



# Extreme Networks Command Line Interface Commands Reference

## Extreme Networks Command Line Interface Commands Reference

### Introduction

This guide describes the Extreme Networks Command Line Interface (CLI) commands for the configuration of various features in Extreme Networks VSP Operating System Software.

This document provides two different ways of navigating CLI command documentation.

- [alphabetically](#) Each command is listed corresponding to the first letter of the command.
- [command mode](#) Each command mode page has a list of commands that are available in that mode. Each page is organized alphabetically for those commands in that mode.

Use the 'find-in-page' function of the browser to search for a command based on the page you are viewing. Most browsers launch 'find' using CTRL+F.

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# Alphabetical command listing

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## Alphabetized list of commands

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- [A](#) - 45 commands
- [B](#) - 49 commands
- [C](#) - 83 commands
- [D](#) - 29 commands
- [E](#) - 24 commands
- [F](#) - 25 commands
- [G](#) - 2 commands
- [H](#) - 6 commands
- [I](#) - 567 commands
- [L](#) - 44 commands
- [M](#) - 67 commands
- [N](#) - 37 commands
- [O](#) - 2 commands
- [P](#) - 38 commands
- [Q](#) - 11 commands
- [R](#) - 78 commands
- [S](#) - 688 commands
- [T](#) - 38 commands
- [U](#) - 10 commands
- [V](#) - 27 commands
- [W](#) - 2 commands

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## Command mode index

The following command modes are available. Select the command mode to see a list of commands available in that mode.

- [Application Configuration](#)
- [BGP Router Configuration](#)
- [DHCP-guard Configuration](#)
- [Elan-Transparent Configuration](#)
- [GigabitEthernet Interface Configuration](#)
- [Global Configuration](#)
- [IS-IS Router Configuration](#)
- [Loopback Interface Configuration](#)
- [mgmtEthernet Interface Configuration](#)
- [MLT Interface Configuration](#)
- [OSPF Router Configuration](#)
- [Privileged EXEC](#)
- [RA-guard Configuration](#)
- [RIP Router Configuration](#)
- [Route-Map Configuration](#)
- [User EXEC](#)
- [VLAN Interface Configuration](#)
- [VRF Router Configuration](#)
- [VRRP Router Configuration](#)
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## Commands starting with A organized alphabetically

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- [accept adv-rtr \(for OSPF\)](#)
- [accept adv-rtr \(for the GRT\)](#)
- [accept \(for the GRT\)](#)
- [accept i-sid \(for the GRT\)](#)
- [accept isid-list \(for the GRT\)](#)
- [accept route-map](#)
- [access-diffserv](#)
- [access-policy](#)
- [access-policy <1-65535> accesslevel](#)
- [access-policy <1-65535> access-strict](#)
- [access-policy <1-65535> enable](#)
- [access-policy <1-65535> ftp](#)
- [access-policy <1-65535> host](#)
- [access-policy <1-65535> http](#)
- [access-policy <1-65535> mode](#)
- [access-policy <1-65535> name](#)
- [access-policy <1-65535> network](#)
- [access-policy <1-65535> precedence](#)
- [access-policy <1-65535> rlogin](#)
- [access-policy <1-65535> snmp-group](#)
- [access-policy <1-65535> snmpv3](#)
- [access-policy <1-65535> ssh](#)
- [access-policy <1-65535> telnet](#)
- [access-policy <1-65535> tftp](#)
- [access-policy <1-65535> username](#)
- [access-policy by-mac](#)
- [action](#)
- [aggregate-address](#)
- [application](#)
- [area](#)
- [area range](#)
- [area virtual-link](#)
- [as-boundary-router enable](#)
- [asg](#)
- [asg load-af-file](#)
- [attribute](#)
- [auto-negotiate enable \(on an Ethernet port\)](#)
- [auto-negotiate \(for the management port\)](#)
- [auto-negotiation-advertisements](#)
- [auto-peer-restart enable](#)
- [auto-recover-delay](#)
- [auto-recover-port](#)
- [auto-summary](#)
- [autotopology](#)
- [auto-vlink](#)

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## Commands starting with B organized alphabetically

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- [backbone](#)
- [backbone](#)
- [backup](#)
- [bad-lsa-ignore enable](#)
- [banner](#)
- [bgp aggregation](#)
- [bgp always-compare-med](#)
- [bgp client-to-client reflection](#)
- [bgp cluster-id](#)
- [bgp confederation](#)
- [bgp default local-preference](#)
- [bgp deterministic-med enable](#)
- [bgp multiple-paths](#)
- [boot](#)
- [boot config choice](#)
- [boot config flags advanced-feature-bandwidth-reservation](#)
- [boot config flags block-snmp](#)
- [boot config flags debug-config](#)
- [boot config flags debugmode](#)
- [boot config flags dvr-leaf-mode](#)
- [boot config flags enhancedsecure-mode](#)
- [boot config flags factorydefaults](#)
- [boot config flags flow-control-mode](#)
- [boot config flags ftpd](#)
- [boot config flags ha-cpu](#)
- [boot config flags hsecure](#)
- [boot config flags ipv6-mode](#)
- [boot config flags linerate-directed-broadcast](#)
- [boot config flags logging](#)
- [boot config flags nni-mstp](#)
- [boot config flags reboot](#)
- [boot config flags rlogind](#)
- [boot config flags spanning-tree-mode](#)
- [boot config flags spbm-config-mode](#)
- [boot config flags sshd](#)
- [boot config flags telnetd](#)
- [boot config flags tftpd](#)
- [boot config flags trace-logging](#)
- [boot config flags urpf-mode](#)
- [boot config flags verify-config](#)
- [boot config flags vrf-scaling](#)
- [boot config flags vxlan-gw-full-interworking-mode](#)
- [boot config host](#)
- [boot config loadconfigtime](#)
- [boot config logfile](#)
- [boot config multicast](#)
- [boot config sio](#)
- [boot config sio console](#)
- [router](#)

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## Commands starting with C organized alphabetically

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- [cd](#)
- [certificate subject](#)
- [certificate ca](#)
- [certificate generate-csr](#)
- [certificate generate-keypair](#)
- [certificate install-file](#)
- [cfm cmac enable](#)
- [cfm cmac enable](#)
- [cfm cmac level <0-7>](#)
- [cfm cmac mepid <1-8191>](#)
- [cfm maintenance-association](#)
- [cfm maintenance-domain](#)
- [cfm maintenance-endpoint](#)
- [cfm spbm enable](#)
- [cfm spbm level](#)
- [cfm spbm mepid](#)
- [channelize](#)
- [chef client info-file](#)
- [chef client ip address](#)
- [chef client start](#)
- [chef enable](#)
- [chef install-cert-file server-cert](#)
- [chef install-cert-file validation-key](#)
- [chef server ip address](#)
- [clear alarm](#)
- [clear eapol non-eap](#)
- [clear filter acl](#)
- [clear ip arp interface](#)
- [clear ip dhcp-relay](#)
- [clear ip dhcp-relay counters](#)
- [clear ip dhcp-snooping binding](#)
- [clear ip mdsp sa-cache](#)
- [clear ip mdsp sa-cache peer](#)
- [clear ip mroute stats](#)
- [clear ip msdp peer](#)
- [clear ip msdp statistics](#)
- [clear ip ospf stats](#)
- [clear ip route](#)
- [clear ipsec stats all](#)
- [clear ipv6 dcache](#)
- [clear ipv6 fhs snooping](#)
- [clear ipv6 fhs statistics dhcp-guard](#)
- [clear ipv6 fhs statistics nd-inspection](#)
- [clear ipv6 fhs statistics ra-guard](#)
- [clear ipv6 mroute stats](#)
- [clear ipv6 neighbor-cache](#)
- [clear ipv6 route static](#)
- [clear ipv6 statistics](#)
- [clear ipv6 vrrp](#)

- [clear ip vrrp](#)
- [clear isis lsdb](#)
- [clear isis stats](#)
- [clear khi](#)
- [clear lacp](#)
- [clear logging](#)
- [clear mac-address-table](#)
- [clear mac-address-table dynamic](#)
- [clear mlt](#)
- [clear qos](#)
- [clear qos cosq-stats](#)
- [clear radius statistics](#)
- [clear sflow statistics](#)
- [clear slpp](#)
- [clear slpp stats](#)
- [clear-stats](#)
- [clear telnet](#)
- [clear trace](#)
- [clear virtual-ist stats](#)
- [clilog](#)
- [cli password](#)
- [cli timeout](#)
- [clock set](#)
- [clock time-zone](#)
- [!\(command number\)](#)
- [comp-bestpath-med-confed](#)
- [configure](#)
- [copy](#)
- [cp](#)
- [csnp-interval](#)
- [c-vid \(for a mlt\)](#)
- [c-vid \(for a port\)](#)
- [c-vid \(for a VXLAN Gateway mlt\)](#)
- [c-vid \(for a VXLAN Gateway port\)](#)

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## Commands starting with D organized alphabetically

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- [debug ip pim](#)
- [debug-screen](#)
- [default-cost](#)
- [default-information](#)
- [default-metric \(for BGP\)](#)
- [default-metric \(for RIP\)](#)
- [default svlan-porttype](#)
- [default-vlan-id](#)
- [delete](#)
- [dir](#)
- [disable](#)
- [dos-chkdisk](#)
- [dos-format](#)
- [dsapssap](#)
- [dump ar](#)
- [duplex](#)
- [duplex \(for the management port\)](#)
- [dvr apply redistribute direct](#)
- [dvr apply redistribute static](#)
- [dvr controller](#)
- [dvr controller <1-255> inject-default-route-disable](#)
- [dvr inject-default-route-disable](#)
- [dvr leaf](#)
- [dvr leaf <1-255> virtual-ist {A.B.C.D} {A.B.C.D} peer-ip {A.B.C.D} cluster-id <1-1000>](#)
- [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>](#)
- [dvr redistribute direct](#)
- [dvr redistribute direct \(for a VRF\)](#)
- [dvr redistribute static](#)
- [dvr redistribute static \(for a VRF\)](#)

[A](#) | [B](#) | [C](#) | [D](#) | [E](#) | [F](#) | [G](#) | [H](#) | [I](#) | [L](#) | [M](#) | [N](#) | [O](#) | [P](#) | [Q](#) | [R](#) | [S](#) | [T](#) | [U](#) | [V](#) | [W](#)



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- [eapol](#)
- [eapol enable](#)
- [eapol fail-open-vlan](#)
- [eapol guest-vlan](#)
- [eapol init](#)
- [eapol max-request](#)
- [eapol multihost eap-mac-max](#)
- [eapol multihost eap-oper-mode](#)
- [eapol multihost mac-max](#)
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- [eapol multihost non-eap-pwd-fmt](#)
- [eapol multihost radius-non-eap-enable](#)
- [eapol quiet-interval](#)
- [eapol re-authenticate](#)
- [eapol re-authentication](#)
- [eapol re-authentication-period](#)
- [eapol status](#)
- [editing](#)
- [enable](#)
- [enable-diffserv](#)
- [enable \(for a route policy\)](#)
- [encapsulation dot1q](#)
- [end](#)
- [exit](#)

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## Commands starting with F organized alphabetically

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- [fa assignment-timeout](#)
- [fa authentication-key \(for a MLT\)](#)
- [fa authentication-key \(for a port\)](#)
- [fa discovery-timeout](#)
- [fa enable](#)
- [fa enable \(for a MLT\)](#)
- [fa enable \(for a port\)](#)
- [fa management \(for a MLT\)](#)
- [fa management \(for a port\)](#)
- [fa message-authentication \(for a MLT\)](#)
- [fa message-authentication \(for a port\)](#)
- [fa zero-touch-client](#)
- [filter acl](#)
- [filter acl ace](#)
- [filter acl ace action](#)
- [filter acl ace arp](#)
- [filter acl ace ethernet](#)
- [filter acl ace ip](#)
- [filter acl ace ipv6](#)
- [filter acl ace protocol](#)
- [filter acl port](#)
- [filter acl set](#)
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# Commands starting with G

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## Commands starting with G organized alphabetically

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- [global-debug mask](#)
- [grep](#)

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# Commands starting with H

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## Commands starting with H organized alphabetically

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- [help](#)
- [helper-mode-disable](#)
- [high-secure enable](#)
- [hop-limit maximum](#)
- [hop-limit minimum](#)
- [host-route](#)

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## Commands starting with I organized alphabetically

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- [ibgp-report-import-rt](#)
- [ignore-illegal-rtrid](#)
- [ike policy](#)
- [ike profile](#)
- [ike v2-profile](#)
- [inband-mgmt-ip](#)
- [interface GigabitEthernet](#)
- [interface Loopback](#)
- [interface mgmtEthernet](#)
- [interface mlt](#)
- [interface vlan](#)
- [ip address \(for the management port\)](#)
- [ip address \(loopback\)](#)
- [ip address \(on a VLAN\)](#)
- [ip alternative-route \(globally\)](#)
- [ip alternative-route \(on a VRF\)](#)
- [ip area \(loopback\)](#)
- [ip area virtual-link ipsec](#)
- [ip area virtual-link ipsec action](#)
- [ip area virtual-link ipsec direction](#)
- [ip area virtual-link ipsec enable](#)
- [ip area virtual-link ipsec security-association](#)
- [ip arp](#)
- [ip arp \(for a VRF\)](#)
- [ip arp-inspection](#)
- [ip arp-inspection enable](#)
- [ip arp multicast-mac-flooding](#)
- [ip arp-proxy enable \(for a port\)](#)
- [ip arp-proxy enable \(for a VLAN\)](#)
- [ip arp-response \(for a port\)](#)
- [ip arp-response \(for a VLAN\)](#)
- [ip arp static-mcast](#)
- [ip as-list](#)
- [ip as-list \(for a VRF\)](#)
- [ip bgp](#)
- [ip bgp aggregate-address](#)
- [ip bgp aggregation](#)
- [ip bgp always-compare-med](#)
- [ip bgp apply redistribute](#)
- [ip bgp auto-peer-restart enable](#)
- [ip bgp auto-summary](#)
- [ip bgp debug-screen](#)
- [ip bgp default-information](#)
- [ip bgp default local-preference](#)
- [ip bgp default-metric](#)
- [ip bgp deterministic-med enable](#)
- [ip bgp enable](#)
- [ip bgp flap-dampening](#)
- [ip bgp global-debug mask](#)

