Energy Saver schedules configured on the switch.

Default

None

Command Mode

Privileged EXEC

show filter acl

Display filter access control list (ACL) configuration information.

Syntax

- **show filter acl**
- **show filter acl <acl-id>**

Command Parameters

<acl-id> Specifies the ACL ID. Use the CLI Help to see the available range for your switch.

Default

None

Command Mode

Privileged EXEC

show filter acl ace

Display the filter access control list (ACL) access control entry (ACE) configuration information.

Syntax

- **show filter acl ace**
- **show filter acl ace <acl-id>**
- **show filter acl ace <acl-id> <ace-id>**

Command Parameters

<ace-id> Specifies the ACE ID. Different hardware platforms support different ACE ID ranges. Use the CLI Help to see the available range for your switch.

<acl-id> Specifies the ACL ID. Use the CLI Help to see the available range for your switch.

Default

None

Command Mode

Privileged EXEC

show filter acl action

Display the filter access control list (ACL) advanced information.

Syntax

- **show filter acl action**
- **show filter acl action <acl-id>**
- **show filter acl action <acl-id> <ace-id>**

Command Parameters

<ace-id>	Specifies the ACE ID. Different hardware platforms support different ACE ID ranges. Use the CLI Help to see the available range for your switch.
<acl-id>	Specifies the ACL ID. Use the CLI Help to see the available range for your switch.

Default

None

Command Mode

Privileged EXEC

show filter acl arp

Display the filter access control list (ACL) ARP operation configuration information.

Syntax

- **show filter acl arp**
- **show filter acl arp <acl-id>**
- **show filter acl arp <acl-id> <ace-id>**

Command Parameters

<ace-id>	Specifies the ACE ID. Different hardware platforms support different ACE ID ranges. Use the CLI Help to see the available range for your switch.
<acl-id>	Specifies the ACL ID. Use the CLI Help to see the available range for your switch.

Default

None

Command Mode

Privileged EXEC

show filter acl config

Review your configuration to ensure that it is correct.

Syntax

- **show filter acl config**
- **show filter acl config <acl-id>**
- **show filter acl config <acl-id> <ace-id>**

Command Parameters

<ace-id>	Specifies the ACE ID. Different hardware platforms support different ACE ID ranges. Use the CLI Help to see the available range for your switch.
<acl-id>	Specifies the ACL ID. Use the CLI Help to see the available range for your switch.

Default

None

Command Mode

Privileged EXEC

show filter acl ethernet

Display the filter access control list (ACL) Ethernet configuration information.

Syntax

- **show filter acl ethernet**
- **show filter acl ethernet <acl-id>**
- **show filter acl ethernet <acl-id> <ace-id>**

Command Parameters

<ace-id>	Specifies the ACE ID. Different hardware platforms support different ACE ID ranges. Use the CLI Help to see the available range for your switch.
<acl-id>	Specifies the ACL ID. Use the CLI Help to see the available range for your switch.

Default

None

Command Mode

Privileged EXEC

show filter acl ip

Display the filter access control list (ACL) IP configuration information.

Syntax

- **show filter acl ip**
- **show filter acl ip <acl-id>**
- **show filter acl ip <acl-id> <ace-id>**

Command Parameters

<ace-id>	Specifies the ACE ID. Different hardware platforms support different ACE ID ranges. Use the CLI Help to see the available range for your switch.
<acl-id>	Specifies the ACL ID. Use the CLI Help to see the available range for your switch.

Default

None

Command Mode

Privileged EXEC

show filter acl ipv6

Display the filter access control list (ACL) IPv6 configuration information.

Syntax

- **show filter acl ipv6**
- **show filter acl ipv6 <acl-id>**
- **show filter acl ipv6 <acl-id> <ace-id>**

Command Parameters

<ace-id>	Specifies the ACE ID. Different hardware platforms support different ACE ID ranges. Use the CLI Help to see the available range for your switch.
<acl-id>	Specifies the ACL ID. Use the CLI Help to see the available range for your switch.

Default

None

Command Mode

Privileged EXEC

show filter acl protocol

Display the filter access control list (ACL) protocol configuration information.

Syntax

- **show filter acl protocol**
- **show filter acl protocol <acl-id>**
- **show filter acl protocol <acl-id> <ace-id>**

Command Parameters

<ace-id>	Specifies the ACE ID. Different hardware platforms support different ACE ID ranges. Use the CLI Help to see the available range for your switch.
<acl-id>	Specifies the ACL ID. Use the CLI Help to see the available range for your switch.

Default

None

Command Mode

Privileged EXEC

show filter acl statistics

View port statistics to ensure that the access control entry (ACE) operates correctly.

Syntax

- **show filter acl statistics**
- **show filter acl statistics <acl-id>**
- **show filter acl statistics <acl-id> <ace-id>**
- **show filter acl statistics <acl-id> qos**
- **show filter acl statistics <acl-id> security**
- **show filter acl statistics all**
- **show filter acl statistics default**
- **show filter acl statistics default <acl-id>**
- **show filter acl statistics global**
- **show filter acl statistics global <acl-id>**

Command Parameters

security	Shows ACL statistics for Security ACEs
<ace-id>	Specifies the ACE ID. Different hardware platforms support different ACE ID ranges. Use the CLI Help to see the available range for your switch.
<acl-id>	Specifies the ACL ID. Use the CLI Help to see the available range for your switch.

all	Shows all statistics for all access control entry.
default	Shows traffic statistics for access control entry..
global	Shows global statistics for access control entry.
qos	Shows statistics for Quality of Service (QoS) access control entries.

Default

None

Command Mode

Privileged EXEC

show history

Shows a list of previously used commands. You can use this command in any mode, beginning with Privileged EXEC. The output shows the last 32 commands used in the active session.

Syntax

- **`show history`**

Default

None

Command Mode

Privileged EXEC

show interface gigabitethernet config

Display port info and configuration such as port type, diff-serv, qos level MLT id and the Layer 3 trusted/untrusted information for a gigabitEthernet interface.

Syntax

- **`show interface gigabitethernet config`**

Default

None

Command Mode

Privileged EXEC

show interface vlan nlb-mode

Displays the NLB information.

Syntax

- **show interface vlan nlb-mode**
- **show interface vlan nlb-mode <1-4059>**

Command Parameters

<1-4059>	Specifies the VLAN ID in the range of 1 to 4059. By default, VLAN IDs 1 to 4059 are configurable and the system reserves VLAN IDs 4060 to 4094 for internal use. On switches that support the vrf-scaling and spbm-config-mode boot configuration flags, if you enable these flags, the system also reserves VLAN IDs 3500 to 3998. VLAN ID 1 is the default VLAN and you cannot create or delete VLAN ID 1.

Default

None

Command Mode

Privileged EXEC

show interfaces gigabitethernet

Show configuration information for GigabitEthernet ports.

Syntax

- **show interfaces gigabitEthernet**
- **show interfaces gigabitEthernet {slot/port[/sub-port][-slot/port[/sub-port]][,...]}**
- **show interfaces gigabitEthernet {slot/port[/sub-port][-slot/port[/sub-port]][,...]} <1-4059>**

Command Parameters

{slot/port[/sub-port] [-slot/port[/sub-port]] [,...]}	Identifies the slot and port in one of the following formats: a single slot and port (slot/port), a range of slots and ports (slot/port-slot/port), or a series of slots and ports (slot/port,slot/port,slot/port). If your platform supports channelization and the port is channelized, you must also specify the sub-port in the format slot/port/sub-port.
<1-4059>	Specifies the VLAN ID in the range of 1 to 4059. By default, VLAN IDs 1 to 4059 are configurable and the system reserves VLAN IDs 4060 to 4094 for internal use. On switches that support the vrf-scaling and spbm-config-mode boot configuration flags, if you enable these flags, the system also reserves VLAN IDs

3500 to 3998. VLAN ID 1 is the default VLAN and you cannot create or delete VLAN ID 1.

Default

None

Command Mode

Privileged EXEC

show interfaces gigabitethernet channelize

Display port-channelization information. Not all hardware platforms support this feature. For information about hardware support, see your hardware documentation.

Syntax

- **show interfaces gigabitEthernet channelize**
- **show interfaces gigabitEthernet channelize {slot/port[-slot/port][,...]}**
- **show interfaces gigabitEthernet channelize detail**
- **show interfaces gigabitEthernet channelize detail {slot/port[/sub-port][-slot/port[/sub-port]][,...]}**

Command Parameters

{slot/port[/sub-port] [-slot/port[/sub-port]] [,...]}	Identifies the slot and port in one of the following formats: a single slot and port (slot/port), a range of slots and ports (slot/port-slot/port), or a series of slots and ports (slot/port,slot/port,slot/port). If your platform supports channelization and the port is channelized, you must also specify the sub-port in the format slot/port/sub-port.
[port *{slot/port [-slot/port] [,...]}*]	Specifies a specific outgoing interface to use by IP address. Identifies the slot and port in one of the following formats: a single slot and port (slot/port), a range of slots and ports (slot/port-slot/port), or a series of slots and ports (slot/port,slot/port,slot/port).
detail	Display the detailed channelization information.

Default

None

Command Mode

Privileged EXEC

show interfaces gigabitethernet config

Show the configuration for specific ports and VLANs to manage network performance.

Syntax

- **show interfaces gigabitEthernet config**
- **show interfaces gigabitEthernet config <1-4059>**
- **show interfaces gigabitEthernet config {slot/port[/sub-port][-slot/port[/sub-port]][,...]}**

Command Parameters

{slot/port[/sub-port] [-slot/port[/sub-port]] [,...]}	Identifies the slot and port in one of the following formats: a single slot and port (slot/port), a range of slots and ports (slot/port-slot/port), or a series of slots and ports (slot/port,slot/port,slot/port). If your platform supports channelization and the port is channelized, you must also specify the sub-port in the format slot/port/sub-port.
<1-4059>	Specifies the VLAN ID in the range of 1 to 4059. By default, VLAN IDs 1 to 4059 are configurable and the system reserves VLAN IDs 4060 to 4094 for internal use. On switches that support the vrf-scaling and spbm-config-mode boot configuration flags, if you enable these flags, the system also reserves VLAN IDs 3500 to 3998. VLAN ID 1 is the default VLAN and you cannot create or delete VLAN ID 1.

Default

None

Command Mode

Privileged EXEC

show interfaces gigabitethernet error

Show general error information for the port.

Syntax

- **show interfaces GigabitEthernet error [{slot/port[/sub-port][-slot/port[/sub-port]][,...]}]**
- **show interfaces GigabitEthernet error collision {slot/port[/sub-port][-slot/port[/sub-port]][,...]}**
- **show interfaces GigabitEthernet error ospf {slot/port[/sub-port][-slot/port[/sub-port]][,...]}**
- **show interfaces GigabitEthernet error verbose {slot/port[/sub-port][-slot/port[/sub-port]][,...]}**

Command Parameters

{slot/port[/sub-port] [-slot/port[/sub-port]] [,...]}	Identifies the slot and port in one of the following formats: a single slot and port (slot/port), a range of slots and ports (slot/port-slot/port), or a series of slots and ports (slot/port,slot/port,slot/port). If your platform supports channelization and the port is channelized, you must also specify the sub-port in the format slot/port/sub-port.
collision	Show port collision error information.
ospf	Show port ospf error information.
verbose	Show port error information. Display priority-based flow control pause transmit and receive counter.

Default

None

Command Mode

Privileged EXEC

show interfaces gigabitethernet fdb-entry

Show the forwarding database (FDB) entries for the port.

Syntax

- **`show interfaces gigabitEthernet fdb-entry`**
- **`show interfaces gigabitEthernet fdb-entry <1-4059>`**
- **`show interfaces gigabitEthernet fdb-entry {slot/port[/sub-port][-slot/port[/sub-port]][,...]}`**

Command Parameters

{slot/port[/sub-port] [-slot/port[/sub-port]] [,...]}	Identifies the slot and port in one of the following formats: a single slot and port (slot/port), a range of slots and ports (slot/port-slot/port), or a series of slots and ports (slot/port,slot/port,slot/port). If your platform supports channelization and the port is channelized, you must also specify the sub-port in the format slot/port/sub-port.
<1-4059>	Specifies the VLAN ID in the range of 1 to 4059. By default, VLAN IDs 1 to 4059 are configurable and the system reserves VLAN IDs 4060 to 4094 for internal use. On switches that support the vrf-scaling and spbm-config-mode boot configuration flags, if you enable these flags, the system also reserves VLAN IDs 3500 to 3998. VLAN ID 1 is the default VLAN and you cannot create or delete VLAN ID 1.

Default

None

Command Mode

Privileged EXEC

show interfaces gigabitethernet high-secure

Show the high-secure configuration for the port.

Syntax

- **show interfaces gigabitethernet high-secure**
- **show interfaces gigabitEthernet high-secure {slot/port[/sub-port][-slot/port[/sub-port]][,...]} <1-4059>**
- **show interfaces gigabitethernet high-secure <1-4059>**

Command Parameters

{slot/port[/sub-port] [-slot/port[/sub-port]] [,...]}	Identifies the slot and port in one of the following formats: a single slot and port (slot/port), a range of slots and ports (slot/port-slot/port), or a series of slots and ports (slot/port,slot/port,slot/port). If your platform supports channelization and the port is channelized, you must also specify the sub-port in the format slot/port/sub-port.
<1-4059>	Specifies the VLAN ID in the range of 1 to 4059. By default, VLAN IDs 1 to 4059 are configurable and the system reserves VLAN IDs 4060 to 4094 for internal use. On switches that support the vrf-scaling and spbm-config-mode boot configuration flags, if you enable these flags, the system also reserves VLAN IDs 3500 to 3998. VLAN ID 1 is the default VLAN and you cannot create or delete VLAN ID 1.

Default

None

Command Mode

Privileged EXEC

show interfaces gigabitethernet interface

Show general port information.

Syntax

- **show interfaces gigabitEthernet interface**

- **show interfaces gigabitEthernet interface <1-4059>**
- **show interfaces gigabitEthernet interface {slot/port[/sub-port][-slot/port[/sub-port]][,...]} <1-4059>**

Command Parameters

{slot/port[/sub-port] [-slot/port[/sub-port]] [,...]}	Identifies the slot and port in one of the following formats: a single slot and port (slot/port), a range of slots and ports (slot/port-slot/port), or a series of slots and ports (slot/port,slot/port,slot/port). If your platform supports channelization and the port is channelized, you must also specify the sub-port in the format slot/port/sub-port.
<1-4059>	Specifies the VLAN ID in the range of 1 to 4059. By default, VLAN IDs 1 to 4059 are configurable and the system reserves VLAN IDs 4060 to 4094 for internal use. On switches that support the vrf-scaling and spbm-config-mode boot configuration flags, if you enable these flags, the system also reserves VLAN IDs 3500 to 3998. VLAN ID 1 is the default VLAN and you cannot create or delete VLAN ID 1.

Default

None

Command Mode

Privileged EXEC

show interfaces gigabitEthernet i-sid

Display all configured service instance identifiers (I-SID) on port.

Syntax

- **show interfaces gigabitEthernet i-sid {slot/port[/sub-port][-slot/port[/sub-port]][,...]}**

Command Parameters

{slot/port[/sub-port] [-slot/port[/sub-port]] [,...]}	Identifies the slot and port in one of the following formats: a single slot and port (slot/port), a range of slots and ports (slot/port-slot/port), or a series of slots and ports (slot/port,slot/port,slot/port). If your platform supports channelization and the port is channelized, you must also specify the sub-port in the format slot/port/sub-port.

Default

None

Command Mode

Privileged EXEC

show interfaces gigabitethernet l1-config

Show Layer 1 configuration information for the port.

Syntax

- **show interfaces gigabitEthernet l1-config**
- **show interfaces gigabitEthernet l1-config {slot/port[/sub-port][-slot/port[/sub-port]][,...]} <1-4059>**
- **show interfaces gigabitEthernet l1-config <1-4059>**

Command Parameters

{slot/port[/sub-port] [-slot/port[/sub-port]] [,...]}	Identifies the slot and port in one of the following formats: a single slot and port (slot/port), a range of slots and ports (slot/port-slot/port), or a series of slots and ports (slot/port,slot/port,slot/port). If your platform supports channelization and the port is channelized, you must also specify the sub-port in the format slot/port/sub-port.
<1-4059>	Specifies the VLAN ID in the range of 1 to 4059. By default, VLAN IDs 1 to 4059 are configurable and the system reserves VLAN IDs 4060 to 4094 for internal use. On switches that support the vrf-scaling and spbm-config-mode boot configuration flags, if you enable these flags, the system also reserves VLAN IDs 3500 to 3998. VLAN ID 1 is the default VLAN and you cannot create or delete VLAN ID 1.

Default

None

Command Mode

Privileged EXEC

show interfaces gigabitethernet limit-fdb-learning

Show the configuration for the limit forwarding database (FDB) learning feature.

Syntax

- **show interfaces gigabitEthernet limit-fdb-learning [<1-4059>] [{slot/port[/sub-port][-slot/port[/sub-port]][,...]}]**

Command Parameters

{slot/port[/sub-port] [-slot/port[/sub-port]] [,...]}	Identifies the slot and port in one of the following formats: a single slot and port (slot/port), a range of slots and ports (slot/port-slot/port), or a series of slots and ports (slot/port,slot/port,slot/port). If your platform supports channelization and the port is channelized, you must also specify the sub-port in the format slot/port/sub-port.

<1-4059>	Specifies the VLAN ID in the range of 1 to 4059. By default, VLAN IDs 1 to 4059 are configurable and the system reserves VLAN IDs 4060 to 4094 for internal use. On switches that support the vrf-scaling and spbm-config-mode boot configuration flags, if you enable these flags, the system also reserves VLAN IDs 3500 to 3998. VLAN ID 1 is the default VLAN and you cannot create or delete VLAN ID 1.

Default

None

Command Mode

Privileged EXEC

show interfaces gigabitethernet loop-detected

Display loop detection information for the port.

Syntax

- **`show interfaces gigabitEthernet loop-detected`**
- **`show interfaces gigabitEthernet loop-detected {slot/port[-slot/port][,...]}`**
- **`show interfaces gigabitEthernet loop-detected <1-4059>`**

Command Parameters

{slot/port [-slot/port] [,...]}	Identifies the slot and port in one of the following formats: a single slot and port (slot/port), a range of slots and ports (slot/port-slot/port), or a series of slots and ports (slot/port,slot/port,slot/port).
<1-4059>	Specifies the VLAN ID in the range of 1 to 4059. By default, VLAN IDs 1 to 4059 are configurable and the system reserves VLAN IDs 4060 to 4094 for internal use. On switches that support the vrf-scaling and spbm-config-mode boot configuration flags, if you enable these flags, the system also reserves VLAN IDs 3500 to 3998. VLAN ID 1 is the default VLAN and you cannot create or delete VLAN ID 1.

Default

None

Command Mode

Privileged EXEC

show interfaces gigabitethernet mac-security

Show information about the unknown MAC discard feature for the port.

Syntax

- **show interfaces gigabitEthernet mac-security**
- **show interfaces gigabitEthernet mac-security {slot/port[/sub-port][-slot/port[/sub-port]][,...]}**
- **show interfaces gigabitEthernet mac-security <1-4059>**

Command Parameters

{slot/port[/sub-port] [-slot/port[/sub-port]] [,...]}	Identifies the slot and port in one of the following formats: a single slot and port (slot/port), a range of slots and ports (slot/port-slot/port), or a series of slots and ports (slot/port,slot/port,slot/port). If your platform supports channelization and the port is channelized, you must also specify the sub-port in the format slot/port/sub-port.
<1-4059>	Specifies the VLAN ID in the range of 1 to 4059. By default, VLAN IDs 1 to 4059 are configurable and the system reserves VLAN IDs 4060 to 4094 for internal use. On switches that support the vrf-scaling and spbm-config-mode boot configuration flags, if you enable these flags, the system also reserves VLAN IDs 3500 to 3998. VLAN ID 1 is the default VLAN and you cannot create or delete VLAN ID 1.

Default

None

Command Mode

Privileged EXEC

show interfaces gigabitethernet name

Show port names and general configuration information.

Syntax

- **show interfaces gigabitEthernet name**
- **show interfaces gigabitEthernet name <1-4059>**
- **show interfaces gigabitEthernet name {slot/port[/sub-port][-slot/port[/sub-port]][,...]}**

Command Parameters

{slot/port[/sub-port] [-	Identifies the slot and port in one of the following formats: a single slot and port (slot/port), a range of slots and ports (slot/port-slot/port), or a series of slots and

slot/port[/sub-port]] [,...]}	ports (slot/port,slot/port,slot/port). If your platform supports channelization and the port is channelized, you must also specify the sub-port in the format slot/port/sub-port.
<1-4059>	Specifies the VLAN ID in the range of 1 to 4059. By default, VLAN IDs 1 to 4059 are configurable and the system reserves VLAN IDs 4060 to 4094 for internal use. On switches that support the vrf-scaling and spbm-config-mode boot configuration flags, if you enable these flags, the system also reserves VLAN IDs 3500 to 3998. VLAN ID 1 is the default VLAN and you cannot create or delete VLAN ID 1.

Default

None

Command Mode

Privileged EXEC

show interfaces gigabitethernet ospf

Shows OSPF port information.

Syntax

- **show interfaces gigabitEthernet ospf**
- **show interfaces gigabitEthernet ospf <1-4059>**
- **show interfaces gigabitEthernet ospf {slot/port[/sub-port][-slot/port[/sub-port]][,...]}**

Command Parameters

{slot/port[/sub-port] [-slot/port[/sub-port]] [,...]}	Identifies the slot and port in one of the following formats: a single slot and port (slot/port), a range of slots and ports (slot/port-slot/port), or a series of slots and ports (slot/port,slot/port,slot/port). If your platform supports channelization and the port is channelized, you must also specify the sub-port in the format slot/port/sub-port.
<1-4059>	Specifies the VLAN ID in the range of 1 to 4059. By default, VLAN IDs 1 to 4059 are configurable and the system reserves VLAN IDs 4060 to 4094 for internal use. On switches that support the vrf-scaling and spbm-config-mode boot configuration flags, if you enable these flags, the system also reserves VLAN IDs 3500 to 3998. VLAN ID 1 is the default VLAN and you cannot create or delete VLAN ID 1.

Default

None

Command Mode

Privileged EXEC

show interfaces gigabitethernet private-vlan

Shows Private VLAN information for the port.

Syntax

- **show interfaces gigabitethernet private-vlan {slot/port[/sub-port][-slot/port[/sub-port]][,...]}**
- **show interfaces gigabitethernet private-vlan <2-4059>**

Command Parameters

{slot/port[/sub-port] [-slot/port[/sub-port]] [,...]}	Identifies the slot and port in one of the following formats: a single slot and port (slot/port), a range of slots and ports (slot/port-slot/port), or a series of slots and ports (slot/port,slot/port,slot/port). If your platform supports channelization and the port is channelized, you must also specify the sub-port in the format slot/port/sub-port.
<2-4059>	Specifies the VLAN ID in the range of 2 to 4059. VLAN ID 1 is the default VLAN and you cannot create or delete VLAN ID 1. By default, the system reserves VLAN IDs 4060 to 4094 for internal use. On switches that support the vrf-scaling and spbm-config-mode boot configuration flags, if you enable these flags, the system also reserves VLAN IDs 3500 to 3998.

Default

None

Command Mode

Privileged EXEC

show interfaces gigabitethernet rate-limit

Show rate-limit configuration information for the port.

Syntax

- **show interfaces gigabitEthernet rate-limit**
- **show interfaces gigabitEthernet rate-limit <1-4059>**
- **show interfaces gigabitEthernet rate-limit {slot/port[/sub-port][-slot/port[/sub-port]][,...]}**

Command Parameters

{slot/port[/sub-port] [-slot/port[/	Identifies the slot and port in one of the following formats: a single slot and port (slot/port), a range of slots and ports (slot/port-slot/port), or a series of slots and ports (slot/port,slot/port,slot/port). If your platform supports channelization and the port is channelized, you must also specify the sub-port in the format slot/port/sub-port.

sub-port]] [,...]}

<1-4059> Specifies the VLAN ID in the range of 1 to 4059. By default, VLAN IDs 1 to 4059 are configurable and the system reserves VLAN IDs 4060 to 4094 for internal use. On switches that support the vrf-scaling and spbm-config-mode boot configuration flags, if you enable these flags, the system also reserves VLAN IDs 3500 to 3998. VLAN ID 1 is the default VLAN and you cannot create or delete VLAN ID 1.

Default

None

Command Mode

Privileged EXEC

show interfaces gigabitethernet shape

Show the configuration for egress rate-limiting on the port.

Syntax

- **`show interfaces gigabitEthernet shape`**
- **`show interfaces gigabitEthernet shape {slot/port[/sub-port][-slot/port[/sub-port]][,...]}`**

Command Parameters

{slot/port[/sub-port] [-slot/port[/sub-port]] [,...]} Identifies the slot and port in one of the following formats: a single slot and port (slot/port), a range of slots and ports (slot/port-slot/port), or a series of slots and ports (slot/port,slot/port,slot/port). If your platform supports channelization and the port is channelized, you must also specify the sub-port in the format slot/port/sub-port.

Default

None

Command Mode

Privileged EXEC

show interfaces gigabitethernet slpp

Display the Simple Loop Prevention Protocol (SLPP) configuration information for the port.

Syntax

- **show interfaces gigabitEthernet slpp**
- **show interfaces gigabitEthernet slpp {slot/port[/sub-port][-slot/port[/sub-port]][,...]}**

Command Parameters

{slot/port[/sub-port] [-slot/port[/sub-port]] [,...]}	Identifies the slot and port in one of the following formats: a single slot and port (slot/port), a range of slots and ports (slot/port-slot/port), or a series of slots and ports (slot/port,slot/port,slot/port). If your platform supports channelization and the port is channelized, you must also specify the sub-port in the format slot/port/sub-port.

Default

None

Command Mode

Privileged EXEC

show interfaces gigabitethernet state

Shows the state of the port.

Syntax

- **show interfaces gigabitEthernet state**
- **show interfaces gigabitEthernet state <1-4059>**
- **show interfaces gigabitEthernet state {slot/port[/sub-port][-slot/port[/sub-port]][,...]}**

Command Parameters

{slot/port[/sub-port] [-slot/port[/sub-port]] [,...]}	Identifies the slot and port in one of the following formats: a single slot and port (slot/port), a range of slots and ports (slot/port-slot/port), or a series of slots and ports (slot/port,slot/port,slot/port). If your platform supports channelization and the port is channelized, you must also specify the sub-port in the format slot/port/sub-port.
<1-4059>	Specifies the VLAN ID in the range of 1 to 4059. By default, VLAN IDs 1 to 4059 are configurable and the system reserves VLAN IDs 4060 to 4094 for internal use. On switches that support the vrf-scaling and spbm-config-mode boot configuration flags, if you enable these flags, the system also reserves VLAN IDs 3500 to 3998. VLAN ID 1 is the default VLAN and you cannot create or delete VLAN ID 1.

Default

None

Command Mode

Privileged EXEC

show interfaces gigabitethernet statistics

Display the statistics of a port, for all ports, or for a VLAN.

Syntax

- **show interfaces gigabitEthernet statistics**
- **show interfaces gigabitEthernet statistics {slot/port[/sub-port][-slot/port[/sub-port]][,...]}**
- **show interfaces gigabitEthernet statistics rate-limiting**

Command Parameters

{slot/port[/sub-port] [-slot/port[/sub-port]] [,...]}	Identifies the slot and port in one of the following formats: a single slot and port (slot/port), a range of slots and ports (slot/port-slot/port), or a series of slots and ports (slot/port,slot/port,slot/port). If your platform supports channelization and the port is channelized, you must also specify the sub-port in the format slot/port/sub-port.

Default

None

Command Mode

Privileged EXEC

show interfaces gigabitethernet statistics bridging

Display individual bridging statistics for specific ports to manage network performance.

Syntax

- **show interfaces gigabitethernet statistics bridging {slot/port[-slot/port][,...]}**

Command Parameters

{slot/port [-slot/port] [,...]}	Identifies the slot and port in one of the following formats: a single slot and port (slot/port), a range of slots and ports (slot/port-slot/port), or a series of slots and ports (slot/port,slot/port,slot/port).

Default

None

Command Mode

Privileged EXEC

show interfaces gigabitethernet statistics dhcp-relay

Show Dynamic Host Configuration Protocol (DHCP) Relay information to view DHCP parameter information for one port, for all ports, or for a VLAN.

Syntax

- **show interfaces gigabitEthernet statistics dhcp-relay**
- **show interfaces gigabitEthernet statistics dhcp-relay {slot/port[/sub-port][-slot/port[/sub-port]][,...]}**
- **show interfaces gigabitEthernet statistics dhcp-relay vrf WORD<1-16>**
- **show interfaces gigabitEthernet statistics dhcp-relay vrfids WORD<0-512>**

Command Parameters

{slot/port[/sub-port] [-slot/port[/sub-port]] [,...]}	Identifies the slot and port in one of the following formats: a single slot and port (slot/port), a range of slots and ports (slot/port-slot/port), or a series of slots and ports (slot/port,slot/port,slot/port). If your platform supports channelization and the port is channelized, you must also specify the sub-port in the format slot/port/sub-port.
vrf WORD<1-16>	Displays all statistics by port.
vrfids WORD<0-512>	Specifies the slot and the port number.

Default

None

Command Mode

Privileged EXEC

show interfaces gigabitethernet statistics lacp

Display individual Link Aggregation Control Protocol (LACP) statistics for specific ports to manage network performance.

Syntax

- **show interfaces gigabitEthernet statistics lacp**
- **show interfaces gigabitEthernet statistics lacp {slot/port[/sub-port][-slot/port[/sub-port]][,...]}**

Command Parameters

{slot/port[/sub-port] [-slot/port[/sub-port]] [,...]}	Identifies the slot and port in one of the following formats: a single slot and port (slot/port), a range of slots and ports (slot/port-slot/port), or a series of slots and ports (slot/port,slot/port,slot/port). If your platform supports channelization and the port is channelized, you must also specify the sub-port in the format slot/port/sub-port.

Default

None

Command Mode

Privileged EXEC

show interfaces gigabitethernet statistics policer

Display individual policer statistics for specific ports to manage network performance.

Syntax

- **show interfaces gigabitEthernet statistics policer {slot/port[-slot/port][,...]}**

Command Parameters

{slot/port [-slot/port] [,...]}	Identifies the slot and port in one of the following formats: a single slot and port (slot/port), a range of slots and ports (slot/port-slot/port), or a series of slots and ports (slot/port,slot/port,slot/port).

Default

None

Command Mode

Privileged EXEC

show interfaces gigabitethernet statistics rmon

Display individual Remote Network Monitoring (RMON) statistics for specific ports to manage network performance.

Syntax

- **show interfaces gigabitEthernet statistics rmon**
- **show interfaces gigabitEthernet statistics rmon {slot/port[/sub-port] [-slot/port[/sub-port]][,...]}**

- **show interfaces gigabitEthernet statistics rmon history**
- **show interfaces gigabitEthernet statistics rmon history {{slot/port[/sub-port][-slot/port[/sub-port]][,...]}**

Command Parameters

{slot/port[/sub-port] [-slot/port[/sub-port]] [,...]}	Identifies the slot and port in one of the following formats: a single slot and port (slot/port), a range of slots and ports (slot/port-slot/port), or a series of slots and ports (slot/port,slot/port,slot/port). If your platform supports channelization and the port is channelized, you must also specify the sub-port in the format slot/port/sub-port.
history	Displays all statistics by port.
history *{slot/port[/sub-port] [-slot/port[/sub-port]] [,...]}*	Identifies the slot and port in one of the following formats: a single slot and port (slot/port), a range of slots and ports (slot/port-slot/port), or a series of slots and ports (slot/port,slot/port,slot/port). If your platform supports channelization and the port is channelized, you must also specify the sub-port in the format slot/port/sub-port.

Default

None

Command Mode

Privileged EXEC

show interfaces gigabitethernet statistics verbose

Display individual verbose statistics for specific ports to manage network performance.

Syntax

- **show interfaces gigabitEthernet statistics verbose**
- **show interfaces gigabitEthernet statistics verbose {slot/port[/sub-port][-slot/port[/sub-port]][,...]}**

Command Parameters

{slot/port[/sub-port] [-slot/port[/sub-port]] [,...]}	Identifies the slot and port in one of the following formats: a single slot and port (slot/port), a range of slots and ports (slot/port-slot/port), or a series of slots and ports (slot/port,slot/port,slot/port). If your platform supports channelization and the port is channelized, you must also specify the sub-port in the format slot/port/sub-port.

Default

None

Command Mode

Privileged EXEC

show interfaces gigabitethernet vlan

Show VLAN information for the port.

Syntax

- **show interfaces gigabitEthernet vlan**
- **show interfaces gigabitEthernet vlan <1-4059>**
- **show interfaces gigabitEthernet vlan {slot/port[/sub-port][-slot/port[/sub-port]][,...]}**

Command Parameters

{slot/port[/sub-port] [-slot/port[/sub-port]] [,...]}	Identifies the slot and port in one of the following formats: a single slot and port (slot/port), a range of slots and ports (slot/port-slot/port), or a series of slots and ports (slot/port,slot/port,slot/port). If your platform supports channelization and the port is channelized, you must also specify the sub-port in the format slot/port/sub-port.
<1-4059>	Specifies the VLAN ID in the range of 1 to 4059. By default, VLAN IDs 1 to 4059 are configurable and the system reserves VLAN IDs 4060 to 4094 for internal use. On switches that support the vrf-scaling and spbm-config-mode boot configuration flags, if you enable these flags, the system also reserves VLAN IDs 3500 to 3998. VLAN ID 1 is the default VLAN and you cannot create or delete VLAN ID 1.

Default

None

Command Mode

Privileged EXEC

show interfaces gigabitethernet vrfs

Show VRF-association information for the port..

Syntax

- **show interfaces gigabitEthernet vrfs**
- **show interfaces gigabitEthernet vrfs {slot/port[/sub-port][-slot/port[/sub-port]][,...]}**

- **show interfaces gigabitEthernet vrfs vrf WORD<1-16>**
- **show interfaces gigabitEthernet vrfs vrfids WORD<0-512>**

Command Parameters

{slot/port[/sub-port] [-slot/port[/sub-port]] [,...]}	Identifies the slot and port in one of the following formats: a single slot and port (slot/port), a range of slots and ports (slot/port-slot/port), or a series of slots and ports (slot/port,slot/port,slot/port). If your platform supports channelization and the port is channelized, you must also specify the sub-port in the format slot/port/sub-port.
vrf WORD<1-16>	Specifies a VRF instance by name.
vrfids WORD<0-512>	Specifies a range of VRFs by ID number.

Default

None

Command Mode

Privileged EXEC

show interfaces loopback

Show loopback interface information.

Syntax

- **show interfaces loopback vrf WORD <1-16> vrfids WORD<0-512>**

Command Parameters

vrf WORD<1-16>	Displays the loopback information for the associated VRF name. WORD<0-16> specifies the VRF name in the range of 0 to 16 characters.

Default

None

Command Mode

Privileged EXEC

show interfaces mgmtethernet

Show configuration information for MgmtEthernet ports.

Syntax

- **show interfaces mgmtEthernet**

Default

None

Command Mode

Privileged EXEC

show interfaces mgmtethernet config-L1

Show port config-L1 information.

Syntax

- **show interfaces mgmtethernet config-L1**

Default

None

Command Mode

Privileged EXEC

show interfaces mgmtethernet error

Show port general error information

Syntax

- **show interfaces mgmtethernet error {collision|verbose}**

Command Parameters

collision	Shows management port collision error information.
verbose	Displays all statistics by management port.

Default

None

Command Mode

Privileged EXEC

show interfaces mgmtethernet statistics

Display individual statistics for specific management ports to manage network performance.

Syntax

- **show interfaces mgmtEthernet statistics**
- **show interfaces mgmtEthernet statistics verbose**

Default

None

Command Mode

Privileged EXEC

show interfaces vlan

Show basic and advanced VLAN information.

Syntax

- **show interfaces vlan**
- **show interfaces vlan <1-4059>**

Command Parameters

<1-4059>	Specifies the VLAN ID in the range of 1 to 4059. By default, VLAN IDs 1 to 4059 are configurable and the system reserves VLAN IDs 4060 to 4094 for internal use. On switches that support the vrf-scaling and spbm-config-mode boot configuration flags, if you enable these flags, the system also reserves VLAN IDs 3500 to 3998. VLAN ID 1 is the default VLAN and you cannot create or delete VLAN ID 1.

Default

None

Command Mode

Privileged EXEC

show interfaces vlan arp

Display Address Resolution Protocol (ARP) information for the VLAN.

Syntax

- **show interfaces vlan arp**

- **show interfaces vlan arp <1-4059>**

Command Parameters

<1-4059> Specifies the VLAN ID in the range of 1 to 4059. By default, VLAN IDs 1 to 4059 are configurable and the system reserves VLAN IDs 4060 to 4094 for internal use. On switches that support the vrf-scaling and spbm-config-mode boot configuration flags, if you enable these flags, the system also reserves VLAN IDs 3500 to 3998. VLAN ID 1 is the default VLAN and you cannot create or delete VLAN ID 1.

Default

None

Command Mode

Privileged EXEC

show interfaces vlan autolearn-mac

Show bridging autolearn MAC address information for VLANs.

Syntax

- **show interfaces vlan autolearn-mac**
- **show interfaces vlan autolearn-mac**

Default

None

Command Mode

Privileged EXEC

show interfaces vlan dhcp-relay

Show Dynamic Host Configuration Protocol (DHCP) information for the VLAN.

Syntax

- **show interfaces vlan dhcp-relay**
- **show interfaces vlan dhcp-relay <1-4059>**

Command Parameters

<1-4059> Specifies the VLAN ID in the range of 1 to 4059. By default, VLAN IDs 1 to 4059 are configurable and the system reserves VLAN IDs 4060 to 4094 for internal use. On switches that support the vrf-scaling and spbm-config-mode boot configuration flags, if

you enable these flags, the system also reserves VLAN IDs 3500 to 3998. VLAN ID 1 is the default VLAN and you cannot create or delete VLAN ID 1.

Default

None

Command Mode

Privileged EXEC

show interfaces vlan igmp

Show Internet Group Management Protocol (IGMP) information for the VLAN.

Syntax

- **show interfaces vlan igmp [<1-4059>]**
- **show interfaces vlan vrf WORD<0-32>**
- **show interfaces vlan vrfid WORD<0-255>**

Command Parameters

<1-4059>	Specifies the VLAN ID in the range of 1 to 4059. By default, VLAN IDs 1 to 4059 are configurable and the system reserves VLAN IDs 4060 to 4094 for internal use. On switches that support the vrf-scaling and spbm-config-mode boot configuration flags, if you enable these flags, the system also reserves VLAN IDs 3500 to 3998. VLAN ID 1 is the default VLAN and you cannot create or delete VLAN ID 1.
WORD<0-255>	Enter vrf ids
WORD<0-32>	Specify the vrf name

Default

None

Command Mode

Privileged EXEC

show interfaces vlan igmp-mrdisc

Show Internet Group Management Protocol (IGMP) multicast route discovery information for the VLAN.

Syntax

- **show interfaces vlan igmp-mrdisc [<1-4059>]**

Command Parameters

<1-4059>	Specifies the VLAN ID in the range of 1 to 4059. By default, VLAN IDs 1 to 4059 are configurable and the system reserves VLAN IDs 4060 to 4094 for internal use. On switches that support the vrf-scaling and spbm-config-mode boot configuration flags, if you enable these flags, the system also reserves VLAN IDs 3500 to 3998. VLAN ID 1 is the default VLAN and you cannot create or delete VLAN ID 1.

Default

None

Command Mode

Privileged EXEC

show interfaces vlan ip

Show the IP configuration for the VLAN.

Syntax

- **show interfaces vlan ip**
- **show interfaces vlan ip <1-4059>**
- **show interfaces vlan ip vrf WORD<1-16>**
- **show interfaces vlan ip vrfids WORD<0-512>**

Command Parameters

<1-4059>	Specifies the VLAN ID in the range of 1 to 4059. By default, VLAN IDs 1 to 4059 are configurable and the system reserves VLAN IDs 4060 to 4094 for internal use. On switches that support the vrf-scaling and spbm-config-mode boot configuration flags, if you enable these flags, the system also reserves VLAN IDs 3500 to 3998. VLAN ID 1 is the default VLAN and you cannot create or delete VLAN ID 1.
vrf WORD<1-16>	Specifies a VRF by name.
vrfids WORD<0-512>	Displays ip address information for particular vrfids.

Default

None

Command Mode

Privileged EXEC

show interfaces vlan manual-edit-mac

Display the manually-edited bridging MAC address information for VLANs.

Syntax

- **show interfaces vlan manual-edit-mac**

Default

None

Command Mode

Privileged EXEC

show interfaces vlan nlb-mode

Show the Network Load Balancer (NLB) configuration for the VLAN.

Syntax

- **show interfaces vlan nlb-mode**

Default

None

Command Mode

Privileged EXEC

show interfaces vlan vlan-bysrcmac

Show source MAC-based VLAN information.

Syntax

- **show interfaces vlan vlan-bysrcmac**

Default

None

Command Mode

Privileged EXEC

show interfaces vlan vrfs

Show VRF-association information for the VLAN.

Syntax

- **show interfaces vlan vrfs**
- **show interfaces vlan vrfs <1-4059>**
- **show interfaces vlan vrfs {slot/port[/sub-port][-slot/port[/sub-port]][,...]}**
- **show interfaces vlan vrfs vrf WORD<1-16>**
- **show interfaces vlan vrfs vrfids WORD<0-512>**

Command Parameters

{slot/port[/sub-port][-slot/port[/sub-port]] [,...]}	Identifies the slot and port in one of the following formats: a single slot and port (slot/port), a range of slots and ports (slot/port-slot/port), or a series of slots and ports (slot/port,slot/port,slot/port). If your platform supports channelization and the port is channelized, you must also specify the sub-port in the format slot/port/sub-port.
<1-4059>	Specifies the VLAN ID in the range of 1 to 4059. By default, VLAN IDs 1 to 4059 are configurable and the system reserves VLAN IDs 4060 to 4094 for internal use. On switches that support the vrf-scaling and spbm-config-mode boot configuration flags, if you enable these flags, the system also reserves VLAN IDs 3500 to 3998. VLAN ID 1 is the default VLAN and you cannot create or delete VLAN ID 1.
vrf WORD<1-16>	Specifies a VRF instance by name.
vrfids WORD<0-512>	Specifies a range of VRFs by ID number.

Default

None

Command Mode

Privileged EXEC

show ip igmp access

Displays information about the Internet Group Management Protocol (IGMP) multicast access control groups. If you do not specify a VRF name or range of VRF IDs, the results show information for the Global Router. If you do specify a VRF name or range of VRF IDs, the results show information only for the VRFs you specify.

Syntax

- **show ip igmp access**
- **show ip igmp access vrf WORD<1-16>**
- **show ip igmp access vrfids WORD<0-512>**

Command Parameters

vrf WORD<1-16>	Specifies a VRF by name.
vrfids <0-512>	Specifies a VRF by ID.

Default

None

Command Mode

Privileged EXEC

show ip igmp cache

Displays information about the IGMP cache. If you do not specify a VRF name or range of VRF IDs, the results show information for the Global Router. If you do specify a VRF name or range of VRF IDs, the results show information only for the VRFs you specify.

Syntax

- **show ip igmp cache**
- **show ip igmp cache vrf WORD<1-16>**
- **show ip igmp cache vrfids WORD<0-512>**

Command Parameters

vrf WORD<1-16>	Specifies a VRF by name.
vrfids <0-512>	Specifies a VRF by ID.

Default

None

Command Mode

Privileged EXEC

show ip igmp group

Displays information about a statically configured or dynamically learned IGMP group. If you do not specify a VRF name or range of VRF IDs, the results show information for the Global Router. If you do specify a VRF name or range of VRF IDs, the results show information only for the VRFs you specify.

Syntax

- **show ip igmp group**
- **show ip igmp group group {A.B.C.D}**
- **show ip igmp group member-subnet {A.B.C.D/X}**
- **show ip igmp group vrf WORD<1-16>**
- **show ip igmp group vrfids WORD<0-512>**

Command Parameters

count	Specifies the number of entries.
group {A.B.C.D}	Specifies the group address.
member-subnet default |{A.B.C.D/X}	Specifies the IP address and network mask.
vrf WORD<1-16>	Specifies a VRF by name.
vrfids <0-512>	Specifies a VRF by ID.

Default

None

Command Mode

Privileged EXEC

show ip igmp group count

Displays the number of entries in the IGMP group. If you do not specify a VRF name or range of VRF IDs, the results show information for the Global Router. If you do specify a VRF name or range of VRF IDs, the results show information only for the VRFs you specify.

Syntax

- **show ip igmp group count member-subnet {A.B.C.D/X}**
- **show ip igmp group count vrf WORD<1-16>**
- **show ip igmp group count vrfids WORD<0-512>**

Command Parameters

group {A.B.C.D}	Specifies the group address.
member-subnet default |{A.B.C.D/X}	Specifies the IP address and network mask.
vrf WORD<1-16>	Specifies a VRF by name.
vrfids <0-512>	Specifies a VRF by ID.

Default

None

Command Mode

Privileged EXEC

show ip igmp group count group {A.B.C.D}

Displays the number of entries in the specified IGMP group. If you do not specify a VRF name or range of VRF IDs, the results show information for the Global Router. If you do specify a VRF name or range of VRF IDs, the results show information only for the VRFs you specify.

Syntax

- **show ip igmp group count group {A.B.C.D}**
- **show ip igmp group count group {A.B.C.D} detail**
- **show ip igmp group count group {A.B.C.D} detail port {slot/port[/sub-port][-slot/port[/sub-port]][,...]}**
- **show ip igmp group count group {A.B.C.D} detail port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} vlan <1-4059>**
- **show ip igmp group count group {A.B.C.D} detail port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} vrf WORD<1-16>**
- **show ip igmp group count group {A.B.C.D} detail port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} vrf WORD<1-16> vrfids WORD<0-512>**
- **show ip igmp group count group {A.B.C.D} detail port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} vrfids WORD<0-512>**
- **show ip igmp group count group {A.B.C.D} detail vlan <1-4059>**
- **show ip igmp group count group {A.B.C.D} detail vlan <1-4059> port {slot/port[/sub-port][-slot/port[/sub-port]][,...]}**
- **show ip igmp group count group {A.B.C.D} detail vrf WORD<1-16>**
- **show ip igmp group count group {A.B.C.D} detail vrf WORD<1-16> vrfids WORD<0-512>**
- **show ip igmp group count group {A.B.C.D} detail vrfids WORD<0-512>**

- **show ip igmp group count group {A.B.C.D} vrf WORD<1-16>**
- **show ip igmp group count group {A.B.C.D} vrf WORD<1-16> vrfids WORD<0-512>**
- **show ip igmp group count group {A.B.C.D} vrfids WORD<0-512>**

Command Parameters

{A.B.C.D}	Specifies the group address.
detail	Displays Internet Group Management Protocol version 3 (IGMPv3)-specific data.
port *{slot/port[/sub-port] [-slot/port[/sub-port]] [,...]}*	Identifies the slot and port in one of the following formats: a single slot and port (slot/port), a range of slots and ports (slot/port-slot/port), or a series of slots and ports (slot/port,slot/port,slot/port). If your platform supports channelization and the port is channelized, you must also specify the sub-port in the format slot/port/sub-port.
tracked-members	Displays IGMPv3 tracked members for groups/channels.
vlan *<1-4059>*	Specifies the VLAN ID in the range of 1 to 4059. By default, VLAN IDs 1 to 4059 are configurable and the system reserves VLAN IDs 4060 to 4094 for internal use. On switches that support the vrf-scaling and spbm-config-mode boot configuration flags, if you enable these flags, the system also reserves VLAN IDs 3500 to 3998. VLAN ID 1 is the default VLAN and you cannot create or delete VLAN ID 1.
vrf WORD<1-16>	Specifies a VRF by name.
vrfids <0-512>	Specifies a VRF by ID.

Default

None

Command Mode

Privileged EXEC

show ip igmp group count group {A.B.C.D} tracked-members

Displays the number of tracked-members in the specified IGMP group.

Syntax

- **show ip igmp group count group {A.B.C.D} tracked-members**

Command Parameters

member-subnet {A.B.C.D/X}	Specifies the IP address and mask of the IGMP member.
port *{slot/port[/sub-port] [-slot/port[/sub-port]] [,...]}*	Identifies the slot and port in one of the following formats: a single slot and port (slot/port), a range of slots and ports (slot/port-slot/port), or a series of slots and ports (slot/port,slot/port,slot/port). If your platform supports channelization and the port is channelized, you must also specify the sub-port in the format slot/port/sub-port.
source-subnet {A.B.C.D/X}	Specifies the source IP address and the subnet mask.
vlan *<1-4059>*	Specifies the VLAN ID in the range of 1 to 4059. By default, VLAN IDs 1 to 4059 are configurable and the system reserves VLAN IDs 4060 to 4094 for internal use. On switches that support the vrf-scaling and spbm-config-mode boot configuration flags, if you enable these flags, the system also reserves VLAN IDs 3500 to 3998. VLAN ID 1 is the default VLAN and you cannot create or delete VLAN ID 1.
vrf WORD<1-16>	Specifies a VRF by name.
vrfids WORD <0-512>	Specifies the ID of the VRF and is an integer in the range of 0 to 512.

Default

None

Command Mode

Privileged EXEC

show ip igmp group count group {A.B.C.D} tracked-members member-subnet

Displays the number of tracked-members in the specified IGMP group for specific member IP address and subnet mask.

Syntax

- **show ip igmp group count group {A.B.C.D} tracked-members member-subnet {A.B.C.D/X}**
- **show ip igmp group count group {A.B.C.D} tracked-members member-subnet {A.B.C.D/X} port {slot/port[/sub-port][-slot/port[/sub-port]][,...]}**
- **show ip igmp group count group {A.B.C.D} tracked-members member-subnet {A.B.C.D/X} port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} source-subnet {A.B.C.D/X}**

- **show ip igmp group count group {A.B.C.D} tracked-members member-subnet {A.B.C.D/X} port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} source-subnet {A.B.C.D/X} vlan <1-4059>**
- **show ip igmp group count group {A.B.C.D} tracked-members member-subnet {A.B.C.D/X} port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} source-subnet {A.B.C.D/X} vlan <1-4059> vrf WORD<1-16>**
- **show ip igmp group count group {A.B.C.D} tracked-members member-subnet {A.B.C.D/X} port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} source-subnet {A.B.C.D/X} vrf WORD<1-16> vrfids WORD<0-512>**
- **show ip igmp group count group {A.B.C.D} tracked-members member-subnet {A.B.C.D/X} source-subnet {A.B.C.D/X}**
- **show ip igmp group count group {A.B.C.D} tracked-members member-subnet {A.B.C.D/X} source-subnet {A.B.C.D/X} port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} vrf WORD<1-16>**
- **show ip igmp group count group {A.B.C.D} tracked-members member-subnet {A.B.C.D/X} source-subnet {A.B.C.D/X} port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} vrf WORD<1-16> vrfids WORD <0-512>**
- **show ip igmp group count group {A.B.C.D} tracked-members member-subnet {A.B.C.D/X} source-subnet {A.B.C.D/X} vlan <1-4059>**
- **show ip igmp group count group {A.B.C.D} tracked-members member-subnet {A.B.C.D/X} source-subnet {A.B.C.D/X} vrf WORD<1-16>**
- **show ip igmp group count group {A.B.C.D} tracked-members member-subnet {A.B.C.D/X} source-subnet {A.B.C.D/X} vrf WORD<1-16> vrfids WORD<0-512>**
- **show ip igmp group count group {A.B.C.D} tracked-members member-subnet {A.B.C.D/X} source-subnet {A.B.C.D/X} vrfids WORD<0-512>**
- **show ip igmp group count group {A.B.C.D} tracked-members member-subnet {A.B.C.D/X} vlan <1-4059>**
- **show ip igmp group count group {A.B.C.D} tracked-members member-subnet {A.B.C.D/X} vlan <1-4059> port {slot/port[/sub-port][-slot/port[/sub-port]][,...]}**
- **show ip igmp group count group {A.B.C.D} tracked-members member-subnet {A.B.C.D/X} vlan <1-4059> port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} source-subnet {A.B.C.D/X}**
- **show ip igmp group count group {A.B.C.D} tracked-members member-subnet {A.B.C.D/X} vlan <1-4059> source-subnet {A.B.C.D/X}**
- **show ip igmp group count group {A.B.C.D} tracked-members member-subnet {A.B.C.D/X} vrf WORD<1-16>**
- **show ip igmp group count group {A.B.C.D} tracked-members member-subnet {A.B.C.D/X} vrf WORD<1-16> vrfids WORD<0-512>**
- **show ip igmp group count group {A.B.C.D} tracked-members member-subnet {A.B.C.D/X} vrfids WORD<0-512>**

Command Parameters

{A.B.C.D/X}	Specifies the IP address with mask in A.B.C.D/X or A.B.C.D/X.X.X.X format.
port *{slot/port[/sub-port] [-slot/port[/sub-port]] [,...]}*	Displays the number of tracked-members in the specified IGMP group for the specified port list. Identifies the slot and port in one of the following formats: a single slot and port (slot/port), a range of slots and ports (slot/port-slot/port), or a series of slots and ports (slot/port,slot/port,slot/port). If your platform supports channelization and the port is channelized, you must also specify the sub-port in the format slot/port/sub-port.
source-subnet {A.B.C.D/X}	Displays the number of tracked-members in the specified IGMP group for a specific source IP address and subnet mask.
vlan <*1-4059*>	Displays the number of tracked-members in the specified IGMP group for a specific VLAN ID. Specifies the VLAN ID in the range of 1 to 4059. By default, VLAN IDs 1 to 4059 are configurable and the system reserves VLAN IDs 4060 to 4094 for internal use. On switches that support the vrf-scaling and spbm-config-mode boot configuration flags, if you enable these flags, the system also reserves VLAN IDs 3500 to 3998. VLAN ID 1 is the default VLAN and you cannot create or delete VLAN ID 1.
vrf WORD<1-16>	Displays the number of tracked-members in the specified IGMP group for a specific VRF.
vrfids WORD<0-512>	Displays the number of tracked-members in the specified IGMP group for a specific VRF ID.

Default

None

Command Mode

Privileged EXEC

show ip igmp group count group {A.B.C.D} tracked-members port

Displays the number of tracked-members in the specified IGMP group for specific port list.

Syntax

- **`show ip igmp group count group {A.B.C.D} tracked-members port {slot/port[/sub-port][-slot/port[/sub-port]][,...]}`**

- **show ip igmp group count group {A.B.C.D} tracked-members port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} member-subnet {A.B.C.D/X}**
- **show ip igmp group count group {A.B.C.D} tracked-members port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} member-subnet {A.B.C.D/X} source-subnet {A.B.C.D/X}**
- **show ip igmp group count group {A.B.C.D} tracked-members port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} member-subnet {A.B.C.D/X} source-subnet {A.B.C.D/X} vlan <1-4059>**
- **show ip igmp group count group {A.B.C.D} tracked-members port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} member-subnet {A.B.C.D/X} source-subnet {A.B.C.D/X} vrf WORD<1-16>**
- **show ip igmp group count group {A.B.C.D} tracked-members port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} member-subnet {A.B.C.D/X} source-subnet {A.B.C.D/X} vrf WORD<1-16> vrfids <0-512>**
- **show ip igmp group count group {A.B.C.D} tracked-members port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} member-subnet {A.B.C.D/X} source-subnet {A.B.C.D/X} vrfids WORD<0-512>**
- **show ip igmp group count group {A.B.C.D} tracked-members port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} source-subnet {A.B.C.D/X}**
- **show ip igmp group count group {A.B.C.D} tracked-members port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} source-subnet {A.B.C.D/X} member-subnet {A.B.C.D/X}**
- **show ip igmp group count group {A.B.C.D} tracked-members port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} source-subnet {A.B.C.D/X} member-subnet {A.B.C.D/X} vlan <1-4059>**
- **show ip igmp group count group {A.B.C.D} tracked-members port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} source-subnet {A.B.C.D/X} member-subnet {A.B.C.D/X} vrf WORD<1-16>**
- **show ip igmp group count group {A.B.C.D} tracked-members port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} source-subnet {A.B.C.D/X} member-subnet {A.B.C.D/X} vrf WORD<1-16> vrfids WORD<0-512>**
- **show ip igmp group count group {A.B.C.D} tracked-members port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} source-subnet {A.B.C.D/X} member-subnet {A.B.C.D/X} vrfids WORD<0-512>**
- **show ip igmp group count group {A.B.C.D} tracked-members port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} vlan <1-4059>**
- **show ip igmp group count group {A.B.C.D} tracked-members port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} vlan <1-4059> member-subnet {A.B.C.D/X}**
- **show ip igmp group count group {A.B.C.D} tracked-members port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} vlan <1-4059> member-subnet {A.B.C.D/X} source-subnet {A.B.C.D/X}**

- **show ip igmp group count group {A.B.C.D} tracked-members port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} vlan <1-4059> source-subnet {A.B.C.D/X}**
- **show ip igmp group count group {A.B.C.D} tracked-members port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} vrf WORD<1-16>**
- **show ip igmp group count group {A.B.C.D} tracked-members port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} vrf WORD<1-16> vrfids WORD<0-512>**
- **show ip igmp group count group {A.B.C.D} tracked-members port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} vrfids WORD<0-512>**

Command Parameters

{slot/port[/sub-port][-slot/port[/sub-port]] [,...]}	Identifies the slot and port in one of the following formats: a single slot and port (slot/port), a range of slots and ports (slot/port-slot/port), or a series of slots and ports (slot/port,slot/port,slot/port). If your platform supports channelization and the port is channelized, you must also specify the sub-port in the format slot/port/sub-port.
member-subnet {A.B.C.D/X}	Displays the number of tracked-members in the specified IGMP group for specific member IP address and subnet mask.
source-subnet {A.B.C.D/X}	Displays the number of tracked-members in the specified IGMP group for a specific source IP address and subnet mask.
vlan <*1-4059*>	Displays the number of tracked-members in the specified IGMP group for a specific VLAN ID. Specifies the VLAN ID in the range of 1 to 4059. By default, VLAN IDs 1 to 4059 are configurable and the system reserves VLAN IDs 4060 to 4094 for internal use. On switches that support the vrf-scaling and spbm-config-mode boot configuration flags, if you enable these flags, the system also reserves VLAN IDs 3500 to 3998. VLAN ID 1 is the default VLAN and you cannot create or delete VLAN ID 1.
vrf WORD<1-16>	Displays the number of tracked-members in the specified IGMP group for a specific VRF.
vrfids WORD<0-512>	Displays the number of tracked-members in the specified IGMP group for a specific VRF ID.

Default

None

Command Mode

Privileged EXEC

show ip igmp group count group {A.B.C.D} tracked-members source-subnet

Displays the number of tracked-members in the specified IGMP group for a specific source IP address and subnet mask.

Syntax

- **show ip igmp group count group {A.B.C.D} tracked-members source-subnet {A.B.C.D/X}**
- **show ip igmp group count group {A.B.C.D} tracked-members source-subnet {A.B.C.D/X} member-subnet {A.B.C.D/X}**
- **show ip igmp group count group {A.B.C.D} tracked-members source-subnet {A.B.C.D/X} member-subnet {A.B.C.D/X} port {slot/port[/sub-port][-slot/port[/sub-port]][,...]}**
- **show ip igmp group count group {A.B.C.D} tracked-members source-subnet {A.B.C.D/X} member-subnet {A.B.C.D/X} port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} vlan <1-4059>**
- **show ip igmp group count group {A.B.C.D} tracked-members source-subnet {A.B.C.D/X} member-subnet {A.B.C.D/X} port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} vrf WORD<1-16>**
- **show ip igmp group count group {A.B.C.D} tracked-members source-subnet {A.B.C.D/X} member-subnet {A.B.C.D/X} port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} vrf WORD<1-16> vrfids WORD<0-512>**
- **show ip igmp group count group {A.B.C.D} tracked-members source-subnet {A.B.C.D/X} member-subnet {A.B.C.D/X} port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} vrfids WORD<0-512>**
- **show ip igmp group count group {A.B.C.D} tracked-members source-subnet {A.B.C.D/X} port {slot/port[/sub-port][-slot/port[/sub-port]][,...]}**
- **show ip igmp group count group {A.B.C.D} tracked-members source-subnet {A.B.C.D/X} port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} member-subnet {A.B.C.D/X}**
- **show ip igmp group count group {A.B.C.D} tracked-members source-subnet {A.B.C.D/X} port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} member-subnet {A.B.C.D/X} vlan <1-4059>**
- **show ip igmp group count group {A.B.C.D} tracked-members source-subnet {A.B.C.D/X} port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} member-subnet {A.B.C.D/X} vrf WORD<1-16>**
- **show ip igmp group count group {A.B.C.D} tracked-members source-subnet {A.B.C.D/X} port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} member-subnet {A.B.C.D/X} vrf WORD<1-16> vrfids WORD<0-512>**
- **show ip igmp group count group {A.B.C.D} tracked-members source-subnet {A.B.C.D/X} port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} member-subnet {A.B.C.D/X} vrfids WORD<0-512>**

- **show ip igmp group count group {A.B.C.D} tracked-members source-subnet {A.B.C.D/X} vlan <1-4059>**
- **show ip igmp group count group {A.B.C.D} tracked-members source-subnet {A.B.C.D/X} vlan <1-4059> member-subnet {A.B.C.D/X}**
- **show ip igmp group count group {A.B.C.D} tracked-members source-subnet {A.B.C.D/X} vlan <1-4059> member-subnet {A.B.C.D/X} port {slot/port[/sub-port][-slot/port[/sub-port]][,...]}**
- **show ip igmp group count group {A.B.C.D} tracked-members source-subnet {A.B.C.D/X} vlan <1-4059> port {slot/port[/sub-port][-slot/port[/sub-port]][,...]}**
- **show ip igmp group count group {A.B.C.D} tracked-members source-subnet {A.B.C.D/X} vrf WORD<1-16>**
- **show ip igmp group count group {A.B.C.D} tracked-members source-subnet {A.B.C.D/X} vrf WORD<1-16> vrfids WORD<0-512>**
- **show ip igmp group count group {A.B.C.D} tracked-members source-subnet {A.B.C.D/X} vrfids WORD<0-512>**

Command Parameters

{A.B.C.D/X}	Specifies the IP address with mask in A.B.C.D/X or A.B.C.D/X.X.X.X format.
member-subnet {A.B.C.D/X}	Displays the number of tracked-members in the specified IGMP group for specific member IP address and subnet mask.
port *{slot/port[/sub-port] [-slot/port[/sub-port]] [,...]}*	Displays the number of tracked-members in the specified IGMP group for the specified port list. Identifies the slot and port in one of the following formats: a single slot and port (slot/port), a range of slots and ports (slot/port-slot/port), or a series of slots and ports (slot/port,slot/port,slot/port). If your platform supports channelization and the port is channelized, you must also specify the sub-port in the format slot/port/sub-port.
vlan *<1-4059>*	Displays the number of tracked-members in the specified IGMP group for a specific VLAN ID. Specifies the VLAN ID in the range of 1 to 4059. By default, VLAN IDs 1 to 4059 are configurable and the system reserves VLAN IDs 4060 to 4094 for internal use. On switches that support the vrf-scaling and spbm-config-mode boot configuration flags, if you enable these flags, the system also reserves VLAN IDs 3500 to 3998. VLAN ID 1 is the default VLAN and you cannot create or delete VLAN ID 1.
vrf WORD<1-16>	Displays the number of tracked-members in the specified IGMP group for a specific VRF.
vrfids WORD<0-512>	Displays the number of tracked-members in the specified IGMP group for a specific VRF ID.

Default

None

Command Mode

Privileged EXEC

show ip igmp group count group {A.B.C.D} tracked-members vlan

Displays the number of tracked-members in the specified IGMP group for a specific VLAN ID.

Syntax

- **show ip igmp group count group {A.B.C.D} tracked-members vlan <1-4059>**
- **show ip igmp group count group {A.B.C.D} tracked-members vlan <1-4059> member-subnet {A.B.C.D/X}**
- **show ip igmp group count group {A.B.C.D} tracked-members vlan <1-4059> member-subnet {A.B.C.D/X} port {slot/port[/sub-port][-slot/port[/sub-port]][,...]}**
- **show ip igmp group count group {A.B.C.D} tracked-members vlan <1-4059> member-subnet {A.B.C.D/X} port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} source-subnet {A.B.C.D/X}**
- **show ip igmp group count group {A.B.C.D} tracked-members vlan <1-4059> member-subnet {A.B.C.D/X} source-subnet {A.B.C.D/X}**
- **show ip igmp group count group {A.B.C.D} tracked-members vlan <1-4059> port {slot/port[/sub-port][-slot/port[/sub-port]][,...]}**
- **show ip igmp group count group {A.B.C.D} tracked-members vlan <1-4059> port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} member-subnet {A.B.C.D/X}**
- **show ip igmp group count group {A.B.C.D} tracked-members vlan <1-4059> port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} member-subnet {A.B.C.D/X} source-subnet {A.B.C.D/X}**
- **show ip igmp group count group {A.B.C.D} tracked-members vlan <1-4059> port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} source-subnet {A.B.C.D/X}**
- **show ip igmp group count group {A.B.C.D} tracked-members vlan <1-4059> source-subnet {A.B.C.D/X}**
- **show ip igmp group count group {A.B.C.D} tracked-members vlan <1-4059> source-subnet {A.B.C.D/X} member-subnet {A.B.C.D/X}**
- **show ip igmp group count group {A.B.C.D} tracked-members vlan <1-4059> source-subnet {A.B.C.D/X} member-subnet {A.B.C.D/X} port {slot/port[/sub-port][-slot/port[/sub-port]][,...]}**

- **show ip igmp group count group {A.B.C.D} tracked-members vlan <1-4059> source-subnet {A.B.C.D/X} port {slot/port[/sub-port][-slot/port[/sub-port]][,...]}**

Command Parameters

<1-4059>	Specifies the VLAN ID in the range of 1 to 4059. By default, VLAN IDs 1 to 4059 are configurable and the system reserves VLAN IDs 4060 to 4094 for internal use. On switches that support the vrf-scaling and spbm-config-mode boot configuration flags, if you enable these flags, the system also reserves VLAN IDs 3500 to 3998. VLAN ID 1 is the default VLAN and you cannot create or delete VLAN ID 1.
member-subnet {A.B.C.D/X}	Displays the number of tracked-members in the specified IGMP group for specific member IP address and subnet mask.
port *{slot/port[/sub-port] [-slot/port[/sub-port]] [,...]}*	Displays the number of tracked-members in the specified IGMP group for the specified port list. Identifies the slot and port in one of the following formats: a single slot and port (slot/port), a range of slots and ports (slot/port-slot/port), or a series of slots and ports (slot/port,slot/port,slot/port). If your platform supports channelization and the port is channelized, you must also specify the sub-port in the format slot/port/sub-port.
source-subnet {A.B.C.D/X}	Displays the number of tracked-members in the specified IGMP group for a specific source IP address and subnet mask.

Default

None

Command Mode

Privileged EXEC

show ip igmp group count group {A.B.C.D} tracked-members vrf

Displays the number of tracked-members in the specified IGMP group for a specific VRF.

Syntax

- **show ip igmp group count group {A.B.C.D} tracked-members vrf WORD<1-16>**
- **show ip igmp group count group {A.B.C.D} tracked-members vrf WORD<1-16> vrfids WORD<0-512>**

Command Parameters

vrfids WORD<0-512>	Displays the number of tracked-members in the specified IGMP group for a specific VRF ID.
WORD<1-16>	Specifies the VRF name.

Default

None

Command Mode

Privileged EXEC

show ip igmp group count group {A.B.C.D} tracked-members vrfids

Displays the number of tracked-members in the specified IGMP group for a specific VRF ID.

Syntax

- **show ip igmp group count group {A.B.C.D} tracked-members vrfids WORD<0-512>**

Command Parameters

WORD<0-512>	Specifies the VRF ID.

Default

None

Command Mode

Privileged EXEC

show ip igmp group count member-subnet

Displays the number of members in the specified IGMP group subnet.

Syntax

- **show ip igmp group count member-subnet {A.B.C.D/X}**

Command Parameters

member-subnet {A.B.C.D/X}	Specifies the IP address and mask of the IGMP member.

Default

None

Command Mode

Privileged EXEC

show ip igmp group count member-subnet {A.B.C.D/X} group

Displays the number of members in the specified IGMP group subnet.

Syntax

- **show ip igmp group count member-subnet {A.B.C.D/X} group {A.B.C.D}**

Command Parameters

{A.B.C.D}	Specifies the group address.
member-subnet {A.B.C.D/X}	Specifies the IP address and mask of the IGMP member.

Default

None

Command Mode

Privileged EXEC

show ip igmp group count member-subnet {A.B.C.D/X} group {A.B.C.D} detail

Displays the number of members in the specified IGMP group subnet. If you do not specify a VRF name or range of VRF IDs, the results show information for the Global Router. If you do specify a VRF name or range of VRF IDs, the results show information only for the VRFs you specify.

Syntax

- **show ip igmp group count member-subnet {A.B.C.D/X} group {A.B.C.D} detail**
- **show ip igmp group count member-subnet {A.B.C.D/X} group {A.B.C.D} detail port {slot/port[/sub-port][-slot/port[/sub-port]][,...]}**
- **show ip igmp group count member-subnet {A.B.C.D/X} group {A.B.C.D} detail port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} vrf WORD<1-16> vrfids WORD<0-512>**

- **show ip igmp group count member-subnet {A.B.C.D/X} group {A.B.C.D} detail port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} vrf WORD<1-16> vrfids WORD<0-512>**
- **show ip igmp group count member-subnet {A.B.C.D/X} group {A.B.C.D} detail vlan <1-4059>**
- **show ip igmp group count member-subnet {A.B.C.D/X} group {A.B.C.D} detail vlan <1-4059> port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} vrf WORD<1-16>**
- **show ip igmp group count member-subnet {A.B.C.D/X} group {A.B.C.D} detail vrf WORD<1-16>**
- **show ip igmp group count member-subnet {A.B.C.D/X} group {A.B.C.D} detail vrf WORD<1-16> vrfids WORD<0-512>**
- **show ip igmp group count member-subnet {A.B.C.D/X} group {A.B.C.D} detail vrfids WORD<0-512>**

Command Parameters

{A.B.C.D}	Specifies the group address.
member-subnet {A.B.C.D/X}	Specifies the IP address and mask of the IGMP member.
port *{slot/port[/sub-port] [-slot/port[/sub-port]] [,...]}*	Identifies the slot and port in one of the following formats: a single slot and port (slot/port), a range of slots and ports (slot/port-slot/port), or a series of slots and ports (slot/port,slot/port,slot/port). If your platform supports channelization and the port is channelized, you must also specify the sub-port in the format slot/port/sub-port.
vlan *<1-4059>*	Specifies the VLAN ID in the range of 1 to 4059. By default, VLAN IDs 1 to 4059 are configurable and the system reserves VLAN IDs 4060 to 4094 for internal use. On switches that support the vrf-scaling and spbm-config-mode boot configuration flags, if you enable these flags, the system also reserves VLAN IDs 3500 to 3998. VLAN ID 1 is the default VLAN and you cannot create or delete VLAN ID 1.
vrf WORD<1-16>	Specifies a VRF by name.
vrfids WORD <0-512>	Specifies the ID of the VRF and is an integer in the range of 0 to 512.

Default

None

Command Mode

Privileged EXEC

show ip igmp group count member-subnet {A.B.C.D/X} group {A.B.C.D} tracked-members

Displays the number of tracked-members in the specified IGMP group subnet. If you do not specify a VRF name or range of VRF IDs, the results show information for the Global Router. If you do specify a VRF name or range of VRF IDs, the results show information only for the VRFs you specify.

Syntax

- **show ip igmp group count member-subnet {A.B.C.D/X} group {A.B.C.D} tracked-members**
- **show ip igmp group count member-subnet {A.B.C.D/X} group {A.B.C.D} tracked-members member-subnet {A.B.C.D/X}**
- **show ip igmp group count member-subnet {A.B.C.D/X} group {A.B.C.D} tracked-members member-subnet {A.B.C.D/X} port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} vrf WORD<1-16>**
- **show ip igmp group count member-subnet {A.B.C.D/X} group {A.B.C.D} tracked-members member-subnet {A.B.C.D/X} port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} vrf WORD<1-16> source-subnet {A.B.C.D/X}**
- **show ip igmp group count member-subnet {A.B.C.D/X} group {A.B.C.D} tracked-members member-subnet {A.B.C.D/X} port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} vrf WORD<1-16> source-subnet {A.B.C.D/X} vlan <1-4059>**
- **show ip igmp group count member-subnet {A.B.C.D/X} group {A.B.C.D} tracked-members member-subnet {A.B.C.D/X} port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} vrf WORD<1-16> source-subnet {A.B.C.D/X} vrf WORD<1-16> vrfids WORD<0-512>**
- **show ip igmp group count member-subnet {A.B.C.D/X} group {A.B.C.D} tracked-members member-subnet {A.B.C.D/X} port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} vrf WORD<1-16> source-subnet {A.B.C.D/X} vrfids WORD<0-512>**
- **show ip igmp group count member-subnet {A.B.C.D/X} group {A.B.C.D} tracked-members member-subnet {A.B.C.D/X} port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} vrf WORD<1-16> vlan <1-4059>**
- **show ip igmp group count member-subnet {A.B.C.D/X} group {A.B.C.D} tracked-members member-subnet {A.B.C.D/X} port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} vrf WORD<1-16> vlan <1-4059> source-subnet {A.B.C.D/X}**
- **show ip igmp group count member-subnet {A.B.C.D/X} group {A.B.C.D} tracked-members member-subnet {A.B.C.D/X} port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} vrf WORD<1-16> vrf WORD<1-16>**
- **show ip igmp group count member-subnet {A.B.C.D/X} group {A.B.C.D} tracked-members member-subnet {A.B.C.D/X} port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} vrf WORD<1-16> vrfids WORD<0-512>**

- **show ip igmp group count member-subnet {A.B.C.D/X} group {A.B.C.D} tracked-members member-subnet {A.B.C.D/X} port {slot/port[-slot/port][,...]} source-subnet {A.B.C.D/X} vrf WORD<1-16>**
- **show ip igmp group count member-subnet {A.B.C.D/X} group {A.B.C.D} tracked-members member-subnet {A.B.C.D/X} port {slot/port[-slot/port][,...]} vrf WORD<1-16> vrfids WORD<0-512>**
- **show ip igmp group count member-subnet {A.B.C.D/X} group {A.B.C.D} tracked-members member-subnet {A.B.C.D/X} source-subnet {A.B.C.D/X}**
- **show ip igmp group count member-subnet {A.B.C.D/X} group {A.B.C.D} tracked-members member-subnet {A.B.C.D/X} source-subnet {A.B.C.D/X} port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} vrf WORD<1-16>**
- **show ip igmp group count member-subnet {A.B.C.D/X} group {A.B.C.D} tracked-members member-subnet {A.B.C.D/X} source-subnet {A.B.C.D/X} port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} vrf WORD<1-16> vlan <1-4059>**
- **show ip igmp group count member-subnet {A.B.C.D/X} group {A.B.C.D} tracked-members member-subnet {A.B.C.D/X} source-subnet {A.B.C.D/X} port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} vrf WORD<1-16> vrf WORD<1-16>**
- **show ip igmp group count member-subnet {A.B.C.D/X} group {A.B.C.D} tracked-members member-subnet {A.B.C.D/X} source-subnet {A.B.C.D/X} port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} vrf WORD<1-16> vrf WORD<1-16> vrfids WORD<0-512>**
- **show ip igmp group count member-subnet {A.B.C.D/X} group {A.B.C.D} tracked-members member-subnet {A.B.C.D/X} source-subnet {A.B.C.D/X} port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} vrf WORD<1-16> vrfids WORD<0-512>**
- **show ip igmp group count member-subnet {A.B.C.D/X} group {A.B.C.D} tracked-members member-subnet {A.B.C.D/X} source-subnet {A.B.C.D/X} vlan <1-4059>**
- **show ip igmp group count member-subnet {A.B.C.D/X} group {A.B.C.D} tracked-members member-subnet {A.B.C.D/X} source-subnet {A.B.C.D/X} vlan <1-4059> port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} vrf WORD<1-16>**
- **show ip igmp group count member-subnet {A.B.C.D/X} group {A.B.C.D} tracked-members member-subnet {A.B.C.D/X} source-subnet {A.B.C.D/X} vrf WORD<1-16>**
- **show ip igmp group count member-subnet {A.B.C.D/X} group {A.B.C.D} tracked-members member-subnet {A.B.C.D/X} source-subnet {A.B.C.D/X} vrf WORD<1-16> vrfids WORD<0-512>**
- **show ip igmp group count member-subnet {A.B.C.D/X} group {A.B.C.D} tracked-members member-subnet {A.B.C.D/X} source-subnet {A.B.C.D/X} vrfids WORD<0-512>**
- **show ip igmp group count member-subnet {A.B.C.D/X} group {A.B.C.D} tracked-members member-subnet {A.B.C.D/X} vlan <1-4059>**

- **show ip igmp group count member-subnet {A.B.C.D/X} group {A.B.C.D} tracked-members member-subnet {A.B.C.D/X} vlan <1-4059> port <1-4059> vrf WORD<0-16 source-subnet {A.B.C.D/X}**
- **show ip igmp group count member-subnet {A.B.C.D/X} group {A.B.C.D} tracked-members member-subnet {A.B.C.D/X} vlan <1-4059> port <1-4059> vrf WORD<1-16>**
- **show ip igmp group count member-subnet {A.B.C.D/X} group {A.B.C.D} tracked-members member-subnet {A.B.C.D/X} vlan <1-4059> source-subnet {A.B.C.D/X}**
- **show ip igmp group count member-subnet {A.B.C.D/X} group {A.B.C.D} tracked-members member-subnet {A.B.C.D/X} vlan <1-4059> source-subnet {A.B.C.D/X} port <1-4059> vrf WORD<1-16>**
- **show ip igmp group count member-subnet {A.B.C.D/X} group {A.B.C.D} tracked-members member-subnet {A.B.C.D/X} vrf WORD<1-16>**
- **show ip igmp group count member-subnet {A.B.C.D/X} group {A.B.C.D} tracked-members member-subnet {A.B.C.D/X} vrf WORD<1-16> vrfids WORD<0-512>**
- **show ip igmp group count member-subnet {A.B.C.D/X} group {A.B.C.D} tracked-members member-subnet {A.B.C.D/X} vrfids WORD<0-512>**

Command Parameters

{A.B.C.D}	Specifies the group address.
member-subnet {A.B.C.D/X}	Specifies the IP address and mask of the IGMP member.
port *{slot/port[/sub-port] [-slot/port[/sub-port]] [,...]}*	Identifies the slot and port in one of the following formats: a single slot and port (slot/port), a range of slots and ports (slot/port-slot/port), or a series of slots and ports (slot/port,slot/port,slot/port). If your platform supports channelization and the port is channelized, you must also specify the sub-port in the format slot/port/sub-port.
source-subnet {A.B.C.D/X}	Specifies the source IP address and the subnet mask.
vlan *<1-4059>*	Specifies the VLAN ID in the range of 1 to 4059. By default, VLAN IDs 1 to 4059 are configurable and the system reserves VLAN IDs 4060 to 4094 for internal use. On switches that support the vrf-scaling and spbm-config-mode boot configuration flags, if you enable these flags, the system also reserves VLAN IDs 3500 to 3998. VLAN ID 1 is the default VLAN and you cannot create or delete VLAN ID 1.
vrf WORD<1-16>	Specifies a VRF by name.
vrfids WORD <0-512>	Specifies the ID of the VRF and is an integer in the range of 0 to 512.

Default

None

Command Mode

Privileged EXEC

show ip igmp group count member-subnet {A.B.C.D/X} group {A.B.C.D} tracked-members port

Displays the number of tracked-members in the specified IGMP group subnet for a specified port. If you do not specify a VRF name or range of VRF IDs, the results show information for the Global Router. If you do specify a VRF name or range of VRF IDs, the results show information only for the VRFs you specify.

Syntax

- **show ip igmp group count member-subnet {A.B.C.D/X} group {A.B.C.D} tracked-members port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} source-subnet {A.B.C.D/X} member-subnet {A.B.C.D/X} vrf WORD<1-16>**
- **show ip igmp group count member-subnet {A.B.C.D/X} group {A.B.C.D} tracked-members port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} source-subnet {A.B.C.D/X} member-subnet {A.B.C.D/X} vrf WORD<1-16> vrfids WORD<0-512>**
- **show ip igmp group count member-subnet {A.B.C.D/X} group {A.B.C.D} tracked-members port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} source-subnet {A.B.C.D/X} member-subnet {A.B.C.D/X} vrfids WORD<0-512>**
- **show ip igmp group count member-subnet {A.B.C.D/X} group {A.B.C.D} tracked-members port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} source-subnet {A.B.C.D/X} vlan <1-4059>**
- **show ip igmp group count member-subnet {A.B.C.D/X} group {A.B.C.D} tracked-members port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} source-subnet {A.B.C.D/X} vlan <1-4059> member-subnet {A.B.C.D/X}**
- **show ip igmp group count member-subnet {A.B.C.D/X} group {A.B.C.D} tracked-members port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} source-subnet {A.B.C.D/X} vrf WORD<1-16>**
- **show ip igmp group count member-subnet {A.B.C.D/X} group {A.B.C.D} tracked-members port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} source-subnet {A.B.C.D/X} vrf WORD<1-16> vrfids WORD<0-512>**
- **show ip igmp group count member-subnet {A.B.C.D/X} group {A.B.C.D} tracked-members port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} source-subnet {A.B.C.D/X} vrfids WORD<0-512>**

- **show ip igmp group count member-subnet {A.B.C.D/X} group {A.B.C.D} tracked-members port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} vlan <1-4059>**
- **show ip igmp group count member-subnet {A.B.C.D/X} group {A.B.C.D} tracked-members port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} vlan <1-4059> member-subnet {A.B.C.D/X}**
- **show ip igmp group count member-subnet {A.B.C.D/X} group {A.B.C.D} tracked-members port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} vlan <1-4059> member-subnet {A.B.C.D/X} source-subnet {A.B.C.D/X}**
- **show ip igmp group count member-subnet {A.B.C.D/X} group {A.B.C.D} tracked-members port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} vlan <1-4059> source-subnet {A.B.C.D/X}**
- **show ip igmp group count member-subnet {A.B.C.D/X} group {A.B.C.D} tracked-members port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} vlan <1-4059> source-subnet {A.B.C.D/X} member-subnet {A.B.C.D/X}**
- **show ip igmp group count member-subnet {A.B.C.D/X} group {A.B.C.D} tracked-members port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} vrf WORD<1-16>**
- **show ip igmp group count member-subnet {A.B.C.D/X} group {A.B.C.D} tracked-members port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} vrf WORD<1-16>**
- **show ip igmp group count member-subnet {A.B.C.D/X} group {A.B.C.D} tracked-members port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} vrf WORD<1-16> member-subnet {A.B.C.D/X}**
- **show ip igmp group count member-subnet {A.B.C.D/X} group {A.B.C.D} tracked-members port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} vrf WORD<1-16> member-subnet {A.B.C.D/X} source-subnet {A.B.C.D/X}**
- **show ip igmp group count member-subnet {A.B.C.D/X} group {A.B.C.D} tracked-members port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} vrf WORD<1-16> member-subnet {A.B.C.D/X} source-subnet {A.B.C.D/X} vrf WORD<1-16>**
- **show ip igmp group count member-subnet {A.B.C.D/X} group {A.B.C.D} tracked-members port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} vrf WORD<1-16> member-subnet {A.B.C.D/X} source-subnet {A.B.C.D/X} vrf WORD<1-16> vrfids WORD<0-512>**
- **show ip igmp group count member-subnet {A.B.C.D/X} group {A.B.C.D} tracked-members port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} vrf WORD<1-16> member-subnet {A.B.C.D/X} source-subnet {A.B.C.D/X} vrfids WORD<0-512>**
- **show ip igmp group count member-subnet {A.B.C.D/X} group {A.B.C.D} tracked-members port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} vrf WORD<1-16> member-subnet {A.B.C.D/X} vlan <1-4059>**

- **show ip igmp group count member-subnet {A.B.C.D/X} group {A.B.C.D} tracked-members port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} vrf WORD<1-16> member-subnet {A.B.C.D/X} vlan <1-4059> source-subnet {A.B.C.D/X}**
- **show ip igmp group count member-subnet {A.B.C.D/X} group {A.B.C.D} tracked-members port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} vrf WORD<1-16> member-subnet {A.B.C.D/X} vrf WORD<1-16>**
- **show ip igmp group count member-subnet {A.B.C.D/X} group {A.B.C.D} tracked-members port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} vrf WORD<1-16> member-subnet {A.B.C.D/X} vrf WORD<1-16> vrfids WORD<0-512>**
- **show ip igmp group count member-subnet {A.B.C.D/X} group {A.B.C.D} tracked-members port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} vrf WORD<1-16> member-subnet {A.B.C.D/X} vrfids WORD<0-512>**
- **show ip igmp group count member-subnet {A.B.C.D/X} group {A.B.C.D} tracked-members port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} vrf WORD<1-16> source-subnet {A.B.C.D/X} member-subnet {A.B.C.D/X} vlan <1-4059>**
- **show ip igmp group count member-subnet {A.B.C.D/X} group {A.B.C.D} tracked-members port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} vrf WORD<1-16> vrfids WORD<0-512>**
- **show ip igmp group count member-subnet {A.B.C.D/X} group {A.B.C.D} tracked-members port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} vrfids WORD<0-512>**
- **show ip igmp group count member-subnet {A.B.C.D/X} group {A.B.C.D} tracked-members port {slot/port[-slot/port][,...]} member-subnet {A.B.C.D/X} source-subnet {A.B.C.D/X} vlan <1-4059>**
- **show ip igmp group count member-subnet {A.B.C.D/X} group {A.B.C.D} tracked-members port show ip igmp group count group {A.B.C.D} tracked-members member-subnet {A.B.C.D/X} port{slot/port[/sub-port][-slot/port[/sub-port]][,...]} vrf WORD<1-16> source-subnet {A.B.C.D/X}**
- **show ip igmp group count member-subnet {A.B.C.D/X} group {A.B.C.D} tracked-members port show ip igmp group count group {A.B.C.D} tracked-members member-subnet {A.B.C.D/X} port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} vrf WORD<1-16> source-subnet {A.B.C.D/X} member-subnet {A.B.C.D/X}**

Command Parameters

{A.B.C.D}	Specifies the group address.
member-subnet {A.B.C.D/X}	Specifies the IP address and mask of the IGMP member.
port *{slot/port[/sub-port] [-slot/port[/sub-port]] [,...]}*	Identifies the slot and port in one of the following formats: a single slot and port (slot/port), a range of slots and ports (slot/port-slot/port), or a series of slots and ports (slot/port,slot/port,slot/port). If your platform

	supports channelization and the port is channelized, you must also specify the sub-port in the format slot/port/sub-port.
source-subnet {A.B.C.D/X}	Specifies the source IP address and the subnet mask.
vlan <*1-4059*>	Specifies the VLAN ID in the range of 1 to 4059. By default, VLAN IDs 1 to 4059 are configurable and the system reserves VLAN IDs 4060 to 4094 for internal use. On switches that support the vrf-scaling and spbm-config-mode boot configuration flags, if you enable these flags, the system also reserves VLAN IDs 3500 to 3998. VLAN ID 1 is the default VLAN and you cannot create or delete VLAN ID 1.
vrf WORD<1-16>	Specifies a VRF by name.
vrfids WORD <0-512>	Specifies the ID of the VRF and is an integer in the range of 0 to 512.

Default

None

Command Mode

Privileged EXEC

show ip igmp group count member-subnet {A.B.C.D/X} group {A.B.C.D} tracked-members source-subnet

Displays the number of tracked-members in the specified IGMP group subnet for a specified source IP address and subnet mask. If you do not specify a VRF name or range of VRF IDs, the results show information for the Global Router. If you do specify a VRF name or range of VRF IDs, the results show information only for the VRFs you specify.

Syntax

- **show ip igmp group count member-subnet {A.B.C.D/X} group {A.B.C.D} tracked-members source-subnet {A.B.C.D/X}**
- **show ip igmp group count member-subnet {A.B.C.D/X} group {A.B.C.D} tracked-members source-subnet {A.B.C.D/X} member-subnet {A.B.C.D/X}**
- **show ip igmp group count member-subnet {A.B.C.D/X} group {A.B.C.D} tracked-members source-subnet {A.B.C.D/X} member-subnet {A.B.C.D/X} port {slot/port[/sub-port][-slot/port[/sub-port]][,...]}**
- **show ip igmp group count member-subnet {A.B.C.D/X} group {A.B.C.D} tracked-members source-subnet {A.B.C.D/X} member-subnet {A.B.C.D/X} port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} vlan <1-4059>**
- **show ip igmp group count member-subnet {A.B.C.D/X} group {A.B.C.D} tracked-members source-subnet {A.B.C.D/X} member-subnet {A.B.C.D/X}**

```
port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} vrf
WORD<1-16>
```

- **show ip igmp group count member-subnet {A.B.C.D/X} group {A.B.C.D} tracked-members source-subnet {A.B.C.D/X} member-subnet {A.B.C.D/X} port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} vrf WORD<1-16> vrfids WORD<0-512>**
- **show ip igmp group count member-subnet {A.B.C.D/X} group {A.B.C.D} tracked-members source-subnet {A.B.C.D/X} member-subnet {A.B.C.D/X} port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} vrfids WORD<0-512>**
- **show ip igmp group count member-subnet {A.B.C.D/X} group {A.B.C.D} tracked-members source-subnet {A.B.C.D/X} member-subnet {A.B.C.D/X} vlan <1-4059>**
- **show ip igmp group count member-subnet {A.B.C.D/X} group {A.B.C.D} tracked-members source-subnet {A.B.C.D/X} member-subnet {A.B.C.D/X} vlan <1-4059> port {slot/port[/sub-port][-slot/port[/sub-port]][,...]}**
- **show ip igmp group count member-subnet {A.B.C.D/X} group {A.B.C.D} tracked-members source-subnet {A.B.C.D/X} member-subnet {A.B.C.D/X} vrf WORD<1-16>**
- **show ip igmp group count member-subnet {A.B.C.D/X} group {A.B.C.D} tracked-members source-subnet {A.B.C.D/X} member-subnet {A.B.C.D/X} vrf WORD<1-16> vrfids WORD<0-512>**
- **show ip igmp group count member-subnet {A.B.C.D/X} group {A.B.C.D} tracked-members source-subnet {A.B.C.D/X} member-subnet {A.B.C.D/X} vrfids WORD<0-512>**

Command Parameters

{A.B.C.D}	Specifies the group address.
member-subnet {A.B.C.D/X}	Specifies the IP address and mask of the IGMP member.
port *{slot/port[/sub-port] [-slot/port[/sub-port]] [,...]}*	Identifies the slot and port in one of the following formats: a single slot and port (slot/port), a range of slots and ports (slot/port-slot/port), or a series of slots and ports (slot/port,slot/port,slot/port). If your platform supports channelization and the port is channelized, you must also specify the sub-port in the format slot/port/sub-port.
source-subnet {A.B.C.D/X}	Specifies the source IP address and the subnet mask.
vlan *<1-4059>*	Specifies the VLAN ID in the range of 1 to 4059. By default, VLAN IDs 1 to 4059 are configurable and the system reserves VLAN IDs 4060 to 4094 for internal use. On switches that support the vrf-scaling and spbm-config-mode boot configuration flags, if you enable these flags, the system also reserves VLAN IDs 3500 to 3998. VLAN ID 1 is the default VLAN and you cannot create or delete VLAN ID 1.

vrf WORD<1-16>	Specifies a VRF by name.
vrfids WORD <0-512>	Specifies the ID of the VRF and is an integer in the range of 0 to 512.

Default

None

Command Mode

Privileged EXEC

show ip igmp group count member-subnet {A.B.C.D/X} group {A.B.C.D} tracked-members source-subnet {A.B.C.D/X} port

Displays the number of tracked-members in the specified IGMP group subnet for a specified source IP address and subnet mask, and port. If you do not specify a VRF name or range of VRF IDs, the results show information for the Global Router. If you do specify a VRF name or range of VRF IDs, the results show information only for the VRFs you specify.

Syntax

- **show ip igmp group count member-subnet {A.B.C.D/X} group {A.B.C.D} tracked-members source-subnet {A.B.C.D/X} port {slot/port[/sub-port][-slot/port[/sub-port]][,...]}**
- **show ip igmp group count member-subnet {A.B.C.D/X} group {A.B.C.D} tracked-members source-subnet {A.B.C.D/X} port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} member-subnet {A.B.C.D/X}**
- **show ip igmp group count member-subnet {A.B.C.D/X} group {A.B.C.D} tracked-members source-subnet {A.B.C.D/X} port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} member-subnet {A.B.C.D/X} vlan <1-4059>**
- **show ip igmp group count member-subnet {A.B.C.D/X} group {A.B.C.D} tracked-members source-subnet {A.B.C.D/X} port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} member-subnet {A.B.C.D/X} vrf WORD<1-16>**
- **show ip igmp group count member-subnet {A.B.C.D/X} group {A.B.C.D} tracked-members source-subnet {A.B.C.D/X} port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} member-subnet {A.B.C.D/X} vrf WORD<1-16> vrfids WORD<0-512>**
- **show ip igmp group count member-subnet {A.B.C.D/X} group {A.B.C.D} tracked-members source-subnet {A.B.C.D/X} port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} member-subnet {A.B.C.D/X} vrfids WORD<0-512>**

- **show ip igmp group count member-subnet {A.B.C.D/X} group {A.B.C.D} tracked-members source-subnet {A.B.C.D/X} port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} vlan <1-4059>**
- **show ip igmp group count member-subnet {A.B.C.D/X} group {A.B.C.D} tracked-members source-subnet {A.B.C.D/X} port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} vlan <1-4059> member-subnet {A.B.C.D/X}**
- **show ip igmp group count member-subnet {A.B.C.D/X} group {A.B.C.D} tracked-members source-subnet {A.B.C.D/X} port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} vrf WORD<1-16>**
- **show ip igmp group count member-subnet {A.B.C.D/X} group {A.B.C.D} tracked-members source-subnet {A.B.C.D/X} port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} vrf WORD<1-16> vrfids WORD<0-512>**
- **show ip igmp group count member-subnet {A.B.C.D/X} group {A.B.C.D} tracked-members source-subnet {A.B.C.D/X} port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} vrfids WORD<0-512>**

Command Parameters

{A.B.C.D}	Specifies the group address.
member-subnet {A.B.C.D/X}	Specifies the IP address and mask of the IGMP member.
port *{slot/port[/sub-port] [-slot/port[/sub-port]] [,...]}*	Identifies the slot and port in one of the following formats: a single slot and port (slot/port), a range of slots and ports (slot/port-slot/port), or a series of slots and ports (slot/port,slot/port,slot/port). If your platform supports channelization and the port is channelized, you must also specify the sub-port in the format slot/port/sub-port.
source-subnet {A.B.C.D/X}	Specifies the source IP address and the subnet mask.
vlan <*1-4059*>	Specifies the VLAN ID in the range of 1 to 4059. By default, VLAN IDs 1 to 4059 are configurable and the system reserves VLAN IDs 4060 to 4094 for internal use. On switches that support the vrf-scaling and spbm-config-mode boot configuration flags, if you enable these flags, the system also reserves VLAN IDs 3500 to 3998. VLAN ID 1 is the default VLAN and you cannot create or delete VLAN ID 1.
vrf WORD<1-16>	Specifies a VRF by name.
vrfids WORD <0-512>	Specifies the ID of the VRF and is an integer in the range of 0 to 512.

Default

None

Command Mode

Privileged EXEC

show ip igmp group count member-subnet {A.B.C.D/X} group {A.B.C.D} tracked-members source-subnet {A.B.C.D/X} vlan

Displays the number of tracked-members in the specified IGMP group subnet for a specified source IP address and subnet mask, and VLAN ID.

Syntax

- **show ip igmp group count member-subnet {A.B.C.D/X} group {A.B.C.D} tracked-members source-subnet {A.B.C.D/X} vlan <1-4059>**
- **show ip igmp group count member-subnet {A.B.C.D/X} group {A.B.C.D} tracked-members source-subnet {A.B.C.D/X} vlan <1-4059> member-subnet {A.B.C.D/X}**
- **show ip igmp group count member-subnet {A.B.C.D/X} group {A.B.C.D} tracked-members source-subnet {A.B.C.D/X} vlan <1-4059> member-subnet {A.B.C.D/X} port {slot/port[/sub-port][-slot/port[/sub-port]][,...]}**
- **show ip igmp group count member-subnet {A.B.C.D/X} group {A.B.C.D} tracked-members source-subnet {A.B.C.D/X} vlan <1-4059> port {slot/port[/sub-port][-slot/port[/sub-port]][,...]}**
- **show ip igmp group count member-subnet {A.B.C.D/X} group {A.B.C.D} tracked-members source-subnet {A.B.C.D/X} vlan <1-4059> port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} member-subnet {A.B.C.D/X}**

Command Parameters

{A.B.C.D}	Specifies the group address.
member-subnet {A.B.C.D/X}	Specifies the IP address and mask of the IGMP member.
port *{slot/port[/sub-port] [-slot/port[/sub-port]] [,...]}*	Identifies the slot and port in one of the following formats: a single slot and port (slot/port), a range of slots and ports (slot/port-slot/port), or a series of slots and ports (slot/port,slot/port,slot/port). If your platform supports channelization and the port is channelized, you must also specify the sub-port in the format slot/port/sub-port.
source-subnet {A.B.C.D/X}	Specifies the source IP address and the subnet mask.
vlan <*1-4059*>	Specifies the VLAN ID in the range of 1 to 4059. By default, VLAN IDs 1 to 4059 are configurable and the system reserves VLAN IDs 4060 to 4094 for internal use. On switches that support the vrf-scaling and spbm-config-mode boot configuration flags, if you enable these flags, the system also reserves VLAN IDs 3500 to 3998. VLAN ID 1 is the default VLAN and you cannot create or delete VLAN ID 1.

Default

None

Command Mode

Privileged EXEC

show ip igmp group count member-subnet {A.B.C.D/X} group {A.B.C.D} tracked-members source-subnet {A.B.C.D/X} vrf

Displays the number of tracked-members in the specified IGMP group subnet for a specified source IP address and subnet mask, and VRF name.

Syntax

- **show ip igmp group count member-subnet {A.B.C.D/X} group {A.B.C.D} tracked-members source-subnet {A.B.C.D/X} vrf WORD<1-16>**
- **show ip igmp group count member-subnet {A.B.C.D/X} group {A.B.C.D} tracked-members source-subnet {A.B.C.D/X} vrf WORD<1-16> vrfids WORD<0-512>**

Command Parameters

{A.B.C.D}	Specifies the group address.
member-subnet {A.B.C.D/X}	Specifies the IP address and mask of the IGMP member.
source-subnet {A.B.C.D/X}	Specifies the source IP address and the subnet mask.
vrf WORD<1-16>	Specifies a VRF by name.
vrfids WORD <0-512>	Specifies the ID of the VRF and is an integer in the range of 0 to 512.

Default

None

Command Mode

Privileged EXEC

show ip igmp group count member-subnet {A.B.C.D/X} group {A.B.C.D} tracked-members source-subnet {A.B.C.D/X} vrfids

Displays the number of tracked-members in the specified IGMP group subnet for a specified source IP address and subnet mask, and VRF ID.

Syntax

- **show ip igmp group count member-subnet {A.B.C.D/X} group {A.B.C.D} tracked-members source-subnet {A.B.C.D/X} vrfids WORD<0-512>**

Command Parameters

{A.B.C.D}	Specifies the group address.
member-subnet {A.B.C.D/X}	Specifies the IP address and mask of the IGMP member.
source-subnet {A.B.C.D/X}	Specifies the source IP address and the subnet mask.
vrfids WORD <0-512>	Specifies the ID of the VRF and is an integer in the range of 0 to 512.

Default

None

Command Mode

Privileged EXEC

show ip igmp group count member-subnet {A.B.C.D/X} group {A.B.C.D} tracked-members vlan

Displays the number of tracked-members in the specified IGMP group subnet for a specified VLAN ID.

Syntax

- **show ip igmp group count member-subnet {A.B.C.D/X} group {A.B.C.D} tracked-members vlan <1-4059>**
- **show ip igmp group count member-subnet {A.B.C.D/X} group {A.B.C.D} tracked-members vlan <1-4059> member-subnet {A.B.C.D/X}**
- **show ip igmp group count member-subnet {A.B.C.D/X} group {A.B.C.D} tracked-members vlan <1-4059> member-subnet {A.B.C.D/X} port {slot/port[/sub-port][-slot/port[/sub-port]][,...]}**

- **show ip igmp group count member-subnet {A.B.C.D/X} group {A.B.C.D} tracked-members vlan <1-4059> member-subnet {A.B.C.D/X} port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} source-subnet {A.B.C.D/X}**
- **show ip igmp group count member-subnet {A.B.C.D/X} group {A.B.C.D} tracked-members vlan <1-4059> member-subnet {A.B.C.D/X} source-subnet {A.B.C.D/X}**
- **show ip igmp group count member-subnet {A.B.C.D/X} group {A.B.C.D} tracked-members vlan <1-4059> member-subnet {A.B.C.D/X} source-subnet {A.B.C.D/X} port {slot/port[/sub-port][-slot/port[/sub-port]][,...]}**
- **show ip igmp group count member-subnet {A.B.C.D/X} group {A.B.C.D} tracked-members vlan <1-4059> port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} member-subnet {A.B.C.D/X} source-subnet {A.B.C.D/X}**
- **show ip igmp group count member-subnet {A.B.C.D/X} group {A.B.C.D} tracked-members vlan <1-4059> port {slot/port[/sub-port][-slot/port[/sub-port]][,...]}**
- **show ip igmp group count member-subnet {A.B.C.D/X} group {A.B.C.D} tracked-members vlan <1-4059> port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} member-subnet {A.B.C.D/X}**
- **show ip igmp group count member-subnet {A.B.C.D/X} group {A.B.C.D} tracked-members vlan <1-4059> port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} source-subnet {A.B.C.D/X}**
- **show ip igmp group count member-subnet {A.B.C.D/X} group {A.B.C.D} tracked-members vlan <1-4059> port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} source-subnet {A.B.C.D/X} member-subnet {A.B.C.D/X}**
- **show ip igmp group count member-subnet {A.B.C.D/X} group {A.B.C.D} tracked-members vlan <1-4059> source-subnet {A.B.C.D/X}**
- **show ip igmp group count member-subnet {A.B.C.D/X} group {A.B.C.D} tracked-members vlan <1-4059> source-subnet {A.B.C.D/X} member-subnet {A.B.C.D/X}**
- **show ip igmp group count member-subnet {A.B.C.D/X} group {A.B.C.D} tracked-members vlan <1-4059> source-subnet {A.B.C.D/X} member-subnet {A.B.C.D/X} port {slot/port[/sub-port][-slot/port[/sub-port]][,...]}**
- **show ip igmp group count member-subnet {A.B.C.D/X} group {A.B.C.D} tracked-members vlan <1-4059> source-subnet {A.B.C.D/X} port {slot/port[/sub-port][-slot/port[/sub-port]][,...]}**
- **show ip igmp group count member-subnet {A.B.C.D/X} group {A.B.C.D} tracked-members vlan <1-4059> source-subnet {A.B.C.D/X} port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} member-subnet {A.B.C.D/X}**

Command Parameters

{A.B.C.D} Specifies the group address.

member-subnet {A.B.C.D/X}	Specifies the IP address and mask of the IGMP member.
port *{slot/port[/sub-port] [-slot/port[/sub-port]] [,...]}*	Identifies the slot and port in one of the following formats: a single slot and port (slot/port), a range of slots and ports (slot/port-slot/port), or a series of slots and ports (slot/port,slot/port,slot/port). If your platform supports channelization and the port is channelized, you must also specify the sub-port in the format slot/port/sub-port.
source-subnet {A.B.C.D/X}	Specifies the source IP address and the subnet mask.
vlan <*1-4059*>	Specifies the VLAN ID in the range of 1 to 4059. By default, VLAN IDs 1 to 4059 are configurable and the system reserves VLAN IDs 4060 to 4094 for internal use. On switches that support the vrf-scaling and spbm-config-mode boot configuration flags, if you enable these flags, the system also reserves VLAN IDs 3500 to 3998. VLAN ID 1 is the default VLAN and you cannot create or delete VLAN ID 1.

Default

None

Command Mode

Privileged EXEC

show ip igmp group count member-subnet {A.B.C.D/X} group {A.B.C.D} tracked-members vrf

Displays the number of tracked-members in the specified IGMP group subnet for a specified VRF name.

Syntax

- **show ip igmp group count member-subnet {A.B.C.D/X} group {A.B.C.D} tracked-members vrf WORD<1-16>**
- **show ip igmp group count member-subnet {A.B.C.D/X} group {A.B.C.D} tracked-members vrf WORD<1-16> vrfids WORD<0-512>**

Command Parameters

{A.B.C.D}	Specifies the group address.
member-subnet {A.B.C.D/X}	Specifies the IP address and mask of the IGMP member.
vrf WORD<1-16>	Specifies a VRF by name.

vrfids WORD <0-512>	Specifies the ID of the VRF and is an integer in the range of 0 to 512.

Default

None

Command Mode

Privileged EXEC

show ip igmp group count member-subnet {A.B.C.D/X} group {A.B.C.D} tracked-members vrfids

Displays the number of tracked-members in the specified IGMP group subnet for a specified VRF ID.

Syntax

- **show ip igmp group count member-subnet {A.B.C.D/X} group {A.B.C.D} tracked-members vrfids WORD<0-512>**

Command Parameters

{A.B.C.D}	Specifies the group address.
member-subnet {A.B.C.D/X}	Specifies the IP address and mask of the IGMP member.
vrfids WORD <0-512>	Specifies the ID of the VRF and is an integer in the range of 0 to 512.

Default

None

Command Mode

Privileged EXEC

show ip igmp group count member-subnet {A.B.C.D/X} group {A.B.C.D} vrf

Displays the number of members in the specified IGMP group subnet for a specified VRF name.

Syntax

- **show ip igmp group count member-subnet {A.B.C.D/X} group {A.B.C.D} vrf WORD<1-16>**
- **show ip igmp group count member-subnet {A.B.C.D/X} group {A.B.C.D} vrf WORD<1-16> vrfids WORD<0-512>**

Command Parameters

{A.B.C.D}	Specifies the group address.
member-subnet {A.B.C.D/X}	Specifies the IP address and mask of the IGMP member.
vrf WORD<1-16>	Specifies a VRF by name.
vrfids WORD <0-512>	Specifies the ID of the VRF and is an integer in the range of 0 to 512.

Default

None

Command Mode

Privileged EXEC

show ip igmp group count member-subnet {A.B.C.D/X} group {A.B.C.D} vrfids

Displays the number of members in the specified IGMP group subnet for a specified VRF ID

Syntax

- **show ip igmp group count member-subnet {A.B.C.D/X} group {A.B.C.D} vrfids WORD<0-512>**

Command Parameters

{A.B.C.D}	Specifies the group address.
member-subnet {A.B.C.D/X}	Specifies the IP address and mask of the IGMP member.
vrfids WORD <0-512>	Specifies the ID of the VRF and is an integer in the range of 0 to 512.

Default

None

Command Mode

Privileged EXEC

show ip igmp group count member-subnet {A.B.C.D/X} vrf

Displays the number of members in the specified IGMP subnet for a specified VRF name.

Syntax

- **show ip igmp group count member-subnet {A.B.C.D/X} vrf WORD<1-16>**
- **show ip igmp group count member-subnet {A.B.C.D/X} vrf WORD<1-16> vrfids WORD<0-512>**

Command Parameters

member-subnet {A.B.C.D/X}	Specifies the IP address and mask of the IGMP member.
vrf WORD<1-16>	Specifies a VRF by name.
vrfids WORD <0-512>	Specifies the ID of the VRF and is an integer in the range of 0 to 512.

Default

None

Command Mode

Privileged EXEC

show ip igmp group count member-subnet {A.B.C.D/X} vrfids

Displays the number of members in the specified IGMP subnet for a specified VRF ID.

Syntax

- **show ip igmp group count member-subnet {A.B.C.D/X} vrfids WORD<0-512>**

Command Parameters

member-subnet {A.B.C.D/X}	Specifies the IP address and mask of the IGMP member.
vrfids WORD <0-512>	Specifies the ID of the VRF and is an integer in the range of 0 to 512.

Default

None

Command Mode

Privileged EXEC

show ip igmp group group <A.B.C.D>

Displays information for a specific group address. If you do not specify a VRF name or range of VRF IDs, the results show information for the Global Router. If you do specify a VRF name or range of VRF IDs, the results show information only for the VRFs you specify.

Syntax

- **show ip igmp group group {A.B.C.D}**
- **show ip igmp group group {A.B.C.D} detail**
- **show ip igmp group group {A.B.C.D} detail port {slot/port[/sub-port][-slot/port[/sub-port]][,...]}**
- **show ip igmp group group {A.B.C.D} detail port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} vlan <1-4059>**
- **show ip igmp group group {A.B.C.D} detail port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} vlan <1-4059>**
- **show ip igmp group group {A.B.C.D} detail port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} vrf WORD <0-16>**
- **show ip igmp group group {A.B.C.D} detail port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} vrf WORD<1-16>**
- **show ip igmp group group {A.B.C.D} detail port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} vrfids WORD <0-512>**
- **show ip igmp group group {A.B.C.D} detail port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} vrfids WORD<0-512>**
- **show ip igmp group group {A.B.C.D} detail port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} {slot/port[-slot/port][,...]}**
- **show ip igmp group group {A.B.C.D} detail vlan <1-4059>**
- **show ip igmp group group {A.B.C.D} detail vlan <1-4059> port {slot/port[/sub-port][-slot/port[/sub-port]][,...]}**
- **show ip igmp group group {A.B.C.D} detail vlan <1-4059> port {slot/port[/sub-port][-slot/port[/sub-port]][,...]}**
- **show ip igmp group group {A.B.C.D} detail vlan <1-4059>**
- **show ip igmp group group {A.B.C.D} detail vrf WORD <0-16>**
- **show ip igmp group group {A.B.C.D} detail vrfids WORD <0-512>**
- **show ip igmp group group {A.B.C.D} vrf WORD <0-16>**
- **show ip igmp group group {A.B.C.D} vrfids WORD <0-512>**

Command Parameters

detail	Displays Internet Group Management Protocol version 3 (IGMPv3)-specific data.

port *{slot/port[/sub-port] [-slot/port[/sub-port]] [,...]}*	Identifies the slot and port in one of the following formats: a single slot and port (slot/port), a range of slots and ports (slot/port-slot/port), or a series of slots and ports (slot/port,slot/port,slot/port). If your platform supports channelization and the port is channelized, you must also specify the sub-port in the format slot/port/sub-port.
vlan *<1-4059>*	Specifies the VLAN ID in the range of 1 to 4059. By default, VLAN IDs 1 to 4059 are configurable and the system reserves VLAN IDs 4060 to 4094 for internal use. On switches that support the vrf-scaling and spbm-config-mode boot configuration flags, if you enable these flags, the system also reserves VLAN IDs 3500 to 3998. VLAN ID 1 is the default VLAN and you cannot create or delete VLAN ID 1.
vrf WORD<1-16>	Specifies a VRF by name.
vrfids <0-512>	Specifies a VRF by ID.

Default

None

Command Mode

Privileged EXEC

show ip igmp group group <A.B.C.D> tracked-members

Displays all the tracked members for a specific group. If you do not specify a VRF name or range of VRF IDs, the results show information for the Global Router. If you do specify a VRF name or range of VRF IDs, the results show information only for the VRFs you specify.

Syntax

- **show ip igmp group group {A.B.C.D} tracked-members**
- **show ip igmp group group {A.B.C.D} tracked-members member-subnet {A.B.C.D/X}**
- **show ip igmp group group {A.B.C.D} tracked-members member-subnet {A.B.C.D/X} port {slot/port[/sub-port][-slot/port[/sub-port]][,...]}**
- **show ip igmp group group {A.B.C.D} tracked-members member-subnet {A.B.C.D/X} port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} source-subnet {A.B.C.D/X}**
- **show ip igmp group group {A.B.C.D} tracked-members member-subnet {A.B.C.D/X} port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} source-subnet {A.B.C.D/X} vlan <1-4059>**
- **show ip igmp group group {A.B.C.D} tracked-members member-subnet {A.B.C.D/X} port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} source-subnet {A.B.C.D/X} vrf WORD<1-16>**

- **show ip igmp group group {A.B.C.D} tracked-members member-subnet {A.B.C.D/X} port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} source-subnet {A.B.C.D/X} vrfids WORD <0-512>**
- **show ip igmp group group {A.B.C.D} tracked-members member-subnet {A.B.C.D/X} port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} vlan <1-4059>**
- **show ip igmp group group {A.B.C.D} tracked-members member-subnet {A.B.C.D/X} port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} vlan <1-4059> source-subnet {A.B.C.D/X}**
- **show ip igmp group group {A.B.C.D} tracked-members member-subnet {A.B.C.D/X} port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} vrf WORD<1-16>**
- **show ip igmp group group {A.B.C.D} tracked-members member-subnet {A.B.C.D/X} port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} vrfids WORD<0-512>**
- **show ip igmp group group {A.B.C.D} tracked-members member-subnet {A.B.C.D/X} source-subnet {A.B.C.D/X}**
- **show ip igmp group group {A.B.C.D} tracked-members member-subnet {A.B.C.D/X} source-subnet {A.B.C.D/X} port {slot/port[/sub-port][-slot/port[/sub-port]][,...]}**
- **show ip igmp group group {A.B.C.D} tracked-members member-subnet {A.B.C.D/X} source-subnet {A.B.C.D/X} port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} vlan <1-4059>**
- **show ip igmp group group {A.B.C.D} tracked-members member-subnet {A.B.C.D/X} source-subnet {A.B.C.D/X} port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} vrf WORD<1-16>**
- **show ip igmp group group {A.B.C.D} tracked-members member-subnet {A.B.C.D/X} source-subnet {A.B.C.D/X} port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} vrfids WORD <0-512>**
- **show ip igmp group group {A.B.C.D} tracked-members member-subnet {A.B.C.D/X} source-subnet {A.B.C.D/X} vlan <1-4059>**
- **show ip igmp group group {A.B.C.D} tracked-members member-subnet {A.B.C.D/X} source-subnet {A.B.C.D/X} vlan <1-4059> port {slot/port[/sub-port][-slot/port[/sub-port]][,...]}**
- **show ip igmp group group {A.B.C.D} tracked-members member-subnet {A.B.C.D/X} source-subnet {A.B.C.D/X} vlan <1-4059>**
- **show ip igmp group group {A.B.C.D} tracked-members member-subnet {A.B.C.D/X} source-subnet {A.B.C.D/X} vlan <1-4059> port {slot/port[/sub-port][-slot/port[/sub-port]][,...]}**
- **show ip igmp group group {A.B.C.D} tracked-members member-subnet {A.B.C.D/X} source-subnet {A.B.C.D/X} vrf WORD<1-16>**
- **show ip igmp group group {A.B.C.D} tracked-members member-subnet {A.B.C.D/X} source-subnet {A.B.C.D/X} vrfids WORD <0-512>**

- **show ip igmp group group {A.B.C.D} tracked-members member-subnet {A.B.C.D/X} vlan <1-4059>**
- **show ip igmp group group {A.B.C.D} tracked-members member-subnet {A.B.C.D/X} vlan <1-4059> port {slot/port[/sub-port][-slot/port[/sub-port]][,...]}**
- **show ip igmp group group {A.B.C.D} tracked-members member-subnet {A.B.C.D/X} vlan <1-4059> port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} source-subnet {A.B.C.D/X}**
- **show ip igmp group group {A.B.C.D} tracked-members member-subnet {A.B.C.D/X} vlan <1-4059> source-subnet {A.B.C.D/X}**
- **show ip igmp group group {A.B.C.D} tracked-members member-subnet {A.B.C.D/X} vlan <1-4059> source-subnet {A.B.C.D/X} port {slot/port[/sub-port][-slot/port[/sub-port]][,...]}**
- **show ip igmp group group {A.B.C.D} tracked-members member-subnet {A.B.C.D/X} vlan <1-4059>**
- **show ip igmp group group {A.B.C.D} tracked-members member-subnet {A.B.C.D/X} vlan <1-4059> port {slot/port[/sub-port][-slot/port[/sub-port]][,...]}**
- **show ip igmp group group {A.B.C.D} tracked-members member-subnet {A.B.C.D/X} vlan <1-4059> port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} source-subnet {A.B.C.D/X}**
- **show ip igmp group group {A.B.C.D} tracked-members member-subnet {A.B.C.D/X} vlan <1-4059> source-subnet {A.B.C.D/X}**
- **show ip igmp group group {A.B.C.D} tracked-members member-subnet {A.B.C.D/X} vlan <1-4059> source-subnet {A.B.C.D/X} port {slot/port[/sub-port][-slot/port[/sub-port]][,...]}**
- **show ip igmp group group {A.B.C.D} tracked-members member-subnet {A.B.C.D/X} vrf WORD<1-16>**
- **show ip igmp group group {A.B.C.D} tracked-members member-subnet {A.B.C.D/X} vrfids WORD<0-512>**
- **show ip igmp group group {A.B.C.D} tracked-members port {slot/port[/sub-port][-slot/port[/sub-port]][,...]}**
- **show ip igmp group group {A.B.C.D} tracked-members port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} member-subnet {A.B.C.D/X}**
- **show ip igmp group group {A.B.C.D} tracked-members port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} member-subnet {A.B.C.D/X} source-subnet {A.B.C.D/X}**
- **show ip igmp group group {A.B.C.D} tracked-members port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} member-subnet {A.B.C.D/X} source-subnet {A.B.C.D/X} vlan <1-4059>**
- **show ip igmp group group {A.B.C.D} tracked-members port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} member-subnet {A.B.C.D/X} source-subnet {A.B.C.D/X} vrf WORD<1-16>**

- **show ip igmp group group {A.B.C.D} tracked-members port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} member-subnet {A.B.C.D/X} source-subnet {A.B.C.D/X} vrfids WORD <0-512>**
- **show ip igmp group group {A.B.C.D} tracked-members port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} member-subnet {A.B.C.D/X} vlan <1-4059>**
- **show ip igmp group group {A.B.C.D} tracked-members port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} member-subnet {A.B.C.D/X} vlan <1-4059> source-subnet {A.B.C.D/X}**
- **show ip igmp group group {A.B.C.D} tracked-members port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} member-subnet {A.B.C.D/X} vrf WORD<1-16>**
- **show ip igmp group group {A.B.C.D} tracked-members port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} member-subnet {A.B.C.D/X} vrfids WORD <0-512>**
- **show ip igmp group group {A.B.C.D} tracked-members port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} source-subnet {A.B.C.D/X}**
- **show ip igmp group group {A.B.C.D} tracked-members port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} source-subnet {A.B.C.D/X} member-subnet {A.B.C.D/X}**
- **show ip igmp group group {A.B.C.D} tracked-members port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} source-subnet {A.B.C.D/X} member-subnet {A.B.C.D/X}**
- **show ip igmp group group {A.B.C.D} tracked-members port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} source-subnet {A.B.C.D/X} member-subnet {A.B.C.D/X} vlan <1-4059>**
- **show ip igmp group group {A.B.C.D} tracked-members port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} source-subnet {A.B.C.D/X} member-subnet {A.B.C.D/X} vlan <1-4059>**
- **show ip igmp group group {A.B.C.D} tracked-members port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} source-subnet {A.B.C.D/X} member-subnet {A.B.C.D/X} vrf WORD <0-16>**
- **show ip igmp group group {A.B.C.D} tracked-members port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} source-subnet {A.B.C.D/X} member-subnet {A.B.C.D/X} vrf WORD<1-16>**
- **show ip igmp group group {A.B.C.D} tracked-members port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} source-subnet {A.B.C.D/X} member-subnet {A.B.C.D/X} vrfids WORD <0-512>**
- **show ip igmp group group {A.B.C.D} tracked-members port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} source-subnet {A.B.C.D/X} member-subnet {A.B.C.D/X} vrfids WORD<0-512>**
- **show ip igmp group group {A.B.C.D} tracked-members port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} source-subnet {A.B.C.D/X} vlan <1-4059>**

- **show ip igmp group group {A.B.C.D} tracked-members port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} source-subnet {A.B.C.D/X} vlan <1-4059> member-subnet {A.B.C.D/X}**
- **show ip igmp group group {A.B.C.D} tracked-members port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} source-subnet {A.B.C.D/X} vlan <1-4059>**
- **show ip igmp group group {A.B.C.D} tracked-members port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} source-subnet {A.B.C.D/X} vlan <1-4059> member-subnet {A.B.C.D/X}**
- **show ip igmp group group {A.B.C.D} tracked-members port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} source-subnet {A.B.C.D/X} vrf WORD <0-16>**
- **show ip igmp group group {A.B.C.D} tracked-members port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} source-subnet {A.B.C.D/X} vrf WORD<1-16>**
- **show ip igmp group group {A.B.C.D} tracked-members port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} source-subnet {A.B.C.D/X} vrfids WORD<0-512>**
- **show ip igmp group group {A.B.C.D} tracked-members port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} source-subnet {A.B.C.D/X} vrfids WORD<0-512>**
- **show ip igmp group group {A.B.C.D} tracked-members port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} vlan <1-4059>**
- **show ip igmp group group {A.B.C.D} tracked-members port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} vlan <1-4059> member-subnet {A.B.C.D/X}**
- **show ip igmp group group {A.B.C.D} tracked-members port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} vlan <1-4059> member-subnet {A.B.C.D/X} source-subnet {A.B.C.D/X}**
- **show ip igmp group group {A.B.C.D} tracked-members port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} vlan <1-4059> source-subnet {A.B.C.D/X}**
- **show ip igmp group group {A.B.C.D} tracked-members port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} vlan <1-4059> source-subnet {A.B.C.D/X} member-subnet {A.B.C.D/X}**
- **show ip igmp group group {A.B.C.D} tracked-members port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} vlan <1-4059>**
- **show ip igmp group group {A.B.C.D} tracked-members port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} vlan <1-4059> member-subnet {A.B.C.D/X}**
- **show ip igmp group group {A.B.C.D} tracked-members port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} vlan <1-4059> member-subnet {A.B.C.D/X} source-subnet {A.B.C.D/X}**

- **show ip igmp group group {A.B.C.D} tracked-members port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} vlan <1-4059> source-subnet {A.B.C.D/X}**
- **show ip igmp group group {A.B.C.D} tracked-members port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} vlan <1-4059> source-subnet {A.B.C.D/X} member-subnet {A.B.C.D/X}**
- **show ip igmp group group {A.B.C.D} tracked-members port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} vrf WORD<1-16>**
- **show ip igmp group group {A.B.C.D} tracked-members port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} vrf WORD<1-16>**
- **show ip igmp group group {A.B.C.D} tracked-members port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} vrfids WORD<0-512>**
- **show ip igmp group group {A.B.C.D} tracked-members port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} vrfids WORD<0-512>**
- **show ip igmp group group {A.B.C.D} tracked-members source-subnet {A.B.C.D/X}**
- **show ip igmp group group {A.B.C.D} tracked-members source-subnet {A.B.C.D/X}**
- **show ip igmp group group {A.B.C.D} tracked-members source-subnet {A.B.C.D/X} member-subnet {A.B.C.D/X}**
- **show ip igmp group group {A.B.C.D} tracked-members source-subnet {A.B.C.D/X} member-subnet {A.B.C.D/X} port {slot/port[/sub-port][-slot/port[/sub-port]][,...]}**
- **show ip igmp group group {A.B.C.D} tracked-members source-subnet {A.B.C.D/X} member-subnet {A.B.C.D/X} port {slot/port[/sub-port][-slot/port[/sub-port]][,...]}**
- **show ip igmp group group {A.B.C.D} tracked-members source-subnet {A.B.C.D/X} member-subnet {A.B.C.D/X} port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} vlan <1-4059>**
- **show ip igmp group group {A.B.C.D} tracked-members source-subnet {A.B.C.D/X} member-subnet {A.B.C.D/X} port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} vlan <1-4059>**
- **show ip igmp group group {A.B.C.D} tracked-members source-subnet {A.B.C.D/X} member-subnet {A.B.C.D/X} port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} vrf WORD<1-16>**
- **show ip igmp group group {A.B.C.D} tracked-members source-subnet {A.B.C.D/X} member-subnet {A.B.C.D/X} port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} vrf WORD<1-16>**
- **show ip igmp group group {A.B.C.D} tracked-members source-subnet {A.B.C.D/X} member-subnet {A.B.C.D/X} port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} vrfids WORD<0-512>**
- **show ip igmp group group {A.B.C.D} tracked-members source-subnet {A.B.C.D/X} member-subnet {A.B.C.D/X} port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} vrfids WORD<0-512>**

- **show ip igmp group group {A.B.C.D} tracked-members source-subnet {A.B.C.D/X} member-subnet {A.B.C.D/X} vlan <1-4059>**
- **show ip igmp group group {A.B.C.D} tracked-members source-subnet {A.B.C.D/X} member-subnet {A.B.C.D/X} vlan <1-4059> port {slot/port[/sub-port][-slot/port[/sub-port]][,...]}**
- **show ip igmp group group {A.B.C.D} tracked-members source-subnet {A.B.C.D/X} member-subnet {A.B.C.D/X} vlan <1-4059>**
- **show ip igmp group group {A.B.C.D} tracked-members source-subnet {A.B.C.D/X} member-subnet {A.B.C.D/X} vlan <1-4059> port {slot/port[/sub-port][-slot/port[/sub-port]][,...]}**
- **show ip igmp group group {A.B.C.D} tracked-members source-subnet {A.B.C.D/X} member-subnet {A.B.C.D/X} vrf WORD<1-16>**
- **show ip igmp group group {A.B.C.D} tracked-members source-subnet {A.B.C.D/X} member-subnet {A.B.C.D/X} vrf WORD<1-16>**
- **show ip igmp group group {A.B.C.D} tracked-members source-subnet {A.B.C.D/X} member-subnet {A.B.C.D/X} vrfids WORD<0-512>**
- **show ip igmp group group {A.B.C.D} tracked-members source-subnet {A.B.C.D/X} member-subnet {A.B.C.D/X} vrfids WORD<0-512>**
- **show ip igmp group group {A.B.C.D} tracked-members source-subnet {A.B.C.D/X} port {slot/port[/sub-port][-slot/port[/sub-port]][,...]}**
- **show ip igmp group group {A.B.C.D} tracked-members source-subnet {A.B.C.D/X} port {slot/port[/sub-port][-slot/port[/sub-port]][,...]}**
- **show ip igmp group group {A.B.C.D} tracked-members source-subnet {A.B.C.D/X} port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} member-subnet {A.B.C.D/X}**
- **show ip igmp group group {A.B.C.D} tracked-members source-subnet {A.B.C.D/X} port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} member-subnet {A.B.C.D/X}**
- **show ip igmp group group {A.B.C.D} tracked-members source-subnet {A.B.C.D/X} port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} member-subnet {A.B.C.D/X} vlan <1-4059>**
- **show ip igmp group group {A.B.C.D} tracked-members source-subnet {A.B.C.D/X} port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} member-subnet {A.B.C.D/X} vlan <1-4059>**
- **show ip igmp group group {A.B.C.D} tracked-members source-subnet {A.B.C.D/X} port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} member-subnet {A.B.C.D/X} vrf WORD<1-16>**
- **show ip igmp group group {A.B.C.D} tracked-members source-subnet {A.B.C.D/X} port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} member-subnet {A.B.C.D/X} vrf WORD<1-16>**
- **show ip igmp group group {A.B.C.D} tracked-members source-subnet {A.B.C.D/X} port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} member-subnet {A.B.C.D/X} vrfids WORD<0-512>**

- **show ip igmp group group {A.B.C.D} tracked-members source-subnet {A.B.C.D/X} port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} member-subnet {A.B.C.D/X} vrfids WORD<0-512>**
- **show ip igmp group group {A.B.C.D} tracked-members source-subnet {A.B.C.D/X} port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} vlan <1-4059>**
- **show ip igmp group group {A.B.C.D} tracked-members source-subnet {A.B.C.D/X} port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} vlan <1-4059> member-subnet {A.B.C.D/X}**
- **show ip igmp group group {A.B.C.D} tracked-members source-subnet {A.B.C.D/X} port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} vlan <1-4059>**
- **show ip igmp group group {A.B.C.D} tracked-members source-subnet {A.B.C.D/X} port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} vlan <1-4059> member-subnet {A.B.C.D/X}**
- **show ip igmp group group {A.B.C.D} tracked-members source-subnet {A.B.C.D/X} port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} vrf WORD<1-16>**
- **show ip igmp group group {A.B.C.D} tracked-members source-subnet {A.B.C.D/X} port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} vrf WORD<1-16>**
- **show ip igmp group group {A.B.C.D} tracked-members source-subnet {A.B.C.D/X} port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} vrfids WORD<0-512>**
- **show ip igmp group group {A.B.C.D} tracked-members source-subnet {A.B.C.D/X} port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} vrfids WORD<0-512>**
- **show ip igmp group group {A.B.C.D} tracked-members source-subnet {A.B.C.D/X} vlan <1-4059>**
- **show ip igmp group group {A.B.C.D} tracked-members source-subnet {A.B.C.D/X} vlan <1-4059> member-subnet {A.B.C.D/X}**
- **show ip igmp group group {A.B.C.D} tracked-members source-subnet {A.B.C.D/X} vlan <1-4059> member-subnet {A.B.C.D/X} port {slot/port[/sub-port][-slot/port[/sub-port]][,...]}**
- **show ip igmp group group {A.B.C.D} tracked-members source-subnet {A.B.C.D/X} vlan <1-4059> port {slot/port[/sub-port][-slot/port[/sub-port]][,...]}**
- **show ip igmp group group {A.B.C.D} tracked-members source-subnet {A.B.C.D/X} vlan <1-4059> port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} member-subnet {A.B.C.D/X}**
- **show ip igmp group group {A.B.C.D} tracked-members source-subnet {A.B.C.D/X} vlan <1-4059>**
- **show ip igmp group group {A.B.C.D} tracked-members source-subnet {A.B.C.D/X} vlan <1-4059> member-subnet {A.B.C.D/X}**

- **show ip igmp group group {A.B.C.D} tracked-members source-subnet {A.B.C.D/X} vlan <1-4059> member-subnet {A.B.C.D/X} {slot/port[/sub-port][-slot/port[/sub-port]][,...]}**
- **show ip igmp group group {A.B.C.D} tracked-members source-subnet {A.B.C.D/X} vlan <1-4059> port {slot/port[/sub-port][-slot/port[/sub-port]][,...]}**
- **show ip igmp group group {A.B.C.D} tracked-members source-subnet {A.B.C.D/X} vlan <1-4059> port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} member-subnet {A.B.C.D/X}**
- **show ip igmp group group {A.B.C.D} tracked-members source-subnet {A.B.C.D/X} vrf WORD <0-16>**
- **show ip igmp group group {A.B.C.D} tracked-members source-subnet {A.B.C.D/X} vrfids WORD<0- 512>**
- **show ip igmp group group {A.B.C.D} tracked-members vlan <1-4059>**
- **show ip igmp group group {A.B.C.D} tracked-members vlan <1-4059> member-subnet {A.B.C.D/X}**
- **show ip igmp group group {A.B.C.D} tracked-members vlan <1-4059> member-subnet {A.B.C.D/X} port {slot/port[/sub-port][-slot/port[/sub-port]][,...]}**
- **show ip igmp group group {A.B.C.D} tracked-members vlan <1-4059> member-subnet {A.B.C.D/X} port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} source-subnet {A.B.C.D/X}**
- **show ip igmp group group {A.B.C.D} tracked-members vlan <1-4059> member-subnet {A.B.C.D/X} source-subnet {A.B.C.D/X}**
- **show ip igmp group group {A.B.C.D} tracked-members vlan <1-4059> member-subnet {A.B.C.D/X} source-subnet {A.B.C.D/X} port {slot/port[/sub-port][-slot/port[/sub-port]][,...]}**
- **show ip igmp group group {A.B.C.D} tracked-members vlan <1-4059> port {slot/port[/sub-port][-slot/port[/sub-port]][,...]}**
- **show ip igmp group group {A.B.C.D} tracked-members vlan <1-4059> port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} member-subnet {A.B.C.D/X}**
- **show ip igmp group group {A.B.C.D} tracked-members vlan <1-4059> port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} member-subnet {A.B.C.D/X} source-subnet {A.B.C.D/X}**
- **show ip igmp group group {A.B.C.D} tracked-members vlan <1-4059> port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} source-subnet {A.B.C.D/X}**
- **show ip igmp group group {A.B.C.D} tracked-members vlan <1-4059> port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} source-subnet {A.B.C.D/X} member-subnet {A.B.C.D/X}**
- **show ip igmp group group {A.B.C.D} tracked-members vlan <1-4059> source-subnet {A.B.C.D/X}**

- **show ip igmp group group {A.B.C.D} tracked-members vlan <1-4059> source-subnet {A.B.C.D/X} member-subnet {A.B.C.D/X}**
- **show ip igmp group group {A.B.C.D} tracked-members vlan <1-4059> source-subnet {A.B.C.D/X} member-subnet {A.B.C.D/X} port {slot/port[/sub-port][-slot/port[/sub-port]][,...]}**
- **show ip igmp group group {A.B.C.D} tracked-members vlan <1-4059> source-subnet {A.B.C.D/X} port {slot/port[/sub-port][-slot/port[/sub-port]][,...]}**
- **show ip igmp group group {A.B.C.D} tracked-members vlan <1-4059> source-subnet {A.B.C.D/X} port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} member-subnet {A.B.C.D/X}**
- **show ip igmp group group {A.B.C.D} tracked-members vlan <1-4059>**
- **show ip igmp group group {A.B.C.D} tracked-members vlan <1-4059> member-subnet {A.B.C.D/X}**
- **show ip igmp group group {A.B.C.D} tracked-members vlan <1-4059> member-subnet {A.B.C.D/X} port {slot/port[/sub-port][-slot/port[/sub-port]][,...]}**
- **show ip igmp group group {A.B.C.D} tracked-members vlan <1-4059> member-subnet {A.B.C.D/X} port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} source-subnet {A.B.C.D/X}**
- **show ip igmp group group {A.B.C.D} tracked-members vlan <1-4059> member-subnet {A.B.C.D/X} source-subnet {A.B.C.D/X}**
- **show ip igmp group group {A.B.C.D} tracked-members vlan <1-4059> member-subnet {A.B.C.D/X} source-subnet {A.B.C.D/X} port {slot/port[/sub-port][-slot/port[/sub-port]][,...]}**
- **show ip igmp group group {A.B.C.D} tracked-members vlan <1-4059> port {slot/port[/sub-port][-slot/port[/sub-port]][,...]}**
- **show ip igmp group group {A.B.C.D} tracked-members vlan <1-4059> port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} member-subnet {A.B.C.D/X}**
- **show ip igmp group group {A.B.C.D} tracked-members vlan <1-4059> port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} member-subnet {A.B.C.D/X} source-subnet {A.B.C.D/X}**
- **show ip igmp group group {A.B.C.D} tracked-members vlan <1-4059> port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} source-subnet {A.B.C.D/X}**
- **show ip igmp group group {A.B.C.D} tracked-members vlan <1-4059> port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} source-subnet {A.B.C.D/X} member-subnet {A.B.C.D/X}**
- **show ip igmp group group {A.B.C.D} tracked-members vlan <1-4059> source-subnet {A.B.C.D/X}**
- **show ip igmp group group {A.B.C.D} tracked-members vlan <1-4059> source-subnet {A.B.C.D/X} member-subnet {A.B.C.D/X}**

- **show ip igmp group group {A.B.C.D} tracked-members vlan <1-4059> source-subnet {A.B.C.D/X} member-subnet {A.B.C.D/X} port {slot/port[/sub-port][-slot/port[/sub-port]][,...]}**
- **show ip igmp group group {A.B.C.D} tracked-members vlan <1-4059> source-subnet {A.B.C.D/X} port {slot/port[/sub-port][-slot/port[/sub-port]][,...]}**
- **show ip igmp group group {A.B.C.D} tracked-members vlan <1-4059> source-subnet {A.B.C.D/X} port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} member-subnet {A.B.C.D/X}**
- **show ip igmp group group {A.B.C.D} tracked-members vrf WORD<1-16>**
- **show ip igmp group group {A.B.C.D} tracked-members vrfids WORD<0-512>**

Command Parameters

member-subnet {A.B.C.D/X}	Specifies the IP address and mask of the IGMP member.
port *{slot/port[/sub-port] [-slot/port[/sub-port]] [,...]}*	Identifies the slot and port in one of the following formats: a single slot and port (slot/port), a range of slots and ports (slot/port-slot/port), or a series of slots and ports (slot/port,slot/port,slot/port). If your platform supports channelization and the port is channelized, you must also specify the sub-port in the format slot/port/sub-port.
source-subnet {A.B.C.D/X}	Specifies the source IP address and the subnet mask.
vlan <*1-4059*>	Specifies the VLAN ID in the range of 1 to 4059. By default, VLAN IDs 1 to 4059 are configurable and the system reserves VLAN IDs 4060 to 4094 for internal use. On switches that support the vrf-scaling and spbm-config-mode boot configuration flags, if you enable these flags, the system also reserves VLAN IDs 3500 to 3998. VLAN ID 1 is the default VLAN and you cannot create or delete VLAN ID 1.
vrf WORD<1-16>	Specifies a VRF by name.
vrfids <0-512>	Specifies a VRF by ID.

Default

None

Command Mode

Privileged EXEC

show ip igmp group member-subnet

Displays information for a specific IP address and mask of the IGMP member. If you do not specify a VRF name or range of VRF IDs, the results show information for the Global Router. If you do specify a VRF name or range of VRF IDs, the results show information only for the VRFs you specify.

Syntax

- **show ip igmp group member-subnet {A.B.C.D/X}**
- **show ip igmp group member-subnet {A.B.C.D/X} vrf WORD<1-16>**
- **show ip igmp group member-subnet {A.B.C.D/X} vrfids WORD<0-512>**
- **show ip igmp group member-subnet default**

Command Parameters

{A.B.C.D/X}	Specifies the IP address and mask of the IGMP member.
default	Shows information for the default IP address.
vrf WORD<1-16>	Specifies a VRF by name.
vrfids <0-512>	Specifies a VRF by ID.

Default

None

Command Mode

Privileged EXEC

show ip igmp interface

Displays information about the interfaces where Internet Group Management Protocol (IGMP) is enabled. If you do not specify a VRF name or range of VRF IDs, the results show information for the Global Router. If you do specify a VRF name or range of VRF IDs, the results show information only for the VRFs you specify.

Syntax

- **show ip igmp interface**
- **show ip igmp interface gigabitethernet**
- **show ip igmp interface gigabitethernet <1-4059>**
- **show ip igmp interface gigabitethernet {slot/port[/sub-port][-slot/port[/sub-port]][,...]}**
- **show ip igmp interface vlan**

- **show ip igmp interface vlan <1-4059>**
- **show ip igmp interface vlan vrf WORD<1-16>**
- **show ip igmp interface vlan vrfids WORD<0-512>**
- **show ip igmp interface vrf WORD<1-16>**
- **show ip igmp interface vrfids WORD<0-512>**

Command Parameters

gigabitethernet *{slot/port[/sub-port] [-slot/port[/sub-port]] [,...]}*	Identifies the slot and port in one of the following formats: a single slot and port (slot/port), a range of slots and ports (slot/port-slot/port), or a series of slots and ports (slot/port,slot/port,slot/port). If your platform supports channelization and the port is channelized, you must also specify the sub-port in the format slot/port/sub-port.
interface	Shows Internet Group Management Protocol (IGMP) interfaces.
vlan <*1-4059*>	Specifies the VLAN ID in the range of 1 to 4059. By default, VLAN IDs 1 to 4059 are configurable and the system reserves VLAN IDs 4060 to 4094 for internal use. On switches that support the vrf-scaling and spbm-config-mode boot configuration flags, if you enable these flags, the system also reserves VLAN IDs 3500 to 3998. VLAN ID 1 is the default VLAN and you cannot create or delete VLAN ID 1.
vrf WORD<1-16>	Specifies a VRF by name.
vrfids <0-512>	Specifies a VRF by ID.

Default

None

Command Mode

Privileged EXEC

show ip igmp mrdisc

Displays information about the Internet Group Management Protocol (IGMP) multicast discovery routes. If you do not specify a VRF name or range of VRF IDs, the results show information for the Global Router. If you do specify a VRF name or range of VRF IDs, the results show information only for the VRFs you specify.

Syntax

- **show ip igmp mrdisc**
- **show ip igmp mrdisc vrf WORD<1-16>**
- **show ip igmp mrdisc vrfids WORD<0-512>**

Command Parameters

vrf WORD<1-16>	Specifies a VRF by name.
vrfids <0-512>	Specifies a VRF by ID.

Default

None

Command Mode

Privileged EXEC

show ip igmp mrdisc neighbors

Display information about the Internet Group Management Protocol (IGMP) multicast router discovery neighbors. If you do not specify a VRF name or range of VRF IDs, the results show information for the Global Router. If you do specify a VRF name or range of VRF IDs, the results show information only for the VRFs you specify.

Syntax

- **show ip igmp mrdisc neighbors**
- **show ip igmp mrdisc neighbors vrf WORD<1-16>**
- **show ip igmp mrdisc neighbors vrfids WORD<0-512>**

Command Parameters

vrf WORD<1-16>	Specifies a VRF by name.
vrfids <0-512>	Specifies a VRF by ID.

Default

None

Command Mode

Privileged EXEC

show ip igmp router-alert

Display the status of Internet Group Management Protocol (IGMP) router alert. If you do not specify a VRF name or range of VRF IDs, the results show information for the Global Router. If you do specify a VRF name or range of VRF IDs, the results show information only for the VRFs you specify.

Syntax

- **show ip igmp router-alert**
- **show ip igmp router-alert vrf WORD<1-16>**
- **show ip igmp router-alert vrfids WORD<0-512>**

Command Parameters

vrf WORD<1-16>	Specifies a VRF by name.
vrfids <0-512>	Specifies a VRF by ID.

Default

None

Command Mode

Privileged EXEC

show ip igmp sender

Display information about the Internet Group Management Protocol (IGMP) senders.

Syntax

- **show ip igmp sender**
- **show ip igmp sender count**
- **show ip igmp sender group {A.B.C.D}**
- **show ip igmp sender group {A.B.C.D} vrf WORD<1-16>**
- **show ip igmp sender group {A.B.C.D} vrfids WORD<0-512>**
- **show ip igmp sender member-subnet {A.B.C.D/X}**
- **show ip igmp sender member-subnet {A.B.C.D/X} vrf WORD<1-16>**
- **show ip igmp sender member-subnet {A.B.C.D/X} vrfids WORD<0-512>**
- **show ip igmp sender member-subnet default**
- **show ip igmp sender vrf WORD<1-16>**
- **show ip igmp sender vrfids WORD<0-512>**

Command Parameters

count	Specifies the number of entries.
group {A.B.C.D}	Specifies the group address.
member-subnet default |{A.B.C.D/X}	Specifies the IP address and network mask.

vrf WORD<1-16>	Specifies a VRF by name.
vrfids <0-512>	Specifies a VRF by ID.

Default

None

Command Mode

Privileged EXEC

show ip igmp snooping

Display the status of Internet Group Management Protocol (IGMP) snoop.

Syntax

- **show ip igmp snooping**
- **show ip igmp snooping vrf WORD<1-16>**
- **show ip igmp snooping vrfids WORD<0-512>**

Command Parameters

vrf WORD<1-16>	Specifies a VRF by name.
vrfids <0-512>	Specifies a VRF by ID.

Default

None

Command Mode

Privileged EXEC

show ip igmp snoop-trace

View multicast group trace information for Internet Group Management Protocol (IGMP) snoop.

Syntax

- **show ip igmp snoop-trace [source <A.B.C.D>] [group <A.B.C.D>]**
- **show ip igmp snoop-trace group {A.B.C.D} vrf WORD<1-16>**
- **show ip igmp snoop-trace group {A.B.C.D} vrfids WORD<0-512>**
- **show ip igmp snoop-trace source {A.B.C.D} vrf WORD<1-16>**

- **show ip igmp snoop-trace source {A.B.C.D} vrfids WORD<0-512>**
- **show ip igmp snoop-trace vrf WORD<1-16>**
- **show ip igmp snoop-trace vrfids WORD<0-512>**

Command Parameters

group <A.B.C.D>	Specifies the multicast group address.
source <A.B.C.D>	Specifies the multicast source address.
vrf WORD<1-16>	Specifies a VRF by name.
vrfids <0-512>	Specifies a VRF by ID.

Default

None

Command Mode

Privileged EXEC

show ip igmp ssm

Display the Source Specific Multicast (SSM) group range and the status of dynamic learning.

Syntax

- **show ip igmp ssm**
- **show ip igmp ssm vrf WORD<1-16>**
- **show ip igmp ssm vrfids WORD<0-512>**

Command Parameters

vrf WORD<1-16>	Specifies a VRF by name.
vrfids <0-512>	Specifies a VRF by ID.

Default

None

Command Mode

Privileged EXEC

show ip igmp ssm-map

Display the list of Source Specific Multicast (SSM) channels.

Syntax

- **show ip igmp ssm-map**
- **show ip igmp ssm-map vrf WORD<1-16>**
- **show ip igmp ssm-map vrfids WORD<0-512>**

Command Parameters

vrf WORD<1-16>	Specifies a VRF by name.
vrfids <0-512>	Specifies a VRF by ID.

Default

None

Command Mode

Privileged EXEC

show ip igmp static

Display information about the static and blocked ports for the Internet Group Management Protocol (IGMP)-enabled interfaces.

Syntax

- **show ip igmp static**
- **show ip igmp static vrf WORD<1-16>**
- **show ip igmp static vrfids WORD<0-512>**

Command Parameters

vrf WORD<1-16>	Specifies a VRF by name.
vrfids <0-512>	Specifies a VRF by ID.

Default

None

Command Mode

Privileged EXEC

show ip igmp stream-limit

Display multicast stream limitation information for the ports on a specific interface.

Syntax

- **show ip igmp stream-limit interface**
- **show ip igmp stream-limit interface vrf WORD<1-16>**
- **show ip igmp stream-limit interface vrfids WORD<0-512>**
- **show ip igmp stream-limit port**
- **show ip igmp stream-limit port vrf WORD<1-16>**
- **show ip igmp stream-limit port vrfids WORD<0-512>**

Command Parameters

interface	Specifies the type of interface to include in the output. The results display all ports using stream limitation on the selected interface type.
port	Specifies the Internet Group Management Protocol (IGMP) stream limitation port details.
vrf WORD<1-16>	Specifies a VRF by name.
vrfids <0-512>	Specifies a VRF by ID.

Default

None

Command Mode

Privileged EXEC

show ip igmp sys

View the current fast leave mode configuration and Internet Group Management Protocol (IGMP) system parameters on the switch.

Syntax

- **show ip igmp sys**
- **show ip igmp sys vrf WORD<1-16>**
- **show ip igmp sys vrfids WORD<0-512>**

Command Parameters

vrf WORD<1-16>	Specifies a VRF by name.

vrfids <0-512>	Specifies a VRF by ID.

Default

None

Command Mode

Privileged EXEC

show ip irdp

Confirm that the Router Discovery is enabled.

Syntax

- **show ip irdp**
- **show ip irdp [vrf WORD<1-16>] [vrfids WORD<0-512>]**
- **show ip irdp interface gigabitethernet <1-4059>**
- **show ip irdp interface gigabitethernet {slot/port[/sub-port][-slot/port[/sub-port]][,...]}**
- **show ip irdp interface vlan**
- **show ip irdp interface vlan <1-4059>**
- **show ip irdp vrf WORD<1-16>**
- **show ip irdp vrfids WORD<0-512>**

Command Parameters

interface vlan	Show route discovery per interface information.
vrfids WORD<0-512>	Show route discovery for particular vrfids

Default

None

Command Mode

Privileged EXEC

show ip msdp count

Display the number of sources and groups originated in MSDP SA messages and the number of SA from an MSDP peer.

Syntax

- **show ip msdp count vrf WORD<1-16>**
- **show ip msdp count vrfids WORD<0-512>**
- **show ip msdp count WORD<0-11>**

Command Parameters

vrf WORD<1-16>	Specifies a particular VRF. Type a name between 1-16 characters in length.
vrfids WORD<0-512>	Specifies the VRF ID.
WORD<0-11>	0-65535(2-Byte AS) 0-4294967295(4-Byte AS) Default AS Number: 0

Default

None

Command Mode

Privileged EXEC

show ip msdp mesh-group

Display the configured Mesh groups.

Syntax

- **show ip msdp mesh-group vrf WORD<1-16>**
- **show ip msdp mesh-group vrfids WORD<0-512>**
- **show ip msdp mesh-group WORD<1-64>**

Command Parameters

vrf WORD<1-16>	Specifies a particular VRF. Type a name between 1-16 characters in length.
vrfids WORD<0-512>	Specifies the VRF ID.
WORD<1-64>	Specifies the Mesh group name.

Default

None

Command Mode

Privileged EXEC

show ip msdp peer

Display detailed information about the MSDP peer.

Syntax

- **show ip msdp peer {A.B.C.D}**
- **show ip msdp peer vrf WORD<1-16>**
- **show ip msdp peer vrfids WORD<0-512>**

Command Parameters

{A.B.C.D}	Specifies the Peer address.
vrf WORD<1-16>	Specifies a particular VRF. Type a name between 1-16 characters in length.
vrfids WORD<0-512>	Specifies the VRF ID.

Default

None

Command Mode

Privileged EXEC

show ip msdp rpf

Display the rpf-peer information.

Syntax

- **show ip msdp rpf {A.B.C.D}**

Command Parameters

{A.B.C.D}	Specifies the RPF address.
vrf WORD<1-16>	Specifies a particular VRF. Type a name between 1-16 characters in length.
vrfids WORD<0-512>	Specifies the VRF ID.

Default

None

Command Mode

Privileged EXEC

show ip msdp sa-cache

Display the (S, G) state that is learned from MSDP peers.

Syntax

- **show ip msdp sa-cache group {A.B.C.D}**
- **show ip msdp sa-cache local**
- **show ip msdp sa-cache rp {A.B.C.D}**
- **show ip msdp sa-cache source {A.B.C.D}**
- **show ip msdp sa-cache vrf WORD<1-16>**
- **show ip msdp sa-cache vrfids WORD<0-512>**

Command Parameters

group {A.B.C.D}	Specifies all cache entries that match the group address.
local	Specifies the local SA cache.
rp {A.B.C.D}	Specifies cache entries that match the Rendezvous Point address.
source {A.B.C.D}	Specifies cache entries that match the source address.
vrf WORD<1-16>	Specifies a particular VRF. Type a name between 1-16 characters in length.
vrfids WORD<0-512>	Specifies the VRF ID.

Default

None

Command Mode

Privileged EXEC

show ip msdp sa-check

Display the peer info from which a router will accept SA originating from the RP and also check whether the specified(S,G,RP) would be accepted from the peer.

Syntax

- **show ip msdp sa-check source {A.B.C.D} group {A.B.C.D} rp {A.B.C.D}**
- **show ip msdp sa-check source {A.B.C.D} group {A.B.C.D} rp {A.B.C.D} peer A.B.C.D}**
- **show ip msdp sa-check source {A.B.C.D} group {A.B.C.D} rp {A.B.C.D} vrf WORD<1-16>**

- **show ip msdp sa-check source {A.B.C.D} group {A.B.C.D} rp {A.B.C.D} vrfids WORD<0-512>**

Command Parameters

group {A.B.C.D}	Specifies the group IP address.
peer {A.B.C.D}	Specifies the MSDP peer IP address.
rp {A.B.C.D}	Specifies the RP IP address.
source {A.B.C.D}	Specifies the source IP address.
vrf WORD<0-16>	Specifies a particular VRF. Type a name between 1-16 characters in length.
vrfids WORD<0-512>]	Specifies the VRF ID.

Default

None

Command Mode

Privileged EXEC

show ip msdp show-all

Display a collection of show commands output of MSDP protocol.

Syntax

- **show ip msdp show-all file WORD<1-99>**
- **show ip msdp show-all vrf WORD<1-16>**
- **show ip msdp show-all vrfids WORD<0-512>**

Command Parameters

file WORD<1-99>	Specifies the filename - {/intflash/ } <file> {string length 1...99}.
vrf WORD<1-16>	Specifies a particular VRF. Type a name between 1-16 characters in length.
vrfids WORD<0-512>	Specifies the VRF ID.

Default

None

Command Mode

Privileged EXEC

show ip msdp summary

Display the MSDP global status and peer status.

Syntax

- **show ip msdp summary vrf WORD<1-16>**
- **show ip msdp summary vrfids WORD<0-512>**

Command Parameters

vrf WORD<1-16>	Specifies a particular VRF. Type a name between 1-16 characters in length.
vrfids WORD<0-512>	Specifies the VRF ID.

Default

None

Command Mode

Privileged EXEC

show ip redistribute

Display and ensure the accuracy of the configuration settings.

Syntax

- **show ip <rip|ospf|bgp> redistribute [interface] [vrf WORD<1-16>] [vrfids WORD<0-512>]**

Command Parameters

<ospf|bgp|static|direct|rip>	Specifies the type of routes to redistribute-the protocol source.
interface	Shows rip information for each interface.
vrf WORD<1-16>	Displays rip configuration for a particular VRF.
vrfids WORD<0-512>	Specifies a list of VRF IDs.

Default

None

Command Mode

Privileged EXEC

show ipv6 fhs statistics

Displays the FHS statistics on a port or set of ports.

Syntax

- **show ipv6 fhs statistics all**
- **show ipv6 fhs statistics all {slot/port[/sub-port][-slot/port[/sub-port]][,...]}**
- **show ipv6 fhs statistics dhcp-guard**
- **show ipv6 fhs statistics dhcp-guard {slot/port[/sub-port][-slot/port[/sub-port]][,...]}**
- **show ipv6 fhs statistics nd-inspection**
- **show ipv6 fhs statistics nd-inspection {slot/port[/sub-port][-slot/port[/sub-port]][,...]}**
- **show ipv6 fhs statistics ra-guard**
- **show ipv6 fhs statistics ra-guard {slot/port[/sub-port][-slot/port[/sub-port]][,...]}**

Command Parameters

{slot/port[/sub-port][-slot/port[/sub-port]] [,...]}	Displays the statistics on either a single port or a set of ports. Identifies the slot and port in one of the following formats: a single slot and port (slot/port), a range of slots and ports (slot/port-slot/port), or a series of slots and ports (slot/port,slot/port,slot/port). If your platform supports channelization and the port is channelized, you must also specify the sub-port in the format slot/port/sub-port.
all	Displays all IPv6 FHS statistics.
dhcp-guard	Displays DHCP-Guard statistics.
nd-inspection	Displays Neighbor Discovery Inspection statistics.
ra-guard	Displays RA-Guard statistics.

Default

None

Command Mode

Privileged EXEC

show ipv6 isis accept

Displays the IPv6 IS-IS Accept Policy Information.

Syntax

- **show ipv6 isis accept**
- **show ipv6 isis accept vrf WORD<1-16>**
- **show ipv6 isis accept vrf WORD<1-16> vrfids WORD<0-512>**
- **show ipv6 isis accept vrfids WORD<0-512>**

Command Parameters

vrf WORD<1-16>	Displays the IPv6 IS-IS Accept Policy Information for a specific VRF.
vrfids WORD<0-512>	Displays the IPv6 IS-IS Accept Policy Information for a specific VRF ID.

Default

None

Command Mode

Privileged EXEC

show ipv6 isis redistribute

Display the rules for redistribution of routes into ISIS for GRT.

Syntax

- **show ipv6 isis redistribute**
- **show ipv6 isis redistribute vrf WORD<1-16>**
- **show ipv6 isis redistribute vrfids WORD<0-512>**

Command Parameters

vrf WORD<1-16>	Specifies a VRF name. The VRF parameter is optional.
vrfids WORD<0-512>	Specifies a VRF by ID. The VRF parameter is optional.

Default

The default is disabled.

Command Mode

Privileged EXEC

show ipv6 ospf default-cost

Display the IPv6 OSPF default cost information to ensure accuracy.

Syntax

- **show ipv6 ospf default-cost [vrf WORD<1-16>] [vrfids WORD<0-512>]**
- **show ipv6 ospf default-cost vrf WORD<1-16>**
- **show ipv6 ospf default-cost vrfids WORD<0-512>**

Command Parameters

vrf <WORD 1-16>	Specifies the VRF name.
vrfids <WORD 0-512>	Specifies VRF IDs.

Default

None

Command Mode

Privileged EXEC

show ipv6 ospf ipsec

Display the IPv6 OSPF IPsec information to ensure accuracy.

Syntax

- **show ipv6 ospf ipsec [vrf WORD<1-16>] [vrfids WORD<0-512>]**
- **show ipv6 ospf ipsec vrf WORD<1-16>**
- **show ipv6 ospf ipsec vrfids WORD<0-512>**

Command Parameters

vrf <WORD 1-16>	Specifies the VRF name.
vrfids <WORD 0-512>	Specifies VRF IDs.

Default

None

Command Mode

Privileged EXEC

show ipv6 ospf vrf

Display the IPv6 OSPF configuration for a particular VRF.

Syntax

- **show ipv6 ospf vrf WORD<1-16>**
- **show ipv6 ospf vrf WORD<1-16> vrfids WORD<0-512>**

Command Parameters

vrf <WORD 1-16>	Specifies the VRF name.
vrfids <WORD 0-512>	Specifies VRF IDs.

Default

None

Command Mode

Privileged EXEC

show ipv6 ospf vrfids

Display the IPv6 OSPF configuration for VRFs by VRF ID.

Syntax

- **show ipv6 ospf vrfids WORD<0-512>**

Command Parameters

vrfids <WORD 0-512>	Specifies VRF IDs.

Default

None

Command Mode

Privileged EXEC

show ipv6 rip redistiribute

Display ripng redistribute parameters

Syntax

- **show ipv6 rip redistribute**

Default

None

Command Mode

Privileged EXEC

show link-flap-detect

Show link-flap-detect configuration.

Syntax

- **show link-flap-detect**

Default

None

Command Mode

Privileged EXEC

show lldp

Display LLDP information.

Syntax

- **show lldp**
- **show lldp location-identification**

Command Parameters

location-identification	Specifies the location information parameters.

Default

None

Command Mode

Privileged EXEC

show lldp local-sys-data

Display LLDP local system data.

Syntax

- **show lldp local-sys-data**

- **show lldp local-sys-data med**

Command Parameters

med	Displays local LLDP-MED information.

Default

None

Command Mode

Privileged EXEC

show lldp med-network-policies

Displays LLDP-MED network policies.

Syntax

- **show lldp med-network-policies**
- **show lldp med-network-policies guest-voice**
- **show lldp med-network-policies guest-voice-signaling**
- **show lldp med-network-policies softphone-voice**
- **show lldp med-network-policies streaming-video**
- **show lldp med-network-policies video-conferencing**
- **show lldp med-network-policies video-signaling**
- **show lldp med-network-policies voice**
- **show lldp med-network-policies voice-signaling**

Command Parameters

guest-voice	Specifies the type of LLDP-MED network policy.
guest-voice-signaling	Specifies the type of LLDP-MED network policy.
softphone-voice	Specifies the type of LLDP-MED network policy.
streaming-video	Specifies the type of LLDP-MED network policy.
video-conferencing	Specifies the type of LLDP-MED network policy.
video-signaling	Specifies the type of LLDP-MED network policy.
voice	Specifies the type of LLDP-MED network policy.
voice-signaling	Specifies the type of LLDP-MED network policy.

Default

None

Command Mode

Privileged EXEC

show lldp neighbor

Display details of LLDP neighbors learned.

Syntax

- **show lldp neighbor**
- **show lldp neighbor port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} [med]**
- **show lldp neighbor summary [port {slot/port[/sub-port][-slot/port[/sub-port]][,...]}] [med]**

Command Parameters

med	Displays LLDP neighbors learned based on LLDP-MED TLV information.
port *{slot/port[/sub-port] [-slot/port[/sub-port]] [,...]}*	Identifies the slot and port in one of the following formats: a single slot and port (slot/port), a range of slots and ports (slot/port-slot/port), or a series of slots and ports (slot/port,slot/port,slot/port). If your platform supports channelization and the port is channelized, you must also specify the sub-port in the format slot/port/sub-port.
summary	Displays the summary of the LLDP neighbors on a single port or a range of ports.

Default

None

Command Mode

Privileged EXEC

show lldp port

Display LLDP port list.

Syntax

- **show lldp port**

- **show lldp port {slot/port[/sub-port][-slot/port[/sub-port]][,...]}**
- **show lldp port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} location-identification**
- **show lldp port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} med-network-policies**
- **show lldp port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} med-network-policies guest-voice**
- **show lldp port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} med-network-policies guest-voice-signaling**
- **show lldp port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} med-network-policies softphone-voice**
- **show lldp port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} med-network-policies streaming-video**
- **show lldp port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} med-network-policies video-conferencing**
- **show lldp port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} med-network-policies video-signaling**
- **show lldp port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} med-network-policies voice**
- **show lldp port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} med-network-policies voice-signaling**

Command Parameters

{slot/port[/sub-port] [-slot/port[/sub-port]] [,...]}	Identifies the slot and port in one of the following formats: a single slot and port (slot/port), a range of slots and ports (slot/port-slot/port), or a series of slots and ports (slot/port,slot/port,slot/port). If your platform supports channelization and the port is channelized, you must also specify the sub-port in the format slot/port/sub-port.
location-identification	Specifies the location information parameters for specific ports.
med-network-policies [guest-voice | guest-voice-signaling | softphone-voice | streaming-video | video-conferencing | video-signaling | voice | voice-signaling]	Displays the LLDP-MED network policies configured on specific ports.

Default

None

Command Mode

Privileged EXEC

show lldp rx-stats

Verify that the port is receiving LLDP PDUs successfully.

Syntax

- **show lldp rx-stats**
- **show lldp rx-stats {slot/port[/sub-port][-slot/port[/sub-port]][,...]}**

Command Parameters

port *{slot/port[/sub-port] [-slot/port[/sub-port]] [,...]}*	Identifies the slot and port in one of the following formats: a single slot and port (slot/port), a range of slots and ports (slot/port-slot/port), or a series of slots and ports (slot/port,slot/port,slot/port). If your platform supports channelization and the port is channelized, you must also specify the sub-port in the format slot/port/sub-port.

Default

None

Command Mode

Privileged EXEC

show lldp stats

Verify LLDP statistics.

Syntax

- **show lldp stats**

Default

None

Command Mode

Privileged EXEC

show lldp tx-stats

Verify successful LLDP transmission on a port.

Syntax

- **show lldp tx-stats**
- **show lldp tx-stats {slot/port[/sub-port][-slot/port[/sub-port]][,...]}**

Command Parameters

port *{slot/port[/sub-port] [-slot/port[/sub-port]] [,...]}*	Identifies the slot and port in one of the following formats: a single slot and port (slot/port), a range of slots and ports (slot/port-slot/port), or a series of slots and ports (slot/port,slot/port,slot/port). If your platform supports channelization and the port is channelized, you must also specify the sub-port in the format slot/port/sub-port.

Default

None

Command Mode

Privileged EXEC

show mac-address-entry

Shows the database status and MAC address to display the static forwarding database status.

Syntax

- **show mac-address-entry**

Default

None

Command Mode

Privileged EXEC

show macsec connectivity-association

Display the connectivity-association (CA) details. For security reasons, the CA key is not displayed.

Syntax

- **show macsec connectivity-association**
- **show macsec connectivity-association <ca-name>**
- **show macsec connectivity-association WORD<5-15>**

Command Parameters

<ca-name>	Specifies a connectivity-association name. An 80 byte alphanumeric string.
WORD<5-15>	Specifies a connectivity-association name. It is a 5 to 15 character alphanumeric string.

Default

None

Command Mode

Privileged EXEC

show macsec status

Display the following information for MACsec enabled interfaces: • MACsec status • MACsec encryption status • CAK in MD5 checksum format

Syntax

- **show macsec status**
- **show macsec status {slot/port[/sub-port][-slot/port[/sub-port]][,...]}**

Command Parameters

{slot/port[/sub-port] [-slot/port[/sub-port]] [,...]}	Identifies the slot and port in one of the following formats: a single slot and port (slot/port), a range of slots and ports (slot/port-slot/port), or a series of slots and ports (slot/port,slot/port,slot/port). If your platform supports channelization and the port is channelized, you must also specify the sub-port in the format slot/port/sub-port.

Default

None

Command Mode

Privileged EXEC

show pluggable-optical-modules

View Digital Diagnostic Interface (DDI) module information to view transceiver manufacturing information and characteristics, temperature and voltage information, and configuration details.

Syntax

- **show pluggable-optical-modules basic**
- **show pluggable-optical-modules basic {slot/port[/sub-port][-slot/port[/sub-port]][,...]}**
- **show pluggable-optical-modules config**
- **show pluggable-optical-modules detail**
- **show pluggable-optical-modules detail {slot/port[/sub-port][-slot/port[/sub-port]][,...]}**

- **show pluggable-optical-modules temperature**
- **show pluggable-optical-modules temperature {slot/port[/sub-port][-slot/port[/sub-port]][,...]}**
- **show pluggable-optical-modules voltage**
- **show pluggable-optical-modules voltage {slot/port[/sub-port][-slot/port[/sub-port]][,...]}**

Command Parameters

{slot/port[/sub-port] [-slot/port[/sub-port]] [,...]}	Identifies the slot and port in one of the following formats: a single slot and port (slot/port), a range of slots and ports (slot/port-slot/port), or a series of slots and ports (slot/port,slot/port,slot/port). If your platform supports channelization and the port is channelized, you must also specify the sub-port in the format slot/port/sub-port.
basic	Shows basic transceiver information.
config	Shows pluggable optical modules configuration information.
detail	Shows detailed transceiver information.
temperature	Shows transceiver temperature information.
voltage	Shows transceiver voltage information.

Default

None

Command Mode

Privileged EXEC

show poe-main-status

View main PoE status.

Syntax

- **show poe-main-status**

Default

None

Command Mode

Privileged EXEC

show poe-port-status

View port PoE status.

Syntax

- **show poe-port-status**

Default

None

Command Mode

Privileged EXEC

show poe-power-measurement

View PoE power measurement per port.

Syntax

- **show poe-power-measurement {slot/port[/sub-port][-slot/port[/sub-port]][,...]}**

Command Parameters

{slot/port[/sub-port] [-slot/port[/sub-port]] [,...]}	Identifies the slot and port in one of the following formats: a single slot and port (slot/port), a range of slots and ports (slot/port-slot/port), or a series of slots and ports (slot/port,slot/port,slot/port). If your platform supports channelization and the port is channelized, you must also specify the sub-port in the format slot/port/sub-port.

Default

None

Command Mode

Privileged EXEC

show ports statistics ospf extended

Use statistics to help you monitor Open Shortest Path First (OSPF) performance.

Syntax

- **show ports statistics ospf extended {slot/port[/sub-port][-slot/port[/sub-port]][,...]}**

Command Parameters

{slot/port[/sub-port] [-slot/port[/sub-port]] [,...]}	Identifies the slot and port in one of the following formats: a single slot and port (slot/port), a range of slots and ports (slot/port-slot/port), or a series of slots and ports (slot/port,slot/port,slot/port). If your platform supports channelization and the port is channelized, you must also specify the sub-port in the format slot/port/sub-port.

Default

None

Command Mode

Privileged EXEC

show ports statistics ospf main

Use statistics to help you monitor Open Shortest Path First (OSPF) performance.

Syntax

- **`show ports statistics ospf main {slot/port[/sub-port][-slot/port[/sub-port]][,...]}`**

Command Parameters

{slot/port[/sub-port] [-slot/port[/sub-port]] [,...]}	Identifies the slot and port in one of the following formats: a single slot and port (slot/port), a range of slots and ports (slot/port-slot/port), or a series of slots and ports (slot/port,slot/port,slot/port). If your platform supports channelization and the port is channelized, you must also specify the sub-port in the format slot/port/sub-port.

Default

None

Command Mode

Privileged EXEC

show qos policer

Display ingress rate-limiting information for an interface.

Syntax

- **`show qos policer interface gigabitethernet [{slot/port[/sub-port][-slot/port[/sub-port]][,...]}]`**

Command Parameters

interface gigabitEthernet *{slot/port[/sub-port] [-slot/port[/sub-port]] [,...]}*	Identifies the slot and port in one of the following formats: a single slot and port (slot/port), a range of slots and ports (slot/port-slot/port), or a series of slots and ports (slot/port,slot/port,slot/port). If your platform supports channelization and the port is channelized, you must also specify the sub-port in the format slot/port/sub-port.

Default

None

Command Mode

Privileged EXEC

show radius dynamic-server

Display configuration or statistical information about RADIUS dynamic session clients.

Syntax

- **show radius dynamic-server [client | statistics]**

Command Parameters

statistics	Display statistics for RADIUS Dynamic Authorization clients.
WORD<0-46>	Specifies the client IPv4 or IPv6 address.

Default

None

Command Mode

Privileged EXEC

show routing statistics

View port routing statistics to manage network performance.

Syntax

- **show routing statistics interface**
- **show routing statistics interface gigabitethernet [{slot/port[/sub-port][-slot/port[/sub-port]][,...]}]**

Command Parameters

gigabitethernet *{slot/port[/sub-port] [-slot/port[/sub-port]] [,...]}*	Identifies the slot and port in one of the following formats: a single slot and port (slot/port), a range of slots and ports (slot/port-slot/port), or a series of slots and ports (slot/port,slot/port,slot/port). If your platform supports channelization and the port is channelized, you must also specify the sub-port in the format slot/port/sub-port.

Default

None

Command Mode

Privileged EXEC

show running-config

Display the current switch configuration.

Syntax

- **`show running-config`**
- **`show running-config module {app-telemetry | boot | cfm | chef | cli | diag | dvr | eap | energy-saver | fa | fhs | filter | ike | ip | ipfix | ipsec | ipv6 | isis | i-sid | lacp | license | lldp | lst | macsec | mlt | naap | nls | ntp | ovsdb | port | qos | radius | restconf | rmon | sflow | security | slamon | slpp | smtp | spbm | stg | sys | tacacs | virtual-service | vlan | web | vxlan}`**
- **`show running-config verbose`**

Command Parameters

module {app-telemetry | boot | cfm | chef | cli | diag | dvr | eap | energy-saver | fa | fhs | filter | ike | ip | ipfix | ipsec | ipv6 | isis | i-sid | lacp | license | lldp | lst | macsec | mlt | naap | nls | ntp | ovsdb | port | qos | radius | restconf | rmon | sflow | security | slamon | slpp | smtp | spbm | stg | sys | tacacs | virtual-service | vlan | web | vxlan}	Specifies the command group for which you request configuration settings.
verbose	Specifies the complete list of configuration information on the switch.

Default

None

Command Mode

Privileged EXEC

show slot

Show slot configuration.

Syntax

- **show slot**
- **show slot <1>**

Command Parameters

<1> Specifies the interface slot number <1>.

Default

None

Command Mode

Privileged EXEC

show vlan src-mac

View the VLAN source MAC addresses to display the source MAC address for any source MAC-based VLANs on the switch or for the specified VLAN.

Syntax

- **show vlan src-mac <1-4059>**

Command Parameters

<1-4059> Specifies the VLAN ID in the range of 1 to 4059. By default, VLAN IDs 1 to 4059 are configurable and the system reserves VLAN IDs 4060 to 4094 for internal use. On switches that support the vrf-scaling and spbm-config-mode boot configuration flags, if you enable these flags, the system also reserves VLAN IDs 3500 to 3998. VLAN ID 1 is the default VLAN and you cannot create or delete VLAN ID 1.

Default

None

Command Mode

Privileged EXEC

show vnid i-sid

Display information about all the VNIDs or use the option to specify a particular VNID.

Syntax

- **show vnid i-sid {<1-500>}**

Command Parameters

<1-500>	Displays information about the specified VNID.

Default

None

Command Mode

Privileged EXEC

show vnid mac-address-entry

Display all the VNIDs in the FDB table or use one of the options to specify a particular VNID.

Syntax

- **show vnid mac-address-entry [<1–16777215> | port <{slot/port[-slot/port][,...]}> | mac <0x00:0x00:0x00:0x00:0x00:0x00> | remote]**

Command Parameters

[<1–16777215> | port <*{slot/port [-slot/port] [,...]}*> | mac <0x00:0x00:0x00:0x00:0x00:0x00> | remote]	Display the FDB table for the specified VNID.

Default

None

Command Mode

Privileged EXEC

show vtep local

Display the VTEP's source IP address and the name of the VRF.

Syntax

- **show vtep local**

Default

None

Command Mode

Privileged EXEC

show vtep remote

Display information about all of the remote VTEPs or use the option to specify a particular VTEP.

Syntax

- **show vtep remote [<1-500>]**

Command Parameters

<1-500> Displays information about the specified remote VTEP.

Default

None

Command Mode

Privileged EXEC

show vtep remote name

Display the names of all remote VTEPs or use the option to specify a particular VTEP.

Syntax

- **show vtep remote name [<1-500>]**

Command Parameters

<1-500> Displays the name of the specified remote VTEP.

Default

None

Command Mode

Privileged EXEC

software

Perform various software functions on the switch to ensure it is updated with latest versions.

Syntax

- **software [activate WORD<1-99> | add WORD<1-99> | add-modules WORD<1-99> | commit | remove WORD<1-99>] reset-commit-time <1-60>]**
- **software activate WORD<1-99>**

- **software add WORD<1-99>**
- **software add-modules WORD<1-99>**
- **software commit**
- **software remove WORD<1-99>**

Command Parameters

activate WORD<1-99>	Copies the software version to the boot flash file. When you use the software activate command, the system checks for hardware dependencies and prevents a downgrade if it detects a dependency. For example, if a hardware component has a minimum software version dependency, you cannot downgrade to an incompatible software version or install the hardware component in a chassis that runs an incompatible software version.
add WORD<1-99>	Unpacks a software release <version>.
add-modules WORD<1-99>	Add modules to existing software release in /intflash/relea se/<version>
commit	Ensures the running software release is trusted.
remove WORD<1-99>	Removes the software release <version>.
reset-commit-time <1-60>	Extends or reduces the software commit or rollback time.

Default

None

Command Mode

Privileged EXEC

software reset-commit-time

Extends or reduces the commit time after you apply a software upgrade. You may need additional time to verify the software works as expected after the upgrade before you commit or roll back.

Syntax

- **software reset-commit-time**
- **software reset-commit-time <1-60>**

Command Parameters

<1-60>	Extends or reduces the commit timer. By default, the commit timer is 10 minutes. As an example, if you enter the command string of software reset-commit-time 5, you reduce the commit timer to 5 minutes. If you enter the command string of software reset-commit-time 25, you extend the commit timer by 15 minutes, for a total of 25 minutes.

Default

The default is 10 minutes.

Command Mode

Privileged EXEC

source

Source a configuration to merge a script file into the running configuration or verify the syntax of a configuration file.

Warning:

You are not able to source a complete configuration file to merge it with your running configuration because the system can crash. Use the source command to merge smaller portions of a configuration into the existing configuration.

Important:

Do not source a verbose configuration (verbose.cfg) with the debug stop option. The sourcing process cannot complete if you use these two options with a verbose configuration.

Syntax

- **source WORD<1-99>**
- **source WORD<1-99> debug**
- **source WORD<1-99> debug stop**
- **source WORD<1-99> debug stop syntax**
- **source WORD<1-99> debug syntax**
- **source WORD<1-99> stop**
- **source WORD<1-99> stop syntax**
- **source WORD<1-99> syntax**

Command Parameters

debug	Debugs the script by outputting the configuration commands to the screen.
stop	Stops the sourcing of a configuration if an error occurs.

syntax	Checks the syntax of the configuration file. This parameter does not load the configuration file; only verifies the syntax. If you use this parameter with the stop parameter (source WORD<1-99> stop syntax), the output appears on screen and verification stops if it encounters an error. If you use this parameter with the debug parameter (source WORD<1-99> debug syntax), the output does not stop if it encounters an error; you must review the on-screen output to verify if an error exists. If you use this parameter by itself, it does not output to the screen or stop on error; it shows an error message, "syntax errors in script", to indicate if errors exist in the configuration file.
WORD<1-99>	Specifies a filename and location.

Default

None

Command Mode

Privileged EXEC

sys action

Reset system functions to reset all statistics counters, the console port, and the operation of the switchover function.

Syntax

- **`sys action reset {console | counters}`**
- **`sys action reset console`**
- **`sys action reset counters`**

Command Parameters

reset {console| counters}	Reinitializes the hardware universal asynchronous receiver transmitter (UART) drivers. Use this command only if the console connection stops responding. Resets all the statistics counters in the switch to zero. Resets the console port.

Default

None

Command Mode

Privileged EXEC

sys shutdown

Use this command to prepare the system for shutdown. This command properly shuts down the file system, and powers off all interface modules. After you use this command, you must physically disconnect the chassis power. To restore power after you use this command, you must physically turn the chassis power on again.

Syntax

- **sys shutdown**

Default

None

Command Mode

Privileged EXEC

trace ipv6 base

Configure trace parameters for the IPv6 base.

Syntax

- **trace ipv6 base disable {all|debug|error|icmp|info|ipclient|nbr|pkt|warn} [vrf WORD<1-16>]**
- **trace ipv6 base enable {all|debug|error|icmp|info|ipclient|nbr|pkt|warn} [vrf WORD<1-16>]**

Command Parameters

<all|debug|error|icmp|info|ipclient|nbr|pkt|warn>	Specifies the trace category.
disable	Disables the trace.
enable	Enables the trace.
vrf WORD<1-16>	Specifies VRF by name.

Default

None

Command Mode

Privileged EXEC

trace ipv6 forwarding

Configure trace parameters for IPv6 forwarding.

Syntax

- **trace ipv6 forwarding disable {all|debug|error|info|pkt|warn} [vrf WORD<1-16>]**
- **trace ipv6 forwarding enable {all|debug|error|info|pkt|warn} [vrf WORD<1-16>]**

Command Parameters

<all|debug|error|info|pkt|warn>	Specifies the trace category.
disable	Disables the trace.
enable	Enables the trace.
vrf WORD<1-16>	Specifies VRF by name.

Default

None

Command Mode

Privileged EXEC

trace ipv6 nd

Configure trace parameters for IPv6 neighbor discovery.

Syntax

- **trace ipv6 nd disable {all|debug|error|info|nbr|pkt|redirect|warn} [vrf WORD<1-16>]**
- **trace ipv6 nd disable {all|debug|error|info|nbr|pkt|redirect|warn} [vrf WORD<1-16>]**
- **trace ipv6 nd enable {all|debug|error|info|nbr|pkt|redirect|warn} [vrf WORD<1-16>]**
- **trace ipv6 nd enable {all|debug|error|info|nbr|pkt|redirect|warn} [vrf WORD<1-16>]**

Command Parameters

<all|debug|error|info|nbr|pkt|redirect|warn>	Specifies the trace category.
disable	Disables the trace.

enable	Enables the trace.
vrf WORD<1-16>	Specifies VRF by name.

Default

None

Command Mode

Privileged EXEC

trace ipv6 ospf

Configure trace parameters for IPv6 OSPF.

Syntax

- **trace ipv6 ospf disable {all|debug|error|info|nbr|pkt|redirect|warn} [vrf WORD<1-16>]**
- **trace ipv6 ospf enable {all|debug|error|info|nbr|pkt|redirect|warn} [vrf WORD<1-16>]**

Command Parameters

<all|debug|error|info|nbr|pkt|redirect|warn>	Specifies the trace category.
disable	Disables the trace.
enable	Enables the trace.
vrf WORD<1-16>	Specifies VRF by name.

Default

None

Command Mode

Privileged EXEC

trace ipv6 rtm

Configure trace parameters for the IPv6 routing table manager.

Syntax

- **trace ipv6 rtm disable {all|change-list|debug|error|fib|info|redist|update|warn} [vrf WORD<1-16>]**

- **trace ipv6 rtm enable {all|change-list|debug|error|fib|info|redist|update|warn} [vrf WORD<1-16>]**

Command Parameters

<all|changelist|debug|error|fib|info|redist|update|warn>	Specifies the trace category.
disable	Disables the trace.
enable	Enables the trace.
vrf WORD<1-16>	Specifies VRF by name.

Default

None

Command Mode

Privileged EXEC

trace ipv6 transport

Configure trace parameters for IPv6 transport.

Syntax

- **trace ipv6 transport disable {all|common|tcp|udp} [vrf WORD<1-16>]**
- **trace ipv6 transport enable {all|common|tcp|udp} [vrf WORD<1-16>]**

Command Parameters

<all|common|tcp|udp>	Specifies the trace category.
disable	Disables the trace.
enable	Enables the trace.
vrf WORD<1-16>	Specifies VRF by name.

Default

None

Command Mode

Privileged EXEC

traceroute

Use traceroute to determine the route packets take through a network to a destination.

Syntax

- **traceroute WORD<0-256>**
- **traceroute WORD<0-256> <1-1176>**
- **traceroute WORD<0-256> <1-1176> mgmt clip**
- **traceroute WORD<0-256> <1-1176> mgmt vlan**
- **traceroute WORD<0-256> <1-1444>**
- **traceroute WORD<0-256> -m <1-255>**
- **traceroute WORD<0-256> -m <1-255> mgmt clip**
- **traceroute WORD<0-256> -m <1-255> mgmt vlan**
- **traceroute WORD<0-256> -p <0-65535>**
- **traceroute WORD<0-256> -p <0-65535> mgmt clip**
- **traceroute WORD<0-256> -p <0-65535> mgmt vlan**
- **traceroute WORD<0-256> -q <1-255>**
- **traceroute WORD<0-256> -q <1-255> mgmt clip**
- **traceroute WORD<0-256> -q <1-255> mgmt vlan**
- **traceroute WORD<0-256> source WORD<1-256>**
- **traceroute WORD<0-256> -v**
- **traceroute WORD<0-256> vrf WORD<1-16>**
- **traceroute WORD<0-256> -w <1-255>**
- **traceroute WORD<0-256> -w <1-255> mgmt clip**
- **traceroute WORD<0-256> -w <1-255> mgmt vlan**

Command Parameters

<1-1444>	Specifies the size of the probe packet. The range depends on the hardware platform.
-m <1-255>	Specifies the is maximum time-to-live (TTL).
mgmt clip	Run a traceroute test using a Segmented Management Instance. If you do not use the mgmt parameter, the traceroute command uses the VOSS IP routing stack to initiate the traceroute request.
mgmt vlan	Run a traceroute test using a Segmented Management Instance. If you do not use the mgmt parameter, the traceroute command uses the VOSS IP routing stack to initiate the traceroute request.

-p <0-65535	Specifies the base UDP port number.
-q <1-255>	Specifies the number of probes per TTL.
source WORD<1-256>	Specifies the source IP address for use in traceroutes.
-v	Specifies verbose mode (detailed output).
vrf WORD<1-16>	Specifies the VRF instance by VRF name.
-w <1-255>	Specifies the wait time per probe.
WORD<0-256>	Specifies the hostname, or IP address.
WORD<0-256> <1-1176>	Specifies the wait time per probe. The range depends on the hardware platform.
WORD<0-256> -m <1-255>	Specifies the is maximum time-to-live (TTL).
WORD<0-256> -p <1-65535>	Specifies the base UDP port number.
WORD<0-256> -q <1-255>	Specifies the number of probes per TTL.
WORD<0-256> source WORD<1-256>	Source address for trace route.
WORD<0-256> -v	Specifies verbose mode (detailed output).
WORD<0-256> vrf WORD<1-16>	Vrf name (IPv4 only).
WORD<0-256> -w <1-255>	Specifies the source IP address for use in traceroutes.

Default

None

Command Mode

Privileged EXEC

uboot-install

Upgrade the boot loader image. Only use this command if specifically advised to do so by Technical Support. Improper use of this command can result in permanent damage to the device and render it unusable.

Syntax

- **uboot-install WORD<1-99>**

Command Parameters

WORD<1-99>	Specifies the full path and filename that contains the uboot image. This command is not available on all hardware platforms.

Default

None

Command Mode

Privileged EXEC

usb-stop

Use this command to safely remove the USB drive from the USB port.

Syntax

- **usb-stop**

Default

None

Command Mode

Privileged EXEC

virtual-service

Configures virtual service on the switch.

Syntax

- **virtual-service WORD<1-80> console**

Command Parameters

console	Accesses the console for the specific virtual.
WORD<1-80>	Specifies the virtual service name.

Default

None

Command Mode

Privileged EXEC

virtual-service WORD<1-80> install

Installs the virtual service package.

Syntax

- **virtual-service WORD <1-80> install package WORD<1-512>**

Command Parameters

package WORD<1-512>	Specifies the package to be installed.
WORD<1-80>	Specifies the virtual service name.

Default

None

Command Mode

Privileged EXEC

virtual-service WORD<1-80> uninstall

Uninstalls the virtual service.

Syntax

- **virtual-service WORD<1-80> uninstall**

Command Parameters

WORD<1-80>	Specifies the virtual service name.

Default

None

Command Mode

Privileged EXEC

write memory

Save to memory.

Syntax

- **write memory**

Default

None

Command Mode

Privileged EXEC

Chapter 19: RA-guard Configuration

hop-limit maximum

Enables verification of the advertised hop count limit.

Syntax

- **default hop-limit maximum**
- **hop-limit maximum <0-255>**

Command Parameters

<0-255>	Specifies hop limit count.

Default

The default maximum limit is 0.

Command Mode

RA-guard Configuration

hop-limit minimum

Enables verification of the advertised hop count limit.

Syntax

- **default hop-limit minimum**
- **hop-limit minimum <0-255>**

Command Parameters

<0-255>	Specifies hop limit count.

Default

The default minimum limit is 0.

Command Mode

RA-guard Configuration

managed-config-flag

Enables verification of managed address configuration flag in the advertised RA packet.

Syntax

- **default managed-config-flag**
- **managed-config-flag <none |on | off>**

Command Parameters

none	Set managed config flag to none.
off	Set managed config flag to off.
on	Set managed config flat to on.

Default

None

Command Mode

RA-guard Configuration

match ra-macaddr-list

Enables verification of the sender Source MAC address against the configured mac-access-list.

Syntax

- **default match ra-macaddr-list**
- **match ra-macaddr-list WORD<1–64>**
- **no match ra-macaddr-list**

Command Parameters

WORD<1–64>	Specifies the MAC access list name.

Default

None

Command Mode

RA-guard Configuration

match ra-prefix-list

Enables verification of the advertised prefixes in inspected messages against the configured authorized prefix list.

Syntax

- **default match ra-prefix-list**
- **match ra-prefix-list WORD<1–64>**
- **no match ra-prefix-list**

Command Parameters

WORD<1–64>	Specifies the prefix list name.

Default

None

Command Mode

RA-guard Configuration

match ra-srcaddr-list

Enables verification of the sender's IPv6 address in inspected messages against the configured authorized device source access list.

Syntax

- **default match ra-srcaddr-list**
- **match ra-srcaddr-list WORD<1–64>**
- **no match ra-srcaddr-list**

Command Parameters

WORD<1–64>	Specifies the MAC access list name.

Default

None

Command Mode

RA-guard Configuration

router-preference

Enables verification of the advertised default router-preference parameter value is lower than or equal to a specified limit.

Syntax

- **`default router-preference maximum`**
- **`router-preference maximum {none | high | low | medium}`**

Command Parameters

maximum {none | high | low | medium}	Verifies if the advertised default router-preference parameter value is lower than or equal to a specified limit.

Default

None

Command Mode

RA-guard Configuration

Chapter 20: RIP Router Configuration

default-metric (for RIP)

Configure RIP default import metric. This value is used by RIP announce of OSPF internal routes if the policy does not specify metric. 0 is used for deconfiguration.

Syntax

- **default default-metric**
- **default-metric <0-15>**

Command Parameters

<0-15> Configures the value of default import metric to import a route into RIP domain.

Default

The default value is 8.

Command Mode

RIP Router Configuration

ipv6 default-information enable

Enable IPv6 default information enable.

Syntax

- **default ipv6 default-information enable**
- **ipv6 default-information enable**
- **no ipv6 default-information enable**

Default

The default is disabled.

Command Mode

RIP Router Configuration

ipv6 default-information metric

Configure IPv6 default route metric value.

Syntax

- **default ipv6 default-information metric**
- **ipv6 default-information metric <1-15>**

Command Parameters

<1-15>	Specifies the IPv6 route metric value.

Default

None

Command Mode

RIP Router Configuration

ipv6 redistribute bgp enable

Enable BGP redistribute.

Syntax

- **default ipv6 redistribute bgp enable**
- **ipv6 redistribute bgp enable**
- **no ipv6 redistribute bgp enable**

Default

The default is disabled.

Command Mode

RIP Router Configuration

ipv6 redistribute bgp enable (For RIPng)

Enable IPv6 BGP redistribute.

Syntax

- **ipv6 redistribute bgp enable**

Default

None

Command Mode

RIP Router Configuration

ipv6 redistribute direct enable

Enable direct redistribute.

Syntax

- **default ipv6 redistribute direct enable**
- **ipv6 redistribute direct enable**
- **no ipv6 redistribute direct enable**

Default

The default is disabled.

Command Mode

RIP Router Configuration

ipv6 redistribute isis enable

Enable ISIS redistribute.

Syntax

- **default ipv6 redistribute isis enable**
- **ipv6 redistribute isis enable**
- **no ipv6 redistribute isis enable**

Default

The default is disabled.

Command Mode

RIP Router Configuration

ipv6 redistribute ospf enable

Enable OSPF redistribute.

Syntax

- **default ipv6 redistribute ospf enable**
- **ipv6 redistribute ospf enable**
- **no ipv6 redistribute ospf enable**

Default

The default is disabled.

Command Mode

RIP Router Configuration

ipv6 redistribute static enable

Enable static redistribute.

Syntax

- **default ipv6 redistribute static enable**
- **ipv6 redistribute static enable**
- **no ipv6 redistribute static enable**

Default

The default is disabled.

Command Mode

RIP Router Configuration

ipv6 timers basic holddown

Configure RIPng holddown timer.

Syntax

- **ipv6 timers basic holddown <0-360>**

Command Parameters

<0-360>	Specifies the RIPng holddown timer in seconds.

Default

None

Command Mode

RIP Router Configuration

ipv6 timers basic timeout

Configure RIPng timeout timer.

Syntax

- **ipv6 timers basic timeout <0-360>**

Command Parameters

<0-360>	Specifies the RIPng timeout timer in seconds.

Default

None

Command Mode

RIP Router Configuration

ipv6 timers basic update

Configure RIPng update timer.

Syntax

- **ipv6 timers basic update <0-360>**

Command Parameters

<0-360>	Specifies the RIPng update timer in seconds.

Default

None

Command Mode

RIP Router Configuration

network (for RIP)

Enable RIP on a network.

Syntax

- **network {A.B.C.D}**
- **no network {A.B.C.D}**

Command Parameters

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

Default

None

Command Mode

RIP Router Configuration

redistribute (for RIP)

Redistribute learned routes into RIP.

Syntax

- **default redistribute { direct | isis | ospf | rip | static }**
- **default redistribute { direct | isis | ospf | rip | static } enable**
- **default redistribute { direct | isis | ospf | rip | static } enable vrf-src WORD<0-16>**
- **default redistribute { direct | isis | ospf | rip | static } metric**
- **default redistribute { direct | isis | ospf | rip | static } metric vrf-src WORD<0-16>**
- **default redistribute { direct | isis | ospf | rip | static } route-map**
- **default redistribute { direct | isis | ospf | rip | static } route-map vrf-src WORD<0-16>**
- **default redistribute { direct | isis | ospf | rip | static } vrf-src WORD<0-16>**
- **default redistribute WORD<0-32>**
- **default redistribute WORD<0-32> enable**
- **default redistribute WORD<0-32> enable vrf-src WORD<0-16>**
- **default redistribute WORD<0-32> metric**
- **default redistribute WORD<0-32> metric vrf-src WORD<0-16>**
- **default redistribute WORD<0-32> route-map**
- **default redistribute WORD<0-32> route-map vrf-src WORD<0-16>**
- **default redistribute WORD<0-32> vrf-src WORD<0-16>**
- **no redistribute { direct | isis | ospf | rip | static }**
- **no redistribute { direct | isis | ospf | rip | static } enable**
- **no redistribute { direct | isis | ospf | rip | static } enable vrf-src WORD<0-16>**

- **no redistribute { direct | isis | ospf | rip | static } route-map**
- **no redistribute { direct | isis | ospf | rip | static } route-map vrf-src WORD<0-16>**
- **no redistribute { direct | isis | ospf | rip | static } vrf-src WORD<0-16>**
- **no redistribute WORD<0-32>**
- **no redistribute WORD<0-32> enable**
- **no redistribute WORD<0-32> enable vrf-src WORD<0-16>**
- **no redistribute WORD<0-32> route-map**
- **no redistribute WORD<0-32> route-map vrf-src WORD<0-16>**
- **no redistribute WORD<0-32> vrf-src WORD<0-16>**
- **redistribute { direct | isis | ospf | rip | static }**
- **redistribute { direct | isis | ospf | rip | static } enable**
- **redistribute { direct | isis | ospf | rip | static } enable vrf-src WORD<0-16>**
- **redistribute { direct | isis | ospf | rip | static } metric <0-65535>**
- **redistribute { direct | isis | ospf | rip | static } metric <0-65535> vrf-src WORD<0-16>**
- **redistribute { direct | isis | ospf | rip | static } route-map WORD<0-64>**
- **redistribute { direct | isis | ospf | rip | static } route-map WORD<0-64> vrf-src WORD<0-16>**
- **redistribute { direct | isis | ospf | rip | static } vrf-src WORD<0-16>**
- **redistribute WORD<0-32>**
- **redistribute WORD<0-32> enable**
- **redistribute WORD<0-32> enable vrf-src WORD<0-16>**
- **redistribute WORD<0-32> metric <0-65535>**
- **redistribute WORD<0-32> metric <0-65535> vrf-src WORD<0-16>**
- **redistribute WORD<0-32> route-map WORD<0-64>**
- **redistribute WORD<0-32> route-map WORD<0-64> vrf-src WORD<0-16>**
- **redistribute WORD<0-32> vrf-src WORD<0-16>**

Command Parameters

enable	Enables route redistribution of Intermediate-System-to-Intermediate-System (ISIS) learned IP routes into RIP.

metric <0-65535>	Configures the metric (cost) to apply to redistributed routes. The default is 1.
route-map WORD<0-64>	Configures the route policy to apply to redistributed routes.
vrf-src WORD<0-16>	Specifies the source VRF instance. This parameter is not required for redistribution within the same VRF.
WORD<0-32>	Specifies the protocol type. The possible values are bgp, direct, isis, ospf, rip, or static.

Default

By default, route redistribution is disabled.