- [ip bgp ibgp-report-import-rt enable](#)
- [ip bgp ignore-illegal-rtrid enable](#)
- [ip bgp in-route-map](#)
- [ip bgp multiple-paths](#)
- [ip bgp neighbor](#)
- [ip bgp neighbor password](#)
- [ip bgp network](#)
- [ip bgp no-med-path-is-worst enable](#)
- [ip bgp out-route-map WORD<0-256>](#)
- [ip bgp quick-start enable](#)
- [ip bgp redistribute](#)
- [ip bgp redistribute](#)
- [ip bgp restart-bgp](#)
- [ip bgp router-id {A.B.C.D}](#)
- [ip bgp stats-clear-counters](#)
- [ip bgp synchronization](#)
- [ip bgp traps enable](#)
- [ip community-list](#)
- [ip community-list \(for a VRF\)](#)
- [ip dhcp-relay \(for an MLT\)](#)
- [ip dhcp-relay \(for a port\)](#)
- [ip dhcp-relay \(for a VLAN\)](#)
- [ip dhcp-relay \(for loopback\)](#)
- [ip dhcp-relay fwd-path](#)
- [ip dhcp-relay fwd-path enable](#)
- [ip dhcp-relay fwd-path \(for a port\)](#)
- [ip dhcp-relay fwd-path \(for a VRF\)](#)
- [ip dhcp-relay fwd-path mode](#)
- [ip dhcp-relay fwd-path mode \(for a port\)](#)
- [ip dhcp-relay fwd-path mode \(for a VRF\)](#)
- [ip dhcp-snooping binding](#)
- [ip dhcp-snooping enable](#)
- [ip dhcp-snooping enable \(for VLAN\)](#)
- [ip dhcp-snooping \(for MLT\)](#)
- [ip dhcp-snooping \(for port\)](#)
- [ip directed-broadcast \(for a port\)](#)
- [ip directed-broadcast \(for a VLAN\)](#)
- [ip domain-name](#)
- [ip ecmp](#)
- [ip ecmp path-list apply](#)
- [ip forward-protocol udp](#)
- [ip forward-protocol udp broadcastmask](#)
- [ip forward-protocol udp broadcastmask \(on a port\)](#)
- [ip forward-protocol udp maxttl](#)
- [ip forward-protocol udp maxttl \(on a port\)](#)
- [ip forward-protocol udp \(on a port\)](#)
- [ip forward-protocol udp \(on a VLAN\)](#)
- [ip forward-protocol udp port](#)
- [ip forward-protocol udp portfwd](#)
- [ip forward-protocol udp portfwdlist](#)
- [ip forward-protocol udp portfwdlist \(on a port\)](#)
- [ip forward-protocol udp portfwdlist \(on a VLAN\)](#)
- [ip gratuitous-arp](#)
- [ip icmp](#)
- [ip icmp echo-broadcast-request \(for a VRF\)](#)
- [ip icmp echo-broadcast-request \(globally\)](#)
- [ip icmp \(for a VRF\)](#)
- [ip igmp access-list \(for a port\)](#)
- [ip igmp access-list \(for a VLAN\)](#)
- [ip igmp access-list mode \(for a port\)](#)
- [ip igmp access-list mode \(for a VLAN\)](#)
- [ip igmp flush port](#)
- [ip igmp flush vlan](#)
- [ip igmp \(for a port\)](#)
- [ip igmp \(for a VLAN\)](#)

- [ip igmp \(for a VRF\)](#)
- [ip igmp generate-log](#)
- [ip igmp generate-log \(for a VRF\)](#)
- [ip igmp generate-trap \(for a VRF\)](#)
- [ip igmp \(globally\)](#)
- [ip igmp igmpv3-explicit-host-tracking \(for an Ethernet port\)](#)
- [ip igmp igmpv3-explicit-host-tracking \(for a VLAN\)](#)
- [ip igmp immediate-leave \(for an Ethernet port\)](#)
- [ip igmp immediate-leave \(for a VLAN\)](#)
- [ip igmp immediate-leave-members](#)
- [ip igmp immediate-leave-mode \(for a VRF\)](#)
- [ip igmp mrdisc](#)
- [ip igmp snoop-querier](#)
- [ip igmp snoop-querier-addr](#)
- [ip igmp ssm dynamic-learning \(for a VRF\)](#)
- [ip igmp ssm group-range \(for a VRF\)](#)
- [ip igmp ssm-map \(for a VRF\)](#)
- [ip igmp static-group](#)
- [ip igmp stream-limit \(for a port\)](#)
- [ip igmp stream-limit \(for a VLAN\)](#)
- [ip igmp stream-limit-group](#)
- [ip ipsec enable \(for a loopback interface\)](#)
- [ip ipsec enable \(for a mgmt port\)](#)
- [ip ipsec enable \(for a port\)](#)
- [ip ipsec enable \(for a VLAN\)](#)
- [ip ipsec policy \(for a loopback interface\)](#)
- [ip ipsec policy \(for a management interface\)](#)
- [ip ipsec policy \(for a port\)](#)
- [ip ipsec policy \(for a VLAN\)](#)
- [ip irdp](#)
- [ip irdp address \(for a port\)](#)
- [ip irdp address \(for a VLAN\)](#)
- [ip irdp holdtime \(for a port\)](#)
- [ip irdp holdtime \(for a VLAN\)](#)
- [ip irdp maxadvertinterval \(for a port\)](#)
- [ip irdp maxadvertinterval \(for a VLAN\)](#)
- [ip irdp minadvertinterval \(for a port\)](#)
- [ip irdp minadvertinterval \(for a VLAN\)](#)
- [ip irdp multicast \(for a port\)](#)
- [ip irdp multicast \(for a VLAN\)](#)
- [ip irdp preference \(for a port\)](#)
- [ip irdp preference \(for a VLAN\)](#)
- [ip isid-list](#)
- [ip isid-list \(for a VRF\)](#)
- [ip max-routes-trap enable](#)
- [ip more-specific-non-local-route](#)
- [ip mroute \(for a port\)](#)
- [ip mroute resource-usage egress-threshold](#)
- [ip mroute resource-usage \(for a VRF\)](#)
- [ip mroute resource-usage \(globally\)](#)
- [ip mroute resource-usage log-msg trap-msg](#)
- [ip mroute static-source-group](#)
- [ip mroute stats enable](#)
- [ip mroute stream-limit \(globally\)](#)
- [ip msdp apply redistribute \(for a VRF\)](#)
- [ip msdp apply redistribute \(globally\)](#)
- [ip msdp connect—retry \(for a VRF\)](#)
- [ip msdp connect—retry \(globally\)](#)
- [ip msdp description](#)
- [ip msdp enable](#)
- [ip msdp \(for a VRF\)](#)
- [ip msdp keepalive \(for a VRF\)](#)
- [ip msdp keepalive \(globally\)](#)
- [ip msdp md5-authentication \(for a VRF\)](#)
- [ip msdp md5-authentication \(globally\)](#)

- [ip msdp mesh-group \(for a VRF\)](#)
- [ip msdp mesh-group \(globally\)](#)
- [ip msdp originator-id \(for a VRF\)](#)
- [ip msdp originator-id \(globally\)](#)
- [ip msdp password peer \(for a VRF\)](#)
- [ip msdp password peer \(globally\)](#)
- [ip msdp peer](#)
- [ip msdp redistribute \(for a VRF\)](#)
- [ip msdp redistribute \(globally\)](#)
- [ip msdp redistribute route-policy \(for a VRF\)](#)
- [ip msdp redistribute route-policy \(for a VRF\)](#)
- [ip msdp redistribute route-policy \(globally\)](#)
- [ip msdp redistribute route-policy \(globally\)](#)
- [ip msdp sa-filter in \(for a VRF\)](#)
- [ip msdp sa-filter in \(globally\)](#)
- [ip msdp sa-filter out \(for a VRF\)](#)
- [ip msdp sa-filter out \(globally\)](#)
- [ip msdp sa-limit \(for a VRF\)](#)
- [ip msdp sa-limit \(globally\)](#)
- [ip msdp ttl-threshold \(for a VRF\)](#)
- [ip msdp ttl-threshold \(globally\)](#)
- [ip name-server](#)
- [ip ospf](#)
- [ip ospf accept adv-rtr](#)
- [ip ospf admin-state](#)
- [ip ospf advertise-when-down enable \(for a port\)](#)
- [ip ospf advertise-when-down enable \(for a VLAN\)](#)
- [ip ospf apply accept](#)
- [ip ospf apply accept adv-rtr](#)
- [ip ospf apply redistribute](#)
- [ip ospf area \(for a port\)](#)
- [ip ospf area \(for a VLAN\)](#)
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- [ip ospf area range \(for a VRF\)](#)
- [ip ospf area virtual-link \(for a VRF\)](#)
- [ip ospf area virtual-link message-digest-key \(for a VRF\)](#)
- [ip ospf as-boundary-router enable \(for a VRF\)](#)
- [ip ospf as-boundary-router \(for a VRF\)](#)
- [ip ospf authentication-key \(for a port\)](#)
- [ip ospf authentication-key \(for a VLAN\)](#)
- [ip ospf authentication-type \(for a port\)](#)
- [ip ospf authentication-type \(for a VLAN\)](#)
- [ip ospf auto-vlink \(for a VRF\)](#)
- [ip ospf bad-lsa-ignore enable \(for a VRF\)](#)
- [ip ospf cost \(for a port\)](#)
- [ip ospf cost \(for a VLAN\)](#)
- [ip ospf dead-interval \(for a port\)](#)
- [ip ospf dead-interval \(for a VLAN\)](#)
- [ip ospf default-cost](#)
- [ip ospf digest-key \(for a port\)](#)
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- [ip ospf hello-interval \(for a port\)](#)
- [ip ospf hello-interval \(for a VLAN\)](#)
- [ip ospf host-route {A.B.C.D} \(for a VRF\)](#)
- [ip ospf \(loopback\)](#)
- [ip ospf mtu-ignore enable \(for a port\)](#)
- [ip ospf mtu-ignore enable \(for a VLAN\)](#)
- [ip ospf neighbor \(for a VRF\)](#)
- [ip ospf network \(for a port\)](#)
- [ip ospf network \(for a VLAN\)](#)
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- [ip ospf poll-interval \(for a port\)](#)

- [ip ospf poll-interval \(for a VLAN\)](#)
- [ip ospf primary-digest-key \(for a port\)](#)
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- [ip ospf vlan \(for a VLAN\)](#)
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- [ip pim interface-type \(for a port\)](#)
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- [ip pim join-prune-interval \(for a port\)](#)
- [ip pim \(loopback\)](#)
- [ip pim mode](#)
- [ip pim rp-candidate group](#)
- [ip pim static-rp](#)
- [ip pim virtual-neighbor](#)
- [ip prefix-list](#)
- [ip prefix-list \(for a VRF\)](#)
- [ip rip advertise-when-down enable \(for a port\)](#)
- [ip rip advertise-when-down enable \(for a VLAN\)](#)
- [ip rip apply redistribute](#)
- [ip rip auto-aggregation enable \(for a VLAN\)](#)
- [ip rip auto-aggregation \(for a port\)](#)
- [ip rip cost \(for a port\)](#)
- [ip rip cost \(for a VLAN\)](#)
- [ip rip default-listen enable \(for a VLAN\)](#)
- [ip rip default-listen \(for a port\)](#)
- [ip rip default-metric \(for a VRF\)](#)
- [ip rip default-supply enable \(for a port\)](#)
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- [ip rip enable \(for a port\)](#)
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- [ip rip in-policy \(for a port\)](#)
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- [ip rip listen enable \(for a VLAN\)](#)
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- [ip rip out-policy \(for a port\)](#)
- [ip rip out-policy \(for a VLAN\)](#)
- [ip rip poison enable \(for a port\)](#)
- [ip rip poison enable \(for a VLAN\)](#)
- [ip rip port](#)
- [ip rip receive version \(for a port\)](#)
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- [ip rip redistribute](#)
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- [ip rip send \(for a VLAN\)](#)
- [ip rip supply \(for a port\)](#)
- [ip rip supply \(for a VLAN\)](#)
- [ip rip timeout \(for a port\)](#)
- [ip rip timeout \(for a VLAN\)](#)
- [ip rip timers basic holddown \(for a VRF\)](#)
- [ip rip timers basic timeout \(for a VRF\)](#)
- [ip rip timers basic update \(for a VRF\)](#)
- [ip rip triggered \(for a port\)](#)
- [ip rip triggered \(for a VLAN\)](#)
- [ip route \(for a VRF\)](#)
- [ip route \(globally\)](#)
- [ip route preference protocol ebgp](#)
- [ip route preference protocol \(for a VRF\)](#)
- [ip route preference protocol ibgp](#)
- [ip route preference protocol ospf-extern1](#)
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- [ip route preference protocol ospf-inter](#)
- [ip route preference protocol ospf-intra](#)
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- [ip rsmlt](#)
- [ip rsmlt edge-support](#)
- [ip rvs-path-chk](#)
- [ipsec policy](#)
- [ipsec policy admin enable](#)
- [ipsec policy security-association](#)
- [ipsec security-association](#)
- [ip-source-address](#)
- [ip source-route](#)
- [ip source-route \(for VRF\)](#)
- [ip source verify](#)
- [ip spb-multicast enable \(for a port\)](#)
- [ip spb-multicast enable \(for a VLAN\)](#)
- [ip spb-pim-gw enable \(for a port\)](#)
- [ip spb-pim-gw enable \(for a VLAN\)](#)
- [ip spb-pim-gw foreign-source \(for a VRF\)](#)
- [ip spb-pim-gw foreign-source \(globally\)](#)
- [ip spb-pim-gw hello-interval \(for a port\)](#)
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- [ip spb-pim-gw ip join-prune-interval \(for a port\)](#)
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- [ipv6 area virtual-link ipsec enable](#)
- [ipv6 area virtual-link ipsec security-association](#)
- [ipv6 as-boundary-router](#)
- [ipv6 autoconfig](#)
- [ipv6 default-information enable](#)
- [ipv6 default-information metric](#)
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- [ipv6 dhcp-relay fwd-path](#)
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- [ipv6 fhs dhcp-guard](#)
- [ipv6 fhs dhcp-guard enable](#)
- [ipv6 fhs dhcp-guard policy](#)
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- [ipv6 fhs nd-inspection enable \(for a VLAN\)](#)
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- [ipv6 fhs snooping dhcp enable \(for a VLAN\)](#)
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- [ipv6 interface address \(for a port\)](#)
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- [ipv6 interface retransmit-timer \(for a port\)](#)
- [ipv6 interface retransmit-timer \(for a VLAN\)](#)
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- [ipv6 ipsec enable \(for a port\)](#)
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- [ipv6 mld last-listener-query-interval \(for a port\)](#)
- [ipv6 mld last-listener-query-interval \(for a VLAN\)](#)
- [ipv6 mld query-interval \(for a port\)](#)
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- [ipv6 mld query-max-response \(for a port\)](#)
- [ipv6 mld query-max-response \(for a VLAN\)](#)
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- [ipv6 mld robust-value \(for a VLAN\)](#)
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- [ipv6 mld ssm-snoop](#)
- [ipv6 mld version \(for a port\)](#)
- [ipv6 mld version \(for a VLAN\)](#)
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- [ipv6 nd dad-ns \(for a VLAN\)](#)
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- [ipv6 nd prefix-interface \(for a port\)](#)
- [ipv6 nd ra-lifetime \(for a port\)](#)
- [ipv6 nd ra-lifetime \(for a VLAN\)](#)
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- [ipv6 pim fwd-cache-timeout](#)
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- [ipv6 pim hello-interval \(for a VLAN\)](#)
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- [ipv6 redistribute bgp enable](#)
- [ipv6 redistribute bgp enable \(For IS-IS\)](#)
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- [ipv6 redistribute bgp enable \(For RIPng\)](#)
- [ipv6 redistribute direct enable](#)
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- [ipv6 redistribute \(for OSPF\)](#)
- [ipv6 redistribute isis enable](#)
- [ipv6 redistribute ospf enable](#)
- [ipv6 redistribute static enable](#)
- [ipv6 rip cost \(for a port \)](#)
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- [ipv6 rip poison enable \(for a port\)](#)
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- [ipv6 timers basic timeout](#)
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- [ipv6 tunnel](#)
- [ipv6 tunnel \(for OSPF\)](#)
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- [ipv6 vrrp address \(for a VLAN\)](#)
- [ipv6 vrrp \(for a port\)](#)
- [ipv6 vrrp \(for a VLAN\)](#)
- [ipvpn](#)
- [ipvpn enable](#)
- [ip vrf](#)
- [ip vrrp address \(for a port\)](#)
- [ip vrrp \(for a port\)](#)
- [ip vrrp \(for a VLAN\)](#)
- [ip vrrp version](#)
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- [i-sid \(T-UNI based\)](#)
- [isis accept adv-rtr \(for a VRF\)](#)
- [isis accept \(for a VRF\)](#)
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- [isis apply redistribute](#)
- [isis dup-detection-temp-disable](#)
- [isis hello-auth \(on an MLT\)](#)
- [isis hello-auth \(on a port\)](#)
- [isis l1-dr-priority \(on an MLT\)](#)
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- [isis l1-hello-interval \(on an MLT\)](#)
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- [isis \(on an MLT\)](#)
- [isis \(on a port\)](#)
- [isis redistribute bgp](#)
- [isis redistribute direct](#)
- [isis redistribute ospf](#)
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- [isis redistribute static](#)
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- [is-type](#)