Command Mode

RIP Router Configuration

timers basic holddown (for RIP)

Configures the RIP hold-down timer value, the length of time (in seconds) that RIP continues to advertise a network after determining that it is unreachable.

Syntax

- **default timers basic holddown**
- **timers basic holddown <0-360>**

Command Parameters

<0-360>	Configures the holddown timer value.

Default

The default is 120 seconds.

Command Mode

RIP Router Configuration

timers basic timeout

Configure the RIP timeout interval.

Syntax

- **default timers basic timeout**

- **timers basic timeout <15-259200>**
- **timers basic timeout <15-259200> [holddown <0-360>] [update <1-360>]**

Command Parameters

<15-259200>	Configures the value of default import metric to import a route into RIP domain.
holddown <0-360>	Configures the RIP hold-down timer value, the length of time (in seconds) that RIP continues to advertise a network after it determines that the network is unreachable. The default is 120.
update <1-360>	Configures the RIP update timer. The update time is the time interval, in seconds, between RIP updates. The default is 30.

Default

The default value is 180.

Command Mode

RIP Router Configuration

timers basic update

Configure the RIP update timer. The update time is the time interval between RIP updates.

Syntax

- **default timers basic update**
- **timers basic update <1-360>**

Command Parameters

<1-360>	Configures the update interval.

Default

The default is 30 seconds.

Command Mode

RIP Router Configuration

Chapter 21: Route-Map Configuration

enable (for a route policy)

Enable the route policy.

Syntax

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

Default

The default is disable.

Command Mode

Route-Map Configuration

match as-path

If configured, the switch Match the as-path attribute of the Border Gateway Protocol (BGP) routes against the contents of the specified AS-lists. This command is used only for BGP routes and ignored for all other route types.

Syntax

- `default match as-path WORD<0-256>`
- `match as-path WORD<0-256>`
- `no match as-path WORD<0-256>`

Command Parameters

WORD<0-256>	Specifies the list IDs of AS-lists, separated by a comma.

Default

None

Command Mode

Route-Map Configuration

match community

If configured, the switch Match the community attribute of the BGP routes against the contents of the specified community lists. This command is used only for BGP routes and ignored for all other route types.

Syntax

- **default match community WORD<0-256>**
- **match community WORD<0-256>**
- **no match community WORD<0-256>**

Command Parameters

WORD<0-256>	Specifies the list IDs of up to four defined community lists, separated by a comma.

Default

None

Command Mode

Route-Map Configuration

match community-exact

When disabled, match community-exact results in a match when the community attribute of the BGP routes match any entry of any community-list specified in match community. When enabled, match community-exact results in a match when the community attribute of the BGP routes Match all of the entries of all the community lists specified in match community.

Syntax

- **default match community-exact**
- **default match community-exact enable**
- **match community-exact**
- **match community-exact enable**
- **no match community-exact**
- **no match community-exact enable**

Command Parameters

enable	Enables match community-exact.

Default

The default is disable.

Command Mode

Route-Map Configuration

match extcommunity

Match the extended community.

Syntax

- **default match extcommunity WORD<0-1027>**
- **match extcommunity WORD<0-1027>**
- **no match extcommunity WORD<0-1027>**

Command Parameters

WORD<0-1027>	Specifies the list IDs of AS-lists, separated by a comma.

Default

None

Command Mode

Route-Map Configuration

match interface

Match the IP address of the interface by which the RIP route was learned against the contents of the specified prefix list. This command is used only for RIP routes and ignored for all other route types.

Syntax

- **default match interface WORD<0-259>**
- **match interface WORD<0-259>**
- **no match interface WORD<0-259>**

Command Parameters

WORD<0-259>	Specifies the name of up to four defined prefix lists, separated by a comma.

Default

None

Command Mode

Route-Map Configuration

match local-preference

Match the preference value from 0-2147483647.

Syntax

- **default match local-preference**
- **match local-preference <0-2147483647>**

Command Parameters

<0-2147483647>	Specifies the preference value.

Default

The default is 0.

Command Mode

Route-Map Configuration

match metric

Match the metric of the incoming advertisement or existing route against the specified value. If 0, this field is ignored.

Syntax

- **default match metric**
- **match metric <0-65535>**

Command Parameters

<0-65535>	Specifies the metric to match.

Default

The default is 0.

Command Mode

Route-Map Configuration

match metric-type-isis

Match ISIS metric type, applicable to ISIS only, ignored otherwise.

Syntax

- **default match metric-type-isis**
- **match metric-type-isis {any | internal | external}**

Command Parameters

{ any | internal | external}	Specifies IS-IS routes of the specified type. • internal – permits or denies routes that are internal to the IS-IS domain. • external – permits or denies routes that originate from an external routing protocol domain. • any – permits or denies both internal routes as well as external routes.

Default

The default is any.

Command Mode

Route-Map Configuration

match network

Match the destination network against the contents of the specified prefix lists.

Syntax

- **default match network WORD<0-259>**
- **match network WORD<0-259>**
- **no match network WORD<0-259>**

Command Parameters

WORD<0-259>	Specifies the name of up to four defined prefix lists, separated by a comma.

Default

None

Command Mode

Route-Map Configuration

match next-hop

Match the next-hop IP address of the route against the contents of the specified prefix list. This command applies only to nonlocal routes.

Syntax

- **default match next-hop WORD<0-259>**
- **match next-hop WORD<0-259>**
- **no match next-hop WORD<0-259>**

Command Parameters

WORD<0-259>	Specifies the name of up to four defined prefix lists, separated by a comma.

Default

None

Command Mode

Route-Map Configuration

match protocol

Match the protocol through which the route is learned.

Syntax

- **default match protocol**
- **match protocol WORD<0-60>**
- **no match protocol**
- **no match protocol WORD<0-60>**

Command Parameters

WORD<0-60>	Specifies the protocol as any|xxx, where xxx is local, OSPF, External BGP (EBGP), Internal BGP (IBGP), RIP, static, or any combination, in a string length 0 to 60.

Default

The default is any.

Command Mode

Route-Map Configuration

match route-source

Match the next-hop IP address for RIP routes and advertising router IDs for OSPF routes against the contents of the specified prefix list. This option is ignored for all other route types.

Syntax

- **default match route-source WORD<0-259>**
- **match route-source WORD<0-259>**
- **no match route-source WORD<0-259>**

Command Parameters

WORD<0-259>	Specifies the name of up to four defined prefix lists, separated by a comma.

Default

None

Command Mode

Route-Map Configuration

match route-type

Configure a specific route type to match. This command applies only to OSPF routes.

Syntax

- **default match route-type**
- **match route-type { any | local | internal | external | external-1 | external-2 }**

Command Parameters

{ any | local | internal | external | external-1 | external-2}	Specifies OSPF routes of the specified type only (External-1 or External-2). Any other value is ignored.

Default

The default is any.

Command Mode

Route-Map Configuration

match tag

Specify a list of tags used during the match criteria process.

Syntax

- **default match tag**
- **match tag WORD<0-256>**

- **no match tag**

Command Parameters

WORD<0-256>	Specifies one or more tag values.

Default

None

Command Mode

Route-Map Configuration

match vrf

Configure a specific VRF to match.

Syntax

- **default match vrf WORD<1-16>**
- **match vrf WORD<1-16>**
- **no match vrf WORD<1-16>**

Command Parameters

WORD<1-16>	Specifies the VRF name.

Default

None

Command Mode

Route-Map Configuration

match vrfids

Configure a specific VRF to match.

Syntax

- **default match vrfids WORD<0-511>**
- **match vrfids WORD<0-511>**
- **no match vrfids WORD<0-511>**

Command Parameters

WORD<0-511>	Specifies the VRF ID.

Default

None

Command Mode

Route-Map Configuration

name

Rename a policy and changes the name field for all sequence numbers under the given policy.

Syntax

- **name WORD<1-64>**

Command Parameters

WORD<1-64>	Specifies the new name for the policy.

Default

None

Command Mode

Route-Map Configuration

permit

Specifies the action to take when a permit or deny policy is selected for a specific route. Permit allows the route, deny (no permit) ignores the route.

Syntax

- **default permit**
- **no permit**
- **permit**

Default

The default is permit.

Command Mode

Route-Map Configuration

set as-path

Add the AS number of the AS-list to the BGP routes that match this policy.

Syntax

- **default set as-path WORD<0-256>**
- **no set as-path WORD<0-256>**
- **set as-path WORD<0-256>**

Command Parameters

WORD<0-256>	Specifies the list ID of up to four defined AS-lists separated by a comma.

Default

None

Command Mode

Route-Map Configuration

set as-path-mode

Configure the AS path mode.

Syntax

- **default set as-path-mode**
- **set as-path-mode prepend**
- **set as-path-mode tag**

Command Parameters

prepend	Prepends the Autonomous System (AS) number of the AS-list specified in set-as-path to the old as-path attribute of the BGP routes that match this policy.
tag	Configures the Autonomous System (AS) path mode to tag.

Default

The default is prepend.

Command Mode

Route-Map Configuration

set automatic-tag

Configure the tag automatically. This command is used for BGP routes only.

Syntax

- **default set automatic-tag**
- **default set automatic-tag enable**
- **no set automatic-tag**
- **no set automatic-tag enable**
- **set automatic-tag**
- **set automatic-tag enable**

Command Parameters

enable	Enables this configuration.

Default

The default is disable.

Command Mode

Route-Map Configuration

set community

Add the community number of the community list to the BGP routes that match this policy.

Syntax

- **default set community WORD<0-256>**
- **no set community WORD<0-256>**
- **set community WORD<0-256>**

Command Parameters

WORD<0-256>	Specifies the list ID of up to four defined community lists separated by a comma.

Default

None

Command Mode

Route-Map Configuration

set community-mode

Configure the community mode.

Syntax

- **default set community-mode**
- **set community-mode additive**
- **set community-mode none**
- **set community-mode unchanged**

Command Parameters

additive	Prepends the community number of the community list specified in set-community to the old community path attribute of the BGP routes that match this policy.
none	Removes the community path attribute of the BGP routes that match this policy to the specified value.
unchanged	Configures the community mode to unchanged.

Default

The default is unchanged.

Command Mode

Route-Map Configuration

set injectlist

Replace the destination network of the route that Match this policy with the contents of the specified prefix list.

Syntax

- **default set injectlist**
- **no set injectlist**
- **set injectlist WORD<0-1027>**

Command Parameters

WORD<0-1027>	Specifies one prefix list by name.

Default

None

Command Mode

Route-Map Configuration

set ip-preference

Configure the preference to a value greater than 0. Specify the route preference value to assign to the routes that match this policy. This command applies to accept policies only.

Syntax

- **default set ip-preference**
- **set ip-preference <0-255>**

Command Parameters

<0-255>	Assigns the preference to the routes. If you configure the default, the global preference value is used.

Default

The default is 0.

Command Mode

Route-Map Configuration

set local-preference

Specify a value used during the route decision process in the BGP protocol. This command applies to BGP only.

Syntax

- **default set local-preference**
- **set local-preference <0-65535>**

Command Parameters

<0-65535>	Specifies the local preference value.

Default

The default is 0.

Command Mode

Route-Map Configuration

set mask

Configure the mask of the route that matches this policy. This command applies only to RIP accept policies.

Syntax

- **default set mask**
- **no set mask**
- **set mask {A.B.C.D}**

Command Parameters

{A.B.C.D}	Specifies a valid contiguous IP mask.

Default

The default is 0.0.0.0.

Command Mode

Route-Map Configuration

set metric

Configure the metric value for the route while announcing a redistribution. If you configure the default, the original cost of the route is advertised into OSPF; for RIP, the original cost of the route or defaultimport- metric is used.

Syntax

- **default set metric**
- **set metric <0-65535>**

Command Parameters

<0-65535>	Specifies a metric value.

Default

The default is 0.

Command Mode

Route-Map Configuration

set metric-type

Configure the metric type for the routes to announce into the OSPF domain that Match this policy. This command applies only for OSPF announce policies.

Syntax

- **default set metric-type**

- **set metric-type { type1 | type2 }**

Command Parameters

{ type1 | type2 }	Specifies the metric type to announce.

Default

The default is type 2.

Command Mode

Route-Map Configuration

set metric-type-internal

Configure the MED value for routes advertised to EBGP neighbors to the specified IGP metric value.

Syntax

- **default set metric-type-internal**
- **set metric-type-internal <0-1>**

Command Parameters

<0-1>	Specifies the Interior Gateway Protocol (IGP) metric value.

Default

The default is 0.

Command Mode

Route-Map Configuration

set metric-type-isis

Set ISIS metric type, applicable to ISIS only, ignored otherwise.

Syntax

- **default set metric-type-isis**
- **set metric-type-isis {any | internal | external}**

Command Parameters

{ any | internal | external}	Specifies IS-IS routes of the specified type. • internal – permits or denies routes that are internal to the IS-IS domain. • external – permits or denies routes that

originate from an external routing protocol domain. • any – permits or denies both internal routes as well as external routes.

Default

The default is any.

Command Mode

Route-Map Configuration

set next-hop

Specify the IPv4 or IPv6 address of the next-hop router.

Syntax

- **default set next-hop**
- **no set next-hop**
- **set next-hop WORD<1-256>**

Command Parameters

WORD<1-256>	Specifies the IP address of the next-hop router.

Default

None

Command Mode

Route-Map Configuration

set nssa-pbit

Configure the not so stubby area (NSSA) translation P bit. This command applies to OSPF announce policies only.

Syntax

- **default set nssa-pbit**
- **default set nssa-pbit enable**
- **no set nssa-pbit**
- **no set nssa-pbit enable**
- **set nssa-pbit**
- **set nssa-pbit enable**

Command Parameters

enable	Enables P bit translation.

Default

The default is enable.

Command Mode

Route-Map Configuration

set origin

Change the origin path attribute of the BGP routes that match this policy to the specified value.

Syntax

- **default set origin**
- **set origin { igp | egp | incomplete }**

Command Parameters

{ igp | egp | incomplete }	Specifies the origin path attribute.

Default

The default is unchanged.

Command Mode

Route-Map Configuration

set origin-egp-as

Configure the origin EGP autonomous system (AS). This command applies to BGP only.

Syntax

- **default set origin-egp-as**
- **set origin-egp-as <0-65535>**

Command Parameters

<0-65535>	Indicates the remote Autonomous System (AS) number.

Default

The default is 0.

Command Mode

Route-Map Configuration

set tag

Configure the tag of the destination routing protocol. If not specified, the switch forwards the tag value in the source routing protocol.

Syntax

- **default set tag**
- **set tag <0-65535>**

Command Parameters

<0-65535> Specifies the tag value. A value of 0 indicates that this parameter is not set.

Default

The default is 0.

Command Mode

Route-Map Configuration

set weight

Configure the weight for the routing table. This command applies to BGP only. This value overrides the weight configured through NetworkTableEntry, FilterListWeight, or NeighborWeight.

Syntax

- **default set weight**
- **set weight <0-65535>**

Command Parameters

<0-65535> Specifies the weight value. A value of 0 indicates that this parameter is not set.

Default

The default is 0.

Command Mode

Route-Map Configuration

set-metric-type-live-metric

Configure metric type for BGP routes. This command applies to BGP policies only, ignored otherwise.

Syntax

- **`default set-metric-type-live-metric`**
- **`set-metric-type-live-metric`**

Default

The default is disable.

Command Mode

Route-Map Configuration

Chapter 22: User EXEC

clear-stats

Clear port statistic counters.

Syntax

- `clear-stats`
- `clear-stats port {slot/port[/sub-port][-slot/port[/sub-port]][,...]}`
- `clear-stats port mgmt`

Command Parameters

port {slot/port[/sub-port][-slot/port[/sub-port]][,...]}	Identifies the slot and port in one of the following formats: a single slot and port (slot/port), a range of slots and ports (slot/port-slot/port), or a series of slots and ports (slot/port,slot/port,slot/port). If your platform supports channelization and the port is channelized, you must also specify the sub-port in the format slot/port/sub-port.
port mgmt	Clear the management port stats.

Default

None

Command Mode

User EXEC

clock set

Configure the calendar time in the form of month, day, year, hour, minute, and second.

Syntax

- `clock set <MMddyyyyhhmmss>`

Command Parameters

<MMddyyyyhhmmss>	Specifies the month, day, year, hours, minutes, and seconds.

Default

None

Command Mode

User EXEC

debug-file remove

Clears all types of debug files. To remove a specific file, use the remove command instead. Debug files include core, archive, dmalloc, wd_stats, PMEM and flrec files.

Syntax

- **debug-file remove**
- **debug-file remove {slot[-slot][,...]}**
- **debug-file remove {slot[-slot][,...]} all**
- **debug-file remove all**

Command Parameters

{slot[-slot][,...]}	Removes the debug files for one or more specific slots. You can specify a specific slot number , a range of slots, or use the value of all to view information for all slots. This parameter does not apply to all hardware platforms.
all	Removes all types of debug files. If you do not use this parameter, you remove all but the most recent file.

Default

None

Command Mode

User EXEC

dump ar

To aid in troubleshooting, a dump of the hardware records can be captured.

Syntax

- **dump ar <1> WORD <1-1536> <0-3>**

Command Parameters

<0-3>	Specifies the verbosity from 0 to 3. Higher numbers specify more verbosity.

WORD<1-1536>	Specifies a record type in the AR table. Options include vlan, ip_subnet, mac_vlan, mac, arp, ip, ipmc, ip_filter, protocol, all.

Default

None

Command Mode

User EXEC

eapol init

Initialize Extensible Authentication Protocol (EAPoL) administration traffic control direction.

Syntax

- **`eapol init`**
- **`eapol init {slot/port[/sub-port][-slot/port[/sub-port]][,...]}`**

Command Parameters

{slot/port[/sub-port][-slot/port[/sub-port]][,...]}	Identifies the slot and port in one of the following formats: a single slot and port (slot/port), a range of slots and ports (slot/port-slot/port), or a series of slots and ports (slot/port,slot/port,slot/port). If your platform supports channelization and the port is channelized, you must also specify the sub-port in the format slot/port/sub-port.
re-authenticate {slot/port[/sub-port][-slot/port[/sub-port]][,...]}	Starts re-authentication immediately. {slot/port[/sub-port][-slot/port[/sub-port]][,...]} identifies the slot and port in one of the following formats: a single slot and port (slot/port), a range of slots and ports (slot/port-slot/port), or a series of slots and ports (slot/port,slot/port,slot/port). If your platform supports channelization and the port is channelized, you must also specify the sub-port in the format slot/port/sub-port.

Default

None

Command Mode

User EXEC

eapol re-authenticate

Starts re-authentication immediately.

Syntax

- **eapol re-authenticate {slot/port[/sub-port][-slot/port[/sub-port]][,...]}**

Command Parameters

port {slot/port[/sub-port][-slot/port[/sub-port]][,...]}	Identifies the slot and port in one of the following formats: a single slot and port (slot/port), a range of slots and ports (slot/port-slot/port), or a series of slots and ports (slot/port,slot/port,slot/port). If your platform supports channelization and the port is channelized, you must also specify the sub-port in the format slot/port/sub-port.

Default

None

Command Mode

User EXEC

enable

Use this command to enter Privileged EXEC mode.

Syntax

- **enable**

Default

None

Command Mode

User EXEC

exit

Use this command to exit a command mode and enter the lower command mode. If you use this command in User EXEC mode, you end the current CLI session.

Syntax

- **exit**

Default

None

Command Mode

User EXEC

file-checksum

Calculates or compares a Message Digest 5 algorithm (MD5) or SHA512 digest for a specified file.

Syntax

- **file-checksum md5 WORD<1-99>**
- **file-checksum md5 WORD<1-99> -a**
- **file-checksum md5 WORD<1-99> -a -f**
- **file-checksum md5 WORD<1-99> -c**
- **file-checksum md5 WORD<1-99> -c -a**
- **file-checksum md5 WORD<1-99> -c -f**
- **file-checksum md5 WORD<1-99> -f WORD<1-99>**
- **file-checksum md5 WORD<1-99> -r**
- **file-checksum md5 WORD<1-99> -r -a**
- **file-checksum md5 WORD<1-99> -r -c**
- **file-checksum md5 WORD<1-99> -r -f**
- **file-checksum sha512 WORD<1-99>**
- **file-checksum sha512 WORD<1-99> -a**
- **file-checksum sha512 WORD<1-99> -a -f**
- **file-checksum sha512 WORD<1-99> -c**
- **file-checksum sha512 WORD<1-99> -c -a**
- **file-checksum sha512 WORD<1-99> -c -f**
- **file-checksum sha512 WORD<1-99> -f WORD<1-99>**
- **file-checksum sha512 WORD<1-99> -r**
- **file-checksum sha512 WORD<1-99> -r -a**
- **file-checksum sha512 WORD<1-99> -r -c**
- **file-checksum sha512 WORD<1-99> -r -f**

Command Parameters

-a	Adds data to the output file instead of overwriting it.
-c	Compares the checksum of the specified file with the checksum present in the checksum file name.

-f	Stores the result of the checksum to a file. If the output file specified is one of the reserved filenames on the switch, the command fails with the error message: Error: Invalid operation.
md5	Calculate or compare the Message Digest 5 algorithm (MD5) digest to verify the MD5 checksum for a specified file. The md5 command displays the output on screen or stores the output in a file that you specify.
-r	Reverses the output.
sha512	Calculate or compare the SHA512 digest for a file.
WORD<1-99>	Specifies the filename.

Default

None

Command Mode

User EXEC

help

Use this command to see parameters for a particular command. You can use this command in any mode. You can also request Help at any point by entering a question mark after a command, which shows the available options.

Syntax

- **help**
- **help WORD<1-255>**

Command Parameters

WORD<1-255>	Enters a command to see the options for that command.

Default

None

Command Mode

User EXEC

ip bgp apply redistribute

Configure a redistribute entry to announce routes of a certain source protocol type into the Border Gateway Protocol (BGP) domain, for example, static, Routing Information Protocol (RIP), or direct routes.

Syntax

- **ip bgp apply redistribute**
- **ip bgp apply redistribute direct**
- **ip bgp apply redistribute direct vrf WORD<1-16>**
- **ip bgp apply redistribute direct vrf-src WORD<1-16>**
- **ip bgp apply redistribute isis**
- **ip bgp apply redistribute isis vrf WORD<1-16>**
- **ip bgp apply redistribute isis vrf-src WORD<1-16>**
- **ip bgp apply redistribute ospf**
- **ip bgp apply redistribute ospf vrf WORD<1-16>**
- **ip bgp apply redistribute ospf vrf-src WORD<1-16>**
- **ip bgp apply redistribute rip**
- **ip bgp apply redistribute rip vrf WORD<1-16>**
- **ip bgp apply redistribute rip vrf-src WORD<1-16>**
- **ip bgp apply redistribute static**
- **ip bgp apply redistribute static vrf WORD<1-16>**
- **ip bgp apply redistribute static vrf-src WORD<1-16>**
- **ip bgp apply redistribute vrf WORD<1-16>**

Command Parameters

{direct|dvr|isis|ospf|rip|static|vrf}	Specifies the protocol type.
vrf WORD<1-16>	Specifies a VRF instance by name.
vrf-src WORD<1-16>	Specifies the source VRF instance. This parameter is not required for redistribution within the same VRF.

Default

None

Command Mode

User EXEC

ip bgp restart-bgp

Restart BGP for a particular peer.

Syntax

- `ip bgp restart-bgp`
- `ip bgp restart-bgp neighbor WORD<0-1536>`
- `ip bgp restart-bgp neighbor WORD<0-1536> soft-reconfiguration {in|out}`
- `ip bgp restart-bgp neighbor WORD<0-1536> vrf WORD<1-16>`
- `ip bgp restart-bgp vrf WORD<1-16>`
- `ip bgp restart-bgp vrf WORD<1-16> soft-reconfiguration {in|out}`

Command Parameters

soft-configuration {in|out}	Enables or disables soft-reconfiguration. If peer soft-reconfiguration is enabled in the in-bound direction, the policy can be changed and routes can be re-learned without having to reset the BGP connection. Enabling soft-reconfiguration, using the in parameter, causes the system to store all BGP routes in local memory. Even non-best routes will be stored if soft-configuration in is enabled. Setting the value to out forces the neighbor to send out all the updates to the remote neighbor without resetting the connection.
vrf WORD<1-16>	Applies the BGP configuration for a particular VRF.
WORD<1-1536>	Specifies the neighbor IP address or the neighbor group name.

Default

The default for soft-reconfiguration is: in

Command Mode

User EXEC

ip bgp stats-clear-counters

Clears the BGP configuration statistics.

Syntax

- `ip bgp stats-clear-counters`
- `ip bgp stats-clear-counters neighbor <nbr_ipaddr|peer-group-name>`
- `ip bgp stats-clear-counters vrf WORD<1-16>`

Command Parameters

neighbor <nbr_ipaddress| peer-groupname>	Clears the BGP configuration statistics for the peer IP address or the peer group name.
vrf WORD<1-16>	Clears the statistics for the BGP configuration for a particular VRF.

Default

None

Command Mode

User EXEC

ip ecmp path-list apply

Apply changes to all Equal Cost Multipath (ECMP) path-list configurations.

Syntax

- **ip ecmp path-list apply**
- **ip ecmp path-list apply vrf WORD<1-16>**
- **ip ecmp pathlist-apply**
- **ip ecmp pathlist-apply vrf WORD<1-16>**

Command Parameters

path-list apply	Apply changes to all Equal Cost Multipath (ECMP) path-list configurations.
vrf WORD<1-16>	Apply changes to all Equal Cost Multipath (ECMP) path-list configurations for a particular VRF.

Default

None

Command Mode

User EXEC

ip igmp flush port

Use this command to flush Internet Group Management Protocol (IGMP) group members on a port.

Syntax

- **ip igmp flush port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} grp-member**

Command Parameters

{slot/port[/sub-port][-slot/port[/sub-port]][,...]}	Identifies the slot and port in one of the following formats: a single slot and port (slot/port), a range of slots and ports (slot/port-slot/port), or a series of slots and ports (slot/port,slot/port,slot/port). If your platform supports channelization and the port is channelized, you must also specify the sub-port in the format slot/port/sub-port.
grp-member	Specifies a group member.

Default

None

Command Mode

User EXEC

ip igmp flush vlan

Use this command to flush Internet Group Management Protocol (IGMP) group members, the multicast router and senders.

Syntax

- **ip igmp flush vlan <1-4059>**
- **ip igmp flush vlan <1-4059> grp-member**
- **ip igmp flush vlan <1-4059> mrouter**
- **ip igmp flush vlan <1-4059> sender**
- **ip igmp flush vlan <1-4059> sender {A.B.C.D}**
- **ip igmp flush vlan <1-4059> sender {A.B.C.D} {A.B.C.D}**

Command Parameters

<1-4059>	Specifies the VLAN ID in the range of 1 to 4059. By default, VLAN IDs 1 to 4059 are configurable and the system reserves VLAN IDs 4060 to 4094 for internal use. If you enable VRF scaling and SPBM mode, the system also reserves VLAN IDs 3500 to 3998. VLAN ID 1 is the default VLAN and you cannot create or delete VLAN ID 1.
grp-member	Specifies a group member.
mrouter	Specifies a multicast router.
sender {A.B.C.D} {A.B.C.D}	Specifies a sender. The first IP address specifies the source IP address of the sender. The second IP address specifies the group IP address of the sender.

Default

None

Command Mode

User EXEC

ip ospf apply accept

Apply OSPF accept policy changes to allow the configuration changes in the policy to take effect in an OSPF Accept context (and to prevent the switch from attempting to apply the changes one by one after each configuration change).

Syntax

- **ip ospf apply accept**
- **ip ospf apply accept vrf WORD<1-16>**

Command Parameters

[vrf WORD<1-16>]	Specifies the name of the VRF.
apply	Commits entered changes. Issue this command after modifying any policy configuration that affects an OSPF accept policy.

Default

The default is disabled.

Command Mode

User EXEC

ip ospf apply accept adv-rtr

Apply the OSPF accept policy change to accept external routes from a specified advertising route.

Syntax

- **ip ospf apply accept adv-rtr {A.B.C.D}**
- **ip ospf apply accept adv-rtr {A.B.C.D} vrf WORD<1-16>**

Command Parameters

{A.B.C.D}	Specifies the advertising router IP address.
vrf WORD<1-16>	Specifies the configuration for a particular VRF. WORD<0-16> specifies the VRF name.

Default

None

Command Mode

User EXEC

ip ospf apply redistribute

Apply the OSPF redistribution.

Syntax

- **ip ospf apply redistribute**
- **ip ospf apply redistribute {bgp | direct | isis | ospf | rip | static |dvr}**
- **ip ospf apply redistribute {bgp | direct | isis | ospf | rip | static |dvr} vrf WORD<1-16>**
- **ip ospf apply redistribute {bgp | direct | isis | ospf | rip | static |dvr} vrf WORD<1-16> vrf-src WORD<1-16>**
- **ip ospf apply redistribute {bgp | direct | isis | ospf | rip | static |dvr} vrf-src WORD<1-16>**
- **ip ospf apply redistribute vrf WORD<1-16>**
- **ip ospf apply redistribute WORD<1-32>**
- **ip ospf apply redistribute WORD<1-32> vrf WORD<1-16>**
- **ip ospf apply redistribute WORD<1-32> vrf-src WORD<1-16>**

Command Parameters

{bgp | direct | isis | ospf | rip | static | dvr }	Specifies the type of routes to be redistributed (the protocol source), including BGP, RIP, OSPF, ISIS, DVR, static, and direct.
vrf WORD<1-16>	Specifies the VRF instance by name. When applying a redistribution instance that redistributes from a nonzero VRF to VRF 0 (the global router), do not specify the destination VRF; only specify the source VRF.
vrf-src WORD<1-16>	Specifies the source VRF instance. This parameter is not required for redistribution within the same VRF.

Default

None

Command Mode

User EXEC

ip ospf spf-run

Force the switch to update its shortest-path calculations so that the switch uses the latest OSPF routing information.

Syntax

- **ip ospf spf-run**
- **ip ospf spf-run vrf WORD<1-16>**

Command Parameters

vrf WORD<1-16>	Specifies a VRF instance by name.

Default

None

Command Mode

User EXEC

ip rip apply redistribute

Apply RIP redistribution.

Syntax

- **ip rip apply redistribute**
- **ip rip apply redistribute**
- **ip rip apply redistribute { direct | isis | ospf | rip | static }**
- **ip rip apply redistribute { direct | isis | ospf | rip | static } vrf WORD<1-16>**
- **ip rip apply redistribute { direct | isis | ospf | rip | static } vrf WORD<1-16> vrf-src WORD<1-16>**
- **ip rip apply redistribute { direct | isis | ospf | rip | static } vrf-src WORD<1-16>**
- **ip rip apply redistribute bgp**
- **ip rip apply redistribute bgp vrf WORD<1-16>**
- **ip rip apply redistribute bgp vrf-src WORD<1-16>**
- **ip rip apply redistribute direct**
- **ip rip apply redistribute direct vrf WORD<1-16>**
- **ip rip apply redistribute direct vrf-src WORD<1-16>**
- **ip rip apply redistribute dvr**

- **ip rip apply redistribute dvr vrf WORD<1-16>**
- **ip rip apply redistribute dvr vrf-src WORD<1-16>**
- **ip rip apply redistribute isis**
- **ip rip apply redistribute isis vrf WORD<1-16>**
- **ip rip apply redistribute isis vrf-src WORD<1-16>**
- **ip rip apply redistribute ospf**
- **ip rip apply redistribute ospf vrf WORD<1-16>**
- **ip rip apply redistribute ospf vrf-src WORD<1-16>**
- **ip rip apply redistribute rip**
- **ip rip apply redistribute rip vrf WORD<1-16>**
- **ip rip apply redistribute rip vrf-src WORD<1-16>**
- **ip rip apply redistribute static**
- **ip rip apply redistribute static vrf WORD<1-16>**
- **ip rip apply redistribute static vrf-src WORD<1-16>**
- **ip rip apply redistribute vrf WORD<1-16>**
- **ip rip apply redistribute vrf WORD<1-16>**
- **ip rip apply redistribute vrf WORD<1-16>**

Command Parameters

{ direct | isis | ospf | rip | static }	Specifies the type of routes to be redistributed (the protocol source), including OSPF, static, direct, RIP.
{bgp | direct | dvr | isis | ospf | rip | static | vrf}	Specifies the protocol type.
vrf WORD<1-16>	Specifies the VRF instance by name. When applying a redistribution instance that redistributes from a nonzero VRF to VRF 0 (the global router), do not specify the destination VRF; only specify the source VRF.
vrf WORD<1-16>	Specifies a VRF instance by name.
vrf-src WORD<0-16>	Specifies the source VRF instance. This parameter is not required for redistribution within the same VRF.
vrf-src WORD<1-16>	Specifies the source VRF instance. This parameter is not required for redistribution within the same VRF.

Default

None

Command Mode

User EXEC

ipv6 bgp apply redistribute

Apply bgp redistribute commands

Syntax

- **ipv6 bgp apply redistribute**
- **ipv6 bgp apply redistribute direct [vrf WORD<1-16]**
- **ipv6 bgp apply redistribute isis [vrf WORD<1-16]**
- **ipv6 bgp apply redistribute ospf [vrf WORD<1-16]**
- **ipv6 bgp apply redistribute rip**
- **ipv6 bgp apply redistribute static [vrf WORD<1-16]**
- **ipv6 bgp apply redistribute vrf WORD<1-16**

Command Parameters

direct	Enter the protocol type direct.
isis	Enter the protocol type isis.
ospf	Enter the protocol type ospf.
rip	Enter the protocol type ripng.
static	Enter the protocol type static.
vrf WORD<1-16>	Apply BGP configuration for a particular VRF.

Default

None

Command Mode

User EXEC

ipv6 mld flush

Flushes MLD group members and senders.

Syntax

- **ipv6 mld flush port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} grp-member**
- **ipv6 mld flush vlan <1-4059> grp-member**
- **ipv6 mld flush vlan <1-4059> sender**

Command Parameters

grp-member	Flushes MLD group members.
port {slot/port[/sub-port][-slot/port[/sub-port]][,...]}	Flushes MLD group members by brouter port.
sender	Flushes MLD senders.
vlan <1-4059>	Flushes MLD group members or senders by VLAN.

Default

None

Command Mode

User EXEC

ipv6 ospf apply redistribute

Apply the OSPF redistribution.

Syntax

- **ipv6 ospf apply redistribute**
- **ipv6 ospf apply redistribute {bgp | direct | isis | ospf | rip | static }**
- **ipv6 ospf apply redistribute {bgp | direct | isis | ospf | rip | static } vrf WORD<1-16>**
- **ipv6 ospf apply redistribute vrf WORD<1-16>**

Command Parameters

{ bgp| direct | isis | rip | static | vrf}	Specifies a protocol type.
vrf WORD<1-16>	Specifies the VRF name.

Default

None

Command Mode

User EXEC

isis apply accept

Apply IS-IS accept policy changes. This command can disrupt traffic and cause temporary traffic loss. After you apply accept policy changes, the command reapplies the accept policies, which deletes all of the IS-IS routes, and adds the IS-IS routes again. You should make all the relevant accept policy changes, and then apply the changes at the end.

Syntax

- **isis apply accept**
- **isis apply accept vrf WORD<1-16>**

Command Parameters

vrf WORD<1-16>	Specifies a VRF instance.

Default

None

Command Mode

User EXEC

isis apply redistribute

Apply the redistribution of the specified protocol into the Shortest Path Bridging MAC (SPBM) network.

Syntax

- **isis apply redistribute**
- **isis apply redistribute bgp**
- **isis apply redistribute bgp vrf WORD<1-16>**
- **isis apply redistribute direct**
- **isis apply redistribute direct vrf WORD<1-16>**
- **isis apply redistribute ospf**
- **isis apply redistribute ospf vrf WORD<1-16>**
- **isis apply redistribute rip**
- **isis apply redistribute rip vrf WORD<1-16>**
- **isis apply redistribute static**
- **isis apply redistribute static vrf WORD<1-16>**
- **isis apply redistribute vrf WORD<1-16>**

Command Parameters

{bgp | direct | isis | ospf | rip | static | vrf}	Specifies the protocol type.
WORD<1-16>	Specifies the VRF name.

Default

None

Command Mode

User EXEC

isis dup-detection-temp-disable

Temporarily disables isis duplicate detection

Syntax

- **isis dup-detection-temp-disable**

Default

None

Command Mode

User EXEC

l2 ping ip-address

Trigger a Layer 2 ping, which acts like a native ping. Enable Connectivity Fault Management (CFM) to debug Layer 2. It can also help you debug ARP problems by providing the ability to troubleshoot next hop ARP records.

Syntax

- **l2 ping ip-address WORD<0-255>**
- **l2 ping ip-address WORD<0-255> burst-count <1-200>**
- **l2 ping ip-address WORD<0-255> burst-count <1-200> priority <0-7>**
- **l2 ping ip-address WORD<0-255> burst-count <1-200> source-mode nodal**
- **l2 ping ip-address WORD<0-255> burst-count <1-200> source-mode smltVirtual**
- **l2 ping ip-address WORD<0-255> burst-count <1-200> testfill-pattern all-zero**
- **l2 ping ip-address WORD<0-255> burst-count <1-200> testfill-pattern all-zero-crc**

- **l2 ping ip-address WORD<0-255> burst-count <1-200> testfill-pattern pseudo-random-bit-sequence**
- **l2 ping ip-address WORD<0-255> burst-count <1-200> testfill-pattern pseudo-random-bit-sequence-crc**
- **l2 ping ip-address WORD<0-255> data-tlv-size <0-400>**
- **l2 ping ip-address WORD<0-255> frame-size <64-1500>**
- **l2 ping ip-address WORD<0-255> time-out <1-10>**
- **l2 ping ip-address WORD<0-255> vrf WORD<1-16>**

Command Parameters

burst-count <1-200>	Specifies the burst count.
data-tlv-size <0-400>	Specifies the data Type-Length-Value (TLV) size. The default is 0.
frame-size <64-1500>	Specifies the frame size. The default is 0.
priority <0-7>	Specifies the priority. The default is 7.
source-mode nodal	Specifies the source mode of nodal or smltVirtual. Nodal MPs provide both MEP and MIP functionality for SPBM deployments. Nodal MPs are associated with a B-VLAN and are VLAN encapsulated packets. The default is nodal.
source-mode smltVirtual	Specifies the source mode of nodal or smltVirtual. The switch supports SMLT interaction with SPBM. The platform uses two B-VIDs into the core from each pair of SMLT terminating nodes. Both nodes advertise the Nodal B-MAC into the core on both B-VIDS. In addition each node advertises the SMLT virtual B-MAC on one of the two B-VLANs. The default is nodal.
testfill-pattern all-zero	Specifies the testfill pattern. Range is: all-zero: null signal without cyclic redundancy check; all-zero-crc: null signal with cyclic redundancy check with 32-bit polynomial; pseudo-random-bit-sequence: PRBS without cyclic redundancy check; or pseudo-random-bit-sequence-crc: PBRS with cyclic redundancy check with 32-bit polynomial. A cyclic redundancy check is a code that detects errors. The default is all-zero.
testfill-pattern all-zero-crc	Specifies the testfill pattern. Range is: all-zero: null signal without cyclic redundancy check; all-zero-crc: null signal with cyclic redundancy check with 32-bit polynomial; pseudo-random-bit-sequence: PRBS without cyclic redundancy check; or pseudo-random-bit-sequence-crc: PBRS with cyclic redundancy check with 32-bit polynomial. A cyclic redundancy check is a code that detects errors. The default is all-zero.
testfill-pattern pseudo-random-bit-sequence	Specifies the testfill pattern. Range is: all-zero: null signal without cyclic redundancy check; all-zero-crc: null signal with cyclic redundancy check with 32-bit polynomial; pseudo-random-bit-sequence: PRBS without cyclic

	redundancy check; or pseudo-random-bit-sequence-crc: PBRS with cyclic redundancy check with 32-bit polynomial. A cyclic redundancy check is a code that detects errors. The default is all-zero.
testfill-pattern pseudo-random-bit-sequence-crc	Specifies the testfill pattern. Range is: all-zero: null signal without cyclic redundancy check; all-zero-crc: null signal with cyclic redundancy check with 32-bit polynomial; pseudo-random-bit-sequence: PRBS without cyclic redundancy check; or pseudo-random-bit-sequence-crc: PBRS with cyclic redundancy check with 32-bit polynomial. A cyclic redundancy check is a code that detects errors. The default is all-zero.
time-out <1-10>	Specifies the interval in seconds. The default is 3.
vrf WORD<1-16>	Specifies the VRF name.
WORD<0-255>	Specifies the IP address.

Default

None

Command Mode

User EXEC

l2 ping vlan

Trigger a Layer 2 ping, which acts like a native ping. Enable Connectivity Fault Management (CFM) to debug Layer 2. It can also help you debug ARP problems by providing the ability to troubleshoot next hop ARP records.

Syntax

- **l2 ping vlan <1-4059> mac <0x00:0x00:0x00:0x00:0x00:0x00> burst-count <1-200>**
- **l2 ping vlan <1-4059> mac <0x00:0x00:0x00:0x00:0x00:0x00> data-tlv-size <0-400>**
- **l2 ping vlan <1-4059> mac <0x00:0x00:0x00:0x00:0x00:0x00> frame-size <64-1500>**
- **l2 ping vlan <1-4059> mac <0x00:0x00:0x00:0x00:0x00:0x00> priority <0-7>**
- **l2 ping vlan <1-4059> mac <0x00:0x00:0x00:0x00:0x00:0x00> testfill-pattern all-zero**
- **l2 ping vlan <1-4059> mac <0x00:0x00:0x00:0x00:0x00:0x00> testfill-pattern all-zero-crc**
- **l2 ping vlan <1-4059> mac <0x00:0x00:0x00:0x00:0x00:0x00> testfill-pattern pseudo-random-bit-sequence**

- **l2 ping vlan <1-4059> mac <0x00:0x00:0x00:0x00:0x00:0x00> testfill-pattern pseudo-random-bit-sequence-crc**
- **l2 ping vlan <1-4059> mac <0x00:0x00:0x00:0x00:0x00:0x00> time-out <1-10>**
- **l2 ping vlan <1-4059> mac 0x00:0x00:0x00:0x00:0x00:0x00**
- **l2 ping vlan <1-4059> routernodename WORD<0-255>**
- **l2 ping vlan <1-4059> routernodename WORD<0-255>**
- **l2 ping vlan <1-4059> routernodename WORD<0-255> burst-count <1-200>**
- **l2 ping vlan <1-4059> routernodename WORD<0-255> data-tlv-size <0-400>**
- **l2 ping vlan <1-4059> routernodename WORD<0-255> frame-size <64-1500>**
- **l2 ping vlan <1-4059> routernodename WORD<0-255> priority <0-7>**
- **l2 ping vlan <1-4059> routernodename WORD<0-255> testfill-pattern all-zero**
- **l2 ping vlan <1-4059> routernodename WORD<0-255> testfill-pattern all-zero-crc**
- **l2 ping vlan <1-4059> routernodename WORD<0-255> testfill-pattern pseudo-random-bit-sequence**
- **l2 ping vlan <1-4059> routernodename WORD<0-255> testfill-pattern pseudo-random-bit-sequence-crc**
- **l2 ping vlan <1-4059> routernodename WORD<0-255> time-out <1-10>**

Command Parameters

<1-4059>	Specifies the VLAN ID in the range of 1 to 4059. By default, VLAN IDs 1 to 4059 are configurable and the system reserves VLAN IDs 4060 to 4094 for internal use. If you enable VRF scaling and SPBM mode, the system also reserves VLAN IDs 3500 to 3998. VLAN ID 1 is the default VLAN and you cannot create or delete VLAN ID 1.
burst-count <1-200>	Specifies the burst count.
data-tlv-size <0-400>	Specifies the data Type-Length-Value (TLV) size. The default is 0.
frame-size <64-1500>	Specifies the frame size. The default is 0.
mac <0x00:0x00:0x00:0x00:0x00:0x00>	Specifies the MAC address.
priority <0-7>	Specifies the priority. The default is 7.
routernodename WORD<0-255>	Specifies the router node name.

testfill-pattern all-zero	Specifies the testfill pattern. Range is: all-zero: null signal without cyclic redundancy check; all-zero-crc: null signal with cyclic redundancy check with 32-bit polynomial; pseudo-random-bit-sequence: PRBS without cyclic redundancy check; or pseudo-random-bit-sequence-crc: PBRS with cyclic redundancy check with 32-bit polynomial. A cyclic redundancy check is a code that detects errors. The default is all-zero.
testfill-pattern all-zero-crc	Specifies the testfill pattern. Range is: all-zero: null signal without cyclic redundancy check; all-zero-crc: null signal with cyclic redundancy check with 32-bit polynomial; pseudo-random-bit-sequence: PRBS without cyclic redundancy check; or pseudo-random-bit-sequence-crc: PBRS with cyclic redundancy check with 32-bit polynomial. A cyclic redundancy check is a code that detects errors. The default is all-zero.
testfill-pattern pseudo-random-bit-sequence	Specifies the testfill pattern. Range is: all-zero: null signal without cyclic redundancy check; all-zero-crc: null signal with cyclic redundancy check with 32-bit polynomial; pseudo-random-bit-sequence: PRBS without cyclic redundancy check; or pseudo-random-bit-sequence-crc: PBRS with cyclic redundancy check with 32-bit polynomial. A cyclic redundancy check is a code that detects errors. The default is all-zero.
testfill-pattern pseudo-random-bit-sequence-crc	Specifies the testfill pattern. Range is: all-zero: null signal without cyclic redundancy check; all-zero-crc: null signal with cyclic redundancy check with 32-bit polynomial; pseudo-random-bit-sequence: PRBS without cyclic redundancy check; or pseudo-random-bit-sequence-crc: PBRS with cyclic redundancy check with 32-bit polynomial. A cyclic redundancy check is a code that detects errors. The default is all-zero.
time-out <1-10>	Specifies the interval in seconds. The default is 3.

Default

None

Command Mode

User EXEC

l2 tracemroute

Trigger a Layer 2 multicast traceroute. Enable Connectivity Fault Management (CFM) to debug Layer 2.

Syntax

- `l2 tracemroute source {A.B.C.D} group {A.B.C.D}`
- `l2 tracemroute source {A.B.C.D} group {A.B.C.D} priority <0-7>`
- `l2 tracemroute source {A.B.C.D} group {A.B.C.D} ttl-value <1-255>`
- `l2 tracemroute source {A.B.C.D} group {A.B.C.D} vlan <1-4059>`
- `l2 tracemroute source {A.B.C.D} group {A.B.C.D} vrf WORD<1-16>`

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 <1-4059>	Specifies the VLAN ID in the range of 1 to 4059. By default, VLAN IDs 1 to 4059 are configurable and the system reserves VLAN IDs 4060 to 4094 for internal use. If you enable VRF scaling and SPBM mode, the system also reserves VLAN IDs 3500 to 3998. VLAN ID 1 is the default VLAN and you cannot create or delete VLAN ID 1.
vrf WORD<1-16>	Specifies the VRF name.

Default

None

Command Mode

User EXEC

l2 traceroute ip-address

Trigger a Layer 2 traceroute, which acts like native traceroute. Enable Connectivity Fault Management (CFM) to debug Layer 2. It can also help you debug ARP problems by providing the ability to troubleshoot next hop ARP records.

Syntax

- `l2 traceroute ip-address WORD<0-255>`

- **l2 traceroute ip-address WORD<0-255> ttl-value <1-255>**
- **l2 traceroute ip-address WORD<0-255> vrf WORD<1-16>**

Command Parameters

ip-address WORD<0-255>	Specifies the IP address.
priority <0-7>	Specifies the priority. The default is 7.
source-mode nodal	Specifies the source mode of nodal. Nodal MPs provide both MEP and MIP functionality for SPBM deployments. Nodal MPs are associated with a B-VLAN and are VLAN encapsulated packets. The default is nodal.
source-mode smltVirtual	Specifies the source mode of smltVirtual. The switch supports SMLT interaction with SPBM. The platform uses two B-VIDs into the core from each pair of SMLT terminating nodes. Both nodes advertise the Nodal B-MAC into the core on both B-VIDS. In addition each node advertises the SMLT virtual B-MAC on one of the two B-VLANs. The default is nodal.
ttl-value <1-255>	Specifies the time-to-live (TTL) value. The default is 64.
vrf WORD<1-16>	Specifies the VRF name.
WORD<0-255>	Specifies the IP address.

Default

None

Command Mode

User EXEC

Usage Guidelines

If you use this command on a DvR Leaf node, the output only shows DvR Controller IP addresses if the IP address or host route specified is unknown in the DvR domain.

l2 traceroute vlan

Trigger a Layer 2 traceroute, which acts like native traceroute. Enable Connectivity Fault Management (CFM) to debug Layer 2. It can also help you debug ARP problems by providing the ability to troubleshoot next hop ARP records.

Syntax

- **l2 traceroute vlan <1-4059> mac 0x00:0x00:0x00:0x00:0x00:0x00**
- **l2 traceroute vlan <1-4059> mac 0x00:0x00:0x00:0x00:0x00:0x00**
- **l2 traceroute vlan <1-4059> mac 0x00:0x00:0x00:0x00:0x00:0x00 priority <0-7>**

- **l2 traceroute vlan <1-4059> mac 0x00:0x00:0x00:0x00:0x00:0x00 ttl-value <1-255>**
- **l2 traceroute vlan <1-4059> routernodename WORD<0-255>**
- **l2 traceroute vlan <1-4059> routernodename WORD<0-255> priority <0-7>**
- **l2 traceroute vlan <1-4059> routernodename WORD<0-255> source-mode**
- **l2 traceroute vlan <1-4059> routernodename WORD<0-255> source-mode nodal ttl-value <1-255>**
- **l2 traceroute vlan <1-4059> routernodename WORD<0-255> source-mode smltVirtual ttl-value <1-255>**
- **l2 traceroute vlan <1-4059> routernodename WORD<0-255> ttl-value <1-255>**
- **l2 traceroute vlan <1-4059> mac 0x00:0x00:0x00:0x00:0x00:0x00 priority <0-7> source-mode nodal ttl-value <1-255>**
- **l2 traceroute vlan <1-4059> mac 0x00:0x00:0x00:0x00:0x00:0x00 priority <0-7> source-mode nodal ttl-value <1-255>**
- **l2 traceroute vlan <1-4059> mac 0x00:0x00:0x00:0x00:0x00:0x00 priority <0-7> source-mode smltVirtual ttl-value <1-255>**
- **l2 traceroute vlan <1-4059> mac 0x00:0x00:0x00:0x00:0x00:0x00 priority <0-7> source-mode smltVirtual ttl-value <1-255>**

Command Parameters

<1-4059>	Specifies the VLAN ID in the range of 1 to 4059. By default, VLAN IDs 1 to 4059 are configurable and the system reserves VLAN IDs 4060 to 4094 for internal use. If you enable VRF scaling and SPBM mode, the system also reserves VLAN IDs 3500 to 3998. VLAN ID 1 is the default VLAN and you cannot create or delete VLAN ID 1.
mac <0x00:0x00:0x00:0x00:0x00:0x00>	Specifies the MAC address.
priority <0-7>	Specifies the priority. The default is 7.
routernodename WORD<0-255>	Specifies the router node name.
ttl-value <1-255>	Specifies the time-to-live (TTL) value. The default is 64.

Default

None

Command Mode

User EXEC

l2 tracetree

Trigger a Layer 2 tracetree. Layer 2 tracetree allows a user to trigger a multicast link trace message (LTM) by specifying the Backbone VLAN (B-VLAN) and service instance identifier (I-SID). The command allows the user to view a multicast tree on the SPBM B-VLAN from the source node to the destination nodes for a particular I-SID.

Syntax

- `l2 tracetree <1-4059> <1-16777215>`
- `l2 tracetree <1-4059> <1-16777215> mac 0x00:0x00:0x00:0x00:0x00:0x00`
- `l2 tracetree <1-4059> <1-16777215> mac 0x00:0x00:0x00:0x00:0x00:0x00 priority <0-7>`
- `l2 tracetree <1-4059> <1-16777215> priority <0-7>`
- `l2 tracetree <1-4059> <1-16777215> routernodename WORD<0-255>`
- `l2 tracetree <1-4059> <1-16777215> routernodename WORD<0-255> priority <0-7>`
- `l2 tracetree <1-4059> <1-16777215> routernodename WORD<0-255> source-mode nodal ttl-value <1-255>`
- `l2 tracetree <1-4059> <1-16777215> routernodename WORD<0-255> source-mode smltVirtual ttl-value <1-255>`
- `l2 tracetree <1-4059> <1-16777215> routernodename WORD<0-255> ttl-value <1-255>`
- `l2 tracetree <1-4059> <1-16777215> source-mode nodal ttl-value <1-255>`
- `l2 tracetree <1-4059> <1-16777215> source-mode smltVirtual ttl-value <1-255>`
- `l2 tracetree <1-4059> <1-16777215> ttl-value <1-255>`

Command Parameters

<1-16777215>	Specifies the service instance identifier (I-SID).
<1-4059>	Specifies the VLAN ID in the range of 1 to 4059. By default, VLAN IDs 1 to 4059 are configurable and the system reserves VLAN IDs 4060 to 4094 for internal use. If you enable VRF scaling and SPBM mode, the system also reserves VLAN IDs 3500 to 3998. VLAN ID 1 is the default VLAN and you cannot create or delete VLAN ID 1.
mac <0x00:0x00:0x00:0x00:0x00:0x00>	Specifies the MAC address.
priority <0-7>	Specifies the priority value. The default is 7.
routernodename WORD<0-255>	Specifies the router node name.

source-mode nodal	Specifies the source mode of nodal. The default is nodal.
source-mode smltVirtual	Specifies the source mode of smltVirtual. The default is nodal.
ttl-value <1-255>	Specifies the time-to-live (TTL) value. The default is 64.

Default

None

Command Mode

User EXEC

l2 tracetree-fan

Trigger a Layer 2 tracetree-fan. Layer 2 tracetree-fan allows a user to trigger an LTM on the internal Fabric Area Network (FAN) I-SID.

Syntax

- `l2 tracetree-fan mac 0x00 : 0x00 : 0x00 : 0x00 : 0x00 : 0x00`
- `l2 tracetree-fan mac 0x00 : 0x00 : 0x00 : 0x00 : 0x00 : 0x00 priority <0-7>`
- `l2 tracetree-fan priority <0-7>`
- `l2 tracetree-fan routernodename WORD <0-255>`
- `l2 tracetree-fan routernodename WORD <0-255> priority <0-7>`
- `l2 tracetree-fan routernodename WORD <0-255> ttl-value <1-255>`
- `l2 tracetree-fan ttl-value <1-255>`

Command Parameters

mac <0x00:0x00:0x00:0x00:0x00:0x00>	Specifies the MAC address.
priority <0-7>	Specifies the priority value. The default is 7.
routernodename WORD<0-255>	Specifies the router node name.
ttl-value <1-255>	Specifies the time-to-live (TTL) value. The default is 64.

Default

None

Command Mode

User EXEC

line-card

Perform trace commands for input/output cards.

Syntax

- **line-card <1-4> trace grep WORD<0-1024>**
- **line-card <1-4> trace level <<Module_ID>> <0-4>**
- **line-card <1-4> trace level**
- **line-card <1-4> trace grep**

Command Parameters

<1-4>	Specifies the slot number. The number of slots supported depends on the hardware platform. For more information, see your hardware documentation.
grep <0-1024>	Greps the string in the range of 0 to 1024.
trace	Sets the trace level.
trace grep WORD<0-1024>	Greps the string in the range of 0 to 1024.
trace level <*Module_ID*> <0-4>	Sets the trace level. <*Module_ID*> specifies the module for the trace. Different platforms support different ID ranges because of feature support differences. To see which module IDs are available on your switch, use the **show trace modid-list** command or CLI command completion Help. <0-4> specifies the trace level.

Default

None

Command Mode

User EXEC

linktrace

Trigger a linktrace. The linktrace message is often compared to traceroute. A MEP transmits the Linktrace Message packet to a maintenance endpoint with intermediate points responding to indicate the path of the traffic within a domain for the purpose of fault isolation. The packet specifies the target MAC address of a MP, which is the SPBM system ID or the virtual SMLT MAC. MPs on the path to the target address respond with an LTR.

Syntax

- **linktrace WORD<0-22> WORD<0-22> <1-8191> <0x00:0x00:0x00:0x00:0x00:0x00>**
- **linktrace WORD<0-22> WORD<0-22> <1-8191> <0x00:0x00:0x00:0x00:0x00:0x00> detail**
- **linktrace WORD<0-22> WORD<0-22> <1-8191> <0x00:0x00:0x00:0x00:0x00:0x00> priority <0-7>**
- **linktrace WORD<0-22> WORD<0-22> <1-8191> <0x00:0x00:0x00:0x00:0x00:0x00> source-mode nodal**
- **linktrace WORD<0-22> WORD<0-22> <1-8191> <0x00:0x00:0x00:0x00:0x00:0x00> ttl-value <1-255>**
- **linktrace WORD<1-22> WORD<1-22> <1-8191> 0x00:0x00:0x00:0x00:0x00:0x00**
- **linktrace WORD<1-22> WORD<1-22> <1-8191> 0x00:0x00:0x00:0x00:0x00:0x00 detail**
- **linktrace WORD<1-22> WORD<1-22> <1-8191> 0x00:0x00:0x00:0x00:0x00:0x00 priority <0-7>**
- **linktrace WORD<1-22> WORD<1-22> <1-8191> 0x00:0x00:0x00:0x00:0x00:0x00 source-mode nodal**
- **linktrace WORD<1-22> WORD<1-22> <1-8191> 0x00:0x00:0x00:0x00:0x00:0x00 ttl-value <1-255>**

Command Parameters

<0-22 | 1-22 >	Specifies the Maintenance domain name. The range depends on the hardware platform.
<0x00:0x00:0x00:0x00:0x00:0x00>	Specifies the remote MAC address to reach the MEP/MIP.
<1-8191>	Specifies the MEP ID.
detail	Displays linktrace result details.
priority <0-7>	Specifies the priority. The default is 7.
source-mode nodal	Specifies the source mode as nodal.
ttl-value <1-255>	Specifies the time-to-live (TTL) value. The default is 64.

Default

None

Command Mode

User EXEC

login

Login to a different user access level.

Syntax

- `login`

Default

None

Command Mode

User EXEC

logout

Ends the current session.

Syntax

- `logout`

Default

None

Command Mode

User EXEC

loopback

Trigger the loopback test. The LBM packet is often compared to ping. A MEP transmits the loopback message to an intermediate or endpoint within a domain for the purpose of fault verification. This can be used to check the ability of the network to forward different sized frames.

Syntax

- **loopback WORD<0-22> WORD<0-22> <1-8191> <0x00:0x00:0x00:0x00:0x00:0x00>**
- **loopback WORD<0-22> WORD<0-22> <1-8191> <0x00:0x00:0x00:0x00:0x00:0x00> burst-count <1-200>**
- **loopback WORD<0-22> WORD<0-22> <1-8191> <0x00:0x00:0x00:0x00:0x00:0x00> data-tlv-size <0-400>**
- **loopback WORD<0-22> WORD<0-22> <1-8191> <0x00:0x00:0x00:0x00:0x00:0x00> frame-size <64-1500>**
- **loopback WORD<0-22> WORD<0-22> <1-8191> <0x00:0x00:0x00:0x00:0x00:0x00> priority <0-7>**
- **loopback WORD<0-22> WORD<0-22> <1-8191> <0x00:0x00:0x00:0x00:0x00:0x00> source-mode nodal**
- **loopback WORD<0-22> WORD<0-22> <1-8191> <0x00:0x00:0x00:0x00:0x00:0x00> testfill-pattern all-zero**
- **loopback WORD<0-22> WORD<0-22> <1-8191> <0x00:0x00:0x00:0x00:0x00:0x00> testfill-pattern all-zero-crc**
- **loopback WORD<0-22> WORD<0-22> <1-8191> <0x00:0x00:0x00:0x00:0x00:0x00> testfill-pattern pseudo-random-bit-sequence-crc**
- **loopback WORD<0-22> WORD<0-22> <1-8191> <0x00:0x00:0x00:0x00:0x00:0x00> time-out <1-10>**
- **loopback WORD<0-22> WORD<0-22> <1-8191>< 0x00:0x00:0x00:0x00:0x00:0x00> testfill-pattern pseudo-random-bit-sequence**
- **loopback WORD<1-22> WORD<1-22> <1-8191> 0x00:0x00:0x00:0x00:0x00:0x00**
- **loopback WORD<1-22> WORD<1-22> <1-8191> 0x00:0x00:0x00:0x00:0x00:0x00 burst-count <1-200>**
- **loopback WORD<1-22> WORD<1-22> <1-8191> 0x00:0x00:0x00:0x00:0x00:0x00 data-tlv-size <0-400>**
- **loopback WORD<1-22> WORD<1-22> <1-8191> 0x00:0x00:0x00:0x00:0x00:0x00 testfill-pattern all-zero-crc**
- **loopback WORD<1-22> WORD<1-22> <1-8191> 0x00:0x00:0x00:0x00:0x00:0x00 time-out <1-10>**
- **loopback WORD<1-22> WORD<1-22> <1-8191>**
- **loopback WORD<1-22> WORD<1-22> <1-8191> 0x00:0x00:0x00:0x00:0x00:0x00 frame-size <64-1500>**
- **loopback WORD<1-22> WORD<1-22> <1-8191> 0x00:0x00:0x00:0x00:0x00:0x00 interframe-interval <0-1000>**
- **loopback WORD<1-22> WORD<1-22> <1-8191> 0x00:0x00:0x00:0x00:0x00:0x00 priority <0-7>**

- **loopback WORD<1-22> WORD<1-22> <1-8191> 0x00:0x00:0x00:0x00:0x00:0x00 source-mode nodal**
- **loopback WORD<1-22> WORD<1-22> <1-8191> 0x00:0x00:0x00:0x00:0x00:0x00 source-mode smltVirtual**
- **loopback WORD<1-22> WORD<1-22> <1-8191> 0x00:0x00:0x00:0x00:0x00:0x00 testfill-pattern all-zero**
- **loopback WORD<1-22> WORD<1-22> <1-8191> 0x00:0x00:0x00:0x00:0x00:0x00 testfill-pattern pseudo-random-bit-sequence**
- **loopback WORD<1-22> WORD<1-22> <1-8191> 0x00:0x00:0x00:0x00:0x00:0x00 testfill-pattern pseudo-random-bit-sequence-crc**

Command Parameters

<0x00:0x00:0x00:0x00:0x00:0x00>	Specifies the remote MAC address to reach the MEP/MIP.
<1-8191>	Specifies the MEP ID.
burst-count <1-200>	Specifies the burst count.
data-tlv-size <0-400>	Specifies the data Type-Length-Value (TLV) size.
frame-size <64-1500>	Specifies the frame size. The default is 0.
interframe-interval <0-1000>	Specifies the interval between LBM frames in msecs. A value of 0 msecs indicates to send the frames as fast as possible. The default is 500.
priority <0-7>	Specifies the priority. The default is 7.
source-mode {nodal|noVlanMac| smltVirtual}	Specifies the source mode as nodal, noVlanMac, or smltVirtual. Use the smltVirtual value with B-VLANs only. Use the noVlanMac value with C-VLANs only. The default is nodal.
source-mode {nodal}	Specifies the source mode as nodal.
test-fill-pattern {all-zero|all-zero-crc| pseudo-random-bit-sequence|pseudo-random-bit-sequence-crc}	Specifies the testfill pattern: all-zero: null signal without cyclic redundancy check; all-zero-crc: null signal with cyclic redundancy check with 32-bit polynomial; pseudo-random-bit-sequence: PRBS without cyclic redundancy check; or pseudo-random-bit-sequence-crc: pseudo-random-bit-sequence with cyclic redundancy check with 32-bit polynomial. A cyclic redundancy check is a code that detects errors. The default is 1:all-zero.
time-out <1-10>	Specifies the time-out interval in seconds. The default is 3.

WORD<1-22> WORD<1-22>	The first parameter, specifies the Maintenance domain name. The second parameter, specifies the Maintenance association name.

Default

None

Command Mode

User EXEC

ls

Lists files in a directory.

Syntax

- **ls**
- **ls -r**
- **ls WORD<1-99>**

Command Parameters

-r	Recurse into directories.
WORD<1-99>	Specify the directory path name.

Default

None

Command Mode

User EXEC

manualtrigger ip rip interface

Sends a triggered update.

Syntax

- **manualtrigger ip rip interface vlan <1-4059>**

Command Parameters

vlan <1-4059>	Specifies the VLAN ID in the range of 1 to 4059. By default, VLAN IDs 1 to 4059 are configurable and the system reserves VLAN IDs 4060 to 4094 for internal use. If

you enable VRF scaling and SPBM mode, the system also reserves VLAN IDs 3500 to 3998. VLAN ID 1 is the default VLAN and you cannot create or delete VLAN ID 1.

Default

None

Command Mode

User EXEC

ping

Ping a device to test the connection between the switch and another network device. After you ping a device, the switch sends an Internet Control Message Protocol (ICMP) packet to the target device. If the device receives the packet, it sends a ping reply. After the switch receives the reply, a message appears that indicates traffic can reach the specified IP address. If the switch does not receive a reply, the message indicates the address is not responding.

Syntax

- **ping WORD<0-256>**
- **ping WORD<0-256> count <1-9999>**
- **ping WORD<0-256> count <1-9999> mgmt clip**
- **ping WORD<0-256> count <1-9999> mgmt vlan**
- **ping WORD<0-256> -d**
- **ping WORD<0-256> datasize <28-51200>**
- **ping WORD<0-256> datasize <28-51200> mgmt clip**
- **ping WORD<0-256> datasize <28-51200> mgmt vlan**
- **ping WORD<0-256> -I <1-60>**
- **ping WORD<0-256> interface gigabitEthernet {slot/port[sub-port]}**
- **ping WORD<0-256> interface mgmtEthernet mgmt**
- **ping WORD<0-256> interface tunnel <1-2000>**
- **ping WORD<0-256> interface vlan <1-4059>**
- **ping WORD<0-256> -s**
- **ping WORD<0-256> -s mgmt clip**
- **ping WORD<0-256> -s mgmt vlan**
- **ping WORD<0-256> scopeid <1-9999>**
- **ping WORD<0-256> source WORD<1-256>**
- **ping WORD<0-256> -t <1-120>**

- **ping WORD<0-256> -t <1-120> mgmt clip**
- **ping WORD<0-256> -t <1-120> mgmt vlan**
- **ping WORD<0-256> vrf WORD<1-16>**

Command Parameters

interface gigabitEthernet {slot/port[sub-port]}	Specifies a specific outgoing interface to use by IP address. {slot/port[sub-port]} identifies a single slot and port. If your platform supports channelization and the port is channelized, you must also specify the subport in the format slot/port/sub-port.
interface gigabitEthernet {slot/port[sub-port]} | tunnel <1-2000> | vlan <1-4059>	Specifies a specific outgoing interface to use by IP address. Additional ping interface filters: gigabitEthernet: {slot/port[sub-port]} gigabit vlan: Specifies the VLAN ID in the range of 1 to 4059. By default, VLAN IDs 1 to 4059 are configurable and the system reserves VLAN IDs 4060 to 4094 for internal use. If you enable VRF scaling and SPBM mode, the system also reserves VLAN IDs 3500 to 3998. VLAN ID 1 is the default VLAN and you cannot create or delete VLAN ID 1.
mgmt clip	Ping a network connection using a Segmented Management Instance. If you do not use the mgmt parameter, the ping command uses the VOSS IP routing stack to initiate the ping request.
mgmt vlan	Ping a network connection using a Segmented Management Instance. If you do not use the mgmt parameter, the ping command uses the VOSS IP routing stack to initiate the ping request.
WORD <0-256>	Specifies the host name or IPv4 (a.b.c.d) or IPv6 (x:x:x:x:x:x:x:x) address (string length 0-256). Specifies the address to ping.
WORD<0-256> count <1-9999>	Specifies the number of times to ping(for IPV4/IPV6).
WORD<0-256> -d	Configures the ping debug mode. This variable detects local software failures (ping related threads creation or write to sending socket) and receiving issues (ICMP packet too short or wrong ICMP packet type) (for IPV4/IPV6).
WORD<0-256> datasize <28-51200>	Specifies the size of ping data sent in bytes. The datasize for IPv4 addresses is <28-9216>. The datasize for IPv6 addresses is <28-51200>. The default is 0.
WORD<0-256> -I <1-60>	Specifies the interval between transmissions (for IPV4/IPV6).
WORD<0-256> interface mgmtEthernet mgmt	Specifies an IP address that will be used as the source IP address in the packet header.

WORD<0-256> interface tunnel <1-2000>	Specifies the tunnel interface.
WORD<0-256> interface vlan <1-4059>	Specifies the virtual routing and forwarding (VRF) name from 1-16 characters. Specify the MgmtRouter VRF if you need to run the ping operation through the management interface.
WORD<0-256> -s	Configures the continuous ping at the interval rate defined by the [-I] parameter (for IPV4/IPV6).
WORD<0-256> scopeid <1-9999>	Specifies the scope ID. <1-9999> specifies the circuit ID for IPv6.
WORD<0-256> source WORD<1-256>	Specifies an IP address that will be used as the source IP address in the packet header.
WORD<0-256> -t <1-120>	Specifies the no-answer timeout value in seconds (1-120) (for IPV4/ IPV6).
WORD<0-256> vrf WORD<1-16>	Specifies the virtual routing and forwarding (VRF) name from 1-16 characters. Specify the MgmtRouter VRF if you need to run the ping operation through the management interface.

Default

None

Command Mode

User EXEC

pwc

Prints the current working level.

Syntax

- **pwc**

Default

None

Command Mode

User EXEC

remove

Remove files or directories to free space.

Syntax

- **remove WORD<1-255>**
- **remove WORD<1-255> -y**

Command Parameters

WORD<1-255>	Specifies the file to rename.
WORD<1-255> -y	Skips the confirm question.

Default

None

Command Mode

User EXEC

show alarm database

Show the contents of alarm-log buffers

Syntax

- **show alarm database**
- **show alarm database alarm-id WORD<0-32>**
- **show alarm database alarm-status WORD<0-32>**
- **show alarm database alarm-type WORD<0-32>**
- **show alarm database event-code <0x0-0x00FFFFFF | 0x0-0x0>**
- **show alarm database module WORD<0-100>**
- **show alarm database severity WORD<0-25>**

Command Parameters

alarm-id WORD<0-32>	Alarm ID
alarm-status WORD<0-32>	Alarm status
alarm-type WORD<0-32>	Specifies the type of alarm.
event-code <0x0-0x00FFFFFF | 0x0-0x0>	Event Code

module WORD<0-100>	Module
severity WORD<0-25>	Severity

Default

None

Command Mode

User EXEC

show alarm statistics

Show the statistics of alarm-log buffers

Syntax

- **show alarm statistics**

Default

None

Command Mode

User EXEC

show application restconf

Show the RESTCONF configuration and operation status.

Syntax

- **show application restconf**

Default

None

Command Mode

User EXEC

Command Output

The **show application restconf** command displays the following information:

Output field	Description
Admin State	Specifies the administrative state of the RESTCONF application.

Table continues…

Output field	Description
TCP Port	Specifies the TCP port for the RESTCONF server.
Certificate File Status	Specifies the status of TLS/SSL certificate file whether it is installed or uninstalled.
TLS Enable	Specifies whether TLS/SSL is enabled or disabled for the RESTCONF server.
Trap Notification	Specifies whether trap notification is enabled or disabled when the RESTCONF server is not available.
Oper State	Specifies the operational status of the RESTCONF server.
Web Server Version	Specifies the RESTCONF web server version that is running on the device.
RESTCONF Server Version	Specifies the RESTCONF server version that is running on the device.

Example

The following example displays the RESTCONF configuration.

```
Switch:1>show application restconf
================================================================================
                                    RESTCONF Info
================================================================================
Admin State             : true
TCP Port                : 8080
Certificate File Status : install
TLS Enable              : false
Trap Notification       : true
Oper State              : up
Web Server Version      : 1.0.1.11
RESTCONF Server Version : 1.0.1.39
================================================================================
```

show application restconf conflict-ifname

Show conflicting interface name information. To enable RESTCONF the interface name (VLAN name, MLT name, and Port interface name) must be unique.

Syntax

- **show application restconf conflict-ifname**

Default

None

Command Mode

User EXEC

show application slamon agent

Display the configuration information of the SLA Mon agent application.

Syntax

- **show application slamon agent**

Default

None

Command Mode

User EXEC

show app-telemetry counter

Displays the Application Telemetry status counters.

Syntax

- **show app-telemetry counter**
- **show app-telemetry counter id <number>**
- **show app-telemetry counter name <rule>**

Command Parameters

id <1-2000>	Specifies the rule ID number.
id <1-2000>	Shows the counters for the specified rule number.
name WORD<1-32>	Specifies the name of the rule.
name WORD<1-32>	Shows the counters for the specified rule name.

Default

None

Command Mode

User EXEC

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

User EXEC

show autotopology

View topology message status to view the interconnections between Layer 2 devices in a network.

Syntax

- **show autotopology nmm-table**

Command Parameters

nmm-table	Displays topology table information.

Default

None

Command Mode

User EXEC

show banner

Display the banner information.

Syntax

- **show banner**

Default

None

Command Mode

User EXEC

show basic config

Display the basic switch configuration.

Syntax

- **show basic config**

Default

None

Command Mode

User EXEC

show bgp ipv6 aggregates

Display BGP IPv6 aggregates information.

Syntax

- **show bgp ipv6 aggregates [WORD <1-256>] [vrf WORD<1-16>] [vrfids WORD<0-512>]**
- **show bgp ipv6 aggregates vrf WORD<1-16>**
- **show bgp ipv6 aggregates vrfids WORD<0-512>**
- **show bgp ipv6 aggregates WORD<1-256>**

Command Parameters

vrf <WORD 1-16>	Specifies the VRF name.
vrfids <WORD 0-512>	Specifies VRF IDs.
WORD <1-256>	Specifies the IPv6 prefix and length.

Default

None

Command Mode

User EXEC

show bgp ipv6 imported-routes

Display BGP IPv6 imported-routes information.

Syntax

- **show bgp ipv6 imported-routes [WORD <1-256>] [longer-prefixes] [vrf WORD<1-16>] [vrfids WORD<0-512>]**
- **show bgp ipv6 imported-routes WORD<1-256>**
- **show bgp ipv6 imported-routes WORD<1-256> longer-prefixes**

Command Parameters

longer-prefixes	Shows long prefixes. the longer-prefixes indicate the mask length from any specified prefix to 32 (for example show from prefix A.B.C.D/len to A.B.C.D/32.)
vrf <WORD 1-16>	Specifies the VRF name.
vrfids <WORD 0-512>	Specifies VRF IDs.
WORD <1-256>	Specifies the IPv6 prefix and length.

Default

None

Command Mode

User EXEC

show bgp ipv6 neighbors

Display BGP IPv6 neighbors.

Syntax

- **show bgp ipv6 neighbors WORD <1-256> vrf WORD<1-16>**
- **show bgp ipv6 neighbors WORD <1-256> vrf WORD<1-16> vrfids WORD<0-512>**
- **show bgp ipv6 neighbors WORD <1-256> vrfids WORD<0-512>**
- **show bgp ipv6 neighbors WORD<1-256> advertised-routes**
- **show bgp ipv6 neighbors WORD<1-256> advertised-routes WORD<1-256>**
- **show bgp ipv6 neighbors WORD<1-256> advertised-routes WORD<1-256> longer-prefixes**
- **show bgp ipv6 neighbors WORD<1-256> routes**
- **show bgp ipv6 neighbors WORD<1-256> routes community disable**
- **show bgp ipv6 neighbors WORD<1-256> routes community enable**
- **show bgp ipv6 neighbors WORD<1-256> routes WORD<1-256>**
- **show bgp ipv6 neighbors WORD<1-256> routes WORD<1-256> longer-prefixes**

Command Parameters

advertised-routes WORD<1-256>	Displays information about BGP peer advertised routes. The IPv6 address is optional.
community <disable | enable>	Enables the display of community attributes.
longer-prefixes	Shows long prefixes. The longer-prefixes indicate the mask length from any specified prefix to 32 (for example, show from prefix a.b.c.d/len to a.b.c.d/32).
routes WORD<1-256>	Displays information about BGP peer routes.
vrf <WORD 1-16>	Specifies the VRF name.
vrfids <WORD 0-512>	Specifies VRF IDs.
WORD<1-256>	Specifies the IPv4 or IPv6 address.

Default

None

Command Mode

User EXEC

show bgp ipv6 networks

Display information about BGP network configurations.

Syntax

- **show bgp ipv6 networks WORD <1-256> vrf WORD<1-16>**
- **show bgp ipv6 networks WORD <1-256> vrf WORD<1-16> vrfids WORD<0-512>**
- **show bgp ipv6 networks WORD <1-256> vrfids WORD<0-512>**
- **show bgp ipv6 networks WORD<1-256>**

Command Parameters

vrf <WORD 1-16>	Specifies the VRF name.
vrfids <WORD 0-512>	Specifies VRF IDs.
WORD <1-256>	Specifies IPv6 prefix and length in the range of 1 to 256

Default

None

Command Mode

User EXEC

show bgp ipv6 redistributed-routes

Display BGP IPv6 redistributed-routes information.

Syntax

- **show bgp ipv6 redistributed-routes vrf WORD<1-16>**
- **show bgp ipv6 redistributed-routes [vrf WORD<1-16>] [vrfids WORD<0-512>]**
- **show bgp ipv6 redistributed-routes vrfids WORD<0-512>**

Command Parameters

vrf <WORD 1-16>	Specifies the VRF name.
vrfids <WORD 0-512>	Specifies VRF IDs.

Default

None

Command Mode

User EXEC

show bgp ipv6 route

Display information about BGP IPv6 routes.

Syntax

- **show bgp ipv6 route vrfids WORD<0-512>**
- **show bgp ipv6 route community {disable|enable}**
- **show bgp ipv6 route ipv6 WORD<1-256>**
- **show bgp ipv6 route vrf WORD<1-16>**
- **show bgp ipv6 route vrf WORD<1-16> vrfids WORD<0-512>**
- **show bgp ipv6 route WORD <1-256>**
- **show bgp ipv6 route WORD<1-256> longer-prefixes**

Command Parameters

community {disable|enable}	Enables or disables the display of community attributes.
ipv6 WORD<1-256>	Specifies an IPv6 address.
longer-prefixes	Shows long prefixes. the longer-prefixes indicate the mask length from any specified prefix to 32 (for example show from prefix A.B.C.D/len to A.B.C.D/32.)
vrf <WORD 1-16>	Specifies the VRF name.
vrfids <WORD 0-512>	Specifies VRF IDs.
WORD <1-256>	Specifies IPv6 address and length in the range of 1 to 256

Default

None

Command Mode

User EXEC

show bgp ipv6 summary

Shows a summary of BGP peering over IPv6 transport.

Syntax

- **show bgp ipv6 summary vrf WORD<1-16>**
- **show bgp ipv6 summary vrf WORD<1-16> vrfids WORD<0-512>**
- **show bgp ipv6 summary vrfids WORD<0-512>**

Command Parameters

vrf <WORD 1-16>	Specifies the VRF name.
vrfids <WORD 0-512>	Specifies VRF IDs.

Default

None

Command Mode

User EXEC

show brouter

Show brouter port information.

Syntax

- **show brouter**

Default

None

Command Mode

User EXEC

show certificate ca

Display the certificate authority details.

Syntax

- **show certificate ca WORD<1–45>**

Command Parameters

WORD<1–45>	Specifies name of the Certificate Authority. If the name is not specified, the command displays the CA details of all configured CA.

Default

None

Command Mode

User EXEC

show certificate cert-type

Displays the digital certificate for given certificate type or lists all the certificate details from the local store for given certificate type.

Syntax

- **show certificate cert-type intermediate-ca-cert WORD<1-80>**
- **show certificate cert-type offline-ca-cert**
- **show certificate cert-type offline-subject-cert**
- **show certificate cert-type online-ca-cert**

- **show certificate cert-type online-subject-cert**
- **show certificate cert-type root-ca-cert WORD<1-80>**

Command Parameters

intermediate-ca-cert WORD<1-80>	Specifies the intermediate certificate obtained offline from Certificate Authority.
offline-ca-cert	Specifies Certificate Authority certificate obtained offline from Certificate Authority
offline-subject-cert	Specifies subject certificate obtained offline from Certificate Authority.
online-ca-cert	Specifies Certificate Authority Certificate obtained online from Certificate Authority.
online-subject-cert	Specifies subject certificate obtained online from Certificate Authority.
root-ca-cert WORD<1-80>	Specifies root certificate obtained offline from Root Certificate Authority.

Default

None

Command Mode

User EXEC

show certificate key-name

Displays the name and public key of all the key-pairs.

Syntax

- **show certificate key-name**

Default

None

Command Mode

User EXEC

show certificate subject

Displays the details of the configured subject.

Syntax

- **show certificate subject**

Default

None

Command Mode

User EXEC

show cfm cmac

Displays the global CFM CMAC configuration for the C-VLAN. This command does not apply to all hardware platforms.

Syntax

- **show cfm cmac**

Default

None

Command Mode

User EXEC

show cfm maintenance-association

Display the Connectivity Fault Management (CFM) Maintenance-Association configuration. An MA represents a logical grouping of monitored entities within its Maintenance Domain.

Syntax

- **show cfm maintenance-association**

Default

None

Command Mode

User EXEC

show cfm maintenance-domain

Display the Connectivity Fault Management (CFM) Maintenance-Domain configuration. A Maintenance-Domain is the part of a network that is controlled by a single administrator. A single MD may contain several Maintenance-Associations (MA).

Syntax

- **show cfm maintenance-domain**

Default

None

Command Mode

User EXEC

show cfm maintenance-endpoint

Display the Connectivity Fault Management Maintenance Endpoint configuration. A Maintenance Endpoint (MEP) represents a managed CFM entity, associated with a specific Domain Service Access Point of a service instance, which can generate and receive CFM Protocol Data Units (PDUs) and track any responses. MEP functionality can be divided into the following functions: Fault Detection, Fault Verification, Fault Isolation and Fault Notification.

Syntax

- **show cfm maintenance-endpoint**

Default

None

Command Mode

User EXEC

show cfm spbm

Displays the global CFM MEP configuration for SPBM VLANs.

Syntax

- **show cfm spbm**

Default

None

Command Mode

User EXEC

show cli info

Display general Console settings.

Syntax

- **show cli info**

Default

None

Command Mode

User EXEC

show cli password

Display CLI usernames and passwords.

Syntax

- **show cli password**

Default

None

Command Mode

User EXEC

show clilog

Verify the configuration and view the log file. This command only applies to log files generated by releases earlier than Release 3.2. Not all hardware platforms support these earlier releases. The command is replaced by show logging file module clilog. For more information about software release support on your platform, see Release Notes for XA1400 Series.

Syntax

- **show clilog**
- **show clilog [file] [tail] [grep WORD<1-256>]**

Command Parameters

file	Shows the log file.
grep WORD <1-256>	Shows the last results first.
tail	Performs a string search in the log file. WORD <1-256> is the string, of up to 256 characters in length, to match.

Default

None

Command Mode

User EXEC

show clock

Display the current time.

Syntax

- **`show clock`**
- **`show clock detail`**
- **`show clock time-zone`**

Command Parameters

detail	Displays detailed date information.
time-zone	Displays the local time-zone configuration.

Default

None

Command Mode

User EXEC

show debug

Shows debugging configuration.

Syntax

- **`show debug ip pim`**

- **show debug ipv6 pim**

Command Parameters

ip pim	Shows the configuration of IP PIM debugging commands.
ipv6 pim	Shows the configuration of IPv6 PIM debugging commands.

Default

None

Command Mode

User EXEC

show dvr

Displays a summary of the DvR configuration on a DvR Controller or a DvR Leaf.

Syntax

- **show dvr**

Command Parameters

none	Displays a summary of the DvR configuration on a DvR Controller or a DvR Leaf.

Default

none

Command Mode

User EXEC

show dvr backbone-entries

Displays the DvR backbone entries.

Syntax

- **show dvr backbone-entries**

Default

None

Command Mode

User EXEC

show dvr backbone-entries adv-controller

Displays the DvR backbone entries for a specific advertising controller.

Syntax

- **show dvr backbone-entries adv-controller WORD<1-255>**
- **show dvr backbone-entries adv-controller WORD<1-255> domain-id <1-255>**
- **show dvr backbone-entries adv-controller WORD<1-255> domain-id <1-255> host-mac-address 0x00:0x00:0x00:0x00:0x00:0x00**
- **show dvr backbone-entries adv-controller WORD<1-255> domain-id <1-255> host-mac-address 0x00:0x00:0x00:0x00:0x00:0x00 ipv4 {A.B.C.D}**
- **show dvr backbone-entries adv-controller WORD<1-255> domain-id <1-255> host-mac-address 0x00:0x00:0x00:0x00:0x00:0x00 ipv4 {A.B.C.D} l2isid <1-16777215>**
- **show dvr backbone-entries adv-controller WORD<1-255> domain-id <1-255> host-mac-address 0x00:0x00:0x00:0x00:0x00:0x00 ipv4 {A.B.C.D} l2isid <1-16777215> l3isid <1-16777215>**
- **show dvr backbone-entries adv-controller WORD<1-255> domain-id <1-255> host-mac-address 0x00:0x00:0x00:0x00:0x00:0x00 ipv4 {A.B.C.D} l2isid <1-16777215> l3isid <1-16777215> next-hop WORD<1-255>**
- **show dvr backbone-entries adv-controller WORD<1-255> domain-id <1-255> host-mac-address 0x00:0x00:0x00:0x00:0x00:0x00 ipv4 {A.B.C.D} l2isid <1-16777215> l3isid <1-16777215> next-hop WORD<1-255> nh-as-mac**
- **show dvr backbone-entries adv-controller WORD<1-255> host-mac-address 0x00:0x00:0x00:0x00:0x00:0x00**
- **show dvr backbone-entries adv-controller WORD<1-255> host-mac-address 0x00:0x00:0x00:0x00:0x00:0x00 ipv4 {A.B.C.D}**
- **show dvr backbone-entries adv-controller WORD<1-255> host-mac-address 0x00:0x00:0x00:0x00:0x00:0x00 ipv4 {A.B.C.D} l2isid <1-16777215>**
- **show dvr backbone-entries adv-controller WORD<1-255> host-mac-address 0x00:0x00:0x00:0x00:0x00:0x00 ipv4 {A.B.C.D} l2isid <1-16777215> l3isid <1-16777215>**
- **show dvr backbone-entries adv-controller WORD<1-255> host-mac-address 0x00:0x00:0x00:0x00:0x00:0x00 ipv4 {A.B.C.D} l2isid <1-16777215> l3isid <1-16777215> next-hop WORD<1-255>**
- **show dvr backbone-entries adv-controller WORD<1-255> host-mac-address 0x00:0x00:0x00:0x00:0x00:0x00 ipv4 {A.B.C.D} l2isid <1-16777215> l3isid <1-16777215> next-hop WORD<1-255> nh-as-mac**
- **show dvr backbone-entries adv-controller WORD<1-255> ipv4 {A.B.C.D}**
- **show dvr backbone-entries adv-controller WORD<1-255> ipv4 {A.B.C.D} l2isid <1-16777215>**
- **show dvr backbone-entries adv-controller WORD<1-255> ipv4 {A.B.C.D} l2isid <1-16777215> l3isid <1-16777215>**

- **show dvr backbone-entries adv-controller WORD<1-255> ipv4 {A.B.C.D} l2isid <1-16777215> l3isid <1-16777215> next-hop WORD<1-255>**
- **show dvr backbone-entries adv-controller WORD<1-255> ipv4 {A.B.C.D} l2isid <1-16777215> l3isid <1-16777215> next-hop WORD<1-255> nh-as-mac**
- **show dvr backbone-entries adv-controller WORD<1-255> l2isid <1-16777215>**
- **show dvr backbone-entries adv-controller WORD<1-255> l2isid <1-16777215> l3isid <1-16777215>**
- **show dvr backbone-entries adv-controller WORD<1-255> l2isid <1-16777215> l3isid <1-16777215> next-hop WORD<1-255>**
- **show dvr backbone-entries adv-controller WORD<1-255> l2isid <1-16777215> l3isid <1-16777215> next-hop WORD<1-255> nh-as-mac**
- **show dvr backbone-entries adv-controller WORD<1-255> l3isid <1-16777215>**
- **show dvr backbone-entries adv-controller WORD<1-255> l3isid <1-16777215> next-hop WORD<1-255>**
- **show dvr backbone-entries adv-controller WORD<1-255> l3isid <1-16777215> next-hop WORD<1-255> nh-as-mac**
- **show dvr backbone-entries adv-controller WORD<1-255> next-hop WORD<1-255>**
- **show dvr backbone-entries adv-controller WORD<1-255> next-hop WORD<1-255> nh-as-mac**
- **show dvr backbone-entries adv-controller WORD<1-255> nh-as-mac**

Command Parameters

domain-id <1-255>	Specifies the domain ID for advertising controller.
host-mac-address 0x00:0x00:0x00:0x00:0x00:0x00	Specifies the host MAC address for advertising controller.
ipv4 {A.B.C.D}	Specifies the IPv4 address for advertising controller.
l2isid <1-16777215>	Specifies the Layer 2 I-SID for advertising controller.
l3isid <1-16777215>	Specifies the Layer 3 I-SID for advertising controller.
next-hop WORD<1-255>	Specifies the next hop node for advertising controller.
nh-as-mac	Specifies the next hop node with specific MAC address for advertising controller.

WORD<1-255>	Specifies the advertising controller.

Default

None

Command Mode

User EXEC

show dvr backbone-entries domain-id

Displays the DvR backbone entries for a specific domain ID.

Syntax

- **show dvr backbone-entries domain-id<1-255>**
- **show dvr backbone-entries domain-id<1-255> host-mac-address 0x00:0x00:0x00:0x00:0x00:0x00**
- **show dvr backbone-entries domain-id<1-255> host-mac-address 0x00:0x00:0x00:0x00:0x00:0x00 ipv4 {A.B.C.D}**
- **show dvr backbone-entries domain-id<1-255> host-mac-address 0x00:0x00:0x00:0x00:0x00:0x00 ipv4 {A.B.C.D} l2isid <1-16777215>**
- **show dvr backbone-entries domain-id<1-255> host-mac-address 0x00:0x00:0x00:0x00:0x00:0x00 ipv4 {A.B.C.D} l2isid <1-16777215> l3isid <1-16777215>**
- **show dvr backbone-entries domain-id<1-255> host-mac-address 0x00:0x00:0x00:0x00:0x00:0x00 ipv4 {A.B.C.D} l2isid <1-16777215> l3isid <1-16777215> next-hop WORD<1-255>**
- **show dvr backbone-entries domain-id<1-255> host-mac-address 0x00:0x00:0x00:0x00:0x00:0x00 ipv4 {A.B.C.D} l2isid <1-16777215> l3isid <1-16777215> next-hop WORD<1-255> nh-as-mac**
- **show dvr backbone-entries domain-id<1-255> ipv4 {A.B.C.D}**
- **show dvr backbone-entries domain-id<1-255> ipv4 {A.B.C.D} l2isid <1-16777215>**
- **show dvr backbone-entries domain-id<1-255> ipv4 {A.B.C.D} l2isid <1-16777215> l3isid <1-16777215>**
- **show dvr backbone-entries domain-id<1-255> ipv4 {A.B.C.D} l2isid <1-16777215> l3isid <1-16777215> next-hop WORD<1-255>**
- **show dvr backbone-entries domain-id<1-255> ipv4 {A.B.C.D} l2isid <1-16777215> l3isid <1-16777215> next-hop WORD<1-255> nh-as-mac**
- **show dvr backbone-entries domain-id<1-255> l2isid <1-16777215>**
- **show dvr backbone-entries domain-id<1-255> l2isid <1-16777215> l3isid <1-16777215>**

- **show dvr backbone-entries domain-id<1-255> l2isid <1-16777215> l3isid <1-16777215>**
- **show dvr backbone-entries domain-id<1-255> l2isid <1-16777215> l3isid <1-16777215> next-hop WORD<1-255>**
- **show dvr backbone-entries domain-id<1-255> l2isid <1-16777215> l3isid <1-16777215> next-hop WORD<1-255> nh-as-mac**
- **show dvr backbone-entries domain-id<1-255> l3isid <1-16777215>**
- **show dvr backbone-entries domain-id<1-255> l3isid <1-16777215> next-hop WORD<1-255>**
- **show dvr backbone-entries domain-id<1-255> l3isid <1-16777215> next-hop WORD<1-255> nh-as-mac**
- **show dvr backbone-entries domain-id<1-255> next-hop WORD<1-255>**
- **show dvr backbone-entries domain-id<1-255> next-hop WORD<1-255> nh-as-mac**
- **show dvr backbone-entries domain-id<1-255> nh-as-mac**

Command Parameters

<1-255>	Specifies the domain ID.
host-mac-address 0x00:0x00:0x00:0x00:0x00:0x00	Specifies the host MAC address for domain ID.
ipv4 {A.B.C.D}	Specifies the IPv4 address for domain ID.
l2isid <1-16777215>	Specifies the Layer 2 I-SID for domain ID.
l3isid <1-16777215>	Specifies the Layer 3 I-SID for domain ID.
next-hop WORD<1-255>	Specifies the next hop node for domain ID.
nh-as-mac	Specifies the next hop node with specific MAC address for domain ID.

Default

None

Command Mode

User EXEC

show dvr backbone-entries host-mac-address

Displays the DvR backbone entries for a specific host MAC address.

Syntax

- **show dvr backbone-entries host-mac-address 0x00:0x00:0x00:0x00:0x00:0x00**
- **show dvr backbone-entries host-mac-address 0x00:0x00:0x00:0x00:0x00:0x00 ipv4 {A.B.C.D}**
- **show dvr backbone-entries host-mac-address 0x00:0x00:0x00:0x00:0x00:0x00 ipv4 {A.B.C.D} l2isid <1-16777215>**
- **show dvr backbone-entries host-mac-address 0x00:0x00:0x00:0x00:0x00:0x00 ipv4 {A.B.C.D} l2isid <1-16777215> l3isid <1-16777215>**
- **show dvr backbone-entries host-mac-address 0x00:0x00:0x00:0x00:0x00:0x00 ipv4 {A.B.C.D} l2isid <1-16777215> l3isid <1-16777215>**
- **show dvr backbone-entries host-mac-address 0x00:0x00:0x00:0x00:0x00:0x00 ipv4 {A.B.C.D} l2isid <1-16777215> l3isid <1-16777215> next-hop WORD<1-255>**
- **show dvr backbone-entries host-mac-address 0x00:0x00:0x00:0x00:0x00:0x00 ipv4 {A.B.C.D} l2isid <1-16777215> l3isid <1-16777215> next-hop WORD<1-255> nh-as-mac**
- **show dvr backbone-entries host-mac-address 0x00:0x00:0x00:0x00:0x00:0x00 l2isid <1-16777215>**
- **show dvr backbone-entries host-mac-address 0x00:0x00:0x00:0x00:0x00:0x00 l2isid <1-16777215> l3isid <1-16777215>**
- **show dvr backbone-entries host-mac-address 0x00:0x00:0x00:0x00:0x00:0x00 l2isid <1-16777215> l3isid <1-16777215> next-hop WORD<1-255>**
- **show dvr backbone-entries host-mac-address 0x00:0x00:0x00:0x00:0x00:0x00 l2isid <1-16777215> l3isid <1-16777215> next-hop WORD<1-255> nh-as-mac**
- **show dvr backbone-entries host-mac-address 0x00:0x00:0x00:0x00:0x00:0x00 l3isid <1-16777215>**
- **show dvr backbone-entries host-mac-address 0x00:0x00:0x00:0x00:0x00:0x00 l3isid <1-16777215> next-hop WORD<1-255>**
- **show dvr backbone-entries host-mac-address 0x00:0x00:0x00:0x00:0x00:0x00 l3isid <1-16777215> next-hop WORD<1-255> nh-as-mac**
- **show dvr backbone-entries host-mac-address 0x00:0x00:0x00:0x00:0x00:0x00 next-hop WORD<1-255>**
- **show dvr backbone-entries host-mac-address 0x00:0x00:0x00:0x00:0x00:0x00 next-hop WORD<1-255> nh-as-mac**
- **show dvr backbone-entries host-mac-address 0x00:0x00:0x00:0x00:0x00:0x00 nh-as-mac**

Command Parameters

0x00:0x00:0x00:0x00:0x00:0x00	Specifies the host MAC address.
ipv4 {A.B.C.D}	Specifies the IPv4 address for host MAC address.
l2isid <1-16777215>	Specifies the Layer 2 I-SID for host MAC address.
l3isid <1-16777215>	Specifies the Layer 3 I-SID for host MAC address.
next-hop WORD<1-255>	Specifies the next hop node for host MAC address.
nh-as-mac	Specifies the next hop node with specific MAC address for host MAC address.

Default

None

Command Mode

User EXEC

show dvr backbone-entries ipv4

Displays the DvR backbone entries for a specific IPv4 address.