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- [l2 ping ip-address](#)
- [l2 ping vlan](#)
- [l2 tracemroute](#)
- [l2 traceroute ip-address](#)
- [l2 traceroute vlan](#)
- [l2 tracetree](#)
- [lACP aggregation enable](#)
- [lACP aggr-wait-time](#)
- [lACP enable \(for a port\)](#)
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- [lACP \(globally\)](#)
- [lACP key](#)
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- [link-flap-detect](#)
- [linktrace](#)
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- [lldp tx-interval](#)
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- [macsec confidentiality-offset](#)
- [macsec connectivity-association \(globally\)](#)
- [macsec connectivity-association \(to a port\)](#)
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- [macsec encryption](#)
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- [mac-security \(T-UNI based\)](#)
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- [match as-path](#)
- [match community](#)
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- [match metric](#)
- [match metric-type-isis](#)
- [match network](#)
- [match next-hop](#)
- [match protocol](#)
- [match ra-macaddr-list](#)
- [match ra-prefix-list](#)
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- [match reply prefix-list](#)
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- [match vrf](#)
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- [max-logins](#)
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- [md5](#)
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- [mlt](#)
- [mlt <1-512> member](#)
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- [mv](#)
- [mvpn enable](#)
- [mvpn fwd-cache-timeout <10-86400>](#)

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- [name \(for a port\)](#)
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- [neighbor \(for OSPF\)](#)
- [neighbor password](#)
- [neighbor WORD<0-1536>](#)
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- [neighbor WORD<0-1536> advertisement-interval <5-120>](#)
- [neighbor WORD<0-1536> default-ipv6-originate](#)
- [neighbor WORD<0-1536> default-originate](#)
- [neighbor WORD<0-1536> ebgp-multihop](#)
- [neighbor WORD<0-1536> enable](#)
- [neighbor WORD<0-1536> in-route-map WORD<0-256>](#)
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- [neighbor WORD<0-1536> peer-group WORD<0-1536>](#)
- [neighbor WORD<0-1536> remote-as WORD<0-11>](#)
- [neighbor WORD<0-1536> remove-private-as enable](#)
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- [password change-interval](#)
- [password create-user](#)
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- [qos egressmap](#)
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- [qos if-policer](#)
- [qos if-rate-limiting](#)
- [qos if-shaper](#)
- [qos ingressmap](#)
- [qos level](#)
- [qos queue-profile <1-5>](#)
- [qos queue-profile queue <1-5> <0-7>](#)
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- [radius reachability unreachable-timer](#)
- [radius reachability username](#)
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- [rmon history](#)
- [rmon stats](#)
- [rmon util-method](#)
- [route-map](#)
- [router bgp](#)
- [router bgp as-4-byte enable](#)
- [router bgp as-dot enable](#)
- [route-reflector enable](#)
- [route-refresh](#)
- [router-id \(for BGP\)](#)
- [router-id \(for OSPF\)](#)
- [router isis](#)
- [router isis enable](#)
- [router ospf](#)
- [router-preference](#)
- [router rip enable](#)
- [router rip ipv6-enable](#)
- [router vrf](#)
- [router vrrp](#)
- [rsh](#)
- [run spbm](#)
- [run spbm interface](#)
- [run vms layer-2 switch](#)
- [run vms layer-2 switch](#)
- [run vms layer-3 switch](#)

[A](#) | [B](#) | [C](#) | [D](#) | [E](#) | [F](#) | [G](#) | [H](#) | [I](#) | [L](#) | [M](#) | [N](#) | [O](#) | [P](#) | [Q](#) | [R](#) | [S](#) | [T](#) | [U](#) | [V](#) | [W](#)

## Commands starting with S organized alphabetically

[A](#) | [B](#) | [C](#) | [D](#) | [E](#) | [F](#) | [G](#) | [H](#) | [I](#) | [L](#) | [M](#) | [N](#) | [O](#) | [P](#) | [Q](#) | [R](#) | [S](#) | [T](#) | [U](#) | [V](#) | [W](#)

- [save](#)
- [save config](#)
- [save log](#)
- [save trace](#)
- [send-trap](#)
- [set as-path](#)
- [set as-path-mode](#)
- [set automatic-tag](#)
- [set community](#)
- [set community-mode](#)
- [set injectlist](#)
- [set ip-preference](#)
- [set local-preference](#)
- [set mask](#)
- [set metric](#)
- [set metric-type](#)
- [set metric-type-internal](#)
- [set metric-type-isis](#)
- [set-metric-type-live-metric](#)
- [set next-hop](#)
- [set nssa-pbit](#)
- [set origin](#)
- [set origin-egp-as](#)
- [set tag](#)
- [set weight](#)
- [sflow agent-ip](#)
- [sflow collector](#)
- [sflow counter-interval](#)
- [sflow enable](#)
- [sflow max-header-size](#)
- [sflow sampling-rate](#)
- [sha512](#)
- [show access-policy](#)
- [show alarm](#)
- [show alarm database](#)
- [show alarm statistics](#)
- [show application chef client](#)
- [show application slamon agent](#)
- [show asg](#)
- [show autotopology](#)
- [show banner](#)
- [show basic config](#)
- [show bgp ipv6 aggregates](#)
- [show bgp ipv6 imported-routes](#)
- [show bgp ipv6 neighbors](#)
- [show bgp ipv6 networks](#)
- [show bgp ipv6 redistributed-routes](#)
- [show bgp ipv6 route](#)
- [show boot config](#)

- [show boot config choice](#)
- [show boot config flags](#)
- [show brouter](#)
- [show certificate ca](#)
- [show certificate cert-type](#)
- [show certificate key-name](#)
- [show certificate subject](#)
- [show cfm cmac](#)
- [show cfm maintenance-association](#)
- [show cfm maintenance-domain](#)
- [show cfm maintenance-endpoint](#)
- [show cfm spbm](#)
- [show cli info](#)
- [show clilog](#)
- [show cli password](#)
- [show clock](#)
- [show debug](#)
- [show dvr](#)
- [show dvr backbone-entries](#)
- [show dvr backbone-members](#)
- [show dvr database](#)
- [show dvr host-entries](#)
- [show dvr interfaces](#)
- [show dvr l3vsn](#)
- [show dvr members](#)
- [show dvr redistribute](#)
- [show dvr routes](#)
- [show eapol auth-diags interface](#)
- [show eapol auth-stats interface](#)
- [show eapol multihost non-eap-mac status](#)
- [show eapol multihost-session-stats interface](#)
- [show eapol port](#)
- [show eapol session interface](#)
- [show eapol session-stats interface](#)
- [show eapol status interface](#)
- [show eapol system](#)
- [show fa](#)
- [show fa agent](#)
- [show fa assignment](#)
- [show fa elements](#)
- [show fa interface](#)
- [show fa interface disabled-auth](#)
- [show fa interface enabled-auth](#)
- [show fa interface mlt](#)
- [show fa interface port](#)
- [show fa statistics](#)
- [show fa zero-touch-client](#)
- [show fdb-filter](#)
- [show filter acl](#)
- [show filter acl ace](#)
- [show filter acl action](#)
- [show filter acl arp](#)
- [show filter acl config](#)
- [show filter acl ethernet](#)
- [show filter acl ip](#)
- [show filter acl ipv6](#)
- [show filter acl protocol](#)
- [show filter acl statistics](#)
- [show ftp-access](#)
- [show fulltech](#)
- [show history](#)
- [show hosts](#)
- [show ike policy](#)
- [show ike profile](#)
- [show ike sa](#)

- [show ike v2-profile](#)
- [show interface gigabitethernet config](#)
- [show interfaces gigabitethernet](#)
- [show interfaces gigabitethernet channelize](#)
- [show interfaces gigabitethernet config](#)
- [show interfaces gigabitethernet error](#)
- [show interfaces gigabitethernet fdb-entry](#)
- [show interfaces gigabitethernet high-secure](#)
- [show interfaces gigabitethernet interface](#)
- [show interfaces gigabitEthernet i-sid](#)
- [show interfaces gigabitethernet l1-config](#)
- [show interfaces gigabitethernet limit-fdb-learning](#)
- [show interfaces gigabitethernet loop-detected](#)
- [show interfaces gigabitethernet mac-security](#)
- [show interfaces gigabitethernet name](#)
- [show interfaces gigabitethernet ospf](#)
- [show interfaces gigabitethernet private-vlan](#)
- [show interfaces gigabitethernet rate-limit](#)
- [show interfaces gigabitethernet shape](#)
- [show interfaces gigabitethernet slpp](#)
- [show interfaces gigabitethernet state](#)
- [show interfaces gigabitethernet statistics](#)
- [show interfaces gigabitethernet statistics bridging](#)
- [show interfaces gigabitethernet statistics dhcp-relay](#)
- [show interfaces gigabitethernet statistics lacp](#)
- [show interfaces gigabitethernet statistics policer](#)
- [show interfaces gigabitethernet statistics rmon](#)
- [show interfaces gigabitethernet statistics verbose](#)
- [show interfaces gigabitethernet vlan](#)
- [show interfaces gigabitethernet vrfs](#)
- [show interfaces loopback](#)
- [show interfaces mgmtethernet](#)
- [show interfaces mgmtethernet config-L1](#)
- [show interfaces mgmtethernet error](#)
- [show interfaces mgmtethernet statistics](#)
- [show interfaces vlan](#)
- [show interfaces vlan arp](#)
- [show interfaces vlan autolearn-mac](#)
- [show interfaces vlan dhcp-relay](#)
- [show interfaces vlan igmp](#)
- [show interfaces vlan igmp-mrdisc](#)
- [show interfaces vlan ip](#)
- [show interfaces vlan manual-edit-mac](#)
- [show interfaces vlan nlb-mode](#)
- [show interfaces vlan vlan-bysrcmac](#)
- [show interfaces vlan vrfs](#)
- [show interface vlan nlb-mode](#)
- [show io](#)
- [show ip arp](#)
- [show ip arp gigabitethernet](#)
- [show ip arp-inspection](#)
- [show ip arp-inspection interface](#)
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- [show ip arp interface](#)
- [show ip arp spbm-tunnel-as-mac](#)
- [show ip as-list](#)
- [show ip bgp aggregates](#)
- [show ip bgp cidr-only](#)
- [show ip bgp confederation](#)
- [show ip bgp dampened-paths](#)
- [show ip bgp flap-damp-config](#)
- [show ip bgp imported-routes](#)
- [show ip bgp neighbors](#)
- [show ip bgp networks](#)
- [show ip bgp peer-group](#)



- [show ip bgp redistributed-routes](#)
- [show ip bgp route](#)
- [show ip bgp stats](#)
- [show ip bgp summary](#)
- [show ip community-list](#)
- [show ip dhcp-relay](#)
- [show ip dhcp-snooping](#)
- [show ip dhcp-snooping binding](#)
- [show ip dhcp-snooping binding address](#)
- [show ip dhcp-snooping binding interface](#)
- [show ip dhcp-snooping binding summary](#)
- [show ip dhcp-snooping binding type](#)
- [show ip dhcp-snooping interface](#)
- [show ip dhcp-snooping interface gigabitEthernet](#)
- [show ip directed-broadcast](#)
- [show ip dns](#)
- [show ip ecmp](#)
- [show ip extcommunity-list](#)
- [show ip forward-protocol udp](#)
- [show ip forward-protocol udp portfwd](#)
- [show ip forward-protocol udp portfwdlist](#)
- [show ip igmp access](#)
- [show ip igmp cache](#)
- [show ip igmp group](#)
- [show ip igmp group count](#)
- [show ip igmp group count group {A.B.C.D}](#)
- [show ip igmp group count group {A.B.C.D} tracked-members](#)
- [show ip igmp group count member-subnet](#)
- [show ip igmp group group <A.B.C.D>](#)
- [show ip igmp group group <A.B.C.D> tracked-members](#)
- [show ip igmp group member-subnet](#)
- [show ip igmp interface](#)
- [show ip igmp mrdisc](#)
- [show ip igmp mrdisc neighbors](#)
- [show ip igmp router-alert](#)
- [show ip igmp sender](#)
- [show ip igmp snooping](#)
- [show ip igmp snoop-trace](#)
- [show ip igmp ssm](#)
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- [show ip igmp static](#)
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- [show ip isid-list](#)
- [show ip isis redistribute](#)
- [show ip mroute hw-resource-usage](#)
- [show ip mroute interface](#)
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- [show ip mroute route](#)
- [show ip mroute static-source-group](#)
- [show ip mroute stats](#)
- [show ip msdp count](#)
- [show ip msdp mesh-group](#)
- [show ip msdp peer](#)
- [show ip msdp rpf](#)
- [show ip msdp sa-cache](#)
- [show ip msdp sa-check](#)
- [show ip msdp show-all](#)
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- [show ip ospf accept](#)

- [show ip ospf area](#)
- [show ip ospf area-range](#)
- [show ip ospf ase](#)
- [show ip ospf authentication](#)
- [show ip ospf default-cost](#)
- [show ip ospf host-route](#)
- [show ip ospf ifstats](#)
- [show ip ospf int-auth](#)
- [show ip ospf interface](#)
- [show ip ospf int-timers](#)
- [show ip ospf lsdb](#)
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- [show ip ospf port-error](#)
- [show ip ospf redistribute](#)
- [show ip ospf stats](#)
- [show ip ospf virtual-link](#)
- [show ip ospf vrf](#)
- [show ip ospf vrfids](#)
- [show ip pim](#)
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- [show ip pim interface](#)
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- [show ip pim rp-hash](#)
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- [show ip route](#)
- [show ip routing](#)
- [show ip rsmlt](#)
- [show ip rsmlt edge-support](#)
- [show ipsec interface \(for a port\)](#)
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- [show ipsec interface mgmtethernet mgmt](#)
- [show ipsec policy](#)
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- [show ipsec sa-policy](#)
- [show ipsec statistics gigabitethernet](#)
- [show ipsec statistics mgmtethernet mgmt](#)
- [show ipsec statistics system](#)
- [show ipsec statistics vlan](#)
- [show ip source binding](#)
- [show ip source verify](#)
- [show ip spb-pim-gw](#)
- [show ip spb-pim-gw foreign-source](#)
- [show ip spb-pim-gw interface](#)
- [show ip spb-pim-gw neighbor](#)
- [show ip spb-pim-gw node](#)
- [show ip spb-pim-gw spbmc-source](#)
- [show ip spb-pim-rw mroute](#)
- [show ip tcp connections](#)
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- [show ip udp endpoints](#)
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- [show ipv6 address](#)

- [show ipv6 dcache](#)
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- [show ipv6 fhs dhcp-guard policy](#)
- [show ipv6 fhs ipv6-access-list](#)
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- [show ipv6 mld group](#)
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- [show ipv6 mld group group](#)
- [show ipv6 mld group group WORD<0-255> detail](#)
- [show ipv6 mld group member-subnet](#)
- [show ipv6 mld-host-cache](#)
- [show ipv6 mld interface](#)
- [show ipv6 mld sender](#)
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- [show ipv6 mld snoop-trace](#)
- [show ipv6 mld sys](#)
- [show ipv6 mroute interface](#)
- [show ipv6 mroute next-hop](#)
- [show ipv6 mroute route](#)
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- [show ipv6 ospf](#)
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- [show ipv6 ospf lsdb](#)
- [show ipv6 ospf nbma-nbr interface](#)
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- [show isis spbm i-sid](#)
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- [show khi cpp](#)
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- [show lldp rx-stats](#)