Syntax

- **show dvr backbone-entries ipv4 {A.B.C.D}**
- **show dvr backbone-entries ipv4 {A.B.C.D} l2isid <1-16777215>**
- **show dvr backbone-entries ipv4 {A.B.C.D} l2isid <1-16777215> l3isid <1-16777215>**
- **show dvr backbone-entries ipv4 {A.B.C.D} l2isid <1-16777215> l3isid <1-16777215> next-hop WORD<1-255>**
- **show dvr backbone-entries ipv4 {A.B.C.D} l2isid <1-16777215> l3isid <1-16777215> next-hop WORD<1-255> nh-as-mac**
- **show dvr backbone-entries ipv4 {A.B.C.D} l3isid <1-16777215>**
- **show dvr backbone-entries ipv4 {A.B.C.D} l3isid <1-16777215> next-hop WORD<1-255>**
- **show dvr backbone-entries ipv4 {A.B.C.D} l3isid <1-16777215> next-hop WORD<1-255> nh-as-mac**
- **show dvr backbone-entries ipv4 {A.B.C.D} next-hop WORD<1-255>**
- **show dvr backbone-entries ipv4 {A.B.C.D} next-hop WORD<1-255> nh-as-mac**

- **show dvr backbone-entries ipv4 {A.B.C.D} nh-as-mac**

Command Parameters

{A.B.C.D}	Specifies the IPv4 address.
l2isid <1-16777215>	Specifies the Layer 2 I-SID for IPv4 address.
l3isid <1-16777215>	Specifies the Layer 3 I-SID for IPv4 address.
next-hop WORD<1-255>	Specifies the next hop node for IPv4 address.
nh-as-mac	Specifies the next hop node with specific MAC address for IPv4 address.

Default

None

Command Mode

User EXEC

show dvr backbone-entries l2isid

Displays the DvR backbone entries for a specific Layer 2 I-SID.

Syntax

- **show dvr backbone-entries l2isid <1-16777215>**
- **show dvr backbone-entries l2isid <1-16777215> l3isid <1-16777215>**
- **show dvr backbone-entries l2isid <1-16777215> l3isid <1-16777215> next-hop WORD<1-255>**
- **show dvr backbone-entries l2isid <1-16777215> l3isid <1-16777215> next-hop WORD<1-255> nh-as-mac**
- **show dvr backbone-entries l2isid <1-16777215> next-hop WORD<1-255>**
- **show dvr backbone-entries l2isid <1-16777215> next-hop WORD<1-255> nh-as-mac**
- **show dvr backbone-entries l2isid <1-16777215> nh-as-mac**

Command Parameters

<1-16777215>	Specifies the Layer 2 I-SID.
l3isid <1-16777215>	Specifies the Layer 3 I-SID for Layer 2 I-SID.
next-hop WORD<1-255>	Specifies the next hop node for Layer 2 I-SID.

nh-as-mac	Specifies the next hop node with specific MAC address for Layer 2 I-SID.

Default

None

Command Mode

User EXEC

show dvr backbone-entries l3isid

Displays the DvR backbone entries for a specific Layer 3 I-SID.

Syntax

- **show dvr backbone-entries l3isid <1-16777215>**
- **show dvr backbone-entries l3isid <1-16777215> next-hop WORD<1-255>**
- **show dvr backbone-entries l3isid <1-16777215> next-hop WORD<1-255> nh-as-mac**
- **show dvr backbone-entries l3isid <1-16777215> nh-as-mac**

Command Parameters

<1-16777215>	Specifies the Layer 3 I-SID.
next-hop WORD<1-255>	Specifies the next hop node for Layer 3 I-SID.
nh-as-mac	Specifies the next hop node with specific MAC address for Layer 3 I-SID.

Default

None

Command Mode

User EXEC

show dvr backbone-entries next-hop

Displays the DvR backbone entries for a specific next hop node.

Syntax

- **show dvr backbone-entries next-hop WORD<1-255>**

- **show dvr backbone-entries next-hop WORD<1-255> nh-as-mac**

Command Parameters

nh-as-mac	Specifies the next hop node with specific MAC address for next-hop.
WORD<1-255>	Specifies the next hop node.

Default

None

Command Mode

User EXEC

show dvr backbone-entries nh-as-mac

Displays the DvR backbone entries for a specific next hop node with a specific MAC address.

Syntax

- **show dvr backbone-entries nh-as-mac**

Default

None

Command Mode

User EXEC

show dvr backbone-members

Displays information about the DvR backbone members. DvR backbone members are either DvR Controllers or non-DvR BEBs that receive redistributed host routes from all other DvR Controllers in the SPB network.

Syntax

- **show dvr backbone-members**
- **show dvr backbone-members controller**
- **show dvr backbone-members non-dvr-beb**

Command Parameters

controller	Displays information about DvR backbone members that are Controllers.
non-dvr-beb	Displays information about DvR backbone members that are non-DvR BEBs.

none	Displays information about the DvR backbone members. DvR backbone members are either DvR Controllers or non-DvR BEBs that receive redistributed host routes from all other DvR Controllers in the SPB network.

Default

none

Command Mode

User EXEC

show dvr database

Display DvR database information.

Syntax

- **show dvr database ipv4 {A.B.C.D}**
- **show dvr database l3isid <1-16777215>**
- **show dvr database nh-as-mac type <1-2>**
- **show dvr database vrf WORD <1-16>**
- **show dvr database vrfids WORD<0-512>**

Command Parameters

ipv4 {A.B.C.D}	Displays database entries for a specific net.
l3isid <1-16777215>	Displays database entries for a particular l3isid.
nh-as-mac	Displays database entries next hop as mac.
vrf WORD <1-16>	Specifies a VRF instance by name.
vrfids WORD<0-512>	Specifies a range of VRFs by ID number.

Default

None

Command Mode

User EXEC

show dvr host-entries

Display DvR host-entries information.

Syntax

- **show dvr host-entries domain-id <1-255>**
- **show dvr host-entries ipv4 {A.B.C.D}**
- **show dvr host-entries l2isid <1-16777215>**
- **show dvr host-entries l3isid <1-16777215>**
- **show dvr host-entries nh-as-mac type <1-2>**
- **show dvr host-entries type <1-2>**
- **show dvr host-entries vrf WORD <1-16>**
- **show dvr host-entries vrfids WORD<0-512>**

Command Parameters

domain-id <1-255>	Displays host entries for a particular domain-id.
ipv4 {A.B.C.D}	Displays host entries for a specific net.
l2isid <1-16777215>	Displays host entries for a particular l2isid.
l3isid <1-16777215>	Displays host entries for a particular l3isid.
nh-as-mac	Displays host entries next hop as mac.
type <1-2>	Displays host entries for a particular type - 1= local, 2 = dynamic.
vrf WORD <1-16>	Specifies a VRF instance by name.
vrfids WORD<0-512>	Specifies a range of VRFs by ID number.

Default

None

Command Mode

User EXEC

show dvr interfaces

Displays the DvR interfaces on either a Controller or a Leaf node. On Controllers, DvR interfaces are created when you configure IP on a DvR enabled Layer 2 VSN (VLAN, I-SID). Only Controllers display the administrative state of the interfaces because this is where you enable or disable the interfaces. The Leaf nodes display DvR interface information that is pushed from the Controllers, for example, subnet routes or gateway IP addresses for the Layer 2 VSNs.

Syntax

- **show dvr interfaces**
- **show dvr interfaces l3isid <0-16777215>**
- **show dvr interfaces vrf WORD<1-16>**
- **show dvr interfaces vrfids WORD<0-512>**

Command Parameters

l3isid <0-16777215>	Displays the DvR interfaces for the specified Layer 3 I-SID.
none	Displays the DvR interfaces on either a Controller or a Leaf node. On Controllers, DvR interfaces are created when you configure IP on a DvR enabled Layer 2VSN (VLAN, I-SID). Only Controllers display the administrative state of the interfaces because this is where you enable or disable the interfaces. The Leaf nodes display DvR interface information that is pushed from the Controllers, for example, subnet routes or gateway IP addresses for the Layer 2 VSNs.
vrf WORD<1-16>	Displays the DvR interfaces for a specific VRF whose name is specified.
vrfids WORD<0-512>	Displays the DvR interfaces for a specific VRF whose VRF ID is specified.

Default

none

Command Mode

User EXEC

show dvr l3vsn

Displays VRFs corresponding to Layer 3 (routed) VSN I-SIDs on either a Controller or a Leaf node.

Syntax

- **show dvr l3vsn**
- **show dvr l3vsn l3isid <0-16777215>**
- **show dvr l3vsn l3isid <0-16777215> nh-as-mac**
- **show dvr l3vsn vrf WORD<1-16>**
- **show dvr l3vsn vrfids WORD<0-512>**

Command Parameters

l3isid <0-16777215>	Displays the Layer 3 VSN information for the specified Layer 3 I-SID.

none	Displays the Layer 3 VSN information on either a Controller or a Leaf node.
vrf WORD<1-16>	Displays the Layer 3 VSN information for a specific VRF whose name is specified.
vrfids WORD<0-512>	Displays the Layer 3 VSN information for a specific VRF whose VRF ID is specified.

Default

none

Command Mode

User EXEC

show dvr members

Displays the members of all DvR domains, namely the Controllers and Leaf nodes. You can view this information on either a Controller or a Leaf node. Both the Controller and the Leaf node displays those members of the DvR domain to which it belongs.

Syntax

- **show dvr members**
- **show dvr members controller**
- **show dvr members leaf**

Command Parameters

controller	Displays the members of the DvR domain that the specified Controller is a part of.
leaf	Displays the members of the DvR domain that the specified Leaf is a part of.
none	Displays the members of all DvR domains, namely the Controllers and Leaf nodes. You can view this information on either a Controller or a Leaf node. Both the Controller and the Leaf node displays those members of the DvR domain to which it belongs.

Default

none

Command Mode

User EXEC

show dvr redistribute

Displays the DvR domain redistribution information on a Controller or a Leaf node.

Syntax

- **show dvr redistribute**
- **show dvr redistribute vrf WORD<1-16>**
- **show dvr redistribute vrfids WORD<0-512>**

Command Parameters

none	Displays the DvR domain redistribution information on a Controller or a Leaf node.
vrf WORD<1-16>	Displays the DvR domain redistribution information for a VRF whose name is specfied.
vrfids WORD<0-512>	Displays the DvR domain redistribution information for a VRF whose VRF ID is specified.

Default

none

Command Mode

User EXEC

show dvr routes

Display dvr routes information.

Syntax

- **show dvr routes ipv4 {A.B.C.D}**
- **show dvr routes l3isid <1-16777215>**
- **show dvr routes nh-as-mac type <1-2>**
- **show dvr routes vrf WORD <1-16>**
- **show dvr routes vrfids WORD<0-512>**

Command Parameters

ipv4 {A.B.C.D}	Displays routes for a specific net.
l3isid <1-16777215>	Displays routes for a particular l3isid.
nh-as-mac	Displays routes next hop as mac.

vrf WORD <1-16>	Specifies a VRF instance by name.
vrfids WORD<0-512>	Specifies a range of VRFs by ID number.

Default

None

Command Mode

User EXEC

show eapol auth-diags interface

Display the Extensible Authentication Protocol (EAPoL) Authenticator diagnostics to manage network performance.

Syntax

- **show eapol auth-diags interface**
- **show eapol auth-diags interface gigabitethernet**
- **show eapol auth-diags interface gigabitethernet {slot/port[/sub-port][-slot/port[/sub-port]][,...]}**
- **show eapol auth-diags interface vlan <1-4059>**
- **show eapol auth-diags interface vlan <1-4059>{slot/port[/sub-port][-slot/port[/sub-port]][,...]}**

Command Parameters

gigabitethernet {slot/port[/sub-port][-slot/port[/sub-port]][,...]}	Identifies the slot and port in one of the following formats: a single slot and port (slot/port), a range of slots and ports (slot/port-slot/port), or a series of slots and ports (slot/port,slot/port,slot/port). If your platform supports channelization and the port is channelized, you must also specify the sub-port in the format slot/port/sub-port.
vlan <1-4059>	Specifies the VLAN ID in the range of 1 to 4059. By default, VLAN IDs 1 to 4059 are configurable and the system reserves VLAN IDs 4060 to 4094 for internal use. If you enable VRF scaling and SPBM mode, the system also reserves VLAN IDs 3500 to 3998. VLAN ID 1 is the default VLAN and you cannot create or delete VLAN ID 1.

Default

None

Command Mode

User EXEC

show eapol auth-stats interface

Display the Authenticator statistics to manage network performance.

Syntax

- **show eapol auth-stats interface**
- **show eapol auth-stats interface gigabitEthernet**
- **show eapol auth-stats interface gigabitEthernet {slot/port[/sub-port][-slot/port[/sub-port]][,...]}**
- **show eapol auth-stats interface vlan <1-4059>**
- **show eapol auth-stats interface vlan <1-4059> {slot/port[/sub-port][-slot/port[/sub-port]][,...]}**

Command Parameters

gigabitethernet {slot/port[/sub-port][-slot/port[/sub-port]][,...]}	Identifies the slot and port in one of the following formats: a single slot and port (slot/port), a range of slots and ports (slot/port-slot/port), or a series of slots and ports (slot/port,slot/port,slot/port). If your platform supports channelization and the port is channelized, you must also specify the sub-port in the format slot/port/sub-port.
vlan <1-4059>	Specifies the VLAN ID in the range of 1 to 4059. By default, VLAN IDs 1 to 4059 are configurable and the system reserves VLAN IDs 4060 to 4094 for internal use. If you enable VRF scaling and SPBM mode, the system also reserves VLAN IDs 3500 to 3998. VLAN ID 1 is the default VLAN and you cannot create or delete VLAN ID 1.

Default

None

Command Mode

User EXEC

show eapol multihost non-eap-mac status

Display non-EAP client MAC information on a port.

Syntax

- **show eapol multihost non-eap-mac status**
- **show eapol multihost non-eap-mac status interface gigabitEthernet {slot/port[/sub-port][-slot/port[/sub-port]][,...]}**

Command Parameters

{slot/port[/sub-port][-slot/port[/sub-port]][,...]}	Identifies the slot and port in one of the following formats: a single slot and port (slot/port), a range of slots and ports (slot/port-slot/port), or a series of slots and ports (slot/port,slot/port,slot/port). If your platform supports channelization and the port is channelized, you must also specify the sub-port in the format slot/port/sub-port.
vlan <1-4059>	Specifies the VLAN ID in the range of 1 to 4059. By default, VLAN IDs 1 to 4059 are configurable and the system reserves VLAN IDs 4060 to 4094 for internal use. If you enable VRF scaling and SPBM mode, the system also reserves VLAN IDs 3500 to 3998. VLAN ID 1 is the default VLAN and you cannot create or delete VLAN ID 1.

Default

None

Command Mode

User EXEC

show eapol port

Display Extensible Authentication Protocol (EAPoL) information for the specified port or interface type.

Syntax

- **show eapol port {slot/port[sub-port]}**
- **show eapol port interface gigabitEthernet**
- **show eapol port interface gigabitEthernet {slot/port[/sub-port][-slot/port[/sub-port]][,...]}**
- **show eapol port interface vlan <1-4059>**
- **show eapol port interface vlan <1-4059> [{slot/port[/sub-port][-slot/port[/sub-port]][,...]}]**

Command Parameters

{slot/port[sub-port]}	Identifies a single slot and port. If your platform supports channelization and the port is channelized, you must also specify the sub-port in the format slot/port/sub-port.
gigabitethernet {slot/port[/sub-port][-slot/port[/sub-port]][,...]}	Identifies the slot and port in one of the following formats: a single slot and port (slot/port), a range of slots and ports (slot/port-slot/port), or a series of slots and ports (slot/port,slot/port,slot/port). If your platform supports channelization and the port is channelized, you must also specify the sub-port in the format slot/port/sub-port.

vlan <1-4059>	Specifies the VLAN ID in the range of 1 to 4059. By default, VLAN IDs 1 to 4059 are configurable and the system reserves VLAN IDs 4060 to 4094 for internal use. If you enable VRF scaling and SPBM mode, the system also reserves VLAN IDs 3500 to 3998. VLAN ID 1 is the default VLAN and you cannot create or delete VLAN ID 1.

Default

None

Command Mode

User EXEC

show eapol session-stats interface

Display the port Extensible Authentication Protocol (EAPoL) authenticator session statistics for the specified interface type.

Syntax

- **show eapol session-stats interface**
- **show eapol session-stats interface gigabitethernet**
- **show eapol session-stats interface gigabitethernet {slot/port[/sub-port][-slot/port[/sub-port]][,...]}**
- **show eapol session-stats interface vlan <1-4059>**
- **show eapol session-stats interface vlan <1-4059> [{slot/port[/sub-port][-slot/port[/sub-port]][,...]}**

Command Parameters

gigabitethernet {slot/port[/sub-port][-slot/port[/sub-port]][,...]}	Identifies the slot and port in one of the following formats: a single slot and port (slot/port), a range of slots and ports (slot/port-slot/port), or a series of slots and ports (slot/port,slot/port,slot/port). If your platform supports channelization and the port is channelized, you must also specify the sub-port in the format slot/port/sub-port.
vlan <1-4059>	Specifies the VLAN ID in the range of 1 to 4059. By default, VLAN IDs 1 to 4059 are configurable and the system reserves VLAN IDs 4060 to 4094 for internal use. If you enable VRF scaling and SPBM mode, the system also reserves VLAN IDs 3500 to 3998. VLAN ID 1 is the default VLAN and you cannot create or delete VLAN ID 1.

Default

None

Command Mode

User EXEC

show eapol status interface

Display the port Extensible Authentication Protocol (EAPoL) operation statistics for the specified interface type.

Syntax

- **show eapol status interface**
- **show eapol status interface gigabitEthernet**
- **show eapol status interface gigabitEthernet {slot/port[/sub-port][-slot/port[/sub-port]][,...]}**
- **show eapol status interface vlan <1-4059>**
- **show eapol status interface vlan <1-4059> {slot/port[/sub-port][-slot/port[/sub-port]][,...]}**

Command Parameters

gigabitethernet {slot/port[/sub-port][-slot/port[/sub-port]][,...]}	Identifies the slot and port in one of the following formats: a single slot and port (slot/port), a range of slots and ports (slot/port-slot/port), or a series of slots and ports (slot/port,slot/port,slot/port). If your platform supports channelization and the port is channelized, you must also specify the sub-port in the format slot/port/sub-port.
vlan <1-4059>	Specifies the VLAN ID in the range of 1 to 4059. By default, VLAN IDs 1 to 4059 are configurable and the system reserves VLAN IDs 4060 to 4094 for internal use. If you enable VRF scaling and SPBM mode, the system also reserves VLAN IDs 3500 to 3998. VLAN ID 1 is the default VLAN and you cannot create or delete VLAN ID 1.

Default

None

Command Mode

User EXEC

show eapol system

Display the current Extensible Authentication Protocol (EAPoL) setting on the switch.

Syntax

- **show eapol system**

Command Parameters

config	Shows eapol system configured values.

Default

None

Command Mode

User EXEC

show fa

Display the Fabric Attach configuration status.

Syntax

- **show fa**

Default

None

Command Mode

User EXEC

show fa agent

Display Fabric Attach agent information.

Syntax

- **show fa agent**

Command Parameters

config	Display Fabric Attach agent information.

Default

None

Command Mode

User EXEC

show fa assignment

Display Fabric Attach ISID-to-VLAN assignments.

Syntax

- **show fa assignment**
- **show fa assignment {slot/port[/sub-port][-slot/port[/sub-port]][,...]}**

Command Parameters

{slot/port[/sub-port][-slot/port[/sub-port]][,...]}	Identifies the slot and port in one of the following formats: a single slot and port (slot/port), a range of slots and ports (slot/port-slot/port), or a series of slots and ports (slot/port,slot/port,slot/port). If your platform supports channelization and the port is channelized, you must also specify the sub-port in the format slot/port/sub-port.

Default

None

Command Mode

User EXEC

show fa elements

Display Fabric Attach discovery elements.

Syntax

- **show fa elements**
- **show fa elements {slot/port[/sub-port][-slot/port[/sub-port]][,...]}**

Command Parameters

{slot/port[/sub-port][-slot/port[/sub-port]][,...]}	Identifies the slot and port in one of the following formats: a single slot and port (slot/port), a range of slots and ports (slot/port-slot/port), or a series of slots and ports (slot/port,slot/port,slot/port). If your platform supports channelization and the port is channelized, you must also specify the sub-port in the format slot/port/sub-port.

Default

None

Command Mode

User EXEC

show fa interface

Display Fabric Attach configuration on all interfaces.

Syntax

- **show fa interface**

Default

None

Command Mode

User EXEC

show fa interface disabled-auth

Display Fabric Attach interfaces with authentication disabled.

Syntax

- **show fa interface disabled-auth**

Default

None

Command Mode

User EXEC

show fa interface enabled-auth

Display Fabric Attach interfaces with authentication enabled.

Syntax

- **show fa interface enabled-auth**

Default

None

Command Mode

User EXEC

show fa interface mlt

Display Fabric Attach interfaces on an MLT.

Syntax

- **show fa interface mlt**
- **show fa interface mlt <1-512>**

Command Parameters

<1-512>	Display Fabric Attach interfaces on an MLT.

Default

None

Command Mode

User EXEC

show fa interface port

Display Fabric Attach interfaces on a port.

Syntax

- **show fa interface port**
- **show fa interface port {slot/port[/sub-port][-slot/port[/sub-port]][,...]}**

Command Parameters

{slot/port[/sub-port][-slot/port[/sub-port]][,...]}	Identifies the slot and port in one of the following formats: a single slot and port (slot/port), a range of slots and ports (slot/port-slot/port), or a series of slots and ports (slot/port,slot/port,slot/port). If your platform supports channelization and the port is channelized, you must also specify the sub-port in the format slot/port/sub-port.

Default

None

Command Mode

User EXEC

show fa statistics

Display global level Fabric Attach statistics.

Syntax

- **show fa statistics**

- **show fa statistics {slot/port[/sub-port][-slot/port[/sub-port]][,...]}**
- **show fa statistics summary**

Command Parameters

{slot/port[/sub-port][-slot/port[/sub-port]][,...]}	Identifies the slot and port in one of the following formats: a single slot and port (slot/port), a range of slots and ports (slot/port-slot/port), or a series of slots and ports (slot/port,slot/port,slot/port). If your platform supports channelization and the port is channelized, you must also specify the sub-port in the format slot/port/sub-port.
summary	Display global level Fabric Attach statistics.

Default

None

Command Mode

User EXEC

show fa zero-touch-client

Display fabric attach zero touch client information

Syntax

- **show fa zero-touch-client**

Default

None

Command Mode

User EXEC

show fdb-filter

Show forwarding database filter information. This command does not apply to all hardware platforms.

Syntax

- **show fdb-filter**

Default

None

Command Mode

User EXEC

show ftp-access

Show the maximum FTP sessions.

Syntax

- **show ftp-access**

Default

None

Command Mode

User EXEC

show fulltech

Run all show commands and, optionally, capture the output to a file.

Syntax

- **show fulltech**
- **show fulltech file WORD<1-99>**
- **show fulltech khi**
- **show fulltech khi file WORD<1-99>**

Command Parameters

file WORD<1-99>	Specifies the file name in the range of 1 to 99 for which you need the logs to be displayed. WORD<1-99> specifies the filename in the form /intflash/<file>.
khi	show full tech khi info

Default

None

Command Mode

User EXEC

show hosts

Query the DNS host for information about host addresses. You can enter either a hostname or an IP address. If you enter the hostname, this command shows the IP address corresponding to the hostname and if you enter an IP address, this command shows the hostname for the IP address.

Syntax

- **show hosts WORD<0-256>**

Command Parameters

WORD<0-256>	Specifies one of the following: the name of the host DNS server as a string of 0-256 characters, the IP address of the host DNS server in a.b.c.d format, or the IPv6 address of the host DNS server in hexadecimal format (string length 0-46).

Default

None

Command Mode

User EXEC

show ike policy

Display the configured IKE policies

Syntax

- **show ike policy**
- **show ike policy WORD<1–32> laddr WORD<1–256>**
- **show ike policy WORD<1–32> laddr WORD<1–256> raddr WORD<1–256>**

Command Parameters

laddr WORD<1–256>	Specifies the local IPv4 or IPv6 address.
raddr WORD<1–256>	Specifies the remote IPv4 or IPv6 address.
WORD<1–32>	Specifies the name of the policy to be displayed.

Default

None

Command Mode

User EXEC

show ike profile

Display IKEv2 profiles.

Syntax

- **show ike profile**
- **show ike profile WORD<1-32>**

Command Parameters

WORD<1–32>	Specifies the name of the profile to be displayed.

Default

None

Command Mode

User EXEC

show ike sa

Display security associations.

Syntax

- **show ike sa**
- **show ike sa version v1 WORD<1-32> laddr WORD<1-256> raddr WORD<1-256>**
- **show ike sa version v2 WORD<1-32> laddr WORD<1-256> raddr WORD<1-256>**

Command Parameters

laddr WORD<1–256>	Specifies the local IPv4 or IPv6 address.
raddr WORD<1–256>	Specifies the remote IPv4 or IPv6 address.
version v1 WORD<1–32>	Specifies the local IPv4 or IPv6 address for IKE Phase 1, version 1 SA.
version v2 WORD<1–32>	Specifies the local IPv4 or IPv6 address for IKE Phase 1, version 2 SA.

Default

None

Command Mode

User EXEC

show ike v2-profile

Display IKE profiles.

Syntax

- **show ike v2-profile**
- **show ike v2-profile WORD<1-32>**

Command Parameters

WORD<1–32>	Specifies the name of the profile to be displayed.

Default

None

Command Mode

User EXEC

show io

Shows IO information.

Syntax

- **show io cpu-cosq-counters**
- **show io filter-tables**
- **show io l2-tables**
- **show io l3-tables**
- **show io logical-intf-ipsec**
- **show io logical-intf-tables**
- **show io nic-counters**
- **show io spb-tables**

Command Parameters

cpu-cosq-counters	Shows the CPU cosq counters.
filter-tables	Shows the filter tables.
l2-tables	Shows the Layer 2 tables.
l3-tables	Shows the Layer 3 tables.
logical-intf-ipsec	Shows the logical interface ipsec status.

logical-intf-tables	Shows the logical interface tables.
nic-counters	Shows the network interface card counters.
spb-tables	Shows the Shortest Path Bridging tables.

Default

None

Command Mode

User EXEC

show ip arp

Show ARP information to view the configuration information in the ARP table.

Syntax

- **show ip arp**
- **show ip arp {A.B.C.D}**
- **show ip arp gigabitEthernet {{slot/port[sub-port]}**
- **show ip arp gigabitEthernet {{slot/port[sub-port]} vrfids WORD<0-512>**
- **show ip arp gigabitEthernet{{slot/port[sub-port]} vrf WORD<1-16>**
- **show ip arp -s {A.B.C.D} {A.B.C.D}**
- **show ip arp spbm-tunnel-as-mac**
- **show ip arp vlan <1-4059>**
- **show ip arp vrf WORD<1-16>**
- **show ip arp vrfids WORD<0-512>**

Command Parameters

{A.B.C.D}	Specifies the network IP address for the table.
{slot/port[sub-port]}	Identifies a single slot and port. If your platform supports channelization and the port is channelized, you must also specify the subport in the format slot/port/sub-port.
gigabitEthernet {slot/port[sub-port]} vrfids WORD<0-512>	Specifies the VRF ID. The total number of ARPs listed in the summary line of the show ip arp display represents the total number of ARPs on the chassis, including all VRFs (which includes the Mgmt Router VRF). {{slot/port[sub-port]} identifies a single slot and port. If your platform supports channelization and the port is channelized, you must also specify the subport in the format slot/port/sub-port.

interface	Displays ARP interface configuration information.
-s {A.B.C.D} {A.B.C.D}	Specifies the network IP address for the table.
spbm-tunnel-as-mac	Displays the remote host name in the TUNNEL column for the SPBM ARP entry.
vlan <1-4059>	Specifies the VLAN ID in the range of 1 to 4059. By default, VLAN IDs 1 to 4059 are configurable and the system reserves VLAN IDs 4060 to 4094 for internal use. If you enable VRF scaling and SPBM mode, the system also reserves VLAN IDs 3500 to 3998. VLAN ID 1 is the default VLAN and you cannot create or delete VLAN ID 1.
vrf WORD<1-16>	Specifies the name of the VRF. The total number of ARPs listed in the summary line of the show ip arp display represents the total number of ARPs on the chassis including all VRFs (which includes the Mgmt Router VRF).
vrfids WORD<0-512>	Specifies the VRF ID. The total number of ARPs listed in the summary line of the show ip arp display represents the total number of ARPs on the chassis, including all VRFs (which includes the Mgmt Router VRF).
vrfids WORD<0-512>	Specifies the VRF ID. The total number of ARPs listed in the summary line of the show ip arp display represents the total number of ARPs on the chassis, including all VRFs (which includes the Mgmt Router VRF).

Default

None

Command Mode

User EXEC

show ip arp gigabitethernet

Display ARP entries for a particular brouter port.

Syntax

- **show ip arp gigabitethernet {slot/port[/sub-port]}**
- **show ip arp gigabitEthernet**
- **show ip arp gigabitethernet {slot/port[/sub-port]} vrf WORD<1-16>**
- **show ip arp gigabitethernet {slot/port[/sub-port]} vrfids WORD<0-512>**

Command Parameters

{slot/port[sub-port]}	Identifies a single slot and port. If your platform supports channelization and the port is channelized, you must also specify the subport in the format slot/port/sub-port.
vrf WORD<1-16>	Specifies a VRF instance by name.
vrfids WORD<0-512>	Specifies a range of VRFs by ID number.

Default

None

Command Mode

User EXEC

show ip arp interface

Show ARP port information to display data about the specified port, all ports, or the VLAN.

Syntax

- **show ip arp interface**
- **show ip arp interface gigabitethernet**
- **show ip arp interface gigabitethernet {slot/port[/sub-port][-slot/port[/sub-port]][,...]}**
- **show ip arp interface vlan <1-4059>**

Command Parameters

gigabitethernet {slot/port[/sub-port][-slot/port[/sub-port]][,...]}	Identifies the slot and port in one of the following formats: a single slot and port (slot/port), a range of slots and ports (slot/port-slot/port), or a series of slots and ports (slot/port,slot/port,slot/port). If your platform supports channelization and the port is channelized, you must also specify the sub-port in the format slot/port/sub-port.
vlan <1-4059>	Specifies the VLAN ID in the range of 1 to 4059. By default, VLAN IDs 1 to 4059 are configurable and the system reserves VLAN IDs 4060 to 4094 for internal use. If you enable VRF scaling and SPBM mode, the system also reserves VLAN IDs 3500 to 3998. VLAN ID 1 is the default VLAN and you cannot create or delete VLAN ID 1.

Default

None

Command Mode

User EXEC

show ip arp spbm-tunnel-as-mac

Display SPBM ARP entry tunnel as BMAC.

Syntax

- **show ip arp spbm-tunnel-as-mac**

Default

None

Command Mode

User EXEC

show ip arp-inspection

Displays DAI information.

Syntax

- **show ip arp-inspection**
- **show ip arp-inspection vlan <1-4059>**
- **show ip arp-inspection vrf WORD<1-16>**
- **show ip arp-inspection vrfids WORD<0-512>**

Command Parameters

vlan <1-4059>	Specifies the VLAN ID in the range of 1 to 4059. By default, VLAN IDs 1 to 4059 are configurable and the system reserves VLAN IDs 4060 to 4094 for internal use. If you enable VRF scaling and SPBM mode, the system also reserves VLAN IDs 3500 to 3998. VLAN ID 1 is the default VLAN and you cannot create or delete VLAN ID 1.
vrf WORD<1-16>	Specifies the name of the VRF. The total number of ARPs listed in the summary line of the show ip arp display represents the total number of ARPs on the chassis including all VRFs (which includes the Mgmt Router VRF).
vrfids WORD<0-512>	Specifies the VRF ID. The total number of ARPs listed in the summary line of the show ip arp display represents the total number of ARPs on the chassis, including all VRFs (which includes the Mgmt Router VRF).

Default

None

Command Mode

User EXEC

show ip arp-inspection interface

Displays DAI interface configuration.

Syntax

- **show ip arp-inspection interface**
- **show ip arp-inspection interface vlan**
- **show ip arp-inspection interface vlan <1-4059>**
- **show ip arp-inspection interface vrf WORD<1-16>**
- **show ip arp-inspection interface vrfids WORD<0-512>**

Command Parameters

vlan <1-4059>	Displays the DAI VLAN configuration.
vrf WORD<1-16>	Displays DAI configuration for a particular VRF.
vrfids WORD<0-512>	Displays DAI configuration for a particular VRF ID.

Default

None

Command Mode

User EXEC

show ip arp-inspection interface gigabitEthernet

Displays DAI configuration on the port.

Syntax

- **show ip arp-inspection interface gigabitEthernet**
- **show ip arp-inspection interface gigabitEthernet {slot/port[/sub-port][-slot/port[/sub-port]][,...]} vrf WORD<1-16>**
- **show ip arp-inspection interface gigabitEthernet {slot/port[/sub-port][-slot/port[/sub-port]][,...]} vrfids WORD<0-512>**
- **show ip arp-inspection interface gigabitEthernet <1-4059> vrf WORD<1-16>**
- **show ip arp-inspection interface gigabitEthernet <1-4059> vrfids WORD<0-512>**
- **show ip arp-inspection interface gigabitEthernet vrf WORD<1-16>**
- **show ip arp-inspection interface gigabitEthernet vrfids WORD<0-512>**

Command Parameters

{slot/port[/sub-port][-slot/port[/sub-port]][,...]}	Displays DAI configuration for a particular port.
<1-4059>	Displays the DAI VLAN configuration.
vrf WORD<1-16>	Displays DAI configuration for a particular VRF.
vrfids WORD<0-512>	Displays DAI configuration for a particular VRF ID.

Default

None

Command Mode

User EXEC

show ip as-list

Show the AS path lists on the Global Router.

Syntax

- **show ip as-list [<1-1024>] [vrf WORD<1-16>] [vrfids WORD<0-512>]**

Command Parameters

<1-1024>	Specifies the list ID.
vrf WORD<1-16>	Specifies the name of the VRF.
vrfids WORD<0-512>	Specifies the VRF ID in the range of 0 to 512.

Default

None

Command Mode

User EXEC

show ip bgp aggregates

Display information about current aggregate addresses.

Syntax

- **show ip bgp aggregates [<prefix/len>] [vrf WORD<1-16>] [vrfids WORD<0-255>]**

Command Parameters

<prefix/len>	Specifies the IP address and the mask length (the length can be 0 to 32).
vrf WORD<1-16>	Specifies a VRF instance by name.
vrfids WORD <0-512>	Specifies a range of VRFs by ID number.

Default

None

Command Mode

User EXEC

show ip bgp cidr-only

Display information about classless interdomain routing (CIDR) routes.

Syntax

- **show ip bgp cidr-only [<prefix/len>] [vrf WORD<1-16>] [vrfids WORD<0-512>]**

Command Parameters

<prefix/len>	Specifies an exact match of the prefix. This is an IP address and an integer value between 0 and 32 in the format a.b.c.d/xx.
vrf WORD<1-16>	Specifies a VRF instance by name.
vrfids WORD<0-512>	Specifies a range of VRFs by ID number.

Default

None

Command Mode

User EXEC

show ip bgp confederation

View BGP confederation information on the switch.

Syntax

- **show ip bgp confederation**

Default

None

Command Mode

User EXEC

show ip bgp dampened-paths

Display information about flap-dampened routes to determine unreliable routes.

Syntax

- **show ip bgp dampened-paths <A.B.C.D> [<prefix/len>] [longer-prefixes] [vrf WORD<1-16>] [vrfids WORD<0-512>]**

Command Parameters

{A.B.C.D}	Specifies the source IP address in the format a.b.c.d.
<prefix/len>	Shows paths with this prefix. The prefix is the IP address and exact mask length (must be an integer value between 0 and 32).
longer-prefixes	Shows long prefixes. The longer-prefixes indicate the mask length from any specified prefix to 32 (for example, show from prefix a.b.c.d/len to a.b.c./32).
vrf WORD<1-16>	Specifies a VRF instance by name.
vrfids WORD<0-512>	Specifies a range of VRFs by ID number.

Default

None

Command Mode

User EXEC

show ip bgp flap-damp-config

Display global information about flap-dampening.

Syntax

- **show ip bgp flap-damp-config [<prefix/len>] [vrf WORD<1-16>] [vrfids WORD<0-512>]**

Command Parameters

[<prefix/len>]	Specifies the exact match the prefix {a,b,c,d/len}.
vrf WORD <1-16>	Displays BGP configuration for a particular VRF.
vrfids WORD<0-512>	Specifies the VRF ID in the range of 0 to 512.

Default

None

Command Mode

User EXEC

show ip bgp imported-routes

Display information about BGP imported routes.

Syntax

- **show ip bgp imported-routes [<prefix/len>][longer-prefixes] [vrf WORD<1-16>] [vrfids WORD<0-512>]**

Command Parameters

<prefix/len>	Shows paths with this prefix. The prefix is the IP address and exact mask length (must be an integer value between 0 and 32).
longerprefixes	Shows long prefixes. The longer-prefixes indicate the mask length from any specified prefix to 32 (for example, show from prefix a.b.c.d/len to a.b.c./32).
vrf WORD<1-16>	Specifies a VRF instance by name.
vrfids WORD<0-512>	Specifies a range of VRFs by ID number.

Default

None

Command Mode

User EXEC

show ip bgp neighbors

Display information about BGP peer advertised routes, peer routes, and IP VPN BGP peers.

Syntax

- **show ip bgp neighbors [{A.B.C.D}] [advertised-routes][<prefix/len>] [vrf WORD<1-16>] [vrfids WORD<0-512>]**
- **show ip bgp neighbors [{A.B.C.D}][vrf WORD<1-16>][vrfids WORD<0-512>]**
- **show ip bgp neighbors {A.B.C.D} routes [<prefix/len>][community <disable|enable>] [longerprefixes] [vrf WORD<1-16>] [vrfids WORD<0-512>]**
- **show ip bgp neighbors {A.B.C.D} stats [vrf WORD<1-16>][vrfids WORD<0-512>]**
- **show ip bgp neighbors {A.B.C.D} vpnv4 [<prefix/len>][community <disable|enable>] [extcommunity][longer-prefixes] [vrf WORD<1-16>] [vrfids WORD<0-512>]**

Command Parameters

{A.B.C.D}	Specifies the IP address.
<prefix/len>	Shows paths with this prefix. The prefix is the IP address and exact mask length (must be an integer value between 0 and 32).
advertised-routes	Displays information about BGP peer advertised routes.
community	Enables the display of community attributes.
ext-community	Enables the display of extended community attributes.
longer-prefixes	Shows long prefixes. The longer-prefixes indicate the mask length from any specified prefix to 32 (for example, show from prefix a.b.c.d/len to a.b.c.d/32).
routes	Displays information about BGP peer routes.
stats	Displays statistics information for BGP peers.
vpnv4	Displays information about IP VPN BGP peers.
vrf WORD<1-16>	Specifies a VRF instance by name.
vrfids WORD<0-512>	Specifies a range of VRFs by ID number.

Default

None

Command Mode

User EXEC

show ip bgp networks

Display information about BGP network configurations.

Syntax

- **show ip bgp networks [<prefix/len>] [vrf WORD<1-16>] [vrfids WORD<0-512>]**

Command Parameters

<prefix/len>	Shows networks with this prefix. The prefix is the IP address and exact mask length (must be an integer value between 0 and 32).
vrf WORD<1-16>	Specifies a VRF instance by name.
vrfids WORD<0-512>	Specifies a range of VRFs by ID number.

Default

None

Command Mode

User EXEC

show ip bgp peer-group

Display information about BGP peer groups.

Syntax

- **show ip bgp peer-group [WORD<0-1536>] [vrf WORD<1-16>] [vrfids WORD<0-512>]**

Command Parameters

vrf WORD<1-16>	Specifies a VRF instance by name.
vrfids WORD<0-512>	Specifies a range of VRFs by ID number.
WORD<0-1536>	Specifies the name of the peer group.

Default

None

Command Mode

User EXEC

show ip bgp redistributed-routes

View BGP redistribution information on the switch.

Syntax

- **show ip bgp redistributed-routes <prefix/len> vrf WORD<1-16> vrfids WORD<0-512>**

Command Parameters

<prefix/len>	Shows paths with this prefix. The prefix is the IP address and exact mask length (must be an integer value between 0 and 32).
vrf WORD<1-16>	Specifies a VRF instance by name.
vrfids WORD<0-512>	Specifies a range of VRFs by ID number.

Default

None

Command Mode

User EXEC

show ip bgp route

Display information about BGP routes.

Syntax

- **show ip bgp route [<prefix/len>] [longer-prefixes][community <enable|disable>] [ip <A.B.C.D>][vrf WORD<1-16>] [vrfids WORD<0-512>]**

Command Parameters

<prefix/len>	Shows paths with this prefix. The prefix is the IP address and exact mask length (must be an integer value between 0 and 32).
community <enable|disable>	Enables or disables the display of community attributes.
ip <A.B.C.D>	Specifies an IP address.
longer-prefixes	Shows long prefixes. The longer-prefixes indicate the mask length from any specified prefix to 32 (for example, show from prefix a.b.c.d/len to a.b.c./32).
vrf WORD<1-16>	Specifies a VRF instance by name.

vrfids WORD<0-512>	Specifies a range of VRFs by ID number.

Default

None

Command Mode

User EXEC

show ip bgp stats

View Border Gateway Protocol (BGP) statistics.

Syntax

- **show ip bgp stats**
- **show ip bgp stats vrf WORD<1-16>**
- **show ip bgp stats vrf WORD<1-16> vrfids WORD<0-512>**
- **show ip bgp stats vrfids WORD<0-512>**

Command Parameters

vrf WORD<1-16>	Specifies a VRF instance by name.
vrfids WORD<0-512>	Specifies a range of VRFs by ID number.

Default

None

Command Mode

User EXEC

show ip bgp summary

Display summarized information about Border Gateway Protocol (BGP).

Syntax

- **show ip bgp summary [vrf WORD<1-16>] [vrfids WORD<0-512>]**

Command Parameters

vrf WORD <1-16>	Specifies a VRF instance by name.
vrfids WORD <0-512>	Specifies a range of VRFs by ID number.

Default

None

Command Mode

User EXEC

show ip community-list

Show the community lists on the Global Router.

Syntax

- **show ip community-list [<1-1024>] [vrf WORD<1-16>] [vrfids WORD<0-512>]**

Command Parameters

<1-1024>	Specifies the list ID.
vrf WORD<1-16>	Specifies the name of the VRF.
vrfids WORD<0-512>	Specifies the VRF ID in the range of 0 to 512.

Default

None

Command Mode

User EXEC

show ip dhcp-relay

Display relay information to show relay information about Dynamic Host Configuration Protocol (DHCP) routes and counters.

Syntax

- **show ip dhcp-relay counters**
- **show ip dhcp-relay counters [option82] [vrf WORD<1-16>] [vrfids <0-512>]**
- **show ip dhcp-relay counters option82**
- **show ip dhcp-relay counters vrf WORD<1-16>**
- **show ip dhcp-relay counters vrfids WORD<0-512>**
- **show ip dhcp-relay fwd-path**

- **show ip dhcp-relay fwd-path [vrf WORD<1-16>] [vrfids <0-512>]**
- **show ip dhcp-relay fwd-path vrf WORD<1-16>**
- **show ip dhcp-relay fwd-path vrfids WORD<0-512>**
- **show ip dhcp-relay interface**
- **show ip dhcp-relay interface [vrf WORD<1-16>] [vrfids <0-512>]**
- **show ip dhcp-relay interface gigabitethernet**
- **show ip dhcp-relay interface gigabitethernet [{slot/port[-slot/port][,...]}][<1-4059>] [vrf WORD<1-16>] [vrfids <0-512>]**
- **show ip dhcp-relay interface gigabitethernet {slot/port[/sub-port][-slot/port[/sub-port]][,...]}**
- **show ip dhcp-relay interface gigabitethernet vrf WORD<1-16>**
- **show ip dhcp-relay interface gigabitethernet vrfids WORD<0-512>**
- **show ip dhcp-relay interface vlan**
- **show ip dhcp-relay interface vlan <1-4059>**
- **show ip dhcp-relay interface vrf WORD<1-16>**
- **show ip dhcp-relay interface vrfids WORD<0-512>**

Command Parameters

counters	Displays the count of DHCP Relay requests and replies.
fwd-path	Displays information about DHCP Relay forward paths.
gigabitethernet {slot/port[/sub-port][-slot/port[/sub-port]][,...]}	Identifies the slot and port in one of the following formats: a single slot and port (slot/port), a range of slots and ports (slot/port-slot/port), or a series of slots and ports (slot/port,slot/port,slot/port). If your platform supports channelization and the port is channelized, you must also specify the sub-port in the format slot/port/sub-port.
interface	Specifies the interface.
option82	Shows statistics for the relay agent option.
vlan <1-4059>	Specifies the VLAN ID in the range of 1 to 4059. By default, VLAN IDs 1 to 4059 are configurable and the system reserves VLAN IDs 4060 to 4094 for internal use. If you enable VRF scaling and SPBM mode, the system also reserves VLAN IDs 3500 to 3998. VLAN ID 1 is the default VLAN and you cannot create or delete VLAN ID 1.
vrf WORD<1-16>	Specifies the name of the VRF.
vrfids <0-512>	Specifies the ID of the VRF. The value is an integer in the range of 0 to 512.

Default

None

Command Mode

User EXEC

show ip dhcp-snooping

Displays DHCP Snooping global configuration.

Syntax

- **show ip dhcp-snooping**
- **show ip dhcp-snooping vlan <1-4059>**
- **show ip dhcp-snooping vrf WORD<1-16>**
- **show ip dhcp-snooping vrfids WORD<0-512>**

Command Parameters

vlan <1-4059>	Specifies the VLAN ID in the range of 1 to 4059. By default, VLAN IDs 1 to 4059 are configurable and the system reserves VLAN IDs 4060 to 4094 for internal use. If you enable VRF scaling and SPBM mode, the system also reserves VLAN IDs 3500 to 3998. VLAN ID 1 is the default VLAN and you cannot create or delete VLAN ID 1.
vrf WORD<1-16>	Specifies the name of the VRF.
vrfids <0-512>	Specifies the ID of the VRF. The value is an integer in the range of 0 to 512.

Default

None

Command Mode

User EXEC

show ip dhcp-snooping binding

Displays DHCP Snooping binding table information.

Syntax

- **show ip dhcp-snooping binding**
- **show ip dhcp-snooping binding vlan <1-4059>**
- **show ip dhcp-snooping binding vrf WORD<1-16>**
- **show ip dhcp-snooping binding vrfids WORD<0-512>**

Command Parameters

vlan <1-4059>	Specifies the VLAN ID in the range of 1 to 4059. By default, VLAN IDs 1 to 4059 are configurable and the system reserves VLAN IDs 4060 to 4094 for internal use. If you enable VRF scaling and SPBM mode, the system also reserves VLAN IDs 3500 to 3998. VLAN ID 1 is the default VLAN and you cannot create or delete VLAN ID 1.
vrf WORD<1-16>	Specifies the name of the VRF.
vrfids <0-512>	Specifies the ID of the VRF. The value is an integer in the range of 0 to 512.

Default

None

Command Mode

User EXEC

show ip dhcp-snooping binding address

Displays DHCP Snooping binding table information based on address type.

Syntax

- **`show ip dhcp-snooping binding address {A.B.C.D}`**
- **`show ip dhcp-snooping binding address 0x00:0x00:0x00:0x00:0x00:0x00`**

Command Parameters

{A.B.C.D}	Displays DHCP Snooping binding table information for the specified IP address.
0x00:0x00:0x00:0x00:0x00:0x00	Displays DHCP Snooping binding table information for the specified MAC address.

Default

None

Command Mode

User EXEC

show ip dhcp-snooping binding interface

Displays DHCP Snooping binding table information based on interface type.

Syntax

- **show ip dhcp-snooping binding interface**
- **show ip dhcp-snooping binding interface gigabitEthernet**
- **show ip dhcp-snooping binding interface gigabitEthernet {slot/port[/sub-port][-slot/port[/sub-port]][,...]}**
- **show ip dhcp-snooping binding interface vlan <1-4059>**
- **show ip dhcp-snooping binding interface vrf vrfids WORD<0-512>**
- **show ip dhcp-snooping binding interface vrf WORD<1-16>**

Command Parameters

gigabitEthernet {slot/port[/sub-port][-slot/port[/sub-port]][,...]}	Displays DHCP Snooping binding table information for the specified port number.
vlan <1-4059>	Displays DHCP Snooping binding table information for the specified VLAN.
vrf WORD<1-16>	Displays DHCP Snooping binding table information for the specified VRF name.
vrfids WORD<0-512>	Displays DHCP Snooping binding table information for the specified VRF ID.

Default

None

Command Mode

User EXEC

show ip dhcp-snooping binding summary

Displays DHCP Snooping binding table summary.

Syntax

- **show ip dhcp-snooping binding summary**
- **show ip dhcp-snooping binding summary {slot/port[/sub-port][-slot/port[/sub-port]][,...]}**
- **show ip dhcp-snooping binding summary <1-4059>**
- **show ip dhcp-snooping binding summary vrf WORD<1-16>**
- **show ip dhcp-snooping binding summary vrfids WORD<0-512>**

Command Parameters

{slot/port[/sub-port][-slot/port[/sub-port]][,...]}	Displays DHCP Snooping binding table summary for the specified port number.
<1-4059>	Displays DHCP Snooping binding table summary for the specified VLAN.
vrf WORD<1-16>	Displays DHCP Snooping binding table summary for a particular VRF.
vrfids WORD<0-512>	Displays DHCP Snooping binding table summary for a particular VRF ID.

Default

None

Command Mode

User EXEC

show ip dhcp-snooping binding type

Displays DHCP Snooping binding table information based on entry type.

Syntax

- **`show ip dhcp-snooping binding type dynamic`**
- **`show ip dhcp-snooping binding type static`**

Command Parameters

dynamic	Displays DHCP Snooping binding table information for dynamic entries.
static	Displays DHCP Snooping binding table information for static entries.

Default

None

Command Mode

User EXEC

show ip dhcp-snooping interface

Displays DHCP Snooping interface configuration.

Syntax

- **show ip dhcp-snooping interface**
- **show ip dhcp-snooping interface vlan**
- **show ip dhcp-snooping interface vlan <1-4059>**
- **show ip dhcp-snooping interface vrf WORD<1-16>**
- **show ip dhcp-snooping interface vrfids WORD<0-512>**

Command Parameters

vlan <1-4059>	Displays the DHCP Snooping VLAN configuration.
vrf WORD<1-16>	Displays DHCP Snooping configuration for a particular VRF.
vrfids WORD<0-512>	Displays DHCP Snooping configuration for a particular VRF ID.

Default

None

Command Mode

User EXEC

show ip dhcp-snooping interface gigabitEthernet

Displays DHCP Snooping configuration on the port.

Syntax

- **show ip dhcp-snooping interface gigabitEthernet**
- **show ip dhcp-snooping interface gigabitEthernet {slot/port[/sub-port][-slot/port[/sub-port]][,...]} vrf WORD<1-16>**
- **show ip dhcp-snooping interface gigabitEthernet {slot/port[/sub-port][-slot/port[/sub-port]][,...]} vrfids WORD<0-512>**
- **show ip dhcp-snooping interface gigabitEthernet <1-4059> vrf WORD<1-16>**
- **show ip dhcp-snooping interface gigabitEthernet <1-4059> vrfids WORD<0-512>**
- **show ip dhcp-snooping interface gigabitEthernet vrf WORD<1-16>**
- **show ip dhcp-snooping interface gigabitEthernet vrfids WORD<0-512>**

Command Parameters

{slot/port[/sub-port][-slot/port[/sub-port]][,...]}	Displays DHCP Snooping configuration for a particular port.

<1-4059>	Displays the DHCP Snooping VLAN configuration.
vrf WORD<1-16>	Displays DHCP Snooping configuration for a particular VRF.
vrfids WORD<0-512>	Displays DHCP Snooping configuration for a particular VRF ID.

Default

None

Command Mode

User EXEC

show ip directed-broadcast

Show the interface status for direct broadcast.

Syntax

- **show ip directed-broadcast interface**
- **show ip directed-broadcast interface GigabitEthernet**
- **show ip directed-broadcast interface GigabitEthernet {slot/port[sub-port]}**
- **show ip directed-broadcast interface GigabitEthernet {slot/port[sub-port]}**

Command Parameters

interface GigabitEthernet {slot/port[sub-port]}	Identifies a single slot and port. If your platform supports channelization and the port is channelized, you must also specify the subport in the format slot/port/sub-port.

Default

None

Command Mode

User EXEC

show ip directed-broadcast vlan

Displays Vlan IDs with directed broadcast enabled.

Syntax

- **show ip directed-broadcast vlan**

Default

None

Command Mode

User EXEC

show ip dns

View the DNS client system status.

Syntax

- **show ip dns**

Default

None

Command Mode

User EXEC

show ip ecmp

Display the prefix list of routes with number of ECMP paths.

Syntax

- **show ip ecmp max-path**
- **show ip ecmp max-path vrf WORD<1-16>**
- **show ip ecmp max-path vrfids WORD<0-512>**
- **show ip ecmp pathlist-1**
- **show ip ecmp pathlist-1 vrf WORD<1-16>**
- **show ip ecmp pathlist-1 vrfids WORD<0-512>**
- **show ip ecmp pathlist-2**
- **show ip ecmp pathlist-2 vrf WORD<1-16>**
- **show ip ecmp pathlist-2 vrfids WORD<0-512>**
- **show ip ecmp pathlist-3**
- **show ip ecmp pathlist-3 vrf WORD<1-16>**

- **show ip ecmp pathlist-3 vrfids WORD<0-512>**
- **show ip ecmp pathlist-4**
- **show ip ecmp pathlist-4 vrf WORD<1-16>**
- **show ip ecmp pathlist-4 vrfids WORD<0-512>**
- **show ip ecmp pathlist-5**
- **show ip ecmp pathlist-5 vrf WORD<1-16>**
- **show ip ecmp pathlist-5 vrfids WORD<0-512>**
- **show ip ecmp pathlist-6**
- **show ip ecmp pathlist-6 vrf WORD<1-16>**
- **show ip ecmp pathlist-6 vrfids WORD<0-512>**
- **show ip ecmp pathlist-7**
- **show ip ecmp pathlist-7 vrf WORD<1-16>**
- **show ip ecmp pathlist-7 vrfids WORD<0-512>**
- **show ip ecmp pathlist-8**
- **show ip ecmp pathlist-8 vrf WORD<1-16>**
- **show ip ecmp pathlist-8 vrfids WORD<0-512>**

Command Parameters

max-path	Configures the maximum number of Equal Cost Multipath (ECMP) paths.
vrf WORD<1-16>	Displays the prefix list of routes for a particular VRF. WORD<0-16> specifies the VRF name.
vrfids WORD<0-512>	Displays the prefix list of routes for a particular VRF ID. WORD<0-512> specifies the VRF ID.

Default

None

Command Mode

User EXEC

show ip extcommunity-list

Show extended community list information.

Syntax

- **show ip extcommunity-list**
- **show ip extcommunity-list <1-1024>**

- **show ip extcommunity-list <1-1024> vrf WORD<1-16>**
- **show ip extcommunity-list <1-1024> vrfids WORD<0-512>**
- **show ip extcommunity-list vrf WORD<1-16>**
- **show ip extcommunity-list WORD<0-512>**

Command Parameters

<1-1024>	Specifies the extended community list ID.
vrf WORD<1-16>	Displays extended community list for a particular VRF.
vrfids WORD<0-512>	Specifies VRF IDs.

Default

None

Command Mode

User EXEC

show ip forward-protocol udp

Display the UDP protocol table with the UDP port numbers for each supported or designated protocol.

Syntax

- **show ip forward-protocol udp**
- **show ip forward-protocol udp [vrf WORD<1-16>] [vrfids <0-512>]**
- **show ip forward-protocol udp interface**
- **show ip forward-protocol udp interface {A.B.C.D}**
- **show ip forward-protocol udp interface vrf WORD<1-16>**
- **show ip forward-protocol udp interface vrfids WORD<0-512>**
- **show ip forward-protocol udp vrf WORD<1-16>**
- **show ip forward-protocol udp vrfids WORD<0-512>**

Command Parameters

interface <A.B.C.D>	Displays information about the UDP interface for all IP addresses or a specified IP address.
portfwd	Displays the UDP port forwarding table.
portfwdlist <1-1000>	Displays the UDP port forwarding list table for the specified list or all lists on the switch. <1-1000> specifies the port forward list ID.

vrf WORD<1-16>	Specifies the name of the VRF in the range of 0 to 16 characters.
vrfids <0-512>	Specifies the ID of the port and is an integer in the range of 0 to 512.

Default

None

Command Mode

User EXEC

show ip forward-protocol udp portfwd

View and confirm the port forward entry configuration.

Syntax

- **show ip forward-protocol udp portfwd**
- **show ip forward-protocol udp portfwd [vrf WORD<1-16>][vrfids <0-512>]**

Command Parameters

vrf WORD<1-16>	Specifies the name of the VRF in the range of 0 to 16 characters.
vrfids <0-512>	Specifies the ID of VRF and is an integer between 0 and 512.

Default

None

Command Mode

User EXEC

show ip forward-protocol udp portfwdlist

View and confirm the configuration setting on the IP forwarding list.

Syntax

- **show ip forward-protocol udp portfwdlist**
- **show ip forward-protocol udp portfwdlist <1-1000>**
- **show ip forward-protocol udp portfwdlist <1-1000> [vrf WORD<1-16>] [vrfids <0-512>]**
- **show ip forward-protocol udp portfwdlist vrf WORD<1-16>**
- **show ip forward-protocol udp portfwdlist vrfids WORD<0-512>**

Command Parameters

<1-1000>	Specifies the port forward list id which is an integer in the range of 1 to 1000.
vrf WORD<1-16>	Specifies the name of the VRF in the range of 0 to 16 characters.
vrfids <0-512>	Specifies the ID of the port and is an integer in the range of 0 to 512.

Default

None

Command Mode

User EXEC

show ip icmp statistics

Show the collective IPv4 ICMP statistics for all VRF instances.

Syntax

- **show ip icmp statistics**

Default

None

Command Mode

User EXEC

show ip interface

Shows the IP configuration for an interface.

Syntax

- **show ip interface**
- **show ip interface gigabitethernet**
- **show ip interface gigabitethernet <1-4059>**
- **show ip interface gigabitethernet {slot/port[/sub-port][-slot/port[/sub-port]][,...]}**
- **show ip interface vrf WORD<1-16>**
- **show ip interface vrfids WORD<0-512>**

Command Parameters

vlan <1-4059>	Specifies the VLAN ID in the range of 1 to 4059. By default, VLAN IDs 1 to 4059 are configurable and the system reserves VLAN IDs 4060 to 4094 for internal use. If you enable VRF scaling and SPBM mode, the system also reserves VLAN IDs 3500 to 3998. VLAN ID 1 is the default VLAN and you cannot create or delete VLAN ID 1.
vrf WORD<1-16>	Specifies the name of the VRF.
vrfids WORD <0-512>	Specifies the VRF ID in the range of 0 to 512.

Default

None

Command Mode

User EXEC

show ip ipfix

Display IPFIX global status.

Syntax

- **show ip ipfix**

Default

None

Command Mode

User EXEC

show ip ipfix collector

Display information about the IPFIX collector.

Syntax

- **show ip ipfix collector <1-1>**

Command Parameters

<1–1>	Specifies the IPFIX collector ID.

Default

None

Command Mode

User EXEC

show ip ipfix flows

Display information about IPFIX flows.

Syntax

- **show ip ipfix flows**
- **show ip ipfix flows source-addr {A.B.C.D} dest-addr {A.B.C.D} source-port <1-65535> dest-port <1-65535> protocol udp in-port rx-nni**
- **show ip ipfix flows source-addr {A.B.C.D} dest-addr {A.B.C.D} source-port <1-65535> dest-port <1-65535> protocol udp in-port {slot/port[/sub-port]}**
- **show ip ipfix flows source-addr {A.B.C.D} dest-addr {A.B.C.D} source-port <1-65535> dest-port <1-65535> protocol tcp in-port rx-nni**
- **show ip ipfix flows source-addr {A.B.C.D} dest-addr {A.B.C.D} source-port <1-65535> dest-port <1-65535> protocol tcp in-port {slot/port[/sub-port]}**

Command Parameters

dest-addr {A.B.C.D}	Specifies an IP address for the flow destination.
dest-port <1-65535>	Specifies a value for the destination port.
in-port <rx-nni | *{slot/port[/sub-port]}*>	Identifies the port that learns the flow.
protocol {udp|tcp}	Specifies the transport protocol.
source-addr {A.B.C.D}	Specifies an IP address for the flow source.
source-port <1-65535>	Specifies a value for the source port.

Default

None

Command Mode

User EXEC

show ip ipvpn

Display the configuration for IP VPN enabled VRFs.

Syntax

- **show ip ipvpn**
- **show ip ipvpn vrf WORD<1-16>**
- **show ip ipvpn vrf WORD<1-16> vrfids WORD<0-512>**
- **show ip ipvpn vrfids WORD<0-512>**

Command Parameters

vrf WORD<1-16>	Specifies a VRF.
vrfids WORD<0-512>	Specifies the VRF ID.

Default

None

Command Mode

User EXEC

show ip isid-list

Displays I-SID list information.

Syntax

- **show ip isid-list**
- **show ip isid-list vrf WORD<1-16>**
- **show ip isid-list WORD<1-32>**
- **show ip isid-list WORD<1-32> vrf WORD<1-16>**

Command Parameters

vrf WORD<1-16>	Displays I-SID list information for a particular VRF by name.
WORD<1-32>	Displays I-SID list information for a particular I-SID list by name.

Default

None

Command Mode

User EXEC

show ip isis redistribute

Display the redistribution configuration.

Syntax

- **show ip isis redistribute**
- **show ip isis redistribute vrf WORD<1-16>**
- **show ip isis redistribute vrf WORD<1-16> vrfids WORD<0-512>**
- **show ip isis redistribute vrfids WORD<0-512>**

Command Parameters

vrf WORD<1-16>	Specifies a particular VRF. Type a name between 0-16 characters in length.
vrfids WORD<0-512>	Specifies the VRF ID.

Default

None

Command Mode

User EXEC

show ip mroute hw-resource-usage

View multicast hardware resource usage. The range of values depends on the hardware platform.

Syntax

- **show ip mroute hw-resource-usage**
- **show ip mroute hw-resource-usage vrf WORD<1-16>**
- **show ip mroute hw-resource-usage vrf WORD<1-32>**
- **show ip mroute hw-resource-usage vrfids WORD<0-255>**
- **show ip mroute hw-resource-usage vrfids WORD<0-512>**

Command Parameters

vrf WORD<1-32> | vrf WORD<1-16>	Specifies a VRF by name. Range depends on hardware platform.
vrfids WORD <0-255> | vrfids WORD <0-512>	Specifies a VRF by ID. Range depends on hardware platform.

Default

None

Command Mode

User EXEC

show ip mroute interface

Display information about the interface for the multicast routes set up on the switch. The range of values depends on the hardware platform.

Syntax

- **show ip mroute interface**
- **show ip mroute interface gigabitethernet**
- **show ip mroute interface gigabitethernet {slot/port[/sub-port][-slot/port[/sub-port]][,...]}**
- **show ip mroute interface vrf WORD<1-16>**
- **show ip mroute interface vrf WORD<1-32>**
- **show ip mroute interface vrfids WORD<0-255>**
- **show ip mroute interface vrfids WORD<0-512>**

Command Parameters

gigabitethernet {slot/port[/sub-port][-slot/port[/sub-port]][,...]}	Identifies the slot and port in one of the following formats: a single slot and port (slot/port), a range of slots and ports (slot/port-slot/port), or a series of slots and ports (slot/port,slot/port,slot/port). If your platform supports channelization and the port is channelized, you must also specify the sub-port in the format slot/port/sub-port.
vrf WORD<1-32> | vrf WORD<1-16>	Specifies a VRF by name. Range depends on hardware platform.
vrfids WORD <0-255> | vrfids WORD <0-512>	Specifies a VRF ID. Range depends on hardware platform.

Default

None

Command Mode

User EXEC

show ip mroute next-hop

Display information about the next hop for the multicast routes set up on the switch. The range of values depends on the hardware platform.

Syntax

- **show ip mroute next-hop**
- **show ip mroute next-hop vrf WORD<1-16>**
- **show ip mroute next-hop vrf WORD<1-32>**
- **show ip mroute next-hop vrfids WORD<0-255>**
- **show ip mroute next-hop vrfids WORD<0-512>**

Command Parameters

vrf WORD<1-32> | vrf WORD<1-16>	Specifies a VRF by name. Range depends on hardware platform.
vrfids WORD <0-255> | vrfids WORD <0-512>	Specifies a VRF by ID. Range depends on hardware platform.

Default

None

Command Mode

User EXEC

show ip mroute route

Display information about the multicast routes set up on the switch. The range of values depends on the hardware platform.

Syntax

- **show ip mroute route**
- **show ip mroute route vrf WORD<1-16>**
- **show ip mroute route vrf WORD<1-32>**
- **show ip mroute route vrfids WORD<0-255>**
- **show ip mroute route vrfids WORD<0-512>**

Command Parameters

vrf WORD<1-32> | vrf WORD<1-16>	Specifies a VRF by name. Range depends on hardware platform.

vrfids WORD <0-255> | vrfids WORD <0-512>	Specifies a VRF by ID. Range depends on hardware platform.

Default

None

Command Mode

User EXEC

show ip mroute static-source-group

Display information about the static source groups on the current interface. The range of values depends on the hardware platform.

Syntax

- **show ip mroute static-source-group**
- **show ip mroute static-source-group <A.B.C.D>**
- **show ip mroute static-source-group <A.B.C.D> vrf WORD<1-16>**
- **show ip mroute static-source-group <A.B.C.D> vrf WORD<1-32>**
- **show ip mroute static-source-group <A.B.C.D> vrfids WORD<0-255>**
- **show ip mroute static-source-group <A.B.C.D> vrfids WORD<0-512>**

Command Parameters

<A.B.C.D>	Specifies the group IP address.
vrf WORD<1-32> | vrf WORD<1-16>	Specifies a VRF by name. Range depends on hardware platform.
vrfids WORD <0-255> | vrfids WORD <0-512>	Specifies a VRF by ID. Range depends on hardware platform.

Default

None

Command Mode

User EXEC

show ip mroute stats

Display IP multicast route statistics.

Syntax

- **show ip mroute stats**
- **show ip mroute stats [WORD<3-160> {A.B.C.D[,E.F.G.H][,...]}]**

Command Parameters

WORD<3-160> {A.B.C.D[,E.F.G.H][,...]}	Displays the IP multicast route statistics.

Default

None

Command Mode

User EXEC

show ip ospf accept

Display information about the configured OSPF entries.

Syntax

- **show ip ospf accept**
- **show ip ospf accept vrf WORD<1-16>**
- **show ip ospf accept vrfids WORD<0-512>**

Command Parameters

vrf ids WORD<0-512>	Specifies the ID of the VRF.
vrf WORD<1-16>	Specifies the name of the VRF.

Default

None

Command Mode

User EXEC

show ip ospf area

Display OSPF area information to ensure accuracy.

Syntax

- **show ip ospf area**
- **show ip ospf area vrf WORD<1-16>**

- **show ip ospf area vrfids WORD<0-512>**

Command Parameters

vrf WORD <1-16>	Specifies a VRF by name.
vrfids WORD<0-512>	Specifies a range of VRF IDs.

Default

None

Command Mode

User EXEC

show ip ospf area-range

Display OSPF area range configuration information to ensure accuracy.

Syntax

- **show ip ospf area-range**
- **show ip ospf area-range vrf <WORD 1-16>**
- **show ip ospf area-range vrfids <WORD 0-512>**

Command Parameters

vrf <WORD 1-16>	Specifies a VRF by name.
vrfids <WORD 0-512>	Specifies a range of VRF IDs.

Default

None

Command Mode

User EXEC

show ip ospf ase

View the link-state database to determine externally learned routing information.

Syntax

- **show ip ospf ase**
- **show ip ospf ase metric-type**

- **show ip ospf ase metric-type <1-2>**
- **show ip ospf ase vrf WORD<1-16>**
- **show ip ospf ase vrfids WORD<0-512>**

Command Parameters

metric-type <1-2>	Specifies the metric type as a string of 1 to 2 characters.
vrf WORD<1-16>	Identifies the VRF by name.
vrfids WORD<0-512>	Specifies a VRF by ID.

Default

None

Command Mode

User EXEC

show ip ospf authentication

Display OSPF authentication information to ensure accuracy.

Syntax

- **show ip ospf authentication interface**
- **show ip ospf authentication interface gigabitethernet**
- **show ip ospf authentication interface gigabitethernet {slot/port[/sub-port][-slot/port[/sub-port]][,...]}**
- **show ip ospf authentication interface vlan**
- **show ip ospf authentication interface vlan <1-4059>**

Command Parameters

interface gigabitethernet {slot/port[/sub-port][-slot/port[/sub-port]][,...]}	Identifies the slot and port in one of the following formats: a single slot and port (slot/port), a range of slots and ports (slot/port-slot/port), or a series of slots and ports (slot/port,slot/port,slot/port). If your platform supports channelization and the port is channelized, you must also specify the sub-port in the format slot/port/sub-port.
vlan <1-4059>	Specifies the VLAN ID in the range of 1 to 4059. By default, VLAN IDs 1 to 4059 are configurable and the system reserves VLAN IDs 4060 to 4094 for internal use. If you enable VRF scaling and SPBM mode, the system also reserves VLAN IDs 3500 to 3998. VLAN ID 1 is the default VLAN and you cannot create or delete VLAN ID 1.

Default

None

Command Mode

User EXEC

show ip ospf default-cost

Display OSPF default cost information to ensure accuracy.

Syntax

- **show ip ospf default-cost**
- **show ip ospf default-cost vrf WORD<1-16>**
- **show ip ospf default-cost vrfids WORD<0-512>**

Command Parameters

vrf WORD<1-16>	Specifies a VRF by name.
vrfids WORD<0-512>	Specifies a range of VRF IDs.

Default

None

Command Mode

User EXEC

show ip ospf host-route

Display the host route OSPF information to ensure accuracy.

Syntax

- **show ip ospf host-route**
- **show ip ospf host-route vrf WORD<1-16>**
- **show ip ospf host-route vrfids WORD<0-512>**

Command Parameters

vrf WORD<1-16>	Specifies a VRF by name.
vrfids WORD<0-512>	Specifies a range of VRF IDs.

Default

None

Command Mode

User EXEC

show ip ospf ifstats

Use statistics to help you monitor Open Shortest Path First (OSPF) performance.

Syntax

- **show ip ospf ifstats**
- **show ip ospf ifstats detail [vrf WORD <1-16>] [vrfids WORD<0-512>]**
- **show ip ospf ifstats mismatch [vrf WORD <1-16>] [vrfids WORD<0-512>]**
- **show ip ospf ifstats vlan <1-4059>**
- **show ip ospf ifstats vrf WORD<1-16>**
- **show ip ospf ifstats vrfids WORD<0-512>**

Command Parameters

detail	Displays the details of the OSPF.
mismatch	Specifies the number of times the area ID is not matched.
vlan <1-4059>	Specifies the VLAN ID in the range of 1 to 4059. By default, VLAN IDs 1 to 4059 are configurable and the system reserves VLAN IDs 4060 to 4094 for internal use. If you enable VRF scaling and SPBM mode, the system also reserves VLAN IDs 3500 to 3998. VLAN ID 1 is the default VLAN and you cannot create or delete VLAN ID 1.
vrf WORD<1-16>	Specifies a VRF instance by VRF name.
vrfids WORD<0-512>	Specifies a VRF or range of VRFs by ID.

Default

None

Command Mode

User EXEC

show ip ospf int-auth

Display OSPF authentication information to ensure accuracy.

Syntax

- **show ip ospf int-auth**
- **show ip ospf int-auth [vrf WORD <1-16>] [vrfids WORD<0-512>]**
- **show ip ospf int-auth vrf WORD<1-16>**
- **show ip ospf int-auth vrfids WORD<0-512>**

Command Parameters

vrf WORD<1-16>	Displays ospf authentication configuration for a particular VRF.
vrfids WORD<0-512>	Specifies a range of VRF IDs.

Default

None

Command Mode

User EXEC

show ip ospf interface

Display OSPF information on a particular interface to ensure accuracy.

Syntax

- **show ip ospf interface**
- **show ip ospf interface gigabitethernet {slot/port[/sub-port][-slot/port[/sub-port]][,...]}**
- **show ip ospf interface vlan**
- **show ip ospf interface vlan <1-4059>**
- **show ip ospf interface vrf WORD<1-16>**
- **show ip ospf interface vrfids WORD<0-512>**

Command Parameters

gigabitethernet {slot/port[/sub-port][-slot/port[/sub-port]][,...]}	Identifies the slot and port in one of the following formats: a single slot and port (slot/port), a range of slots and ports (slot/port-slot/port), or a series of slots and ports (slot/port,slot/port,slot/port). If your platform supports channelization and the port is channelized, you must also specify the sub-port in the format slot/port/sub-port.
vlan <1-4059>	Specifies the VLAN ID in the range of 1 to 4059. By default, VLAN IDs 1 to 4059 are configurable and the system reserves VLAN IDs 4060 to 4094 for internal use. If you enable VRF scaling and SPBM mode, the

	system also reserves VLAN IDs 3500 to 3998. VLAN ID 1 is the default VLAN and you cannot create or delete VLAN ID 1.
vrf WORD<1-16>	Displays ospf configuration for a particular VRF.
vrfids WORD<0-512>	Specifies a range of VRF IDs.

Default

None

Command Mode

User EXEC

show ip ospf int-timers

Display OSPF timers information to ensure accuracy.

Syntax

- **show ip ospf int-timers**
- **show ip ospf int-timers [vrf WORD<1-16>] [vrfids WORD<0-512>]**
- **show ip ospf int-timers vrf WORD<1-16>**
- **show ip ospf int-timers vrfids WORD<0-512>**

Command Parameters

vrf WORD<1-16>	Displays ospf timer configuration for a particular VRF.
vrfids WORD<0-512>	Specifies a range of VRF IDs.

Default

None

Command Mode

User EXEC

show ip ospf lsdb

View the area advertisements and other information contained in the link-state database (LSD) to ensure correct OSPF operations.

Syntax

- **show ip ospf lsdb**

- **show ip ospf lsdb [area <A.B.C.D>] [lsa-type <0-7>] [lsid <A.B.C.D>] [adv-rtr <A.B.C.D>] [vrf WORD<1-16>] [vrfids WORD<0-512>] [detail]**
- **show ip ospf lsdb adv-rtr {A.B.C.D}**
- **show ip ospf lsdb adv-rtr {A.B.C.D} vrf WORD<1-16>**
- **show ip ospf lsdb adv-rtr {A.B.C.D} vrfids WORD<0-512>**
- **show ip ospf lsdb area {A.B.C.D}**
- **show ip ospf lsdb area {A.B.C.D} vrf WORD<1-16>**
- **show ip ospf lsdb area {A.B.C.D} vrfids WORD<0-512>**
- **show ip ospf lsdb detail**
- **show ip ospf lsdb detail vrf WORD<1-16>**
- **show ip ospf lsdb detail vrfids WORD<0-512>**
- **show ip ospf lsdb lsa-type <0-7>**
- **show ip ospf lsdb lsa-type <0-7> vrf WORD<1-16>**
- **show ip ospf lsdb lsa-type <0-7> vrfids WORD<0-512>**
- **show ip ospf lsdb lsid {A.B.C.D}**
- **show ip ospf lsdb lsid {A.B.C.D} vrf WORD<1-16>**
- **show ip ospf lsdb lsid {A.B.C.D} vrfids WORD<0-512>**
- **show ip ospf lsdb vrf WORD<1-16>**
- **show ip ospf lsdb vrfids WORD<0-512>**

Command Parameters

adv-rtr <A.B.C.D>	Specifies the advertising router.
area <A.B.C.D>	Specifies the OSPF area.
detail	Provides detailed output.
lsa-type <0-7>	Specifies the link-state advertisement type in the range of 0 to 7.
lsid <A.B.C.D>	Specifies the link-state ID.
vrf WORD<1-16>	Specifies a VRF by name.
vrfids WORD<0-512>	Specifies a range of VRF IDs.

Default

None

Command Mode

User EXEC

show ip ospf neighbor

Displays OSPF NBMA neighbor information.

Syntax

- **show ip ospf neighbor**
- **show ip ospf neighbor [vrf WORD<1-16>] [vrfids WORD <0-512>]**
- **show ip ospf neighbor vrf WORD<1-16>**
- **show ip ospf neighbor vrfids WORD<0-512>**

Command Parameters

vrf WORD <1-16>	Specifies a VRF by name.
vrfids WORD<0-512>	Specifies a range of VRF IDs.

Default

None

Command Mode

User EXEC

show ip ospf port-error

Check OSPF errors for administrative and troubleshooting purposes.

Syntax

- **show ip ospf port-error**
- **show ip ospf port-error [port <portList>] [vrf WORD<1-16>] [vrfids WORD<0-512>]**
- **show ip ospf port-error port {slot/port[/sub-port][-slot/port[/sub-port]][,...]}**
- **show ip ospf port-error port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} vrf WORD<1-16>**
- **show ip ospf port-error port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} vrfids WORD<0-512>**
- **show ip ospf port-error vrf WORD<1-16>**
- **show ip ospf port-error vrfids WORD<0-512>**

Command Parameters

port {slot/port[/sub-port][-slot/port[/sub-port]][,...]}	Identifies the slot and port in one of the following formats: a single slot and port (slot/port), a range of slots and ports (slot/port-slot/port), or a series of slots and ports (slot/port,slot/port,slot/port). If your platform supports channelization and the port is channelized, you must also specify the sub-port in the format slot/port/sub-port.
vrf WORD<1-16>	Specifies a VRF by name.
vrfids WORD<0-512>	Specifies a range of VRF IDs.

Default

None

Command Mode

User EXEC

show ip ospf redistribute

Displays the OSPF redistribution configuration information.

Syntax

- **show ip ospf redistribute**
- **show ip ospf redistribute [vrf WORD <1-16>] [vrfids WORD<1-512>]**
- **show ip ospf redistribute vrf WORD<1-16>**
- **show ip ospf redistribute vrfids WORD<0-512>**

Command Parameters

vrf WORD <1-16>	Specifies a VRF by name.
vrfids WORD <0-512>	Specifies a range of VRF IDs.

Default

None

Command Mode

User EXEC

show ip ospf stats

Use statistics to help you monitor Open Shortest Path First (OSPF) performance.

Syntax

- **show ip ospf stats**
- **show ip ospf stats [vrf WORD<1-16>] [vrfids WORD<0-512>]**
- **show ip ospf stats vrf WORD<1-16>**
- **show ip ospf stats vrfids WORD<0-512>**

Command Parameters

vrf WORD<1-16>	Specifies a VRF instance by VRF name.
vrfids WORD<0-512>	Specifies a VRF or range of VRFs by ID.

Default

None

Command Mode

User EXEC

show ip ospf virtual-link

Displays the OSPF virtual link information to ensure accuracy.

Syntax

- **show ip ospf virtual-link {A.B.C.D} {A.B.C.D}**
- **show ip ospf virtual-link {A.B.C.D} {A.B.C.D} [vrf WORD<1-16>] [vrfids WORD<0-512>]**
- **show ip ospf virtual-link {A.B.C.D} {A.B.C.D} vrf WORD<1-16>**
- **show ip ospf virtual-link {A.B.C.D} {A.B.C.D} vrfids WORD<0-512>**

Command Parameters

{A.B.C.D} {A.B.C.D}	Specifies the area ID and the virtual interface ID. The first IP address specifies the area ID and the second specifies the virtual interface ID.
vrf WORD<1-16>	Specifies a VRF by name.
vrfids WORD<0-512>	Specifies a range of VRF IDs.
vrfids WORD<0-512>	Specifies a range of VRF IDs.

Default

None

Command Mode

User EXEC

show ip ospf vrf

Displays the OSPF configuration for a particular VRF.

Syntax

- **show ip ospf vrf WORD<1-16>**
- **show ip ospf vrf WORD<1-16> vrfids WORD<0-512>**

Command Parameters

vrfids WORD<0-512>	Specifices the VRF ID.
WORD<1-16>	Specifies the VRF name.

Default

None

Command Mode

User EXEC

show ip ospf vrfids

Displays the OSPF configuration for VRFs by VRF ID.

Syntax

- **show ip ospf vrfids WORD<0-512>**

Command Parameters

WORD<0-512>	Specifices the VRF ID.

Default

None

Command Mode

User EXEC

show ip pim

Verify the configuration by displaying the global status of PIM on the switch.

Syntax

- **show ip pim**

Default

None

Command Mode

User EXEC

show ip pim active-rp

Displays information about the active rendezvous point (RP) for all groups or a specific group.

Syntax

- **show ip pim active-rp**
- **show ip pim active-rp group <A.B.C.D>**

Command Parameters

group <A.B.C.D>	Specifies the multicast group address.

Default

None

Command Mode

User EXEC

show ip pim bsr

Displays information about the bootstrap router (BSR) for this PIM-SM domain.

Syntax

- **show ip pim bsr**

Default

None

Command Mode

User EXEC

show ip pim interface

Displays information about the PIM-SM interface setup on the switch.

Syntax

- **show ip pim interface [gigabitethernet [{slot/port[/sub-port][-slot/port[/sub-port]][,...]}]**
- **show ip pim interface [gigabitethernet [{slot/port[/sub-port][-slot/port[/sub-port]][,...]}] [vlan <1-4059>]**
- **show ip pim interface vlan [<1-4059>]**

Command Parameters

gigabitethernet {slot/port[/sub-port][-slot/port[/sub-port]][,...]}	Identifies the slot and port in one of the following formats: a single slot and port (slot/port), a range of slots and ports (slot/port-slot/port), or a series of slots and ports (slot/port,slot/port,slot/port). If your platform supports channelization and the port is channelized, you must also specify the sub-port in the format slot/port/sub-port.
vlan [<1-4059>]	Specifies the VLAN ID in the range of 1 to 4059. By default, VLAN IDs 1 to 4059 are configurable and the system reserves VLAN IDs 4060 to 4094 for internal use. If you enable VRF scaling and SPBM mode, the system also reserves VLAN IDs 3500 to 3998. VLAN ID 1 is the default VLAN and you cannot create or delete VLAN ID 1.

Default

None

Command Mode

User EXEC

show ip pim mode

Show the PIM mode (SM or SSM) configuration on the switch.

Syntax

- **show ip pim mode**

Default

None

Command Mode

User EXEC

show ip pim mroute

Displays PIM multicast route information from the route table.

Syntax

- **show ip pim mroute group {A.B.C.D}**
- **show ip pim mroute source {A.B.C.D}**
- **show ip pim mroute terse**
- **show ip pim mroute terse [group {A.B.C.D}] [source {A.B.C.D}]**
- **show ip pim mroute terse group {A.B.C.D}**
- **show ip pim mroute terse source {A.B.C.D}**

Command Parameters

group {A.B.C.D}	Specifies the multicast group address.
source {A.B.C.D}	Specifies the source IP address.
terse	Excludes the VLAN timers from the command output.

Default

None

Command Mode

User EXEC

show ip pim neighbor

Displays information about the neighboring routers configured with PIM-SM.

Syntax

- **show ip pim neighbor**

Default

None

Command Mode

User EXEC

show ip pim rp-candidate

Displays information about the candidate rendezvous points for the PIM-SM domain.

Syntax

- **show ip pim rp-candidate**

Default

None

Command Mode

User EXEC

show ip pim rp-hash

Displays information about the rendezvous points (RPs) for this PIM-SM domain.

Syntax

- **show ip pim rp-hash**

Default

None

Command Mode

User EXEC

show ip pim static-rp

Displays the static rendezvous point (RP) table.

Syntax

- **show ip pim static-rp**

Default

None

Command Mode

User EXEC

show ip pim virtual-neighbor

Display the virtual neighbor.

Syntax

- **show ip pim virtual-neighbor**

Default

None

Command Mode

User EXEC

show ip prefix-list

Display the prefix list.

Syntax

- **show ip prefix-list**
- **show ip prefix-list [WORD<1-64>] [prefix <A.B.C.D>] [vrf WORD<1-16>] [vrfids WORD<0-512>]**
- **show ip prefix-list prefix {A.B.C.D}**
- **show ip prefix-list vrf WORD<1-16>**
- **show ip prefix-list vrfids WORD<0-512>**
- **show ip prefix-list WORD<1-64>**

Command Parameters

prefix {A.B.C.D}	Adds a prefix entry to the prefix list. {A.B.C.D} is the IP address.
vrf WORD<1-16>	Shows prefix list for particular VRF ids. The ID of the VRF and is an integer in the range of 0 to 512.
vrfids WORD<0-512>	Renames the specified prefix list. The name length is from 1 to 64 characters.
WORD <1-64>	Renames the specified prefix list. The name length is from 1 to 64 characters.

Default

None

Command Mode

User EXEC

show ip rip

Display RIP configuration information to ensure the configuration is accurate.

Syntax

- **show ip rip**
- **show ip rip [vrf WORD<1-16>] [vrfids WORD<0-512>]**
- **show ip rip vrf WORD<1-16>**
- **show ip rip vrfids WORD<0-512>**

Command Parameters

vrf WORD<1-16>	Specifies a VRF by name.
vrfids WORD<0-512>	Specifies a range of VRF IDs.

Default

None

Command Mode

User EXEC

show ip rip interface

Display Routing Information Protocol (RIP) information for each interface.

Syntax

- **show ip rip interface**
- **show ip rip interface {A.B.C.D}**
- **show ip rip interface ports**
- **show ip rip interface ports {slot/port[/sub-port][-slot/port[/sub-port]][,...]}**
- **show ip rip interface ports {slot/port[/sub-port][-slot/port[/sub-port]][,...]} [vlan <1-4059>] [vrf WORD<1-16>] [vrfids WORD<0-512>] [{A.B.C.D}]**
- **show ip rip interface vlan**
- **show ip rip interface vlan <1-4059>**
- **show ip rip interface vrf WORD<1-16>**
- **show ip rip interface vrfids WORD<0-512>**

Command Parameters

{A.B.C.D}	Shows configurations based on an IP address assigned to a VLAN.

ports {slot/port[/sub-port][-slot/port[/sub-port]][,...]}	Identifies the slot and port in one of the following formats: a single slot and port (slot/port), a range of slots and ports (slot/port-slot/port), or a series of slots and ports (slot/port,slot/port,slot/port). If your platform supports channelization and the port is channelized, you must also specify the sub-port in the format slot/port/sub-port.
vlan <1-4059>	Shows RIP configuration information for a particular VLAN. Specifies the VLAN ID in the range of 1 to 4059. By default, VLAN IDs 1 to 4059 are configurable and the system reserves VLAN IDs 4060 to 4094 for internal use. If you enable VRF scaling and SPBM mode, the system also reserves VLAN IDs 3500 to 3998. VLAN ID 1 is the default VLAN and you cannot create or delete VLAN ID 1.
vrf WORD<1-16>	Specifies the VRF instance by name. When applying a redistribution instance that redistributes from a nonzero VRF to VRF 0 (the global router), do not specify the destination VRF; only specify the source VRF.
vrfids WORD<0-512>	Specifies a range of VRF IDs.

Default

None

Command Mode

User EXEC

show ip rip redistribute

Display the RIP redistribution configuration information.

Syntax

- **show ip rip redistribute**
- **show ip rip redistribute [vrf WORD<1-16>] [vrfids WORD<1-512>]**
- **show ip rip redistribute vrf WORD<1-16>**
- **show ip rip redistribute vrfids WORD<0-512>**

Command Parameters

vrf WORD<1-16>	Specifies the VRF instance by name. When applying a redistribution instance that redistributes from a nonzero VRF to VRF 0 (the global router), do not specify the destination VRF; only specify the source VRF.
vrfids WORD<0-512>	Specifies a range of VRF IDs.

Default

None

Command Mode

User EXEC

show ip rip vrf

Shows RIP information for a particular VRF by ID.

Syntax

- **show ip rip vrf WORD<1-16>**
- **show ip rip vrf WORD<1-16> vrfids WORD<0-512>**

Command Parameters

vrfids WORD<0-512>	Specifices the VRF ID.
WORD<1-16>	Specifies the VRF name.

Default

None

Command Mode

User EXEC

show ip rip vrfids

Shows RIP information for a particular VRF by ID.

Syntax

- **show ip rip vrfids WORD<0-512>**

Command Parameters

WORD<0-512>	Specifices the VRF ID.

Default

None

Command Mode

User EXEC

show ip route

Display the IP route information.

Syntax

- **show ip route**
- **show ip route {A.B.C.D}**
- **show ip route alternative protocol {bgp|isis|local|ospf|rip|static|}**
- **show ip route alternative spbm-nh-as-mac**
- **show ip route alternative vrf WORD<1-16>**
- **show ip route alternative vrfids WORD<0-512>**
- **show ip route count-summary vrf WORD<1-16>**
- **show ip route count-summary vrfids WORD<0-512>**
- **show ip route preference vrf WORD<1-16>**
- **show ip route preference vrfids WORD<0-512>**
- **show ip route protocol [bgp|isis|local|ospf|rip|static|]**
- **show ip route -s {A.B.C.D/X}**
- **show ip route -s default**
- **show ip route spbm-nh-as-mac**
- **show ip route static**
- **show ip route static {A.B.C.D}**
- **show ip route static {A.B.C.D} -s {A.B.C.D} {A.B.C.D}**
- **show ip route static {A.B.C.D} vrf WORD<1-16>**
- **show ip route static {A.B.C.D} vrfids WORD<0-512>**
- **show ip route static -s {A.B.C.D} {A.B.C.D}**
- **show ip route static -s {A.B.C.D} {A.B.C.D} vrf WORD<1-16>**
- **show ip route static -s {A.B.C.D} {A.B.C.D} vrfids WORD<0-512>**
- **show ip route static vrf WORD<1-16>**
- **show ip route static vrfids WORD<0-512>**
- **show ip route vrf WORD<1-16>**
- **show ip route vrfids WORD<0-512>**

Command Parameters

{A.B.C.D}	Specifies the IP address of the route to the network.
alternative	Displays the alternative routes.

count-summary	Displays ip route count summary.
preference	Displays the route preference information.
-s <A.B.C.D/X>	Indicates the IP address and subnet mask for which to display routes.
-s default	Specifies the default subnet.
spbm-nh-as-mac	show spbm route next hop as mac
static	Shows static route information.
static -s {A.B.C.D} {A.B.C.D} vrf WORD<1-16>	Shows static route information.
vrf WORD<1-16>	Specifies a VRF instance by VRF name.
vrfids WORD<0-512>	Specifies a VRF instance by VRF number.

Default

None

Command Mode

User EXEC

show ip routing

Display the ip routing configuration information.

Syntax

- **show ip routing**
- **show ip routing [vrf WORD<1-16>] [vrfids WORD<0-512>]**
- **show ip routing vrf WORD<1-16>**
- **show ip routing vrfids WORD<0-512>**

Command Parameters

vrf WORD<1-16>	Display the ip routing configuration information.
vrfids WORD<0-512>	Specifies a VRF instance by VRF number.

Default

None

Command Mode

User EXEC

show ip rsmlt

Show IP Routed Split MultiLink Trunking (RSMLT) information to view data about all RSMLT interfaces.

Syntax

- **show ip rsmlt**
- **show ip rsmlt [<local|peer>] [vrf WORD<1-16>] [vrfids WORD<0-512>]**
- **show ip rsmlt local**
- **show ip rsmlt peer**
- **show ip rsmlt vrf WORD<1-16>**
- **show ip rsmlt vrfids WORD<0-512>**

Command Parameters

edge-support	Displays RSMLT edge support and peer information.
local	Displays values for the local switch.
peer	Specifies values for the peer switch.
vrf WORD<1-16>	Specifies a VRF instance by VRF name.
vrfids WORD<0-512>	Specifies a VRF instance by VRF number.

Default

None

Command Mode

User EXEC

show ip rsmlt edge-support

Display Routed Split MultiLink Trunking (RSMLT)-edge status information.

Syntax

- **show ip rsmlt edge-support**

Default

None

Command Mode

User EXEC

show ip source binding

Displays the IPv4 addresses that are allowed on all IP Source Guard enabled ports or for a specified port.

Syntax

- **show ip source binding**
- **show ip source binding {A.B.C.D}**
- **show ip source binding interface gibabitEthernet**
- **show ip source binding interface gigabitEthernet {slot/port[/sub-port][-slot/port[/sub-port]][,...]}**
- **show ip source binding vlan <1-4059>**
- **show ip source binding vrf WORD<1-16>**
- **show ip source binding vrfids WORD<0-512>**

Command Parameters

{A.B.C.D}	Displays the IP Source Guard address bindings for the specified IPv4 address.
interface gigabitEthernet {slot/port[/sub-port][-slot/port[/sub-port]][,...]}	Displays the IPv4 addresses that are allowed on the specified IP Source Guard port.
vlan <1-4059>	Specifies the VLAN ID in the range of 1 to 4059. By default, VLAN IDs 1 to 4059 are configurable and the system reserves VLAN IDs 4060 to 4094 for internal use. If you enable VRF scaling and SPBM mode, the system also reserves VLAN IDs 3500 to 3998. VLAN ID 1 is the default VLAN and you cannot create or delete VLAN ID 1.
vrf WORD<1-16>	Displays the IP Source Guard address bindings list for a specific vrf.
vrfids WORD<0-512>	Displays the IP Source Guard address bindings list for a specific vrf id.

Default

None

Command Mode

User EXEC

show ip source verify

Displays IP Source Guard configuration on all ports or for a specified port, for IPv4 addresses.

Syntax

- **show ip source verify interface gigabitethernet**

Command Parameters

interface gigabitethernet	Displays IP Source Guard configuration on all ports on the switch, for IPv4 addresses.
interface gigabitethernet [{slot/port[/sub-port] [-slot/port[/sub-port]] [,...]}]	Displays IP Source Guard configuration on the specified port(s), for IPv4 addresses.

Default

None

Command Mode

User EXEC

show ip spb–pim–gw

Display the default values used for the SPB-PIM Gateway interface HELLO and JOIN PRUNE intervals unless specifically configured on the individual interface

Syntax

- **show ip spb-pim-gw**
- **show ip spb-pim-gw interface gigabitethernet {slot/port[/sub-port] [-slot/port[/sub-port]] [,...]}**
- **show ip spb-pim-gw interface gigabitethernet {slot/port[/sub-port] [-slot/port[/sub-port]] [,...]} vrf WORD<0-16>**
- **show ip spb-pim-gw interface gigabitethernet {slot/port[/sub-port] [-slot/port[/sub-port]] [,...]} vrfids WORD<0-512>**

Default

None

Command Mode

User EXEC

show ip spb-pim-gw foreign-source

Displays the foreign source information.

Syntax

- **show ip spb-pim-gw foreign-source**
- **show ip spb-pim-gw foreign-source controller**
- **show ip spb-pim-gw foreign-source vrf WORD<1-16>**
- **show ip spb-pim-gw foreign-source vrfids WORD<0-512>**
- **show ip spb-pim-gw foreign-source all**
- **show ip spb-pim-gw foreign-source gateway**
- **show ip spb-pim-gw foreign-source group {A.B.C.D}**
- **show ip spb-pim-gw foreign-source msdp**
- **show ip spb-pim-gw foreign-source source {A.B.C.D}**
- **show ip spb-pim-gw foreign-source spb-node-as-mac**
- **show ip spb-pim-gw foreign-source static**

Command Parameters

all	Displays information for all the VRF IDs from the Controller and Gateway foreign source database.
controller	Displays information from the Controller foreign source database. Only displays information on nodes configured as Controller.
gateway	Displays information from the Gateway foreign source database. Only displays information on nodes configured as Gateway.
group {A.B.C.D}	Displays information for the specific multicast group IP address from the Controller foreign source database.
msdp	Displays information from the Controller foreign source database that is learned through MSDP.
source {A.B.C.D}	Displays information for the specific source IP address from the Controller foreign source database.
spb-node-as-mac	Displays the MAC address for the assigned SPB-PIM Gateway.
static	Displays information from the Controller foreign source database that is configured statically.
vrf WORD<1-16>]	Displays information from the Controller foreign source database for a specific VRF name.

vrfids WORD<0-512>	Displays information from the Controller foreign source database for a range of VRF IDs.

Default

None

Command Mode

User EXEC

show ip spb–pim–gw interface

Display the SPB-PIM Gateway VLAN interface information

Syntax

- **show ip spb–pim–gw interface vlan <1-4059>**

Command Parameters

{slot/port[/sub-port][-slot/port[/sub-port]][,...]}	Identifies the slot and port. {slot/port[/sub-port][-slot/port[/sub-port]][,...]} identifies the slot and port in one of the following formats: a single slot and port (slot/port), a range of slots and ports (slot/port-slot/port), or a series of slots and ports (slot/port,slot/port,slot/port). If your platform supports channelization and the port is channelized, you must also specify the sub-port in the format slot/port/sub-port.
vlan <1-4059>	Specifies the VLAN ID of an interface to display.
vrf WORD<1-16>	Specifies the SPB-PIM Gateway interface neighbor information for a specific VRF.
vrfids WORD<0-512>	Specifies the SPB-PIM Gateway interface neighbor information for a range of VRF IDs.

Default

None

Command Mode

User EXEC

show ip spb–pim–gw neighbor

Display the SPB-PIM Gateway interfaces neighbor information.

Syntax

- **show ip spb-pim-gw neighbor**
- **show ip spb-pim-gw neighbor vrf WORD<1-16>**
- **show ip spb-pim-gw neighbor vrfids WORD<0-512>**

Command Parameters

vrf WORD<1-16>	Specifies the SPB-PIM Gateway interface information for a specific VRF.
vrfids WORD<0-512>	Specifies the SPB-PIM Gateway interface information for a range of VRF IDs.

Default

None

Command Mode

User EXEC

show ip spb–pim–gw node

Displays the active Controllers and Gateways in the SPBM domain.