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- [show logging](#)
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- [show mac-address-entry](#)
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- [show macsec connectivity-association](#)
- [show macsec status](#)
- [show mirror-by-port](#)
- [show mlt](#)
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- [show ports statistics ospf extended](#)
- [show ports statistics ospf main](#)
- [show qos 802.1p-override](#)
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- [show qos queue-profile](#)
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- [show snmp-server](#)
- [show snmp-server host](#)
- [show snmp-server notify-filter](#)
- [show software](#)
- [show spanning-tree bpduguard](#)
- [show spanning-tree config](#)
- [show spanning-tree mstp config](#)
- [show spanning-tree mstp msti config](#)
- [show spanning-tree mstp msti port](#)
- [show spanning-tree mstp port config](#)
- [show spanning-tree mstp port role](#)
- [show spanning-tree mstp port statistics](#)
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- [show spanning-tree rstp port config](#)
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- [show spbm](#)
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- [show vnid i-sid](#)
- [show vnid mac-address-entry](#)
- [show vtep local](#)
- [show vtep remote](#)
- [show vtep remote name](#)
- [show web-server](#)
- [shutdown](#)
- [shutdown \(for the management port\)](#)
- [slamon agent](#)
- [slamon agent-comm-port](#)

- [slamon install-cert-file](#)
- [slamon oper-mode enable](#)
- [slamon server](#)
- [slot reset](#)
- [slot shutdown](#)
- [slpp \(for a port\)](#)
- [slpp \(globally\)](#)
- [slpp-guard ethertype](#)
- [slpp-guard \(for a port\)](#)
- [slpp \(on a VLAN\)](#)
- [smtp](#)
- [snmplog](#)
- [snmp-server authentication-trap enable](#)
- [snmp-server community](#)
- [snmp-server contact](#)
- [snmp-server force-iphdr-sender enable](#)
- [snmp-server force-trap-sender enable](#)
- [snmp-server group](#)
- [snmp-server host v1](#)
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- [snmp-server location](#)
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- [spanning-tree mstp forward-time](#)
- [spanning-tree mstp hello-time \(on a port\)](#)
- [spanning-tree mstp max-age](#)
- [spanning-tree mstp max-hop](#)
- [spanning-tree mstp msti \(globally\)](#)
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## Elan-Transparent Configuration

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## Privileged EXEC

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- [attribute](#)

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- [backup](#)
- [boot](#)
- [boot config sio](#)

### C

- [cd](#)
- [clear alarm](#)
- [clear eapol non-eap](#)
- [clear filter acl](#)
- [clear ip arp interface](#)
- [clear ip dhcp-relay](#)
- [clear ip dhcp-relay counters](#)
- [clear ip dhcp-snooping binding](#)
- [clear ip mdsp sa-cache](#)
- [clear ip mdsp sa-cache peer](#)
- [clear ip mroute stats](#)
- [clear ip msdp peer](#)
- [clear ip msdp statistics](#)
- [clear ip ospf stats](#)
- [clear ip route](#)
- [clear ipsec stats all](#)
- [clear ipv6 dcache](#)
- [clear ipv6 mroute stats](#)
- [clear ipv6 neighbor-cache](#)
- [clear ipv6 route static](#)
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- [clear mlt](#)
- [clear qos](#)
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- [clear radius statistics](#)
- [clear sflow statistics](#)
- [clear slpp](#)
- [clear slpp stats](#)
- [clear telnet](#)
- [clear trace](#)
- [clear virtual-ist stats](#)

!(command number)

- [configure](#)
- [copy](#)
- [cp](#)

## D

- [delete](#)
- [dir](#)
- [disable](#)
- [dos-chkdsk](#)
- [dos-format](#)

## E

- [editing](#)

## F

- [flight-recorder](#)

## G

- [grep](#)

## M

- [maintenance system-action](#)
- [mkdir](#)
- [monitor ip mroute stats](#)
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- [monitor mlt error collision](#)
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- [monitor ports statistics bridging](#)
- [monitor ports statistics dhcp-relay](#)
- [monitor ports statistics interface](#)
- [monitor ports statistics ospf main](#)
- [monitor ports statistics rmon](#)
- [monitor ports statistics routing](#)
- [more](#)
- [mv](#)

## P

- [pwd](#)

## R

- [rename](#)
- [reset](#)
- [restore](#)
- [rlogin](#)
- [rsh](#)

## S

- [save](#)
- [save config](#)
- [save log](#)
- [save trace](#)
- [show access-policy](#)

- [show alarm](#)
- [show boot config](#)
- [show boot config choice](#)
- [show boot config flags](#)
- [show eapol multihost-session-stats interface](#)
- [show eapol session interface](#)
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- [show filter acl ace](#)
- [show filter acl action](#)
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- [show interfaces gigabitethernet config](#)
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- [show interfaces gigabitethernet fdb-entry](#)
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- [show interfaces vlan igmp-mrdisc](#)
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- [show interfaces vlan manual-edit-mac](#)
- [show interfaces vlan nlb-mode](#)
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- [show ip igmp access](#)
- [show ip igmp cache](#)



- [show ip igmp group](#)
- [show ip igmp group count](#)
- [show ip igmp group count group {A.B.C.D}](#)
- [show ip igmp group count group {A.B.C.D} tracked-members](#)
- [show ip igmp group count member-subnet](#)
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- [software reset-commit-time](#)
- [source](#)
- [sys action](#)
- [sys shutdown](#)

## T

- [trace ipv6 base](#)
- [trace ipv6 forwarding](#)
- [trace ipv6 nd](#)
- [trace ipv6 ospf](#)
- [trace ipv6 rtm](#)

[trace ipv6 transport](#)

- [traceroute](#)

## U

- [uboot-install](#)
- [usb-stop](#)

## W

- [write memory](#)

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## RA-guard Configuration

### H

- [hop-limit maximum](#)
- [hop-limit minimum](#)

### M

- [managed-config-flag](#)
- [match ra-macaddr-list](#)
- [match ra-prefix-list](#)
- [match ra-srcaddr-list](#)

### R

- [router-preference](#)

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## RIP Router Configuration

### D

- [default-metric \(for RIP\)](#)

### I

- [ipv6 default-information enable](#)
- [ipv6 default-information metric](#)
- [ipv6 redistribute bgp enable](#)
- [ipv6 redistribute bgp enable \(For RIPng\)](#)
- [ipv6 redistribute direct enable](#)
- [ipv6 redistribute isis enable](#)
- [ipv6 redistribute ospf enable](#)
- [ipv6 redistribute static enable](#)
- [ipv6 timers basic holddown](#)
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- [ipv6 timers basic update](#)

### N

- [network \(for RIP\)](#)

### R

- [redistribute \(for RIP\)](#)

### S

- [show ipv6 rip](#)
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### T

- [timers basic holddown \(for RIP\)](#)
- [timers basic timeout](#)
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## Route-Map Configuration

### E

- [enable](#) (for a route policy)

### M

- [match as-path](#)
- [match community](#)
- [match community-exact](#)
- [match extcommunity](#)
- [match interface](#)
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### N

- [name](#)

### P

- [permit](#)

### S

- [set as-path](#)
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- [set weight](#)

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## User EXEC

### C

- [clear-stats](#)
- [clock set](#)

### D

- [dump ar](#)

### E

- [eapol init](#)
- [eapol re-authenticate](#)
- [enable](#)
- [exit](#)

### H

- [help](#)

### I

- [ip bgp apply redistribute](#)
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- [ip ecmp path-list apply](#)
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### L

- [l2 ping ip-address](#)
- [l2 ping vlan](#)
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## M

- [manualtrigger ip rip interface](#)
- [md5](#)

## P

- [ping](#)
- [pwc](#)

## R

- [remove](#)

## S

- [sha512](#)
- [show alarm database](#)
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## 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`

### Default

None

### Command mode

OSPF Router Configuration

### Command parameters

Parameter	Description
<code>{A.B.C.D}</code>	Specifies the IP address.
<code>enable</code>	Enables an OSPF accept entry for a specified advertising router.
<code>metric-type</code> <code>&lt;type1 type2 any&gt;</code>	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.
<code>route-map WORD&lt;0-64&gt;</code>	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.

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## 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`

### Default

None

### Command mode



**Command parameters**

Parameter	Description
<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.

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## 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`

### Default

None

### Command mode

IS-IS Router Configuration

## Command parameters

Parameter	Description
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.

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## 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`

### Default

None

### Command mode

IS-IS Router Configuration

### Command parameters

Parameter	Description
<code>backbone-route-map WORD&lt;1-64&gt;</code>	Configures the backbone-route-map for DVR routes.
<code>enable</code>	Enables an IS-IS accept policy.
<code>i-sid &lt;1-16777215&gt;</code>	Specifies a service instance identifier (I-SID) number that represents a local or remote Layer 3 VSN for the IS-IS accept policy.
<code>route-map WORD&lt;1-64&gt;</code>	Configures the IS-IS route policy by name.

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## 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`

### Default

None

### Command mode

IS-IS Router Configuration

### Command parameters

Parameter	Description
<code>backbone-route-map WORD&lt;1-64&gt;</code>	Configures the backbone-route-map for DVR routes.
<code>enable</code>	Enables an IS-IS accept policy.
<code>isid-list WORD &lt;1-32&gt;</code>	Specifies a name for a list of I-SID numbers that represent local or remote Layer 3 VSN for the IS-IS accept policy.
<code>route-map WORD&lt;1-64&gt;</code>	Configures the IS-IS route policy by name.

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## 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`

### Default

None

### Command mode

IS-IS Router Configuration

### Command parameters

Parameter	Description
WORD<1-64>	Configures the IS-IS route policy by name.

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## 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`

### Default

The default configuration is trusted (disabled).

### Command mode

GigabitEthernet Interface Configuration

### Command parameters

Parameter	Description
<code>enable</code>	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.
<code>port {slot/port[/sub-port][-slot/port[/sub-port]][,...]}</code>	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.





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## 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>`

### Default

None

### Command mode

Global Configuration

### Command parameters

Parameter	Description
<code>&lt;1-65535&gt;</code>	Specifies the policy ID.



# Command: access-policy <1-65535> accesslevel

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## 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

### Default

The default value is ro.

### Command mode

Global Configuration

### Command parameters

Parameter	Description
{ ro   rwa   rw }	Specifies the access level.
<1-65535>	Specifies the policy ID.

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# Command: access-policy <1-65535> access-strict

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## 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

### Default

The default value is disabled (false).

### Command mode

Global Configuration

### Command parameters

Parameter	Description
<1-65535>	Specifies the policy ID.

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# Command: access-policy <1-65535> enable

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## 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

### Default

The default is disabled (off).

### Command mode

Global Configuration

### Command parameters

Parameter	Description
<1-65535>	Specifies the policy ID.

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## access-policy <1-65535> ftp

Activate or disables 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`

### Default

The default is disabled.

### Command mode

Global Configuration

### Command parameters

Parameter	Description
<1-65535>	Specifies the policy ID.



# Command: access-policy <1-65535> host

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## access-policy <1-65535> host

For remote login access, specify the trusted host address as an IP address.

### Syntax

- access-policy <1-65535> host WORD<0-46>
- default access-policy <1-65535> host
- no access-policy <1-65535> host

### Default

None

### Command mode

Global Configuration

### Command parameters

Parameter	Description
<1-65535>	Specifies the policy ID.
WORD<0-46>	Specifies the IPv4 or IPv6 address.

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# Command: access-policy <1-65535> http

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## 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

### Default

The default is disabled.

### Command mode

Global Configuration

### Command parameters

Parameter	Description
<1-65535>	Specifies the policy ID.

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# Command: access-policy <1-65535> mode

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## 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

### Default

The default is allow.

### Command mode

Global Configuration

### Command parameters

Parameter	Description
{ allow   deny } <1-65535>	Allows or denies access to the designated network address. Specifies the policy ID.

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# Command: access-policy <1-65535> name

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## 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

### Default

None

### Command mode

Global Configuration

### Command parameters

Parameter	Description
<1-65535>	Specifies the policy ID.

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# Command: access-policy <1-65535> network

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## 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

### Default

None

### Command mode

Global Configuration

### Command parameters

Parameter	Description
<1-65535>	Specifies the policy ID.
WORD<1-46> <0-128>	Specifies the IP address and subnet mask

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# Command: access-policy <1-65535> precedence

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## 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

### Default

The default is 10.

### Command mode

Global Configuration

### Command parameters

Parameter	Description
<1-128>	Specifies a precedence value for a policy.
<1-65535>	Specifies the policy ID.

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# Command: access-policy <1-65535> rlogin

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## 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

### Default

The default is disabled.

### Command mode

Global Configuration

### Command parameters

Parameter	Description
<1-65535>	Specifies the policy ID.

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# Command: access-policy <1-65535> snmp-group

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## 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 }

### Default

None

### Command mode

Global Configuration

### Command parameters

Parameter	Description
{ snmpv1   snmpv2c   usm }	Configures the security model.
<1-65535>	Specifies the policy ID.
WORD<1-32>	Specifies the name of the group.

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# Command: `access-policy <1-65535> snmpv3`

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## `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`

### Default

The default is disabled.

### Command mode

Global Configuration

### Command parameters

Parameter	Description
<code>&lt;1-65535&gt;</code>	Specifies the policy ID.

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# Command: access-policy <1-65535> ssh

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## 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

### Default

The default is disabled.

### Command mode

Global Configuration

### Command parameters

Parameter	Description
<1-65535>	Specifies the policy ID.

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# Command: access-policy <1-65535> telnet

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## 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

### Default

The default is disabled.

### Command mode

Global Configuration

### Command parameters

Parameter	Description
<1-65535>	Specifies the policy ID.

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# Command: access-policy <1-65535> tftp

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## 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

### Default

The default is disabled.

### Command mode

Global Configuration

### Command parameters

Parameter	Description
<1-65535>	Specifies the policy ID.

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# Command: access-policy <1-65535> username

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## 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

### Default

None

### Command mode

Global Configuration

### Command parameters

Parameter	Description
<1-65535>	Specifies the policy ID.
WORD<0-30>	Specifies the username.

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## 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>`

### Default

The default action is allow.

### Command mode

Global Configuration

### Command parameters

Parameter	Description
<code>&lt;0x00:0x00:0x00:0x00:0x00:0x00&gt; &lt;allow deny&gt;</code>	Adds a MAC address to the policy. Enter the MAC address in hexadecimal format. Specify the action to take for the MAC address.
<code>action &lt;allow deny&gt;</code>	Specifies the action for a MAC address that does not match the policy.

## 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]][,...]}

### Default

None

### Command mode

GigabitEthernet Interface Configuration

### Command parameters

Parameter	Description
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.

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## 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>`

### Default

The default value is disable.

### Command mode

BGP Router Configuration

### Command parameters

Parameter	Description
<code>advertise-map WORD&lt;0-</code>	Specifies the route map name (any string length between 0 and 64 characters) for route advertisements.

1536>	
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.



# Command: application

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## application

Enter Application mode.

### Syntax

- application

### Default

None.

### Command mode

Global Configuration

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## 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`

### Default

None

### Command mode

OSPF Router Configuration

### Command parameters

Parameter	Description
<code>default-cost &lt;0-16777215&gt;</code>	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.
<code>import</code> <code>&lt;external noexternal nssa&gt;</code>	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.
<code>import-summaries enable</code>	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.