Syntax

- **show ip spb-pim-gw node controller**
- **show ip spb-pim-gw node gateway**
- **show ip spb-pim-gw node spb-node-as-mac**

Command Parameters

controller	Displays only the controller nodes.
gateway	Displays only the gateway nodes.
spb-node-as-mac	Displays the node list with mac address.

Default

None

Command Mode

User EXEC

show ip spb-pim-gw spbmc-source

Displays all the SPB Multicast over Fabric Connect sources distributed to MSDP.

Syntax

- **show ip spb-pim-gw spbmc-source group {A.B.C.D}**
- **show ip spb-pim-gw spbmc-source originator WORD<1-32>**
- **show ip spb-pim-gw spbmc-source source {A.B.C.D}**
- **show ip spb-pim-gw spbmc-source spb-node-as-mac**
- **show ip spb-pim-gw spbmc-source vrf WORD<1-16>**
- **show ip spb-pim-gw spbmc-source WORD<0-512>**

Command Parameters

group {A.B.C.D}	Displays information for a specific multicast group IP address from SPB originated sources database.
originator WORD<1-32>	Displays information for a specific originator host name from SPB originated sources database.
source {A.B.C.D}	Displays information for a specific source IP address from SPB originated sources database.
spb-node-as-mac	Displays the originator of SPB originated sources as a MAC address rather than a nickname.
vrf WORD<1-16>	Displays SPB originated sources for a specific VRF.
vrfids WORD<0-512>	Displays SPB originated sources for a range of VRF IDs.

Default

None

Command Mode

User EXEC

show ip spb-pim-rw mroute

Display the SPB-PIM Gateway multicast routes.

Syntax

- **show ip spb-pim-rw mroute**
- **show ip spb-pim-rw mroute**

- **show ip spb-pim-rw mroute group {A.B.C.D}**
- **show ip spb-pim-rw mroute source {A.B.C.D}**
- **show ip spb-pim-rw mroute vrf WORD<1-16>**
- **show ip spb-pim-rw mroute vrfids WORD<0-512>**

Command Parameters

group {A.B.C.D}	Displays mroute information specific to a group IP address.
source {A.B.C.D}	Displays mroute information specific to a source IP address.
vrf WORD<1-16>	Specifies the SPB-PIM Gateway mroute information for a specific VRF.
vrfids WORD<0-512>	Specifies the SPB-PIM Gateway mroute information for a range of VRF IDs.

Default

None

Command Mode

User EXEC

show ip tcp connections

Displays the information on the TCP connections.

Syntax

- **show ip tcp connections [vrf WORD<1-16>] [vrfids WORD<0-512>]**
- **show ip tcp connections vrf WORD<1-16>**
- **show ip tcp connections vrfids WORD<0-512>**

Command Parameters

vrf WORD<1-16>	Specifies a VRF instance by VRF name.
vrfids WORD<0-512>	Specifies a VRF instance by VRF number.

Default

None

Command Mode

User EXEC

show ip tcp properties

Displays global properties.

Syntax

- **show ip tcp properties**

Default

None

Command Mode

User EXEC

show ip tcp statistics

View TCP statistics to manage network performance.

Syntax

- **show ip tcp statistics**

Default

None

Command Mode

User EXEC

show ip udp endpoints

Displays ip udp endpoints information.

Syntax

- **show ip udp endpoints**

Default

None

Command Mode

User EXEC

show ip udp statistics

Display UDP statistics information.

Syntax

- **show ip udp statistics**

Default

None

Command Mode

User EXEC

show ip vrf

View VRF configuration by VRF name.

Syntax

- **show ip vrf**
- **show ip vrf ipv6-max-routes [vrf WORD <1-16>] [vrfids WORD <0-512>]**
- **show ip vrf max-routes**
- **show ip vrf max-routes [vrf WORD <1-16>] [vrfids WORD <0-512>]**
- **show ip vrf vrf WORD <1-16>**
- **show ip vrfids WORD <0-512>**

Command Parameters

ipv6-max-routes	Displays ipv6 max routes for VRF.
max-routes	Displays max routes for vrf.
mvpn	Displays mvpn information for vrf.
vrfids WORD<0-512>	Displays configuration information for a VRF ID.
WORD<1-16>	Specifies a VRF instance by VRF name.

Default

None

Command Mode

User EXEC

show ip vrf mvpn

Displays information about all VRFS with MVPN enabled.

Syntax

- **show ip vrf mvpn**

Default

None

Command Mode

User EXEC

show ip vrrp

Display the global Virtual Router Redundancy Protocol (VRRP) configuration.

Syntax

- **show ip vrrp**
- **show ip vrrp vrf WORD <0-16>**
- **show ip vrrp vrfids WORD<0-512>**

Default

None

Command Mode

User EXEC

show ip vrrp address

Display basic Virtual Router Redundancy Protocol (VRRP) configuration information about the specified port, all ports, or the VLAN.

Syntax

- **show ip vrrp address**
- **show ip vrrp address [addr {A.B.C.D}][vrid <1-255>][addr <A.B.C.D>] [vrf WORD<1-16>] [vrfids WORD<0-512>] [version <2-3>]**
- **show ip vrrp address [version <2-3>]**
- **show ip vrrp address addr {A.B.C.D}**
- **show ip vrrp address vrf WORD<1-16>**

- **show ip vrrp address vrfids WORD<0-512>**
- **show ip vrrp address vrid <1-255>**

Command Parameters

[version <2|3>	Displays the VRRP version configured.
addr {A.B.C.D}	Specifies the IP address of the master VRRP.
vrf WORD<1-16>	Specifies the name of the VRF.
vrfids WORD<0-512>	Specifies the ID of the VRF and is an integer in the range of 0 to 512.
vrid <1-255>	Specifies a unique integer value that represents the virtual router ID in the range 1 to 255. The virtual router acts as the default router for one or more assigned addresses.

Default

None

Command Mode

User EXEC

show ip vrrp interface

Display Virtual Router Redundancy Protocol (VRRP) information about the interface.

Syntax

- **show ip vrrp interface**
- **show ip vrrp interface**
- **show ip vrrp interface [versin <2-3>]**
- **show ip vrrp interface [version <2-3>]**
- **show ip vrrp interface verbose**
- **show ip vrrp interface vrf WORD<1-16>**
- **show ip vrrp interface vrfids WORD<0-512>**
- **show ip vrrp interface vrid <1-255>**

Command Parameters

[version <2|3>	Displays the VRRP version configured.
gigabitEthernet {slot/port[/sub-port][-slot/port[/sub-port]][,...]}	Identifies the slot and port in one of the following formats: a single slot and port (slot/port), a range of slots and ports (slot/port-slot/port), or a series of slots and ports (slot/port,slot/port,slot/port). If your platform

	supports channelization and the port is channelized, you must also specify the sub-port in the format slot/port/sub-port.
verbose	Shows all available information about the VRRP interfaces.
vlan <1-4059>	Shows the VRRP interface gigabitEthernet configurations. Specifies the VLAN ID in the range of 1 to 4059. By default, VLAN IDs 1 to 4059 are configurable and the system reserves VLAN IDs 4060 to 4094 for internal use. If you enable VRF scaling and SPBM mode, the system also reserves VLAN IDs 3500 to 3998. VLAN ID 1 is the default VLAN and you cannot create or delete VLAN ID 1.
vrf WORD<1-16>	Shows all available information about the VRRP interfaces.
vrfids WORD<0-512>	Specifies the ID of the VRF.

Default

None

Command Mode

User EXEC

show ip vrrp interface gigabitEthernet

Display the Virtual Router Redundancy Protocol (VRRP) interface gigabitEthernet configurations.

Syntax

- **show ip vrrp interface gigabitethernet**
- **show ip vrrp interface gigabitethernet <1-4059>**
- **show ip vrrp interface gigabitethernet {slot/port[/sub-port][-slot/port[/sub-port]][,...]}**
- **show ip vrrp interface gigabitethernet verbose**

Command Parameters

{slot/port[/sub-port][-slot/port[/sub-port]][,...]}	Identifies the slot and port in one of the following formats: a single slot and port (slot/port), a range of slots and ports (slot/port-slot/port), or a series of slots and ports (slot/port,slot/port,slot/port). If your platform supports channelization and the port is channelized, you must also specify the sub-port in the format slot/port/sub-port.
<1-4059>	Specifies the VLAN ID in the range of 1 to 4059. By default, VLAN IDs 1 to 4059 are configurable and the system reserves VLAN IDs 4060 to 4094 for internal use. If you enable VRF scaling and SPBM mode, the system also reserves VLAN IDs 3500 to 3998. VLAN ID 1 is the default VLAN and you cannot create or delete VLAN ID 1.

verbose	Displays all available information about the VRRP interface gigabitEthernet configurations.

Default

None

Command Mode

User EXEC

show ip vrrp interface gigabitEthernet statistics

Display statistics for Virtual Router Redundancy Protocol (VRRP) ports.

Syntax

- **show ip vrrp interface gigabitethernet statistics**
- **show ip vrrp interface gigabitethernet statistics {slot/port[/sub-port][-slot/port[/sub-port]][,...]}**
- **show ip vrrp interface gigabitethernet statistics {slot/port[/sub-port][-slot/port[/sub-port]][,...]} verbose**

Command Parameters

{slot/port[/sub-port][-slot/port[/sub-port]][,...]}	Identifies the slot and port in one of the following formats: a single slot and port (slot/port), a range of slots and ports (slot/port-slot/port), or a series of slots and ports (slot/port,slot/port,slot/port). If your platform supports channelization and the port is channelized, you must also specify the sub-port in the format slot/port/sub-port.
verbose	Displays all available information about the VRRP interface gigabitEthernet configurations.

Default

None

Command Mode

User EXEC

show ip vrrp interface vlan

Show the extended Virtual Router Redundancy Protocol (VRRP) configuration for all VLANs on the switch or for the specified VLAN.

Syntax

- **show ip vrrp interface vlan**
- **show ip vrrp interface vlan <1-4059>**
- **show ip vrrp interface vlan {slot/port[/sub-port][-slot/port[/sub-port]][,...]}**
- **show ip vrrp interface vlan verbose**

Command Parameters

{slot/port[/sub-port][-slot/port[/sub-port]][,...]}	Identifies the slot and port in one of the following formats: a single slot and port (slot/port), a range of slots and ports (slot/port-slot/port), or a series of slots and ports (slot/port,slot/port,slot/port). If your platform supports channelization and the port is channelized, you must also specify the sub-port in the format slot/port/sub-port.
verbose	Displays all available information about the VRRP interface VLAN configurations.
vlan <1-4059>	Specifies the VLAN ID in the range of 1 to 4059. By default, VLAN IDs 1 to 4059 are configurable and the system reserves VLAN IDs 4060 to 4094 for internal use. If you enable VRF scaling and SPBM mode, the system also reserves VLAN IDs 3500 to 3998. VLAN ID 1 is the default VLAN and you cannot create or delete VLAN ID 1.
vrf WORD<1-16>	Specifies the name of the VRF.
vrfids WORD<0-512>	Specifies the ID of the VRF.

Default

None

Command Mode

User EXEC

show ip vrrp statistics

Display Virtual Router Redundancy Protocol (VRRP) statistics.

Syntax

- **show ip vrrp statistics**
- **show ip vrrp statistics [address {A.B.C.D}] [vrf WORD<1-16>] [vrfids WORD<0-512>] [vrid<1-255>] [version <2-3>]**
- **show ip vrrp statistics [version <2-3>]**

- **show ip vrrp statistics address {A.B.C.D}**
- **show ip vrrp statistics vrf WORD<1-16>**
- **show ip vrrp statistics vrfids WORD<0-512>**
- **show ip vrrp statistics vrid <1-255>**

Command Parameters

[version <2|3>	Displays the VRRP version configured.
address {A.B.C.D}	Specifies the address of the backup VRRP.
vrf WORD<1-16>	Specifies the VRF name.
vrfids WORD<0-512>	Specifies the ID of the VRF and is an integer in the range of 0 to 512.
vrid WORD<1-255>	Specifies a unique integar value that represents the virtual router ID in the range of 1 to 255. The virtual router acts as the default router for one or more assigned addresses.

Default

None

Command Mode

User EXEC

show ipsec interface (for a port)

Display the Internet Protocol Security (IPsec) information on an Ethernet interface. The command only works on an interface where you enable IPv6. If you do not enable IPv6 on the interface, the command displays as an error to the user.

Syntax

- **show ipsec interface**
- **show ipsec interface gigabitethernet {slot/port[/sub-port][-slot/port[/sub-port]][,...]}**

Command Parameters

gigabitethernet {slot/port[/sub-port][-slot/port[/sub-port]][,...]}	Identifies the slot and port in one of the following formats: a single slot and port (slot/port), a range of slots and ports (slot/port-slot/port), or a series of slots and ports (slot/port,slot/port,slot/port). If your platform supports channelization and the port is channelized, you must also specify the sub-port in the format slot/port/sub-port.

Default

None

Command Mode

User EXEC

show ipsec interface (for a VLAN)

Display the Internet Protocol Security (IPsec) information on an VLAN interface. The command only works on an interface where you enable IPv6. If you do not enable IPv6 on the interface, the command displays as an error to the user.

Syntax

- **show ipsec interface**
- **show ipsec interface vlan <1-4059>**

Command Parameters

vlan <1-4059>	Specifies the VLAN ID in the range of 1 to 4059. By default, VLAN IDs 1 to 4059 are configurable and the system reserves VLAN IDs 4060 to 4094 for internal use. If you enable VRF scaling and SPBM mode, the system also reserves VLAN IDs 3500 to 3998. VLAN ID 1 is the default VLAN and you cannot create or delete VLAN ID 1.

Default

None

Command Mode

User EXEC

show ipsec interface mgmtethernet mgmt

Displays the IPsec status on a management interface. This command applies to hardware with a dedicated, physical management interface.

Syntax

- **show ipsec interface mgmtethernet mgmt**

Default

None

Command Mode

User EXEC

show ipsec policy

Display Internet Protcol Security (IPsec) policy information.

Syntax

- `show ipsec policy all`
- `show ipsec policy interface WORD<1-32>`
- `show ipsec policy name WORD<1-32>`

Command Parameters

all	Displays all of the IPsec policies on the switch.
interface WORD<1-32>	Displays a specific IPsec policy based on the policy name on the interface.
name WORD<1-32>	Displays the IPsec policy based on the name of the policy.

Default

None

Command Mode

User EXEC

show ipsec sa

Display Internet Protocol Security (IPsec) security association information.

Syntax

- `show ipsec sa all`
- `show ipsec sa name WORD<1-32>`

Command Parameters

all	Displays all of the IPsec security association information.
name WORD<1-32>	Displays information about a specific IPsec security association.

Default

None

Command Mode

User EXEC

show ipsec sa-policy

Display Internet Protocol Security (IPsec) security associations linked to a particular IPsec policy.

Syntax

- **show ipsec sa-policy**

Default

None

Command Mode

User EXEC

show ipsec statistics gigabitethernet

Display statististics for Internet Protocol Security (IPsec) for an Ethernet interface.

Syntax

- **show ipsec statistics gigabitethernet {slot/port[/sub-port][-slot/port[/sub-port]][,...]}**

Command Parameters

gigabitethernet {slot/port[/sub-port][-slot/port[/sub-port]][,...]}	Identifies the slot and port in one of the following formats: a single slot and port (slot/port), a range of slots and ports (slot/port-slot/port), or a series of slots and ports (slot/port,slot/port,slot/port). If your platform supports channelization and the port is channelized, you must also specify the sub-port in the format slot/port/sub-port.

Default

None

Command Mode

User EXEC

show ipsec statistics mgmtethernet

Displays the IPsec status on a management interface. This command applies to hardware with a dedicated, physical management interface.

Syntax

- **show ipsec statistics mgmtethernet mgmt2**

Command Parameters

<mgmt| mgmt2>	Specifies the management interface (primary or standby) on which to view the IPsec status. This command applies to hardware with a dedicated, physical management interface.

Default

None

Command Mode

User EXEC

show ipsec statistics system

Display statistics for Internet Protocol Security (IPsec) for the system.

Syntax

- **show ipsec statistics system**

Default

None

Command Mode

User EXEC

show ipsec statistics vlan

Display statistics for Internet Protocol Security (IPsec) for an VLAN interface.

Syntax

- **show ipsec statistics vlan <1-4059>**

Command Parameters

vlan <1-4059>	Specifies the VLAN ID in the range of 1 to 4059. By default, VLAN IDs 1 to 4059 are configurable and the system reserves VLAN IDs 4060 to 4094 for internal use. If you enable VRF scaling and SPBM mode, the system also reserves VLAN IDs 3500 to 3998. VLAN ID 1 is the default VLAN and you cannot create or delete VLAN ID 1.

Default

None

Command Mode

User EXEC

show ipv6 address

View IPv6 address entries.

Syntax

- **show ipv6 address interface**
- **show ipv6 address interface gigabitethernet [{slot/port[/sub-port][-slot/port[/sub-port]][,...]}]**
- **show ipv6 address interface ip WORD<0-46>**
- **show ipv6 address interface ip WORD<0-46> vrf WORD<1-16>**
- **show ipv6 address interface ip WORD<0-46> vrfids WORD<0-512>**
- **show ipv6 address interface tunnel <1-2000>**
- **show ipv6 address interface vlan [<1-4059>]**
- **show ipv6 address interface vrf WORD<1-16>**
- **show ipv6 address interface vrfids WORD<0-512>**

Command Parameters

{slot/port[/sub-port][-slot/port[/sub-port]][,...]}	Identifies the slot and port in one of the following formats: a single slot and port (slot/port), a range of slots and ports (slot/port-slot/port), or a series of slots and ports (slot/port,slot/port,slot/port). If your platform supports channelization and the port is channelized, you must also specify the sub-port in the format slot/port/sub-port.
<1-4059>	Specifies the VLAN ID in the range of 1 to 4059. By default, VLAN IDs 1 to 4059 are configurable and the system reserves VLAN IDs 4060 to 4094 for internal use. If you enable VRF scaling and SPBM mode, the system also reserves VLAN IDs 3500 to 3998. VLAN ID 1 is the default VLAN and you cannot create or delete VLAN ID 1.
tunnel <1-2000>	Displays the address entries specific to a tunnel ID.
vrf WORD<1-16>	Specifies a VRF name. The VRF parameter is optional.
vrfids WORD<0-512>	Specifies a VRF by ID. The VRF parameter is optional.
WORD<0-46>	Specifies an IPv6 address.

Default

None

Command Mode

User EXEC

show ipv6 dcache

Display the destination cache to see next-hop addresses for destinations. The destination cache is only populated or updated when IPv6 packets originate locally on the central processor of the switch.

Syntax

- **show ipv6 dcache gigabitethernet {slot/port[sub-port]}**
- **show ipv6 dcache mgmtethernet mgmt**
- **show ipv6 dcache tunnel <1-2000>**
- **show ipv6 dcache vlan <1-4059>**
- **show ipv6 dcache vrf WORD<1-16>**
- **show ipv6 dcache vrfids WORD<0-512>**

Command Parameters

gigabitethernet {slot/port[sub-port]}	Identifies a single slot and port. If your platform supports channelization and the port is channelized, you must also specify the sub-port in the format slot/port/sub-port.
mgmtethernet mgmt	Identifies the management port.
tunnel <1-2000>	Specifies the tunnel ID.
vlan <1-4059>	Specifies the VLAN ID in the range of 1 to 4059. By default, VLAN IDs 1 to 4059 are configurable and the system reserves VLAN IDs 4060 to 4094 for internal use. If you enable VRF scaling and SPBM mode, the system also reserves VLAN IDs 3500 to 3998. VLAN ID 1 is the default VLAN and you cannot create or delete VLAN ID 1.
vrf WORD<1-16>	Specifies a VRF name. The VRF parameter is optional.
vrfids WORD<0-512>	Specifies a VRF by ID. The VRF parameter is optional.

Default

None

Command Mode

User EXEC

show ipv6 default-routers

Display default routers learned from router advertisement messages.

Syntax

- **show ipv6 default-routers**

Default

None

Command Mode

User EXEC

show ipv6 dhcp-relay

Display IPv6 Dynamic Host Configuration Protocol (DHCP) Relay information to show relay information about DHCP routes and counters.

Syntax

- **show ipv6 dhcp-relay counters**
- **show ipv6 dhcp-relay counters vrf WORD<1-16>**
- **show ipv6 dhcp-relay counters vrfids WORD<0-512>**
- **show ipv6 dhcp-relay fwd-path**
- **show ipv6 dhcp-relay fwd-path vrf WORD<1-16>**
- **show ipv6 dhcp-relay fwd-path vrfids WORD<0-512>**
- **show ipv6 dhcp-relay interface [gigabitethernet {slot/port[/sub-port][-slot/port[/sub-port]][,...]}] [vlan <1-4059>]**
- **show ipv6 dhcp-relay interface vrf WORD<1-16>**
- **show ipv6 dhcp-relay interface vrfids WORD<0-512>**

Command Parameters

counters	Displays the count of DHCP Relay requests and replies.
fwd-path	Displays information about DHCP Relay forward paths.
gigabitethernet {slot/port[/sub-port][-slot/port[/sub-port]][,...]}	Identifies the slot and port in one of the following formats: a single slot and port (slot/port), a range of slots and ports (slot/port-slot/port), or a series of slots and ports (slot/port,slot/port,slot/port). If your platform supports channelization and the port is channelized, you must also specify the sub-port in the format slot/port/sub-port.
vlan <1-4059>	Specifies the VLAN ID in the range of 1 to 4059. By default, VLAN IDs 1 to 4059 are configurable and the system reserves VLAN IDs 4060 to 4094 for internal use. If you enable VRF scaling and SPBM mode, the system also reserves VLAN IDs 3500 to 3998. VLAN ID 1 is the default VLAN and you cannot create or delete VLAN ID 1.

vrf WORD<1-16>	Specifies a VRF name. The VRF parameter is optional.
vrfids WORD<0-512>	Specifies a VRF by ID. The VRF parameter is optional.

Default

None

Command Mode

User EXEC

show ipv6 fhs dhcp-guard policy

Displays DHCP-guard policy information for all the configured DHCP-guard policy.

Syntax

- **show ipv6 fhs dhcp-guard policy**
- **show ipv6 fhs dhcp-guard policy WORD<1-64>**

Command Parameters

WORD<1-64>	Specifies the policy name.

Default

None

Command Mode

User EXEC

show ipv6 fhs ipv6-access-list

Displays all the configured IPv6 access list in the system.

Syntax

- **show ipv6 fhs ipv6-access-list**
- **show ipv6 fhs ipv6-access-list WORD<1-64>**

Command Parameters

WORD<1–64>	Specifies the access list name.

Default

None

Command Mode

User EXEC

show ipv6 fhs mac-access-list

Displays all the configured MAC access list in the system.

Syntax

- **show ipv6 fhs mac-access-list**
- **show ipv6 fhs mac-access-list WORD<1-64>**

Command Parameters

WORD<1-64>	Specifies the MAC access list name.

Default

None

Command Mode

User EXEC

show ipv6 fhs port-policy

Displays the RA-guard policy name configured and RA-guard statistics.

Syntax

- **show ipv6 fhs port-policy**
- **show ipv6 fhs port-policy {slot/port[/sub-port][-slot/port[/sub-port]][,...]}**

Command Parameters

{slot/port[/sub-port][-slot/port[/sub-port]][,...]}	Identifies the slot and port in one of the following formats: a single slot and port (slot/port), a range of slots and ports (slot/port-slot/port), or a series of slots and ports (slot/port,slot/port,slot/port). If your platform supports channelization and the port is channelized, you must also specify the sub-port in the format slot/port/sub-port.

Default

None

Command Mode

User EXEC

show ipv6 fhs ra-guard policy

Displays configured RA-guard policy information.

Syntax

- **show ipv6 fhs ra-guard policy**
- **show ipv6 fhs ra-guard policy WORD<1-64>**

Command Parameters

WORD<1-64>	Specifies the policy name.

Default

None

Command Mode

User EXEC

show ipv6 fhs snooping binding

Displays entries in the SBT.

Syntax

- **show ipv6 fhs snooping binding**
- **show ipv6 fhs snooping binding type <dynamic|static>**
- **show ipv6 fhs snooping binding vlan <1-4059>**
- **show ipv6 fhs snooping binding vlan <1-4059> ipv6-address WORD<0-46>**

Command Parameters

ipv6-address WORD<0-46>	Displays a specific binding entry based on its IPv6 address.
type <dynamic|static>	Displays binding entries by type.
vlan <1-4059>	Displays binding entries by VLAN. Specifies the VLAN ID in the range of 1 to 4059. By default, VLAN IDs 1 to 4059 are configurable and the system reserves VLAN IDs 4060 to 4094 for internal use. If you enable VRF scaling and SPBM mode, the system also reserves VLAN IDs 3500 to 3998. VLAN ID 1 is the default VLAN and you cannot create or delete VLAN ID 1.

Default

None

Command Mode

User EXEC

show ipv6 fhs status

Displays the IPv6 First Hop Security (FHS) status information.

Syntax

- **show ipv6 fhs status**
- **show ipv6 fhs status vlan**
- **show ipv6 fhs status vlan <1-4059>**

Command Parameters

vlan <1-4059>	Displays status of IPv6 DHCP snooping and ND inspection status on a particular VLAN. Specifies the VLAN ID in the range of 1 to 4059. By default, VLAN IDs 1 to 4059 are configurable and the system reserves VLAN IDs 4060 to 4094 for internal use. If you enable VRF scaling and SPBM mode, the system also reserves VLAN IDs 3500 to 3998. VLAN ID 1 is the default VLAN and you cannot create or delete VLAN ID 1.

Default

None

Command Mode

User EXEC

show ipv6 forwarding

Show IPv6 forwarding information.

Syntax

- **show ipv6 forwarding**
- **show ipv6 forwarding vrf WORD<1-16>**
- **show ipv6 forwarding vrfids WORD<0-512>**

Command Parameters

vrf WORD<1-16>	Specifies a VRF name. The VRF parameter is optional.
vrfids WORD<0-512>	Specifies a VRF by ID. The VRF parameter is optional.

Default

The default is disabled.

Command Mode

User EXEC

show ipv6 global

Show global IPv6 configuration information.

Syntax

- **show ipv6 global**
- **show ipv6 global vrf WORD<1-16>**
- **show ipv6 global vrfids WORD<0-512>**

Command Parameters

vrf WORD<1-16>	Specifies a VRF name. The VRF parameter is optional.
vrfids WORD<0-512>	Specifies a VRF by ID. The VRF parameter is optional.

Default

None

Command Mode

User EXEC

show ipv6 interface

Show IPv6 information for all or specific interfaces.

Syntax

- **show ipv6 interface gigabitethernet [{slot/port[/sub-port][-slot/port[/sub-port]][,...]}]**
- **show ipv6 interface icmpstatistics**
- **show ipv6 interface icmpstatistics gigabitEthernet [{slot/port[/sub-port][-slot/port[/sub-port]][,...]}]**
- **show ipv6 interface icmpstatistics loopback <1-256>**
- **show ipv6 interface icmpstatistics mgmtEthernet**
- **show ipv6 interface icmpstatistics mgmtEthernet mgmt**

- **show ipv6 interface icmpstatistics tunnel <1-2000>**
- **show ipv6 interface icmpstatistics vlan <1-4059>**
- **show ipv6 interface icmpstatistics vrf WORD<1-16>**
- **show ipv6 interface icmpstatistics vrfids WORD<0-512>**
- **show ipv6 interface loopback <1-256>**
- **show ipv6 interface mgmtEthernet**
- **show ipv6 interface mgmtEthernet mgmt**
- **show ipv6 interface statistics**
- **show ipv6 interface statistics gigabitEthernet [{slot/port[/sub-port][-slot/port[/sub-port]][,...]}]**
- **show ipv6 interface statistics loopback <1-256>**
- **show ipv6 interface statistics mgmtEthernet**
- **show ipv6 interface statistics mgmtEthernet mgmt**
- **show ipv6 interface statistics tunnel <1-2000>**
- **show ipv6 interface statistics vlan <1-4059>**
- **show ipv6 interface statistics vrf WORD<1-16>**
- **show ipv6 interface statistics vrfids WORD<0-512>**
- **show ipv6 interface tunnel <1-2000>**
- **show ipv6 interface tunnel vrf WORD<1-16>**
- **show ipv6 interface tunnel vrfids WORD<0-512>**
- **show ipv6 interface vlan [<1-4059>]**
- **show ipv6 interface vrf WORD<1-16>**
- **show ipv6 interface vrfids WORD<0-512>**

Command Parameters

gigabitEthernet {slot/port[/sub-port][-slot/port[/sub-port]][,...]}	Displays IPv6 interface information for gigabitEthernet. {slot/port[/sub-port][-slot/port[/subport]][,...]} identifies the slot and port in one of the following formats: a single slot and port (slot/port), a range of slots and ports (slot/port-slot/port), or a series of slots and ports (slot/port,slot/port,slot/port). If your platform supports channelization and the port is channelized, you must also specify the sub-port in the format slot/port/sub-port.
icmpstatistics [gigabitEthernet | mgmtEthernet | tunnel | vlan]	Shows IPv6 ICMP statistics for the interface as follows: gigabitEthernetdisplays interface gigabitEthernet configurations, mgmtEthernet-displays interface mgmtEthernet configurations, tunnel-displays interface tunnel configurations, vlan -displays vlan interface configurations.
loopback <1-256>	Displays the interface loopback configurations.

loopback <1-256>	Identifies a loopback interface.
mgmtEthernet mgmt	Displays IPv6 interface information for the management port.
statistics [gigabitEthernet | mgmtEthernet | tunnel | vlan]	Shows IPv6 interface statistics as follows: gigabitEthernet- displays interface gigabitEthernet configurations, mgmtEthernet-displays interface mgmtEthernet configurations, tunnel- displays interface tunnel configurations, vlan -displays vlan interface configurations
tunnel <1-2000>	Displays IPv6 interface information for a tunnel. The tunnel ID is expressed as a value from 1 to 2000.
vlan <1-4059>	Displays IPv6 interface information for a VLAN. Specifies the VLAN ID in the range of 1 to 4059. By default, VLAN IDs 1 to 4059 are configurable and the system reserves VLAN IDs 4060 to 4094 for internal use. If you enable VRF scaling and SPBM mode, the system also reserves VLAN IDs 3500 to 3998. VLAN ID 1 is the default VLAN and you cannot create or delete VLAN ID 1.
vrf WORD<1-16>	Specifies a VRF name. The VRF parameter is optional.
vrfids WORD<0-512>	Specifies a VRF by ID. The VRF parameter is optional.

Default

None

Command Mode

User EXEC

show ipv6 interface loopback

Display the IPv6 loopback interface details.

Syntax

- **show ipv6 interface loopback <1-256>**

Command Parameters

<1-256>	Specifies the interface ID value.

Default

None

Command Mode

User EXEC

show ipv6 mld cache

Displays the learned multicast groups in the cache

Syntax

- **show ipv6 mld cache**

Default

None

Command Mode

User EXEC

show ipv6 mld group

Displays MLD group information

Syntax

- **show ipv6 mld group**

Default

None

Command Mode

User EXEC

show ipv6 mld group count

Displays the number of MLD entries

Syntax

- **show ipv6 mld group count**

Default

None

Command Mode

User EXEC

show ipv6 mld group group

Displays the MLD group IPv6 address

Syntax

- **show ipv6 mld group group WORD<0-255>**

Command Parameters

{slot/port [-slot/port]}	Identifies a single slot and port. If your platform supports channelization and the port is channelized, you must also specify the sub-port in the format slot/port/sub-port.
detail	Displays mldv2 specific data.
vlan <1-4059>	Specifies the VLAN ID in the range of 1 to 4059. By default, VLAN IDs 1 to 4059 are configurable and the system reserves VLAN IDs 4060 to 4094 for internal use. If you enable VRF scaling and SPBM mode, the system also reserves VLAN IDs 3500 to 3998. VLAN ID 1 is the default VLAN and you cannot create or delete VLAN ID 1.
WORD<0-255>	Specifies the IPv6 address.

Default

None

Command Mode

User EXEC

show ipv6 mld group group WORD<0-255> detail

Displays MLDv2 specific data

Syntax

- **show ipv6 mld group group WORD<0-255> detail port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} Ports list {slot/port [-slot/port]}**
- **show ipv6 mld group group WORD<0-255> detail vlan <1-4059>**

Default

None

Command Mode

User EXEC

show ipv6 mld group member-subnet

Diplays the MLD IPv6 address and network mask

Syntax

- **show ipv6 mld group member-subnet WORD<0-255>**

Command Parameters

WORD<0-255>	Specifies the IPv6 address or the network mask.

Default

None

Command Mode

User EXEC

show ipv6 mld interface

Displays the IPv6 MLD interface information

Syntax

- **show ipv6 mld interface**
- **show ipv6 mld interface gigabitEthernet {slot/port[/sub-port][-slot/port[/sub-port]][,...]}**
- **show ipv6 mld interface vlan <1-4059>**

Command Parameters

gigabitEthernet {slot/port[/sub-port][-slot/port[/sub-port]][,...]}	Displays the interface gigabitethernet MLD interface information. {slot/port[/sub-port][-slot/port[/sub-port]][,...]} identifies the slot and port in one of the following formats: a single slot and port (slot/port), a range of slots and ports (slot/port-slot/port), or a series of slots and ports (slot/port,slot/port,slot/port). If your platform supports channelization and the port is channelized, you must also specify the sub-port in the format slot/port/sub-port.
vlan <1-4059>	Displays the VLAN interface MLD interface information. By default, VLAN IDs 1 to 4059 are configurable and the system reserves VLAN IDs 4060 to 4094 for internal use. If you enable VRF scaling and SPBM mode, the system also reserves VLAN IDs 3500 to 3998. VLAN ID 1 is the default VLAN and you cannot create or delete VLAN ID 1

Default

None

Command Mode

User EXEC

show ipv6 mld sender

Displays the MLD sender list

Syntax

- **show ipv6 mld sender**
- **show ipv6 mld sender count**
- **show ipv6 mld sender group WORD<0-255>**
- **show ipv6 mld sender sender-subnet WORD<0-255>**

Command Parameters

count	Displays number of MLD entries.
group WORD<0-255>	Displays the MLD IPv6 group address.
sender-subnet WORD<0-255>	Displays the MLD IPv6 address and network mask.

Default

None

Command Mode

User EXEC

show ipv6 mld snooping

Displays MLD snooping information

Syntax

- **show ipv6 mld snooping**

Default

None

Command Mode

User EXEC

show ipv6 mld snoop-trace

Displays MLD snooping tracing information

Syntax

- **show ipv6 mld snoop-trace**

Default

None

Command Mode

User EXEC

show ipv6 mld sys

Displays MLD system parameters

Syntax

- **show ipv6 mld sys**

Default

None

Command Mode

User EXEC

show ipv6 mld-host-cache

Displays the learned multicast group addresses in the host cache.

Syntax

- **show ipv6 mld-host-cache**

Default

None

Command Mode

User EXEC

show ipv6 mroute interface

Displays the IPv6 mroute interface information

Syntax

- **show ipv6 mroute interface**
- **show ipv6 mroute interface gigabitEthernet {slot/port[/sub-port][-slot/port[/sub-port]][,...]}**

Command Parameters

gigabitEthernet {slot/port[/sub-port][-slot/port[/sub-port]][,...]}	Identifies the slot and port in one of the following formats: a single slot and port (slot/port), a range of slots and ports (slot/port-slot/port), or a series of slots and ports (slot/port,slot/port,slot/port). If your platform supports channelization and the port is channelized, you must also specify the sub-port in the format slot/port/sub-port.

Default

None

Command Mode

User EXEC

show ipv6 mroute next-hop

Displays the IPv6 mroute next-hop information

Syntax

- **show ipv6 mroute next-hop**
- **show ipv6 mroute next-hop vlan <1-4059>**

Command Parameters

vlan <1-4059>	Specifies the VLAN ID in the range of 1 to 4059. By default, VLAN IDs 1 to 4059 are configurable and the system reserves VLAN IDs 4060 to 4094 for internal use. If you enable VRF scaling and SPBM mode, the system also reserves VLAN IDs 3500 to 3998. VLAN ID 1 is the default VLAN and you cannot create or delete VLAN ID 1.

Default

None

Command Mode

User EXEC

show ipv6 mroute route

Displays the IPv6 mroute route information

Syntax

- **show ipv6 mroute route**

Default

None

Command Mode

User EXEC

show ipv6 mroute stats

Display IPv6 multicast route statistics.

Syntax

- **show ipv6 mroute stats**
- **show ipv6 mroute stats [WORD<7-400>]**

Command Parameters

WORD<7-400>	Displays the IPv6 multicast route statistics. You can specify up to 10 group addresses in a single command by separating addresses with a comma (,).

Default

None

Command Mode

User EXEC

show ipv6 nd interface

View neighbor discovery interface configuration.

Syntax

- **show ipv6 nd interface gigabitEthernet [{slot/port[/sub-port][-slot/port[/sub-port]][,...]}]**
- **show ipv6 nd interface mgmtEthernet mgmt**
- **show ipv6 nd interface vlan [<1-4059>]**

- **show ipv6 nd interface vrf WORD<1-16>**
- **show ipv6 nd interface vrfids WORD<0-512>**

Command Parameters

gigabitEthernet {slot/port[/sub-port][-slot/port[/sub-port]][,...]}	Identifies the slot and port in one of the following formats: a single slot and port (slot/port), a range of slots and ports (slot/port-slot/port), or a series of slots and ports (slot/port,slot/port,slot/port). If your platform supports channelization and the port is channelized, you must also specify the sub-port in the format slot/port/sub-port.
mgmtEthernet mgmt	Displays the neighbor discovery management interface configuration.
vlan <1-4059>	Specifies the VLAN ID in the range of 1 to 4059. By default, VLAN IDs 1 to 4059 are configurable and the system reserves VLAN IDs 4060 to 4094 for internal use. If you enable VRF scaling and SPBM mode, the system also reserves VLAN IDs 3500 to 3998. VLAN ID 1 is the default VLAN and you cannot create or delete VLAN ID 1.
vrf WORD<1-16>	Specifies a VRF name. The VRF parameter is optional.
vrfids WORD<0-512>	Specifies a VRF by ID. The VRF parameter is optional.

Default

None

Command Mode

User EXEC

show ipv6 nd-prefix

View all configured neighbor discovery prefixes.

Syntax

- **show ipv6 nd-prefix [detail]**
- **show ipv6 nd-prefix detail vrf WORD<1-16>**
- **show ipv6 nd-prefix detail vrfids WORD<0-512>**
- **show ipv6 nd-prefix interface gigabitethernet [{slot/port[/sub-port][-slot/port[/sub-port]][,...]}]**
- **show ipv6 nd-prefix interface vlan [<1-4059>]**
- **show ipv6 nd-prefix vlan [<1-4059>]**
- **show ipv6 nd-prefix vrf WORD<1-16>**
- **show ipv6 nd-prefix vrfids WORD<0-512>**

Command Parameters

detail	Shows detailed information.
gigabitEthernet {slot/port[/sub-port][-slot/port[/sub-port]][,...]}	Identifies the slot and port in one of the following formats: a single slot and port (slot/port), a range of slots and ports (slot/port-slot/port), or a series of slots and ports (slot/port,slot/port,slot/port). If your platform supports channelization and the port is channelized, you must also specify the sub-port in the format slot/port/sub-port.
vlan <1-4059>	Specifies the VLAN ID in the range of 1 to 4059. By default, VLAN IDs 1 to 4059 are configurable and the system reserves VLAN IDs 4060 to 4094 for internal use. If you enable VRF scaling and SPBM mode, the system also reserves VLAN IDs 3500 to 3998. VLAN ID 1 is the default VLAN and you cannot create or delete VLAN ID 1.
vrf WORD<1-16>	Specifies a VRF name. The VRF parameter is optional.
vrfids WORD<0-512>	Specifies a VRF by ID. The VRF parameter is optional.

Default

None

Command Mode

User EXEC

show ipv6 neighbor

View entries in the neighbor cache.

Syntax

- **show ipv6 neighbor**
- **show ipv6 neighbor interface gigbitethernet {slot/port[sub-port]}**
- **show ipv6 neighbor interface mgmtEthernet**
- **show ipv6 neighbor interface mgmtEthernet mgmt**
- **show ipv6 neighbor interface mlt <1-512>**
- **show ipv6 neighbor interface mlt <1-512> vrf WORD<1-16>**
- **show ipv6 neighbor interface mlt <1-512> vrfids WORD<0-512>**
- **show ipv6 neighbor interface vlan <1-4059>**
- **show ipv6 neighbor type <1-4>**
- **show ipv6 neighbor type <1-4> vrf WORD<1-16>**
- **show ipv6 neighbor type <1-4> vrfids WORD<0-512>**

- **show ipv6 neighbor vrf WORD<1-16>**
- **show ipv6 neighbor vrfids WORD<0-512>**
- **show ipv6 neighbor WORD<0-46>**
- **show ipv6 neighbor WORD<0-46> vrf WORD<1-16>**
- **show ipv6 neighbor WORD<0-46> vrfids WORD<0-512>**

Command Parameters

{slot/port[sub-port]}	Identifies a single slot and port. If your platform supports channelization and the port is channelized, you must also specify the sub-port in the format slot/port/sub-port.
<1-512>	Specifies the MLT ID.
mgmtEthernet [mgmt]	Displays neighbor entries for a management port.
type <1-4>	Specifies the type of mapping: 1: other, 2: dynamic, 3: static, or 4: local.
vlan <1-4059>	Specifies the VLAN ID in the range of 1 to 4059. By default, VLAN IDs 1 to 4059 are configurable and the system reserves VLAN IDs 4060 to 4094 for internal use. If you enable VRF scaling and SPBM mode, the system also reserves VLAN IDs 3500 to 3998. VLAN ID 1 is the default VLAN and you cannot create or delete VLAN ID 1.
vrf WORD<1-16>	Specifies a VRF name. The VRF parameter is optional.
vrfids WORD<0-512>	Specifies a VRF by ID. The VRF parameter is optional.
WORD<0-46>	Specifies the neighbor address.

Default

None

Command Mode

User EXEC

show ipv6 ospf

Show the IPv6 OSPFv3 global configuration.

Syntax

- **show ipv6 ospf**

Default

None

Command Mode

User EXEC

show ipv6 ospf area

Show the IPv6 OSPFv3 area configuration.

Syntax

- **show ipv6 ospf area [vrf WORD<1-16>] [vrfids WORD<0-512>]**
- **show ipv6 ospf area vrf WORD<1-16>**
- **show ipv6 ospf area vrfids WORD<0-512>**

Command Parameters

vrf <WORD 1-16>	Specifies the VRF name.
vrfids <WORD 0-512>	Specifies VRF IDs.

Default

None

Command Mode

User EXEC

show ipv6 ospf area-range

Show the IPv6 OSPFv3 range configuration.

Syntax

- **show ipv6 ospf area-range [vrf WORD<1-16>] [vrfids WORD<0-512>]**
- **show ipv6 ospf area-range vrf WORD<1-16>**
- **show ipv6 ospf area-range vrfids WORD<0-512>**

Command Parameters

vrf <WORD 1-16>	Specifies the VRF name.
vrfids <WORD 0-512>	Specifies VRF IDs.

Default

None

Command Mode

User EXEC

show ipv6 ospf ase

Show the IPv6 OSPFv3 as-external LSAs.

Syntax

- **show ipv6 ospf ase [vrf WORD<1-16>] [vrfids WORD<0-512>]**
- **show ipv6 ospf ase vrf WORD<1-16>**
- **show ipv6 ospf ase vrfids WORD<0-512>**

Command Parameters

metric-type <1-2>	Specifies the external type.
vrf <WORD 1-16>	Specifies the VRF name.
vrfids <WORD 0-512>	Specifies VRF IDs.

Default

None

Command Mode

User EXEC

show ipv6 ospf ase metric-type

Display Ipv6 as-external LSA's.

Syntax

- **show ipv6 ospf ase metric-type [vrf WORD<1-16>] [vrfids WORD<0-512>]**
- **show ipv6 ospf ase metric-type vrf WORD<1-16>**
- **show ipv6 ospf ase metric-type vrfids WORD<0-512>**

Command Parameters

vrf <WORD 1-16>	Specifies the VRF name.
vrfids <WORD 0-512>	Specifies VRF IDs.

Default

None

Command Mode

User EXEC

show ipv6 ospf interface

Show the IPv6 OSPFv3 interface configuration.

Syntax

- **show ipv6 ospf interface [gigabitEthernet {slot/port[sub-port]}] [vlan <1-4059>]**
- **show ipv6 ospf interface [vrf WORD<1-16>] [vrfids WORD<0-512>]**
- **show ipv6 ospf interface vrf WORD<1-16>**
- **show ipv6 ospf interface vrfids WORD<0-512>**

Command Parameters

{slot/port[sub-port]}	Identifies a single slot and port. If your platform supports channelization and the port is channelized, you must also specify the sub-port in the format slot/port/sub-port.
vlan <1-4059>	Specifies the VLAN ID in the range of 1 to 4059. By default, VLAN IDs 1 to 4059 are configurable and the system reserves VLAN IDs 4060 to 4094 for internal use. If you enable VRF scaling and SPBM mode, the system also reserves VLAN IDs 3500 to 3998. VLAN ID 1 is the default VLAN and you cannot create or delete VLAN ID 1.
vrf <WORD 1-16>	Specifies the VRF name.
vrfids <WORD 0-512>	Specifies VRF IDs.

Default

None

Command Mode

User EXEC

show ipv6 ospf int-timers

Show the IPv6 OSPFv3 interface timers.

Syntax

- **show ipv6 ospf int-timers [vrf WORD<1-16>] [vrfids WORD<0-512>]**
- **show ipv6 ospf int-timers vrf WORD<1-16>**
- **show ipv6 ospf int-timers vrfids WORD<0-512>**

Command Parameters

vrf <WORD 1-16>	Specifies the VRF name.
vrfids <WORD 0-512>	Specifies VRF IDs.

Default

None

Command Mode

User EXEC

show ipv6 ospf lsdb

Show the IPv6 OSPFv3 Link-state database configuration.

Syntax

- **show ipv6 ospf lsdb**
- **show ipv6 ospf lsdb [area <A.B.C.D>] [lsa-type <0-7>] [lsid <0-4294967295>] [scope <1-3>] [adv-rtr <A.B.C.D>] [vrf WORD<1-16>] [vrfids WORD<0-512>] [detail]**
- **show ipv6 ospf lsdb [vrf WORD<1-16>] [vrfids WORD<0-512>]**
- **show ipv6 ospf lsdb adv-rtr {A.B.C.D}**
- **show ipv6 ospf lsdb adv-rtr {A.B.C.D} [vrf WORD<1-16>] [vrfids WORD<0-512>]**
- **show ipv6 ospf lsdb area {A.B.C.D}**
- **show ipv6 ospf lsdb detail**
- **show ipv6 ospf lsdb detail [vrf WORD<1-16>] [vrfids WORD<0-512>]**
- **show ipv6 ospf lsdb interface gigabitEthernet {slot/port[sub-port]}**
- **show ipv6 ospf lsdb interface vlan <1-4059>**
- **show ipv6 ospf lsdb lsa-type <1-11>**
- **show ipv6 ospf lsdb lsid <0-4294967295>**
- **show ipv6 ospf lsdb scope <1-3>**
- **show ipv6 ospf lsdb tunnel <1-2000>**

- **show ipv6 ospf lsdb vrf WORD<1-16>**
- **show ipv6 ospf lsdb vrfids WORD<0-512>**

Command Parameters

adv-rtr {A.B.C.D}	Specifies the advertise router configurations.
area {A.B.C.D}	Specifies the ipv6 lsdb area configurations.
gigabitEthernet {slot/port[sub-port]}	Identifies a single slot and port. If your platform supports channelization and the port is channelized, you must also specify the sub-port in the format slot/port/sub-port.
interface	Specifies the ipv6 ospf lsdb interface configurations.
lsa-type <1-11>	Specifies the ipv6 ospf lsdb lsa-type.
lsid <0-4294967295>	Specifies the ospf lsdb configuration for specific lsid.
scope <1-3>	Specifies the ipv6 ospf lsdb scope.
tunnel <1-2000>	Specifies the ipv6 ospf lsdb tunnel parameters.
vlan <1-4059>	Specifies the VLAN ID in the range of 1 to 4059. By default, VLAN IDs 1 to 4059 are configurable and the system reserves VLAN IDs 4060 to 4094 for internal use. If you enable VRF scaling and SPBM mode, the system also reserves VLAN IDs 3500 to 3998. VLAN ID 1 is the default VLAN and you cannot create or delete VLAN ID 1.
vrf <WORD 1-16>	Specifies the VRF name.
vrfids <WORD 0-512>	Specifies VRF IDs.

Default

None

Command Mode

User EXEC

show ipv6 ospf nbma-nbr interface

Show the IPv6 OSPFv3 NBMA neighbor configuration.

Syntax

- **show ipv6 ospf nbma-nbr interface gigabitEthernet {slot/port[sub-port]} [WORD<1-46>]**
- **show ipv6 ospf nbma-nbr interface vlan <1-4059> [WORD<1-46>]**

Command Parameters

<1-4059>	Specifies the VLAN ID in the range of 1 to 4059. By default, VLAN IDs 1 to 4059 are configurable and the system reserves VLAN IDs 4060 to 4094 for internal use. If you enable VRF scaling and SPBM mode, the system also reserves VLAN IDs 3500 to 3998. VLAN ID 1 is the default VLAN and you cannot create or delete VLAN ID 1.
gigabitEthernet {slot/port[sub-port]}	Identifies a single slot and port. If your platform supports channelization and the port is channelized, you must also specify the sub-port in the format slot/port/sub-port.
WORD<1-46>	Specifies an IPv6 address.

Default

None

Command Mode

User EXEC

show ipv6 ospf neighbor

Show the IPv6 OSPFv3 neighbor configuration.

Syntax

- **show ipv6 ospf neighbor [vrf WORD<1-16>] [vrfids WORD<0-512>]**
- **show ipv6 ospf neighbor vrf WORD<1-16>**
- **show ipv6 ospf neighbor vrfids WORD<0-512>**

Command Parameters

vrf <WORD 1-16>	Specifies the VRF name.
vrfids <WORD 0-512>	Specifies VRF IDs.

Default

None

Command Mode

User EXEC

show ipv6 ospf redistribute

Show the IPv6 OSPFv3 redistribution configuration.

Syntax

- **show ipv6 ospf redistribute [vrf WORD<1-16>] [vrfids WORD<0-512>]**
- **show ipv6 ospf redistribute vrf WORD<1-16>**
- **show ipv6 ospf redistribute vrfids WORD<0-512>**

Command Parameters

vrf <WORD 1-16>	Specifies the VRF name.
vrfids <WORD 0-512>	Specifies VRF IDs.

Default

None

Command Mode

User EXEC

show ipv6 ospf statistics

Show the IPv6 OSPFv3 statistics.

Syntax

- **show ipv6 ospf statistics [vrf WORD<1-16>] [vrfids WORD<0-512>]**
- **show ipv6 ospf statistics vrf WORD<1-16>**
- **show ipv6 ospf statistics vrfids WORD<0-512>**

Command Parameters

vrf <WORD 1-16>	Specifies the VRF name.
vrfids <WORD 0-512>	Specifies VRF IDs.

Default

None

Command Mode

User EXEC

show ipv6 pim

Displays PIM IPv6 configurations.

Syntax

- **show ipv6 pim**

Default

None

Command Mode

User EXEC

show ipv6 pim active-rp

Displays information about the active rendezvous point (RP) for all groups or a specific group.

Syntax

- **show ipv6 pim active-rp**
- **show ipv6 pim active-rp group**

Command Parameters

group	Specifies the IPv6 group address.

Default

None

Command Mode

User EXEC

show ipv6 pim interface

Displays information about the IPv6 PIM-SM interface configuration on the switch.

Syntax

- **show ipv6 pim interface**
- **show ipv6 pim interface gigabitEthernet {slot/port[/sub-port][-slot/port[/sub-port]][,...]}**
- **show ipv6 pim interface vlan <1-4059>**

Command Parameters

gigabitEthernet {slot/port[/sub-port]	Identifies the slot and port in one of the following formats: a single slot and port (slot/port), a range of slots and ports (slot/port-slot/port), or a series of slots and ports (slot/port,slot/port,slot/port). If your platform

[-slot/port[/sub-port]][,...]}	supports channelization and the port is channelized, you must also specify the sub-port in the format slot/port/sub-port.
vlan <1-4059>	Specifies the VLAN ID in the range of 1 to 4059. By default, VLAN IDs 1 to 4059 are configurable and the system reserves VLAN IDs 4060 to 4094 for internal use. If you enable VRF scaling and SPBM mode, the system also reserves VLAN IDs 3500 to 3998. VLAN ID 1 is the default VLAN and you cannot create or delete VLAN ID 1.

Default

None

Command Mode

User EXEC

show ipv6 pim mode

Displays the IPv6 PIM mode.

Syntax

- **show ipv6 pim mode**

Default

None

Command Mode

User EXEC

show ipv6 pim mroute

Displays the IPv6 mroute information

Syntax

- **show ipv6 pim mroute**
- **show ipv6 pim mroute source WORD<0-255>**

Command Parameters

group WORD<0-255>	Specifies mroute information for the group.
source WORD<0-255>	Specifies mroute information for the source.
terse	Displays brief configuration settings for mroute.

Default

None

Command Mode

User EXEC

show ipv6 pim neighbor

Displays information about the neighboring routers configured with IPv6 PIM-SM

Syntax

- **show ipv6 pim neighbor**
- **show ipv6 pim neighbor WORD<0-255>**

Command Parameters

WORD<0-255>	Specifies the IPv6 address.

Default

None

Command Mode

User EXEC

show ipv6 pim rp-hash

display information about the RPs selected for a multicast group

Syntax

- **show ipv6 pim rp-hash**

Default

None

Command Mode

User EXEC

show ipv6 pim static-rp

Displays the IPv6 static RP table

Syntax

- **show ipv6 pim static-rp**

Default

None

Command Mode

User EXEC

show ipv6 prefix-list

Show IPv6 prefix-list information.

Syntax

- **show ipv6 prefix-list [vrf WORD<1-16>] [vrfids WORD<0-512>]**
- **show ipv6 prefix-list prefix WORD<1-256>**
- **show ipv6 prefix-list vrf WORD<1-16>**
- **show ipv6 prefix-list vrfids WORD<0-512>**
- **show ipv6 prefix-list WORD<1-64>**

Command Parameters

prefix WORD<1-256>	Specifies the prefix.
vrf <WORD 1-16>	Specifies the VRF name.
vrfids <WORD 0-512>	Specifies VRF IDs.
WORD<1-64>	Specifies the prefix-list name.

Default

None

Command Mode

User EXEC

show ipv6 rip

Displays RIPng parameters per interface.

Syntax

- **show ipv6 rip**

Default

None

Command Mode

User EXEC

show ipv6 rip interface

Displays RIPng redistribution configuration.

Syntax

- **show ipv6 rip interface**
- **show ipv6 rip interface gigabitEthernet {slot/port[sub-port]}**
- **show ipv6 rip interface vlan <1-4059>**

Command Parameters

gigabitEthernet {slot/port[sub-port]}	Displays interface gigabitethernet RIPng configurations. {slot/port[sub-port]} identifies a single slot and port. If your platform supports channelization and the port is channelized, you must also specify the sub-port in the format slot/port/sub-port.
vlan <1-4059>	Displays VLAN interface RIPng configurations. By default, VLAN IDs 1 to 4059 are configurable and the system reserves VLAN IDs 4060 to 4094 for internal use. If you enable VRF scaling and SPBM mode, the system also reserves VLAN IDs 3500 to 3998. VLAN ID 1 is the default VLAN and you cannot create or delete VLAN ID 1.

Default

None

Command Mode

User EXEC

show ipv6 rip statistics

Displays RIPng statistics.

Syntax

- **show ipv6 rip statistics**

Default

None

Command Mode

User EXEC

show ipv6 route

Display the b-mac address as next hop rather than host name.

Syntax

- **show ipv6 route [vrf WORD<1-16> | vrfids WORD<0-512>]**
- **show ipv6 route count-summary vrf WORD<1-16>**
- **show ipv6 route count-summary vrfids WORD<0-512>**
- **show ipv6 route dest WORD<0-46>**
- **show ipv6 route dest WORD<0-46> vrf WORD<1-16>**
- **show ipv6 route dest WORD<0-46> vrfids WORD<0-512>**
- **show ipv6 route gigabitethernet {slot/port[sub-port]}]**
- **show ipv6 route next-hop WORD<0-46>**
- **show ipv6 route next-hop WORD<0-46> vrf WORD<1-16>**
- **show ipv6 route next-hop WORD<0-46> vrfids WORD<0-512>**
- **show ipv6 route protocol bgp**
- **show ipv6 route protocol bgp vrf WORD<1-16>**
- **show ipv6 route protocol bgp vrfids WORD<0-512>**
- **show ipv6 route protocol isis**
- **show ipv6 route protocol isis vrf WORD<1-16>**
- **show ipv6 route protocol isis vrfids WORD<0-512>**
- **show ipv6 route protocol local**
- **show ipv6 route protocol local vrf WORD<1-16>**
- **show ipv6 route protocol local vrfids WORD<0-512>**
- **show ipv6 route protocol ospf**
- **show ipv6 route protocol ospf vrf WORD<1-16>**
- **show ipv6 route protocol ospf vrfids WORD<0-512>**
- **show ipv6 route protocol rip**
- **show ipv6 route protocol rip vrf WORD<1-16>**
- **show ipv6 route protocol rip vrfids WORD<0-512>**
- **show ipv6 route protocol static**

- **show ipv6 route protocol static vrf WORD<1-16>**
- **show ipv6 route protocol static vrfids WORD<0-512>**
- **show ipv6 route spbm-nh-as-mac**
- **show ipv6 route static**
- **show ipv6 route static vrf WORD<1-16>**
- **show ipv6 route static vrfids WORD<0-512>**
- **show ipv6 route tunnel <1-2000>**
- **show ipv6 route vlan <1-4059>**
- **show ipv6 route vrf WORD<1-16>**
- **show ipv6 route vrfids WORD<0-512>**

Default

None

Command Mode

User EXEC

show ipv6 route alternative

Display IPv6 alternative routes.

Syntax

- **show ipv6 route alternative protocol bgp**
- **show ipv6 route alternative protocol bgp vrf WORD<1-16>**
- **show ipv6 route alternative protocol bgp vrfids WORD<0-512>**
- **show ipv6 route alternative protocol isis**
- **show ipv6 route alternative protocol isis vrf WORD<1-16>**
- **show ipv6 route alternative protocol isis vrfids WORD<0-512>**
- **show ipv6 route alternative protocol local**
- **show ipv6 route alternative protocol local vrf WORD<1-16>**
- **show ipv6 route alternative protocol local vrfids WORD<0-512>**
- **show ipv6 route alternative protocol ospf vrf WORD<1-16>**
- **show ipv6 route alternative protocol ospf vrfids WORD<0-512>**
- **show ipv6 route alternative protocol rip**
- **show ipv6 route alternative protocol rip vrf WORD<1-16>**
- **show ipv6 route alternative protocol rip vrfids WORD<0-512>**

- **show ipv6 route alternative protocol static**
- **show ipv6 route alternative protocol static vrf WORD<1-16>**
- **show ipv6 route alternative protocol static vrfids WORD<0-512>**
- **show ipv6 route alternative spbm-nh-as-mac**
- **show ipv6 route alternative vrf WORD<1-16>**
- **show ipv6 route alternative vrfids WORD<0-512>**

Command Parameters

protocol {bgp | isis | local | ospf | rip | static}	Displays routes for a particular protocol
spbm-nh-as-mac	Shows spbm route next hop as mac.
vrf WORD<1-16>	Specifies a VRF name. The VRF parameter is optional.
vrfids WORD<0-512>	Specifies a VRF by ID. The VRF parameter is optional.

Default

None

Command Mode

User EXEC

show ipv6 route preference

Display the IPv6 route preference information to confirm that the configuration is correct.

Syntax

- **show ipv6 route preference**
- **show ipv6 route preference vrf WORD<1-16>**
- **show ipv6 route preference vrfids WORD<0-512>**

Command Parameters

vrf WORD<1-16>	Specifies a VRF name. The VRF parameter is optional.
vrfids WORD<0-512>	Specifies a VRF by ID. The VRF parameter is optional.

Default

None

Command Mode

User EXEC

show ipv6 source-guard

Displays IP Source Guard configuration on all ports or for a specified port, for IPv6 addresses.

Syntax

- **show ipv6 source-guard interface enabled**

Default

None

Command Mode

User EXEC

show ipv6 source-guard binding

Displays the IPv6 addresses that are allowed on all IP Source Guard enabled ports or for a specified port.

Syntax

- **show ipv6 source-guard binding**
- **show ipv6 source-guard binding interface gigabitethernet {slot/port[/sub-port] [-slot/port[/sub-port]] [,...]}**
- **show ipv6 source-guard binding WORD<0-46>**

Command Parameters

interface gigabitethernet [{slot/port[/sub-port] [-slot/port[/sub-port]] [,...]}]	Displays the IPv6 addresses that are allowed on the specified IP Source Guard port.
WORD<0-46>	Specifies the IPv6 address bindings for the specified IPv6 address.

Default

None

Command Mode

User EXEC

show ipv6 tcp

You can display IPv6 TCP information. Check the health of connections, from the switch perspective, as they traverse the network detect intermittent connectivity detect attacks on resources determine which applications are active by checking the port numbers view statistics about TCP connections

Syntax

- **show ipv6 tcp**
- **show ipv6 tcp connections**
- **show ipv6 tcp connections vrf WORD<1-16>**
- **show ipv6 tcp connections vrfids WORD<0-512>**
- **show ipv6 tcp listener**
- **show ipv6 tcp listener vrf WORD<1-16>**
- **show ipv6 tcp listener vrfids WORD<0-512>**
- **show ipv6 tcp properties**
- **show ipv6 tcp properties vrf WORD<1-16>**
- **show ipv6 tcp properties vrfids WORD<0-512>**
- **show ipv6 tcp statistics**
- **show ipv6 tcp statistics vrf WORD<1-16>**
- **show ipv6 tcp statistics vrfids WORD<0-512>**

Command Parameters

connections	Displays IPv6 TCP connection table information that includes: local port remote port local address remote address state.
listener	Displays IPv6 TCP listener table information that includes: local port and local address.
properties	Displays IPv6 TCP global properties information that includes: RtoAlgorithm - the timeout value used for retransmitting unacknowledged octets. RtoMin - the minimum time, in milliseconds, permitted by a TCP implementation for the retransmission timeout. RtoMax - the maximum time (in milliseconds) permitted by a TCP implementation for the transmissions timeout. MaxConn - the maximum connections for the device.
statistics	Displays IPv6 TCP global statistics information that includes: ActiveOpens, PassiveOpens, AttemptFails, EstabResets, CurrEstab, InSegs, OutSegs, RetransSegs, InErrs, OutRsts, HCInSegs, and HCOutSegs.
vrf WORD<1-16>	Specifies a VRF name. The VRF parameter is optional.

vrfids WORD<0-512>	Specifies a VRF by ID. The VRF parameter is optional.

Default

None

Command Mode

User EXEC

show ipv6 trace

Show the status of IPv6 trace commands.

Syntax

- **show ipv6 trace base**
- **show ipv6 trace base vrf WORD<1-16>**
- **show ipv6 trace base vrfids WORD<0-512>**
- **show ipv6 trace forwarding**
- **show ipv6 trace forwarding vrfids WORD<0-512>**
- **show ipv6 trace forwarding vrf WORD<1-16>**
- **show ipv6 trace nd**
- **show ipv6 trace nd vrf WORD<1-16>**
- **show ipv6 trace nd vrfids WORD<0-512>**
- **show ipv6 trace ospf**
- **show ipv6 trace ospf vrf WORD<1-16>**
- **show ipv6 trace ospf vrfids WORD<0-512>**
- **show ipv6 trace rip**
- **show ipv6 trace rtm**
- **show ipv6 trace rtm vrf WORD<1-16>**
- **show ipv6 trace rtm vrfids WORD<0-512>**
- **show ipv6 trace transport**
- **show ipv6 trace transport vrfids WORD<0-512>**
- **show ipv6 trace transport vrf WORD<1-16>**

Command Parameters

[base|forwarding|nd|ospf|rip|rtm|transport]	Shows the status for the selected type of trace command.

vrf WORD<1-16>	Specifies a VRF name. The VRF parameter is optional.
vrfids WORD<0-512>	Specifies a VRF by ID. The VRF parameter is optional.

Default

None

Command Mode

User EXEC

show ipv6 tunnel

Shows information about configured IPv6 tunnels, for example, operational state or addresses.

Syntax

- **show ipv6 tunnel <1-2000>**
- **show ipv6 tunnel detail**
- **show ipv6 tunnel local {A.B.C.D}**
- **show ipv6 tunnel remote {A.B.C.D}**

Command Parameters

<1-2000>	Shows configuration information for a specific tunnel ID.
detail	Shows detailed configuration information, for example, the operational status and origin.
local {A.B.C.D}	Shows configuration information for a specific local endpoint address.
remote {A.B.C.D}	Shows configuration information for a specific remote endpoint address.

Default

None

Command Mode

User EXEC

show ipv6 udp

Show IPv6 User Datagram Protocol (UDP) information.

Syntax

- **show ipv6 udp [vrf WORD<1-16> | vrfids WORD<0-512>]**
- **show ipv6 udp endpoints [vrf WORD<1-16> | vrfids WORD<0-512>]**
- **show ipv6 udp endpoints vrf WORD<1-16>**
- **show ipv6 udp endpoints vrfids WORD<0-512>**
- **show ipv6 udp vrf WORD<1-16>**
- **show ipv6 udp vrfids WORD<0-512>**

Command Parameters

endpoints	Shows IPv6 UDP information for the endpoints.
vrf WORD<1-16>	Specifies a VRF name. The VRF parameter is optional.
vrfids WORD<0-512>	Specifies a VRF by ID. The VRF parameter is optional.

Default

None

Command Mode

User EXEC

show ipv6 vrrp

Shows the global status of Virtual Router Redundancy Protocol (VRRP) for IPv6.

Syntax

- **show ipv6 vrrp**
- **show ipv6 vrrp vrf WORD<1-16>**
- **show ipv6 vrrp vrfids WORD<0-512>**

Command Parameters

vrf WORD<1-16>	Specifies a VRF name. The VRF parameter is optional.
vrfids WORD<0-512>	Specifies a VRF by ID. The VRF parameter is optional.

Default

None

Command Mode

User EXEC

show ipv6 vrrp address

Display address information for a specific link-local address or virtual router ID.

Syntax

- **show ipv6 vrrp address**
- **show ipv6 vrrp address link-local WORD<0-127>**
- **show ipv6 vrrp address link-local WORD<0-127> vrfids WORD<0-512>**
- **show ipv6 vrrp address link-local WORD<0-127> vrf WORD<1-16>**
- **show ipv6 vrrp address vrf WORD<1-16>**
- **show ipv6 vrrp address vrfids WORD<0-512>**
- **show ipv6 vrrp address vrid <1-255>**
- **show ipv6 vrrp address vrid <1-255> vrf WORD<1-16>**
- **show ipv6 vrrp address vrid <1-255> vrfids WORD<0-512>**

Command Parameters

link-local WORD<0-127>	Displays information by link-local IPv6 address.
vrf WORD<1-16>	Specifies a VRF name. The VRF parameter is optional.
vrfids WORD<0-512>	Specifies a VRF by ID. The VRF parameter is optional.
vrid <1-255>	Displays information by virtual router ID.

Default

None

Command Mode

User EXEC

show ipv6 vrrp interface

Shows the extended Virtual Router Redundancy Protocol (VRRP) configuration for all interfaces or for a specific interface.

Syntax

- **show ipv6 vrrp interface [verbose]**
- **show ipv6 vrrp interface gigabitethernet [{slot/port[/sub-port][-slot/port[/sub-port]][,...]}] [verbose]**
- **show ipv6 vrrp interface gigabitethernet vrf WORD<1-16>**

- **show ipv6 vrrp interface gigabitethernet vrfids WORD<0-512>**
- **show ipv6 vrrp interface vlan [<1-4059>] [verbose]**
- **show ipv6 vrrp interface vlan vrf WORD<1-16>**
- **show ipv6 vrrp interface vlan vrfids WORD<0-512>**
- **show ipv6 vrrp interface vrf WORD<1-16>**
- **show ipv6 vrrp interface vrfids WORD<0-512>**
- **show ipv6 vrrp interface vrid <1-255> [verbose]**
- **show ipv6 vrrp interface vrid <1-255> vrf WORD<1-16>**
- **show ipv6 vrrp interface vrid <1-255> vrfids WORD<0-512>**

Command Parameters

{slot/port[/sub-port][-slot/port[/sub-port]][,...]}	Identifies the slot and port in one of the following formats: a single slot and port (slot/port), a range of slots and ports (slot/port-slot/port), or a series of slots and ports (slot/port,slot/port,slot/port). If your platform supports channelization and the port is channelized, you must also specify the sub-port in the format slot/port/sub-port.
<1-255>	Displays information by virtual router ID.
<1-4059>	Specifies the VLAN ID in the range of 1 to 4059. By default, VLAN IDs 1 to 4059 are configurable and the system reserves VLAN IDs 4060 to 4094 for internal use. If you enable VRF scaling and SPBM mode, the system also reserves VLAN IDs 3500 to 3998. VLAN ID 1 is the default VLAN and you cannot create or delete VLAN ID 1.
verbose	Displays extended information.
vrf WORD<1-16>	Specifies a VRF name. The VRF parameter is optional.
vrfids WORD<0-512>	Specifies a VRF by ID. The VRF parameter is optional.

Default

None

Command Mode

User EXEC

show ipv6 vrrp interface gigabitethernet statistics

Shows the IPv6 gigabitEthernet interface statistics.

Syntax

- **show ipv6 vrrp interface gigabitethernet statistics [{slot/port[/sub-port][-slot/port[/sub-port]][,...]}] [verbose]**

Command Parameters

statistics {slot/port[/sub-port][-slot/port[/sub-port]][,...]}	Displays the IPv6 statistics for a port. {slot/port[/sub-port][-slot/port[/sub-port]][,...]} identifies the slot and port in one of the following formats: a single slot and port (slot/port), a range of slots and ports (slot/port-slot/port), or a series of slots and ports (slot/port,slot/port,slot/port). If your platform supports channelization and the port is channelized, you must also specify the sub-port in the format slot/port/sub-port.
verbose	Displays extended information.

Default

None

Command Mode

User EXEC

show ipv6 vrrp statistics

Views VRRP for IPv6 statistics to manage network performance.

Syntax

- **show ipv6 vrrp statistics**
- **show ipv6 vrrp statistics link-local WORD<0-127>**
- **show ipv6 vrrp statistics link-local WORD<0-127> vrf WORD<1-16>**
- **show ipv6 vrrp statistics link-local WORD<0-127> vrfids WORD<0-512>**
- **show ipv6 vrrp statistics vrf WORD<1-16>**
- **show ipv6 vrrp statistics vrfids WORD<0-512>**
- **show ipv6 vrrp statistics vrid <1-255>**
- **show ipv6 vrrp statistics vrid <1-255> vrf WORD<1-16>**
- **show ipv6 vrrp statistics vrid <1-255> vrfids WORD<0-512>**

Command Parameters

<1-255>	Displays information by virtual router ID.
vrf WORD<1-16>	Specifies a VRF name. The VRF parameter is optional.
vrfids WORD<0-512>	Specifies a VRF by ID. The VRF parameter is optional.

WORD<0-127>	Displays information by link-local IPv6 address.

Default

None

Command Mode

User EXEC

show i-sid

Display all configured service instance identifiers (I-SID) along with their types, ports/mlt.

Syntax

- **show i-sid**
- **show i-sid <1-16777215>**
- **show i-sid elan**
- **show i-sid elan-transparent**

Command Parameters

<1-16777215>	Specifies a service instance identifier (I-SID).
elan	Specifies the elan (Switched UNI) based service instance identifiers (I-SID).
elan-transparent	Specifies the elan-transparent (Transparent UNI) based service instance identifiers (I-SID).

Default

None

Command Mode

User EXEC

Command Output

The **show i-sid** command displays the following information:

Output field	Description
I-SID	Indicates the I-SID IDs.
I-SID TYPE	Indicated the I-SID type. • T-UNI: Transparent Port UNI service. • ELAN: any to any service (switched service).

Table continues…

Output field	Description
	• CVLAN: CVLAN based service.
VLANID	Indicates the VLAN IDs.
PORT INTERFACES	Indicates the port interface.
MLT INTERFACES	Indicates the MLT interface.
ORIGIN	Indicates if the I-SID is discovered by Fabric Attach or manually added.

Example

The following example displays the command output.

```
Switch:1>show i-sid

================================================================================
                                  Isid Info
================================================================================
ISID        ISID                   PORT               MLT                ORIGIN
ID          TYPE       VLANID      INTERFACES         INTERFACES
--------------------------------------------------------------------------------
999         ELAN       99          -                  c110:100           CONFIG
                       99          1/21               -

c: customer vid    u: untagged-traffic

All 1 out of 1 Total Num of i-sids displayed
```

show i-sid limit-fdb-learning

Displays the maximum MAC learning limit configured for an ISID.

Syntax

- **show i-sid limit-fdb-learning**

Command Parameters

limit-fdb-learning	Shows the ISID based max MAC limit information.

Default

None

Command Mode

User EXEC

show i-sid mac-address-entry

Display all C-MACs learnt on T-UNI ports for a given ISID.

Syntax

- **show i-sid mac-address-entry**
- **show i-sid mac-address-entry <1-16777215>**
- **show i-sid mac-address-entry mac <0x00:0x00:0x00:0x00:0x00:0x00>**
- **show i-sid mac-address-entry port <{slot/port[/sub-port][-slot/port[/sub-port]][,...]}>**
- **show i-sid mac-address-entry remote**

Command Parameters

{slot/port[/sub-port][-slot/port[/sub-port]][,...]}	Identifies the slot and port in one of the following formats: a single slot and port (slot/port), a range of slots and ports (slot/port-slot/port), or a series of slots and ports (slot/port,slot/port,slot/port). If your platform supports channelization and the port is channelized, you must also specify the sub-port in the format slot/port/sub-port.
<0x00:0x00:0x00:0x00:0x00:0x00>	Specifies a MAC id.
<1-16777215>	Specifies a service instance identifier (I-SID).

Default

None

Command Mode

User EXEC

show isis

Display the global Intermediate-System-to-Intermediate-System (IS-IS) configuration.

Syntax

- **show isis**

Default

None

Command Mode

User EXEC

show isis adjacencies

Display Intermediate-System-to-Intermediate-System (IS-IS) adjacencies.

Syntax

- **show isis adjacencies**

Default

None

Command Mode

User EXEC

show isis area

Display the Intermediate-System-to-Intermediate-System (IS-IS) area address.

Syntax

- **show isis area**

Default

None

Command Mode

User EXEC

show isis dup-detection-temp-disable

Displays the Intermediate-System-to-Intermediate-System (IS-IS) duplicate detection temp disable inf

Syntax

- **show isis dup-detection-temp-disable remaining-time**

Command Parameters

remaining-time	Displays IS-IS duplicate detection temp disable remaining time.

Default

None

Command Mode

User EXEC

show isis int-auth

Display the Intermediate-System-to-Intermediate-System (IS-IS) interface authentication configuration.

Syntax

- **show isis int-auth**

Default

None

Command Mode

User EXEC

show isis int-ckt-level

Display the Intermediate-System-to-Intermediate-System (IS-IS) circuit level parameters.

Syntax

- **show isis int-ckt-level**

Default

None

Command Mode

User EXEC

show isis int-counters

Display Intermediate-System-to-Intermediate-System (IS-IS) interface counters.

Syntax

- **show isis int-counters**

Default

None

Command Mode

User EXEC

show isis interface

Display Intermediate-System-to-Intermediate-System (IS-IS) interface configuration and status parameters (including adjacencies).

Syntax

- **show isis interface**
- **show isis interface l1**
- **show isis interface l12**
- **show isis interface l2**

Command Parameters

{ l1 | l2 | l12 }	Displays the interface information for the specified level: l1 (Level 1), l2 (Level 2), l12 (Level 1 and 2). The switch is a Level 1 router, which means it has only Level 1 links and can route within only one area. Level 1 routers route only within their assigned area and cannot route outside that area. Level 2 routers route between areas and toward other domains. Level 1/Level 2 routers route within an assigned area and between areas. Level 1/Level 2 routers maintain both a Level 1 Link State Database and a Level 2 Link State Database.

Default

None

Command Mode

User EXEC

show isis int-l1-cntl-pkts

Display Intermediate-System-to-Intermediate-System (IS-IS) Level 1 control packet counters.

Syntax

- **show isis int-l1-cntl-pkts**

Default

None

Command Mode

User EXEC

show isis int-l2-cntl-pkts

Display Intermediate-System-to-Intermediate-System (IS-IS) Level 2 control packet counters.

Syntax

- **show isis int-l2-cntl-pkts**

Default

None

Command Mode

User EXEC

show isis int-timers

Display Intermediate-System-to-Intermediate-System (IS-IS) interface timers.

Syntax

- **show isis int-timers**

Default

None

Command Mode

User EXEC

show isis logical-interface

Display IS-IS logical interfaces.

Syntax

- **show isis logical-interface**
- **show isis logical-interface [name]**
- **show isis logical-interface [ipsec]**
- **show isis logical-interface [shaper]**

Command Parameters

name	Displays IS-IS logical interface name.
ipsec	Displays IS-IS logical interface IDs with authentication key (**auth-key**) values.
shaper	Displays IS-IS logical interface IDs, names, and egress shaping rate values in Mbps.

Note:

Displays only interfaces with egress shaping rate values configured.

Default

None

Command Mode

User EXEC

show isis lsdb

Display the Intermediate-System-to-Intermediate-System (IS-IS) Link State Database (LSDB).

Syntax

- **show isis lsdb**
- **show isis lsdb detail**
- **show isis lsdb ip-unicast**
- **show isis lsdb ip-unicast i-sid <0-16777215>**
- **show isis lsdb ipv6-unicast**
- **show isis lsdb ipv6-unicast i-sid <0-16777215>**
- **show isis lsdb ipv6-unicast i-sid <0-16777215> lspid xxxx.xxxx.xxxx.xx-xx**
- **show isis lsdb ipv6-unicast i-sid <0-16777215> lspid xxxx.xxxx.xxxx.xx-xx sysid xxxx.xxxx.xxxx**
- **show isis lsdb ipv6-unicast i-sid <0-16777215> sysid xxxx.xxxx.xxxx**
- **show isis lsdb level l1**
- **show isis lsdb level l12**
- **show isis lsdb level l2**
- **show isis lsdb local**
- **show isis lsdb lspid xxxx.xxxx.xxxx.xx-xx - 8 bytes**
- **show isis lsdb sysid xxxx.xxxx.xxxx - 6 bytes**
- **show isis lsdb tlv <1-236>**
- **show isis lsdb tlv <1-236> sub-tlv <1-3>**

Command Parameters

detail	Displays detailed information, which includes the Link State Packet (LSP) ID, the level of the external router, the maximum age of the LSP, the LSP sequence number and the LSP checksum.
ip-unicast	Displays the link state database for the ip-unicast.

ipv6-unicast	Displays the link state database for the IPv6 unicast.
i-sid <0-16777215>	Specifies the i-sid value to filter by.
level { l1 | l2 | l12 }	Displays the link state database for the specified level: l1 (Level 1), l2 (Level 2), or l12 (Level 1 and 2). The switch is a Level 1 router, which means it has only Level 1 links and can route within only one area. Level 1 routers route only within their assigned area and cannot route outside that area. Level 2 routers route between areas and toward other domains. Level 1/Level 2 routers route within an assigned area and between areas. Level 1/Level 2 routers maintain both a Level 1 link state database and a Level 2 Link State database.
local	Displays information on the local link state database.
lspid xxxx.xxxx.xxxx.xx-xx - 8 bytes	Displays the link state database for the specified Link State Packet (LSP) ID. The LSP ID is assigned to external IS-IS routing devices.
sub-tlv <1-3>	Displays the link state database for a specified sub-Type-Length-Value (TLV). Shortest Path Bridging MAC (SPBM) employs Intermediate-System-to-Intermediate-System (IS-IS) as the interior gateway protocol and implements additional TLVs to support additional functionality. TLVs exist inside IS-IS packets and Sub-TLVs exist as additional information in TLVs.
sysid xxxx.xxxx.xxxx - 6 bytes	Displays the link state database for the specified system ID.
sysid xxxx.xxxx.xxxx - 6 bytes	Displays the link state database for a specified sub-Type-Length-Value (TLV). Shortest Path Bridging MAC (SPBM) employs Intermediate-System-to-Intermediate-System (IS-IS) as the interior gateway protocol and implements additional TLVs to support additional functionality. TLVs exist inside IS-IS packets and Sub-TLVs exist as additional information in TLVs.
tlv <1-236>	Displays the link state database for a specified Type-Length-Value (TLV). Shortest Path Bridging MAC (SPBM) employs Intermediate-System-to-Intermediate-System (IS-IS) as the interior gateway protocol and implements additional TLVs to support additional functionality. TLVs exist inside IS-IS packets and give additional information.

Default

None

Command Mode

User EXEC

show isis manual-area

Display Intermediate-System-to-Intermediate-System (IS-IS) areas.

Syntax

- **show isis manual-area**

Default

None

Command Mode

User EXEC

show isis net

Display Intermediate-System-to-Intermediate-System (IS-IS) net information.

Syntax

- **show isis net**

Default

None

Command Mode

User EXEC

show isis spbm

Display isis spbm related info.

Syntax

- **show isis spbm**

Default

None

Command Mode

User EXEC

show isis spbm ip-multicast-fib

Display the Intermediate-System-to-Intermediate-System (IS-IS) Shortest Path Bridging MAC (SPBM) IP multicast Forwarding Information Database (FIB) entries. If you do not use an optional parameter, the command output shows entries for the GlobalRouter (GRT).

Syntax

- **show isis spbm ip-multicast-fib**

Default

None

Command Mode

User EXEC

show isis spbm ip-multicast-route

Displays IP multicast over Fabric Connect route information.

Syntax

- **show isis spbm ip-multicast-route**
- **show isis spbm ip-multicast-route all**
- **show isis spbm ip-multicast-route detail**

Command Parameters

all	Displays all route information.
detail	Displays detailed route information. Shows only for L3 context when vlan/vsn-isid options are not used.
group {A.B.C.D}	Displays the group IP address. Shows only for L3 context when vlan/vsn-isid options are not used.
vlan <2-4059>	Specifies the VLAN ID in the range of 2 to 4059. VLAN ID 1 is the default VLAN and you cannot create or delete VLAN ID 1. By default, the system reserves VLAN IDs 4060 to 4094 for internal use. If you enable VRF scaling and SPBM mode, the system also reserves VLAN IDs 3500 to 3998.
vrf WORD<1-16>	Displays the ip-multicast-route by vrf.
vsn-isid	Displays the ip-multicast-route by vsn-isid.

Default

None

Command Mode

User EXEC

show isis spbm ip-multicast-route group

Displays IP multicast route information by multicast group address.

Syntax

- **show isis spbm ip-multicast-route group {A.B.C.D}**
- **show isis spbm ip-multicast-route group {A.B.C.D} detail**
- **show isis spbm ip-multicast-route group {A.B.C.D} source {A.B.C.D}**
- **show isis spbm ip-multicast-route group {A.B.C.D} source {A.B.C.D} detail**
- **show isis spbm ip-multicast-route group {A.B.C.D} source {A.B.C.D} source-beb WORD<0-255>**
- **show isis spbm ip-multicast-route group {A.B.C.D} source {A.B.C.D} source-beb WORD<0-255> detail**

Command Parameters

{A.B.C.D}	Displays route information by multicast group address.
detail	Displays detailed route information.
source {A.B.C.D}	Displays information for the source IP address.
source-beb WORD<0-255>	Displays information for a specific backbone edge bridge.

Default

None

Command Mode

User EXEC

show isis spbm ip-multicast-route vlan

Displays IP multicast route information by VLAN.

Syntax

- **show isis spbm ip-multicast-route vlan <2-4059>**
- **show isis spbm ip-multicast-route vlan <2-4059> group {A.B.C.D}**

- **show isis spbm ip-multicast-route vlan <2-4059> group {A.B.C.D} detail**
- **show isis spbm ip-multicast-route vlan <2-4059> detail**
- **show isis spbm ip-multicast-route vlan <2-4059> detail**
- **show isis spbm ip-multicast-route vlan <2-4059> group {A.B.C.D}**
- **show isis spbm ip-multicast-route vlan <2-4059> group {A.B.C.D} detail**
- **show isis spbm ip-multicast-route vlan <2-4059> group {A.B.C.D} source {A.B.C.D}**
- **show isis spbm ip-multicast-route vlan <2-4059> group {A.B.C.D} source {A.B.C.D}**
- **show isis spbm ip-multicast-route vlan <2-4059> group {A.B.C.D} source {A.B.C.D} detail**
- **show isis spbm ip-multicast-route vlan <2-4059> group {A.B.C.D} source {A.B.C.D} source-beb WORD<0-255>**
- **show isis spbm ip-multicast-route vlan <2-4059> group {A.B.C.D} source {A.B.C.D} source-beb WORD<0-255>**
- **show isis spbm ip-multicast-route vlan <2-4059> group {A.B.C.D} source {A.B.C.D} source-beb WORD<0-255> detail**
- **show isis spbm ip-multicast-route vlan <2-4059> group {A.B.C.D} source {A.B.C.D} source-beb WORD<0-255> detail**
- **show isis spbm ip-multicast-route vlan<2-4059>**
- **show isis spbm ip-multicast-route vlan<2-4059> group {A.B.C.D} source {A.B.C.D} detail**

Command Parameters

<2-4059>	Specifies the VLAN ID in the range of 2 to 4059. VLAN ID 1 is the default VLAN and you cannot create or delete VLAN ID 1. By default, the system reserves VLAN IDs 4060 to 4094 for internal use. If you enable VRF scaling and SPBM mode, the system also reserves VLAN IDs 3500 to 3998.
detail	Displays detailed route information.
group {A.B.C.D}	Specifies the multicast group address.
source {A.B.C.D}	Displays information for the source IP address.
source-beb WORD<0-255>	Displays information for a specific backbone edge bridge.

Default

None

Command Mode

User EXEC

show isis spbm ip-multicast-route vrf

Displays IP multicast route information by VRF.

Syntax

- **show isis spbm ip-multicast-route vrf WORD<1-16>**
- **show isis spbm ip-multicast-route vrf WORD<1-16> detail**
- **show isis spbm ip-multicast-route vrf WORD<1-16> group {A.B.C.D}**
- **show isis spbm ip-multicast-route vrf WORD<1-16> group {A.B.C.D} detail**
- **show isis spbm ip-multicast-route vrf WORD<1-16> group {A.B.C.D} source {A.B.C.D}**
- **show isis spbm ip-multicast-route vrf WORD<1-16> group {A.B.C.D} source {A.B.C.D} detail**
- **show isis spbm ip-multicast-route vrf WORD<1-16> group {A.B.C.D} source {A.B.C.D} source-beb WORD<1-255>**
- **show isis spbm ip-multicast-route vrf WORD<1-16> group {A.B.C.D} source {A.B.C.D} source-beb WORD<1-255> detail**

Command Parameters

detail	Displays detailed route information.
group {A.B.C.D}	Displays route information by multicast group address.
source {A.B.C.D}	Displays information for the source IP address.
source-beb WORD<0-255>	Displays information for a specific backbone edge bridge.
WORD<1-16>	Specifies the VRF name.

Default

None

Command Mode

User EXEC

show isis spbm ip-multicast-route vsn-isid

Displays IP multicast route information by VSN I-SID.

Syntax

- **show isis spbm ip-multicast-route vsn-isid <1-16777215>**

- **show isis spbm ip-multicast-route vsn-isid <1-16777215> detail**
- **show isis spbm ip-multicast-route vsn-isid <1-16777215> group {A.B.C.D}**
- **show isis spbm ip-multicast-route vsn-isid <1-16777215> group {A.B.C.D} detail**
- **show isis spbm ip-multicast-route vsn-isid <1-16777215> group {A.B.C.D} source {A.B.C.D}**
- **show isis spbm ip-multicast-route vsn-isid <1-16777215> group {A.B.C.D} source {A.B.C.D} detail**
- **show isis spbm ip-multicast-route vsn-isid <1-16777215> group {A.B.C.D} source {A.B.C.D} source-beb WORD<1-255>**
- **show isis spbm ip-multicast-route vsn-isid <1-16777215> group {A.B.C.D} source {A.B.C.D} source-beb WORD<1-255> detail**
- **show isis spbm ip-multicast-route vsn-isid <1-16777215>**
- **show isis spbm ip-multicast-route vsn-isid <1-16777215> detail**
- **show isis spbm ip-multicast-route vsn-isid <1-16777215> group {A.B.C.D}**
- **show isis spbm ip-multicast-route vsn-isid <1-16777215> group {A.B.C.D} detail**
- **show isis spbm ip-multicast-route vsn-isid <1-16777215> group {A.B.C.D} source {A.B.C.D}**
- **show isis spbm ip-multicast-route vsn-isid <1-16777215> group {A.B.C.D} source {A.B.C.D} detail**
- **show isis spbm ip-multicast-route vsn-isid <1-16777215> group {A.B.C.D} source {A.B.C.D} source-beb WORD<1-255>**
- **show isis spbm ip-multicast-route vsn-isid <1-16777215> group {A.B.C.D} source {A.B.C.D} source-beb WORD<1-255> detail**

Command Parameters

<1-16777215>	Specifies the VSN I-SID.
detail	Displays detailed route information.
detail	Displays detailed route information.
group {A.B.C.D}	Displays route information by multicast group address.
source {A.B.C.D}	Displays information for the source IP address.
source-beb WORD<0-255>	Displays information for a specific backbone edge bridge.

Default

None

Command Mode

User EXEC

show isis spbm ip-unicast-fib

Display isis spbm ip unicast-fib.

Syntax

- **show isis spbm ip-unicast-fib**
- **show isis spbm ip-unicast-fib all**
- **show isis spbm ip-unicast-fib id <1-16777215>**
- **show isis spbm ip-unicast-fib spbm-nh-as-mac**

Command Parameters

all	Displays the IP unicast Forwarding Information Base (FIB) entries for all VRFs.
id <1-16777215>	Displays the IP unicast Forwarding Information Base (FIB) for the given service instance identifier (I-SID) value.
spbm-nh-as-mac	Displays the next hop Backbone MAC entry in the IP unicast Forwarding Information Base (FIB).

Default

None

Command Mode

User EXEC

show isis spbm ipv6-unicast-fib

Display the IPv6 Unicast FIB entries for GRT. If you use spbm-nh-as-mad, the command output shows the b-mac address as the nexthop identifier rather than the remote host name.

Syntax

- **show isis spbm ipv6-unicast-fib**
- **show isis spbm ipv6-unicast-fib all**
- **show isis spbm ipv6-unicast-fib id <1-16777215>**
- **show isis spbm ipv6-unicast-fib spbm-nh-as-mac**

Command Parameters

all	Displays the IPv6 unicast Forwarding Information Base (FIB) entries for all VRFs.
id <1-16777215>	Displays the IPv6 unicast Forwarding Information Base (FIB) for the given service instance identifier (I-SID) value.
spbm-nh-as-mac	Displays the next hop Backbone MAC entry in the IPv6 unicast Forwarding Information Base (FIB).

Default

None

Command Mode

User EXEC

show isis spbm i-sid

Display the Intermediate-System-to-Intermediate-System (IS-IS) Shortest Path Bridging MAC (SPBM) multicast Forwarding Information Base (FIB) calculation results by service instance identifier (I-SID).

Syntax

- **show isis spbm i-sid { all | config | discover }**
- **show isis spbm i-sid { all | config | discover } id <1-16777215>**
- **show isis spbm i-sid { all | config | discover } nick-name x.xx.xx - 2.5 bytes**
- **show isis spbm i-sid { all | config | discover } vlan <2-4059>**

Command Parameters

id <1-16777215>	Displays service instance identifier (I-SID) information for the specified I-SID.
nick-name x.xx.xx - 2.5 bytes	Displays service instance identifier (I-SID) information for the specified nickname.
vlan <2-4059>	Displays service instance identifier (I-SID) information for the specified Shortest Path Bridging MAC (SPBM) VLAN. Specifies the VLAN ID in the range of 2 to 4059. VLAN ID 1 is the default VLAN and you cannot create or delete VLAN ID 1. By default, the system reserves VLAN IDs 4060 to 4094 for internal use. If you enable VRF scaling and SPBM mode, the system also reserves VLAN IDs 3500 to 3998.

Default

None

Command Mode

User EXEC

Command Output

The **`show isis spbm i-sid`** command displays the following information:

Output field	Description
ISID {all | discover | config}	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. **Note:** SOURCE NAME is equivalent to nickname.
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 command output.

```
Switch:1>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      Switch1
300    1.11.16        1000   0014.c7e1.33df       config       Switch1
400    1.11.16        1000   0014.c7e1.33df       config       Switch1
200    1.11.16        2000   0014.c7e1.33df       config       Switch1
300    1.11.16        2000   0014.c7e1.33df       config       Switch1
400    1.11.16        2000   0014.c7e1.33df       config       Switch1
200    1.12.45        1000   0016.ca23.73df       discover     Switch2
300    1.12.45        1000   0016.ca23.73df       discover     Switch2

--------------------------------------------------------------------------------
 Total number of SPBM ISID entries configed: 6
--------------------------------------------------------------------------------
 Total number of SPBM ISID entries discovered: 2
--------------------------------------------------------------------------------
 Total number of SPBM ISID entries: 8
--------------------------------------------------------------------------------
```

show isis spbm multicast

Displays the status of the global SPBM multicast configuration.

Syntax

- **show isis spbm multicast**

Default

None

Command Mode

User EXEC

show isis spbm multicast-fib

Display the Intermediate-System-to-Intermediate-System (IS-IS) Shortest Path Bridging MAC (SPBM) multicast Forwarding Information Database (FIB) entries.

Syntax

- **show isis spbm multicast-fib**
- **show isis spbm multicast-fib i-sid <1-16777215>**
- **show isis spbm multicast-fib nick-name x.xx.xx - 2.5 bytes**
- **show isis spbm multicast-fib summary**
- **show isis spbm multicast-fib vlan <2-4059>**

Command Parameters

i-sid <1-16777215>	Displays the FIB for the specified I-SID.
summary	Displays a summary of the FIB.
vlan <2-4059>	Specifies the VLAN ID in the range of 2 to 4059. VLAN ID 1 is the default VLAN and you cannot create or delete VLAN ID 1. By default, the system reserves VLAN IDs 4060 to 4094 for internal use. If you enable VRF scaling and SPBM mode, the system also reserves VLAN IDs 3500 to 3998.

Default

None

Command Mode

User EXEC

show isis spbm nick-name

Display the Shortest Path Bridging MAC (SPBM) configurations for a specific nick-name.

Syntax

- **show isis spbm nick-name**

Default

None

Command Mode

User EXEC

show isis spbm unicast-fib

Display isis spbm unicast-fib.

Syntax

- **show isis spbm unicast-fib**
- **show isis spbm unicast-fib b-mac 0x00:0x00:0x00:0x00:0x00:0x00**
- **show isis spbm unicast-fib summary**
- **show isis spbm unicast-fib vlan <2-4059>**

Command Parameters

b-mac 0x00:0x00:0x00:0x00:0x00:0x00	Displays the Forwarding Information Base (FIB) entry for the specified Backbone MAC (BMAC).
summary	Displays a summary of the Forwarding Information Base (FIB).
vlan <2-4059>	Specifies the VLAN ID for which to display the FIB. Specifies the VLAN ID in the range of 2 to 4059. VLAN ID 1 is the default VLAN and you cannot create or delete VLAN ID 1. By default, the system reserves VLAN IDs 4060 to 4094 for internal use. If you enable VRF scaling and SPBM mode, the system also reserves VLAN IDs 3500 to 3998.

Default

None

Command Mode

User EXEC

show isis spbm unicast-tree

Display the Shortest Path Bridging MAC (SPBM) unicast tree.

Syntax

- **show isis spbm unicast-tree <2-4059>**
- **show isis spbm unicast-tree <2-4059> destination xxxx.xxxx.xxxx - 6 bytes**

Command Parameters

<2-4059>	Displays the unicast tree for the specified destination. Specifies the VLAN ID in the range of 2 to 4059. VLAN ID 1 is the default VLAN and you cannot create or delete VLAN ID 1. By default, the system reserves VLAN IDs 4060 to 4094 for internal use. If you enable VRF scaling and SPBM mode, the system also reserves VLAN IDs 3500 to 3998.
destination xxxx.xxxx.xxxx - 6 bytes	Displays the unicast tree for the specified destination.

Default

None

Command Mode

User EXEC

show isis spb-mcast summary

Displays multicast over Fabric Connect summary information.

Syntax

- **show isis spb-mcast-summary**
- **show isis spb-mcast-summary host-name WORD<0-255>**
- **show isis spb-mcast-summary lspid xxxx.xxxx.xxxx.xx-xx**

Command Parameters

host-name WORD<0-255>	Specifies the host name of the source.
lspid xxxx.xxxx.xxxx.xx-xx	Specifies the LSP ID in xxx.xxx.xxx.xx-xx — 8 byte format.

Default

None

Command Mode

User EXEC

show isis statistics

Display Intermediate-System-to-Intermediate-System (IS-IS) statistics.

Syntax

- **show isis statistics**

Default

None

Command Mode

User EXEC

show isis system-id

Display Intermediate-System-to-Intermediate-System (IS-IS) system ID.

Syntax

- **show isis system-id**

Default

None

Command Mode

User EXEC

show khi cpp

View key health information about the control processors.