Configures the import external option for this area as stub. A stub area has only one exit point (router interface) from the area.

stub

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## 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 }`

### Default

None

### Command mode

OSPF Router Configuration

### Command parameters

Parameter	Description
<code>&lt;A.B.C.D&gt; &lt;A.B.C.D/X&gt;</code>	<code>&lt;A.B.C.D&gt;</code> identifies an OSPF area and <code>&lt;A.B.C.DX&gt;</code> is the IP address and subnet mask of the range, respectively.
<code>&lt;summary-link nssaextlink&gt;</code>	Specifies the LSA type. If you configure the range as type <code>nssaextlink</code> then you cannot configure the <code>advertise-metric</code> .
<code>advertise-metric &lt;0-65535&gt;</code>	Changes the advertised metric cost of the OSPF area range.
<code>advertise-mode</code> <code>&lt;summarize suppress nosummarize</code>	Changes the advertisement mode of the range.

## 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>`

### Default

None

### Command mode

## Command parameters

Parameter	Description
<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 message- digest sha 1 sha 2>	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 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.



# Command: as-boundary-router enable

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## 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

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# Command: asg

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## asg

Configure ASG. Note that not all platforms support the ASG feature. For more information, see Release Notes.

### Syntax

- asg enable
- no asg enable

### Default

None

### Command mode

Global Configuration

### Command parameters

Parameter	Description
enable	Enable ASG.

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## asg load-af-file

Loads the AF file on ASG. Note that not all platforms support the ASG feature. For more information, see Release Notes.

### Syntax

- `asg WORD<1-256> forceload`
- `asg WORD<1-256> test`

### Default

None

### Command mode

Global Configuration

### Command parameters

Parameter	Description
WORD<1-256> forceload	Load older AF file or AF file with different product id for the specified AF file present in /intflash/.
WORD<1-256> test	Validate the AF file without loading for the specified AF file present in /intflash/.

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## attribute

Modify MS-DOS file attributes to enable file transfer.

### Syntax

- attribute WORD<1-1536> + | - | R
- attribute WORD<1-99> + | - | R

### Default

None

### Command mode

Privileged EXEC

### Command parameters

Parameter	Description
+   -   R	Set or remove read-only permission.
WORD<1-99>	Specifies the file name.

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## 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

### Default

The default is true, enabled.

### Command mode

GigabitEthernet Interface Configuration

### Command parameters

Parameter	Description
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.



# Command: auto-negotiate (for the management port)

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## 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

### Default

The default is enabled.

### Command mode

mgmtEthernet Interface Configuration

### Command parameters

Parameter	Description
{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.

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# Command: auto-negotiation-advertisements

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## auto-negotiation-advertisements

Configure autonegotiation advertisements after you enable autonegotiation. Note: Not all parameters appear on all hardware platforms.

### Syntax

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

### Default

None

### Command mode

GigabitEthernet Interface Configuration

### Command parameters

Parameter	Description
10000-full	Advertises 10000 Mbps full duplex.
1000-full	Advertises 1000 Mbps full duplex.
100-full	Advertises 100 Mbps full duplex.
100-half	Advertises 100 Mbps half duplex.
10-full	Advertises 10 Mbps full duplex.
10-half	Advertises 10 Mbps half 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.

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## 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`

### Default

The default value is `enable`.

### Command mode

BGP Router Configuration

### Command parameters

Parameter	Description
<code>enable</code>	Enables the process that automatically restarts a connection to a BGP neighbor.

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## 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>`

### Default

The default is 30.

### Command mode

Global Configuration

### Command parameters

Parameter	Description
<code>&lt;5-3600&gt;</code>	Specifies the range to be set for the auto-recovery of ports in seconds. The range varies between 5 to 3600 seconds.

## 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

### Default

None

### Command mode

GigabitEthernet Interface Configuration

### Command parameters

Parameter	Description
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.



# Command: auto-summary

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## 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

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# Command: autotopology

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## 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

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# Command: auto-vlink

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## 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

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# Command: backbone

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## 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

### Default

none

### Command mode

IS-IS Router Configuration

### Command parameters

Parameter	Description
enable	Configures a non-DvR BEB to join the DvR backbone.

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## backup

Use this command to backup all files, including the directory of the internal flash to the USB flash. 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.

### Syntax

- `backup intflash`

### Default

None

### Command mode

Privileged EXEC

### Command parameters

Parameter	Description
<code>intflash</code>	Copies all files from the internal flash to the USB drive at /usb/intflash.



# Command: bad-lsa-ignore enable

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## 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

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## 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

### Default

The default configuration uses the default banner with no message of the day.

### Command mode

Global Configuration

### Command parameters

Parameter	Description
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.

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## 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`

### Default

The default value is enable.

### Command mode

BGP Router Configuration

### Command parameters

Parameter	Description
<code>enable</code>	Enables the aggregation feature on the interface.



# Command: bgp always-compare-med

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## 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

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# Command: bgp client-to-client reflection

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## 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

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# Command: bgp cluster-id

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## 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}`

### Default

None

### Command mode

BGP Router Configuration

### Command parameters

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

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## 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`

### Default

The default value is 0.

### Command mode

BGP Router Configuration

### Command parameters

Parameter	Description
<code>identifier &lt;0-4294967295&gt;</code>	Specifies the confederation identifier. Identifier number 0-65535(2-Byte AS) 0-4294967295(4-Byte AS).
<code>peers WORD &lt;0-255&gt;</code>	Lists adjoining Autonomous Systems that are part of the confederation in the format (5500,65535,0,10,...,...).

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## 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>`

### Default

The default value is 100.

### Command mode

BGP Router Configuration

### Command parameters

Parameter	Description
<code>&lt;0-2147483647&gt;</code>	Specifies the preference value.

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# Command: bgp deterministic-med enable

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## 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

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## 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`

### Default

The default value is 1.

### Command mode

BGP Router Configuration

### Command parameters

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

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## 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

### Default

None

### Command mode

Privileged EXEC

### Command parameters

Parameter	Description
-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.

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## 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`

### Default

By default, the primary source is the internal flash.

### Command mode

Global Configuration

### Command parameters

Parameter	Description
{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>.





# Command: boot config flags advanced-feature-bandwidth-reservation

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## 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. 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, see Release Notes.

### 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`

### Default

The boot flag is disabled by default. In this mode, you can use all ports on the switch, but SPB, SMLT, and vIST will not work.

### Command mode

Global Configuration

### Command parameters

Parameter	Description
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 SPBM or SMLT-VIST advanced features. Depending on the hardware platform, the number of reserved ports is different.



# Command: boot config flags block-snmp

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## 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

### Command parameters

Parameter	Description
The default is disabled.	Global Configuration

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## boot config flags debug-config

Activate or disable run-time debugging of the configuration file. 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.

### 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`

### Default

The default is disabled.

### Command mode

Global Configuration

### Command parameters

Parameter	Description
<code>console</code>	Displays the line-by-line configuration file processing and result of the execution on the console while the device loads the configuration file.
<code>file</code>	Logs the line-by-line configuration file processing and result of the execution to the debug file while the device loads the configuration file.



# Command: boot config flags debugmode

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## 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. If you change this flag, you must restart the switch. 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

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# Command: boot config flags dvr-leaf-mode

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## 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

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## 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 resue, and password maximum age use. You must save and reboot the switch for the 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.

### 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`

### Default

The default is disabled.

### Command mode

Global Configuration

### Command parameters

Parameter	Description
{jitc   non-jitc}	Enables either the JITC or non-JITC enhanced secure mode.

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# Command: boot config flags factorydefaults

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## boot config flags factorydefaults

Specify whether the switch uses the factory default settings at startup. This flags automatically resets to the default setting after the CPU restarts. If you change this flags you must restart the switch.

### Syntax

- `boot config flags factorydefaults`
- `no boot config flags factorydefaults`

### Default

The default is disabled.

### Command mode

Global Configuration

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# Command: boot config flags flow-control-mode

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## 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

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# Command: boot config flags ftpd

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## 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

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# Command: boot config flags ha-cpu

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## 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

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# Command: boot config flags hsecure

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## 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. 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.

### Syntax

- `boot config flags hsecure`
- `default boot config flags hsecure`
- `no boot config flags hsecure`

### Default

The default is disabled.

### Command mode

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## boot config flags ipv6-mode

Activate or disable IPv6 mode. This command does not apply to all hardware platforms. For more information about feature support, see Release Notes.

### 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



# Command: boot config flags linerate-directed-broadcast

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## boot config flags linerate-directed-broadcast

Enables or disables datapath support for IP Directed Broadcast using port 1/46. This command does not apply to all hardware platforms. For more information about feature support, see Release Notes. 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.

### Syntax

- `boot config flags linerate-directed-broadcast`
- `default boot config flags linerate-directed-broadcast`
- `no boot config flags linerate-directed-broadcast`

### Default

The default is disabled.

### Command mode

Global Configuration

### Command parameters

Parameter	Description
false	Disables datapath support for IP Directed Broadcast on port 1/46.
true	Enables datapath support for IP Directed Broadcast on port 1/46.

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## boot config flags logging

The system names log files according to the following: - File names appear in 8.3 (xxxxxxx.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



# Command: boot config flags nni-mstp

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## 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

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# Command: boot config flags reboot

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## boot config flags reboot

Activate or disable automatic reboot on a fatal error. The reboot command is equivalent to the debugmode command. If you change the reboot value, you must restart the switch. 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

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# Command: boot config flags rlogind

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## 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

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# Command: boot config flags spanning-tree-mode

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## 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. If you change the spanning tree mode, you must save the current configuration and restart the switch.

### 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

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# Command: boot config flags spbm-config-mode

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## 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

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# Command: boot config flags sshd

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## 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

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# Command: boot config flags telnetd

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## 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

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# Command: boot config flags tftpd

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## 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

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# Command: boot config flags trace-logging

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## boot config flags trace-logging

Activate or disable the creation of trace logs. 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

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# Command: boot config flags urpf-mode

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## boot config flags urpf-mode

Enable the urpf-mode boot flag. Save the configuration and reboot the switch for the changes to take effect.

### Syntax

- `boot config flags urpf-mode`
- `default boot config flags urpf-mode`
- `no boot config flags urpf-mode`

### Default

The default is disabled.

### Command mode

Global Configuration

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# Command: boot config flags verify-config

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## 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

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# Command: boot config flags vrf-scaling

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## boot config flags vrf-scaling

Increases the maximum number of VRFs and Layer 3 VSNs that the switch supports.

### Syntax

- `boot config flags vrf-scaling`
- `default boot config flags vrf-scaling`
- `no boot config flags vrf-scaling`

### Default

The default is disabled.

### Command mode

Global Configuration

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# Command: boot config flags vxlan-gw-full-interworking-mode

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## 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

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## 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`

### Default

None

### Command mode

Global Configuration

### Command parameters

Parameter	Description
<code>ftp-debug</code>	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.
<code>password</code>	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

WORD<0-16>

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-  
rexit  
<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.

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## boot config loadconfigtime

Set the timeout for loading the configuration file.

### Syntax

- `boot config loadconfigtime <0-300>`
- `default boot config loadconfigtime`

### Default

The default is 60 seconds.

### Command mode

Global Configuration

### Command parameters

Parameter	Description
<code>&lt;0-300&gt;</code>	Specifies the timeout for loading the configuration file in seconds.

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## boot config logfile

Configure logfile parameters. The log file is named using an 8.3 (xxxxxxx.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`

### Default

None

### Command mode

Global Configuration

### Command parameters

Parameter	Description
<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.

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Version 11.02 December 2017

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# Command: boot config multicast

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## boot config multicast

Configure multicast parameters. This parameter does not appear on all hardware platforms.

### Syntax

- `boot config multicast`
- `default boot config multicast`

### Default

None

### Command mode

Global Configuration

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# Command: boot config sio

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## boot config sio

Configure the serial port devices to define connection settings for the console port. Note that not all platforms support the this command. For more information, see Release Notes.

### Syntax

- `boot config sio`

### Default

None

### Command mode

Privileged EXEC

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## boot config sio console

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`

### Default

None

### Command mode

Global Configuration

### Command parameters

Parameter	Description
<code>&lt;9600-115200&gt; {&lt;1-8&gt;   SF1   SF2   SF3}</code>	Configures the baud rate for the port. The default baud rate differs depending on hardware platform. For more information, see Release Notes.

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## 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 <0-127>`
- `brouter port {slot/port[sub-port]} vlan <2-4059> subnet {A.B.C.D/X} mac-offset <0-511>`
- `brouter port {slot/port[sub-port]} vlan <2-4059> subnet {A.B.C.D/X} mac-offset <0-767>`
- `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 <0-127>`
- `brouter vlan <2-4059> subnet {A.B.C.D/X} mac-offset <0-511>`
- `brouter vlan <2-4059> subnet {A.B.C.D} {A.B.C.D}`
- `no brouter`
- `no brouter port {slot/port[sub-port]}`

### Default

None

### Command mode

GigabitEthernet Interface Configuration

### Command parameters

Parameter	Description
<code>mac-offset &lt;0-127&gt;</code> , <code>mac-offset &lt;0-511&gt;</code> , or <code>mac-offset &lt;0-767&gt;</code>	Specifies the MAC offset value. Different hardware platforms support different MAC offset ranges. Use the CLI Help to see the available range.
<code>port {slot/port[sub-port]}</code>	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/subport.
<code>subnet &lt;{A.B.C.D/X}   {A.B.C.D}&gt;</code>	Assigns an IP address and mask for the management port.
<code>vlan &lt;1-4059&gt;</code>	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.

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# Command: cd

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## cd

Change current file system directory path.

### Syntax

- `cd WORD<1-99>`

### Default

None

### Command mode

Privileged EXEC

### Command parameters

Parameter	Description
<1-99>	Specifies the directory location.

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## certificate subject

Configure the device subject parameters to identify the device, such as the name, Email ID, company, department, and location.

### Syntax

- `certificate subject common-name WORD<0-64>`
- `certificate subject country WORD<0-128>`
- `certificate subject e-mail WORD<0-254>`
- `certificate subject locality WORD<0-128>`
- `certificate subject organization WORD<0-64>`
- `certificate subject province WORD<0-128>`
- `certificate subject unit WORD<0-64>`
- `default certificate subject`
- `no certificate subject`
- `no certificate subject common-name`
- `no certificate subject country`
- `no certificate subject e-mail`
- `no certificate subject locality`
- `no certificate subject organization`
- `no certificate subject province`
- `no certificate subject unit`

### Default

None

### Command mode

Global Configuration

### Command parameters

Parameter	Description
<code>common-name WORD&lt;0-64&gt;</code>	Specifies the name of the subject sending the Certificate Signing Request to the Certificate Authority.
<code>country WORD&lt;0-128&gt;</code>	Specifies the country of the subject sending the Certificate Signing Request to the Certificate Authority.
<code>e-mail WORD&lt;0-254&gt;</code>	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.

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## 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`

### Default

None

### Command mode

Global Configuration



## Command parameters

Parameter	Description
<code>action caauth</code>	Authenticates the trustpoint CA by getting the certificate of the CA and stores the CA certificate locally.
<code>action enroll</code> [ <code>validity-days</code> <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 <code>validity-days</code> specifies the number of days for which the certificate remains valid. The default value is 365 days.
<code>action get-crl</code>	Gets the Certificate Revocation List from the CDP and stores into a file.
<code>action install</code>	Installs the subject certificate obtained from the given trustpoint CA.
<code>action noop</code>	Specifies that no operation should be performed after configuring trustpoint.
<code>action remove</code>	Releases the locally stored certificate associated with the trustpoint CA post revocation.
<code>action renew</code> [ <code>challengepassword</code> 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.
<code>action renew</code> [ <code>validity-days</code> <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 <code>validity-days</code> specifies the number of days for which the certificate remains valid. The default value is 365 days.
<code>ca-url</code> WORD<0-1000>	Specifies the trusted CA url.
<code>common-name</code> WORD<0-64>	Specifies the name of the owner of the device or user.
<code>install-file</code> [ <code>rootca-filename</code> WORD<1-80>]	Installs the Root CA file obtained offline from the CA.
<code>key-name</code> WORD<0-45>	Specifies the key pair generated by the command that was first associated with the CA trustpoint.
<code>use-post</code> <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.