Syntax

- **show khi cpp port-statistics**
- **show khi cpp port-statistics [{slot/port[/sub-port][-slot/port[/sub-port]][,...]}]**

Command Parameters

{slot/port[/sub-port][-slot/port[/sub-port]][,...]}	Identifies the slot and port in one of the following formats: a single slot and port (slot/port), a range of slots and ports (slot/port-slot/port), or a series of slots and ports (slot/port,slot/port,slot/port). If your platform supports channelization and the port is channelized, you must also specify the sub-port in the format slot/port/sub-port.
port-statistics	Displays port statistics.

Default

None

Command Mode

User EXEC

show khi fe-ona detail

View ONA global information such as port numbers, IP addresses, and MTU.

Syntax

- **show khi fe-ona detail**

Default

None

Command Mode

User EXEC

show khi fe-ona status

View the current status of the ONA and release information.

Syntax

- **show khi fe-ona status**

Default

None

Command Mode

User EXEC

show khi performance

View the performance of the various components of the switch by checking their key health indicators.

Syntax

- **show khi performance**
- **show khi performance buffer-pool**
- **show khi performance buffer-pool {slot [-slot] [,...]}**
- **show khi performance cpu**
- **show khi performance cpu {slot[-slot][,...]}**
- **show khi performance memory**
- **show khi performance memory {slot[-slot][,...]}**
- **show khi performance process**
- **show khi performance process {slot[-slot][,...]}**
- **show khi performance pthread**
- **show khi performance pthread {slot[-slot][,...]}**
- **show khi performance slabinfo**
- **show khi performance slabinfo {slot[-slot][,...]}**

Command Parameters

buffer-pool {slot[-slot] [,...]}	Shows buffer performance and utilization statistics. {slot [-slot] [,...]} specifies the slot number.
cpu {slot [-slot] [,...]}	Shows current utilization, 5-minute average utilization, and 5-minute high water mark with date and time of event. {slot [-slot][,...]} specifies the slot number.
memory {slot[-slot] [,...]}	Shows memory performance and utilization statistics. {slot [-slot][,...]} specifies the slot number.
process {slot [-slot] [,...]}	Shows process performance and utilization statistics. {slot [-slot][,...]} specifies the slot number.
pthread {slot[-slot] [,...]}	Shows thread performance and utilization statistics. {slot [-slot][,...]} specifies the slot number.
slabinfo {slot[-slot] [,...]}	Shows internal memory management resource performance and utilization statistics. {slot[-slot] [,...]} specifies the slot number.

Default

None

Command Mode

User EXEC

show lacp

View Link Aggregation Control Protocol (LACP) configuration information to determine the LACP parameters and to ensure your configuration is correct.

Syntax

- **show lacp**
- **show lacp**
- **show lacp actor-admin interface**
- **show lacp actor-admin interface gigabitethernet**
- **show lacp actor-admin interface gigabitethernet {slot/port[/sub-port][-slot/port[/sub-port]][,...]}**
- **show lacp actor-admin interface gigabitethernet vid <1-4059>**
- **show lacp actor-oper interface**
- **show lacp actor-oper interface gigabitethernet**
- **show lacp actor-oper interface gigabitethernet {slot/port[/sub-port][-slot/port[/sub-port]][,...]}**
- **show lacp actor-oper interface gigabitethernet vid <1-4059>**
- **show lacp extension interface**
- **show lacp extension interface gigabitethernet**
- **show lacp extension interface gigabitethernet {slot/port[/sub-port][-slot/port[/sub-port]][,...]}**
- **show lacp extension interface gigabitethernet vid <1-4059>**
- **show lacp partner-admin interface**
- **show lacp partner-admin interface gigabitethernet**
- **show lacp partner-admin interface gigabitethernet {slot/port[/sub-port][-slot/port[/sub-port]][,...]}**
- **show lacp partner-admin interface gigabitethernet vid <1-4059>**
- **show lacp partner-oper interface**
- **show lacp partner-oper interface gigabitethernet**
- **show lacp partner-oper interface gigabitethernet {slot/port[/sub-port][-slot/port[/sub-port]][,...]}**
- **show lacp partner-oper interface gigabitethernet vid <1-4059>**

Command Parameters

actor-admin	Shows LACP actor administrative information for all interfaces.
actor-oper	Shows all LACP actor operational information for all interfaces.
extension	Show all LACP timer information.
interface	Shows all LACP port configuration information for all interfaces.
interface mlt <64-6399>	Shows the MLT LACP information for all MLTs or the specific MLT index.
interface mlt id <1-512>	Specifies the MLT ID.
partner-admin	Shows all LACP partner adminstrative information.
partner-oper	Shows all LACP partner operational information.
vid <1-4059>	Specifies the VLAN ID in the range of 2 to 4059. By default, VLAN IDs 1 to 4059 are configurable and the system reserves VLAN IDs 4060 to 4094 for internal use. If you enable VRF scaling and SPBM mode, the system also reserves VLAN IDs 3500 to 3998. VLAN ID 1 is the default VLAN and you cannot create or delete VLAN ID 1.

Default

None

Command Mode

User EXEC

show lacp interface

View Link Aggregation Control Protocol (LACP) statistics for each port to monitor LACP performance of the port.

Syntax

- **show lacp interface**
- **show lacp interface gigabitethernet**
- **show lacp interface gigabitethernet {slot/port[/sub-port][-slot/port[/sub-port]][,...]}**
- **show lacp interface gigabitethernet vid <1-4059>**
- **show lacp interface mlt**
- **show lacp interface mlt <64-6399>**

- **show lacp interface mlt id <1-512>**

Command Parameters

gigabitethernet {slot/port[/sub-port][-slot/port[/sub-port]][,...]}	Identifies the slot and port in one of the following formats: a single slot and port (slot/port), a range of slots and ports (slot/port-slot/port), or a series of slots and ports (slot/port,slot/port,slot/port). If your platform supports channelization and the port is channelized, you must also specify the sub-port in the format slot/port/sub-port.
mlt <64-6399>	Shows the MLT LACP information for all MLTs or the specific MLT index.
mlt id <1-512>	Specifies the MLT ID.
vid <1-4059>	Shows only ports attached to a particular VLAN ID. By default, VLAN IDs 1 to 4059 are configurable and the system reserves VLAN IDs 4060 to 4094 for internal use. If you enable VRF scaling and SPBM mode, the system also reserves VLAN IDs 3500 to 3998. VLAN ID 1 is the default VLAN and you cannot create or delete VLAN ID 1.

Default

None

Command Mode

User EXEC

show license

Display the existing software licenses on the platform.

Syntax

- **show license**

Default

None

Command Mode

User EXEC

show link-state group

Displays the status of the link-state group

Syntax

- **show link-state group <1-48>**
- **show link-state group <1-48> detail**

Command Parameters

<1-48>	Specifies the link-state group ID.
detail	Displays detailed information about the LST group.

Default

None

Command Mode

User EXEC

show logging

Use this command to display logging information.

Syntax

- **show logging config**
- **show logging info**
- **show logging level**
- **show logging transferFile <1-10>**

Command Parameters

config	Displays the global logging information.
info	Displays the logging information.
level	Displays the configuration of event logging.
transferFile <1-10>	Displays the current level parameter settings and next level directories. <1-10> specifies the TFTP/FTP host IP address.

Default

None

Command Mode

User EXEC

show logging file

View log files by file name, category, severity, or CP to identify possible problems.

Syntax

- **show logging file**
- **show logging file alarm**
- **show logging file CPU WORD<0-100>**
- **show logging file detail**
- **show logging file event-code WORD<0-10>**
- **show logging file module WORD<0-100>**
- **show logging file name-of-file WORD<1-99>**
- **show logging file save-to-file WORD<1-99>**
- **show logging file severity WORD<0-25>**
- **show logging file tail**
- **show logging file vrf WORD<0-32>**

Command Parameters

alarm	Displays alarm log entries.
CPU WORD<0-100>	Filters and list the logs according to the CPU that generated it. Specify a string length of 0-25 characters. To specify multiple filters, separate each CPU by the vertical bar (|), for example, CPU1|CPU2. Different hardware platforms support a different number of CPUs. For more information, see your hardware documentation.
detail	Displays CLI and SNMP logging information.
event-code WORD<0-10>	Specifies a number that precisely identifies the event reported. WORD<0-10> specifies the event code in the format: {0x0-0x00FFFFFF|0x0-0x00FFFFFF}.
module WORD<0-100>	Filters and list the logs according to module. Specify a string length of 0-100 characters. Categories include SNMP, EAP, RADIUS, RMON, WEB, STG, IGMP, HW, MLT, FILTER, QOS, CLILOG, SW, CPU, IP, VLAN, IPMC, IP-RIP, OSPF, PIM, POLICY, RIP, and SNMPLOG. To specify multiple filters, separate each category by the vertical bar (|), for example, OSPF|FILTER|QOS. Use the command show logging file module clilog to view the CLI log. Use the command show logging file module snmplog to view the SNMP log.
name-of-file WORD <1-99>	Displays the valid logs from this file. For example, /intflash/logcopy.txt. You cannot use this command on the current log file-the file into which the messages are currently logged). Specify a string length of 1-99 characters.

save-to-file WORD<1-99>	Redirects the output to the specified file and removes all encrypted information. The tail option is not supported with the save-to-file option.
severity WORD <0-25>	Filters and list the logs according to severity. Choices include INFO, ERROR, WARNING, FATAL. To specify multiple filters, separate each severity by the vertical bar (|), for example, ERROR|WARNING|FATAL.
tail	Shows the last results first.
vrf WORD<0-32>	Specifies the name of a VRF instance to show log messages that only pertain to that VRF.

Default

None

Command Mode

User EXEC

show mac-address-table aging-time

Display forwarding database aging time for all VLANs globally.

Syntax

- **show mac-address-table aging-time**

Default

None

Command Mode

User EXEC

show mgmt interface

Shows general configuration information about a Segmented Management Instance.

Syntax

- **show mgmt interface**
- **show mgmt interface clip**
- **show mgmt interface vlan**

Command Parameters

clip	Shows information specific to the management CLIP.
vlan	Shows information specific to the management VLAN.

Default

None

Command Mode

User EXEC

show mgmt ip

Shows IPv4 address information for a Segmented Management Instance.

Syntax

- **show mgmt ip**
- **show mgmt ip clip**
- **show mgmt ip vlan**

Command Parameters

clip	Shows information specific to the management CLIP.
vlan	Shows information specific to the management VLAN.

Default

None

Command Mode

User EXEC

show mgmt ip arp

Shows ARP information for a Segmented Management Instance.

Syntax

- **show mgmt ip arp**
- **show mgmt ip arp clip**
- **show mgmt ip arp vlan**

Command Parameters

clip	Shows information specific to the management CLIP.
vlan	Shows information specific to the management VLAN.

Default

None

Command Mode

User EXEC

show mgmt ip route

Shows operational IPv4 routes for a Segmented Management Instance.

Syntax

- **show mgmt ip route**
- **show mgmt ip route clip**
- **show mgmt ip route vlan**

Command Parameters

clip	Shows information specific to the management CLIP.
vlan	Shows information specific to the management VLAN.

Default

None

Command Mode

User EXEC

show mgmt ip route static

Shows IPv4 static routes for a management VLAN.

Syntax

- **show mgmt ip route static**
- **show mgmt ip route static vlan**

Command Parameters

vlan	Shows information specific to the management VLAN.

Default

None

Command Mode

User EXEC

show mgmt ipv6 neighbor

Shows the Neighbor Discovery cache for a Segmented Management Instance.

Syntax

- **show mgmt ipv6 neighbor**
- **show mgmt ipv6 neighbor clip**
- **show mgmt ipv6 neighbor vlan**

Command Parameters

clip	Shows information specific to the management CLIP.
vlan	Shows information specific to the management VLAN.

Default

None

Command Mode

User EXEC

show mgmt ipv6 route

Shows operational IPv6 routes for a Segmented Management Instance.

Syntax

- **show mgmt ipv6 route**
- **show mgmt ipv6 route clip**
- **show mgmt ipv6 route vlan**

Command Parameters

clip	Shows information specific to the management CLIP.
vlan	Shows information specific to the management VLAN.

Default

None

Command Mode

User EXEC

show mgmt ipv6 route static

Shows IPv6 static routes for a management VLAN.

Syntax

- **show mgmt ipv6 route static**
- **show mgmt ipv6 route static vlan**

Command Parameters

vlan	Shows information specific to the management VLAN.

Default

None

Command Mode

User EXEC

show mgmt migration

View the designated interface addresses selected for migration to a Segmented Management Instance.

Syntax

- **show mgmt migration**

Default

None

Command Mode

User EXEC

show mgmt statistics

View operational statistics for a Segmented Management Instance.

Syntax

- **show mgmt statistics**
- **show mgmt statistics clip**
- **show mgmt statistics vlan**

Command Parameters

clip	Shows information specific to the management CLIP.
vlan	Shows information specific to the management VLAN.

Default

None

Command Mode

User EXEC

show mirror-by-port

Shows mirror-by-port diagnostic information.

Syntax

- **show mirror-by-port**
- **show mirror-by-port WORD<1-1024> MirrorId List {1-479}**

Command Parameters

MirrorID List {1-479}	Displays the requested mirrors.
WORD<1-1024>	Displays mirror-by-port diagnostic information.

Default

None

Command Mode

User EXEC

show mirror-resources

Shows information about mirror resource usage.

Syntax

- **show mirror-resources**

Default

None

Command Mode

User EXEC

show mlt

Display MultiLink Trunking (MLT) information, including port type, port members and designated ports.

Syntax

- **show mlt**
- **show mlt <1-512>**

Command Parameters

<1-512>	Specifies the MLT ID. The value ranges from 1-512.

Default

None

Command Mode

User EXEC

show mlt error collision

View information about collision errors to obtain information about collision errors in the specified MLT, or for all MLTs.

Syntax

- **show mlt error collision**
- **show mlt error collision <1-512>**

Command Parameters

<1-512> Specifies the MLT ID. The value ranges from 1-512.

Default

None

Command Mode

User EXEC

show mlt error main

View information about Ethernet errors to display information about the types of Ethernet errors sent and received by the specified MLT or all MLTs.

Syntax

- **show mlt error main**
- **show mlt error main <1-512>**

Command Parameters

<1-512> Specifies the MLT ID. The value ranges from 1-512.

Default

None

Command Mode

User EXEC

show mlt i-sid

Display all configured service instance identifiers (I-SID) on mlt.

Syntax

- **show mlt i-sid <1-512>**

Command Parameters

<1-512> specifies the MLT ID.

Default

None

Command Mode

User EXEC

show mlt stats

View MLT statistics to display MultiLinkTrunking statistics for the switch or for the specified MLT ID.

Syntax

- **show mlt stats**
- **show mlt stats <1-512>**

Command Parameters

<1-512>	Specifies the MLT ID. The value ranges from 1-512.

Default

None

Command Mode

User EXEC

show monitor-statistics

Display monitor timer configurations, including duration and interval.

Syntax

- **show monitor-statistics**

Default

None

Command Mode

User EXEC

show multicast software-forwarding

Show the software forwarding configuration.

Syntax

- **show multicast software-forwarding**

Default

None

Command Mode

User EXEC

show ntp

View the Network Time Protocol (NTP) server status statistics.

Syntax

- **show ntp**
- **show ntp key**
- **show ntp restrict**
- **show ntp server**
- **show ntp statistics**

Command Parameters

key	Specifies to show NTP authentication key information.
restrict	Displays the NTP restrict information.
server	Specifies to show NTP server information.
statistics	Specifies to show NTP statistics information.

Default

None

Command Mode

User EXEC

show ovsdb

View the OVSDB configuration information

Syntax

- **show ovsdb configs**
- **show ovsdb controller status**
- **show ovsdb managed-interface**

- **show ovsdb replication state**

Command Parameters

configs	Displays the OVSDB configuration information.
controller status	Displays the OVSDB controller information.
managed-interface	Displays the OVSDB managed-interface information.
replication state	Displays the OVSDB replication information.

Default

None

Command Mode

User EXEC

show qos 802.1p-override

Display the 802.1p override status for a port or VLAN.

Syntax

- **show qos 802.1p-override**
- **show qos 802.1p-override gigabitEthernet {slot/port[/sub-port][-slot/port[/sub-port]][,...]}**
- **show qos 802.1p-override vlan <1-4059>**

Command Parameters

gigabitEthernet {slot/port[/sub-port][-slot/port[/sub-port]][,...]}	Identifies the slot and port in one of the following formats: a single slot and port (slot/port), a range of slots and ports (slot/port-slot/port), or a series of slots and ports (slot/port,slot/port,slot/port). If your platform supports channelization and the port is channelized, you must also specify the sub-port in the format slot/port/sub-port.
vlan <1-4059>	Specifies the VLAN ID in the range of 1 to 4059. By default, VLAN IDs 1 to 4059 are configurable and the system reserves VLAN IDs 4060 to 4094 for internal use. If you enable VRF scaling and SPBM mode, the system also reserves VLAN IDs 3500 to 3998. VLAN ID 1 is the default VLAN and you cannot create or delete VLAN ID 1.

Default

None

Command Mode

User EXEC

show qos cosq-stats

Display the Quality of Service (QoS) egress queues statistics.

Syntax

- **show qos cosq-stats**
- **show qos cosq-stats cpu-port**
- **show qos cosq-stats interface {slot/port[/sub-port][-slot/port[/sub-port]][,...]}**
- **show qos cosq-stats loopback-port <1-2>**

Command Parameters

cpu-port	Shows Qos Cosq Stats on cpu port.
interface {slot/port[/sub-port][-slot/port[/sub-port]][,...]}	Show Qos Cosq Stats on port. {slot/port[/sub-port][-slot/port[/sub-port]][,...]} identifies the slot and port in one of the following formats: a single slot and port (slot/port), a range of slots and ports (slot/port-slot/port), or a series of slots and ports (slot/port,slot/port,slot/port). If your platform supports channelization and the port is channelized, you must also specify the sub-port in the format slot/port/sub-port.
loopback-port <1-2>	Shows Qos Cosq Stats on loopback port.

Default

None

Command Mode

User EXEC

show qos egressmap

Display the Quality of Service (QoS) egress mappings.

Syntax

- **show qos egressmap**
- **show qos egressmap 1p**
- **show qos egressmap 1p <0-7>**
- **show qos egressmap ds**
- **show qos egressmap ds <0-7>**

Command Parameters

1p <0-7>	Displays the QoS level to IEEE 802.1p priority mapping.
ds <0-7>	Displays the QoS level to DS byte mapping.

Default

None

Command Mode

User EXEC

show qos ingressmap

Ensure the accuracy of the ingress configuration.

Syntax

- **show qos ingressmap**
- **show qos ingressmap 1p**
- **show qos ingressmap 1p <0-7>**
- **show qos ingressmap ds**
- **show qos ingressmap ds <0-63>**

Command Parameters

1p <0-7>	Show IEEE 1p to Qos level mapping
ds <0-63>	ShowDS Byte to Qos level mapping

Default

None

Command Mode

User EXEC

show qos queue-profile

Displays the queue profile.

Syntax

- **show qos queue-profile <1-5> queue <0-7>**

- **show qos queue-profile <1-5> queue all**

Command Parameters

<0-7>	Specifies the queue identifier.
<1-5>	Displays the qos queue parameter settings for the specified queue profile ID.
all	Displays the qos queue parameter settings for all queues.
queue	Displays the qos queue parameter settings for specified queue profile ID.

Default

None

Command Mode

User EXEC

show qos rate-limiting

Show port ingress rate-limit information.

Note:

Not all platforms support this command. For more information, see Release Notes for XA1400 Series.

Syntax

- **show qos rate-limiting interface gigabitEthernet**
- **show qos rate-limiting interface gigabitEthernet [{slot/port[/sub-port][-slot/port[/sub-port]][,...]}]**

Command Parameters

interface gigabitEthernet {slot/port[/sub-port][-slot/port[/sub-port]][,...]}	Identifies the slot and port in one of the following formats: a single slot and port (slot/port), a range of slots and ports (slot/port-slot/port), or a series of slots and ports (slot/port,slot/port,slot/port). If your platform supports channelization and the port is channelized, you must also specify the sub-port in the format slot/port/sub-port. **Note:** Not all platforms support this command. For more information, see Release Notes for XA1400 Series.

Default

None

Command Mode

User EXEC

show qos shaper

Display egress rate-limiting information for an interface.

Syntax

- **show qos shaper interface gigabitEthernet**
- **show qos shaper interface gigabitethernet [{slot/port[/sub-port][-slot/port[/sub-port]][,...]}]**

Command Parameters

interface gigabitEthernet {slot/port[/sub-port][-slot/port[/sub-port]][,...]}	Identifies the slot and port in one of the following formats: a single slot and port (slot/port), a range of slots and ports (slot/port-slot/port), or a series of slots and ports (slot/port,slot/port,slot/port). If your platform supports channelization and the port is channelized, you must also specify the sub-port in the format slot/port/sub-port.

Default

None

Command Mode

User EXEC

show radius

Display the global status of Remote Access Dial-In User Services (RADIUS) information.

Syntax

- **show radius**

Default

None

Command Mode

User EXEC

show radius reachability

Display the RADIUS server reachability settings.

Syntax

- **show radius reachability**

Default

None

Command Mode

User EXEC

show radius snmp

Display the global status of Remote Access Dial-In User Services (RADIUS) information.

Syntax

- **show radius snmp**

Default

None

Command Mode

User EXEC

show radius-server

Display the Remote Access Dial-In User Services (RADIUS) server information.

Syntax

- **show radius-server**
- **show radius-server statistics**

Default

None

Command Mode

User EXEC

show radius-server statistics

Display current Remote Access Dial-In User Services (RADIUS) server configurations.

Syntax

- **show radius-server statistics**

Default

None

Command Mode

User EXEC

show rmon

View Remote Network Monitoring (RMON) settings to see information about alarms, statistics, events, or the status of RMON on the switch, RMON address map, or control tables.

Syntax

- **show rmon**
- **show rmon address-map**
- **show rmon alarm**
- **show rmon application-host-stats WORD<1-64>**
- **show rmon ctl-table**
- **show rmon event**
- **show rmon history**
- **show rmon log**
- **show rmon network-host-stats**
- **show rmon protocol-dist-stats**
- **show rmon stats**

Command Parameters

address-map	Displays the RMON control tables on the switch.
alarm	Displays RMON alarm entries on the switch.
application-host-stats WORD<1-64>	Displays RMON application host statistics on the switch. WORD<1-64> specifies one of the following application protocols: TCP, UDP, FTP, TELNET, HTTP, RLOGIN, SSH, TFTP, SNMP, HTTPS.

ctl-table	Displays the RMON address map on the switch.
event	Displays RMON event entries on the switch.
history	Displays RMON history entries on the switch.
log	Displays RMON logs on the switch.
network-host-stats	Displays RMON network host statistics on the switch.
protocol-dist-stats	Displays RMON protocol distribution statistics on the switch.
stats	Displays RMON statistics information on the switch.

Default

None

Command Mode

User EXEC

show route-map

Display current information about the IP route policy.

Syntax

- **show route-map**
- **show route-map [WORD <1-64>] [seq <1-65535>] [vrf WORD<1-16>] [vrfids WORD<0-512>]**
- **show route-map detail**
- **show route-map detail [vrf WORD<1-16>] [vrfids WORD<0-512>]**
- **show route-map vrf WORD<1-16>**
- **show route-map vrfids WORD<0-512>**
- **show route-map WORD<1-64>**
- **show route-map WORD<1-64> seq <1-65535>**

Command Parameters

detail	Specifies the long format information of the route map.
vrf WORD<1-16>	Specifies the name of the VRF.
vrfids WORD<0-512>	Specifies the ID of the VRF and is an integer in the range of 0 to 512.

WORD<1-64> seq <1-65535>	Displays a route policy with a policy name and a sequence number. WORD<1-64> is the policy name. seq <1-65535> is the sequence number.

Default

None

Command Mode

User EXEC

show sflow

Display sFlow configurations.

Syntax

- **show sflow**

Default

None

Command Mode

User EXEC

show sflow collector

Display sFlow collector information.

Syntax

- **show sflow collector**
- **show sflow collector <1-2>**

Command Parameters

<1-2>	Specifies which collector ID to display.

Default

None

Command Mode

User EXEC

show sflow interface

Display sFlow interface configurations.

Syntax

- **show sflow interface**
- **show sflow interface enabled**
- **show sflow interface {slot/port[/sub-port] [-slot/port[/sub-port]] [,...]}**

Command Parameters

enabled	Shows information for all sFlow-enabled interfaces.
{slot/port[/sub-port] [-slot/port[/sub-port]] [,...]}	Identifies the slot and port in one of the following formats: a single slot and port (slot/port), a range of slots and ports (slot/port-slot/port), or a series of slots and ports (slot/port,slot/port,slot/port). If your platform supports channelization and the port is channelized, you must also specify the sub-port in the format slot/port/sub-port.

Default

None

Command Mode

User EXEC

show sflow statistics

Display sFlow statistics.

Syntax

- **show sflow statistics**
- **show sflow statistics collector <1-2>**

Command Parameters

collector <1-2>	Specifies the collector ID to display the statistics.

Default

None

Command Mode

User EXEC

show slpp

Use Simple Loop Prevention Protocol (SLPP) information to view loop information.

Syntax

- **show slpp**

Default

None

Command Mode

User EXEC

show slpp interface

Show Simple Loop Prevention Protocol (SLPP) information for a port so that you can view the loop information for a port.

Syntax

- **show slpp interface GigabitEthernet**
- **show slpp interface GigabitEthernet [{slot/port[/sub-port][-slot/port[/sub-port]][,...]}]**

Command Parameters

GigabitEthernet {slot/port[/sub-port][-slot/port[/sub-port]][,...]}	Identifies the slot and port in one of the following formats: a single slot and port (slot/port), a range of slots and ports (slot/port-slot/port), or a series of slots and ports (slot/port,slot/port,slot/port). If your platform supports channelization and the port is channelized, you must also specify the sub-port in the format slot/port/sub-port.

Default

None

Command Mode

User EXEC

show slpp-guard

View SLPP Guard configuration status for the switch or a specific list of ports.

Syntax

- **show slpp-guard [{slot/port[/sub-port][-slot/port[/sub-port]][,...]}]**

Command Parameters

{slot/port[/sub-port] [-slot/port[/sub-port]] [,...]}	Identifies the slot and port in one of the following formats: a single slot and port (slot/port), a range of slots and ports (slot/port-slot/port), or a series of slots and ports (slot/port,slot/port,slot/port). If your platform supports channelization and the port is channelized, you must also specify the sub-port in the format slot/port/sub-port.

Default

None

Command Mode

User EXEC

show smlt

View all ports for a single port SMLT to ensure the correct ports are configured.

Syntax

- **show smlt**
- **show smlt mlt**

Command Parameters

mlt	Displays SMLT information for the MLT interface.

Default

None

Command Mode

User EXEC

show smtp

Shows a list of active event IDs for which the switch generates email notification. The command output includes the default list of IDs and IDs you specifically add or remove.

Syntax

- **show smtp event-id**

Command Parameters

event-id	Shows a list of active event IDs for which the switch generates email notification.

Default

None

Command Mode

User EXEC

show snmplog

View the contents of the Simple Network Management Protocol (SNMP) log.

Syntax

- **show snmplog**

Default

None

Command Mode

User EXEC

show snmp-server

Display Simple Network Management Protocol (SNMP) system information to view trap and authentication profiles.

Syntax

- **show snmp-server**
- **show snmp-server community**
- **show snmp-server context**
- **show snmp-server group**
- **show snmp-server host**
- **show snmp-server notify-filter**
- **show snmp-server user**
- **show snmp-server view**
- **show snmp-server view [viewname WORD<0-32>]**

Command Parameters

community	Displays the SNMP community table.
context	Displays vacm context table.

group	Displays SNMP group access table.
host	Displays SNMP host details.
notify-filter	Displays SNMP notify-filter details.
user	Displays SNMP users.
view	Displays SNMP MIB view table.
viewname WORD<0-32>	Displays the view for a particular view name.

Default

None

Command Mode

User EXEC

show snmp-server host

Display the Simple Network Management Protocol (SNMP) server configuration information.

Syntax

- **show snmp-server host**

Default

None

Command Mode

User EXEC

show snmp-server notify-filter

Display a new notify filter configuration information.

Syntax

- **show snmp-server notify-filter**

Default

None

Command Mode

User EXEC

show software

Display unpacked software releases information.

Syntax

- **show software**
- **show software detail**
- **show software release WORD<1-99>**
- **show software slot**

Command Parameters

detail	Displays software release in detail mode.
release <WORD 1-99>	Specifies a specific software release to be displayed in the range of 1 to 99.
slot	Specifies software version running on each slot. This parameter is not available on all hardware platforms.
verbose	Includes a date and time stamp to indicate when you last activated a software release. The output also indicates if you manually committed the software release, or if you used the automatic commit feature.

Default

None

Command Mode

User EXEC

show spanning-tree bpduguard

Display BPDU Guard configuration

Syntax

- **show spanning-tree bpduguard [{slot/port[/sub-port] [-slot/port[/subport]][,...]}]**
- **show spanning-tree bpduguard [GigabitEthernet {slot/port[/sub-port] [-slot/port[/subport]][,...]}]**

Command Parameters

{slot/port[/sub-port] [-slot/port[/subport]][,...]}	Identifies the slot and port in one of the following formats: a single slot and port (slot/port), a range of slots and ports (slot/port-slot/port), or a series of slots and ports (slot/port,slot/port,slot/port). If your platform supports channelization and the port is channelized, you must also specify the sub-port in the format slot/port/sub-port.

Default

None

Command Mode

User EXEC

show spanning-tree config

Query the change detection setting to show the port information.

Syntax

- **show spanning-tree config**

Default

None

Command Mode

User EXEC

show spanning-tree mstp config

View the Multiple Spanning Tree Protocol (MSTP) configurations to display the MSTP-related bridge-level VLAN and region information.

Syntax

- **show spanning-tree mstp config**

Default

None

Command Mode

User EXEC

show spanning-tree mstp msti config

Display the configuration for one or all Multiple Spanning Tree Protocol (MSTP) instance IDs.

Syntax

- **show spanning-tree mstp msti config**
- **show spanning-tree mstp msti config <1-63>**

Command Parameters

<1-63>	Specifies the MSTP instance ID.

Default

None

Command Mode

User EXEC

show spanning-tree mstp msti port

Shows the configuration, role, or statistics information of an MSTP port.

Syntax

- **show spanning-tree mstp msti port config**
- **show spanning-tree mstp msti port config [{slot/port[/sub-port][-slot/port[/sub-port]][,...]}]**
- **show spanning-tree mstp msti port role**
- **show spanning-tree mstp msti port role [{slot/port[/sub-port][-slot/port[/sub-port]][,...]}]**
- **show spanning-tree mstp msti port statistics**
- **show spanning-tree mstp msti port statistics [{slot/port[/sub-port][-slot/port[/sub-port]][,...]}]**

Command Parameters

config {slot/port[/sub-port][-slot/port[/sub-port]][,...]}	Shows the configuration information of an MSTP port. {slot/port[/sub-port][-slot/port[/sub-port]][,...]} identifies the slot and port in one of the following formats: a single slot and port (slot/port), a range of slots and ports (slot/port-slot/port), or a series of slots and ports (slot/port,slot/port,slot/port). If your platform supports channelization and the port is channelized, you must also specify the sub-port in the format slot/port/sub-port.
role {slot/port[/sub-port][-slot/	Shows the role information of an MSTP port. {slot/port[/sub-port][-slot/port[/sub-port]][,...]} identifies the slot and port in one of the following formats: a

port[/sub-port]][,...]}	single slot and port (slot/port), a range of slots and ports (slot/port-slot/port), or a series of slots and ports (slot/port,slot/port,slot/port). If your platform supports channelization and the port is channelized, you must also specify the sub-port in the format slot/port/sub-port.
statistics {slot/port[/sub-port][-slot/port[/sub-port]][,...]}	Shows the statitics information of an MSTP port. {slot/port[/sub-port][-slot/port[/sub-port]][,...]} identifies the slot and port in one of the following formats: a single slot and port (slot/port), a range of slots and ports (slot/port-slot/port), or a series of slots and ports (slot/port,slot/port,slot/port). If your platform supports channelization and the port is channelized, you must also specify the sub-port in the format slot/port/sub-port.

Default

None

Command Mode

User EXEC

show spanning-tree mstp port config

Show mstp port configurations.

Syntax

- **show spanning-tree mstp port config {slot/port[/sub-port][-slot/port[/sub-port]][,...]}**

Command Parameters

{slot/port[/sub-port][-slot/port[/sub-port]][,...]}	Displays the MSTP port information. {slot/port[/sub-port][-slot/port[/sub-port]][,...]} identifies the slot and port in one of the following formats: a single slot and port (slot/port), a range of slots and ports (slot/port-slot/port), or a series of slots and ports (slot/port,slot/port,slot/port). If your platform supports channelization and the port is channelized, you must also specify the sub-port in the format slot/port/sub-port.

Default

None

Command Mode

User EXEC

show spanning-tree mstp port role

Display Multiple Spanning Tree Protocol (MSTP) port information.

Syntax

- **show spanning-tree mstp port role {slot/port[/sub-port][-slot/port[/sub-port]][,...]}**

Command Parameters

{slot/port[/sub-port][-slot/port[/sub-port]][,...]}	Displays the MSTP port configurations, which display MSTP-related bridge-level VLAN and region information.

Default

None

Command Mode

User EXEC

show spanning-tree mstp port statistics

Display Multiple Spanning Tree Protocol (MSTP) Multiple Spanning Tree Instance (MSTI) information to ensure the feature is configured correctly for your network.

Syntax

- **show spanning-tree mstp port statistics**
- **show spanning-tree mstp port statistics {slot/port[/sub-port][-slot/port[/sub-port]][,...]}**

Command Parameters

{slot/port[/sub-port][-slot/port[/sub-port]][,...]}	Displays the MSTP port information to display the MSTP, CIST port, and MSTI port information maintained by every port of the common spanning tree. {slot/port[/sub-port][-slot/port[/sub-port]][,...]} identifies the slot and port in one of the following formats: a single slot and port (slot/port), a range of slots and ports (slot/port-slot/port), or a series of slots and ports (slot/port,slot/port,slot/port). If your platform supports channelization and the port is channelized, you must also specify the sub-port in the format slot/port/sub-port.

Default

None

Command Mode

User EXEC

show spanning-tree mstp statistics

Display Multiple Spanning Tree Protocol (MSTP) statistics to see MSTP related bridge-level statistics.

Syntax

- **show spanning-tree mstp statistics**

Default

None

Command Mode

User EXEC

show spanning-tree mstp status

View the Multiple Spanning Tree Protocol (MSTP) status to display the MSTP- related status information known by the selected bridge.

Syntax

- **show spanning-tree mstp status**

Default

None

Command Mode

User EXEC

show spanning-tree rstp config

View the global Rapid Spanning Tree Protocol (RSTP) configuration information to display the RSTP configuration details.

Syntax

- **show spanning-tree rstp config**

Default

None

Command Mode

User EXEC

show spanning-tree rstp port config

Configure Ethernet Rapid Spanning Tree Protocol (RSTP) parameters to set RSTP parameters for the port.

Syntax

- **show spanning-tree rstp port config**
- **show spanning-tree rstp port config [{slot/port[/sub-port][-slot/port[/sub-port]][,...]}]**

Command Parameters

{slot/port[/sub-port][-slot/port[/sub-port]][,...]}	Shows RSTP port configuration. {slot/port[/sub-port][-slot/port[/sub-port]][,...]} identifies the slot and port in one of the following formats: a single slot and port (slot/port), a range of slots and ports (slot/port-slot/port), or a series of slots and ports (slot/port,slot/port,slot/port). If your platform supports channelization and the port is channelized, you must also specify the sub-port in the format slot/port/sub-port.

Default

None

Command Mode

User EXEC

show spanning-tree rstp port role

View the Rapid Spanning Tree Protocol (RSTP) role to display the RSTP information.

Syntax

- **show spanning-tree rstp port role**
- **show spanning-tree rstp port role [{slot/port[/sub-port][-slot/port[/sub-port]][,...]}]**

Command Parameters

{slot/port[/sub-port][-slot/port[/sub-port]][,...]}	Shows the RSTP port role. {slot/port[/sub-port][-slot/port[/sub-port]][,...]} identifies the slot and port in one of the following formats: a single slot and port (slot/port), a range of slots and ports (slot/port-slot/port), or a series of slots and ports (slot/port,slot/port,slot/port). If your platform supports channelization and the port is channelized, you must also specify the sub-port in the format slot/port/sub-port.

Default

None

Command Mode

User EXEC

show spanning-tree rstp port statistics

View the Rapid Spanning Tree Protocol (RSTP) information for a selected port to display the RSTP related configuration information for the selected port.

Syntax

- **show spanning-tree rstp port statistics**
- **show spanning-tree rstp port statistics [{slot/port[/sub-port][-slot/port[/sub-port]][,...]}]**

Command Parameters

{slot/port[/sub-port][-slot/port[/sub-port]][,...]}	Shows RSTP port statistics. {slot/port[/sub-port][-slot/port[/sub-port]][,...]} identifies the slot and port in one of the following formats: a single slot and port (slot/port), a range of slots and ports (slot/port-slot/port), or a series of slots and ports (slot/port,slot/port,slot/port). If your platform supports channelization and the port is channelized, you must also specify the sub-port in the format slot/port/sub-port.

Default

None

Command Mode

User EXEC

show spanning-tree rstp port status

View the Rapid Spanning Tree Protocol (RSTP) status for a port to display the RSTP related status information for a selected port.

Syntax

- **show spanning-tree rstp port status**
- **show spanning-tree rstp port status [{slot/port[/sub-port][-slot/port[/sub-port]][,...]}]**

Command Parameters

{slot/port[/sub-port][-slot/port[/	Identifies the slot and port. {slot/port[/sub-port][-slot/port[/sub-port]][,...]} identifies the slot and port in one of the following formats: a single slot and port (slot/port), a range of slots and ports (slot/port-slot/port), or a series of slots and ports (slot/

sub-port]] [,...]}	port,slot/port,slot/port). If your platform supports channelization and the port is channelized, you must also specify the sub-port in the format slot/port/sub-port.

Default

None

Command Mode

User EXEC

show spanning-tree rstp statistics

View Rapid Spanning Tree Protocol (RSTP) statistics to manage network performance.

Syntax

- **show spanning-tree rstp statistics**

Default

None

Command Mode

User EXEC

show spanning-tree rstp status

View the Rapid Spanning Tree Protocol (RSTP) status to display the RSTP related status information for the selected bridge.

Syntax

- **show spanning-tree rstp status**

Default

None

Command Mode

User EXEC

show spanning-tree status

View spanning-tree status information.

Syntax

- **show spanning-tree status**

Default

None

Command Mode

User EXEC

show spanning-tree tc-receive-alarm-threshold

Displays the tc-receive-alarm-threshold configuration.

Syntax

- **show spanning-tree tc-receive-alarm-threshold**

Default

None

Command Mode

User EXEC

show spbm

Display the status (enabled or disabled) and the ethertype for Shortest Path Bridging MAC (SPBM).

Syntax

- **show spbm**

Default

None

Command Mode

User EXEC

show ssh

Verify that Secure Shell (SSH) services are enabled on the switch and display SSH configuration information to ensure that the SSH parameters are properly configured.

Syntax

- **show ssh <global|session>**
- **show ssh global**
- **show ssh session**

Command Parameters

global	Displays global system SSH information.
session	Displays the current session SSH information.

Default

None

Command Mode

User EXEC

show ssh rekey

Displays the SSH rekey configuration information on the switch.

Syntax

- **show ssh rekey**

Command Parameters

info	Shows information about key exchange between server and client.

Default

None

Command Mode

User EXEC

show sys control

Shows system control settings.

Syntax

- **show sys control**

Default

None

Command Mode

User EXEC

show sys dns

Shows the DNS default domain name.

Syntax

- **show sys dns**

Default

None

Command Mode

User EXEC

show sys force-msg

Shows the message control force message pattern settings.

Syntax

- **show sys force-msg**

Default

None

Command Mode

User EXEC

show sys mgid-usage

Shows the multicast group ID (MGID) usage for VLANs, SPBM, and multicast traffic.

Syntax

- **show sys mgid-usage**

Default

None

Command Mode

User EXEC

show sys msg-control

Shows the system message control function status (activated or disabled).

Syntax

- **show sys msg-control**

Default

None

Command Mode

User EXEC

show sys mtu

Shows system maximum transmission unit (MTU) information.

Syntax

- **show sys mtu**

Default

None

Command Mode

User EXEC

show sys power

View power information for the chassis.

Syntax

- **show sys power**
- **show sys power global**
- **show sys power power-supply**
- **show sys power slot**

Command Parameters

global	Shows a summary of the power redundancy settings.
power-supply	Shows detailed power information for each power supply.
slot	Shows detailed power information for the slot.

Default

None

Command Mode

User EXEC

show sys setting

Shows system settings.

Syntax

- **show sys setting**

Default

None

Command Mode

User EXEC

show sys software

Verify that the image and configuration are loaded properly.

Syntax

- **show sys software**

Default

None

Command Mode

User EXEC

show sys stats

Shows system statistics.

Syntax

- **show sys stats**

Default

None

Command Mode

User EXEC

show sys stats ipmc-threshold-exceeded-cnt

Display IP multicast exceeded threshold counters.

Syntax

- **show sys stats ipmc-threshold-exceeded-cnt**

Default

None

Command Mode

User EXEC

show sys topology-ip

Shows the circuitless IP set.

Syntax

- **show sys topology-ip**

Default

None

Command Mode

User EXEC

show sys-info

Display the system status and technical information on the hardware components of the switch.

Syntax

- **show sys-info**
- **show sys-info card**
- **show sys-info cpld**
- **show sys-info fan**
- **show sys-info led**
- **show sys-info power**
- **show sys-info temperature**
- **show sys-info uboot**
- **show sys-info usb**

Command Parameters

card	Specifies information about all the installed modules, including cooling modules (fans).
cpld	Specifies cpld details. This parameter is not available on all hardware platforms.
fan	Specifies information about installed cooling modules (fans).
led	Shows system LED status.
power	Specifies information about installed power supplies.
temperature	Specifies information about temperature.
uboot	Specifies information about uboot image. This parameter is not available on all hardware platforms.
usb	Specifies information about cached USB information.

Default

None

Command Mode

User EXEC

show syslog

View the syslog information to ensure accuracy.

Syntax

- **show syslog**

Default

None

Command Mode

User EXEC

show syslog host

View the syslog host information to ensure accuracy.

Syntax

- **show syslog host <1-10>**

Command Parameters

<1-10>	Specifies the syslog host ID.

Default

None

Command Mode

User EXEC

show tacacs

show TACACS information.

Syntax

- **show tacacs**

Default

None

Command Mode

User EXEC

show tech

Display technical information about the status of the system and complete information about the hardware components, software components, and operation of the system.

Syntax

- **show tech**

Default

None

Command Mode

User EXEC

show telnet-access

Show the maximum number of Telnet sessions.

Syntax

- **show telnet-access**

Default

None

Command Mode

User EXEC

show trace cfm

Shows the configuration status for CFM trace.

Syntax

- **show trace cfm**

Default

None

Command Mode

User EXEC

show trace file

View the trace results.

Syntax

- **show trace file**
- **show trace file tail**

Command Parameters

tail	Show file from tail

Default

None

Command Mode

User EXEC

show trace level

Show the current trace level for all modules.

Syntax

- **show trace level**

Default

None

Command Mode

User EXEC

show trace modid-list

Show the relationship between level number and module ID to use with the trace tool.

Syntax

- **show trace modid-list**

Default

None

Command Mode

User EXEC

show trace spbm isis

View trace results.

Syntax

- **show trace spbm isis**

Default

None

Command Mode

User EXEC

show trace sub-system

Show trace sub-system name.

Syntax

- **show trace sub-system**

Default

None

Command Mode

User EXEC

show unsupported-lastset

Display the last set of masked commands in the release.

Syntax

- **show unsupported-lastset**

Default

None

Command Mode

User EXEC

show users

Display a list of users who are logged on to the system.

Syntax

- **show users**

Default

None

Command Mode

User EXEC

show virtual-ist

Show virtual IST information.

Syntax

- **show virtual-ist**

Default

None

Command Mode

User EXEC

show virtual-ist stat

Display stat for virtual ist.

Syntax

- **show virtual-ist stat**

Default

None

Command Mode

User EXEC

show virtual-service

Displays virtual service information

Syntax

- **show virtual-service config WORD<1-80>**
- **show virtual-service install WORD<1-80>**
- **show virtual-service statistics WORD<1-80>**

Command Parameters

config WORD<1-80>	Displays the virtual-service configuration.
install WORD<1-80>	Displays installation status for a virtual service.
statistics WORD<1-80>	Displays statistics for virtual services configured on the switch.

Default

None

Command Mode

User EXEC

show vlacp

Display Virtual Link Aggregation Control Protocol (VLACP) global information.

Syntax

- **show vlacp**

Default

None

Command Mode

User EXEC

show vlacp interface

Display Virtual Link Aggregation Control Protocol (VLACP) global information.

Syntax

- **show vlacp interface**

- **show vlacp interface gigabitethernet**
- **show vlacp interface gigabitethernet [vid <1-4059>]**
- **show vlacp interface gigabitethernet {slot/port[/sub-port][-slot/port[/sub-port]][,...]}**

Command Parameters

gigabitethernet {slot/port[/sub-port][-slot/port[/sub-port]][,...]}	Identifies the slot and port in one of the following formats: a single slot and port (slot/port), a range of slots and ports (slot/port-slot/port), or a series of slots and ports (slot/port,slot/port,slot/port). If your platform supports channelization and the port is channelized, you must also specify the sub-port in the format slot/port/sub-port.
vid <1-4059>	Specifies the VLAN ID in the range of 1 to 4059. By default, VLAN IDs 1 to 4059 are configurable and the system reserves VLAN IDs 4060 to 4094 for internal use. If you enable VRF scaling and SPBM mode, the system also reserves VLAN IDs 3500 to 3998. VLAN ID 1 is the default VLAN and you cannot create or delete VLAN ID 1.

Default

None

Command Mode

User EXEC

show vlan advance

View the advanced parameters to display the advanced parameters for the specified VLAN or for all VLANs.

Syntax

- **show vlan advance**
- **show vlan advance <1-4059>**

Command Parameters

<1-4059>	Specifies the VLAN ID in the range of 1 to 4059. By default, VLAN IDs 1 to 4059 are configurable and the system reserves VLAN IDs 4060 to 4094 for internal use. If you enable VRF scaling and SPBM mode, the system also reserves VLAN IDs 3500 to 3998. VLAN ID 1 is the default VLAN and you cannot create or delete VLAN ID 1.

Default

None

Command Mode

User EXEC

show vlan autolearn-mac

View autolearned MAC addresses.

Syntax

- **show vlan autolearn-mac**

Default

None

Command Mode

User EXEC

show vlan basic

View the VLAN information to display the basic configuration for all VLANs or a specified VLAN.

Syntax

- **show vlan basic**
- **show vlan basic <1-4059>**

Command Parameters

<1-4059>	Specifies the VLAN ID in the range of 1 to 4059. By default, VLAN IDs 1 to 4059 are configurable and the system reserves VLAN IDs 4060 to 4094 for internal use. If you enable VRF scaling and SPBM mode, the system also reserves VLAN IDs 3500 to 3998. VLAN ID 1 is the default VLAN and you cannot create or delete VLAN ID 1.

Default

None

Command Mode

User EXEC

show vlan brouter-port

View the brouter port information to display the brouter port VLAN information for all VLANs on the switch or for the specified VLAN.

Syntax

- **show vlan brouter-port**

Default

None

Command Mode

User EXEC

show vlan i-sid

Display the customer VLAN (C-VLAN) to instance service identifier (I-SID) associations.

Syntax

- **show vlan i-sid**
- **show vlan i-sid <1-4059>**

Command Parameters

<1-4059> Specifies the VLAN ID in the range of 1 to 4059. By default, VLAN IDs 1 to 4059 are configurable and the system reserves VLAN IDs 4060 to 4094 for internal use. If you enable VRF scaling and SPBM mode, the system also reserves VLAN IDs 3500 to 3998. VLAN ID 1 is the default VLAN and you cannot create or delete VLAN ID 1.

Default

None

Command Mode

User EXEC

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 C-VLANs.

Example

The following example displays the output for this command.

```
Switch:1>show vlan i-sid
================================================================================
                                  Vlan I-SID
================================================================================
VLAN_ID    I-SID
--------------------------------------------------------------------------------
1
2
5          5
10
20
```

show vlan mac-address-entry

View forwarding database (FDB) filters to display the FDB filters for the specified VLAN.

Syntax

- **show vlan mac-address-entry**
- **show vlan mac-address-entry <1-4059>**
- **show vlan mac-address-entry mac 0x00:0x00:0x00:0x00:0x00:0x00**
- **show vlan mac-address-entry port {slot/port[/sub-port][-slot/port[/sub-port]][,...]}**
- **show vlan mac-address-entry spbm-tunnel-as-mac**

Command Parameters

<1-4059>	Specifies the VLAN ID in the range of 1 to 4059. By default, VLAN IDs 1 to 4059 are configurable and the system reserves VLAN IDs 4060 to 4094 for internal use. If you enable VRF scaling and SPBM mode, the system also reserves VLAN IDs 3500 to 3998. VLAN ID 1 is the default VLAN and you cannot create or delete VLAN ID 1.
mac 0x00:0x00:0x00:0x00:0x00:0x00	Specifies the MAC address.
port {slot/port[/sub-port][-slot/port[/sub-port]][,...]}	Identifies the slot and port in one of the following formats: a single slot and port (slot/port), a range of slots and ports (slot/port-slot/port), or a series of slots and ports (slot/port,slot/port,slot/port). If your platform supports channelization and the port is channelized, you must also specify the sub-port in the format slot/port/sub-port.
spbm-tunnel-as-mac	Discovers where entries are learned. The TUNNEL column indicates where in the SPBM network an entry is learned.

Default

None

Command Mode

User EXEC

show vlan mac-address-static

View the database status, MAC address, and QoS levels to display the static forwarding database status.

Syntax

- **show vlan mac-address-static**
- **show vlan mac-address-static <1-4059>**
- **show vlan mac-address-static mac 0x00:0x00:0x00:0x00:0x00:0x00**
- **show vlan mac-address-static port {slot/port[/sub-port][-slot/port[/sub-port]][,...]}**

Command Parameters

<1-4059>	Specifies the VLAN ID in the range of 1 to 4059. By default, VLAN IDs 1 to 4059 are configurable and the system reserves VLAN IDs 4060 to 4094 for internal use. If you enable VRF scaling and SPBM mode, the system also reserves VLAN IDs 3500 to 3998. VLAN ID 1 is the default VLAN and you cannot create or delete VLAN ID 1.
mac 0x00:0x00:0x00:0x00:0x00:0x00	Specifies the MAC address.
port {slot/port[/sub-port][-slot/port[/sub-port]][,...]}	Identifies the slot and port in one of the following formats: a single slot and port (slot/port), a range of slots and ports (slot/port-slot/port), or a series of slots and ports (slot/port,slot/port,slot/port). If your platform supports channelization and the port is channelized, you must also specify the sub-port in the format slot/port/sub-port.

Default

None

Command Mode

User EXEC

show vlan manual-edit-mac

Show the list of manually edited MAC addresses and the associated ports.

Syntax

- **show vlan manual-edit-mac**

Default

None

Command Mode

User EXEC

show vlan members

View the VLAN port member status to display the port member status for all VLANs on the switch or for the specified VLAN.

Syntax

- **show vlan members**
- **show vlan members [null-vlan] [port {slot/port[-slot/port] [,...]}] [<1-4059>]**
- **show vlan members null-vlan**
- **show vlan members port {slot/port[/sub-port][-slot/port[/sub-port]] [,...]}**

Command Parameters

<1-4059>	Specifies the VLAN ID in the range of 1 to 4059. By default, VLAN IDs 1 to 4059 are configurable and the system reserves VLAN IDs 4060 to 4094 for internal use. If you enable VRF scaling and SPBM mode, the system also reserves VLAN IDs 3500 to 3998. VLAN ID 1 is the default VLAN and you cannot create or delete VLAN ID 1.
null-vlan	Displays ports in a null VLAN.
port {slot/port[/sub-port][-slot/port[/sub-port]] [,...]}	Identifies the slot and port in one of the following formats: a single slot and port (slot/port), a range of slots and ports (slot/port-slot/port), or a series of slots and ports (slot/port,slot/port,slot/port). If your platform supports channelization and the port is channelized, you must also specify the sub-port in the format slot/port/sub-port.

Default

None

Command Mode

User EXEC

show vlan nodal-mep

Display the nodal Maintenance Endpoint (MEP) configuration. The Nodal B-VLAN MEPs created on the CP and function as if they are connected to the virtual interface of the given B-VLAN. Because of this they are supported for both port and MLT based B-VLANs. To support this behavior a MAC entry is added to the FDB and a new CFM data path table containing the B-VLAN and MP level are added to direct CFM frames to the CP as required.

Syntax

- **show vlan nodal-mep**
- **show vlan nodal-mep <1-4059>**

Command Parameters

<1-4059> Specifies the VLAN ID in the range of 1 to 4059. By default, VLAN IDs 1 to 4059 are configurable and the system reserves VLAN IDs 4060 to 4094 for internal use. If you enable VRF scaling and SPBM mode, the system also reserves VLAN IDs 3500 to 3998. VLAN ID 1 is the default VLAN and you cannot create or delete VLAN ID 1.

Default

None

Command Mode

User EXEC

show vlan nodal-mip-level

Display the nodal Maintenance Intermediate Point (MIP) level configuration. The Nodal MIP is associated with a B-VLAN. VLAN and level are sufficient to specify the Nodal MIP entity. The Nodal MIP MAC address is the SPBM system ID for the node on which it resides. If the fastpath sends a message to the CP, the MIP responds if it is not the target and the MEP responds if it is the target.

Syntax

- **show vlan nodal-mip-level**
- **show vlan nodal-mip-level <1-4059>**

Command Parameters

<1-4059> Specifies the VLAN ID in the range of 1 to 4059. By default, VLAN IDs 1 to 4059 are configurable and the system reserves VLAN IDs 4060 to 4094 for internal use. If you enable VRF scaling and SPBM mode, the system also reserves VLAN IDs 3500 to 3998. VLAN ID 1 is the default VLAN and you cannot create or delete VLAN ID 1.

Default

None

Command Mode

User EXEC

show vlan private-vlan

Display the list of private VLANs.

Syntax

- **show vlan private-vlan <2-4059>**

Command Parameters

<2-4059>	Specifies the VLAN ID in the range of 2 to 4059. VLAN ID 1 is the default VLAN and you cannot create or delete VLAN ID 1. By default, the system reserves VLAN IDs 4060 to 4094 for internal use. If you enable VRF scaling and SPBM mode, the system also reserves VLAN IDs 3500 to 3998.

Default

None

Command Mode

User EXEC

show vlan remote-mac-table

Display customer VLAN (C-VLAN) remote-mac-table information.

Syntax

- **show vlan remote-mac-table <1-4059>**
- **show vlan remote-mac-table <1-4059> alternative**

Command Parameters

<1-4059>	Specifies the VLAN ID in the range of 1 to 4059. By default, VLAN IDs 1 to 4059 are configurable and the system reserves VLAN IDs 4060 to 4094 for internal use. If you enable VRF scaling and SPBM mode, the system also reserves VLAN IDs 3500 to 3998. VLAN ID 1 is the default VLAN and you cannot create or delete VLAN ID 1.
alternative	Shows the table in the alternative way.

Default

None

Command Mode

User EXEC

show vlan static-mcastmac

Display the Layer 2 multicast media access control (MAC) filters.

Syntax

- **show vlan static-mcastmac [<1-4059>]**

Command Parameters

<1-4059>	Specifies the VLAN ID in the range of 1 to 4059. By default, VLAN IDs 1 to 4059 are configurable and the system reserves VLAN IDs 4060 to 4094 for internal use. If you enable VRF scaling and SPBM mode, the system also reserves VLAN IDs 3500 to 3998. VLAN ID 1 is the default VLAN and you cannot create or delete VLAN ID 1.

Default

None

Command Mode

User EXEC

show web-server

Display the web server information.

Syntax

- **show web-server**

Default

None

Command Mode

User EXEC

slot reset

Resets a slot. This command is available only on hardware platforms which supports Switch Fabric (SF) module.

Syntax

- `slot reset`

Default

None

Command Mode

User EXEC

ssh (connection)

Connect to a remote Secure Shell (SSH) host

Syntax

- `ssh WORD<1-256> -l WORD<1-32> [-p <1-32768>]`

Command Parameters

-l WORD<1-32>	Specifies the login name of the remote Secure Shell (SSH) server.
-p <1-32768>	Specifies the remote Secure Shell (SSH) server port number to which to connect. The default is 22.
WORD<1-256>	Specifies the IP address or host name.

Default

None

Command Mode

User EXEC

telnet

Use this command to access another platform remotely.

Syntax

- `telnet`
- `telnet WORD<1-256>`

Command Parameters

WORD <1-256>	Specifies the host name, IPv4 address or IPv6 address.

Default

None

Command Mode

User EXEC

terminal

Configures the CLI display.

Syntax

- **terminal length <8-64>**
- **terminal length default**
- **terminal more disable**
- **terminal more enable**

Command Parameters

length <8-64>	Configures the number of lines in the output display for the current session to the default value.
length default	Configures the number of lines in the output display for the current session to the default value.
more <enable|disable>	Configures scrolling for the output display. The default is enabled.

Default

None

Command Mode

User EXEC

trace cfm

cfm related tracing information.

Syntax

- **trace cfm level <0-4>**

Command Parameters

level <0-4>	tracing level for cfm.

Default

None

Command Mode

User EXEC

trace filter file

Specifies the trace messages to filter.

Syntax

- **trace filter file WORD<0-128>**
- **trace filter file WORD<0-128> bt limit WORD<0-256>**
- **trace filter file WORD<0-128> clear**
- **trace filter file WORD<0-128> disable**
- **trace filter file WORD<0-128> lines**
- **trace filter file WORD<0-128> lines WORD<0-256>**
- **trace filter file WORD<0-128> range**
- **trace filter file WORD<0-128> range WORD<0-256> WORD<0-256>**
- **trace filter file WORD<0-128> supress**

Command Parameters

bt limit WORD<0-256>	Performs backtrace filtering for a specific limit value.
clear	Clears trace filter information.
disable	Disables the trace filter.
lines WORD<0-256>	Specifies the lines to filter.
range WORD<0-256> WORD<0-256>	Specifies the range to filter.
suppress	Suppresses the trace filter.
WORD<0-128>	Specifies the filename.

Default

None

Command Mode

User EXEC

trace filter module

Specifies the trace messages to filter.

Syntax

- **trace filter module <0-136>**
- **trace filter module <0-136> clear**
- **trace filter module <0-136> disable**
- **trace filter module <0-136> info**
- **trace filter module <0-136> supress**

Command Parameters

<0-136>	Specifies the module ID.
clear	Clears trace filter information.
disable	Disables the trace filter.
info	Shows the trace filter configuration for the module.
suppress	Suppresses the trace filter.

Default

None

Command Mode

User EXEC

trace flags

Enable or disable the Intermediate-System-to-Intermediate-System trace flags. After IS-IS trace is turned on, only trace information about the set flag appears.

Syntax

- **trace flags isis**
- **trace flags isis remove {none | tx-hello | rx-hello | tx-pkt | rx-pkt | adj | opt | tx-lsack | rx-lsack | tx-lsp | rx-lsp | pkt-err | nbr-mismatch | flood | spf-intra | spf-inter | spf-extern | prefix | nbr-**

change | intf-change | decide | fdb | dr | auth-fail | config | purge | policy | redist | tx-snp | rx-snp | timer | spbm-decide | global | perf | ucast-fib | node | mcast-fib | isid | ip-shortcut | debug | ip-multicast}

- **trace flags isis set {none | tx-hello | rx-hello | tx-pkt | rx-pkt | adj | opt | tx-lsack | rx-lsack | tx-lsp | rx-lsp | pkt-err | nbr-mismatch | flood | spf-intra | spf-inter | spf-extern | prefix | nbr-change | intf-change | decide | fdb | dr |auth-fail | config | purge | policy | redist | tx-snp | rx-snp | timer | spbm-decide | global | perf | ha | ucast-fib | node | mcast-fib | isid | ip-shortcut | debug | ip-multicast}**

Default

None

Command Mode

User EXEC

trace flags isis

Enable or disable the Intermediate-System-to-Intermediate-System trace flags. After IS-IS trace is turned on, only trace information about the set flag appears.

Syntax

- **trace flags isis**
- **trace flags isis remove {none | tx-hello | rx-hello | tx-pkt | rx-pkt | adj | opt | tx-lsack | rx-lsack | tx-lsp | rx-lsp | pkt-err | nbr-mismatch | flood | spf-intra | spf-inter | spf-extern | prefix | nbr-change | intf-change | decide | fdb | dr | auth-fail | config | purge | policy | redist | tx-snp | rx-snp | timer | spbm-decide | global | perf | ucast-fib | node | mcast-fib | isid | ip-shortcut | debug}**
- **trace flags isis set {none | tx-hello | rx-hello | tx-pkt | rx-pkt | adj | opt | tx-lsack | rx-lsack | tx-lsp | rx-lsp | pkt-err | nbr-mismatch | flood | spf-intra | spf-inter | spf-extern | prefix | nbr-change | intf-change | decide | fdb | dr | auth-fail | config | purge | policy | redist | tx-snp | rx-snp | timer | spbm-decide | global | perf | ucast-fib | node | mcast-fib | isid | ip-shortcut | debug}**

Command Parameters

adj	Specifies the option of adjacenies.
auth-fail	Specifies the option of authorization failed.
config	Specifies the option of configuration.

dd-masterslave	The current release does not use this option.
debug	Specifies the option of debug.
decide	Specifies the option of shortest path first computation.
dr	Specifies the option of designated router.
fdb	Specifies the option of filtering database.
flood	Specifies the option of flood.
global	The current release does not use this option.
ha	Specifies the option of High Availability.
intf-change	Specifies the option of IS-IS circuit (interface) events.
ip-multicast	Specifies the option of IP multicast.
ip-shortcut	Specifies the option of IP Shortcut.
isid	Specifies the option of I-SID.
mcast-fib	Specifies the option of multicast forwarding information base.
nbr-change	Specifies the option of neighbor change.
nbr-mismatch	Specifies the option of neighbor mismatch.
node	Specifies the option of node.
none	Specifies the option of none.
opt	Specifies the option of IS-IS TLVs.
perf	Specifies the option of SPBM performance.
pkt-err	Specifies the option of packet error.
policy	The current release does not use this option.
prefix	Specifies the option of prefix.
purge	Specifies the option of Link State Packet purge.
redist	Specifies the option of redistribute.
remove	Removes the Intermediate-System-to-Intermediate-System (IS-IS) trace flags for the specified option.

rx-hello	Specifies the option of received IS-IS hello packets.
rx-lsack	Specifies the option of received LSP acknowledgement.
rx-lsp	Specifies the option of received Link State Packet.
rx-pkt	Specifies the option of received packets.
rx-snp	Specifies the option of received sequence number packet (CSNP and PSNP).
set	Configures the Intermediate-System-to-Intermediate-System (IS-IS) trace flags for the specified option.
spbm-decide	Specifies the option of shortest path first computation for SPBM.
spf-extern	Specifies the option of shortest path first external.
spf-inter	Specifies the option of shortest path first internal.
spf-intra	The current release does not use this option.
timer	Specifies the option of timer.
tx-hello	Specifies the option of transmitted IS-IS hello packets.
tx-lsack	Specifies the option of transmitted LSP acknowledgement.
tx-lsp	Specifies the option of transmitted Link State Packet.
tx-pkt	Specifies the option of transmitted packets.
tx-snp	Specifies the option of transmitted sequence number PDU (CSNP and PSNP).
ucast-fib	Specifies the option of unicast forwarding information base.

Default

None

Command Mode

User EXEC

trace flags ospf

Enable or disables OSPFv2 trace flags for debugging. The flags you set are used by the trace level.

Syntax

- **trace flags ospf**

- **trace flags ospf remove {none | all | tx-hello | rx-hello | tx-ddp-pkt | rx-ddp-pkt | tx-lsu-pkt | rx-lsu-pkt | tx-lsack | rx-lsack | tx-lsr | rx-lsr | pkt-err | nbr-mismatch | flood | spf-intra | spf-inter | spf-extern | spf-tree | nbr-change | intf-change | abr-lsa-generate | asbr-lsa-generate | dr | dd-masterslave | auth-fail | config | lsa | policy}**
- **trace flags ospf set <none|all|tx-hello|rx-hello|tx-ddp-pkt|rx-ddp-pkt|tx-lsu-pkt|rx-lsupkt|tx-lsack|rx-lsack|tx-lsr|rx-lsr|pkt-err|nbr-mismatch|flood|spf-intra|spf-inter|spfextern|spf-tree|nbr-change|intf-change|abr-lsa-generate|asbr-lsa-generate|dr|ddmasterslave|auth-fail|config|lsa|policy>**

Command Parameters

remove <none|all|tx-hello|rx-hello|tx-ddp-pkt|rx-ddp-pkt|tx-lsu-pkt|rxlsu-pkt|tx-lsack|rx-lsack|tx-lsr|rx-lsr|pkt-err|nbr-mismatch|flood|spf-intra|spf-inter|spfextern|spf-tree|nbr-change|intf-change|abr-lsa-generate|asbr-lsa-generate|dr|ddmasterslave|auth-fail|config|lsa|policy>	Removes the OSPF trace flags for the specified option.
set <none|all|tx-hello|rx-hello|tx-ddp-pkt|rx-ddp-pkt|tx-lsu-pkt|rx-lsupkt|tx-lsack|rx-lsack|tx-lsr|rx-lsr|pkt-err|nbr-mismatch|flood|spf-intra|spf-inter|spfextern|spf-tree|nbr-change|intf-change|abr-lsa-generate|asbr-lsa-generate|dr|ddmasterslave|auth-fail|config|lsa|policy>	Sets the OSPF trace flags for the specified option.

Default

By default, all flags are turned off.

Command Mode

User EXEC

trace grep

Search trace results for a specific string value, for example, the word error.

Syntax

- **trace grep**
- **trace grep WORD<0-128>**

Command Parameters

WORD<0-128>	Specifies the search keyword. You can use a specific MAC address or search for errors, using the command, trace grep error.

Default

None

Command Mode

User EXEC

trace level

Use trace to observe the status of a software module at a given time.

Syntax

- **trace level**
- **trace level <<Module_ID> <0-4>**
- **trace level sub-system WORD<1-20> <0-5>**
- **trace level sub-system WORD<1-20> <0-5> process WORD<1-20>**
- **trace level sub-system WORD<1-20> <0-5> process WORD<1-20> slot <1-12>**
- **trace level sub-system WORD<1-20> <0-5> process WORD<1-20> slot SF1**
- **trace level sub-system WORD<1-20> <0-5> process WORD<1-20> slot SF2**
- **trace level sub-system WORD<1-20> <0-5> process WORD<1-20> slot SF3**
- **trace level sub-system WORD<1-20> <0-5> process WORD<1-20> slot SF4**
- **trace level sub-system WORD<1-20> <0-5> process WORD<1-20> slot SF5**
- **trace level sub-system WORD<1-20> <0-5> process WORD<1-20> slot SF6**
- **trace level sub-system WORD<1-20> <0-5> slot SF1**
- **trace level sub-system WORD<1-20> <0-5> slot SF2**
- **trace level sub-system WORD<1-20> <0-5> slot SF3**
- **trace level sub-system WORD<1-20> <0-5> slot SF4**
- **trace level sub-system WORD<1-20> <0-5> slot SF5**
- **trace level sub-system WORD<1-20> <0-5> slot SF6**

Command Parameters

<0-4>	Specifies the trace level from 0 to 4, where 0 is disabled; 1 is very terse; 2 is terse; 3 is very verbose, 4 is verbose.
<Module_ID>	*<Module_ID>* specifies the module for the trace. Different platforms support different ID ranges because of feature support differences. To see which module IDs are available on your switch, use the **show trace modid-list** command or CLI command completion Help.
sub-system WORD<1-20>	Specifies a sub-system ID.

Default

None

Command Mode

User EXEC

trace route-map

Enable or disable trace for route-maps.

Syntax

- `trace route-map { off | on }`
- `trace route-map { off | on } address {A.B.C.D}`
- `trace route-map { off | on } iflist WORD<1-256>`
- `trace route-map { off | on } name WORD<1-64>`
- `trace route-map { off | on } protocol any`
- `trace route-map { off | on } protocol ospf`
- `trace route-map { off | on } protocol rip`
- `trace route-map { off | on } type accept`
- `trace route-map { off | on } type announce`

Command Parameters

{ off | on }	Enables or disables tracing.
address {A.B.C.D}	Specifies the interface address.
iflist WORD<1-256>	Specifies the interface list name.
name WORD<1-64>	Specifies the name of a route-map.
protocol	Specifies a routing protocol.
type	Specifies a route-map type.

Default

None

Command Mode

User EXEC

trace save

Save Trace Sub-System Configuration.

Syntax

- **trace save**

Default

None

Command Mode

User EXEC

trace screen

Configure if the system Display trace information on screen.

Syntax

- **trace screen disable**
- **trace screen enable**

Command Parameters

disable	Prevents the trace messages from appearing on screen.
enable	Shows the trace messages on screen.

Default

None

Command Mode

User EXEC

trace shutdown

Disables trace.

Syntax

- **trace shutdown**

Default

None

Command Mode

User EXEC

trace spbm isis level

Starts debug tracing for IS-IS. <0-4> specifies the trace level from 0 to 4, where 0 is disabled; 1 is very terse; 2 is terse; 3 is very verbose, 4 is verbose.

Syntax

- **trace spbm isis level <0-4>**

Default

None

Command Mode

User EXEC

Chapter 23: VLAN Interface Configuration

dsapssap

Configure the multiple DSAP and SSAP to create a protocol-based VLAN.

Syntax

- **default dsapssap <0x0-0xffff | 0x0-0x0>**
- **dsapssap <0x0-0xffff | 0x0-0x0>**
- **no dsapssap <0x0-0xffff | 0x0-0x0>**

Command Parameters

<0x0-0xffff | 0x0-0x0>	Configures a table used to maintain DSAP/SSAP values assigned to an sna802dot2 or user defined VLAN.

Default

None

Command Mode

VLAN Interface Configuration

ip address (on a VLAN)

Assign an IP address to a VLAN to configure the VLAN.

Syntax

- **ip address {A.B.C.D/X}**
- **ip address {A.B.C.D} {A.B.C.D}**
- **ip address {A.B.C.D} {A.B.C.D} <MAC-offset>**
- **no ip address {A.B.C.D}**

Command Parameters

<A.B.C.D/X>| <A.B.C.D> <A.B.C.D>	Specifies the IP address and subnet mask in the format A.B.C.D/X or A.B.C.D A.B.C.D.

<MAC-offset>	Specifies a number by which to offset the MAC address from the chassis MAC address. This ensures that each IP address has a different MAC address. If you omit this variable, a unique MAC offset is automatically generated. Different hardware platforms support different ranges. To see which range is available on your switch, use the CLI command completion Help.

Default

None

Command Mode

VLAN Interface Configuration

ip arp-inspection enable

Enables DAI on a particular VLAN.

Syntax

- **default ip arp-inspection enable**
- **ip arp-inspection enable**
- **no ip arp-inspection enable**

Default

Disabled

Command Mode

VLAN Interface Configuration

ip arp-proxy enable (for a VLAN)

Configure an ARP proxy to allow a router to answer a local ARP request for a remote destination.

Syntax

- **ip arp-proxy enable**
- **no ip arp-proxy**
- **no ip arp-proxy enable**

Default

The default is disabled.

Command Mode

VLAN Interface Configuration

ip arp-response (for a VLAN)

Enable Address Resolution Protocol (ARP) on the switch to allow a router to answer a local ARP request.

Syntax

- **default ip arp-response**
- **ip arp-response**
- **no ip arp-response**

Default

None

Command Mode

VLAN Interface Configuration

ip dhcp-relay (for a VLAN)

Configure Dynamic Host Configuration Protocol (DHCP) Relay on an interface. The command no ip dhcp-relay disables DHCP Relay but does not delete the DHCP entry.

Syntax

- **default ip dhcp-relay**
- **default ip dhcp-relay broadcast**
- **default ip dhcp-relay circuitId**
- **default ip dhcp-relay fwd-path {A.B.C.D}**
- **default ip dhcp-relay fwd-path {A.B.C.D} mode**
- **default ip dhcp-relay fwd-path {A.B.C.D} vrid <1-255>**
- **default ip dhcp-relay max-hop**
- **default ip dhcp-relay min-sec**
- **default ip dhcp-relay mode**
- **default ip dhcp-relay remoteId**
- **default ip dhcp-relay trusted**
- **ip dhcp-relay**
- **ip dhcp-relay broadcast**
- **ip dhcp-relay circuitId**
- **ip dhcp-relay clear-counter**
- **ip dhcp-relay fwd-path {A.B.C.D}**

- **ip dhcp-relay fwd-path {A.B.C.D} disable**
- **ip dhcp-relay fwd-path {A.B.C.D} enable**
- **ip dhcp-relay fwd-path {A.B.C.D} mode bootp**
- **ip dhcp-relay fwd-path {A.B.C.D} mode bootp_dhcp**
- **ip dhcp-relay fwd-path {A.B.C.D} mode dhcp**
- **ip dhcp-relay fwd-path {A.B.C.D} vrid <1-255>**
- **ip dhcp-relay max-hop <1-16>**
- **ip dhcp-relay min-sec <0-65535>**
- **ip dhcp-relay mode { bootp | dhcp | bootp_dhcp }**
- **ip dhcp-relay remoteId**
- **ip dhcp-relay trusted**
- **no ip dhcp-relay**
- **no ip dhcp-relay broadcast**
- **no ip dhcp-relay circuitId**
- **no ip dhcp-relay fwd-path {A.B.C.D}**
- **no ip dhcp-relay fwd-path {A.B.C.D} vrid <1-255>**
- **no ip dhcp-relay remoteId**
- **no ip dhcp-relay trusted**

Command Parameters

{A.B.C.D}	Creates a forwarding path to the DHCP server with a mode and a state. A.B.C.D is the IP address of the server. The default IP address of the relay is the address of the interface. **Tip:** If the relay is a Virtual Router configured on this interface, you must set the vrid.
broadcast	Enables the device to send the server reply as a broadcast to the end station. After you disable this variable, the device sends the server reply as a unicast to the end station.
circuitId	Enables the device to insert the Option 82 Circuit ID into the packets sent to the server (enables DHCP Option 82).
clear-counter	Clears the dhcp-relay counter.
max-hop <1-16>	Configures the maximum number of hops before a BootP/DHCP packet is discarded (1-16). The default is 4.

min-sec <0-65535>	Configures the minimum seconds count for DHCP. If the secs field in the BootP/DHCP packet header is greater than this value, the device relays or forwards the packet; otherwise, the packet is dropped (0- 65535). The default is 0 seconds.
mode <bootp| dhcp| bootp_dhcp>	Configures DHCP mode to forward BootP messages only, DHCP messages only, or both. The default is both.
remoteId	Enables the device to insert the Option 82 Remote ID into the packets sent to the server (enables DHCP Option 82).
trusted	Configures the circuit as trusted in an Option 82 context.

Default

None

Command Mode

VLAN Interface Configuration

ip dhcp-snooping enable (for VLAN)

Enables DHCP Snooping on a specific VLAN.

Syntax

- **ip dhcp-snooping enable**
- **ip dhcp-snooping enable**
- **no ip dhcp-snooping enable**

Default

Disabled

Command Mode

VLAN Interface Configuration

ip directed-broadcast (for a VLAN)

Configure the device to forward directed broadcasts for a VLAN.

Syntax

- **default ip directed-broadcast**
- **default ip directed-broadcast enable**

- **ip directed-broadcast**
- **ip directed-broadcast enable**
- **no ip directed-broadcast**
- **no ip directed-broadcast enable**

Command Parameters

enable Allows the device to forward directed broadcast frames to the specified VLAN. The default setting for this feature is enabled.

Default

The default is enabled.

Command Mode

VLAN Interface Configuration

ip forward-protocol udp (on a VLAN)

Configure UDP protocols to determine which UDP broadcasts are forwarded

Syntax

- **default ip forward-protocol udp**
- **default ip forward-protocol udp vlan <1-4059>**
- **ip forward-protocol udp vlan <1-4059>**
- **no ip forward-protocol udp**
- **no ip forward-protocol udp vlan <1-4059>**

Command Parameters

<1-4059> Specifies the VLAN ID in the range of 1 to 4059. By default, VLAN IDs 1 to 4059 are configurable and the system reserves VLAN IDs 4060 to 4094 for internal use. On switches that support the vrf-scaling and spbm-config-mode boot configuration flags, if you enable these flags, the system also reserves VLAN IDs 3500 to 3998. VLAN ID 1 is the default VLAN and you cannot create or delete VLAN ID 1.

Default

None

Command Mode

VLAN Interface Configuration

ip forward-protocol udp broadcastmask

Configure the broadcast mask on the IP forwarding list.

Syntax

- **default ip forward-protocol udp broadcastmask**
- **default ip forward-protocol udp broadcastmask {A.B.C.D}**
- **ip forward-protocol udp broadcastmask {A.B.C.D}**
- **ip forward-protocol udp vlan <1-4059> broadcastmask {A.B.C.D}**
- **no ip forward-protocol udp broadcastmask**
- **no ip forward-protocol udp broadcastmask {A.B.C.D}**

Command Parameters

<A.B.C.D>	Sets the interface broadcast mask (the interface broadcast mask can be different from the interface mask). A.B.C.D is an IP address in a.b.c.d format.

Default

None

Command Mode

VLAN Interface Configuration

ip forward-protocol udp maxttl

Set the maximum time to live.

Syntax

- **default ip forward-protocol udp maxttl**
- **default ip forward-protocol udp maxttl <1-16>**
- **ip forward-protocol udp maxttl <1-16>**
- **ip forward-protocol udp vlan <1-4059> maxttl <1-16>**

Command Parameters

<1-4059>	Specifies the VLAN ID in the range of 0 to 4059. By default, VLAN IDs 1 to 4059 are configurable and the system reserves VLAN IDs 4060 to 4094 for internal use. On switches that support the vrf-scaling and spbm-config-mode boot configuration flags, if you enable these flags, the system also reserves VLAN IDs 3500 to 3998. VLAN ID 1 is the default VLAN and you cannot create or delete VLAN ID 1.
maxttl <1-16>	Sets the maximum time-to-live value (TTL) for the UDP broadcast forwarded by the interface. The range is 1 to 16.

Default

None

Command Mode

VLAN Interface Configuration

ip forward-protocol udp portfwdlist (on a VLAN)

Configure the UDP port forwarding list.

Syntax

- **ip forward-protocol udp portfwdlist <1-1000>**
- **ip forward-protocol udp vlan <1-4059> portfwdlist <1-1000>**
- **no ip forward-protocol udp portfwdlist**
- **no ip forward-protocol udp portfwdlist <1-1000>**

Command Parameters

<1-1000>	Creates a UDP port forwarding list in the range of 1 to 1000.
<1-4059>	Specifies the VLAN ID in the range of 1 to 4059. By default, VLAN IDs 1 to 4059 are configurable and the system reserves VLAN IDs 4060 to 4094 for internal use. On switches that support the vrf-scaling and spbm-config-mode boot configuration flags, if you enable these flags, the system also reserves VLAN IDs 3500 to 3998. VLAN ID 1 is the default VLAN and you cannot create or delete VLAN ID 1.

Default

None

Command Mode

VLAN Interface Configuration

ip igmp (for a VLAN)

Configure Internet Group Management Protocol (IGMP) for each interface to change default multicasting operations.

Syntax

- **default ip igmp compatibility-mode**
- **default ip igmp dynamic-downgrade-version**
- **default ip igmp igap**

- **default ip igmp igmpv3-explicit-host-tracking**
- **default ip igmp immediate-leave**
- **default ip igmp immediate-leave-members**
- **default ip igmp last-member-query-interval**
- **default ip igmp mrdisc**
- **default ip igmp mrouter**
- **default ip igmp proxy**
- **default ip igmp query-interval**
- **default ip igmp query-max-response**
- **default ip igmp robust-value**
- **default ip igmp router-alert**
- **default ip igmp snooping**
- **default ip igmp ssm-snoop**
- **default ip igmp static-group**
- **default ip igmp stream-limit**
- **default ip igmp stream-limit-group**
- **default ip igmp version**
- **ip igmp compatibility-mode**
- **ip igmp dynamic-downgrade-version**
- **ip igmp igmpv3-explicit-host-tracking**
- **ip igmp immediate-leave**
- **ip igmp immediate-leave-members {slot/port[/sub-port][-slot/port[/sub-port]][,...]}**
- **ip igmp last-member-query-interval <0-255>**
- **ip igmp mrdisc**
- **ip igmp mrdisc maxadvertinterval <2-180>**
- **ip igmp mrdisc maxinitadvertinterval <2-180>**
- **ip igmp mrdisc maxinitadvertisements <2-15>**
- **ip igmp mrdisc minadvertinterval <3-180>**
- **ip igmp mrdisc neighdeadinterval <2-180>**
- **ip igmp mrouter {slot/port[/sub-port][-slot/port[/sub-port]][,...]}**
- **ip igmp proxy**
- **ip igmp query-interval <1-65535>**
- **ip igmp query-max-response <0-255>**
- **ip igmp robust-value <2-255>**

- **ip igmp router-alert**
- **ip igmp snooping**
- **ip igmp snoop-querier**
- **ip igmp snoop-querier-addr {A.B.C.D}**
- **ip igmp ssm-snoop**
- **ip igmp static-group {A.B.C.D} {A.B.C.D} {slot/port[/sub-port][-slot/port[/sub-port]][,...]} { static | blocked }**
- **ip igmp static-group {A.B.C.D} {A.B.C.D} port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} { static | blocked }**
- **ip igmp stream-limit**
- **ip igmp stream-limit stream-limit-max-streams <0-65535>**
- **ip igmp stream-limit-group {slot/port[/sub-port][-slot/port[/sub-port]][,...]} enable max-streams <0-65535>**
- **ip igmp stream-limit-group {slot/port[/sub-port][-slot/port[/sub-port]][,...]} max-streams <0-65535>**
- **ip igmp version <1-3>**
- **no ip igmp stream-limit-group**
- **no ip igmp compatibility-mode**
- **no ip igmp dynamic-downgrade-version**
- **no ip igmp igap**
- **no ip igmp igmpv3-explicit-host-tracking**
- **no ip igmp immediate-leave**
- **no ip igmp immediate-leave-members**
- **no ip igmp mrdisc**
- **no ip igmp mrouter {slot/port[/sub-port][-slot/port[/sub-port]][,...]}**
- **no ip igmp proxy**
- **no ip igmp router-alert**
- **no ip igmp snooping**
- **no ip igmp snoop-querier**
- **no ip igmp snoop-querier-addr**
- **no ip igmp ssm-snoop**
- **no ip igmp static-group**
- **no ip igmp stream-limit**

Command Parameters

compatibility-mode	Activates v2-v3 compatibility mode. The default value is disabled, which means IGMPv3 is not compatible with IGMPv1 or IGMPv2.
dynamic-downgrade-version	Configures if the system downgrades the version of Internet Group Management Protocol (IGMP) to handle older query messages. If the system downgrades, the host with IGMPv3 only capability does not work. If you do not configure the system to downgrade the version of IGMP, the system logs a warning. The default is enabled.
igmpv3-explicit-host-tracking	Enable igmpv3 explicit host tracking.
immediate-leave	Enable immediate leave.
immediate-leave-members	Enable fast leave members.
last-member-query-interval <0-255>	Configures the maximum response time (in tenths of a second) inserted into group-specific queries sent in response to leave group messages. This value is also the time between group-specific query messages. You cannot configure this value for IGMPv1. Decreasing the value reduces the time to detect the loss of the last member of a group. Configure this value between 3-10 (equal to 0.3 - 1.0 seconds). The default is 10 tenths of a second.
mrdisc	Multicast router discovery parameters.
mrouter *{slot/port[/sub-port] [-slot/port[/sub-port]] [,...]}*	Adds multicast router ports. Identifies the slot and port in one of the following formats: a single slot and port (slot/port), a range of slots and ports (slot/port-slot/port), or a series of slots and ports (slot/port,slot/port,slot/port). If your platform supports channelization and the port is channelized, you must also specify the sub-port in the format slot/port/sub-port.
proxy	Activates the proxy-snoop option globally for the VLAN. The default is disabled.
query-interval <1-65535>	Configures the frequency (in seconds) at which the VLAN transmits host query packets. The default is 125 seconds.
query-max-response <0-255>	Configures the maximum response time (in tenths of a second) advertised in IGMPv2 general queries on this interface. You cannot configure this value for IGMPv1. Smaller values allow a router to prune groups faster. **Important:** You must configure this value lower than the query-interval.

robust-value <2-255>	Configures the expected packet loss of a network. Increase the value if you expect the network to experience packet loss. The default is 2 seconds.
router-alert	Instructs the router to ignore Internet Group Management Protocol (IGMP) packets that do not contain the router alert IP option. When disabled (default configuration), the router processes IGMP packets regardless of the status of the router alert IP option. **Note:** **Important:** To maximize network performance, configure this parameter according to the version of IGMP currently in use: IGMPv1-Disable IGMPv2-Enable IGMPv3-Enable. The default is disabled.
snooping	Activates the snoop option for the VLAN. The default is disabled.
snoop-querier	Enable Igmp L2 querier.
snoop-querier-addr	Igmp L2 querier address.
ssm-snoop	Activates support for PIM-SSM on the snoop interface. The default is disabled.
static-group	Ip multicast static parameters.
stream-limit	Enable/set stream-limit features.
stream-limit-group	Enable/set stream-limit members features.
version <1-3>	Configures the version of IGMP that you want to configure on this interface. For IGMP to function correctly, all routers on a LAN must use the same version. The default is 2 (IGMPv2).

Default

None

Command Mode

VLAN Interface Configuration

ip igmp access-list (for a VLAN)

Configure multicast access control for a VLAN to restrict access to certain multicast streams and to protect multicast streams from spoofing (injecting data to the existing streams).

Syntax

- **default ip igmp access-list WORD<1-64> {A.B.C.D/X}**
- **ip igmp access-list WORD<1-64> {A.B.C.D/X} {deny-tx | deny-rx | deny-both | allow-only-tx | allow-only-rx | allow-only-both}**
- **no ip igmp access-list WORD<1-64> {A.B.C.D/X}**

Command Parameters

{A.B.C.D/X}	Creates an access control group entry for a specific Internet Group Management Protocol (IGMP) interface. Specifies the IP address of the host and the subnet mask used to determine the host or hosts covered by this configuration. You can use the host subnet mask to restrict access to a portion of the network for the host.
deny-tx | deny-rx | deny-both | allowonly-tx | allowonly-rx | allowonly-both	Indicates the action for the specified Internet Group Management Protocol (IGMP) interface. For example, if you specify deny-both, the interface denies both transmitted and received traffic.
WORD<1-64>	Specifies the name of the access list from 1-64 characters.

Default

None

Command Mode

VLAN Interface Configuration

ip igmp access-list mode (for a VLAN)

Change an existing access list on the VLAN interface.

Syntax

- **default ip igmp access-list WORD<1-64> {A.B.C.D/X}**
- **ip igmp access-list WORD<1-64> {A.B.C.D/X} mode {deny-tx | deny-rx | deny-both | allowonly-tx | allow-only-rx | allow-only-both}**
- **no ip igmp access-list WORD<1-64> {A.B.C.D/X}**

Command Parameters

{A.B.C.D/X}	Creates an access control group entry for a specific Internet Group Management Protocol (IGMP) interface. Specifies the IP address of the host and the subnet mask used to determine the host or hosts covered by this configuration. You can use the host subnet mask to restrict access to a portion of the network for the host.

deny-tx | deny-rx | deny-both | allowonly-tx | allowonly-rx | allowonly-both	Indicates the action for the specified Internet Group Management Protocol (IGMP) interface. For example, if you specify deny-both, the interface denies both transmitted and received traffic.
WORD<1-64>	Specifies the name of the access list from 1-64 characters.

Default

None

Command Mode

VLAN Interface Configuration

ip igmp igmpv3-explicit-host-tracking (for a VLAN)

Track all the source and group members. You must enable explicit-host-tracking to use fast leave for IGMPv3.

Syntax

- **default ip igmp igmpv3-explicit-host-tracking**
- **ip igmp igmpv3-explicit-host-tracking**
- **no ip igmp igmpv3-explicit-host-tracking**

Default

The default is disabled.

Command Mode

VLAN Interface Configuration

ip igmp immediate-leave (for a VLAN)

Enable fast (immediate) leave mode to specify if a VLAN receives a leave message from a member of a group.

Syntax

- **default ip igmp immediate-leave**
- **ip igmp immediate-leave**
- **no ip igmp immediate-leave**

Default

None

Command Mode

VLAN Interface Configuration

ip igmp immediate-leave-members

Configure fast leave members on a VLAN to specify fast leave capable ports.

Syntax

- **default ip igmp immediate-leave-members {slot/port[/sub-port][-slot/port[/sub-port]][,...]}**
- **ip igmp immediate-leave-members {slot/port[/sub-port][-slot/port[/sub-port]][,...]}**
- **no ip igmp immediate-leave-members {slot/port[/sub-port][-slot/port[/sub-port]][,...]}**

Command Parameters

{slot/port[/sub-port] [-slot/port[/sub-port]] [,...]}	Identifies the slot and port in one of the following formats: a single slot and port (slot/port), a range of slots and ports (slot/port-slot/port), or a series of slots and ports (slot/port,slot/port,slot/port). If your platform supports channelization and the port is channelized, you must also specify the sub-port in the format slot/port/sub-port.

Default

None

Command Mode

VLAN Interface Configuration

ip igmp mrdisc

Configure the multicast route discovery options to enable the automatic discovery of multicast-capable routers.

Syntax

- **default ip igmp mrdisc**
- **default ip igmp mrdisc maxadvertinterval**
- **default ip igmp mrdisc maxinitadvertinterval**
- **default ip igmp mrdisc maxinitadvertisements**
- **default ip igmp mrdisc minadvertinterval**

- **default ip igmp mrdisc neighdeadinterval**
- **ip igmp mrdisc**
- **ip igmp mrdisc maxadvertinterval <2-180>**
- **ip igmp mrdisc maxinitadvertinterval <2-180>**
- **ip igmp mrdisc maxinitadvertisements <2-15>**
- **ip igmp mrdisc minadvertinterval <3-180>**
- **ip igmp mrdisc neighdeadinterval <2-180>**
- **no ip igmp mrdisc**

Command Parameters

maxadvertinterval <2-180>	Configures the maximum number (in seconds) between successive advertisements. For this change to take effect, you must save the configuration, and then reset the switch. The default is 20.
maxinitadvertinterval <2-180>	Configures the maximum number (in seconds) between successive initial advertisements. For this change to take effect, you must save the configuration, and then reset the switch. The default is 2.
maxinitadvertisements <2-15>	Configures the maximum number of initial multicast advertisements after initialization. For this change to take effect, you must save the configuration, and then reset the switch. The default is 3.
minadvertinterval <3-180>	Configures the minimum number (in seconds) between successive advertisements. For this change to take effect, you must save the configuration, and then reset the switch. The default is 15.
neighdeadinterval <2-180>	Configures the multicast router discovery dead interval-the number of seconds the multicast route neighbors for the switch must wait before assuming that the multicast router is down. The default is 60.

Default

None

Command Mode

VLAN Interface Configuration

ip igmp snoop-querier

Enables the Layer 2 querier on a VLAN interface.

Syntax

- **default ip igmp snoop-querier**
- **ip igmp snoop-querier**

- **no ip igmp snoop-querier**

Default

The default is disabled.

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 static-group

Configure IGMP static members to add members to a snoop group.

Syntax

- **default ip igmp static-group {A.B.C.D}**
- **default ip igmp static-group {A.B.C.D} {A.B.C.D}**
- **default ip igmp static-group {A.B.C.D} {A.B.C.D} {slot/port[/sub-port][-slot/port[/sub-port]][,...]} { static | blocked }**
- **default ip igmp static-group {A.B.C.D} {slot/port[/sub-port][-slot/port[/sub-port]][,...]} { static | blocked }**
- **ip igmp static-group {A.B.C.D} {A.B.C.D} {slot/port[/sub-port][-slot/port[/sub-port]][,...]} { static | blocked }**
- **ip igmp static-group {A.B.C.D} {A.B.C.D} port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} { static | blocked }**

- **ip igmp static-group {A.B.C.D} {slot/port[/sub-port][-slot/port[/sub-port]][,...]} { static | blocked }**
- **ip igmp static-group {A.B.C.D} port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} { static | blocked }**
- **no ip igmp static-group {A.B.C.D}**
- **no ip igmp static-group {A.B.C.D} {A.B.C.D}**
- **no ip igmp static-group {A.B.C.D} {A.B.C.D} {slot/port[/sub-port][-slot/port[/sub-port]][,...]} { static | blocked }**

Command Parameters

[static|blocked]	Adds a static-member entry to the Internet Group Management Protocol (IGMP) interface. value is the port or list of ports to which you want to redirect the multicast stream for this multicast group. static|blocked configures the route to static or blocked.
{slot/port[/sub-port] [-slot/port[/sub-port]] [,...]}	Identifies the slot and port in one of the following formats: a single slot and port (slot/port), a range of slots and ports (slot/port-slot/port), or a series of slots and ports (slot/port,slot/port,slot/port). If your platform supports channelization and the port is channelized, you must also specify the sub-port in the format slot/port/sub-port.
<A.B.C.D> <A.B.C.D>	Indicates the IP address range from <A.B.C.D> to <A.B.C.D> of the selected multicast group.

Default

None

Command Mode

VLAN Interface Configuration

ip igmp stream-limit (for a VLAN)

Configure multicast stream limitation on a VLAN to limit the number of concurrent multicast streams on the VLAN.

Syntax

- **default ip igmp stream-limit**
- **ip igmp stream-limit**
- **ip igmp stream-limit stream-limit-max-streams <0-65535>**
- **no ip igmp stream-limit**

Command Parameters

stream-limit-max-streams <0-65535>	Sets the maximum number of streams allowed on an interface. The value ranges from 0 to 65535.

Default

None

Command Mode

VLAN Interface Configuration

ip igmp stream-limit-group

Configure multicast stream limitation members on ports of a specific VLAN to limit the number of multicast groups that can join a VLAN.

Syntax

- **default ip igmp stream-limit-group {slot/port[/sub-port][-slot/port[/sub-port]][,...]}**
- **default ip igmp stream-limit-group {slot/port[/sub-port][-slot/port[/sub-port]][,...]} enable**
- **ip igmp stream-limit-group {slot/port[/sub-port][-slot/port[/sub-port]][,...]} enable max-streams <0-65535>**
- **ip igmp stream-limit-group {slot/port[/sub-port][-slot/port[/sub-port]][,...]} max-streams <0-65535>**
- **no ip igmp stream-limit-group {slot/port[/sub-port][-slot/port[/sub-port]][,...]}**
- **no ip igmp stream-limit-group {slot/port[/sub-port][-slot/port[/sub-port]][,...]} enable**

Command Parameters

{slot/port[/sub-port] [-slot/port[/sub-port]] [,...]}	Identifies the slot and port in one of the following formats: a single slot and port (slot/port), a range of slots and ports (slot/port-slot/port), or a series of slots and ports (slot/port,slot/port,slot/port). If your platform supports channelization and the port is channelized, you must also specify the sub-port in the format slot/port/sub-port.
max-streams <0-65535>	Configures the maximum number of allowed streams for the specified ports on this VLAN. The range is from 0-65535 and the default is 4. To use the default configuration, use the default option in the command: default ip igmp stream-limit-group <ports>

Default

None

Command Mode

VLAN Interface Configuration

ip ipsec enable (for a VLAN)

Enable Internet Protocol Security (IPsec) for IPv4 on a VLAN.

Syntax

- **default ip ipsec enable**
- **ip ipsec enable**
- **no ip ipsec enable**

Default

The default is disabled.

Command Mode

VLAN Interface Configuration

ip ipsec policy (for a VLAN)

Link an Internet Protocol Security (IPsec) IPv4 policy to a VLAN.

Syntax

- **default ip ipsec policy WORD<1-32>**
- **ip ipsec policy WORD<1-32>**
- **ip ipsec policy WORD<1-32> dir both**
- **ip ipsec policy WORD<1-32> dir in**
- **ip ipsec policy WORD<1-32> dir out**
- **no ip ipsec policy WORD<1-32> dir both**
- **no ip ipsec policy WORD<1-32> dir in**
- **no ip ipsec policy WORD<1-32> dir out**

Command Parameters

dir <both|in|out>	Specifies the direction to which IPsec applies. Both specifies both ingress and egress traffic, in specifies ingress traffic, and out specifies egress traffic. By default, the direction is both.
WORD<1-32>	Specifies the IPsec policy name.

Default

None

Command Mode

VLAN Interface Configuration

ip irdp address (for a VLAN)

Configure Internet Control Message Protocol (ICMP) Router Discovery to enable hosts attached to multicast or broadcast networks to discover the IP addresses of their neighboring routers.