# Command: certificate generate-csr

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## certificate generate-csr

Generate certificate signing request (CSR) and store it into a file.

### Syntax

- `certificate generate-csr`

### Default

None

### Command mode

Global Configuration

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## 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`

### Default

None

### Command mode

Global Configuration

### Command parameters

Parameter	Description
<code>size 2048</code>	Specifies the size or modulus of key-pair to be generated. The value should be 2048.
<code>type rsa</code>	Specifies type of cryptography algorithm used to generate the key-pair.

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## 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>`

### Default

None

### Command mode

Global Configuration

### Command parameters

Parameter	Description
<code>offline-ca-filename WORD&lt;1-80&gt;</code>	Specifies the CA file name obtained from the CA.
<code>offline-crl-filename WORD&lt;1-80&gt;</code>	Specifies the CRL file obtained from the CA
<code>offline-root-ca-filename WORD&lt;1-80&gt;</code>	Specifies the Root CA file name obtained from the CA.
<code>offline-subject-filename WORD&lt;1-80&gt;</code>	Specifies the subject certificate file name obtained from the CA.



# Command: cfm cmac enable

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## 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

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## 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`

### Default

The default is 4.

### Command mode

Global Configuration

### Command parameters

Parameter	Description
<0-7>	Specifies the global C-MAC CFM maintenance level for the chassis within the range of 0 to 7.

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## 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`

### Default

The default is 1.

### Command mode

Global Configuration

### Command parameters

Parameter	Description
<1-8191>	Specifies the global MEP ID within the range of 1 to 8191.



# Command: cfm maintenance-association

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## 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>`

### Default

The default is disabled.

### Command mode

Global Configuration

### Command parameters

Parameter	Description
<code>index &lt;1-2147483647&gt;</code>	Specifies a Maintenance-Association (MA) entry index.
<code>WORD&lt;1-22&gt;</code>	Creates the Connectivity Fault Management (CFM) Maintenance-Association (MA).

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## 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>`

### Default

None

### Command mode

Global Configuration

### Command parameters

Parameter	Description
<code>index &lt;1-2147483647&gt;</code>	Specifies a Maintenance-Domain (MD) entry index.
<code>level &lt;0-7&gt;</code>	Specifies the Maintenance-Domain (MD) level for an existing Maintenance-Domain (MD).
<code>maintenance-level &lt;0-7&gt;</code>	Specifies the Maintenance-Domain (MD) maintenance level when creating the Maintenance-Domain (MD).
<code>WORD&lt;0-22&gt;</code>	Specifies the Maintenance-Domain (MD) name.
<code>WORD&lt;0-22&gt;</code>	Specifies the Maintenance-Association (MA) name.

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## 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`

### Default

None

### Command mode

Global Configuration

### Command parameters

Parameter	Description
<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<0-22>	Specifies the Maintenance-Domain (MD) name.
WORD<0-22>	Specifies the Maintenance-Association (MA) name.



# Command: cfm spbm enable

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## 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

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## 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`

### Default

The default is 4.

### Command mode

Global Configuration

### Command parameters

Parameter	Description
<0-7>	Specifies the maintenance level for every CFM SPBM MEP and MIP level on all SPBM VLANs. The default is 4.

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## cfm spbm mepid

Assigns a global MEP ID for all CFM SPBM MEPs.

### Syntax

- `cfm spbm mepid <1-8191>`
- `default cfm spbm mepid`

### Default

The default is 1.

### Command mode

Global Configuration

### Command parameters

Parameter	Description
<1-8191>	Specifies the global MEP ID for all CFM SPBM MEPs. The default is 1.

## channelize

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

### Default

None

### Command mode

GigabitEthernet Interface Configuration

### Command parameters

Parameter	Description
<code>enable</code>	Enable channelization for all ports.
<code>port</code> <code>{slot/port[/sub-port][-slot/port[/sub-port]][,...]}</code>	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.



# Command: chef client info-file

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## chef client info-file

Loads the correct Chef Client configuration details on the switch. This configuration information is contained in a Ruby file, called client.rb, which is located on the Chef Server. Chef is supported on platforms with x86 CPUs. For information about supported features, see Release Notes.

### Syntax

- chef client info-file WORD<0-128>
- no chef client info-file

### Default

None

### Command mode

Application Configuration

### Command parameters

Parameter	Description
WORD<0-128>	Specifies the client.rb file that is loaded every time you run Chef.

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## chef client ip address

Configures the Chef Client IP address. Chef is supported on platforms with x86 CPUs. For information about supported features, see Release Notes.

### Syntax

- `chef client ip address {A.B.C.D} [vrf WORD<1-16>]`

### Default

None

### Command mode

Application Configuration

### Command parameters

Parameter	Description
<code>[vrf WORD&lt;1-16&gt;]</code>	Specifies an associated VRF by name.
<code>&lt;A.B.C.D&gt;</code>	Specifies the Chef Client's IP address in A.B.C.D format.

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# Command: chef client start

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## chef client start

Runs the Chef Client script. Chef is supported on platforms with x86 CPUs. For information about supported features, see Release Notes.

### Syntax

- `chef client start`

### Default

None

### Command mode

Application Configuration

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# Command: chef enable

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## chef enable

Enables the Chef Client. Chef is supported on platforms with x86 CPUs. For information about supported features, see Release Notes.

### Syntax

- chef enable
- no chef enable

### Default

None

### Command mode

Application Configuration

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# Command: chef install-cert-file server-cert

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## chef install-cert-file server-cert

Loads the CA certificate for the Chef Server. Chef is supported on platforms with x86 CPUs. For information about supported features, see Release Notes.

### Syntax

- `chef install-cert-file server-cert WORD<0-128>`
- `no chef install-cert-file server-cert`

### Default

None

### Command mode

Application Configuration

### Command parameters

Parameter	Description
WORD<0-128>	Specifies the name of the Chef Server's CA certificate.

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# Command: chef install-cert-file validation-key

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## chef install-cert-file validation-key

Loads the validation key, which is the private key to access the Chef Server. Chef is supported on platforms with x86 CPUs. For information about supported features, see Release Notes.

### Syntax

- `chef install-cert-file validation-key WORD<0-128>`
- `no chef install-cert-file validation-key`

### Default

None

### Command mode

Application Configuration

### Command parameters

Parameter	Description
WORD<0-128>	Specifies the name of the validation key, which is the private key to access the Chef Server.

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## chef server ip address

Configures the Chef Server IP address. Chef is supported on platforms with x86 CPUs. For information about supported features, see Release Notes.

### Syntax

- chef server ip address WORD<0-128> [fqdn WORD<0-255>]
- no chef server ip address

### Default

None

### Command mode

Application Configuration

### Command parameters

Parameter	Description
<A.B.C.D>	Specifies the Chef Server's IP address in A.B.C.D format.
fqdn WORD<0- 255>	Specifies the fully qualified domain name (FQDN). This is only necessary when there is no DNS server configured for the switch.

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## 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

### Default

None

### Command mode

Privileged EXEC

### Command parameters

Parameter	Description
database	Clears the alarm database.
database alarm-id WORD<0-100>	Specifies an alarm ID to clear.
statistics	Clears the alarm database statistics.

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# Command: clear eapol non-eap

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## 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[/subport]][,...]}
- clear eapol non-eap {slot/port[/sub-port][-slot/port[/subport]][,...]}  
0x00:0x00:0x00:0x00:0x00:0x00
- clear eapol non-eap 0x00:0x00:0x00:0x00:0x00:0x00

### Default

None

### Command mode

Privileged EXEC

### Command parameters

Parameter	Description
{slot/port[/sub-port][-slot/port[/subport]][,...]}	Specifies the port list on which the Non-EAP MAC is learnt.
0x00:0x00:0x00:0x00:0x00:0x00	Specifies the MAC-Address on the Non-EAP session.

## 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 <1-2048>`
- `clear filter acl statistics <1-2048> <1-2000>`
- `clear filter acl statistics <1-2048> qos`
- `clear filter acl statistics <1-2048> security`
- `clear filter acl statistics all`
- `clear filter acl statistics default`
- `clear filter acl statistics default <1-2048>`
- `clear filter acl statistics global`
- `clear filter acl statistics global <1-2048>`

### Default

None

### Command mode

Privileged EXEC

### Command parameters

Parameter	Description
[<1-2048>]	Specifies the ACL identifier.
<1-2000>	Specifies the ACE identifier.
all	Clears all statistics for all access control entries.
default <1-2048>	Clears traffic statistics for an access control entry (ACE).
global <1-2048>	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.



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## 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>`

### Default

None

### Command mode

Privileged EXEC

### Command parameters

Parameter	Description
<code>gigabitethernet {slot/port[/sub-port][ -slot/port[/sub-port]][,...]}</code>	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.
<code>vlan &lt;1-4059&gt;</code>	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.

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## 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>

### Default

None

### Command mode

Privileged EXEC

### Command parameters

Parameter	Description
{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. 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>	Clear vrf Ip dhcp-relay statistics.
vrfid <0-511>	Enter Vrf Id.

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## clear ip dhcp-relay counters

Clear the Ip Dhcp Relay counter.

### Syntax

- `clear ip dhcp-relay counters interface gigabitethernet {slot/port[-slot/port][,...]}`
- `clear ip dhcp-relay counters vrf WORD<1-16>`
- `clear ip dhcp-relay counters vrfid <0-511>`

### Default

None

### Command mode

Privileged EXEC

### Command parameters

Parameter	Description
<0-511>	Specifies the VRF ID.
gigabitethernet {slot/port[sub-port]}	Clear IP routes on the Interface Gigabit Ethernet. {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<1-16>	Specifies the VRF name.



# Command: clear ip dhcp-snooping binding

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## clear ip dhcp-snooping binding

Clears entries from the DHCP Snooping binding table.

### Syntax

- `clear ip dhcp-snooping binding [dynamic|static]`

### Default

None

### Command mode

Privileged EXEC

### Command parameters

Parameter	Description
<code>dynamic</code>	Clears dynamic entries from the DHCP Snooping binding table.
<code>static</code>	Clears static entries from the DHCP Snooping binding table.

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## clear ip msdp 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>

### Default

None

### Command mode

Privileged EXEC

### Command parameters

Parameter	Description
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.

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# Command: clear ip msdp sa-cache peer

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## clear ip msdp 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

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# Command: clear ip mroute stats

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## clear ip mroute stats

Clear IP multicast route statistics

### Syntax

- clear ip mroute stats

### Default

None

### Command mode

Privileged EXEC

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## clear ip msdp peer

Clears the peer connection to clear the TCP connection to the specified MSDP peer, and reset 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>`

### Default

None

### Command mode

Privileged EXEC

### Command parameters

Parameter	Description
{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.

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# Command: clear ip msdp statistics

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## clear ip msdp statistics

Clear IP MSDP statistics counters.

### Syntax

### Default

None

### Command mode

Privileged EXEC

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## clear ip ospf stats

Clear IP OSPF statistics

### Syntax

- clear ip ospf stats vrf <WORD<1-16>
- clear ip ospf stats vrfid <0-511>

### Default

None

### Command mode

Privileged EXEC

### Command parameters

Parameter	Description
vrf WORD<1-16>	Clear vrf Ip ospf statistics.
vrfid <0-511>	Enter Vrf Id.

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## clear ip route

Clear the routing table.

### Syntax

- `clear ip route gigabitethernet {slot/port[sub-port]}`
- `clear ip route vlan <1-4059>`

### Default

None

### Command mode

Privileged EXEC

### Command parameters

Parameter	Description
<code>gigabitethernet {slot/port[sub-port]}</code>	Clear IP routes on the Interface Gigabit Ethernet. {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.
<code>vlan &lt;1-4059&gt;</code>	Clear IP routes on the Interface Vlan. 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.



# Command: clear ipsec stats all

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## clear ipsec stats all

Clear the Internet Protocol Security (IPsec) system statistics counters.

### Syntax

- `clear ipsec stats all`

### Default

None

### Command mode

Privileged EXEC

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## clear ipv6 dcache

Clear the destination cache.

### Syntax

- clear ipv6 dcache
- clear ipv6 dcache gigabitethernet {slot/port[sub-port]}
- clear ipv6 dcache mgmtethernet mgmt
- clear ipv6 dcache tunnel <1-2000>
- clear ipv6 dcache vlan <1-4059>

### Default

None

### Command mode

Privileged EXEC

### Command parameters

Parameter	Description
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. 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.

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## 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>`

### Default

None

### Command mode

Global Configuration

### Command parameters

Parameter	Description
<code>ipv6-address WORD&lt;0-46&gt;</code>	Clears a specific snooping entry based on its IPv6 address.
<code>vlan &lt;1-4059&gt;</code>	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. 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.



# Command: clear ipv6 fhs statistics dhcp-guard

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## 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]][,...]}`

### Default

None

### Command mode

Global Configuration

### Command parameters

Parameter	Description
<code>{slot/port[/sub-port][-slot/port[/sub-port]][,...]}</code>	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.

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# Command: clear ipv6 fhs statistics nd-inspection

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## 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[/subport]][,...]}

### Default

None

### Command mode

Global Configuration

### Command parameters

Parameter	Description
{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.

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# Command: clear ipv6 fhs statistics ra-guard

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## 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]][,...]}`

### Default

None

### Command mode

Global Configuration

### Command parameters

Parameter	Description
<code>{slot/port[/sub-port][-slot/port[/sub-port]][,...]}</code>	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.

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# Command: clear ipv6 mroute stats

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## clear ipv6 mroute stats

Clear IPv6 multicast route statistics

### Syntax

- `clear ipv6 mroute stats`

### Default

None

### Command mode

Privileged EXEC

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## clear ipv6 neighbor-cache

Clear the neighbor cache.

### Syntax

- `clear ipv6 neighbor-cache`
- `clear ipv6 neighbor-cache gigabitEthernet <slot/port>`
- `clear ipv6 neighbor-cache mgmtethernet mgmt`
- `clear ipv6 neighbor-cache vlan <1-4059>`

### Default

The default is disabled.

### Command mode

Privileged EXEC

### Command parameters

Parameter	Description
<code>gigabitethernet {slot/port[sub-port]}</code>	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.
<code>mgmtethernet mgmt</code>	Identifies a management port.
<code>vlan &lt;1-4059&gt;</code>	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.



# Command: clear ipv6 route static

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## clear ipv6 route static

Clear IPv6 static routes.

### Syntax

- `clear ipv6 route static`

### Default

None

### Command mode

Privileged EXEC

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## clear ipv6 statistics

Use this command to clear IPv6 statistics.

### Syntax

- `clear ipv6 statistics all`
- `clear ipv6 statistics interface`
- `clear ipv6 statistics interface general`
- `clear ipv6 statistics interface general gigabitethernet {slot/port}`
- `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}`
- `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`
- `clear ipv6 statistics udp`

### Default

None

### Command mode

Privileged EXEC

### Command parameters

Parameter	Description
<code>all</code>	Clears all statistics.
<code>general</code>	Clears general statistics.
<code>gigabitEthernet {slot/port[sub-port]}</code>	Clears statistics for a brouter interface. {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.
<code>icmp</code>	Clears Internet Control Message Protocol (ICMP) statistics.
<code>mgmtethernet mgmt</code>	Clears statistics for a management port.
<code>tcp</code>	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. 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.