Syntax

- **default ip irdp address**
- **default ip irdp address <A.B.C.D>**
- **default ip irdp vlan <1-4059> address**
- **ip irdp address <A.B.C.D>**
- **ip irdp vlan <1-4059> address {A.B.C.D}**

Command Parameters

<1-4059>	Specifies the VLAN ID in the range of 1 to 4059. By default, VLAN IDs 1 to 4059 are configurable and the system reserves VLAN IDs 4060 to 4094 for internal use. On switches that support the vrf-scaling and spbm-config-mode boot configuration flags, if you enable these flags, the system also reserves VLAN IDs 3500 to 3998. VLAN ID 1 is the default VLAN and you cannot create or delete VLAN ID 1.
address <A.B.C.D>	Specifies the IP destination address use for broadcast or multicast router advertisements sent from the interface. The address is the all-systems multicast address, 224.0.0.1, or the limited-broadcast address, 255.255.255.255.

Default

The default address is 255.255.255.255.

Command Mode

VLAN Interface Configuration

ip irdp holdtime (for a VLAN)

Configure the lifetime for advertisements.

Syntax

- **default ip irdp holdtime**

- **default ip irdp vlan <1-4059> holdtime**
- **ip irdp holdtime <4-9000>**
- **ip irdp vlan <1-4059> holdtime <4-9000>**

Command Parameters

<1-4059> Specifies the VLAN ID in the range of 1 to 4059. By default, VLAN IDs 1 to 4059 are configurable and the system reserves VLAN IDs 4060 to 4094 for internal use. On switches that support the vrf-scaling and spbm-config-mode boot configuration flags, if you enable these flags, the system also reserves VLAN IDs 3500 to 3998. VLAN ID 1 is the default VLAN and you cannot create or delete VLAN ID 1.

<4-4000> Specifies the lifetime.

Default

The default is 1800.

Command Mode

VLAN Interface Configuration

ip irdp maxadvertinterval (for a VLAN)

Specify the maximum time (in seconds) that elapses between unsolicited broadcast or multicast router advertisement transmissions from the router interface.

Syntax

- **default ip irdp maxadvertinterval**
- **default ip irdp vlan <1-4059> maxadvertinterval**
- **ip irdp maxadvertinterval <4-1800>**
- **ip irdp vlan <1-4059> maxadvertinterval <4-1800>**

Command Parameters

<1-4059> Specifies the VLAN ID in the range of 1 to 4059. By default, VLAN IDs 1 to 4059 are configurable and the system reserves VLAN IDs 4060 to 4094 for internal use. On switches that support the vrf-scaling and spbm-config-mode boot configuration flags, if you enable these flags, the system also reserves VLAN IDs 3500 to 3998. VLAN ID 1 is the default VLAN and you cannot create or delete VLAN ID 1.

<1-4059> Specifies the VLAN ID in the range of 1 to 4059. By default, VLAN IDs 1 to 4059 are configurable and the system reserves VLAN IDs 4060 to 4094 for internal use. On switches that support the vrf-scaling and spbm-config-mode boot configuration flags, if you enable these flags, the system also reserves VLAN IDs 3500 to 3998. VLAN ID 1 is the default VLAN and you cannot create or delete VLAN ID 1.

<4-1800> Specifies the maximum time in seconds.

Default

The default is 600 seconds.

Command Mode

VLAN Interface Configuration

ip irdp minadvertinterval (for a VLAN)

Specify the minimum time (in seconds) that elapses between unsolicited broadcast or multicast router advertisement transmissions from the interface. The range is 3 seconds to maxadvertinterval.

Syntax

- **default ip irdp minadvertinterval**
- **default ip irdp vlan <1-4059> minadvertinterval**
- **ip irdp minadvertinterval <3-1800>**
- **ip irdp vlan <1-4059> minadvertinterval <3-1800>**

Command Parameters

<3-1800> Specifies the minimum time in seconds.

Default

The default is 450 seconds.

Command Mode

VLAN Interface Configuration

ip irdp multicast (for a VLAN)

Specify if multicast advertisements are sent.

Syntax

- **default ip irdp multicast**
- **default ip irdp vlan <1-4059> multicast**
- **ip irdp multicast**
- **ip irdp vlan <1-4059> multicast**
- **no ip irdp multicast**

- **no ip irdp vlan <1-4059> multicast**

Command Parameters

<1-4059>	Specifies the VLAN ID in the range of 1 to 4059. By default, VLAN IDs 1 to 4059 are configurable and the system reserves VLAN IDs 4060 to 4094 for internal use. On switches that support the vrf-scaling and spbm-config-mode boot configuration flags, if you enable these flags, the system also reserves VLAN IDs 3500 to 3998. VLAN ID 1 is the default VLAN and you cannot create or delete VLAN ID 1.

Default

The default is enabled (true).

Command Mode

VLAN Interface Configuration

ip irdp preference (for a VLAN)

Specify the preference (a higher number indicates more preferred) of the address as a default router address relative to other router addresses on the same subnet.

Syntax

- **default ip irdp preference**
- **default ip irdp vlan <1-4059> preference**
- **ip irdp preference <-2147483648-2147483647>**
- **ip irdp vlan <1-4059> preference <-2147483648-2147483647>**

Command Parameters

<1-4059>	Specifies the VLAN ID in the range of 1 to 4059. By default, VLAN IDs 1 to 4059 are configurable and the system reserves VLAN IDs 4060 to 4094 for internal use. On switches that support the vrf-scaling and spbm-config-mode boot configuration flags, if you enable these flags, the system also reserves VLAN IDs 3500 to 3998. VLAN ID 1 is the default VLAN and you cannot create or delete VLAN ID 1.
<-2147483648-2147483647>	Specifies the preference value.

Default

The default is 0.

Command Mode

VLAN Interface Configuration

ip ospf advertise-when-down enable (for a VLAN)

Enable or disable AdvertiseWhenDown. If enabled, the network on this interface is advertised as up, even if the port is down. When you configure a VLAN with no link and enable advertise-when-down, the route is not advertised until the VLAN is active. Then the route is advertised even when the link is down. To disable advertising based on link status, this parameter must be disabled.

Syntax

- **default ip ospf advertise-when-down enable**
- **ip ospf advertise-when-down enable**
- **no ip ospf advertise-when-down enable**

Default

The default is disabled.

Command Mode

VLAN Interface Configuration

ip ospf area (for a VLAN)

Configure OSPF parameters on a VLAN to control how OSPF behaves.

Syntax

- **default ip ospf area**
- **ip ospf area {A.B.C.D}**
- **no ip ospf area**

Command Parameters

<A.B.C.D>	Configures the OSPF identification number for the area, typically formatted as an IP address.

Default

None

Command Mode

VLAN Interface Configuration

ip ospf authentication-key (for a VLAN)

Configure the eight-character simple password authentication key for the VLAN.

Syntax

- **ip ospf authentication-key WORD<0-8>**

Command Parameters

WORD<0-8>	Specifies the authentication key.

Default

None

Command Mode

VLAN Interface Configuration

ip ospf authentication-type (for a VLAN)

Configure the OSPF authentication type for the VLAN. If you choose simple, you must configure the password with the ip ospf authentiation-key WORD<0-8> command. If you choose MD5, you must configure the MD5 key with the ip ospf message-digest-key <1-255> md5 WORD<0-16> command.

Syntax

- **default ip ospf authentication-type**
- **ip ospf authentication-type message-digest**
- **ip ospf authentication-type none**
- **ip ospf authentication-type sha-1**
- **ip ospf authentication-type sha-2**
- **ip ospf authentication-type simple**
- **no ip ospf authentication-type**

Command Parameters

message-digest	Configures the authentication-type to message-digest. If you choose MD5, you must configure the MD5 key with the ip ospf message-digest-key <1-255> md5 WORD<0-16> command. Message Digest 5 (MD5) provides standards-based authentication using 128-bit encryption. If you use MD5, each OSPF packet has a message digest appended to it. The digest must match between sending and receiving routers, or the packet is discarded.
none	Configures the authentication-type to none.
sha-1	Configures the authentication-type to secure hash algorithm 1 (SHA-1). SHA-1 provides standards-based authentication using 128-bit encryption.
sha-2	sha-2—Specifies SHA-2, which offers the hash function SHA-256.

Note:

The command parameter sha-2, an update of SHA-1, can offer six hash functions that include SHA-224, SHA-256, SHA-384, SHA-512, SHA-512/224,SHA 512/256, with hash values that are 224, 256, 384, or 512 bits. However, the current release supports only SHA-256.

simple	Configures the authentication-type to simple, which is a simple-text password. Only routers that contain the same authentication ID in their LSA can communicate with each other. Using this security mechanism is not recommended. If you choose simple, you must configure the password with the ip ospf authentiation-key WORD<0-8> command.

Default

None

Command Mode

VLAN Interface Configuration

ip ospf cost (for a VLAN)

Configure the OSPF cost associated with this interface and advertised in router link advertisements.

Syntax

- `default ip ospf cost`
- `ip ospf cost <0-65535>`

Command Parameters

<1-65535>	Specifies the cost range.

Default

The default is 0.

Command Mode

VLAN Interface Configuration

ip ospf dead-interval (for a VLAN)

Configure the router OSPF dead interval-the number of seconds the OSPF neighbors of a switch must wait before assuming that the OSPF router is down. The value must be at least four times the Hello interval.

Syntax

- **default ip ospf dead-interval**
- **ip ospf dead-interval <0-2147483647>**

Command Parameters

<0-2147483647>	Specifies the number of seconds the OSPF neighbors of a switch must wait before assuming that the OSPF router is down. The value must be at least four times the Hello interval.

Default

The default is 40.

Command Mode

VLAN Interface Configuration

ip ospf digest-key (for a VLAN)

Configure the Digest algorithm key which can be of type MD5, SHA-1 or SHA-2. At most, you can configure two digest keys for an interface.

Syntax

- **default ip ospf digest-key <1-255>**
- **ip ospf digest-key <1-255> key WORD<0-16>**
- **no ip ospf digest-key <1-255>**

Command Parameters

<1-255>	Specifies the ID for the digest key.
<WORD> <0-16>	Specifies an alphanumeric password of up to 16 bytes (string length 0 to 16).

Default

None

Command Mode

VLAN Interface Configuration

ip ospf enable (for a VLAN)

Enable OSPF on the VLAN.

Syntax

- **default ip ospf enable**
- **ip ospf enable**
- **no ip ospf**
- **no ip ospf enable**

Default

The default is disabled.

Command Mode

VLAN Interface Configuration

ip ospf hello-interval (for a VLAN)

Configure the OSPF Hello interval, which is the number of seconds between Hello packets sent on this interface.

Syntax

- **default ip ospf hello-interval**
- **ip ospf hello-interval <1-65535>**

Command Parameters

<1-65535>	Specifies the Hello interval range in seconds. Dead Interval must be a multiple of Hello Interval.

Default

The default is 10.

Command Mode

VLAN Interface Configuration

ip ospf mtu-ignore enable (for a VLAN)

Enable maximum transmission unit (MTU) ignore. To allow the switch to accept OSPF database description (DBD) packets with a different MTU size, enable mtu-ignore. Incoming OSPF DBD packets are dropped if their MTU is greater than 1500 bytes.

Syntax

- **default ip ospf mtu-ignore enable**
- **ip ospf mtu-ignore enable**

- **no ip ospf mtu-ignore enable**

Default

None

Command Mode

VLAN Interface Configuration

ip ospf network (for a VLAN)

Specify the type of OSPF interface.

Syntax

- **default ip ospf network**
- **ip ospf network { broadcast | nbma | passive }**

Command Parameters

<broadcast|nbma|passive>	Specifies the interface type.

Default

None

Command Mode

VLAN Interface Configuration

ip ospf poll-interval (for a VLAN)

Configure the OSPF poll interval in seconds.

Syntax

- **default ip ospf poll-interval**
- **ip ospf poll-interval <0-2147483647>**

Command Parameters

<0-2147483647>	Specifies the poll interval range in seconds.

Default

The default is 120.

Command Mode

VLAN Interface Configuration

ip ospf primary-digest-key (for a VLAN)

Changes the primary key used to encrypt outgoing packets. <1-255> is the ID for the new digest key.

Syntax

- **default ip ospf primary-digest-key**
- **ip ospf primary-digest-key <1-255>**

Command Parameters

<1-255>	Specifies the primay md5 key range.

Default

None

Command Mode

VLAN Interface Configuration

ip ospf priority (for a VLAN)

Configure the OSPF priority for the VLAN during the election process for the designated router. The VLAN with the highest priority number is the best candidate for the designated router. If you configure the priority to 0, the VLAN cannot become either the designated router or a backup designated router.

Syntax

- **default ip ospf priority**
- **ip ospf priority <0-255>**

Command Parameters

<0-255>	Specifies the priority range.

Default

The default is 1.

Command Mode

VLAN Interface Configuration

ip ospf retransmit-interval (for a VLAN)

Configure the retransmit interval for the virtual interface, the number of seconds between link-state advertisement retransmissions.

Syntax

- **default ip ospf retransmit-interval**
- **ip ospf retransmit-interval <0-3600>**

Command Parameters

<0-3600>	Specifies the retransmit interval range in seconds.

Default

None

Command Mode

VLAN Interface Configuration

ip ospf transit-delay (for a VLAN)

Configure the transit delay for the virtual interface, which is the estimated number of seconds required to transmit a link-state update over the interface.

Syntax

- **default ip ospf transit-delay**
- **default ip ospf transit-delay cost**
- **default ip ospf transit-delay mtu-ignore enable**
- **default ip ospf transit-delay priority**
- **ip ospf transit-delay <0-3600>**
- **ip ospf transit-delay <0-3600> cost <0-65535>**
- **ip ospf transit-delay <0-3600> mtu-ignore enable**
- **ip ospf transit-delay <0-3600> priority <0-255>**

Command Parameters

<0-3600>	Specifies the transit delay range.
cost <0-65535>	Configures the OSPF metric for the interface. The switch advertises the metric in router link advertisements. The default is 1.
mtu-ignore enable	Enables maximum transmission unit (MTU) ignore. To allow the switch to accept OSPF database description (DBD) packets with a different MTU size, enable

	mtu-ignore. Incoming OSPF DBD packets are dropped if their MTU is greater than 1500 bytes.
priority <0-255>	Configures the OSPF priority for the interface during the election process for the designated router. The interface with the highest priority number is the designated router. The interface with the second-highest priority becomes the backup designated router. If the priority is 0, the interface cannot become either the designated router or a backup. The priority is used only during election of the designated router and backup designated router. The default is 1.

Default

None

Command Mode

VLAN Interface Configuration

ip ospf vlan (for a VLAN)

Configure OSPF on a VLAN.

Syntax

- **default ip ospf vlan <1-4059>**
- **ip ospf vlan <1-4059> advertise-when-down enable**
- **ip ospf vlan <1-4059> area {A.B.C.D}**
- **ip ospf vlan <1-4059> authentication-key WORD<0-8>**
- **ip ospf vlan <1-4059> authentication-type message-digest**
- **ip ospf vlan <1-4059> authentication-type none**
- **ip ospf vlan <1-4059> authentication-type simple**
- **ip ospf vlan <1-4059> cost <0-65535>**
- **ip ospf vlan <1-4059> dead-interval <0-2147483647>**
- **ip ospf vlan <1-4059> enable**
- **ip ospf vlan <1-4059> hello-interval <1-65535>**
- **ip ospf vlan <1-4059> mtu-ignore enable**
- **ip ospf vlan <1-4059> network { broadcast | nbma | passive }**
- **ip ospf vlan <1-4059> poll-interval <0-2147483647>**
- **ip ospf vlan <1-4059> primary-md5-key <1-255>**
- **ip ospf vlan <1-4059> priority <0-255>**
- **ip ospf vlan <1-4059> retransmit-interval <0-3600>**
- **ip ospf vlan <1-4059> transit-delay <0-3600>**

- **no ip ospf vlan <1-4059>**

Command Parameters

<1-4059>	Specifies the VLAN ID in the range of 1 to 4059. By default, VLAN IDs 1 to 4059 are configurable and the system reserves VLAN IDs 4060 to 4094 for internal use. On switches that support the vrf-scaling and spbm-config-mode boot configuration flags, if you enable these flags, the system also reserves VLAN IDs 3500 to 3998. VLAN ID 1 is the default VLAN and you cannot create or delete VLAN ID 1.
advertise-when-down enable	Enables or disables AdvertiseWhenDown. If enabled, the network on this interface is advertised as up, even if the port is down. When you configure a VLAN with no link and enable advertise-when-down, the route is not advertised until the VLAN is active. Then the route is advertised even when the link is down. To disable advertising based on link status, this parameter must be disabled. The default is disabled.
area {A.B.C.D}	Configures OSPF parameters on a VLAN to control how OSPF behaves.
authentication-key WORD<0-8>	Configures the eight-character simple password authentication key for the VLAN.
authentication-type	Configures the OSPF authentication type for the VLAN. If simple, all OSPF updates the interface receives must contain the authentication key specified by the area authentication-key command. If MD5, they must contain the MD5 key. The default is none.
cost <0-65535>	Configures the OSPF cost associated with this interface and advertised in router link advertisements. The default is 0.
dead-interval <0-2147483647>	Configures the router OSPF dead interval-the number of seconds the OSPF neighbors of a switch must wait before assuming that the OSPF router is down. The value must be at least four times the Hello interval. The default is 40.
enable	Enables OSPF on the VLAN. The default is disabled.
hello-interval <1-65535>	Configures the OSPF Hello interval, which is the number of seconds between Hello packets sent on this interface. The default is 10.
mtu-ignore enable	Enables maximum transmission unit (MTU) ignore. To allow the switch to accept OSPF database description (DBD) packets with a different MTU size, enable mtu-ignore. Incoming OSPF DBD packets are dropped if their MTU is greater than 1500 bytes.
network { broadcast | nbma | passive }	Specifies the type of OSPF interface.
poll-interval <0-2147483647>	Configures the OSPF poll interval in seconds. The default is 120.

primary-md5-key <1-255>	Changes the primary key used to encrypt outgoing packets. <1-255> is the ID for the new message digest key.
priority <0-255>	Configures the OSPF priority for the VLAN during the election process for the designated router. The VLAN with the highest priority number is the best candidate for the designated router. If you configure the priority to 0, the VLAN cannot become either the designated router or a backup designated router. The default is 1.
retransmit-interval <0-3600>	Configures the retransmit interval for the virtual interface, the number of seconds between link-state advertisement retransmissions.
transit-delay <0-3600>	Configures the transit delay for the virtual interface, which is the estimated number of seconds required to transmit a link-state update over the interface.

Default

None

Command Mode

VLAN Interface Configuration

ip pim (for a VLAN)

Enable PIM on the specified VLAN.

Syntax

- **default ip pim enable**
- **default ip pim hello-interval**
- **default ip pim join-prune-interval**
- **ip pim active**
- **ip pim enable**
- **ip pim hello-interval <0-18724>**
- **ip pim join-prune-interval <1-18724>**
- **ip pim passive**
- **no ip pim enable**

Command Parameters

active	Enable PIM and configure the interface type to active or passive to perform multicasting operations.

enable	Configure PIM for each interface to enable the interface to perform multicasting operations.
hello-interval <0-18724>	Specify how long to wait (in seconds) before the PIM switch sends out the next hello message to neighboring switches.
join-prune-interval <1-18724>	Specify how long to wait (in seconds) before the PIM router sends out the next join/prune message to its upstream neighbors.
passive	Enable PIM and Configure the interface type to passive simultaneously. By default, an enabled interface is active.

Default

None

Command Mode

VLAN Interface Configuration

ip pim bsr-candidate preference (for a VLAN)

Configure additional routers as candidate BSRs (C-BSR) to provide backup protection in the event that the primary BSR fails.

Syntax

- **`default ip pim bsr-candidate`**
- **`ip pim bsr-candidate preference <0-255>`**
- **`no ip pim bsr-candidate`**

Command Parameters

preference <0-255>	Configure additional routers as candidate BSRs (C-BSR) to provide backup protection in the event that the primary BSR fails.

Default

None

Command Mode

VLAN Interface Configuration

ip pim interface-type (for a VLAN)

Specify whether the selected interface is active or passive. You can change the state of a PIM interface after you create the interface but only if you disable PIM on the interface. An active interface accepts PIM control transmitted and received traffic. A passive interface prevents PIM control traffic from transmitting or receiving, thereby reducing the load on a system. Use this feature when a high number of PIM interfaces exist and connect to end users, not to other switches.

Syntax

- **default ip pim interface-type**
- **ip pim interface-type active**
- **ip pim interface-type passive**

Command Parameters

<active|passive>	Specifies the interface type.

Default

The default is active.

Command Mode

VLAN Interface Configuration

ip rip advertise-when-down enable (for a VLAN)

Enable or disable AdvertiseWhenDown. If enabled, the network on this interface is advertised as up, even if the port is down. The default is disabled. When you configure a port with no link and enable advertise-when-down, it does not advertise the route until the port is active. Then the route is advertised even when the link is down. To disable advertising based on link status, this parameter must be disabled.

Syntax

- **default ip rip advertise-when-down enable**
- **ip rip advertise-when-down enable**
- **no ip rip advertise-when-down enable**

Command Parameters

<enable|disable>	Enables or disables AdvertiseWhenDown. If enabled, the network on this interface is advertised as up, even if the port is down. The default is disabled. When you configure a port with no link and enable advertise-when-down, it does not advertise the route until the port is active. Then the route is advertised even when the link is down. To disable advertising based on link status, this parameter must be disabled.

Default

The default is disabled.

Command Mode

VLAN Interface Configuration

ip rip auto-aggregation enable (for a VLAN)

Enable or disable automatic route aggregation on the port. When enabled, the router switch automatically aggregates routes to their natural mask when they are advertised on an interface in a different class network. The default is disabled.

Syntax

- **default ip rip auto-aggregation enable**
- **ip rip auto-aggregation enable**
- **no ip rip auto-aggregation enable**

Command Parameters

enable	Enables or disables automatic route aggregation on the port. When enabled, the router switch automatically aggregates routes to their natural mask when they are advertised on an interface in a different class network. The default is disabled.

Default

The default is disabled.

Command Mode

VLAN Interface Configuration

ip rip cost (for a VLAN)

Configure the RIP cost for this port (link).

Syntax

- **default ip rip cost**
- **ip rip cost <1-15>**

Command Parameters

<1-15>	Configures the RIP cost for this interface.

Default

None

Command Mode

VLAN Interface Configuration

ip rip default-listen enable (for a VLAN)

Enable default listen: the switch accepts the default route learned through RIP on this interface. The default is disabled.

Syntax

- **default ip rip default-listen enable**
- **ip rip default-listen enable**
- **no ip rip default-listen enable**

Command Parameters

enable Enables DefaultListen: the switch accepts the default route learned through RIP on this interface. The default is disabled.

Default

The default is disabled.

Command Mode

VLAN Interface Configuration

ip rip default-supply enable (for a VLAN)

Enable default supply. If enabled, a default route must be advertised from this interface. The default is false. The default route is advertised only if it exists in the routing table. The default route will not be advertised on RIP interfaces by default. You need to redistribute the default route, and then configure the default-supply at the interface for the default route to be advertised to the neighbor.

Syntax

- **default ip rip default-supply enable**
- **ip rip default-supply enable**
- **no ip rip default-supply enable**

Command Parameters

enable Enables DefaultSupply. If enabled, a default route must be advertised from this interface. The default is false. The default route is advertised only if it exists in the routing table.

Default

The default is false.

Command Mode

VLAN Interface Configuration

ip rip enable (for a VLAN)

Enable RIP routing on the interface.

Syntax

- `ip rip enable`
- `no ip rip enable`

Command Parameters

enable	Enables RIP routing on the interface.

Default

The default is disabled.

Command Mode

VLAN Interface Configuration

ip rip holddown (for a VLAN)

Configure the RIP holddown timer value, the length of time (in seconds) that RIP continues to advertise a network after determining that it is unreachable. The default is 120.

Syntax

- `default ip rip holddown`
- `ip rip holddown <0-360>`

Command Parameters

<0-360>	Configures the RIP holddown timer value, the length of time (in seconds) that RIP continues to advertise a network after determining that it is unreachable. The default is 120.

Default

The default is 120.

Command Mode

VLAN Interface Configuration

ip rip in-policy (for a VLAN)

Configure the port RIP in-policy. The policy name for inbound filtering on this RIP interface. This policy determines whether to learn a route on this interface. It also specifies the parameters of the route when it is added to the routing table.

Syntax

- **default ip rip in-policy**
- **ip rip in-policy WORD<0-64>**

Command Parameters

WORD<0-64>	Configures the port RIP in-policy. The policy name for inbound filtering on this RIP interface. This policy determines whether to learn a route on this interface. It also specifies the parameters of the route when it is added to the routing table.

Default

None

Command Mode

VLAN Interface Configuration

ip rip listen enable (for a VLAN)

If enabled, the switch listens for a default route without listening for all routes. Specify that the routing switch learns RIP routes through this interface. The default is enable.

Syntax

- **default ip rip listen enable**
- **ip rip listen enable**
- **no ip rip listen enable**

Default

The default is enabled.

Command Mode

VLAN Interface Configuration

ip rip out-policy (for a VLAN)

Configure the port RIP out-policy. The policy name for outbound filtering on this RIP interface. This policy determines whether to advertise a route from the routing table on this interface. This policy also Specify the parameters of the advertisement. policy name is a string of length 0 to 64 characters.

Syntax

- **default ip rip out-policy**
- **ip rip out-policy WORD<0-64>**

Command Parameters

WORD<0-64>	Configures the port RIP out-policy. The policy name for outbound filtering on this RIP interface. This policy determines whether to advertise a route from the routing table on this interface. This policy also specifies the parameters of the advertisement. policy name is a string of length 0 to 64 characters.

Default

None

Command Mode

VLAN Interface Configuration

ip rip poison enable (for a VLAN)

Enable Poison Reverse. If you disable Poison Reverse (no poison enable), Split Horizon is enabled. By default, Split Horizon is enabled. If Split Horizon is enabled, 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. Therefore, the receiver neighbor ignores this route because the metric 16 indicates infinite hops in the network. These mechanisms prevent routing loops.

Syntax

- **default ip rip poison enable**
- **ip rip poison enable**
- **no ip rip poison enable**

Command Parameters

enable	Enables Poison Reverse. If you disable Poison Reverse (no poison enable), Split Horizon is enabled. By default, Split Horizon is enabled. If Split Horizon is enabled, 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. Therefore, the receiver neighbor ignores this

route because the metric 16 indicates infinite hops in the network. These mechanisms prevent routing loops.

Default

The default is disabled.

Command Mode

VLAN Interface Configuration

ip rip receive version (for a VLAN)

Indicate which RIP update version is accepted on this interface. The default is rip1orrip2.

Syntax

- **default ip rip receive version**
- **ip rip receive version { rip1 | rip2 | rip1orrip2 }**

Command Parameters

<rip1|rip2|rip1orrip2>	Indicates which RIP update version is accepted on this interface. The default is rip1orrip2.

Default

The default is rip1orrip 2.

Command Mode

VLAN Interface Configuration

ip rip send (for a VLAN)

Indicate which RIP update version the router sends from this interface. ripVersion1 implies sending RIP updates that comply with RFC 1058. rip1Compatible implies broadcasting RIP2 updates using RFC 1058 route subassumption rules. The default is rip1Compatible

Syntax

- **ip rip send version { notsend | rip1 | rip1comp | rip2 }**
- **ip rip send version { notsend | rip1 | rip1comp | rip2 } timeout <15-259200>**

Command Parameters

<notsend|rip1| rip2|rip1comp| rip2>	Indicates which RIP update version the router sends from this interface. ripVersion1 implies sending RIP updates that comply with RFC 1058. rip1Compatible implies broadcasting RIP2 updates using RFC 1058 route subassumption rules. The default is rip1Compatible

Default

The default is rip1Compatible.

Command Mode

VLAN Interface Configuration

ip rip supply (for a VLAN)

Specify that the switch advertises RIP routes through the port. The default is enable.

Syntax

- **`default ip rip supply enable`**
- **`ip rip supply enable`**
- **`no ip rip supply enable`**

Command Parameters

<enable|disable>	Specifies that the switch advertises RIP routes through the port. The default is enable.

Default

The default is enabled.

Command Mode

VLAN Interface Configuration

ip rip timeout (for a VLAN)

Configure the RIP timeout interval in seconds.

Syntax

- **`ip rip timeout <15-259200>`**

Command Parameters

<15-259200>	Configures the RIP timeout interval in seconds.

Default

None

Command Mode

VLAN Interface Configuration

ip rip triggered (for a VLAN)

Enable automatic triggered updates for RIP.

Syntax

- **default ip rip triggered enable**
- **ip rip triggered enable**
- **no ip rip triggered enable**

Command Parameters

enable	Enables automatically triggered updates for RIP.

Default

The default is disabled.

Command Mode

VLAN Interface Configuration

ip rsmlt

Configure Routed Split MultiLink Trunking (RSMLT) on an IPv4 VLAN interface.

Syntax

- **default ip rsmlt**
- **default ip rsmlt holddown-timer**
- **default ip rsmlt holddown-timer holdup-timer**
- **default ip rsmlt holdup-timer**
- **ip rsmlt**
- **ip rsmlt holddown-timer <0-3600>**
- **ip rsmlt holddown-timer <0-3600> holdup-timer <0-9999>**
- **ip rsmlt holdup-timer <0-9999>**
- **no ip rsmlt**

Command Parameters

holddown-timer<0-3600>	Defines how long the RSMLT switch does not participate in Layer 3 forwarding. <0-3600> is the timer value in seconds.Configure this value to be longer than the anticipated routing protocol convergence. The default holddown timer is 60.
holdup-timer<0-3600|9999>	Defines how long the RSMLT switch maintains forwarding for its peer. 0-3600 is the timer value in seconds. 9999 means infinity. The default holdup timer is 1800.

Default

None

Command Mode

VLAN Interface Configuration

ip spb-multicast enable (for a VLAN)

Enables Layer 3 VSN IP multicast over SPBM.

Syntax

- **default ip spb-multicast enable**
- **ip spb-multicast enable**
- **no ip spb-multicast enable**

Default

The default is disabled.

Command Mode

VLAN Interface Configuration

ip spb-pim-gw enable (for a VLAN)

Enable SPB-PIM Gateway on a VLAN interface.

Syntax

- **default p spb-pim-gw enable**
- **ip spb-pim-gw enable**
- **no ip spb-pim-gw enable**

Default

The default is disabled.

Command Mode

VLAN Interface Configuration

ip spb-pim-gw hello-interval (for a VLAN)

Configures the SPB-PIM Gateway VLAN HELLO interval.

Syntax

- **default ip spb-pim-gw hello-interval <0-18724>**
- **ip spb-pim-gw hello-interval <0-18724>**
- **no ip spb-pim-gw hello-interval <0-18724>**

Command Parameters

<0-18724> Specifies the HELLO interval in seconds. The default value is 30 seconds.

Default

The default value is 30 seconds.

Command Mode

VLAN Interface Configuration

ip spb-pim-gw ip join-prune-interval (for a VLAN)

Configures the SPB-PIM Gateway VLAN JOIN PRUNE interval.

Syntax

- **default ip spb-pim-gw ip join-prune-interval <1-18724>**
- **ip spb-pim-gw ip join-prune-interval <1-18724>**
- **no ip spb-pim-gw ip join-prune-interval <1-18724>**

Command Parameters

<1-18724> Specifies the JOIN PRUNE interval in seconds. The default value is 60 seconds.

Default

The default value is 60 seconds.

Command Mode

VLAN Interface Configuration

ip vrrp (for a VLAN)

Configure Virtual Router Redundancy Protocol (VRRP) on a VLAN.

Syntax

- **default ip vrrp <1-255>**
- **default ip vrrp <1-255> action**
- **default ip vrrp <1-255> adver-int**
- **default ip vrrp <1-255> backup-master enable**
- **default ip vrrp <1-255> critical-ip enable**
- **default ip vrrp <1-255> critical-ip-addr**
- **default ip vrrp <1-255> fast-adv enable**
- **default ip vrrp <1-255> fast-adv-int**
- **default ip vrrp <1-255> holddown-timer**
- **default ip vrrp <1-255> priority**
- **default ip vrrp <1-255> enable**
- **default ip vrrp address <1-255>**
- **default ip vrrp address <1-255> {A.B.C.D}**
- **ip vrrp <1-255> action none**
- **ip vrrp <1-255> action preempt**
- **ip vrrp <1-255> adver-int <1-255>**
- **ip vrrp <1-255> backup-master enable**
- **ip vrrp <1-255> critical-ip enable**
- **ip vrrp <1-255> critical-ip-addr {A.B.C.D}**
- **ip vrrp <1-255> enable**
- **ip vrrp <1-255> fast-adv enable**
- **ip vrrp <1-255> fast-adv-int <200-1000>**
- **ip vrrp <1-255> holddown-timer <0-21600>**
- **ip vrrp <1-255> priority <1-255>**
- **ip vrrp <1-255> enable**
- **ip vrrp address <1-255> {A.B.C.D}**
- **no ip vrrp <1-255>**
- **no ip vrrp <1-255> backup-master enable**
- **no ip vrrp <1-255> critical-ip enable**
- **no ip vrrp <1-255> enable**

- **no ip vrrp <1-255> fast-adv enable**
- **no ip vrrp address <1-255>**
- **no ip vrrp address <1-255> {A.B.C.D}**

Command Parameters

action {none| preempt}	Manually overrides the hold-down timer and force preemption. none| preempt can be set to preempt the timer or set to none to allow the timer to keep working.
address <1-255> <A.B.C.D>	Sets the IP address of the Virtual Router Redundancy Protocol (VRRP) interface that forwards packets to the virtual IP addresses associated with the virtual router. A.B.C.D is the IP address of the master VRRP.
adver-int <1-255>	Sets the the time interval between sending Virtual Router Redundancy Protocol (VRRP) advertisement messages. The range is between 1 and 255 seconds. This value must be the same on all of the participating routers. The default is 1.
backup-master enable	Enables the Virtual Router Redundancy Protocol (VRRP) backup master. This option is supported only on Split MultiLink Trunking (SMLT) ports. Do not enable Backup Master if Critical IP is enabled.
critical-ip enable	Enables the critical IP address option. Do not enable Critical IP if Backup Master is enabled.
critical-ip-addr <A.B.C.D>	Sets the critical IP address for Virtual Router Redundancy Protocol (VRRP). A.B.C.D is the IP address on the local router, which is configured so that a change in its state causes a role switch in the virtual router (for example, from master to backup in case the interface goes down).
enable	Enables Virtual Router Redundancy Protocol (VRRP) on the interface.
fast-adv enable	Enables the Fast Advertisement Interval. The default is disabled.
fast-adv-int <200-1000>	Sets the Fast Advertisement Interval, in milliseconds, the time interval between sending Virtual Router Redundancy Protocol (VRRP) advertisement messages. The range must be the same on all participating routers. The default is 200. You must enter values in multiples of 200 milliseconds.
holddown-timer<0-21600>	Modifies the behavior of the Virtual Router Redundancy Protocol (VRRP) failover mechanism by allowing the router enough time to detect the OSPF or RIP routes. 0-21600 is the time interval (in seconds) a router is delayed when changing to master state.
priority <1-255>	Sets the port Virtual Router Redundancy Protocol (VRRP) priority. 1-255 is the value used by the VRRP router. The default is 100. Assign the value 255 to the router that owns the IP address associated with the virtual router.

Default

None

Command Mode

VLAN Interface Configuration

ipv6 dhcp-relay (for a VLAN)

Configure Dynamic Host Configuration Protocol (DHCP) Relay on an interface. The command no ipv6 dhcp-relay disables DHCP on the interface; it does not delete the entry.

Syntax

- **default ipv6 dhcp-relay**
- **default ipv6 dhcp-relay fwd-path WORD<0-255>**
- **default ipv6 dhcp-relay max-hop**
- **default ipv6 dhcp-relay remote-id**
- **ipv6 dhcp-relay**
- **ipv6 dhcp-relay fwd-path WORD<0-255>**
- **ipv6 dhcp-relay fwd-path WORD<0-255> enable**
- **ipv6 dhcp-relay fwd-path WORD<0-255> vrid WORD<1-255>**
- **ipv6 dhcp-relay max-hop <1-32>**
- **ipv6 dhcp-relay remoteId**
- **no ipv6 dhcp-relay**
- **no ipv6 dhcp-relay fwd-path WORD<0-255>**
- **no ipv6 dhcp-relay fwd-path WORD<0-255> enable**
- **no ipv6 dhcp-relay remoteId**

Command Parameters

max-hop <1-32>	Configures the maximum number of hops before a BootP/DHCP packet is discarded. The default is 32.
remoteId	Enables the Remote ID. The default is disabled.
vrid WORD<1-255>	Specifies the ID of the virtual router and is an integer from 1-255.
WORD<0-255>	Creates a forwarding path to the Dynamic Host Configuration Protocol (DHCP) server with a mode and a state. WORD<0-255> is the IPv6 address of the server. The default IP address of the relay is the address of the

interface. If the relay is a Virtual Router configured on this interface, you must set the vrid. By default, the forwarding path is disabled.

Default

None

Command Mode

VLAN Interface Configuration

ipv6 fhs nd-inspection enable (for a VLAN)

Enables neighbor discovery (ND) inspection on a VLAN.

Syntax

- **default ipv6 fhs nd-inspection enable**
- **ipv6 fhs nd-inspection enable**
- **no ipv6 fhs nd-inspection enable**

Default

The default is disabled.

Command Mode

VLAN Interface Configuration

ipv6 fhs snooping dhcp enable (for a VLAN)

Enables or disables IPv6 DHCP snooping on a particular VLAN.

Syntax

- **default ipv6 fhs snooping dhcp enable**
- **ipv6 fhs snooping dhcp enable**
- **no ipv6 fhs snooping dhcp enable**

Default

The default is disabled.

Command Mode

VLAN Interface Configuration

ipv6 forwarding (for a VLAN)

Configure IPv6 forwarding. By default, IPv6 forwarding is globally disabled, which means you can only use local IPv6 connections, and traffic does not traverse an IPv6 network.

Syntax

- **default ipv6 forwarding**
- **ipv6 forwarding**
- **no ipv6 forwarding**

Default

By default, forwarding is enabled on an interface. You must enable it globally before the interface configuration takes effect.

Command Mode

VLAN Interface Configuration

ipv6 interface address (for a VLAN)

Configure the IPv6 address for a VLAN.

Syntax

- **ipv6 interface address WORD<0-255>**
- **no ipv6 interface address WORD<0-255>**

Command Parameters

WORD<0-255>	Assigns an IPv6 address to the VLAN.

Default

None

Command Mode

VLAN Interface Configuration

ipv6 interface enable (for a VLAN)

Enable IPv6 route advertisement on a VLAN.

Syntax

- **default ipv6 interface enable**

- **ipv6 interface enable**
- **no ipv6 interface enable**

Default

The default is disabled.

Command Mode

VLAN Interface Configuration

ipv6 interface hop-limit (for a VLAN)

Configure the maximum number of hops before packets drop.

Syntax

- **default ipv6 interface hop-limit**
- **ipv6 interface hop-limit <1-255>**
- **ipv6 interface link-local WORD<0-19>**

Command Parameters

<1-255>	Configures the maximum hops.

Default

The default is 64 hops.

Command Mode

VLAN Interface Configuration

ipv6 interface link-local (for a VLAN)

Create a link-local address for the VLAN.

Syntax

- **ipv6 interface link-local WORD<0-19>**

Command Parameters

WORD<0-19>	Specifies the 64-bit interface ID used to calculate the actual link-local address.

Default

None

Command Mode

VLAN Interface Configuration

ipv6 interface mac-offset

Request a MAC for an IPv6 VLAN.

Syntax

- **ipv6 interface mac-offset <MAC-offset>**

Command Parameters

<MAC-offset>	Specifies a number by which to offset the MAC address from the chassis MAC address. This ensures that each IP address has a different MAC address. If you omit this variable, a unique MAC offset is automatically generated. Different hardware platforms support different ranges. To see which range is available on your switch, use the CLI command completion Help.

Default

None

Command Mode

VLAN Interface Configuration

ipv6 interface mtu (for a VLAN)

Configure the maximum transmission unit for the VLAN.

Syntax

- **default ipv6 interface mtu**
- **ipv6 interface mtu <1280-9500>**

Command Parameters

<1280-9500>	Configures the maximum transmission unit for the interface: 1280-1500, 1850, or 9500.

Default

The default is 1500.

Command Mode

VLAN Interface Configuration

ipv6 interface name (for a VLAN)

Configure an interface description for the VLAN.

Syntax

- **ipv6 interface name WORD<0-255>**

Command Parameters

WORD<0-255>	Assigns a descriptive name to the VLAN.

Default

None

Command Mode

VLAN Interface Configuration

ipv6 interface reachable-time (for a VLAN)

Configure the time a neighbor is considered reachable after receiving a reachability confirmation.

Syntax

- **default ipv6 interface reachable-time**
- **ipv6 interface reachable-time <1-3600000>**

Command Parameters

<1-3600000>	Configures the time, in milliseconds, a neighbor is considered reachable after receiving a reachability confirmation.

Default

The default is 30000.

Command Mode

VLAN Interface Configuration

ipv6 interface retransmit-timer (for a VLAN)

Configure the time, between retransmissions of Neighbor Solicitation messages to a neighbor when resolving the address or when probing the reachability of a neighbor.

Syntax

- **default ipv6 interface retransmit-timer**
- **ipv6 interface retransmit-timer <1-4294967295>**

Command Parameters

<1-4294967295>	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.

Default

The default is 1000.

Command Mode

VLAN Interface Configuration

ipv6 ipsec enable (for a VLAN)

Enable Internet Protocol Security (IPsec) for IPv6 on a VLAN.

Syntax

- **default ipv6 ipsec enable**
- **ipv6 ipsec enable**
- **no ipv6 ipsec enable**

Default

The default is disabled.

Command Mode

VLAN Interface Configuration

ipv6 ipsec policy (for a VLAN)

Link an Internet Protocol Security (IPsec) IPv6 policy to a VLAN.

Syntax

- **default ipv6 ipsec policy WORD<1-32>**
- **ipv6 ipsec policy WORD<1-32>**
- **ipv6 ipsec policy WORD<1-32> dir both**
- **ipv6 ipsec policy WORD<1-32> dir in**
- **ipv6 ipsec policy WORD<1-32> dir out**
- **no ipv6 ipsec policy WORD<1-32> dir both**
- **no ipv6 ipsec policy WORD<1-32> dir in**

- **no ipv6 ipsec policy WORD<1-32> dir out**

Command Parameters

dir <both|in|out>	Specifies the direction to which IPsec applies. Both specifies both ingress and egress traffic, in specifies ingress traffic, and out specifies egress traffic. By default, the direction is both.
WORD<1-32>	Specifies the IPsec policy name.

Default

None

Command Mode

VLAN Interface Configuration

ipv6 mld last-listener-query-interval (for a VLAN)

Configure the last listener query interval for the MLD

Syntax

- **default ipv6 mld last-member-query-interval**
- **ipv6 mld last-listener-query-interval <0-60>**
- **no ipv6 mld last-member-query-interval**

Command Parameters

<0-60>	Indicates the last listener query interval in seconds.

Default

None

Command Mode

VLAN Interface Configuration

ipv6 mld query-interval (for a VLAN)

Configure the query interval for the MLD interface

Syntax

- **default ipv6 mld query-interval**
- **ipv6 mld query-interval <1-65535>**

- **no ipv6 mld query-interval**

Command Parameters

<1-65535> Indicates the frequency at which MLD host query packets transmit on this interface.

Default

None

Command Mode

VLAN Interface Configuration

ipv6 mld query-max-response (for a VLAN)

Configure the query maximum response time for mld interface

Syntax

- **default ipv6 mld query-max-response**
- **ipv6 mld query-max-response <0-60>**
- **no ipv6 mld query-max-response**

Command Parameters

<0–60> Indicates the query maximum response interval time in seconds.

Default

None

Command Mode

VLAN Interface Configuration

ipv6 mld robust-value (for a VLAN)

Configure the MLD robustness

Syntax

- **default ipv6 mld robust-value**
- **ipv6 mld robust-value <2-255>**
- **no ipv6 mld robust-value**

Command Parameters

<2-255> Specifies a numerical value for MLD snooping robustness.

Default

None

Command Mode

VLAN Interface Configuration

ipv6 mld snooping

Enable MLD snooping

Syntax

- **default ipv6 mld snooping**
- **ipv6 mld snooping**
- **no ipv6 mld snooping**

Default

None

Command Mode

VLAN Interface Configuration

ipv6 mld ssm-snoop

Enable MLD ssm-snooping

Syntax

- **default ipv6 mld ssm-snoop**
- **ipv6 mld ssm-snoop**
- **no ipv6 mld ssm-snoop**

Default

None

Command Mode

VLAN Interface Configuration

ipv6 mld version (for a VLAN)

Configure MLD version

Syntax

- **default ipv6 mld version**
- **ipv6 mld version <1-2>**
- **no ipv6 mld version**

Command Parameters

<1-2>	Indicates the version of MLD that runs on this interface.

Default

None

Command Mode

VLAN Interface Configuration

ipv6 nd dad-ns (for a VLAN)

Configure the number of neighbor solicitation messages from duplicate address detection.

Syntax

- **default ipv6 nd dad-ns**
- **ipv6 nd dad-ns <0-600>**
- **ipv6 nd dad-ns <0-600> other-config-flag**

Command Parameters

<0-600>	Configures the number of neighbor solicitation messages from duplicate address detection. A value of 0 disables duplicate address detection on the specified interface. A value of 1 configures a single transmission without follow-up transmissions.

Default

The default is 1.

Command Mode

VLAN Interface Configuration

ipv6 nd hop-limit (for a VLAN)

Configure the hop limit sent in router advertisements.

Syntax

- **default ipv6 nd hop-limit**
- **ipv6 nd hop-limit <0-255>**
- **no ipv6 nd hop-limit**

Command Parameters

hoplimit <0-255>	Specifies the current hop limit field sent in router advertisements from this interface. The value must be the current diameter of the Internet. A value of zero indicates that the advertisement does not specify a hop-limit value.

Default

The default is 64.

Command Mode

VLAN Interface Configuration

ipv6 nd managed-config-flag (for a VLAN)

Enable M-bit (managed address configuration) on the router.

Syntax

- **default ipv6 nd managed-config-flag**
- **ipv6 nd managed-config-flag**
- **no ipv6 nd managed-config-flag**

Default

The default is disabled.

Command Mode

VLAN Interface Configuration

ipv6 nd other-config-flag (for a VLAN)

Enable the O-bit (other stateful configuration) in the router advertisement. Other stateful configuration autoConfigure received information without addresses.

Syntax

- **default ipv6 nd other-config-flag**
- **ipv6 nd other-config-flag**
- **no ipv6 nd other-config-flag**

Default

The default is disabled.

Command Mode

VLAN Interface Configuration

ipv6 nd prefix (for a VLAN)

Configure neighbor discovery prefixes. IPv6 nodes on the same link use ND to discover link-layer addresses and to obtain and advertise various network parameters and reachability information. ND combines the services provided by ARP and router discovery for IPv4. IPv6 router advertisement includes discovery prefixes.

Syntax

- **default ipv6 nd prefix WORD<0-255> [no-advertise] [preferred-life] [valid-life]**
- **ipv6 nd prefix WORD<0-255> infinite**
- **ipv6 nd prefix WORD<0-255> no-advertise**
- **ipv6 nd prefix WORD<0-255> preferred-life <0-4294967295>**
- **ipv6 nd prefix WORD<0-255> valid-life <0-4294967295>**
- **no ipv6 nd prefix WORD<0-255> [no-advertise]**

Command Parameters

infinite	Configures the prefix as infinite.
no-advertise	Removes the prefix from the neighbor advertisement. The default for noadvertise is disabled.
preferred-life <0-4294967295>	Configures the preferred life, in seconds. The valid range is 0-4294967295. The default preferred-life is 604800.
valid-life <0-4294967295>	Configures the valid life, in seconds. The valid range is 0-4294967295. The default valid-life is 2592000.
WORD <0-255>	Specifies the IPv6 address prefix.

Default

None

Command Mode

VLAN Interface Configuration

ipv6 nd ra-lifetime (for a VLAN)

Configure the router lifetime included in router advertisement. Other devices use this information to determine if the router can be reached.

Syntax

- **default ipv6 nd ra-lifetime**
- **ipv6 nd ra-lifetime <0-9000>**

Command Parameters

<0-9000>	Configures the router lifetime included in router advertisement. The range is 0 or <4-9000>.

Default

The default is 1800.

Command Mode

VLAN Interface Configuration

ipv6 nd rtr-advert-max-interval (for a VLAN)

Configure the maximum time allowed between sending unsolicited multicast router advertisements.

Syntax

- **default ipv6 nd rtr-advert-max-interval**
- **ipv6 nd rtr-advert-max-interval <4-1800>**

Command Parameters

<4-1800>	Specifies the maximum interval value.

Default

The default is 600.

Command Mode

VLAN Interface Configuration

ipv6 nd rtr-advert-min-interval (for a VLAN)

Configure the minimum time allowed between sending unsolicited multicast router advertisements from the interface.

Syntax

- **default ipv6 nd rtr-advert-min-interval**
- **ipv6 nd rtr-advert-min-interval <3-1350>**

Command Parameters

<3-1350>	Configures the minimum time, in seconds.

Default

The default is 200.

Command Mode

VLAN Interface Configuration

ipv6 nd send-ra (for a VLAN)

Enable or disables periodic router advertisement messages.

Syntax

- **default ipv6 nd send-ra**
- **ipv6 nd send-ra**
- **no ipv6 nd send-ra**

Default

The default is enabled.

Command Mode

VLAN Interface Configuration

ipv6 ospf (for a VLAN)

Configure OSPFv3 on an interface.

Syntax

- **default ipv6 ospf**
- **default ipv6 ospf cost**
- **default ipv6 ospf dead-interval**
- **default ipv6 ospf enable**
- **default ipv6 ospf hello-interval**
- **default ipv6 ospf nbma-nbr WORD<0-43>**

- **default ipv6 ospf poll-interval**
- **default ipv6 ospf priority**
- **default ipv6 ospf retransmit-interval**
- **default ipv6 ospf transit-delay**
- **ipv6 ospf cost <0-65535>**
- **ipv6 ospf dead-interval <1-65535>**
- **ipv6 ospf enable**
- **ipv6 ospf hello-interval <1-65535>**
- **ipv6 ospf nbma-nbr WORD<0-43> <0-255>**
- **ipv6 ospf nbma-nbr WORD<0-43> priority <0-255>**
- **ipv6 ospf poll-interval <0-65535>**
- **ipv6 ospf priority <0-255>**
- **ipv6 ospf retransmit-interval <1-1800>**
- **ipv6 ospf transit-delay <1-1800>**
- **no ipv6 ospf**
- **no ipv6 ospf enable**
- **no ipv6 ospf nbma-nbr WORD<0-43>**

Command Parameters

cost <0-65535>	Configures the OSPF metric for the interface. The switch advertises the metric in router link advertisements. The default is 1.
dead-interval <1-65535>	Specifies the dead interval, as the number of seconds to wait before determining the OSPF router is down. The default is 40.
enable	Enables the OSPF on the IPv6 interface.
hello-interval <1-65535>	Specifies the hello interval, in seconds, for hello packets sent between switches for a virtual interface in an OSPF area. The default is 10.
nbma-nbr WORD<0-43>	Configures an NBMA neighbor. WORD<0-43> specifies the IPv6 address. Use priority <0-255> to change an existing priority value for an NBMA neighbor. Use <0-255> to assign the priority value when you create the neighbor.
network <eth | nbma | p2mp | p2p | passive>	Configures the type of interface as one of the following: eth: broadcast, nbma: NBMA, p2mp: point-to-multipoint, p2p:point-to-point, or passive: passive interface.
poll-interval <0-65535>	Configures the polling interval for the OSPF interface in seconds. The default is 120.

priority <0-255>	Configures the OSPF priority for the interface during the election process for the designated router. The interface with the highest priority number is the designated router. The interface with the second-highest priority becomes the backup designated router. If the priority is 0, the interface cannot become either the designated router or a backup. The priority is used only during election of the designated router and backup designated router. The default is 1.
retransmit-interval <1-1800>	Specifies the retransmit interval, in seconds, for link-state advertisements. The default is 5.
transit-delay <1-1800>	Specifies the transit-delay interval, in seconds, required to transmit a link-state update packet over the virtual interface. The default is 1.

Default

None

Command Mode

VLAN Interface Configuration

ipv6 ospf area (for a VLAN)

Configure an OSPFv3 area on an interface.

Syntax

- **ipv6 ospf area {A.B.C.D}**
- **ipv6 ospf area {A.B.C.D} cost <0-65535>**
- **ipv6 ospf area {A.B.C.D} dead-interval <1-65535>**
- **ipv6 ospf area {A.B.C.D} hello-interval <1-65535>**
- **ipv6 ospf area {A.B.C.D} network eth**
- **ipv6 ospf area {A.B.C.D} network nbma**
- **ipv6 ospf area {A.B.C.D} network p2mp**
- **ipv6 ospf area {A.B.C.D} network p2p**
- **ipv6 ospf area {A.B.C.D} network passive**
- **ipv6 ospf area {A.B.C.D} priority <0-255>**
- **ipv6 ospf area {A.B.C.D} retransmit-interval <1-1800>**
- **ipv6 ospf area {A.B.C.D} transit-delay <1-1800>**

Command Parameters

area {A.B.C.D}	Creates an IPv6 OSPF area.

cost <0-65535>	Configures the OSPF metric for the interface. The switch advertises the metric in router link advertisements. The default is 1.
dead-interval <1-65535>	Specifies the dead interval, as the number of seconds to wait before determining the OSPF router is down. The default is 40.
hello-interval <1-65535>	Specifies the hello interval, in seconds, for hello packets sent between switches for a virtual interface in an OSPF area. The default is 10.
network <eth|nbma|p2mp|p2p|passive>	Configures the type of interface as one of the following: eth: broadcast, nbma: NBMA, p2mp: point-to-multipoint, p2p:pointto-point, or passive: passive interface.
priority <0-255>	Configures the OSPF priority for the interface during the election process for the designated router. The interface with the highest priority number is the designated router. The interface with the second-highest priority becomes the backup designated router. If the priority is 0, the interface cannot become either the designated router or a backup. The priority is used only during election of the designated router and backup designated router. The default is 1.
retransmit-interval <1-1800>	Specifies the retransmit interval, in seconds, for link-state advertisements. The default is 5.
transit-delay <1-1800>	Specifies the transit-delay interval, in seconds, required to transmit a link-state update packet over the virtual interface. The default is 1.

Default

None

Command Mode

VLAN Interface Configuration

ipv6 pim enable (for a VLAN)

Enable PIM globally on the switch

Syntax

- **default ipv6 pim enable**
- **ipv6 pim enable**
- **no ipv6 pim enable**

Default

The default is disabled

Command Mode

VLAN Interface Configuration

ipv6 pim hello-interval (for a VLAN)

Configure the time between hello messages

Syntax

- **default ipv6 pim hello-interval**
- **ipv6 pim hello-interval <0-18724>**

Command Parameters

<0–18724>	Specifies the duration in seconds before the PIM router sends out the next hello message to neighboring switches.

Default

The default is 30 seconds

Command Mode

VLAN Interface Configuration

ipv6 pim join-prune-interval (for a VLAN)

Configure the interval for join and prune messages

Syntax

- **default ipv6 pim join-prune-interval**
- **ipv6 pim join-prune-interval <1-18724>**

Command Parameters

<1-18724>	Specifies the duration in seconds before the PIM router sends out the next join or prune message to its upstream neighbors.

Default

The default is disabled

Command Mode

VLAN Interface Configuration

ipv6 rip cost (for a VLAN)

Configure the RIPng cost for this port (link).

Syntax

- **default ipv6 rip cost**
- **ipv6 rip cost <1-15>**

Command Parameters

<1-15>	Specifies the cost value.

Default

None

Command Mode

VLAN Interface Configuration

ipv6 rip poison enable (for a VLAN)

Enable poison reverse.

Syntax

- **default ipv6 rip poison enable**
- **ipv6 rip poison enable**
- **no ipv6 rip poison enable**

Default

The default is disabled.

Command Mode

VLAN Interface Configuration

ipv6 vrrp (for a VLAN)

Configure Virtual Router Redundancy Protocol (VRRP) to provide fast failover of a default router for IPv6 LAN hosts. VRRP supports a virtual IPv6 address shared between two or more routers that connect the common subnet to the enterprise network. VRRP for IPv6 provides a faster switchover to an alternate default router than is possible using the ND protocol.

Syntax

- **default ipv6 vrrp <1-255> [enable]**

- **default ipv6 vrrp <1-255> accept-mode enable**
- **default ipv6 vrrp <1-255> action**
- **default ipv6 vrrp <1-255> adver-int**
- **default ipv6 vrrp <1-255> backup-master enable**
- **default ipv6 vrrp <1-255> critical-ipv6-addr [critical ipv6 enable]**
- **default ipv6 vrrp <1-255> fast-adv enable [fast-adv-int]**
- **default ipv6 vrrp <1-255> holddown-timer**
- **default ipv6 vrrp <1-255> priority**
- **ipv6 vrrp <1-255> accept-mode enable**
- **ipv6 vrrp <1-255> action none**
- **ipv6 vrrp <1-255> action preempt**
- **ipv6 vrrp <1-255> adver-int <1..40>**
- **ipv6 vrrp <1-255> backup-master enable**
- **ipv6 vrrp <1-255> critical-ipv6 enable**
- **ipv6 vrrp <1-255> critical-ipv6-addr WORD<0-46>**
- **ipv6 vrrp <1-255> enable**
- **ipv6 vrrp <1-255> fast-adv enable**
- **ipv6 vrrp <1-255> fast-adv-int <200-1000>**
- **ipv6 vrrp <1-255> holddown-timer <0-21600>**
- **ipv6 vrrp <1-255> priority <1-255>**
- **no ipv6 vrrp <1-255> [enable]**
- **no ipv6 vrrp <1-255> accept-mode enable**
- **no ipv6 vrrp <1-255> backup-master enable**
- **no ipv6 vrrp <1-255> critical ipv6 enable**
- **no ipv6 vrrp <1-255> fast-adv enable**

Command Parameters

<1-255>	Specifies a number that uniquely identifies a virtual router on an interface. The virtual router acts as the default router for one or more assigned addresses.
accept-mode enable	Controls whether a master router accepts packets addressed to the IPv6 address of the address owner as its own if it is not the IPv6 address owner. The default accept-mode enable is disabled.
action <none| preempt>	Lists options to override the holddown timer manually and force preemption. None does not override the timer. preempt preempts the timer. This parameter applies only if the holddown timer is active.

adver-int <1-40>	Specifies the time interval, in seconds, between sending advertisement messages. Only the master router sends advertisements. The default is 1.
backup-master enable	Uses the backup Virtual Router Redundancy Protocol (VRRP) switch for traffic forwarding. This option reduces the traffic on the IST link. The default backupmaster enable is disabled.
critical-ip enable	Enables or disables the use of critical IP. When disabled, the Virtual Router Redundancy Protocol (VRRP) ignores the availability of the address configured as critical IP. This address must be a local address. The default critical-ip enable is disabled.
critical-ip-addr WORD<0-46>	Specifies an IP interface on the local router configured so that a change in its state causes a role switch in the virtual router (for example, from master to backup) in case the interface stops responding.
enable	Enables IPv6 Virtual Router Redundancy Protocol (VRRP). The default is disabled.
fast-adv enable	Enables or disables the fast advertisement interval. When disabled, the regular advertisement interval is used. The default is disabled.
fast-adv-int <200-1000>	Configures the interval between Virtual Router Redundancy Protocol (VRRP) advertisement messages. You must configure the same value on all participating routers. This unit of measure must be in multiples of 200 milliseconds. The default is 200.
holddown-timer<0-21600>	Configures the amount of time, in seconds, to wait before preempting the current Virtual Router Redundancy Protocol (VRRP) master.
priority <1-255>	Specifies the priority value used by this Virtual Router Redundancy Protocol (VRRP) router. The value 255 is reserved for the router that owns the IP addresses associated with the virtual router. The default priority is 100.

Default

None

Command Mode

VLAN Interface Configuration

ipv6 vrrp address (for a VLAN)

Specify a link-local address to associate with the virtual router. Optionally, you can also assign global unicast IPv6 addresses to associate with the virtual router. Network prefixes for the virtual router are derived from the global IPv6 addresses assigned to the virtual router.

Syntax

- **default ipv6 vrrp address <1-255>**
- **ipv6 vrrp address <1-255> link-local WORD<0-127>**
- **no ipv6 vrrp address <1-255>**

Command Parameters

<1-255>	Specifies the virtual router ID. The virtual router acts as the default router for one or more associated addresses.
link-local WORD<0-127>	Specifies a link-local IPv6 address to associate with the virtual router.

Default

None

Command Mode

VLAN Interface Configuration

migrate-to-mgmt (for a VLAN)

Designate an existing VLAN IP address as a Segmented Management Instance. This action moves the IP interface from the VOSS routing stack to the management stack to use with management applications. You cannot migrate interfaces used for routing purposes, for example, where you configure Layer 3 routing protocols.

Syntax

- **migrate-to-mgmt**
- **no migrate-to-mgmt**

Default

None

Command Mode

VLAN Interface Configuration

nlb-mode

Configure the NLB support on an IP interface to enable or disable the Network Load Balancer (NLB) support.

Syntax

- **default nlb-mode**
- **nlb-mode multicast**
- **nlb-mode unicast**
- **no nlb-mode**

Command Parameters

multicast	Configures the mode as multicast.
unicast	Configures the mode as unicast.

Default

By default, NLB is disabled.

Command Mode

VLAN Interface Configuration

slpp (on a VLAN)

Enable the Simple Loop Prevention Protocol (SLPP) globally and for a VLAN to detect a loop and automatically stop it. The VLAN configuration controls the boundary of SLPP-PDU transmission.

Syntax

- **default slpp**
- **default slpp enable**
- **default slpp tx-interval**
- **no slpp**
- **no slpp enable**
- **no slpp vid <1-4059>**
- **slpp enable**
- **slpp tx-interval <500-5000>**
- **slpp vid <1-4059>**

Command Parameters

enable	Enables or disables the SLPP operation. You must enable the SLPP operation to enable the SLPP packet transmit and receive process. If you disable the SLPP operation, the system sends no SLPP packets and discards received SLPP packets. The default is disabled.

tx-interval <500-5000>	Configures the SLPP packet transmit interval, expressed in milliseconds, in a range from 500-5000. The default is 500.
vid <1-4059>	Specifies the VLAN ID in the range of 1 to 4059. VLAN IDs 1 to 4059 are configurable. The system reserves VLAN IDs 4060 to 4094 for internal use. VLAN ID 1 is the default VLAN. You cannot create or delete VLAN ID 1.

Default

None

Command Mode

VLAN Interface Configuration

vrf (for a VLAN)

Associate a VLAN to a Virtual Router Forwarding (VRF) so that the VLAN becomes a member of the VRF instance.

Syntax

- **no vrf**
- **vrf WORD<1-16>**

Command Parameters

vrf WORD<1-16>	Specifies the VRF name.

Default

None

Command Mode

VLAN Interface Configuration

Chapter 24: VRF Router Configuration

dvr inject-default-route-disable

Disables injection of default routes for a specific VRF instance, on the DvR Controller.

Syntax

- **default dvr inject-default-route-disable**
- **dvr inject-default-route-disable**
- **no dvr inject-default-route-disable**

Default

The default is enable

Command Mode

VRF Router Configuration

dvr redistribute direct (for a VRF)

Enables route redistribution of direct routes on a VRF instance. The route type is internal.

Syntax

- **dvr redistribute direct enable**
- **dvr redistribute direct metric <0-65535>**
- **dvr redistribute direct route-map**

Command Parameters

enable	Enables route redistribution of direct routes on a VRF instance. The route type is internal.
metric <0-65535>	Configures the route redistribution metric for direct routes on a VRF instance.
route-map	Configures the route policy for route redistribution of direct routes, on a VRF instance.

Default

The default is disable

Command Mode

VRF Router Configuration

dvr redistribute static (for a VRF)

Enables route redistribution of direct routes on a VRF instance. The route type is external.

Syntax

- **dvr redistribute static enable**
- **dvr redistribute static metric <0-65535>**
- **dvr redistribute static route-map**

Command Parameters

enable	Enables route redistribution of static routes on a VRF instance. The route type is external.
metric <0-65535>	Configures the route redistribution metric for static routes on a VRF instance.
route-map	Configures the route policy for route redistribution of static routes on a VRF instance.

Default

The default is disable

Command Mode

VRF Router Configuration

ip alternative-route (on a VRF)

Enable the alternative route feature for a VRF context.

Syntax

- **default ip alternative-route**
- **ip alternative-route**
- **no ip alternative-route**

Command Parameters

alternative-route	Enables or disables the Alternative Route feature. The default value is enabled. If the alternative-route parameter is disabled, all existing alternative routes are removed. When the parameter is enabled, all alternative routes are re-added.

Default

The default is enabled.

Command Mode

VRF Router Configuration

ip arp (for a VRF)

Configure ARP static entries to modify the ARP parameters on the device. The only way to change a static ARP is to delete the static ARP entry and create a new entry with new information.

Syntax

- `default ip arp {A.B.C.D}`
- `default ip arp timeout`
- `ip arp {A.B.C.D} 0x00:0x00:0x00:0x00:0x00:0x00 {slot/port[/sub-port][-slot/port[/sub-port]][,...]}`
- `ip arp {A.B.C.D} 0x00:0x00:0x00:0x00:0x00:0x00 {slot/port[/sub-port][-slot/port[/sub-port]][,...]} vid <1-4059>`
- `ip arp timeout <1-32767>`
- `no ip arp {A.B.C.D}`

Command Parameters

{A.B.C.D}	Specifies the IP address.
{slot/port[/sub-port][-slot/port[/sub-port]][,...]}	Identifies the slot and port in one of the following formats: a single slot and port (slot/port), a range of slots and ports (slot/port-slot/port), or a series of slots and ports (slot/port,slot/port,slot/port). If your platform supports channelization and the port is channelized, you must also specify the sub-port in the format slot/port/sub-port.
{slot[-slot][,...]}	Specifies the port that receives the flooding.
0x00:0x00:0x00:0x00:0x00:0x00	Specifies the MAC address in hexadecimal format. The MAC address parameter does not accept MAC addresses beginning with 01:00:5e (01:00:5e:00:00:00 to 01:00:5e:ff:ff:ff inclusive).
timeout <1-32767>	Configures the timeout value.
vid <1-4059>	Specifies the VLAN ID in the range of 1 to 4059. By default, VLAN IDs 1 to 4059 are configurable and the system reserves VLAN IDs 4060 to 4094 for internal use. If you enable VRF scaling and SPBM mode, the system

	also reserves VLAN IDs 3500 to 3998. VLAN ID 1 is the default VLAN and you cannot create or delete VLAN ID 1.

Default

None

Command Mode

VRF Router Configuration

ip as-list (for a VRF)

Use an asynchronous (AS) path list to restrict the routing information a router learns or advertises to and from a neighbor. The AS path list acts as a filter that Match AS paths.

Syntax

- `no ip as-list <1-1024> as-path WORD<0-1536>`
- `no ip as-list <1-1024> memberid <0-65535>`

Command Parameters

{ permit | deny }	Permits or denies access for matching conditions.
<1-1024>	Creates the specified AS-path list entry.
<prefix/len>	Specifies the IPv4 address and an integer value in the range of 1 to 256.
advertisemap WORD<0-1536>	Specifies the route map name for route advertisements.
as-path WORD<0-1536>	Specifies an integer value between 0 and 1536 placed within quotation marks " ."
as-set	Enables autonomous system (AS) information.
Attributemap WORD<0-1536>	Specifies the route map name.
memberid <0-65535>	Adds a regular expression entry to the specified AS-path list.
summaryonly	Enables the summarization of routes not included in routing updates. This parameter creates the aggregate route and suppresses advertisements of more specific routes to all neighbors. The default value is disable.

suppress-map WORD<0-1536>	Specifies the route map name for the suppressed route list.

Default

None

Command Mode

VRF Router Configuration

ip bgp

Enables BGP on the VRF.

Syntax

- **default ip bgp**
- **ip bgp**
- **no ip bgp**

Default

The default value is disabled.

Command Mode

VRF Router Configuration

ip bgp aggregate-address

Add or delete an aggregate address in a BGP routing table.

Syntax

- **default ip bgp aggregate-address WORD <1-256>**
- **default ip bgp aggregate-address WORD <1-256> advertise-map**
- **default ip bgp aggregate-address WORD <1-256> as-set**
- **default ip bgp aggregate-address WORD <1-256> attribute-map**
- **default ip bgp aggregate-address WORD <1-256> summary-only**
- **default ip bgp aggregate-address WORD <1-256> suppress-map**
- **ip bgp aggregate-address WORD <1-256>**
- **ip bgp aggregate-address WORD <1-256> advertise-map WORD<0-1536>**
- **ip bgp aggregate-address WORD <1-256> as-set**

- **ip bgp aggregate-address WORD <1-256> attribute-map WORD<0-1536>**
- **ip bgp aggregate-address WORD <1-256> summary-only**
- **ip bgp aggregate-address WORD <1-256> suppress-map WORD<0-1536>**
- **no ip bgp aggregate-address WORD <1-256>**
- **no ip bgp aggregate-address WORD <1-256> advertise-map**
- **no ip bgp aggregate-address WORD <1-256> as-set**
- **no ip bgp aggregate-address WORD <1-256> attribute-map**
- **no ip bgp aggregate-address WORD <1-256> summary-only**
- **no ip bgp aggregate-address WORD <1-256> suppress-map**

Command Parameters

advertise-map WORD<0-1536>	Specifies the route map name (any string length between 0 and 64 characters) for route advertisements.
as-set	Enables autonomous system (AS) information.
attribute-map WORD <0-1536>	Specifies the route map name (string length between 0 and 64 characters).
summary-only	Enables the summarization of routes not included in routing updates. This parameter creates the aggregate route and suppresses advertisements of more specific routes to all neighbors. The default value is disable.
suppress-map WORD<0-1536>	Specifies the route map name (string length between 0 and 64 characters) for the suppressed route list.
WORD <1-256>	Specifies the IPv4 or the IPv6 address and an integer value in the range of 1 to 256.

Default

The default is disabled.

Command Mode

VRF Router Configuration

ip bgp aggregation

Enable or disable automatic route aggregation on the port. When enabled, the router automatically aggregates routes to their natural mask when they are advertised on an interface in a different class network.

Syntax

- **default ip bgp aggregation**
- **default ip bgp aggregation enable**
- **ip bgp aggregation**
- **ip bgp aggregation enable**
- **no ip bgp aggregation**
- **no ip bgp aggregation enable**

Default

The default is disabled.

Command Mode

VRF Router Configuration

ip bgp always-compare-med

When enabled, compares multiexit discriminator (MED) attributes from neighbors in different autonomous systems.

Syntax

- **default ip bgp always-compare-med**
- **ip bgp always-compare-med**
- **no ip bgp always-compare-med**

Default

The default is enabled.

Command Mode

VRF Router Configuration

ip bgp auto-peer-restart enable

Enable the process that automatically restarts a connection to a BGP neighbor.

Syntax

- **default ip bgp auto-peer-restart**
- **default ip bgp auto-peer-restart enable**
- **ip bgp auto-peer-restart enable**
- **no ip bgp auto-peer-restart**

- **no ip bgp auto-peer-restart enable**

Default

The default is enabled.

Command Mode

VRF Router Configuration

ip bgp auto-summary

Summarize the networks based on class limits after BGP is enabled. (For example, Class A, B, C networks).

Syntax

- **default ip bgp auto-summary**
- **ip bgp auto-summary**
- **no ip bgp auto-summary**

Default

The default is enabled.

Command Mode

VRF Router Configuration

ip bgp debug-screen

Display debug messages on the console, or saves them in a log file.

Syntax

- **default ip bgp debug-screen**
- **ip bgp debug-screen { off | on }**
- **no ip bgp debug-screen**

Default

The default is off.

Command Mode

VRF Router Configuration

ip bgp default local-preference

Specifies the default value of the local preference attribute.

Syntax

- **default ip bgp default local-preference**
- **ip bgp default local-preference <0-2147483647>**
- **no ip bgp default local-preference**

Command Parameters

<0-2147483647>	Specifies the preference value.

Default

The default is 0.

Command Mode

VRF Router Configuration

ip bgp default-information

Enable the advertisement of a default route to peers, if it is present in the routing table.

Syntax

- **default ip bgp default-information originate**
- **default ip bgp default-information ipv6-originate**
- **ip bgp default-information originate**
- **ip bgp default-information ipv6-originate**
- **no ip bgp default-information originate**
- **no ip bgp default-information ipv6-originate**

Command Parameters

originate	Enables the origination default route.
ipv6-originate	Enables the origination of an IPv6 default route.

Default

The default is disabled.

Command Mode

VRF Router Configuration

ip bgp default-metric

Configure a value that is sent to a BGP neighbor to determine the cost of a route a neighbor is using.

Syntax

- **default ip bgp default-metric**
- **ip bgp default-metric <-1-2147483647>**
- **no ip bgp default-metric**

Command Parameters

<-1-2147483647>	Specifies the range of the default metric. A default metric value helps solve the problems associated with redistributing routes that have incompatible metrics.

Default

The default value is -1.

Command Mode

VRF Router Configuration

ip bgp deterministic-med enable

Enables deterministic MED. Deterministic MED, when enabled, means that the first AS of the multiple paths must be the same.

Syntax

- **default ip bgp deterministic-med**
- **default ip bgp deterministic-med enable**
- **ip bgp deterministic-med enable**
- **no ip bgp deterministic-med**
- **no ip bgp deterministic-med enable**

Default

The default is disabled.

Command Mode

VRF Router Configuration

ip bgp enable

Enabled BGP on the VRF.

Syntax

- **default ip bgp enable**
- **ip bgp enable**
- **no ip bgp enable**

Default

The default is disabled.

Command Mode

VRF Router Configuration

ip bgp flap-dampening

Enable route suppression for routes that flap on and off.

Syntax

- **default ip bgp flap-dampening**
- **default ip bgp flap-dampening enable**
- **ip bgp flap-dampening**
- **ip bgp flap-dampening enable**
- **no ip bgp flap-dampening**
- **no ip bgp flap-dampening enable**

Default

The default is enabled.

Command Mode

VRF Router Configuration

ip bgp global-debug mask

Display specific debug messages for your global BGP configuration.

Syntax

- **default ip bgp global-debug mask**

- **ip bgp global-debug mask WORD<1-100>**
- **no ip bgp global-debug mask**

Default

None

Command Mode

VRF Router Configuration

ip bgp ibgp-report-import-rt enable

Configure BGP to advertise imported routes to an interior BGP (IBGP) peer. This command enable or disables the advertisement of non-BGP imported routes to other IBGP neighbors.

Syntax

- **default ip bgp ibgp-report-import-rt enable**
- **ip bgp ibgp-report-import-rt enable**
- **no ip bgp ibgp-report-import-rt enable**

Default

The default is enabled.

Command Mode

VRF Router Configuration

ip bgp ignore-illegal-rtrid enable

Overlook an illegal router id after enabling BGP.

Syntax

- **default ip bgp ignore-illegal-rtrid**
- **default ip bgp ignore-illegal-rtrid enable**
- **ip bgp ignore-illegal-rtrid enable**
- **no ip bgp ignore-illegal-rtrid**
- **no ip bgp ignore-illegal-rtrid enable**

Default

The default is enabled.

Command Mode

VRF Router Configuration

ip bgp in-route-map

Apply a route policy to all incoming routes.

Syntax

- **default ip bgp in-route-map**
- **ip bgp in-route-map WORD<0-256>**
- **no ip bgp in-route-map WORD<0-256>**

Default

None

Command Mode

VRF Router Configuration

ip bgp multiple-paths

Configures the maximum number of equal-cost-paths that are available to a BGP router by limiting the number of equal-cost-paths the routing table can store.

Syntax

- **ip bgp multiple-paths <1-8>**

Default

The default is 1.

Command Mode

VRF Router Configuration

ip bgp neighbor

Configure BGP neighbors for a VRF context.

Syntax

- **default ip bgp neighbor WORD<0-1536>**
- **default ip bgp neighbor WORD<0-1536> advertisement-interval**
- **default ip bgp neighbor WORD<0-1536> allow-as-in**
- **default ip bgp neighbor WORD<0-1536> as-override**
- **default ip bgp neighbor WORD<0-1536> default-ipv6-originate**
- **default ip bgp neighbor WORD<0-1536> default-originate**

- **default ip bgp neighbor WORD<0-1536> ebgp-multihop**
- **default ip bgp neighbor WORD<0-1536> enable**
- **default ip bgp neighbor WORD<0-1536> in-route-map**
- **default ip bgp neighbor WORD<0-1536> ipv6-in-route-map**
- **default ip bgp neighbor WORD<0-1536> ipv6-max-prefix**
- **default ip bgp neighbor WORD<0-1536> ipv6-out-route-map**
- **default ip bgp neighbor WORD<0-1536> max-prefix**
- **default ip bgp neighbor WORD<0-1536> MD5-authentication enable**
- **default ip bgp neighbor WORD<0-1536> neighbor-debug-mask**
- **default ip bgp neighbor WORD<0-1536> next-hop-self**
- **default ip bgp neighbor WORD<0-1536> out-route-map**
- **default ip bgp neighbor WORD<0-1536> remote-as**
- **default ip bgp neighbor WORD<0-1536> remove-private-as enable**
- **default ip bgp neighbor WORD<0-1536> retry-interval**
- **default ip bgp neighbor WORD<0-1536> send-community**
- **default ip bgp neighbor WORD<0-1536> site-of-origin**
- **default ip bgp neighbor WORD<0-1536> soft-reconfiguration-in enable**
- **default ip bgp neighbor WORD<0-1536> timers**
- **default ip bgp neighbor WORD<0-1536> update-source**
- **default ip bgp neighbor WORD<0-1536> weight**
- **ip bgp neighbor WORD<0-1536>**
- **ip bgp neighbor WORD<0-1536> advertisement-interval <5-120>**
- **ip bgp neighbor WORD<0-1536> allow-as-in <0-10>**
- **ip bgp neighbor WORD<0-1536> as-override**
- **ip bgp neighbor WORD<0-1536> default-ipv6-originate**
- **ip bgp neighbor WORD<0-1536> default-originate**
- **ip bgp neighbor WORD<0-1536> ebgp-multihop**
- **ip bgp neighbor WORD<0-1536> enable**
- **ip bgp neighbor WORD<0-1536> in-route-map WORD<0-256>**
- **ip bgp neighbor WORD<0-1536> ipv6-in-route-map**
- **ip bgp neighbor WORD<0-1536> ipv6-max-prefix**
- **ip bgp neighbor WORD<0-1536> ipv6-out-route-map**
- **ip bgp neighbor WORD<0-1536> max-prefix <0-2147483647>**
- **ip bgp neighbor WORD<0-1536> MD5-authentication enable**

- **ip bgp neighbor WORD<0-1536> neighbor-debug-mask WORD<1-100>**
- **ip bgp neighbor WORD<0-1536> next-hop-self**
- **ip bgp neighbor WORD<0-1536> out-route-map WORD<0-256>**
- **ip bgp neighbor WORD<0-1536> peer-group WORD<0-1536>**
- **ip bgp neighbor WORD<0-1536> remote-as WORD<0-11>**
- **ip bgp neighbor WORD<0-1536> remove-private-as enable**
- **ip bgp neighbor WORD<0-1536> retry-interval <1-65535>**
- **ip bgp neighbor WORD<0-1536> send-community**
- **ip bgp neighbor WORD<0-1536> site-of-origin <0-65535> <0-2147483647>**
- **ip bgp neighbor WORD<0-1536> site-of-origin {A.B.C.D} <0-65535>**
- **ip bgp neighbor WORD<0-1536> soft-reconfiguration-in enable**
- **ip bgp neighbor WORD<0-1536> timers <0-21845> <0-65535>**
- **ip bgp neighbor WORD<0-1536> update-source {A.B.C.D}**
- **ip bgp neighbor WORD<0-1536> weight <0-65535>**
- **no ip bgp neighbor WORD<0-1536>**
- **no ip bgp neighbor WORD<0-1536> as-override**
- **no ip bgp neighbor WORD<0-1536> default-ipv6-originate**
- **no ip bgp neighbor WORD<0-1536> default-originate**
- **no ip bgp neighbor WORD<0-1536> ebgp-multihop**
- **no ip bgp neighbor WORD<0-1536> enable**
- **no ip bgp neighbor WORD<0-1536> in-route-map**
- **no ip bgp neighbor WORD<0-1536> ipv6-in-route-map**
- **no ip bgp neighbor WORD<0-1536> ipv6-max-prefix**
- **no ip bgp neighbor WORD<0-1536> ipv6-out-route-map**
- **no ip bgp neighbor WORD<0-1536> MD5-authentication enable**
- **no ip bgp neighbor WORD<0-1536> neighbor-debug-mask**
- **no ip bgp neighbor WORD<0-1536> next-hop-self**
- **no ip bgp neighbor WORD<0-1536> out-route-map**
- **no ip bgp neighbor WORD<0-1536> peer-group**
- **no ip bgp neighbor WORD<0-1536> remove-private-as enable**
- **no ip bgp neighbor WORD<0-1536> send-community**
- **no ip bgp neighbor WORD<0-1536> site-of-origin**
- **no ip bgp neighbor WORD<0-1536> soft-reconfiguration-in enable**
- **no ip bgp neighbor WORD<0-1536> update-source**

Command Parameters

advertisement-interval <5-120>	Specifies the IP Border Gateway Protocol (BGP) route advertisement interval.
allow-as-in <0-10>	Specifies the IP Border Gateway Protocol (BGP) neighbor allow-as-in.
as-override	Specifies the as-override.
default-ipv6-originate	Enables the IPv6 bgp neighbor default-originate.
default-originate	Specifies the default-originate.
ebgp-multihop	Specifies EBGP-multihop.
enable	Enables the command.
in-route-map WORD<0-256>	Specifies the in-route-map.
ipv6-in-route-map	Specifies the IPv6 in-route-map.
ipv6-max-prefix	Specifies the IPv6 max-prefix.
ipv6-out-route-map	Specifies the IPv6 out-route-map.
max-prefix <0-2147483647>	Specifies the max-prefix.
MD5-authentication enable	Enables the Message Digest 5 (MD5)-authentication.
neighbor-debug-mask WORD<1-100>	Specifies the neighbor-debug-mask.
next-hop-self	Specifies the next-hop-self.
out-route-map WORD<0-256>	Specifies the out-route-map.
peer-group WORD<0-1536>	Specifies the peer group.
remote-as WORD<0-11>	Specifies the remote-as.
remove-private-as enable	Enables the remote-private-as enable.
retry-interval <1-65535>	Specifies the retry-interval.
send-community	Specifies the send-community.
site-of-origin {A.B.C.D} <0-65535>	Specifies the site-of-origin.
timers <0-21845> <0-65535>	Specifies the timers.

update-source WORD<1-256>	Specifies the IPv4 or IPv6 address of the update-source.
weight <0-65535>	Specifies the weight.
WORD<0-1536>	Specifies the neighbor IP address, neighbor IPv6 address, or the neighbor group name.

Default

None

Command Mode

VRF Router Configuration

ip bgp neighbor password

Specify the password for IP BGP.

Syntax

- **default ip bgp neighbor password <nbr_ipaddr|peer-group-name> WORD<0-1536>**
- **ip bgp neighbor password <nbr_ipaddr|peer-group-name> WORD<0-1536>**
- **no ip bgp neighbor password <nbr_ipaddr|peer-group-name> WORD<0-1536>**

Command Parameters

<nbr_ipaddr|peer-group-name>	Specifies the peer IP address or the peer group name.
password	Configures the IP BGP neighbor password.
WORD<0-1536>	Specifies a password for IP BGP.

Default

None

Command Mode

VRF Router Configuration

ip bgp network

Specify the Interior Gateway Protocol (IGP) network prefixes for Border Gateway Protocol (BGP) to advertise for redistribution.

Syntax

- **default ip bgp network WORD<1-256>**
- **ip bgp network WORD<1-256>**
- **ip bgp network WORD<1-256> metric <0-65535>**
- **no ip bgp network WORD<1-256>**

Command Parameters

WORD<1-256>	Specifies IGP network prefixes for Border Gateway Protocol (BGP) to advertise for redistribution. This command imports routes into BGP. WORD <1-256> is the IPv4 or IPv6 network address and mask.
metric <0-65535>	Corresponds to the multiexit discriminator (MED) BGP attribute for the route.

Default

None

Command Mode

VRF Router Configuration

ip bgp no-med-path-is-worst enable

Enable Border Gateway Protocol (BGP) to treat an update without a multiexit discriminator (MED) attribute as the worst path.

Syntax

- **default ip bgp no-med-path-is-worst**
- **default ip bgp no-med-path-is-worst enable**
- **ip bgp no-med-path-is-worst enable**
- **no ip bgp no-med-path-is-worst**
- **no ip bgp no-med-path-is-worst enable**

Default

The default value is enable.

Command Mode

VRF Router Configuration

ip bgp out-route-map WORD<0-256>

Applies a route policy rule to all outgoing routes that are learned from, or sent to, the local peers or peer groups, of the BGP router. The local BGP router is the BGP router that allows or disallows routes, and sets attributes in incoming or outgoing updates.

Syntax

- **default ip bgp out-route-map**
- **ip bgp out-route-map WORD<0-256>**
- **no ip bgp out-route-map WORD<0-256>**

Default

None

Command Mode

VRF Router Configuration

ip bgp quick-start enable

Enables the quick-start flag for exponential backoff.

Syntax

- **default ip bgp quick-start**
- **default ip bgp quick-start enable**
- **ip bgp quick-start enable**
- **no ip bgp quick-start**
- **no ip bgp quick-start enable**

Default

The default value is enable.

Command Mode

VRF Router Configuration

ip bgp redistribute

Configure and enable redistribution entries to allow a protocol to announce routes of a certain source type, for example, static, RIP, or direct.

Syntax

- **default ip bgp redistribute {{direct | dvr | ipv6-direct | ipv6-isis | ipv6-static | isis | ospf | ospfv3 | rip | static} {enable | metric | metric-type |route-map WORD |vrf-src WORD <1-16>}**
- **ip bgp redistribute {{direct | dvr | ipv6-direct | ipv6-isis | ipv6-static | isis | ospf | ospfv3 | rip | static} {enable | metric <0-65535> | metric-type live-metric |route-map WORD<0-64> |vrf-src WORD <1-16>}**
- **no ip bgp redistribute {{direct | dvr | ipv6-direct | ipv6-isis | ipv6-static | isis | ospf | ospfv3 | rip | static} [enable] vrf-src WORD <1-16>**

Command Parameters

direct	Ip bgp redistribute direct command
dvr	Ip bgp redistribute dvr command
enable	Enables the route redistribution instance.
ipv6-direct	Ip bgp redistribute ipv6-direct command
ipv6-isis	Ip bgp redistribution ipv6-isis command
ipv6-static	Ip bgp redistribute ipv6-static command
isis	Ip bgp redistribute isis command
metric <0-65535>	Configures the metric to apply to redistributed routes.
metric-type live-metric	Configures default bgp redistribute direct metric-type value
ospf	Ip bgp redistribute ospf command
ospfv3	Ip bgp redistribute ospfv3 command
rip	Ip bgp redistribute rip command
route-map WORD<0-64>	Configures the route map to apply to redistributed routes.
static	Ip bgp redistribute static command
vrf-src WORD<1-16>	Specifies the source VRF instance. This parameter is not required for redistribution within the same VRF.

Default

None

Command Mode

VRF Router Configuration

ip bgp router-id {A.B.C.D}

Specify the BGP router ID in IP address format.

Syntax

- **default ip bgp router-id**
- **ip bgp router-id {A.B.C.D}**
- **no ip bgp router-id**

Command Parameters

{A.B.C.D}	Identifies the router IP address.

Default

None

Command Mode

VRF Router Configuration

ip bgp synchronization

Enables the router to accept routes from BGP peers without waiting for an update from the IGP.

Syntax

- **default ip bgp synchronization**
- **ip bgp synchronization**
- **no ip bgp synchronization**

Default

The default value is enable.

Command Mode

VRF Router Configuration

ip bgp traps enable

Enables BGP traps.

Syntax

- **default ip bgp traps**
- **default ip bgp traps enable**

- **ip bgp traps enable**
- **no ip bgp traps**
- **no ip bgp traps enable**

Default

The default value is disable.

Command Mode

VRF Router Configuration

ip community-list (for a VRF)

Show the community lists on the VRF Router.

Syntax

- **no ip community-list <1-1024>**
- **no ip community-list <1-1024> community-string WORD<0-256>**
- **no ip community-list <1-1024> memberid <0-65535>**

Command Parameters

<permit|deny>	Sets the access mode, which permits or denies access for matching conditions.
community-list <1-1024>	Creates the specified community list entry. <1-1024> specifies the list id.
community-string WORD<0-256>	Specifies an alphanumeric string value with a string length of 0 to 1536 characters. This string value is either an AS num: community-value or a well-known community string. Well known communities include: internet no-export no-advertise local-as (known as NO_EXPORT_SUBCONFED).
memberId <0-65535>	Adds an entry to the community list. <0-65535> is an integer value that represents the member ID in the community list.

Default

None

Command Mode

VRF Router Configuration

ip dhcp-relay fwd-path (for a VRF)

Create the forwarding path from the client to the server.

Syntax

- **default ip dhcp-relay fwd-path {A.B.C.D} {A.B.C.D}**
- **default ip dhcp-relay fwd-path {A.B.C.D} {A.B.C.D} mode**
- **ip dhcp-relay fwd-path {A.B.C.D} {A.B.C.D}**
- **ip dhcp-relay fwd-path {A.B.C.D} {A.B.C.D} disable**
- **ip dhcp-relay fwd-path {A.B.C.D} {A.B.C.D} enable**
- **ip dhcp-relay fwd-path {A.B.C.D} {A.B.C.D} mode bootp**
- **ip dhcp-relay fwd-path {A.B.C.D} {A.B.C.D} mode bootp_dhcp**
- **ip dhcp-relay fwd-path {A.B.C.D} {A.B.C.D} mode dhcp**
- **no ip dhcp-relay fwd-path {A.B.C.D} {A.B.C.D}**

Command Parameters

{A.B.C.D}	Creates a forwarding path to the Dynamic Host Configuration Protocol (DHCP) server. A.B.C.D is the IP address of the server. The default IP address of the relay is the address of the interface. **Tip:** If the relay is a virtual router configured on this interface, you must set the vrid.
disable	Disables the forwarding path.
enable	Enables the forwarding path.
mode <bootp| dhcp| bootp_dhcp>	Configures DHCP mode to forward BootP messages only, Dynamic Host Configuration Protocol (DHCP) messages only, or both. The default is both.

Default

None

Command Mode

VRF Router Configuration

ip dhcp-relay fwd-path mode (for a VRF)

Modify Dynamic Host Configuration Protocol (DHCP) mode to forward BootP messages only, DHCP messages only, or both.

Syntax

- **default ip dhcp-relay fwd-path {A.B.C.D} {A.B.C.D} mode**
- **ip dhcp-relay fwd-path {A.B.C.D} {A.B.C.D} mode bootp**
- **ip dhcp-relay fwd-path {A.B.C.D} {A.B.C.D} mode bootp_dhcp**
- **ip dhcp-relay fwd-path {A.B.C.D} {A.B.C.D} mode dhcp**

Command Parameters

<bootp|dhcp|bootp_dhcp>	Configures DHCP mode to forward BootP messages only, Dynamic Host Configuration Protocol (DHCP) messages only, or both. The default is both.

Default

The default mode is both.

Command Mode

VRF Router Configuration

ip icmp (for a VRF)

Enable Internet Control Message Protocol (ICMP) redirect and unreachable messages.

Syntax

- **default ip icmp**
- **default ip icmp unreachable**
- **ip icmp unreachable**
- **no ip icmp**
- **no ip icmp unreachable**

Command Parameters

unreachable	Enables the switch to send Internet Control Message Protocol (ICMP) unreachable messages. When enabled, generates Internet Control Message Protocol (ICMP) network unreachable messages if the destination network is not reachable from this router. These messages help determine if the routing switch is reachable over the network. The default is disabled.

Default

The default is disabled.

Command Mode

VRF Router Configuration

ip icmp echo-broadcast-request (for a VRF)

Enables or disables the processing of IPv4 ICMP messages sent to a broadcast address for a non-zero VRF.

Syntax

- **default ip icmp echo-broadcast-request**
- **ip icmp echo-broadcast-request**
- **no ip icmp echo-broadcast-request**

Command Parameters

echo broadcast-request	Enables or disables the processing of IPv4 ICMP messages sent to a broadcast address for a non-zero VRF. The default value is enabled.

Default

The default is enabled.

Command Mode

VRF Router Configuration

ip igmp (for a VRF)

Configure Internet Group Management Protocol (IGMP) for each interface to change default multicasting operations.

Syntax

- **default ip igmp ssm-map {A.B.C.D} {A.B.C.D}**
- **default ip igmp ssm-map {A.B.C.D} {A.B.C.D} [enable]**
- **ip igmp generate-log**
- **ip igmp generate-trap**
- **ip igmp immediate-leave-mode <multiple-user|one-user>**
- **ip igmp ssm [dynamic-learning] [group-range {A.B.C.D/X}]**
- **ip igmp ssm-map {A.B.C.D} {A.B.C.D} [enable]**
- **ip igmp ssm-map all**
- **no ip igmp ssm-map {A.B.C.D} {A.B.C.D}**
- **no ip igmp ssm-map {A.B.C.D} {A.B.C.D} [enable]**

Command Parameters

generate-log	Sets the Internet Group Management Protocol (IGMP) log.

generate-trap	Sets the Internet Group Management Protocol (IGMP) trap.
immediate-leave-mode <multiple-user|one-user	Enables immediate leave mode to users which is either a single user or multiple users.
ssm [dynamic-learning] [group-range {A.B.C.D/X}]	Enables and sets the Source Specific Multicast (SSM) features. The parameter, dynamic-learning enables SSM dynamic learning. The parameter, group range {A.B.C.D/X} configures the range group address and mask. The SSM range parameter extends the default SSM range of 232/8 to include an IP multicast address. You can configure existing applications without having to change their group configurations. This parameter specifies an IP multicast address within the range of 224.0.0.0 and 239.255.255.255. The default is 232.0.0.0. The address mask is the IP address mask of the multicast group. The default is 255.0.0.0.
ssm-map all	Enables the Source Specific Multicast (SSM) map table for all static entries.
ssm-map{A.B.C.D} {A.B.C.D}[enable]	Enables the Source Specific Multicast (SSM) map table for a specific entry or creates a static entry for a specific group. The parameter, {A.B.C.D} {A.B.C.D} creates a static SSM channel table entry by specifying the group and source IP addresses. The first IP address is an IP multicast address within the SSM range. The second IP address is the source IP address and it it is an IP host address that sends traffic to the group. The default for {A.B.C.D}{A.B.C.D} enable is enable for each entry. The default is enable for each entry.
ssm-map{A.B.C.D} [enable]	Enables the administrative state for a specific entry (group). This variable does not affect the dynamically-learned entries. This state determines whether the switch uses the static entry or saves it for future use. The default is enable for each entry.

Default

None

Command Mode

VRF Router Configuration

ip igmp generate-log (for a VRF)

Enables the generation of IGMP log messages.

Syntax

- **default ip igmp generate-log**
- **ip igmp generate-log**

- **no ip igmp generate-log**

Default

The default is disabled.

Command Mode

VRF Router Configuration

ip igmp generate-trap (for a VRF)

Enables the generation of IGMP traps.

Syntax

- **default ip igmp generate-trap**
- **ip igmp generate-trap**
- **no ip igmp generate-trap**

Default

The default is disabled.

Command Mode

VRF Router Configuration

ip igmp immediate-leave-mode (for a VRF)

Configures the fast leave mode.

Syntax

- **default ip igmp immediate-leave-mode multiple-user**
- **default ip igmp immediate-leave-mode one-user**
- **ip igmp immediate-leave-mode multiple-user**
- **ip igmp immediate-leave-mode one-user**
- **no ip igmp immediate-leave-mode multiple-user**
- **no ip igmp immediate-leave-mode one-user**

Command Parameters

multiple-user	Removes all group members on a fast leave-enabled interface port after receiving the first leave message from a member. This behavior is the same as the conventional fast leave process.

one-user	Removes from the group only the IGMP member who sent the leave message. Traffic does not stop if other receivers exist on the interface port.

Default

The default is multiple-user.

Command Mode

VRF Router Configuration

ip igmp ssm dynamic-learning (for a VRF)

Enables SSM dynamic learning for the VRF.

Syntax

- **default ip igmp ssm dynamic-learning**
- **ip igmp ssm dynamic-learning**
- **ip igmp ssm dynamic-learning group-range {A.B.C.D/X}**
- **no ip igmp ssm dynamic-learning**

Command Parameters

group-range {A.B.C.D/X}	Extends the default SSM range of 232/8 to include an IP multicast address. You can configure existing applications without changing their group configuration.

Default

The default is enabled.

Command Mode

VRF Router Configuration

ip igmp ssm group-range (for a VRF)

Extends the default SSM range of 232/8 to include an IP multicast address. You can configure existing applications without changing their group configuration.

Syntax

- **default ip igmp ssm**
- **ip igmp ssm group-range {A.B.C.D/X}**
- **no ip igmp ssm**

Command Parameters

{A.B.C.D/X}	Specifies the IP address. The IP address must be within the range of 224.0.0.0 and 239.255.255.255.

Default

The default IP address is 0.0.0.232. The default mask is 0.0.0.255.

Command Mode

VRF Router Configuration

ip igmp ssm-map (for a VRF)

Configures the SSM map table to map groups to their sending source.