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## 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>`

### Default

None

### Command mode

Privileged EXEC

### Command parameters

Parameter	Description
<code>gigabitethernet {slot/port[/sub-port][-slot/port[/sub-port]][,...]}</code>	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.
<code>vlan &lt;1-4059&gt;</code>	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.
<code>vrid &lt;1-255&gt;</code>	Specifies the ID of the virtual router.

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## 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>`

### Default

None

### Command mode

Privileged EXEC

### Command parameters

Parameter	Description
<code>gigabitethernet {slot/port[/sub-port][-slot/port[/sub-port]][,...]}</code>	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.
<code>vlan &lt;1-4059&gt;</code>	Specifies the ID of the virtual router. 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.
<code>vrid &lt;1-255&gt;</code>	Specifies the ID of the virtual router.





# Command: clear isis lsdb

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## 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

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## 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`

### Default

None

### Command mode

Privileged EXEC

### Command parameters

Parameter	Description
<code>error-counters</code>	Clears the IS-IS stats error-counters.
<code>packet-counters</code>	Clears the IS-IS stats packet-counters.

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# Command: clear khi

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## clear khi

Clear the forwarding health and CPP statistics information.

### Syntax

- `clear khi cpp <port-statistics>`

### Default

None

### Command mode

Privileged EXEC

### Command parameters

Parameter	Description
<code>cpp port-statistics</code>	Clears statistics for control packets that go to the control processor.

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## 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]][, ...]}`

### Default

None

### Command mode

Privileged EXEC

### Command parameters

Parameter	Description
<code>link-aggregate &lt;1-512&gt;</code>	Specifies the MLT ID.
<code>port {slot/port[/sub-port][-slot/port[/sub-port]][, ...]}</code>	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.
<code>stats</code>	Clears lacp stats.



# Command: clear logging

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## clear logging

Clear the log file.

### Syntax

- clear logging

### Default

None

### Command mode

Privileged EXEC

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## 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>`

### Default

None

### Command mode

Privileged EXEC

### Command parameters

Parameter	Description
<code>address WORD&lt;17-17&gt;</code>	Specifies the MAC address.
<code>interface vlan &lt;1-4059&gt;</code>	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.
<code>port {slot/port[/sub-port][-slot/port[/sub-port]][,...]}</code>	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.



# Command: clear mac-address-table dynamic

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## 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>`

### Default

None

### Command mode

GigabitEthernet Interface Configuration

### Command parameters

Parameter	Description
<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.
0x00:0x00:0x00:0x00:0x00:0x00	Specifies the MAC address.
0x00:0x00:0x00:0x00:0x00:0x00	Specifies the MAC address.



# Command: clear mlt

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## clear mlt

Clear interswitch trunking (IST) statistics.

### Syntax

- `clear mlt ist stats`

### Default

None

### Command mode

Privileged EXEC

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## 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]][,...]}`

### Default

None

### Command mode

Privileged EXEC

### Command parameters

Parameter	Description
<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. {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.

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## 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]][,...]}`

### Default

None

### Command mode

Privileged EXEC

### Command parameters

Parameter	Description
<code>{slot/port[/sub-port][-slot/port[/sub-port]][,...]}</code>	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.

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# Command: clear radius statistics

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## clear radius statistics

Clear server statistics.

### Syntax

- clear radius statistics

### Default

None

### Command mode

Privileged EXEC

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# Command: clear sflow statistics

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## clear sflow statistics

Clear sFlow statistics.

### Syntax

- `clear sflow statistics [collector <1-2>]`

### Default

None

### Command mode

Privileged EXEC

### Command parameters

Parameter	Description
[collector <1-2>]	Clear the sFlow statistics for the specified collector.

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## clear slpp

Clear SLPP Information

### Syntax

- clear slpp stats
- clear slpp stats port {slot/port[/sub-port][-slot/port[/sub-port]][,...]}

### Default

None

### Command mode

Privileged EXEC

### Command parameters

Parameter	Description
stats	Clear SLPP Stats.
stats port {slot/port[/sub- port][- slot/port[/sub- port]][,...]}	Clear SLPP Stats for the specified 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.

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# Command: clear slpp stats

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## clear slpp stats

Clear slpp statistics.

### Syntax

- clear slpp stats

### Default

None

### Command mode

Privileged EXEC

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## clear-stats

Clear port statistic counters.

### Syntax

- clear-stats
- clear-stats port {slot/port[/sub-port][-slot/port[/sub-port]][, ...]}
- clear-stats port mgmt

### Default

None

### Command mode

User EXEC

### Command parameters

Parameter	Description
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.



# Command: clear telnet

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## clear telnet

Close open Telnet sessions.

### Syntax

- clear telnet <0-7>

### Default

None

### Command mode

Privileged EXEC

### Command parameters

Parameter	Description
<0-7>	Specifies the Telnet session ID to close.

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# Command: clear trace

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## clear trace

Clear the trace file.

### Syntax

- clear trace

### Default

None

### Command mode

Privileged EXEC

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# Command: clear virtual-ist stats

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## clear virtual-ist stats

Clear stats for vIST.

### Syntax

- `clear virtual-ist stats`

### Default

None

### Command mode

Privileged EXEC

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## 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

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## 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

### Default

None

### Command mode

Global Configuration

### Command parameters

Parameter	Description
<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.

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## cli timeout

Configure the idle timeout period before automatic logoff for CLI and Telnet sessions.

### Syntax

- `cli timeout <30-65535>`
- `default cli timeout`

### Default

The default is 900 seconds.

### Command mode

Global Configuration

### Command parameters

Parameter	Description
<code>&lt;30-65535&gt;</code>	Configures the timeout value, in seconds, to wait for a Telnet or CLI login session before terminating the connection.

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## clock set

Configure the calendar time in the form of month, day, year, hour, minute, and second.

### Syntax

- `clock set <MMddyyyyhhmmss>`

### Default

None

### Command mode

User EXEC

### Command parameters

Parameter	Description
<code>&lt;MMddyyyyhhmmss&gt;</code>	Specifies the month, day, year, hours, minutes, and seconds.

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## 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 savings.

### Syntax

- clock time-zone
- clock time-zone WORD<1-10> [WORD<1-20>][WORD<1-20> ]
- default clock time-zone
- no clock time-zone

### Default

The default is Coordinated Universal Time (UTC).

### Command mode

Global Configuration

### Command parameters

Parameter	Description
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>	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.
WORD<1-20>	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.



# Command: !(command number)

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## !(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

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## 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`

### Default

The default value is enable.

### Command mode

BGP Router Configuration

### Command parameters

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



# Command: configure

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## 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`

### Default

None

### Command mode

Privileged EXEC

### Command parameters

Parameter	Description
<code>network</code>	Configures the device from a TFTP network host.
<code>network address {A.B.C.D} filename WORD&lt;1-239&gt;</code>	Specifies an address of the TFTP server.
<code>network filename WORD&lt;1-239&gt; address {A.B.C.D}</code>	Specifies the filename of the configuration file.
<code>terminal</code>	Configures the device from a terminal.

## 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`

### Default

None

### Command mode

Privileged EXEC

### Command parameters

Parameter	Description
?	Copies the running configuration file to /intflash/config.cfg by default.
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>.
WORD<1-255> WORD<1-255> -	Source filename, a.b.c.d:<file>   /intflash/<file>   /usb/<file>.
y -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.



# Command: cp

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## cp

Use this command to copy files.

### Syntax

- cp WORD<1-255> WORD<1-255>
- cp WORD<1-255> WORD<1-255> -y

### Default

None

### Command mode

Privileged EXEC

### Command parameters

Parameter	Description
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.
WORD<1-255> WORD<1-255> -y	Specifies the file to copy.



# Command: csnp-interval

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## 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`

### Default

The default CSNP interval is 10 seconds.

### Command mode

IS-IS Router Configuration

### Command parameters

Parameter	Description
<code>&lt;1-600&gt;</code>	Configures the interval, in seconds.

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## c-vid (for a mlt)

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

### Syntax

- `c-vid <1-4094> mlt <1-512>`
- `c-vid <1-4094> port {slot/port[/sub-port][-slot/port[/sub-port]][,...]}`
- `no c-vid <1-4094> mlt <1-512>`
- `no c-vid <1-4094> port {slot/port[/sub-port][-slot/port[/sub-port]][,...]}`

### Default

None

### Command mode

MLT Interface Configuration

### Command parameters

Parameter	Description
<code>&lt;1-4094&gt;</code>	Specifies a value that identifies the customer 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.
<code>mlt &lt;1-512&gt;</code>	Add mlt to Elan based service.
<code>port {slot/port[/sub- port][- slot/port[/sub- port]][,...]}</code>	privilege level to go to.

## c-vid (for a port)

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

### Syntax

- `c-vid <1-4094> mlt <1-512>`
- `c-vid <1-4094> port {slot/port[/sub-port][-slot/port[/sub-port]][,...]}`
- `no c-vid <1-4094> mlt <1-512>`
- `no c-vid <1-4094> port {slot/port[/sub-port][-slot/port[/sub-port]][,...]}`

### Default

None

### Command mode

GigabitEthernet Interface Configuration

### Command parameters

Parameter	Description
<code>&lt;1-4094&gt;</code>	Specifies a value that identifies the customer 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.
<code>mlt &lt;1-512&gt;</code>	Add MLT to Elan based service.
<code>port {slot/port[/sub-port][-slot/port[/sub-port]][,...]}</code>	Add ports to Elan based service. {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.



# Command: c-vid (for a VXLAN Gateway mlt)

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## 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>`

### Default

None

### Command mode

VXLAN Configuration

### Command parameters

Parameter	Description
<code>&lt;1-4094&gt; mlt &lt;1-4094&gt;</code>	Specifies a value that uniquely identifies the customer VLAN ID and MLTs of this ELAN end point.

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# Command: c-vid (for a VXLAN Gateway port)

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## 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]] [,...]}>`

### Default

None

### Command mode

VXLAN Configuration

### Command parameters

Parameter	Description
<code>&lt;1-4094&gt; port &lt;{slot/port[/sub-port] [-slot/port[/sub-port]] [,...]}&gt;</code>	Specifies a value that uniquely identifies the customer VLAN ID and ports of this ELAN end point.

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## 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}

### Default

None

### Command mode

Global Configuration

### Command parameters

Parameter	Description
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.

<code>rp-adv</code>	Set rp-adv debug trace to true.
<code>send-dbg-trace</code>	Set send trace to true.
<code>source {A.B.C.D}</code>	Set source value to specific source ip-addr.

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## 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`

### Default

The default value is off.

### Command mode

BGP Router Configuration

### Command parameters

Parameter	Description
<code>&lt;on off&gt;</code>	Disables BGP screen logging (off) or enable BGP screen logging (on).

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## 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 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>`

### Default

None

### Command mode

OSPF Router Configuration

### Command parameters

Parameter	Description
<code>ethernet &lt;1-65535&gt;</code>	Configures the OSPF default metrics for 10 Mb/s Ethernet. The default is 100.
<code>fast-ethernet &lt;1-65535&gt;</code>	Configures the OSPF default metrics for 100 Mb/s (Fast) Ethernet. The default is 10.
<code>forty-gig-ethernet &lt;1-65535&gt;</code>	Configures the OSPF default metrics for 40 Gigabit Ethernet. The default is 10.

gig-ethernet <1-65535>

ten-gig-ethernet <1-65535>

default is 1.

Configures the OSPF default metrics for Gigabit Ethernet. The default is 1.

Configures the OSPF default metrics for 10 Gigabit Ethernet. The default is 1.

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# Command: default-information

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## 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`

### Default

The default value is `disable`.

### Command mode

BGP Router Configuration

### Command parameters

Parameter	Description
<code>originate</code>	Enables the origination default route.

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## 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>`

### Default

The default value is -1.

### Command mode

BGP Router Configuration

### Command parameters

Parameter	Description
<code>&lt;-1-2147483647&gt;</code>	Specifies the range of the default metric. A default metric value helps solve the problems associated with redistributing routes that have incompatible metrics.



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## 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>

### Default

The default value is 8.

### Command mode

RIP Router Configuration

### Command parameters

Parameter	Description
<0-15>	Configures the value of default import metric to import a route into RIP domain.



# Command: default svlan-porttype

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## default svlan-porttype

Set svlan port type to default

### Syntax

- `default svlan-porttype`

### Default

None

### Command mode

MLT Interface Configuration

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## 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>

### Default

None

### Command mode

GigabitEthernet Interface Configuration

### Command parameters

Parameter	Description
{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.

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## delete

Use this command to delete files.

### Syntax

- delete WORD<1-255>
- delete WORD<1-255> -y

### Default

None

### Command mode

Privileged EXEC

### Command parameters

Parameter	Description
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.

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## dir

View the free space and files in flash memory.

### Syntax

- dir
- dir -l
- dir -r
- dir WORD<1-99>

### Default

None

### Command mode

Privileged EXEC

### Command parameters

Parameter	Description
-l	Details, dir -l [-r]
-r	Recursive, dir -r
WORD<1-99>	Directory path name, dir <path> [-l] [-r]



# Command: disable

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## disable

Turns off privileged commands and returns you to the User Exec prompt.

### Syntax

- disable

### Default

None

### Command mode

Privileged EXEC

### Command parameters

Parameter	Description
<0-15>	Privilege level to go to.

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## dos-chkdisk

Check MS DOS file system for any inconsistencies. Run the dos-chkdisk WORD<1-99> repair command, if at the end of the output for the dos-chkdisk WORD<1-99> you see: 1) Correct 2) Don't correct.

### Syntax

- dos-chkdisk WORD<1-99>
- dos-chkdisk WORD<1-99> repair

### Default

None

### Command mode

Privileged EXEC

### Command parameters

Parameter	Description
WORD<1-99>	Specifies the device name to repair.
WORD<1-99> repair	Repairs the errors found.

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## dos-format

Format the external flash or USB.

### Syntax

- `dos-format WORD<1-99>`

### Default

None

### Command mode

Privileged EXEC

### Command parameters

Parameter	Description
WORD<1-99>	Specifies the device name to format.

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## 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>`

### Default

None

### Command mode

VLAN Interface Configuration

### Command parameters

Parameter	Description
<code>&lt;0x0-0xffff   0x0-0x0&gt;</code>	Configures a table used to maintain DSAP/SSAP values assigned to an sna802dot2 or user defined VLAN.

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## dump ar

To aid in troubleshooting, a dump of the hardware records can be captured.

### Syntax

- `dump ar <1> WORD <1-1536> <0-3>`

### Default

None

### Command mode

User EXEC

### Command parameters

Parameter	Description
<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.

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## 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]][,...]}

### Default

The default is half.

### Command mode

GigabitEthernet Interface Configuration

### Command parameters

Parameter	Description
<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.



# Command: duplex (for the management port)

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## duplex (for the management port)

Configure the duplex mode for the Ethernet management port. 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>

### Default

The default is half-duplex mode.

### Command mode

mgmtEthernet Interface Configuration

### Command parameters

Parameter	Description
<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.

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## 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>`

### Default

none

### Command mode

Global Configuration

### Command parameters

Parameter	Description
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.

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## 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>`

### Default

none

### Command mode

Global Configuration

### Command parameters

Parameter	Description
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.

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## 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`

### Default

none

### Command mode

Global Configuration

### Command parameters

Parameter	Description
<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.



# Command: dvr controller <1-255> inject-default-route-disable

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## dvr controller <1-255> inject-default-route-disable

Disables injection of default routes for the GRT, on the DvR Controller.

### Syntax

- `dvr controller <1-255> inject-default-route-disable`

### Default

The default is enable

### Command mode

Global Configuration

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# Command: dvr inject-default-route-disable

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## dvr inject-default-route-disable

Disables injection of default routes for a specific VRF instance, on the DvR Controller.