Syntax

- **default ip igmp ssm-map {A.B.C.D} {A.B.C.D}**
- **default ip igmp ssm-map {A.B.C.D} {A.B.C.D} enable**
- **default ip igmp ssm-map all**
- **ip igmp ssm-map {A.B.C.D} {A.B.C.D}**
- **ip igmp ssm-map {A.B.C.D} {A.B.C.D} enable**
- **ip igmp ssm-map all**
- **no ip igmp ssm-map {A.B.C.D} {A.B.C.D}**
- **no ip igmp ssm-map {A.B.C.D} {A.B.C.D} enable**
- **no ip igmp ssm-map all**

Command Parameters

{A.B.C.D} {A.B.C.D}	Enables the SSM map table for a specific entry or creates a static entry for a specific group. {A.B.C.D} {A.B.C.D} creates a static SSM channel table entry by specifying the group and source IP address. The first IP address is an IP multicast address within the SSM range. The second IP address is the source IP address. The source address is an IP host address that sends traffic to the group.
all	Enables the SSM map table for all static entries.
enable	Enables the static entry.

Default

The default is disabled.

Command Mode

VRF Router Configuration

ip isid-list (for a VRF)

Create an I-SID list to use with IS-IS accept policies.

Syntax

- **ip isid-list WORD<1-32> <0-16777215>**
- **ip isid-list WORD<1-32> list WORD<1-1024>**
- **no ip isid-list WORD<1-32> <0-16777215>**
- **no ip isid-list WORD<1-32> list WORD<1-1024>**

Command Parameters

<0-16777215>	Specifies an I-SID value.
list WORD<1-1024>	Specifies a list of I-SID values in one of the following formats (1,3,5,8-10).
WORD<1-32>	Specifies a name for the I-SID list.

Default

None

Command Mode

VRF Router Configuration

ip mroute resource-usage (for a VRF)

Configures the resource usage counters.

Syntax

- **default ip mroute resource-usage egress-threshold <0-32767>**
- **default ip mroute resource-usage egress-threshold <0-32767> ingress-threshold**
- **default ip mroute resource-usage ingress-threshold <0-32767>**
- **default ip mroute resource-usage log-msg**
- **default ip mroute resource-usage trap-msg**
- **ip mroute resource-usage egress-threshold <0-32767>**
- **ip mroute resource-usage egress-threshold <0-32767> ingress-threshold <0-32767>**
- **ip mroute resource-usage ingress-threshold <0-32767>**
- **ip mroute resource-usage log-msg**
- **ip mroute resource-usage trap-msg**

- **no ip mroute resource-usage egress-threshold <0-32767>**
- **no ip mroute resource-usage egress-threshold <0-32767> ingress-threshold**
- **no ip mroute resource-usage ingress-threshold <0-32767>**
- **no ip mroute resource-usage log-msg**
- **no ip mroute resource-usage trap-msg**

Command Parameters

egress-threshold <0-32767>	Configures the egress record threshold (S,G). A notification message is sent if this value is exceeded. The default is 0.
ingress-threshold <0-32767>	Configures the ingress record threshold (peps). A notification message is sent if this value is exceeded. The default is 0.
log-msg	Configures the notification method for sending only a log message after the threshold level is exceeded. The default is disabled.
log-msg	Configures the notification method for sending only a log message after the threshold level is exceeded. The default is disabled.
trap-msg	Configures the notification method for sending only a trap message after the threshold level is exceeded. The default is disabled.
trap-msg	Configures the notification method for sending only a trap message after the threshold level is exceeded. The default is disabled

Default

None

Command Mode

VRF Router Configuration

ip msdp (for a VRF)

Create an MSDP instance on a user defined VRF to allow further configuration to take place.

Syntax

- **ip msdp**

Default

None

Command Mode

VRF Router Configuration

ip msdp apply redistribute (for a VRF)

Apply MSDP redistribution filters.

Syntax

- **default ip msdp apply redistribute**
- **ip msdp apply redistribute**
- **no ip msdp apply redistribute**

Default

None

Command Mode

VRF Router Configuration

ip msdp connect—retry (for a VRF)

Configure the connect-retry period to specify the amount of time, in seconds, between connection attempts for peering sessions.

Syntax

- **default ip msdp connect—retry {A.B.C.D} <1-65535>**
- **ip msdp connect—retry {A.B.C.D} <1-65535>**
- **no ip msdp connect—retry {A.B.C.D} <1-65535>**

Command Parameters

{A.B.C.D}	Specifies the MSDP peer IP address.
<1-65535>	Specifies the connect-retry interval in seconds. The default is 30 seconds.

Default

The default is 30 seconds.

Command Mode

VRF Router Configuration

ip msdp description

Configure a peer description to add descriptive text to an MSDP peer for easy identification of a peer.

Syntax

- **default ip msdp description**
- **ip msdp description {A.B.C.D} WORD<1-255>**
- **no ip msdp description**

Command Parameters

{A.B.C.D}	Specifies the MSDP peer IP address.
WORD<1-255>	Specifies a descriptive text to a MSDP peer in the range of 1-255 characters.

Default

None

Command Mode

VRF Router Configuration

ip msdp keepalive (for a VRF)

Configure keepalive messages to adjust the interval in seconds at which an MSDP peer sends keep alive messages.

Syntax

- **default ip msdp keepalive {A.B.C.D} <0-21845> <0-65535>**
- **ip msdp keepalive {A.B.C.D} <0-21845> <0-65535>**
- **no ip msdp keepalive {A.B.C.D} <0-21845> <0-65535>**

Command Parameters

{A.B.C.D}	Specifies the MSDP peer IP address.
<0-21845>	Specifies the keep alive interval in seconds. The default is 60 seconds.
<0-65535>	Specifies the hold time interval in seconds. The default is 75 seconds. 0 seconds means the peer never expires. Values 1 and 2 are not allowed.

Default

The default is 60 seconds.

Command Mode

VRF Router Configuration

ip msdp md5-authentication (for a VRF)

Configure Message Digest (MD) 5 authentication to secure control messages on the TCP connection between MSDP peers.

Syntax

- **default ip msdp md5-authentication**
- **ip msdp md5-authentication**
- **ip msdp md5-authentication {A.B.C.D} [enable]**
- **no ip msdp md5-authentication {A.B.C.D} [enable]**

Command Parameters

{A.B.C.D}	Specifies the MSDP peer IP address.
enable	Enables MD5 authentication.

Default

The default is disabled.

Command Mode

VRF Router Configuration

ip msdp mesh-group (for a VRF)

Configure mesh groups to reduce SA flooding. A mesh group does not forward SA messages to other group members.

Syntax

- **default ip msdp mesh-group WORD<1-64> {A.B.C.D}**
- **ip msdp mesh-group WORD<1-64> {A.B.C.D}**
- **no ip msdp mesh-group WORD<1-64> {A.B.C.D}**

Command Parameters

{A.B.C.D}	Specifies the MSDP peer IP address.
WORD<1-64>	Specifies the mesh group name.

Default

None

Command Mode

VRF Router Configuration

ip msdp originator-id (for a VRF)

Configure the originator ID to set the Rendezvous Point (RP) address inside the Source Active (SA) message.

Syntax

- **default ip msdp originator-id {A.B.C.D}**
- **ip msdp originator-id {A.B.C.D}**
- **no ip msdp originator-id {A.B.C.D}**

Command Parameters

{A.B.C.D}	Specifies the MSDP source IP address.

Default

None

Command Mode

VRF Router Configuration

ip msdp password peer (for a VRF)

Configure the case sensitive password for MD5 authentication

Syntax

- **default ip msdp password peer {A.B.C.D}**
- **ip msdp password peer {A.B.C.D} WORD<1-80>**
- **no ip msdp password peer {A.B.C.D} WORD<1-80>**

Command Parameters

{A.B.C.D}	Specifies the MSDP peer IP address.
WORD<1-80>	Specifies the MD5 authentication password.

Default

None

Command Mode

VRF Router Configuration

ip msdp peer

Configure an MSDP peer to establish a peer relationship between the local MSDP enabled router and a peer in another domain.

Syntax

- **default ip msdp peer {A.B.C.D}**
- **default ip msdp peer {A.B.C.D} enable**
- **default ip msdp peer {A.B.C.D} remote-as WORD<0-11>**
- **ip msdp peer {A.B.C.D}**
- **ip msdp peer {A.B.C.D} enable**
- **ip msdp peer {A.B.C.D} remote-as WORD<0-11>**
- **no ip msdp peer {A.B.C.D}**
- **no ip msdp peer {A.B.C.D} enable**
- **no ip msdp peer {A.B.C.D} remote-as WORD<0-11>**

Command Parameters

{A.B.C.D}	Specifies the MSDP peer IP address.
WORD<0-11>	Specifies the AS number of the MSDP peer, 0-65535 (2-Byte AS) 0-4294967295 (4-Byte AS).

Default

The default is disabled.

Command Mode

VRF Router Configuration

ip msdp redistribute (for a VRF)

Filter SPB routes to filter which (S,G,RP) entries sent out to all MSDP peers.

Syntax

- **default ip msdp redistribute**
- **ip msdp redistribute**
- **no ip msdp redistribute**

Default

None

Command Mode

VRF Router Configuration

ip msdp redistribute route-policy (for a VRF)

Create the route policy name.

Syntax

- **default ip msdp redistribute route-policy WORD<1-64>**
- **ip msdp redistribute route-policy WORD<1-64>**
- **no ip msdp redistribute route-policy WORD<1-64>**

Command Parameters

WORD<1-64>	Specifies the route policy name.

Default

None

Command Mode

VRF Router Configuration

ip msdp sa-filter in (for a VRF)

Create the inbound filter.

Syntax

- **default ip msdp sa-filter in {A.B.C.D}**
- **default ip msdp sa-filter in {A.B.C.D} route-policy WORD<1-64>**
- **ip msdp sa-filter in {A.B.C.D}**
- **ip msdp sa-filter in {A.B.C.D} route-policy WORD<1-64>**
- **no ip msdp sa-filter in {A.B.C.D}**
- **no ip msdp sa-filter in {A.B.C.D} route-policy WORD<1-64>**

Command Parameters

{A.B.C.D}	Specifies the MSDP peer IP address.
route-policy WORD<1-64>	Specifies the route policy name for an inbound filter.

Default

None

Command Mode

VRF Router Configuration

ip msdp sa-filter out (for a VRF)

Create the outbound filter.

Syntax

- **default ip msdp sa-filter out {A.B.C.D}**
- **default ip msdp sa-filter out {A.B.C.D} route-policy WORD<1-64>**
- **ip msdp sa-filter out {A.B.C.D}**
- **ip msdp sa-filter out {A.B.C.D} route-policy WORD<1-64>**
- **ip msdp sa-filter out {A.B.C.D} route-policy WORD<1-64>**
- **no ip msdp sa-filter out {A.B.C.D}**

Command Parameters

{A.B.C.D}	Specifies the MSDP peer IP address.
route-policy WORD<1-64>	Specifies the route policy name for an outbound filter.

Default

None

Command Mode

VRF Router Configuration

ip msdp sa-limit (for a VRF)

Specifies the maximum number of SA messages to keep in SA cache.

Syntax

- **default ip msdp sa-limit {A.B.C.D} <0-6144>**
- **ip msdp sa-limit {A.B.C.D} <0-6144>**
- **no ip msdp sa-limit {A.B.C.D} <0-6144>**

Command Parameters

{A.B.C.D}	Specifies the MSDP peer IP address.
<0-6144>	Specifies the maximum number of SA messages to keep in SA cache. The default is 6144 messages.

Default

The default is 6144.

Command Mode

VRF Router Configuration

ip msdp ttl-threshold (for a VRF)

Configure the time-to-live (TTL) threshold to limit which multicast data packets the router encapsulated in SA Messaged forwarded to an MSDP peer.

Syntax

- **default ip msdp ttl-threshold {A.B.C.D} <1-255>**
- **ip msdp ttl-threshold {A.B.C.D} <1-255>**
- **no ip msdp ttl-threshold {A.B.C.D} <1-255>**

Command Parameters

{A.B.C.D}	Specifies the MSDP peer IP address.
<1-255>	Specifies the Time-To-Live value. The default is 1.

Default

The default is 1.

Command Mode

VRF Router Configuration

ip ospf

Configures OSPF settings.

Syntax

- **default ip ospf**
- **ip ospf**
- **no ip ospf**

Default

None

Command Mode

VRF Router Configuration

ip ospf (for a VRF)

Enables OSPF on the VRF.

Syntax

- **default ip ospf**
- **ip ospf**
- **no ip ospf**

Default

The default value is disabled.

Command Mode

VRF Router Configuration

ip ospf accept adv-rtr

Configures OSPF accept policies for the VRF.

Syntax

- **default ip ospf accept adv-rtr {A.B.C.D}**
- **default ip ospf accept adv-rtr {A.B.C.D} enable**
- **default ip ospf accept adv-rtr {A.B.C.D} metric-type**
- **default ip ospf accept adv-rtr {A.B.C.D} route-map**
- **ip ospf accept adv-rtr {A.B.C.D}**
- **ip ospf accept adv-rtr {A.B.C.D} enable**
- **ip ospf accept adv-rtr {A.B.C.D} metric-type { type1 | type2 | any }**
- **ip ospf accept adv-rtr {A.B.C.D} route-map WORD<0-64>**
- **no ip ospf accept adv-rtr {A.B.C.D}**
- **no ip ospf accept adv-rtr {A.B.C.D} enable**

Command Parameters

{A.B.C.D}	Specifies the IP address.
adv-rtr <A.B.C.D>	Specifies the advertising router IP address.
enable	Enables an OSPF accept entry for a specified advertising router.

metric-type <type1|type2|any>	OSPF external routes match this entry. any means match all external routes. type1 means match external type 1 only. type2 means match external type 2 only.
route-map WORD<0-64>	Specifies the name of the route policy to use for filtering external routes advertised by the specified advertising router before accepting into the routing table.
vrf WORD<1-16>	Specifies the configuration for a particular VRF. WORD<0-16> specifies the VRF name.

Default

None

Command Mode

VRF Router Configuration

ip ospf admin-state

Shows the administrative status of OSPF for the router. Enabled denotes that the OSPF process is active on at least one interface; disabled disables it for all interfaces.

Syntax

- **default ip ospf admin-state**
- **ip ospf admin-state**
- **no ip ospf admin-state**

Default

None

Command Mode

VRF Router Configuration

ip ospf area (for a VRF)

Configure OSPF parameters on a port to control how OSPF behaves.

Syntax

- **default ip ospf area {A.B.C.D}**
- **default ip ospf area {A.B.C.D} default-cost**
- **default ip ospf area {A.B.C.D} import**

- **default ip ospf area {A.B.C.D} import-summaries enable**
- **default ip ospf area {A.B.C.D} stub**
- **ip ospf area {A.B.C.D}**
- **ip ospf area {A.B.C.D} default-cost <0-16777215>**
- **ip ospf area {A.B.C.D} import external**
- **ip ospf area {A.B.C.D} import noexternal**
- **ip ospf area {A.B.C.D} import nssa**
- **ip ospf area {A.B.C.D} import-summaries enable**
- **ip ospf area {A.B.C.D} stub**
- **no ip ospf area {A.B.C.D}**
- **no ip ospf area {A.B.C.D} import-summaries enable**

Command Parameters

<A.B.C.D>	Configures the OSPF identification number for the area, typically formatted as an IP address.
default-cost <0-16777215>	Stub area default metric for this stub area, which is the cost from 0 to 16 777 215. This is the metric value applied at the indicated type of service.
import <external|noexternal|nssa>	Specifies the type of area: external - Stub and NSSA (not so stubby area) are both false. noexternal-Configures the area as stub area. nssa - Configures the area as NSSA.
import-summaries enable	Configures the area support to import summary advertisements into a stub area. This parameter must be used only if the area is a stub area.
stub	Configures the import external option for this area as stub. A stub area has only one exit point (router interface) from the area.

Default

None

Command Mode

VRF Router Configuration

ip ospf area range (for a VRF)

Use aggregate area ranges to reduce the number of link-state advertisements that are required within the area. You can also control advertisements.

Syntax

- **default ip ospf area range {A.B.C.D} {A.B.C.D/X} { summary-link | nssa-extlink } advertise-metric**

- **default ip ospf area range {A.B.C.D} {A.B.C.D/X} { summary-link | nssa-extlink } advertise-mode**
- **ip ospf area range {A.B.C.D} {A.B.C.D/X} { summary-link | nssa-extlink } advertise-metric <0-65535>**
- **ip ospf area range {A.B.C.D} {A.B.C.D/X} { summary-link | nssa-extlink } advertise-mode { summarize | suppress | no-summarize }**
- **no ip ospf area range {A.B.C.D} {A.B.C.D/X} { summary-link | nssa-extlink }**

Command Parameters

{A.B.C.D} {A.B.C.D/X}	<A.B.C.D> identifies an OSPF area and <A.B.C.DX> is the IP address and subnet mask of the range, respectively.
<summary-link| nssaextlink>	Specifies the LSA type. If you configure the range as type nssaextlink then you cannot configure the advertise-metric.
advertise-metric <0-65535>	Changes the advertised metric cost of the OSPF area range.
advertise-mode <summarize|suppress| nosummarize	Changes the advertisement mode of the range.

Default

None

Command Mode

VRF Router Configuration

ip ospf area virtual-link (for a VRF)

Enables or disables the automatic creation of virtual links.

Syntax

- **default ip ospf area virtual-link {A.B.C.D} {A.B.C.D}**
- **default ip ospf area virtual-link {A.B.C.D} {A.B.C.D} authentication-type**
- **default ip ospf area virtual-link {A.B.C.D} {A.B.C.D} dead-interval**
- **default ip ospf area virtual-link {A.B.C.D} {A.B.C.D} hello-interval**
- **default ip ospf area virtual-link {A.B.C.D} {A.B.C.D} primary-md5-key**
- **default ip ospf area virtual-link {A.B.C.D} {A.B.C.D} retransmit-interval**

- **default ip ospf area virtual-link {A.B.C.D} {A.B.C.D} transit-delay**
- **ip ospf area virtual-link {A.B.C.D} {A.B.C.D}**
- **ip ospf area virtual-link {A.B.C.D} {A.B.C.D} authentication-key WORD<0-8>**
- **ip ospf area virtual-link {A.B.C.D} {A.B.C.D} authentication-type message-digest**
- **ip ospf area virtual-link {A.B.C.D} {A.B.C.D} authentication-type none**
- **ip ospf area virtual-link {A.B.C.D} {A.B.C.D} authentication-type simple**
- **ip ospf area virtual-link {A.B.C.D} {A.B.C.D} dead-interval <0-2147483647>**
- **ip ospf area virtual-link {A.B.C.D} {A.B.C.D} hello-interval <1-65535>**
- **ip ospf area virtual-link {A.B.C.D} {A.B.C.D} primary-md5-key <1-255>**
- **ip ospf area virtual-link {A.B.C.D} {A.B.C.D} retransmit-interval <0-3600>**
- **ip ospf area virtual-link {A.B.C.D} {A.B.C.D} transit-delay <0-3600>**
- **no ip ospf area virtual-link {A.B.C.D} {A.B.C.D}**

Command Parameters

<A.B.C.D> <A.B.C.D>	Creates a virtual interface area identifier. <A.B.C.D> <A.B.C.D> specify the area ID and the virtual interface ID, respectively.
authentication-key WORD<0-8>	Configures the authentication key of up to eight characters.
authentication-type <none|simple| messagedigest>	authenticationtype is: none, simple password, or MD5 authentication. If simple, all OSPF updates received by the interface must contain the authentication key specified by the area authentication-key command. If MD5, they must contain the MD5 key. The default is none.
dead-interval <0-2147483647>	Configures the dead interval, in seconds, for the virtual interface, the number of seconds that a router Hello packets are not seen before its neighbors declare the router down. This value must be at least four times the Hello interval value. The default is 60.
hello-interval <1-65535>	Configures the Hello interval, in seconds, on the virtual interface for the length of time (in seconds) between the Hello packets that the router sends on the interface. The default is 10.
primary-md5-key <1-255>	Changes the primary key used to encrypt outgoing packets. <1-255> is the ID for the message digest key.
retransmit-interval <0-3600>	Configures the retransmit interval for the virtual interface, the number of seconds between link-state advertisement retransmissions. The range is from 0 to 3600.

transit-delay <0-3600>	Configures the transit delay for the virtual interface, the estimated number of seconds required to transmit a link-state update over the interface. The range is from 0 to 3600.

Default

None

Command Mode

VRF Router Configuration

ip ospf area virtual-link message-digest-key (for a VRF)

Configure a Message Digest 5 algorithm (MD5) key for the virtual interface.

Syntax

- `default ip ospf area virtual-link message-digest-key {A.B.C.D} {A.B.C.D} <1-255>`
- `ip ospf area virtual-link message-digest-key {A.B.C.D} {A.B.C.D} <1-255> md5-key WORD<1-16>`
- `no ip ospf area virtual-link message-digest-key {A.B.C.D} {A.B.C.D} <1-255>`

Command Parameters

<1-255> md5-key WORD<1-16>	<A.B.C.D> is the virtual interface id. <1-255> is the ID for the message digest key. WORD<0-16> is an alphanumeric password in the range of 0 to 16 characters.
<A.B.C.D> <A.B.C.D>	Adds a Message Digest 5 algorithm (MD5) key to the interface. At most, you can configure two MD5 keys to an interface. <A.B.C.D> identifies an OSPF area.

Default

None

Command Mode

VRF Router Configuration

ip ospf as-boundary-router (for a VRF)

Specifies ASBR status, the router is an autonomous system boundary router (ASBR).

Syntax

- **default ip ospf as-boundary-router**
- **ip ospf as-boundary-router**
- **no ip ospf as-boundary-router**

Default

None

Command Mode

VRF Router Configuration

ip ospf as-boundary-router enable (for a VRF)

Configure the router as an autonomous system boundary router (ASBR).

Syntax

- **default ip ospf as-boundary-router enable**
- **ip ospf as-boundary-router enable**
- **no ip ospf as-boundary-router enable**

Default

The default is disabled.

Command Mode

VRF Router Configuration

ip ospf auto-vlink (for a VRF)

Use automatic virtual links to provide an automatic, dynamic backup link for vital OSPF traffic. Automatic virtual links require more system resources than manually configured virtual links.

Syntax

- **default ip ospf auto-vlink**
- **ip ospf auto-vlink**
- **no ip ospf auto-vlink**

Default

None

Command Mode

VRF Router Configuration

ip ospf bad-lsa-ignore enable (for a VRF)

Configures the switch to accept bad LSAs, for example, with a hole in the mask. If you use the no operator with this command, the switch ignores bad LSAs.

Syntax

- **default ip ospf bad-lsa-ignore**
- **default ip ospf bad-lsa-ignore enable**
- **ip ospf bad-lsa-ignore enable**
- **no ip ospf bad-lsa-ignore**
- **no ip ospf bad-lsa-ignore enable**

Default

The default is disabled.

Command Mode

VRF Router Configuration

ip ospf default-cost

Configures the default OSPF metrics.

Note:

Not all parameters appear on all hardware platforms.

Syntax

- **default ip ospf default-cost ethernet**
- **default ip ospf default-cost fast-ethernet**
- **default ip ospf default-cost forty-gig-ethernet**
- **default ip ospf default-cost gig-ethernet**
- **default ip ospf default-cost ten-gig-ethernet**
- **default ip ospf default-cost twentyfive-gig-ethernet**
- **ip ospf default-cost ethernet <1-65535>**
- **ip ospf default-cost fast-ethernet <1-65535>**
- **ip ospf default-cost forty-gig-ethernet <1-65535>**
- **ip ospf default-cost gig-ethernet <1-65535>**
- **ip ospf default-cost ten-gig-ethernet <1-65535>**
- **ip ospf default-cost twentyfive-gig-ethernet <1-65535>**

Command Parameters

ethernet <1-65535>	Configures the OSPF default metrics for 10 Mb/s Ethernet. The default is 100.
fast-ethernet <1-65535>	Configures the OSPF default metrics for 100 Mb/s (Fast) Ethernet. The default is 10.
forty-gig-ethernet <1-65535>	Configures the OSPF default metrics for 40 Gigabit Ethernet. The default is 1.
gig-ethernet <1-65535>	Configures the OSPF default metrics for Gigabit Ethernet. The default is 1.
hundred-gig-ethernet <1-65535>	Configures the OSPF default metrics for 100 Gigabit Ethernet. The default is 1.
ten-gig-ethernet <1-65535>	Configures the OSPF default metrics for 10 Gigabit Ethernet. The default is 1.
twentyfive-gig-ethernet <1-65535>	Configures the OSPF default metrics for 25 Gigabit Ethernet. The default is 1.
vlan	Configures the OSPF default metrics for a VLAN. The default is 1.

Default

None

Command Mode

VRF Router Configuration

ip ospf host-route {A.B.C.D} (for a VRF)

Use host routes when the switch resides in a network that uses routing protocols other than OSPF.

Syntax

- **default ip ospf host-route {A.B.C.D}**
- **default ip ospf host-route {A.B.C.D} metric**
- **ip ospf host-route {A.B.C.D}**
- **ip ospf host-route {A.B.C.D} metric <0-65535>**
- **no ip ospf host-route {A.B.C.D}**

Command Parameters

<A.B.C.D>	Specifies the IP address of the host router in a.b.c.d format.

metric <0-65535>	Configures the metric (cost) for the host route.

Default

None

Command Mode

VRF Router Configuration

ip ospf neighbor (for a VRF)

Configure NBMA neighbors so that the interface can participate in Designated Router election. All OSPF neighbors that you manually configure are NBMA neighbors.

Syntax

- **default ip ospf neighbor {A.B.C.D}**
- **ip ospf neighbor {A.B.C.D} priority <0-255>**
- **no ip ospf neighbor {A.B.C.D}**

Command Parameters

<A.B.C.D>	Identifies an OSPF area in IP address format A.B.C.D.
priority <0-255>	Changes the priority level of the neighbor.

Default

None

Command Mode

VRF Router Configuration

ip ospf network (for a VRF)

Enable OSPF on a network.

Syntax

- **default ip ospf network {A.B.C.D}**
- **default ip ospf network {A.B.C.D} {A.B.C.D}**
- **ip ospf network {A.B.C.D}**
- **ip ospf network {A.B.C.D} {A.B.C.D}**
- **ip ospf network {A.B.C.D} area {A.B.C.D}**

- **no ip ospf network {A.B.C.D}**
- **no ip ospf network {A.B.C.D} {A.B.C.D}**

Command Parameters

{A.B.C.D}	Specifies the IP address of the network.
area {A.B.C.D}	Specifies the OSPF area.

Default

None

Command Mode

VRF Router Configuration

ip ospf redistribute

Configure and enable redistribution entries to allow a protocol to announce routes of a certain source type, for example, static, RIP, or direct.

Syntax

- **default ip ospf redistribute { bgp| direct | isis | ospf | rip | static | dvr }**
- **default ip ospf redistribute { bgp| direct | isis | ospf | rip | static | dvr } vrf-src WORD<0-16>**
- **default ip ospf redistribute { bgp| direct | isis | ospf | rip | static | dvr } enable**
- **default ip ospf redistribute { bgp| direct | isis | ospf | rip | static | dvr } metric**
- **default ip ospf redistribute { bgp| direct | isis | ospf | rip | static | dvr } metric-type**
- **default ip ospf redistribute { bgp| direct | isis | ospf | rip | static | dvr } route-map**
- **default ip ospf redistribute { bgp| direct | isis | ospf | rip | static | dvr } subnets**
- **default ip ospf redistribute { bgp| direct | isis | ospf | rip | static | dvr } subnets vrf-src WORD<0-16>**
- **ip ospf redistribute { bgp| direct | isis | ospf | rip | static | dvr }**
- **ip ospf redistribute { bgp| direct | isis | ospf | rip | static | dvr } subnets { allow | suppress }**
- **ip ospf redistribute { bgp| direct | isis | ospf | rip | static | dvr } vrf-src WORD<0-16>**

- **ip ospf redistribute { bgp| direct | isis | ospf | rip | static | dvr } enable**
- **ip ospf redistribute { bgp| direct | isis | ospf | rip | static | dvr } metric <0-65535>**
- **ip ospf redistribute { bgp| direct | isis | ospf | rip | static | dvr } metric-type { type1 | type2 | any }**
- **ip ospf redistribute { bgp| direct | isis | ospf | rip | static | dvr } route-map WORD<0-64>**
- **ip ospf redistribute { bgp| direct | isis | ospf | rip | static | dvr } subnets { allow | suppress } vrf-src WORD<0-16>**
- **no ip ospf redistribute { bgp| direct | isis | ospf | rip | static | dvr }**
- **no ip ospf redistribute { bgp| direct | isis | ospf | rip | static | dvr } route-policy vrf-src WORD<0-16>**
- **no ip ospf redistribute { bgp| direct | isis | ospf | rip | static | dvr } vrf-src WORD<0-16>**
- **no ip ospf redistribute { bgp| direct | isis | ospf | rip | static | dvr } enable**
- **no ip ospf redistribute { bgp| direct | isis | ospf | rip | static | dvr } route-map**

Command Parameters

**{ bgp| direct	isis	ospf	rip	static	dvr }**	Specifies the type of routes to redistribute-the protocol source.
enable	Enables the route redistribution instance.
metric <0-65535>	Configures the metric to apply to redistributed routes.
**metric-type { type1	type2	any }**	Specifies a type 1 or a type 2 metric. For metric type 1, the cost of the external routes is equal to the sum of all internal costs and the external cost. For metric type 2, the cost of the external routes is equal to the external cost alone.
route-map WORD<0-64>	Configures the route policy to apply to redistributed routes.
**subnets { allow	suppress }**	Indicates whether the subnets are advertised individually or aggregated to their classful subnet. Choose allow to advertise the subnets individually with the learned or configured mask of the subnet. The default is allow.
vrf WORD <0-16>	Specifies the VRF instance.
vrf-src WORD<0-16>	Specifies the source VRF instance. This parameter is not required for redistribution within the same VRF.

Default

None

Command Mode

VRF Router Configuration

ip ospf rfc1583-compatibility enable (for a VRF)

Controls the preference rules used when the router chooses among multiple autonomous system external (ASE) LSAs which advertise the same destination. If enabled, the preference rule is the same as that specified by RFC1583. If disabled, the preference rule is as described in RFC2328, which can prevent routing loops when ASE LSAs for the same destination originate from different areas.

Syntax

- **default ip ospf rfc1583-compatibility**
- **default ip ospf rfc1583-compatibility enable**
- **ip ospf rfc1583-compatibility enable**
- **no ip ospf rfc1583-compatibility**
- **no ip ospf rfc1583-compatibility enable**

Default

The default is disabled.

Command Mode

VRF Router Configuration

ip ospf router-id (for a VRF)

Configure OSPF parameters on the switch to control how OSPF behaves on the system. The switch uses global parameters to communicate with other OSPF routers. Globally configure OSPF before you configure OSPF for an interface, port, or VLAN.

Syntax

- **default ip ospf router-id**
- **ip ospf router-id {A.B.C.D}**
- **no ip ospf router-id**

Command Parameters

router-id <A.B.C.D>	Configures the OSPF router ID IP address, where A.B.C.D is the IP address.

Default

None

Command Mode

VRF Router Configuration

ip ospf timers basic holddown (for a VRF)

Configures the OSPF hold-down timer value, the length of time (in seconds) that OSPF continues to advertise a network after determining that it is unreachable.

Syntax

- **default ip ospf timers basic**
- **default ip ospf timers basic holddown**
- **ip ospf timers basic holddown <3-60>**

Command Parameters

<3-60>	Configures the holddown timer value.

Default

The default is 120 seconds.

Command Mode

VRF Router Configuration

ip ospf trap (For a VRF)

Enable OSPF traps.

Syntax

- **default ip ospf trap**
- **default ip ospf trap enable**
- **ip ospf trap enable**
- **no ip ospf trap**
- **no ip ospf trap enable**

Command Parameters

enable	Enables OSPF traps.

Default

The default value is disable.

Command Mode

VRF Router Configuration

ip prefix-list (for a VRF)

Allows or denies specific route updates. A prefix list policy specifies route prefixes to match. When there is a match, the route is used. Configure a prefix list and apply the list to any IP route policy.

Syntax

- **ip prefix-list WORD<1-64> {A.B.C.D/X}**
- **ip prefix-list WORD<1-64> {A.B.C.D/X} ge <0-32>**
- **ip prefix-list WORD<1-64> {A.B.C.D/X} id <1-2147483647>**
- **ip prefix-list WORD<1-64> {A.B.C.D/X} le <0-32>**
- **ip prefix-list WORD<1-64> name WORD<1-64>**
- **no ip prefix-list WORD<1-64>**
- **no ip prefix-list WORD<1-64> {A.B.C.D/X}**

Command Parameters

<A.B.C.D/X> [<ge|le> <0-32>]	Adds a prefix entry to the prefix list. A.B.C.D/X is the IP address and mask. <ge|le> <0-32> Lower bound and higher bound mask lengths together can define a range of networks. Use the no operator to remove a prefix entry from the prefix list: no ip prefix-list WORD<1-64> <A.B.C.D/X>
name WORD<1-64>	Renames the specified prefix list. The name length is from 1 to 64 characters.

Default

None

Command Mode

VRF Router Configuration

ip rip (for a VRF)

Enables RIP on the VRF.

Syntax

- **ip rip**
- **no ip rip**

Default

The default is disabled.

Command Mode

VRF Router Configuration

ip rip default-metric (for a VRF)

Configure RIP default import metric. This value is used by RIP announce of OSPF internal routes if the policy does not specify metric. 0 is used for deconfiguration.

Syntax

- **default ip rip default-metric**
- **ip rip default-metric <0-15>**

Command Parameters

<0-15> Configures the value of default import metric to import a route into RIP domain.

Default

The default value is -1.

Command Mode

VRF Router Configuration

ip rip domain (for a VRF)

Specify the RIP domain.

Syntax

- **default ip rip domain**
- **ip rip domain <0-39321>**

Command Parameters

<0-39321>	Specifies the RIP domain.

Default

The default is 0.

Command Mode

VRF Router Configuration

ip rip enable (for a VRF)

Enable RIP routing on the interface.

Syntax

- **default ip rip enable**
- **ip rip enable**
- **no ip rip enable**

Command Parameters

enable	Enables RIP routing on the interface.

Default

The default is disabled.

Command Mode

VRF Router Configuration

ip rip redistribute

Configure and enable redistribution entries to allow a protocol to announce routes of a certain source type, for example, static, RIP, or direct.

Syntax

- **default ip rip redistribute WORD<0-32>**
- **default ip rip redistribute WORD<0-32> enable**
- **default ip rip redistribute WORD<0-32> enable vrf-src WORD<1-16>**
- **default ip rip redistribute WORD<0-32> metric**
- **default ip rip redistribute WORD<0-32> metric vrf-src WORD<1-16>**

- **default ip rip redistribute WORD<0-32> route-map**
- **default ip rip redistribute WORD<0-32> route-map vrf-src WORD<1-16>**
- **default ip rip redistribute WORD<0-32> vrf-src WORD<1-16>**
- **ip rip redistribute WORD<0-32>**
- **ip rip redistribute WORD<0-32> enable**
- **ip rip redistribute WORD<0-32> enable vrf-src WORD<1-16>**
- **ip rip redistribute WORD<0-32> metric <0-65535>**
- **ip rip redistribute WORD<0-32> metric <0-65535> vrf-src WORD<0-16>**
- **ip rip redistribute WORD<0-32> metric <0-65535>**
- **ip rip redistribute WORD<0-32> metric <0-65535> vrf-src WORD<1-16>**
- **ip rip redistribute WORD<0-32> route-map WORD<0-64>**
- **ip rip redistribute WORD<0-32> route-map WORD<0-64> vrf-src WORD<1-16>**
- **ip rip redistribute WORD<0-32> vrf-src WORD<1-16>**
- **no ip rip redistribute WORD<0-32>**
- **no ip rip redistribute WORD<0-32> enable**
- **no ip rip redistribute WORD<0-32> enable vrf-src WORD<1-16>**
- **no ip rip redistribute WORD<0-32> route-map**
- **no ip rip redistribute WORD<0-32> route-map vrf-src WORD<1-16>**
- **no ip rip redistribute WORD<0-32> vrf-src WORD<1-16>**

Command Parameters

enable	Enables the route redistribution instance.
metric <0-65535>	Configures the metric to apply to redistributed routes.
route-map WORD<0-64>	Configures the route map to apply to redistributed routes.
vrf WORD <0-16>	Specifies the VRF instance.
vrf-src WORD<0-16>	Specifies the source VRF instance. This parameter is not required for redistribution within the same VRF.
WORD<0-32>	Specifies the type of routes to redistribute-the protocol source.

Default

None

Command Mode

VRF Router Configuration

ip rip redistribute { direct | isis | ospf | rip | static }

Configure and enable redistribution entries to allow a protocol to announce routes of a certain source type, for example, static, RIP, or direct.

Syntax

- **default ip rip redistribute { direct | isis | ospf | rip | static }**
- **default ip rip redistribute { direct | isis | ospf | rip | static } enable**
- **default ip rip redistribute { direct | isis | ospf | rip | static } enable vrf-src WORD<1-16>**
- **default ip rip redistribute { direct | isis | ospf | rip | static } metric**
- **default ip rip redistribute { direct | isis | ospf | rip | static } metric vrf-src WORD<1-16>**
- **default ip rip redistribute { direct | isis | ospf | rip | static } route-map**
- **default ip rip redistribute { direct | isis | ospf | rip | static } route-map vrf-src WORD<1-16>**
- **default ip rip redistribute { direct | isis | ospf | rip | static } vrf-src WORD<1-16>**
- **ip rip redistribute { direct | isis | ospf | rip | static }**
- **ip rip redistribute { direct | isis | ospf | rip | static } enable**
- **ip rip redistribute { direct | isis | ospf | rip | static } enable vrf-src WORD<1-16>**
- **ip rip redistribute { direct | isis | ospf | rip | static } metric <0-65535>**
- **ip rip redistribute { direct | isis | ospf | rip | static } metric <0-65535> vrf-src WORD<1-16>**
- **ip rip redistribute { direct | isis | ospf | rip | static } route-map WORD<0-64>**
- **ip rip redistribute { direct | isis | ospf | rip | static } route-map WORD<0-64> vrf-src WORD<1-16>**
- **ip rip redistribute { direct | isis | ospf | rip | static } vrf-src WORD<1-16>**
- **no ip rip redistribute { direct | isis | ospf | rip | static }**
- **no ip rip redistribute { direct | isis | ospf | rip | static } enable**
- **no ip rip redistribute { direct | isis | ospf | rip | static } enable vrf-src WORD<1-16>**
- **no ip rip redistribute { direct | isis | ospf | rip | static } route-map**

- **no ip rip redistribute { direct | isis | ospf | rip | static } route-map vrf-src WORD<1-16>**
- **no ip rip redistribute { direct | isis | ospf | rip | static } vrf-src WORD<1-16>**

Command Parameters

enable	Enables the route redistribution instance.
metric <0-65535>	Configures the metric to apply to redistributed routes.
route-map WORD<0-64>	Configures the route map to apply to redistributed routes.
vrf WORD <0-16>	Specifies the VRF instance.
vrf-src WORD<0-16>	Specifies the source VRF instance. This parameter is not required for redistribution within the same VRF.
WORD<0-32>	Specifies the type of routes to redistribute-the protocol source.

Default

None

Command Mode

VRF Router Configuration

ip rip timers basic holddown (for a VRF)

Configures the RIP hold-down timer value, the length of time (in seconds) that RIP continues to advertise a network after determining that it is unreachable.

Syntax

- **default ip rip timers basic holddown**
- **ip rip timers basic holddown <0-360>**

Command Parameters

<0-360>	Configures the holddown timer value.

Default

The default is 120 seconds.

Command Mode

VRF Router Configuration

ip rip timers basic timeout (for a VRF)

Configure the RIP timeout interval.

Syntax

- **default ip rip timers basic timeout**
- **ip rip timers basic timeout <15-259200>**

Command Parameters

<15-259200>	Configures the value of default import metric to import a route into RIP domain.

Default

The default is 180.

Command Mode

VRF Router Configuration

ip rip timers basic update (for a VRF)

Configure the RIP update timer. The update time is the time interval between RIP updates.

Syntax

- **default ip rip timers basic update**
- **ip rip timers basic update <1-360>**

Command Parameters

<1-360>	Configures the update interval.

Default

The default is 30 seconds.

Command Mode

VRF Router Configuration

ip route (for a VRF)

Configure a default route for a VRF. To assign a static route to specify a gateway address route for the management interface, configure the static route in the MgmtRouter VRF context. You can specify up to four static routes for the management interface.

Syntax

- **default ip route {A.B.C.D} {A.B.C.D} {A.B.C.D}**
- **default ip route {A.B.C.D} {A.B.C.D} {A.B.C.D} dynamic**
- **default ip route {A.B.C.D} {A.B.C.D} {A.B.C.D} enable**
- **default ip route {A.B.C.D} {A.B.C.D} {A.B.C.D} local-next-hop enable**
- **default ip route {A.B.C.D} {A.B.C.D} {A.B.C.D} preference**
- **ip route {A.B.C.D} {A.B.C.D} {A.B.C.D} enable**
- **ip route {A.B.C.D} {A.B.C.D} {A.B.C.D} enable next-hop-vrf WORD<1-16>**
- **ip route {A.B.C.D} {A.B.C.D} {A.B.C.D} local-next-hop enable**
- **ip route {A.B.C.D} {A.B.C.D} {A.B.C.D} preference <1-255>**
- **ip route {A.B.C.D} {A.B.C.D} {A.B.C.D} preference <1-255> next-hop-vrf WORD<1-16>**
- **ip route {A.B.C.D} {A.B.C.D} {A.B.C.D} weight <1-65535>**
- **ip route {A.B.C.D} {A.B.C.D} {A.B.C.D} weight <1-65535> local-next-hop enable**
- **ip route {A.B.C.D} {A.B.C.D} {A.B.C.D} weight <1-65535> next-hop-vrf WORD<1-16>**
- **ip route {A.B.C.D} {A.B.C.D} {A.B.C.D} weight <1-65535> preference <1-255>**
- **no ip route {A.B.C.D} {A.B.C.D} {A.B.C.D}**
- **no ip route {A.B.C.D} {A.B.C.D} {A.B.C.D} dynamic**
- **no ip route {A.B.C.D} {A.B.C.D} {A.B.C.D} dynamic next-hop-vrf WORD<1-16>**
- **no ip route {A.B.C.D} {A.B.C.D} {A.B.C.D} enable**
- **no ip route {A.B.C.D} {A.B.C.D} {A.B.C.D} enable next-hop-vrf WORD<1-16>**
- **no ip route {A.B.C.D} {A.B.C.D} {A.B.C.D} local-next-hop enable**
- **no ip route {A.B.C.D} {A.B.C.D} {A.B.C.D} next-hop-vrf WORD<1-16>**
- **no ip route {A.B.C.D} {A.B.C.D} {A.B.C.D} preference**

Command Parameters

{A.B.C.D} {A.B.C.D} {A.B.C.D}

Specifies the IP address, subnet mask, and next-hop address for the route. The first {A.B.C.D} configures the destination IP address of this route. An entry with a value of 0.0.0.0 is the default route. Multiple routes to a single destination can appear in the table, but access to such multiple entries depends on the network management protocol table access mechanisms. The second {A.B.C.D} configures the route network mask with the destination address before the switch compares the mask to the destination value. The third {A.B.C.D} configures the IP address of the next hop of this route. In the case of a route

	bound to an interface realized through a broadcast media, the value of this box is the agent IP address on that interface.
<1-255>	Indicates the route preference of this entry. If you can use more than one route to forward IP traffic, the switch uses the route with the highest preference. The higher the number, the higher the preference.
<1-65535>	Specifies the static route cost.
WORD<0-16>	Specifies the VRF ID in inter-VRF static-route configuration.

Default

None

Command Mode

VRF Router Configuration

ip route preference protocol (for a VRF)

Specifies the route preference within a specific VRF context.

Syntax

- **default ip route preference protocol <static | ospf-intra | ospf-inter | ebgp | ibgp | rip | ospf-extern1 | ospf-extern2 | spbm-level1>**
- **ip route preference protocol <static | ospf-intra | ospf-inter | ebgp | ibgp | rip | ospf-extern1 | ospf-extern2 | spbm-level1> <0-255>**

Command Parameters

{static | ospf-intra | ospf-inter | ebgp | ibgp | rip | ospf-extern1 | ospf-extern2 | spbm-level1}	Specifies the Protocol type.
<0-255>	Preference value (0 is reserved for Local routes).

Default

None

Command Mode

VRF Router Configuration

ip source-route (for VRF)

Enables IPv4 source routing on the specified VRF.

Syntax

- **default ip source-route**
- **ip source-route**
- **no ip source-route**

Default

Disabled

Command Mode

VRF Router Configuration

ip spb-pim-gw foreign-source (for a VRF)

Configures a static foreign source.

Syntax

- **default ip spb-pim-gw foreign-source {A.B.C.D} group {A.B.C.D}**
- **ip spb-pim-gw foreign-source {A.B.C.D} group {A.B.C.D}**
- **no ip spb-pim-gw foreign-source {A.B.C.D} group {A.B.C.D}**

Command Parameters

{A.B.C.D}	Specifies the multicast foreign source IP address.
group {A.B.C.D}	Specifies the group IP address.

Default

None

Command Mode

VRF Router Configuration

ipv6 alternative-route (for VRF)

Enable IPv6 alternative route.

Syntax

- **default ipv6 alternative-route**
- **ipv6 alternative-route**
- **no ipv6 alternative-route**

Default

The default is enabled.

Command Mode

VRF Router Configuration

ipv6 dhcp-relay (for VRF)

Configure Dynamic Host Configuration Protocol (DHCP) Relay.

Syntax

- **default ipv6 dhcp-relay fwd-path WORD<0-255> WORD<0-255>**
- **ipv6 dhcp-relay fwd-path WORD<0-255> WORD<0-255> enable**
- **no ipv6 dhcp-relay fwd-path WORD<0-255> WORD<0-255> enable**

Command Parameters

enable	Enables dhcp-relay forwarding path.
fwd-path	Creates a forwarding path.
WORD<0-255>	Specifies Agent IPv6 address.
WORD<0-255>	Specifies Server IPv6 address.

Default

None

Command Mode

VRF Router Configuration

ipv6 ecmp (for VRF)

IPv6 ECMP configuration.

Syntax

- **default ipv6 ecmp enable**
- **default ipv6 ecmp max-path**
- **ipv6 ecmp enable**
- **ipv6 ecmp max-path <ECMP-Paths>**
- **no ipv6 ecmp enable**

Command Parameters

enable	Enables IPv6 ECMP globally.
max-path *<ECMP-Paths>*	Configures the maximum number of ECMP paths. Different hardware platforms can support a different number of ECMP paths. For more information on the maximum number of ECMP paths supported on your switch, see the scaling information in Release Notes for XA1400 Series.

Default

The default is disabled.

Command Mode

VRF Router Configuration

ipv6 forwarding (for VRF)

Configures IPv6 router with respect to the forwarding of datagrams received by, but not addressed to, this entity. Enable forwarding to act as a router.

Syntax

- **default ipv6 forwarding**
- **ipv6 forwarding**
- **no ipv6 forwarding**

Default

By default, forwarding is enabled on an interface. You must enable it globally before the interface configuration takes effect.

Command Mode

VRF Router Configuration

ipv6 hop-limit (for VRF)

Insert a value into the hop-limit field of the IPv6 header.

Syntax

- **default ipv6 hop-limit <0-255>**
- **ipv6 hop-limit <0-255>**

Command Parameters

<0-255>	Inserts a value into the hop-limit field of IPv6 header in the range of 0 to 255.

Default

The default hop limit is 64.

Command Mode

VRF Router Configuration

ipv6 icmp echo multicast-request (for VRF)

Enables or disables the processing of IPv6 ICMP messages sent to a multicast address globally.

Syntax

- **default ipv6 icmp echo multicast-request**
- **ipv6 icmp echo multicast-request**
- **no ipv6 icmp echo multicast-request**

Command Parameters

echo multicast-request	Enables or disables the processing of IPv6 ICMP messages sent to a multicast address globally. The default value is enabled.

Default

The default is enabled.

Command Mode

VRF Router Configuration

ipv6 icmp error-interval (for VRF)

Configure the interval (in milliseconds) for sending ICMPv6 error messages.

Syntax

- **default ipv6 icmp error-interval**
- **ipv6 icmp error-interval <0-2147483647>**

Command Parameters

<1-2147483647>	Configures the interval (in milliseconds) for sending ICMPv6 error messages. An entry of 0 seconds results in no sent ICMPv6 error messages.

Default

The default error interval is 1000.

Command Mode

VRF Router Configuration

ipv6 icmp error-quota (for VRF)

Configure the number of Internet Control Message Protocol (ICMP) error messages that can be sent during the ICMP error interval.

Syntax

- **default ipv6 icmp error-quota**
- **ipv6 icmp error-quota <0-2000000>**

Command Parameters

<0-2000000>	Configures the number of internet Control Message Protocol (ICMP) error messages that the system can send during the ICMP error interval. A value of zero instructs the system not to send any ICMP error messages.

Default

The default error quota is 50.

Command Mode

VRF Router Configuration

ipv6 icmp unreach-msg (for VRF)

Enable Internet Control Message Protocol (ICMP) network unreachable messages.

Syntax

- **default ipv6 icmp unreach-msg**
- **ipv6 icmp unreach-msg**
- **no ipv6 icmp unreach-msg**

Default

By default ICMP network unreachable messages are disabled.

Command Mode

VRF Router Configuration

ipv6 ipvpn (for VRF)

Enable IPv6 IP VPN configurations.

Syntax

- **default ipv6 ipvpn enable**
- **ipv6 ipvpn enable**
- **no ipv6 ipvpn enable**

Command Parameters

enable	Enables IPv6 IP VPN.

Default

None

Command Mode

VRF Router Configuration

ipv6 isis (for VRF)

Enable IPv6 isis accept and redistribute commands.

Syntax

- **default ipv6 isis redistribute direct enable**
- **default ipv6 isis redistribute static enable**
- **ipv6 isis redistribute direct enable**
- **ipv6 isis redistribute static enable**
- **no ipv6 isis redistribute direct enable**
- **no ipv6 isis redistribute static enable**

Command Parameters

direct	Configures IPv6 isis redistribute direct command.
enable	Enable isis redistribute direct command.
redistribute	Configures IPv6 isis redistribute.
static	Configures IPv6 isis redistribute static command.

Default

None

Command Mode

VRF Router Configuration

ipv6 isis accept (for a VRF)

Configure an IPv6 Intermediate-System-to-Intermediate-System (IS-IS) accept policy instance to apply to all IPv6 routes from all Backbone Edge Bridges (BEBs) for a Virtual Routing and Forwarding (VRF) instance.

Syntax

- **ipv6 isis accept i-sid <0-16777215>**
- **ipv6 isis accept i-sid <0-16777215> enable**
- **ipv6 isis accept i-sid <0-16777215> route-map WORD<1-64>**
- **ipv6 isis accept isid-list WORD<1-32>**
- **ipv6 isis accept isid-list WORD<1-32> enable**
- **ipv6 isis accept isid-list WORD<1-32> route-map WORD<1-64>**
- **ipv6 isis accept route-map WORD<1-64>**
- **no ipv6 isis accept i-sid <0-16777215>**
- **no ipv6 isis accept i-sid <0-16777215> enable**
- **no ipv6 isis accept i-sid <0-16777215> route-map**
- **no ipv6 isis accept isid-list WORD<1-32>**
- **no ipv6 isis accept isid-list WORD<1-32> enable**
- **no ipv6 isis accept isid-list WORD<1-32> route-map**
- **no ipv6 isis accept route-map**

Command Parameters

enable	Enables the IPv6 IS-IS accept policy.
i-sid <0-16777215>	Specifies a service instance identifier (I-SID) number representing a local or remote IPv6 Layer 3 VSN. The number 0 represents the GRT.
isid-list WORD <1-32>	Specifies a list of I-SID numbers representing local or remote IPv6 Layer 3 VSNs.
route-map WORD<1-64>	Specifies an IPv6 IS-IS route policy.

Default

The default is disabled.

Command Mode

VRF Router Configuration

ipv6 isis accept adv-rtr (for a VRF)

Configure an IPv6 Intermediate-System-to-Intermediate-System (IS-IS) accept policy instance to apply to all IPv6 routes for a specific Backbone Edge Bridge (BEB) for a Virtual Routing and Forwarding (VRF) instance.

Syntax

- **ipv6 isis accept adv-rtr <x.xx.xx>**
- **ipv6 isis accept adv-rtr <x.xx.xx> enable**
- **ipv6 isis accept adv-rtr <x.xx.xx> i-sid <0-16777215>**
- **ipv6 isis accept adv-rtr <x.xx.xx> i-sid <0-16777215> enable**
- **ipv6 isis accept adv-rtr <x.xx.xx> i-sid <0-16777215> route-map WORD<1-64>**
- **ipv6 isis accept adv-rtr <x.xx.xx> isid-list WORD<1-32>**
- **ipv6 isis accept adv-rtr <x.xx.xx> isid-list WORD<1-32> enable**
- **ipv6 isis accept adv-rtr <x.xx.xx> isid-list WORD<1-32> route-map WORD<1-64>**
- **ipv6 isis accept adv-rtr <x.xx.xx> route-map WORD<1-64>**
- **no ipv6 isis accept adv-rtr <x.xx.xx>**
- **no ipv6 isis accept adv-rtr <x.xx.xx> enable**
- **no ipv6 isis accept adv-rtr <x.xx.xx> i-sid <0-16777215>**
- **no ipv6 isis accept adv-rtr <x.xx.xx> i-sid <0-16777215> enable**
- **no ipv6 isis accept adv-rtr <x.xx.xx> i-sid <0-16777215> route-map**
- **no ipv6 isis accept adv-rtr <x.xx.xx> isid-list WORD<1-32>**
- **no ipv6 isis accept adv-rtr <x.xx.xx> isid-list WORD<1-32> enable**
- **no ipv6 isis accept adv-rtr <x.xx.xx> isid-list WORD<1-32> route-map**
- **no ipv6 isis accept adv-rtr <x.xx.xx> route-map**

Command Parameters

adv-rtr <x.xx.xx>	Specifies a specific advertising BEB for the IPv6 IS-IS accept policy. The x.xx.xx variable specifies an SPBM nickname.
enable	Enables the IPv6 IS-IS accept policy.

i-sid <0-16777215>	Configures the service instance identifier (I-SID) to which the IPv6 IS-IS accept policy applies. The number 0 represents the GRT.
isid-list WORD <1-32>	Configures a list of I-SIDs to which the IPv6 IS-IS accept policy applies.
route-map WORD<1-64>	Specifies an IPv6 IS-IS route policy.

Default

The default is disabled.

Command Mode

VRF Router Configuration

ipv6 isis redistribute bgp

Identify IPv6 routes on the local switch to be announced into the Shortest Path Bridging MAC (SPBM) network.

Syntax

- **default ipv6 isis redistribute bgp enable**
- **default ipv6 isis redistribute bgp metric**
- **default ipv6 isis redistribute bgp metric-type**
- **default ipv6 isis redistribute bgp route-map**
- **ipv6 isis redistribute bgp**
- **ipv6 isis redistribute bgp enable**
- **ipv6 isis redistribute bgp metric <0-65535>**
- **ipv6 isis redistribute bgp metric-type external**
- **ipv6 isis redistribute bgp metric-type internal**
- **ipv6 isis redistribute bgp route-map WORD<0-64>**
- **no ipv6 isis redistribute bgp**
- **no ipv6 isis redistribute bgp enable**
- **no ipv6 isis redistribute bgp metric**
- **no ipv6 isis redistribute bgp metric-type**
- **no ipv6 isis redistribute bgp route-map**

Command Parameters

enable	Enables Border Gateway Protocol (BGP) route redistribution.

metric <0-65535>	Specifies the metric for the redistributed route.Use a value that is consistent with the destination protocol. The default is 1.
metrictype external	Specifies the metric type. Specifies a type 1 or a type 2 metric. For metric type 1, the cost of the external routes is equal to the sum of all internal costs and the external cost. For metric type 2, the cost of the external routes is equal to the external cost alone. The default is internal.
metrictype internal	Specifies the metric type. Specifies a type 1 or a type 2 metric. For metric type 1, the cost of the external routes is equal to the sum of all internal costs and the external cost. For metric type 2, the cost of the external routes is equal to the external cost alone. The default is internal.

Default

By default, redistribution is disabled.

Command Mode

VRF Router Configuration

ipv6 isis redistribute direct

Identify IPv6 routes on the local switch to be announced into the Shortest Path Bridging MAC (SPBM) network.

Syntax

- **default ipv6 isis redistribute direct enable**
- **default ipv6 isis redistribute direct metric**
- **default ipv6 isis redistribute direct metric-type**
- **default ipv6 isis redistribute direct route-map**
- **ipv6 isis redistribute direct**
- **ipv6 isis redistribute direct enable**
- **ipv6 isis redistribute direct metric <0-65535>**
- **ipv6 isis redistribute direct metric-type external**
- **ipv6 isis redistribute direct metric-type internal**
- **ipv6 isis redistribute direct route-map WORD<0-64>**
- **no ipv6 isis redistribute direct**
- **no ipv6 isis redistribute direct enable**
- **no ipv6 isis redistribute direct metric**
- **no ipv6 isis redistribute direct metric-type**
- **no ipv6 isis redistribute direct route-map**

Command Parameters

enable	Enables direct route redistribution.
metric <0-65535>	Specifies the metric for the redistributed route.Use a value that is consistent with the destination protocol. The default is 1.
metrictype external	Specifies the metric type. Specifies a type 1 or a type 2 metric. For metric type 1, the cost of the external routes is equal to the sum of all internal costs and the external cost. For metric type 2, the cost of the external routes is equal to the external cost alone. The default is internal.
metrictype internal	Specifies the metric type. Specifies a type 1 or a type 2 metric. For metric type 1, the cost of the external routes is equal to the sum of all internal costs and the external cost. For metric type 2, the cost of the external routes is equal to the external cost alone. The default is internal.

Default

By default, redistribution is disabled.

Command Mode

VRF Router Configuration

ipv6 isis redistribute ospf

Identify IPv6 routes on the local switch to be announced into the Shortest Path Bridging MAC (SPBM) network.

Syntax

- **default ipv6 isis redistribute ospf enable**
- **default ipv6 isis redistribute ospf metric**
- **default ipv6 isis redistribute ospf metric-type**
- **default ipv6 isis redistribute ospf route-map**
- **ipv6 isis redistribute ospf**
- **ipv6 isis redistribute ospf enable**
- **ipv6 isis redistribute ospf metric <0-65535>**
- **ipv6 isis redistribute ospf metric-type external**
- **ipv6 isis redistribute ospf metric-type internal**
- **ipv6 isis redistribute ospf route-map WORD<0-64>**
- **no ipv6 isis redistribute ospf**
- **no ipv6 isis redistribute ospf enable**

- **no ipv6 isis redistribute ospf metric**
- **no ipv6 isis redistribute ospf metric-type**
- **no ipv6 isis redistribute ospf route-map**

Command Parameters

enable	Enables Open Shortest Path First (OSPF) route redistribution.
metric <0-65535>	Specifies the metric for the redistributed route.Use a value that is consistent with the destination protocol. The default is 1.
metrictype external	Specifies the metric type. Specifies a type 1 or a type 2 metric. For metric type 1, the cost of the external routes is equal to the sum of all internal costs and the external cost. For metric type 2, the cost of the external routes is equal to the external cost alone. The default is internal.
metrictype internal	Specifies the metric type. Specifies a type 1 or a type 2 metric. For metric type 1, the cost of the external routes is equal to the sum of all internal costs and the external cost. For metric type 2, the cost of the external routes is equal to the external cost alone. The default is internal.

Default

By default, redistribution is disabled.

Command Mode

VRF Router Configuration

ipv6 isis redistribute static

Identify IPv6 routes on the local switch to be announced into the Shortest Path Bridging MAC (SPBM) network.

Syntax

- **default ipv6 isis redistribute static enable**
- **default ipv6 isis redistribute static metric**
- **default ipv6 isis redistribute static metric-type**
- **default ipv6 isis redistribute static route-map**
- **ipv6 isis redistribute static**
- **ipv6 isis redistribute static enable**
- **ipv6 isis redistribute static metric <0-65535>**
- **ipv6 isis redistribute static metric-type external**
- **ipv6 isis redistribute static metric-type internal**

- **ipv6 isis redistribute static route-map WORD<0-64>**
- **no ipv6 isis redistribute static**
- **no ipv6 isis redistribute static enable**
- **no ipv6 isis redistribute static metric**
- **no ipv6 isis redistribute static metric-type**
- **no ipv6 isis redistribute static route-map**

Command Parameters

enable	Enables static route redistribution.
metric <0-65535>	Specifies the metric for the redistributed route.Use a value that is consistent with the destination protocol. The default is 1.
metrictype external	Specifies the metric type. Specifies a type 1 or a type 2 metric. For metric type 1, the cost of the external routes is equal to the sum of all internal costs and the external cost. For metric type 2, the cost of the external routes is equal to the external cost alone. The default is internal.
metrictype internal	Specifies the metric type. Specifies a type 1 or a type 2 metric. For metric type 1, the cost of the external routes is equal to the sum of all internal costs and the external cost. For metric type 2, the cost of the external routes is equal to the external cost alone. The default is internal.

Default

By default, redistribution is disabled.

Command Mode

VRF Router Configuration

ipv6 neighbor (for VRF)

Comands to configure IPv6 neighbors globally.

Syntax

- **ipv6 neighbor WORD<0-128> port {slot/port[sub-port]} mac 0x00:0x00:0x00:0x00:0x00:0x00 vlan <1-4059>**
- **no ipv6 neighbor WORD<0-128> port {slot/port[sub-port]}**
- **no ipv6 neighbor WORD<0-128> vlan <1-4059>**

Command Parameters

mac 0x00:0x00:0x00:0x00:0x00:0x00	Specifies the MAC address.

port {slot/port[sub-port]}	Identifies a single slot and port. If your platform supports channelization and the port is channelized, you must also specify the subport in the format slot/port/sub-port.
vlan <*1-4059*>	Specifies the VLAN ID in the range of 0 to 4059. By default, VLAN IDs 1 to 4059 are configurable and the system reserves VLAN IDs 4060 to 4094 for internal use. On switches that support the vrf-scaling and spbm-config-mode boot configuration flags, if you enable these flags, the system also reserves VLAN IDs 3500 to 3998. VLAN ID 1 is the default VLAN and you cannot create or delete VLAN ID 1.
WORD<0-128>	Ipv6 address in hex colon format.

Default

None

Command Mode

VRF Router Configuration

ipv6 ospf (for a VRF)

Configure IPv6 OSPF parameters for a VRF.

Syntax

- **`default ipv6 ospf`**
- **`ipv6 ospf`**
- **`no ipv6 ospf`**

Default

None

Command Mode

VRF Router Configuration

ipv6 ospf area (for a VRF)

Configure OSPF parameters on a VRF to control how OSPF behaves.

Syntax

- **`default ipv6 ospf area {A.B.C.D}`**

- **default ipv6 ospf area {A.B.C.D} default-cost**
- **default ipv6 ospf area {A.B.C.D} import**
- **default ipv6 ospf area {A.B.C.D} import-summaries enable**
- **ipv6 ospf area {A.B.C.D}**
- **ipv6 ospf area {A.B.C.D} default-cost <0-16777215>**
- **ipv6 ospf area {A.B.C.D} import external**
- **ipv6 ospf area {A.B.C.D} import noexternal**
- **ipv6 ospf area {A.B.C.D} import nssa**
- **ipv6 ospf area {A.B.C.D} import-summaries enable**
- **no ipv6 ospf area {A.B.C.D}**
- **no ipv6 ospf area {A.B.C.D} import-summaries enable**

Command Parameters

{A.B.C.D}	Specifies the area address.
default-cost <0-16777215>	Stub area default metric for this stub area, which is the cost from 0 to 16 777 215. This is the metric value applied at the indicated type of service.
import <external|noexternal|nssa>	Specifies the type of area: external - Stub and NSSA (not so stubby area) are both false. noexternal-Configures the area as stub area. nssa - Configures the area as NSSA.
import-summaries enable	Configures the area support to import summary advertisements into a stub area. This parameter must be used only if the area is a stub area.

Default

None

Command Mode

VRF Router Configuration

ipv6 ospf area range (for a VRF)

Configure OSPF parameters on a VRF to control how OSPF behaves.

Syntax

- **default ipv6 ospf area range {A.B.C.D} WORD<0-255> inter-area-prefix-link [advertise-metric]**
- **default ipv6 ospf area range {A.B.C.D} WORD<0-255> nssa-extlink [advertise-metric]**
- **ipv6 ospf area range {A.B.C.D} WORD<0-255> advertise-mode advertise**

- **ipv6 ospf area range {A.B.C.D} WORD<0-255> advertise-mode not-advertise**
- **ipv6 ospf area range {A.B.C.D} WORD<0-255> inter-area-prefix-link advertise-metric <0-65535>**
- **ipv6 ospf area range {A.B.C.D} WORD<0-255> inter-area-prefix-link advertise-mode advertise**
- **ipv6 ospf area range {A.B.C.D} WORD<0-255> inter-area-prefix-link advertise-mode not-advertise**
- **ipv6 ospf area range {A.B.C.D} WORD<0-255> nssa-extlink advertise-metric <0-65535>**
- **ipv6 ospf area range {A.B.C.D} WORD<0-255> nssa-extlink advertise-mode advertise**
- **ipv6 ospf area range {A.B.C.D} WORD<0-255> nssa-extlink advertise-mode not-advertise**
- **no ipv6 ospf area range {A.B.C.D} WORD<0-255> inter-area-prefix-link**
- **no ipv6 ospf area range {A.B.C.D} WORD<0-255> nssa-extlink**

Command Parameters

{A.B.C.D}	Specifies the area address.
advertise-metric <0-65535>	Specifies the advertise metric value and LSA type. The default advertise-metric is 0.
advertise-mode <advertise| not-advertise>	Configures if the area advertises into other OSPF areas. The default avertise-mode is advertise.
inter-area-prefix-link	Configures the area to use this LSA type.
nssa-extlink	Configures the area to use this LSA type.
WORD<0-255>	Specifies the IPv6 address and prefix.

Default

None

Command Mode

VRF Router Configuration

ipv6 ospf area virtual-link (for a VRF)

Configure OSPF parameters on a VRF to control how OSPF behaves.

Syntax

- **default ipv6 area virtual-link {A.B.C.D} {A.B.C.D}**
- **default ipv6 area virtual-link {A.B.C.D} {A.B.C.D} dead-interval**
- **default ipv6 area virtual-link {A.B.C.D} {A.B.C.D} hello-interval**
- **default ipv6 area virtual-link {A.B.C.D} {A.B.C.D} retransmit-interval**
- **default ipv6 area virtual-link {A.B.C.D} {A.B.C.D} transit-delay**
- **ipv6 area virtual-link {A.B.C.D} {A.B.C.D}**
- **ipv6 area virtual-link {A.B.C.D} {A.B.C.D} dead-interval <1-65535>**
- **ipv6 area virtual-link {A.B.C.D} {A.B.C.D} hello-interval <1-65535>**
- **ipv6 area virtual-link {A.B.C.D} {A.B.C.D} retransmit-interval <1-1800>**
- **ipv6 area virtual-link {A.B.C.D} {A.B.C.D} transit-delay <1-1800>**
- **no ipv6 area virtual-link {A.B.C.D} {A.B.C.D}**

Command Parameters

{A.B.C.D} {A.B.C.D}	Specifies the area address and the virtual link address.
dead-interval <1-65535>	Specifies the dead interval, as the number of seconds to wait before determining the OSPF router is down. The default dead-interval is 60.
hello-interval <1-65535>	Specifies the hello interval, in seconds, for hello packets sent between switches for a virtual interface in an OSPF area. The default hello interval is 10.
retransmit-interval <1-1800>	Specifies the retransmit interval, in seconds, for link-state advertisements. The default retransmit-interval is 5.
transit-delay <1-1800>	Specifies the transit-delay interval, in seconds, required to transmit a link-state update packet over the virtual interface. The default transit-delay is 1.

Default

None

Command Mode

VRF Router Configuration

ipv6 ospf as-boundary-router

Specify ASBR status, the router is an autonomous system boundary router (ASBR).

Syntax

- **default ipv6 ospf as-boundary-router**
- **ipv6 ospf as-boundary-router**
- **no ipv6 ip ospf as-boundary-router**

Default

None

Command Mode

VRF Router Configuration

ipv6 ospf default-cost

Configures the default OSPF metrics.

Note:

Not all parameters appear on all hardware platforms.

Syntax

- **default ipv6 ospf default-cost ethernet**
- **default ipv6 ospf default-cost fast-ethernet**
- **default ipv6 ospf default-cost forty-gig-ethernet**
- **default ipv6 ospf default-cost gig-ethernet**
- **default ipv6 ospf default-cost ten-gig-ethernet**
- **default ipv6 ospf default-cost twentyfive-gig-ethernet**
- **ipv6 ospf default-cost ethernet <1-65535>**
- **ipv6 ospf default-cost fast-ethernet <1-65535>**
- **ipv6 ospf default-cost forty-gig-ethernet <1-65535>**
- **ipv6 ospf default-cost gig-ethernet <1-65535>**
- **ipv6 ospf default-cost ten-gig-ethernet <1-65535>**
- **ipv6 ospf default-cost twentyfive-gig-ethernet <1-65535>**
- **ipv6 ospf default-cost vlan**

Command Parameters

ethernet <1-65535>	Configures the OSPF default metrics for 10 Mb/s Ethernet. The default is 100.
fast-ethernet <1-65535>	Configures the OSPF default metrics for 100 Mb/s (Fast) Ethernet. The default is 10.

forty-gig-ethernet <1-65535>	Configures the OSPF default metrics for 40 Gigabit Ethernet. The default is 1.
gig-ethernet <1-65535>	Configures the OSPF default metrics for Gigabit Ethernet. The default is 1.
hundred-gig-ethernet <1-65535>	Configures the OSPF default metrics for 100 Gigabit Ethernet. The default is 1.
ten-gig-ethernet <1-65535>	Configures the OSPF default metrics for 10 Gigabit Ethernet. The default is 1.
twentyfive-gig-ethernet <1-65535>	Configures the OSPF default metrics for 25 Gigabit Ethernet. The default is 1.
vlan	Configures the OSPF default metrics for a VLAN. The default is 1.

Default

None

Command Mode

VRF Router Configuration

ipv6 ospf helper-mode-disable

Disable helper mode for OSPF on a VRF.

Syntax

- **default ipv6 ospf helper-mode-disable**
- **ipv6 ospf helper-mode-disable**
- **no ipv6 ospf helper-mode-disable**

Default

The default is enabled when OSPF is configured.

Command Mode

VRF Router Configuration

ipv6 ospf redistribute

Configure a redistribute entry to announce certain routes into the OSPFv3 domain.

Syntax

- **default ipv6 ospf redistribute { bgp| direct | isis | static }**
- **default ipv6 ospf redistribute { bgp| direct | isis | static } enable**
- **default ipv6 ospf redistribute { bgp| direct | isis | static } metric**
- **default ipv6 ospf redistribute { bgp| direct | isis | static } metric-type**
- **default ipv6 ospf redistribute { bgp| direct | isis | static } route-map**
- **ipv6 ospf redistribute { bgp| direct | isis | static }**
- **ipv6 ospf redistribute { bgp| direct | isis | static } enable**
- **ipv6 ospf redistribute { bgp| direct | isis | static } metric <0-65535>**
- **ipv6 ospf redistribute { bgp| direct | isis | static } metric-type { type1 | type2 }**
- **ipv6 ospf redistribute { bgp| direct | isis | static } route-map WORD<0-64>**
- **no ipv6 ospf redistribute { bgp| direct | isis | static }**
- **no ipv6 ospf redistribute { bgp| direct | isis | static } enable**
- **no ipv6 ospf redistribute { bgp| direct | isis | static } route-map**

Command Parameters

**{bgp| direct	isis |static}**	Specifies the type of routes to redistribute-the protocol source.
enable	Enables the route redistribution instance.
metric <0-65535>	Configures the metric to apply to redistributed routes.
**metric-type { type1	type2 }**	Specifies a type 1 or a type 2 metric. For metric type 1, the cost of the external routes is equal to the sum of all internal costs and the external cost. For metric type 2, the cost of the external routes is equal to the external cost alone.
route-map WORD<0-64>	Configures the route policy to apply to redistributed routes.

Default

None

Command Mode

VRF Router Configuration

ipv6 ospf router-id

Configure the OSPF router ID for a VRF.

Syntax

- **default ipv6 ospf router-id**
- **ipv6 ospf router-id {A.B.C.D}**
- **no ipv6 ospf router-id**

Command Parameters

router-id <A.B.C.D>	Configures the OSPF router ID IP address, where A.B.C.D is the IP address.

Default

None

Command Mode

VRF Router Configuration

ipv6 prefix-list

Use prefix lists to allow or deny specific route updates. A prefix list policy specifies route prefixes to match. When there is a match, the route is used. Configure a prefix list and apply the list to a route policy.

Syntax

- **ipv6 prefix-list WORD<1-64> name WORD<1-64>**
- **ipv6 prefix-list WORD<1-64> WORD<1-256> ge <0- 128>**
- **ipv6 prefix-list WORD<1-64> WORD<1-256> id <1-2147483647>**
- **ipv6 prefix-list WORD<1-64> WORD<1-256> le <0-128>**
- **no ipv6 prefix-list WORD<1-64> [WORD<1-256>]**

Command Parameters

ge <0-128>	Specifies the minimum length to match. Lower bound and higher bound mask lengths together can define a range of networks.
id <1-2147483647>	Specifies the prefix list ID.
le <0-128>	Specifies the maximum length to match. Lower bound and higher bound mask lengths together can define a range of networks.

name WORD<1-64>	Renames the specified prefix list. The name length is from 1 to 64 characters.
WORD<1-256>	Specifies the IPv6 address and length.
WORD<1-64>	Adds a prefix entry to the prefix list. WORD<1-64> is the prefix-list name. WORD<1-256> is the IPv6 address and length. <ge|le><0- 128> is the minimum and maximum length to match. Lower bound and higher bound mask lengths together can define a range of networks.

Default

None

Command Mode

VRF Router Configuration

ipv6 route (for VRF)

Configure a static route to destination IPv6 address prefixes.

Syntax

- **default ipv6 route WORD<0-46>**
- **default ipv6 route WORD<0-46> enable next-hop WORD<0-46>**
- **default ipv6 route WORD<0-46> enable port {slot/port[/sub-port]}**
- **default ipv6 route WORD<0-46> enable vlan <1-4059>**
- **default ipv6 route WORD<0-46> preference**
- **default ipv6 route WORD<0-46> preference next-hop WORD<0-46>**
- **default ipv6 route WORD<0-46> preference port {slot/port[/sub-port]}**
- **default ipv6 route WORD<0-46> preference vlan <1-4059>**
- **ipv6 route WORD<0-46> cost <1-65535>**
- **ipv6 route WORD<0-46> cost <1-65535> next-hop WORD<0-46>**
- **ipv6 route WORD<0-46> cost <1-65535> port {slot/port[/sub-port]}**
- **ipv6 route WORD<0-46> cost <1-65535> preference <1-255>**
- **ipv6 route WORD<0-46> cost <1-65535> vlan <1-4059>**
- **ipv6 route WORD<0-46> enable**
- **ipv6 route WORD<0-46> enable next-hop WORD<0-46>**
- **ipv6 route WORD<0-46> enable port {slot/port[/sub-port]}**
- **ipv6 route WORD<0-46> enable vlan <1-4059>**

- **ipv6 route WORD<0-46> preference <1-255>**
- **ipv6 route WORD<0-46> preference <1-255> next-hop WORD<0-46>**
- **ipv6 route WORD<0-46> preference <1-255> port {slot/port[/sub-port]}**
- **ipv6 route WORD<0-46> preference <1-255> vlan <1-4059>**
- **no ipv6 route WORD<0-46>**
- **no ipv6 route WORD<0-46> enable**
- **no ipv6 route WORD<0-46> enable next-hop WORD<0-46>**
- **no ipv6 route WORD<0-46> enable port {slot/port[/sub-port]}**
- **no ipv6 route WORD<0-46> enable vlan <1-4059>**
- **no ipv6 route WORD<0-46> next-hop WORD<0-46>**
- **no ipv6 route WORD<0-46> port {slot/port[/sub-port]}**
- **no ipv6 route WORD<0-46> vlan <1-4059>**

Command Parameters

cost <1-65535>	Specifies the cost or distance ratio to reach the destination for this node. The default cost is 1.
enable	Enables the static route on the port. The default state for a new static route is enable.
next-hop WORD<0-46>	Specifies the IPv6 address of the next hop on this route. You do not need to specify the next hop if the devices directly connect to one another. Configure the next hop if the two nodes do not share the same network prefix but reside on the same link.
port {slot/port[/sub-port]}	Specifies the port to which this entry applies. You must specify the port if the next hop is a link-local address.
preference <1-255>	Specifies the routing preference of the destination IPv6 address. The default preference is 5.
vlan <*1-4059*>	Specifies the VLAN ID in the range of 1 to 4059. By default, VLAN IDs 1 to 4059 are configurable and the system reserves VLAN IDs 4060 to 4094 for internal use. If you enable VRF scaling and SPBM mode, the system also reserves VLAN IDs 3500 to 3998. VLAN ID 1 is the default VLAN and you cannot create or delete VLAN ID 1.
WORD<0-46>	Specifies the IPv6 destination network address.

Default

The default state for a new static route is enable.

Command Mode

VRF Router Configuration

ipv6 source-route (for VRF)

Enables IPv6 source routing globally.

Syntax

- **default ipv6 source-route**
- **ipv6 source-route**
- **no ipv6 source-route**

Default

Disabled

Command Mode

VRF Router Configuration

ipvpn

Create an IP Virtual Private Network (VPN) instance on the Virtual Routing and Forwarding (VRF).

Syntax

- **default ipvpn**
- **ipvpn**
- **ipvpn enable**
- **no ipvpn**

Command Parameters

enable Enable IP Virtual Private Network (VPN) on the Virtual Routing and Forwarding (VRF).

Default

The default is disabled.

Command Mode

VRF Router Configuration

ipvpn enable

Enable IP Virtual Private Network (VPN) on the Virtual Routing and Forwarding (VRF).

Syntax

- **default ipvpn enable**

- **ipvpn enable**
- **no ipvpn enable**

Default

The default is disabled.

Command Mode

VRF Router Configuration

i-sid (for a VRF)

Assign an service instance identifier (I-SID) to the VRF.

Syntax

- **default i-sid**
- **i-sid <0-16777215>**
- **no i-sid**

Command Parameters

<0-16777215>	Specifies the service instance identifier (I-SID).

Default

The default is disabled.

Command Mode

VRF Router Configuration

isis accept (for a VRF)

Configure an Intermediate-System-to-Intermediate-System (IS-IS) accept policy instance to apply to all routes from all Backbone Edge Bridges (BEBs) for a Virtual Routing and Forwarding (VRF) instance.

Syntax

- **isis accept i-sid <0-16777215>**
- **isis accept i-sid <0-16777215> enable**
- **isis accept i-sid <0-16777215> route-map WORD<1-64>**
- **isis accept isid-list WORD<1-32>**
- **isis accept isid-list WORD<1-32> enable**

- **isis accept isid-list WORD<1-32> route-map WORD<1-64>**
- **isis accept route-map WORD<1-64>**
- **no isis accept i-sid <0-16777215>**
- **no isis accept i-sid <0-16777215> enable**
- **no isis accept i-sid <0-16777215> route-map**
- **no isis accept isid-list WORD<1-32>**
- **no isis accept isid-list WORD<1-32> enable**
- **no isis accept isid-list WORD<1-32> route-map**
- **no isis accept route-map**

Command Parameters

enable	Enables the IS-IS accept policy.
i-sid <0-16777215>	Specifies a service instance identifier (I-SID) number representing a local or remote Layer 3 VSN. The number 0 represents the GRT.
isid-list WORD <1-32>	Specifies a list of I-SID numbers representing local or remote Layer 3 VSNs.
route-map WORD<1-64>	Specifies an IS-IS route policy.

Default

The default is disabled.

Command Mode

VRF Router Configuration

isis accept adv-rtr (for a VRF)

Configure an Intermediate-System-to-Intermediate-System (IS-IS) accept policy instance to apply to all routes for a specific Backbone Edge Bridge (BEB) for a Virtual Routing and Forwarding (VRF) instance.

Syntax

- **isis accept adv-rtr <x.xx.xx>**
- **isis accept adv-rtr <x.xx.xx> enable**
- **isis accept adv-rtr <x.xx.xx> i-sid <0-16777215>**
- **isis accept adv-rtr <x.xx.xx> i-sid <0-16777215> enable**
- **isis accept adv-rtr <x.xx.xx> i-sid <0-16777215> route-map WORD<1-64>**
- **isis accept adv-rtr <x.xx.xx> isid-list WORD<1-32>**

- **isis accept adv-rtr <x.xx.xx> isid-list WORD<1-32> enable**
- **isis accept adv-rtr <x.xx.xx> isid-list WORD<1-32> route-map WORD<1-64>**
- **isis accept adv-rtr <x.xx.xx> route-map WORD<1-64>**
- **no isis accept adv-rtr <x.xx.xx>**
- **no isis accept adv-rtr <x.xx.xx> enable**
- **no isis accept adv-rtr <x.xx.xx> i-sid <0-16777215>**
- **no isis accept adv-rtr <x.xx.xx> i-sid <0-16777215> enable**
- **no isis accept adv-rtr <x.xx.xx> i-sid <0-16777215> route-map**
- **no isis accept adv-rtr <x.xx.xx> isid-list WORD<1-32>**
- **no isis accept adv-rtr <x.xx.xx> isid-list WORD<1-32> enable**
- **no isis accept adv-rtr <x.xx.xx> isid-list WORD<1-32> route-map**
- **no isis accept adv-rtr <x.xx.xx> route-map**

Command Parameters

adv-rtr <x.xx.xx>	Specifies a specific advertising BEB for the IS-IS accept policy. The x.xx.xx variable specifies an SPBM nickname.
enable	Enables the IS-IS accept policy.
i-sid <0-16777215>	Configures the service instance identifier (I-SID) to which the IS-IS accept policy applies. The number 0 represents the GRT.
isid-list WORD <1-32>	Configures a list of I-SIDs to which the IS-IS accept policy applies.
route-map WORD<1-64>	Specifies an IS-IS route policy.

Default

The default is disabled.

Command Mode

VRF Router Configuration

isis redistribute bgp

Identify routes on the local switch to be announced into the Shortest Path Bridging MAC (SPBM) network.

Syntax

- **default isis redistribute bgp enable**
- **default isis redistribute bgp metric**

- **default isis redistribute bgp metric-type**
- **default isis redistribute bgp route-map**
- **default isis redistribute bgp subnets**
- **isis redistribute bgp**
- **isis redistribute bgp enable**
- **isis redistribute bgp metric <0-65535>**
- **isis redistribute bgp metric-type external**
- **isis redistribute bgp metric-type internal**
- **isis redistribute bgp route-map WORD<0-64>**
- **isis redistribute bgp subnets allow**
- **isis redistribute bgp subnets suppress**
- **no isis redistribute bgp**
- **no isis redistribute bgp enable**
- **no isis redistribute bgp metric**
- **no isis redistribute bgp metric-type**
- **no isis redistribute bgp route-map**
- **no isis redistribute bgp subnets**

Command Parameters

enable	Enables Border Gateway Protocol (BGP) route redistribution.
metric <0-65535>	Specifies the metric for the redistributed route.Use a value that is consistent with the destination protocol. The default is 1.
metrictype external	Specifies the metric type. Specifies a type 1 or a type 2 metric. For metric type 1, the cost of the external routes is equal to the sum of all internal costs and the external cost. For metric type 2, the cost of the external routes is equal to the external cost alone. The default is internal.
metrictype internal	Specifies the metric type. Specifies a type 1 or a type 2 metric. For metric type 1, the cost of the external routes is equal to the sum of all internal costs and the external cost. For metric type 2, the cost of the external routes is equal to the external cost alone. The default is internal.
routemap WORD<0-64>	Configures the route policy to apply to redistributed routes. Specifies a name.
subnets allow	Indicates whether the subnets are advertised individually or aggregated to their classful subnet. Choose allow to advertise the subnets individually with the learned or configured mask of the subnet. The default is allow.

subnets suppress	Indicates whether the subnets are advertised individually or aggregated to their classful subnet. Choose suppress to advertise subnets aggregated to their classful subnet. The default is allow.

Default

By default, redistribution is disabled.

Command Mode

VRF Router Configuration

isis redistribute direct

Identify routes on the local switch to be announced into the Shortest Path Bridging MAC (SPBM) network.

Syntax

- **default isis redistribute direct enable**
- **default isis redistribute direct metric**
- **default isis redistribute direct metric-type**
- **default isis redistribute direct route-map**
- **default isis redistribute direct subnets**
- **isis redistribute direct**
- **isis redistribute direct enable**
- **isis redistribute direct metric <0-65535>**
- **isis redistribute direct metric-type external**
- **isis redistribute direct metric-type internal**
- **isis redistribute direct route-map WORD<0-64>**
- **isis redistribute direct subnets allow**
- **isis redistribute direct subnets suppress**
- **no isis redistribute direct**
- **no isis redistribute direct enable**
- **no isis redistribute direct metric**
- **no isis redistribute direct metric-type**
- **no isis redistribute direct route-map**
- **no isis redistribute direct subnets**

Command Parameters

enable	Enables route redistribution.
metric <0-65535>	Configures the metric (cost) to apply to redistributed routes. The default is 1.
metric-type external	Configures the type of route to import into the protocol. The default is internal.
metric-type internal	Configures the type of route to import into the protocol. The default is internal.
route-map WORD<0-64>	Configures the route policy to apply to redistributed routes. Specifies a name.
subnets allow	Indicates whether the subnets are advertised individually or aggregated to their classful subnet. Choose allow to advertise the subnets individually with the learned or configured mask of the subnet. The default is allow.
subnets suppress	Indicates whether the subnets are advertised individually or aggregated to their classful subnet. Choose suppress to advertise subnets aggregated to their classful subnet. The default is allow.

Default

By default, redistribution is disabled.

Command Mode

VRF Router Configuration

isis redistribute ospf

Identify routes on the local switch to be announced into the Shortest Path Bridging MAC (SPBM) network.

Syntax

- **default isis redistribute ospf enable**
- **default isis redistribute ospf metric**
- **default isis redistribute ospf metric-type**
- **default isis redistribute ospf route-map**
- **default isis redistribute ospf subnets**
- **isis redistribute ospf**
- **isis redistribute ospf enable**

- **isis redistribute ospf metric <0-65535>**
- **isis redistribute ospf metric-type external**
- **isis redistribute ospf metric-type internal**
- **isis redistribute ospf route-map WORD<0-64>**
- **isis redistribute ospf subnets allow**
- **isis redistribute ospf subnets suppress**
- **no isis redistribute ospf**
- **no isis redistribute ospf enable**
- **no isis redistribute ospf metric**
- **no isis redistribute ospf metric-type**
- **no isis redistribute ospf route-map**
- **no isis redistribute ospf subnets**

Command Parameters

enable	Enables route redistribution.
metric <0-65535>	Configures the metric (cost) to apply to redistributed routes. The default is 1.
metrictype external	Configures the type of route to import into the protocol. The default is internal.
metrictype internal	Configures the type of route to import into the protocol. The default is internal.
routemap WORD<0-64>	Configures the route policy to apply to redistributed routes. Specifies a name.
subnets allow	Indicates whether the subnets are advertised individually or aggregated to their classful subnet. Choose allow to advertise the subnets individually with the learned or configured mask of the subnet. The default is allow.
subnets allow	Indicates whether the subnets are advertised individually or aggregated to their classful subnet. Choose allow to advertise the subnets individually with the learned or configured mask of the subnet. The default is allow.
subnets allow	Indicates whether the subnets are advertised individually or aggregated to their classful subnet. Choose allow to advertise the subnets individually with the learned or configured mask of the subnet. The default is allow.
subnets suppress	Indicates whether the subnets are advertised individually or aggregated to their classful subnet. Choose suppress to advertise subnets aggregated to their classful subnet. The default is allow.

subnets suppress	Indicates whether the subnets are advertised individually or aggregated to their classful subnet. Choose suppress to advertise subnets aggregated to their classful subnet. The default is allow.
subnets suppress	Indicates whether the subnets are advertised individually or aggregated to their classful subnet. Choose suppress to advertise subnets aggregated to their classful subnet. The default is allow.

Default

By default, redistribution is disabled.

Command Mode

VRF Router Configuration

isis redistribute rip

Identify routes on the local switch to be announced into the Shortest Path Bridging MAC (SPBM) network.

Syntax

- **default isis redistribute rip enable**
- **default isis redistribute rip metric**
- **default isis redistribute rip metric-type**
- **default isis redistribute rip route-map**
- **default isis redistribute rip subnets**
- **isis redistribute rip**
- **isis redistribute rip enable**
- **isis redistribute rip metric <0-65535>**
- **isis redistribute rip metric-type external**
- **isis redistribute rip metric-type internal**
- **isis redistribute rip route-map WORD<0-64>**
- **isis redistribute rip subnets allow**
- **isis redistribute rip subnets suppress**
- **no isis redistribute rip**
- **no isis redistribute rip enable**
- **no isis redistribute rip metric**
- **no isis redistribute rip metric-type**
- **no isis redistribute rip route-map**

- **no isis redistribute rip subnets**

Command Parameters

enable	Enables route redistribution.
enable	Enables route redistribution.
enable	Enables route redistribution.
metric <0-65535>	Configures the metric (cost) to apply to redistributed routes. The default is 1.
metric <0-65535>	Configures the metric (cost) to apply to redistributed routes. The default is 1.
metric <0-65535>	Configures the metric (cost) to apply to redistributed routes. The default is 1.
metrictype external	Configures the type of route to import into the protocol. The default is internal.
metric-type external	Configures the type of route to import into the protocol. The default is internal.
metric-type external	Configures the type of route to import into the protocol. The default is internal.
metrictype internal	Configures the type of route to import into the protocol. The default is internal.
metric-type internal	Configures the type of route to import into the protocol. The default is internal.
metric-type internal	Configures the type of route to import into the protocol. The default is internal.
routemap WORD<0-64>	Configures the route policy to apply to redistributed routes. Specifies a name.
route-map WORD<0-64>	Configures the route policy to apply to redistributed routes. Specifies a name.
route-map WORD<0-64>	Configures the route policy to apply to redistributed routes. Specifies a name.
subnets allow	Indicates whether the subnets are advertised individually or aggregated to their classful subnet. Choose allow to advertise the subnets individually with the learned or configured mask of the subnet. The default is allow.

subnets allow	Indicates whether the subnets are advertised individually or aggregated to their classful subnet. Choose allow to advertise the subnets individually with the learned or configured mask of the subnet. The default is allow.
subnets allow	Indicates whether the subnets are advertised individually or aggregated to their classful subnet. Choose allow to advertise the subnets individually with the learned or configured mask of the subnet. The default is allow.
subnets suppress	Indicates whether the subnets are advertised individually or aggregated to their classful subnet. Choose suppress to advertise subnets aggregated to their classful subnet. The default is allow.
subnets suppress	Indicates whether the subnets are advertised individually or aggregated to their classful subnet. Choose suppress to advertise subnets aggregated to their classful subnet. The default is allow.
subnets suppress	Indicates whether the subnets are advertised individually or aggregated to their classful subnet. Choose suppress to advertise subnets aggregated to their classful subnet. The default is allow.

Default

By default, redistribution is disabled.

Command Mode

VRF Router Configuration

isis redistribute static

Identify routes on the local switch to be announced into the Shortest Path Bridging MAC (SPBM) network.

Syntax

- **default isis redistribute static enable**
- **default isis redistribute static metric**
- **default isis redistribute static metric-type**
- **default isis redistribute static route-map**
- **default isis redistribute static subnets**
- **isis redistribute static**
- **isis redistribute static enable**
- **isis redistribute static metric <0-65535>**
- **isis redistribute static metric-type external**
- **isis redistribute static metric-type internal**

- **isis redistribute static route-map WORD<0-64>**
- **isis redistribute static subnets allow**
- **isis redistribute static subnets suppress**
- **no isis redistribute static**
- **no isis redistribute static enable**
- **no isis redistribute static metric**
- **no isis redistribute static metric-type**
- **no isis redistribute static route-map**
- **no isis redistribute static subnets**

Command Parameters

enable	Enables route redistribution.
metric <0-65535>	Configures the metric (cost) to apply to redistributed routes. The default is 1.
metric-type external	Configures the type of route to import into the protocol. The default is internal.
metric-type internal	Configures the type of route to import into the protocol. The default is internal.
route-map WORD<0-64>	Configures the route policy to apply to redistributed routes. Specifies a name.
subnets allow	Indicates whether the subnets are advertised individually or aggregated to their classful subnet. Choose allow to advertise the subnets individually with the learned or configured mask of the subnet. The default is allow.
subnets suppress	Indicates whether the subnets are advertised individually or aggregated to their classful subnet. Choose suppress to advertise subnets aggregated to their classful subnet. The default is allow.

Default

By default, redistribution is disabled.

Command Mode

VRF Router Configuration

mvpn enable

Enables Layer 3 VSN IP multicast over Fabric Connect for a specific VRF.

Syntax

- **default mvpn enable**
- **mvpn enable**
- **no mvpn enable**

Default

The default is disabled.

Command Mode

VRF Router Configuration

mvpn fwd-cache-timeout <10-86400>

Configures the timeout value on the VRF.

Syntax

- **default mvpn fwd-cache-timeout**
- **mvpn fwd-cache-timeout <10-86400>**
- **no mvpn fwd-cache-timeout**

Command Parameters

<10-86400>	Specifies the timeout value. The default is 210 seconds.

Default

The default is 210 seconds.

Command Mode

VRF Router Configuration

Chapter 25: VRRP Router Configuration

ipv6 send-trap enable

Configure Virtual Router Redundancy Protocol (VRRP) notification control.

Syntax

- **default ipv6 send-trap enable**
- **ipv6 send-trap enable**
- **no ipv6 send-trap enable**

Default

Generation of SNMP traps for VRRP events is enabled.

Command Mode

VRRP Router Configuration

ping-virtual-address

Ping a virtual address to test the connection.

Syntax

- **default ping-virtual-address**
- **default ping-virtual-address enable**
- **default ping-virtual-address enable vrf WORD<1-16>**
- **no ping-virtual-address**
- **no ping-virtual-address enable**
- **no ping-virtual-address enable vrf WORD<1-16>**
- **ping-virtual-address**
- **ping-virtual-address enable**
- **ping-virtual-address enable vrf WORD<1-16>**

Command Parameters

enable	Enables the virtual address ping.
vrf WORD <0-16>	Specifies the virtual routing and forwarding (VRF) name from 1-16 characters.

Default

None

Command Mode

VRRP Router Configuration

send-trap

Configure Virtual Router Redundancy Protocol (VRRP) notification control.

Syntax

- **default send-trap**
- **default send-trap enable**
- **default send-trap enable vrf WORD<1-16>**
- **no send-trap**
- **no send-trap enable**
- **no send-trap enable vrf WORD<1-16>**
- **send-trap**
- **send-trap enable**
- **send-trap enable vrf WORD<1-16>**

Command Parameters

enable	Enable a trap for VRRP events.
vrf WORD<1-16>	Specifies the VRF name.

Default

Generation of SNMP traps for VRRP events is enabled.

Command Mode

VRRP Router Configuration

Chapter 26: VXLAN Configuration

c-vid (for a VXLAN Gateway mlt)

Associate VLANs in an MLT list to the specified VNID instance.

Syntax

- `c-vid <1-4094> mlt <1-4094>`
- `no c-vid <1-4094> mlt <1-4094>`

Command Parameters

<1-4094> mlt <1-4094>	Specifies a value that uniquely identifies the customer VLAN ID and MLTs of this ELAN end point.

Default

None

Command Mode

VXLAN Configuration

c-vid (for a VXLAN Gateway port)

Associate VLANs in a port list to the specified VNID instance.

Syntax

- `c-vid <1-4094> port {slot/port[/sub-port][-slot/port[/sub-port]] [,...]}`
- `no c-vid <1-4094> port {slot/port[/sub-port][-slot/port[/sub-port]] [,...]}`

Command Parameters

<1-4094> port *{slot/port[/sub-port] [-slot/port[/sub-port]] [,...]}*	Specifies a value that uniquely identifies the customer VLAN ID and ports of this ELAN end point.

Default

None

Command Mode

VXLAN Configuration

untagged-traffic (for a VXLAN Gateway mlt)

Specify the MLT in this VNID instance that will support untagged traffic.

Syntax

- **no untagged-traffic mlt <1-4094>**
- **untagged-traffic mlt <1-4094>**

Command Parameters

mlt <1-4094>	Specifies the MLTs that support untagged traffic.

Default

None

Command Mode

VXLAN Configuration

untagged-traffic (for a VXLAN Gateway port)

Specify the ports in this VNID instance that will support untagged traffic.

Syntax

- **no untagged-traffic port {slot/port[/sub-port][-slot/port[/sub-port]][,...]}**
- **untagged-traffic port {slot/port[/sub-port][-slot/port[/sub-port]][,...]}**

Command Parameters

port *{slot/port[/sub-port] [-slot/port[/sub-port]] [,...]}*	Specifies the ports that support untagged traffic.

Default

None

Command Mode

VXLAN Configuration

vtep (association)

Associate VTEPs to the specified VNID instance.

Syntax

- **no vtep <1-255>**
- **vtep <1-255>**

Command Parameters

<1-255>	Lists the remote VTEP destinations to associate with the specified VNID.

Default

None

Command Mode

VXLAN Configuration