### Syntax

### Default

The default is enable

### Command mode

VRF Router Configuration

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# Command: dvr leaf

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## 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`

### Default

none

### Command mode

Global Configuration

### Command parameters

Parameter	Description
-----------	-------------

<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.
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```
Command: dvr leaf <1-255> virtual-ist
{A.B.C.D} {A.B.C.D} peer-ip {A.B.C.D}
cluster-id <1-1000>
```

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## 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>`

### Default

none

### Command mode

Global Configuration

### Command parameters

Parameter	Description
none	Configures vIST on a DvR Leaf node pair

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```
Command: 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>
```

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## 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>

### Default

none

### Command mode

Global Configuration

### Command parameters

Parameter	Description
none	Configures vIST on a DvR Leaf node pair

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## 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`

### Default

The default is disable

### Command mode

Global Configuration

### Command parameters

Parameter	Description
<code>enable</code>	Enables route redistribution of direct routes on the GRT. The route type is internal.
<code>metric &lt;0-65535&gt;</code>	Configures the route redistribution metric for direct routes on the GRT.
<code>route-map</code>	Configures the route policy for route redistribution of direct routes, on the GRT.



# Command: dvr redistribute direct (for a VRF)

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## 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`

### Default

The default is disable

### Command mode

VRF Router Configuration

### Command parameters

Parameter	Description
<code>enable</code>	Enables route redistribution of direct routes on a VRF instance. The route type is internal.
<code>metric &lt;0-65535&gt;</code>	Configures the route redistribution metric for direct routes on a VRF instance.
<code>route-map</code>	Configures the route policy for route redistribution of direct routes, on a VRF instance.

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## 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`

### Default

The default is disable

### Command mode

Global Configuration

### Command parameters

Parameter	Description
<code>enable</code>	Enables route redistribution of static routes on the GRT. The route type is external.
<code>metric &lt;0-65535&gt;</code>	Configures the route redistribution metric for static routes on the GRT.
<code>route-map</code>	Configures the route policy for route redistribution of static routes, on the GRT.



# Command: dvr redistribute static (for a VRF)

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## 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`

### Default

The default is disable

### Command mode

VRF Router Configuration

### Command parameters

Parameter	Description
<code>enable</code>	Enables route redistribution of static routes on a VRF instance. The route type is external.
<code>metric &lt;0-65535&gt;</code>	Configures the route redistribution metric for static routes on a VRF instance.
<code>route-map</code>	Configures the route policy for route redistribution of static routes on a VRF instance.

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## eapol

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

### Syntax

- `default eapol enable`
- `default eapol max-request`
- `default eapol port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} max-request`
- `default eapol port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} quiet-interval`
- `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 port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} re-authentication-period`
- `default eapol port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} status`
- `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 quiet-interval`
- `default eapol re-authentication`
- `default eapol re-authentication enable`
- `default eapol re-authentication-period`
- `default eapol status`
- `default eapol supplicant-timeout`
- `default eapol transmit-interval`
- `eapol max-request <1-10>`
- `eapol port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} max-request <1-10>`
- `eapol port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} quiet-interval <1-65535>`
- `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 port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} re-authentication-period <1-2147483647>`
- `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 port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} status unauthorized
- 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 quiet-interval <1-65535>
- eapol re-authentication
- eapol re-authentication enable
- eapol re-authentication-period <1-2147483647>
- eapol status authorized
- eapol status auto
- eapol status unauthorized
- eapol supplicant-timeout <1-65535>
- eapol transmit-interval <1-65535>
- no eapol 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 port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} status
- no eapol re-authentication
- no eapol re-authentication enable
- no eapol status

## Default

None

## Command mode

GigabitEthernet Interface Configuration

## Command parameters

Parameter	Description
max-request <1-10>	Maximum EAP requests sent to supplicant before timing out the session.
quiet-interval <1-65535>	Specifies the time interval in seconds between authentication failure and start of a new authentication.
re-authentication enable	Enables reauthenticating an existing supplicant at a specified time interval.
re-authentication-period <1-2147483647>	Specifies the time interval in seconds between successive reauthentications.
status {authorized auto unauthorized}	Sets the desired EAP authentication status for this port.
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.





# Command: eapol enable

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## 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

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# Command: eapol fail-open-vlan

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## 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`

### Default

None

### Command mode

GigabitEthernet Interface Configuration

### Command parameters

Parameter	Description
<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.

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## eapol guest-vlan

Configure the desired Guest VLAN ID.

### Syntax

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

### Default

None

### Command mode

GigabitEthernet Interface Configuration

### Command parameters

Parameter	Description
<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.

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## eapol init

Initialize Extensible Authentication Protocol (EAPoL) administration traffic control direction.

### Syntax

- eapol init
- eapol init {slot/port[/sub-port][-slot/port[/sub-port]][,...]}

### Default

None

### Command mode

User EXEC

### Command parameters

Parameter	Description
{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.

## 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>`

### Default

The default is 2.

### Command mode

GigabitEthernet Interface Configuration

### Command parameters

Parameter	Description
<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.





# Command: eapol multihost eap-mac-max

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## 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>

### Default

The default is 1.

### Command mode

GigabitEthernet Interface Configuration

### Command parameters

Parameter	Description
<0-32>	Specifies the maximum EAPOL clients allowed on the port at one time. The default is 1.

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# Command: eapol multihost eap-oper-mode

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## eapol multihost eap-oper-mode

Configure the EAPoL operational mode.

### Syntax

- default eapol multihost eap-oper-mode
- eapol multihost eap-oper-mode {mhmvm | mhsm}

### Default

The default is MHMV.

### Command mode

GigabitEthernet Interface Configuration

### Command parameters

Parameter	Description
mhmvm   mhsm	Specifies the EAPoL operational mode.

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# Command: eapol multihost mac-max

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## 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 <1-32>

### Default

The default is 1.

### Command mode

GigabitEthernet Interface Configuration

### Command parameters

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

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# Command: eapol multihost non-eap-mac-max

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## 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

### Default

The default is 1.

### Command mode

GigabitEthernet Interface Configuration

### Command parameters

Parameter	Description
<0-32>	Specifies the maximum non-EAPoL clients allowed on the port at one time. The default is 1.

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# Command: eapol multihost non-eap-pwd-fmt

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## 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`

### Default

None

### Command mode

Global Configuration

### Command parameters

Parameter	Description
<code>ip-addr</code>	Management ip-address of the switch.
<code>key WORD&lt;1-32&gt;</code>	Key string used in password format.
<code>mac-addr</code>	MAC address of the client.
<code>padding</code>	A dot(.) is used as delimiter.
<code>port-number</code>	IfIndex of the port on which MAC is received.



# Command: eapol multihost radius-non-eap-enable

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## 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

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## 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>`

### Default

The default is 60.

### Command mode

GigabitEthernet Interface Configuration

### Command parameters

Parameter	Description
<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.

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## eapol re-authenticate

Starts re-authentication immediately.

### Syntax

- eapol re-authenticate {slot/port[/sub-port][-slot/port[/sub-port]][,...]}

### Default

None

### Command mode

User EXEC

### Command parameters

Parameter	Description
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.

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## 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`

### Default

None

### Command mode

GigabitEthernet Interface Configuration

### Command parameters

Parameter	Description
<code>{slot/port[/sub-port][-slot/port[/sub-port]][,...]}</code>	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.
<code>enable</code>	Enables reauthenticating an existing supplicant at a specified time interval. The default is disabled.





# Command: eapol re-authentication-period

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## 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

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## 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`

### Default

None

### Command mode

GigabitEthernet Interface Configuration

### Command parameters

Parameter	Description
<code>authorized</code>	Specifies the port is always authorized.
<code>auto</code>	Specifies that port authorization depends on the results of the EAPoL authentication by the RADIUS server.
<code>port</code> <code>{slot/port[/sub-port][-slot/port[/sub-port]][,...]}</code>	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.

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## editing

Simple vi line editor to modify script files

### Syntax

- editing WORD<1-99>

### Default

None

### Command mode

Privileged EXEC

### Command parameters

Parameter	Description
WORD<1-99>	Device name, /intflash.

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# Command: enable

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## enable

Use this command to enter Privileged EXEC mode.

### Syntax

- enable

### Default

None

### Command mode

User EXEC

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## 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`

### Default

None

### Command mode

GigabitEthernet Interface Configuration

### Command parameters

Parameter	Description
<code>enable</code>	Enables DiffServ for the specified port. The default is enabled.
<code>port</code> <code>{slot/port[/sub-port]</code> <code>port}[-</code> <code>slot/port[/sub-</code> <code>port]][,...]}</code>	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.



# Command: enable (for a route policy)

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## 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

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## 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]][,...]}`

### Default

None

### Command mode

GigabitEthernet Interface Configuration

### Command parameters

Parameter	Description
<code>dot1q</code>	Sets encapsulation. dot1q enables trunking on the MLT.
<code>port {slot/port[/sub-port][-slot/port[/sub-port]][,...]}</code>	Adds ports to this MLT. {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.



# Command: end

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## 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

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# Command: exit

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## 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

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## fa assignment-timeout

Configure the Fabric Attach assignment time-out in seconds.

### Syntax

- default fa assignment-timeout
- fa assignment-timeout <30-480>

### Default

None

### Command mode

Global Configuration

### Command parameters

Parameter	Description
<30-480>	Specifies the Fabric Attach assignment timeout in seconds. The default value is 240 seconds.



# Command: fa authentication-key (for a MLT)

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## fa authentication-key (for a MLT)

Configure the Fabric Attach authentication key.

### Syntax

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

### Default

None

### Command mode

MLT Interface Configuration

### Command parameters

Parameter	Description
WORD<0-32>	Configures the authentication key on the MLT.

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# Command: fa authentication-key (for a port)

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## fa authentication-key (for a port)

Configure the Fabric Attach authentication key.

### Syntax

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

### Default

None

### Command mode

GigabitEthernet Interface Configuration

### Command parameters

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

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# Command: fa discovery-timeout

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## fa discovery-timeout

Configure the Fabric Attach discovery time-out in seconds.

### Syntax

- default fa fa discovery-timeout
- fa discovery-timeout <30-480>

### Default

None

### Command mode

Global Configuration

### Command parameters

Parameter	Description
<30-480>	Specifies the Fabric Attach discovery timeout in seconds. The default value is 240 seconds.

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# Command: fa enable

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## fa enable

Enable Fabric Attach globally.

### Syntax

- fa enable
- no fa enable

### Default

None

### Command mode

Global Configuration

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# Command: fa enable (for a MLT)

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## fa enable (for a MLT)

Enable Fabric Attach on a MLT.

### Syntax

- fa enable
- no fa enable

### Default

None

### Command mode

MLT Interface Configuration

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# Command: fa enable (for a port)

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## fa enable (for a port)

Enable Fabric Attach on a port.

### Syntax

- `fa enable`
- `no fa enable`

### Default

None

### Command mode

GigabitEthernet Interface Configuration

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# Command: fa management (for a MLT)

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## fa management (for a MLT)

Configure Fabric Attach management on a MLT.

### Syntax

- `default fa management i-sid`
- `fa management i-sid <1-16777215> c-vid <1-4094>`
- `no fa management i-sid`

### Default

None

### Command mode

MLT Interface Configuration

### Command parameters

Parameter	Description
<code>c-vid &lt;1-4094&gt;</code>	Specifies the C-VLAN value of the MLT on the FA server.
<code>i-sid &lt;1-16777215&gt;</code>	Specifies the management I-SID.

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# Command: fa management (for a port)

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## fa management (for a port)

Configure Fabric Attach management on a port.

### Syntax

- `default fa management i-sid`
- `fa management i-sid <1-16777215> c-vid <1-4094>`
- `no fa management i-sid`

### Default

None

### Command mode

GigabitEthernet Interface Configuration

### Command parameters

Parameter	Description
<code>c-vid &lt;1-4094&gt;</code>	Specifies the C-VLAN value of the port on the FA server.
<code>i-sid &lt;1-16777215&gt;</code>	Specifies the management I-SID.

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# Command: fa message-authentication (for a MLT)

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## fa message-authentication (for a MLT)

Configure Fabric Attach message authentication on MLT.

### Syntax

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

### Default

None

### Command mode

MLT Interface Configuration

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# Command: fa message-authentication (for a port)

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## 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

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## 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 <1-16000000>`
- `fa zero-touch-client standard camera i-sid <1-16000000>`
- `fa zero-touch-client standard ona-sdn i-sid <1-16000000>`
- `fa zero-touch-client standard ona-spb-over-ip i-sid <1-16000000>`
- `fa zero-touch-client standard phone i-sid <1-16000000>`
- `fa zero-touch-client standard router i-sid <1-16000000>`
- `fa zero-touch-client standard security-device i-sid <1-16000000>`
- `fa zero-touch-client standard srvr-endpt i-sid <1-16000000>`
- `fa zero-touch-client standard switch i-sid <1-16000000>`
- `fa zero-touch-client standard video i-sid <1-16000000>`
- `fa zero-touch-client standard virtual-switch i-sid <1-16000000>`
- `fa zero-touch-client standard wap-type1 i-sid <1-16000000>`
- `fa zero-touch-client standard wap-type2 i-sid <1-16000000>`
- `no fa zero-touch-client standard camera i-sid <1-16000000>`
- `no fa zero-touch-client standard ona-sdn i-sid <1-16000000>`
- `no fa zero-touch-client standard ona-spb-over-ip i-sid <1-16000000>`
- `no fa zero-touch-client standard phone i-sid <1-16000000>`
- `no fa zero-touch-client standard router i-sid <1-16000000>`
- `no fa zero-touch-client standard security-device i-sid <1-16000000>`
- `no fa zero-touch-client standard srvr-endpt i-sid <1-16000000>`
- `no fa zero-touch-client standard switch i-sid <1-16000000>`
- `no fa zero-touch-client standard video i-sid <1-16000000>`
- `no fa zero-touch-client standard virtual-switch i-sid <1-16000000>`
- `no fa zero-touch-client standard wap-type1 i-sid <1-16000000>`
- `no fa zero-touch-client standard wap-type2 i-sid <1-16000000>`

## Default

The default value is enable.

## Command mode

Global Configuration

## Command parameters

Parameter	Description
camera	Specifies the cliet type as IP Camera.
i-sid <1-16000000>	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 (SpbOIp).
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).

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## filter acl

Use an access control list (ACL) to specify an ordered list of ACEs, or filter rules.

### Syntax

- `default filter acl <1-2048>`
- `default filter acl <1-2048> enable`
- `default filter acl <1-2048> name`
- `filter acl <1-2048> enable`
- `filter acl <1-2048> name WORD<0-32>`
- `filter acl <1-2048> type { inVlan | inPort | outPort }`
- `filter acl <1-2048> type { inVlan | inPort | outPort } name WORD<0-32>`
- `filter acl <1-2048> type {inVlan | inPort} pktType ipv6`
- `no filter acl <1-2048>`
- `no filter acl <1-2048> enable`

### Default

None

### Command mode

Global Configuration

### Command parameters

Parameter	Description
<code>&lt;1-2048&gt;</code>	Specifies a unique identifier (1 to 2048) for this ACL.
<code>name WORD&lt;0-32&gt;</code>	Specifies an optional descriptive name for the ACL.
<code>pktType ipv6</code>	Specifies the packet type as IPv6.
<code>type &lt;inVlan inPort outPort&gt;</code>	Specifies the access control list (ACL) type. inVlan and inPort are ingress ACLs, and outPort is egress ACL.

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## 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 <1-2048> <1-2000>`
- `default filter acl ace <1-2048> <1-2000> enable`
- `default filter acl ace <1-2048> <1-2000> name`
- `filter acl ace <1-2048> <1-2000>`
- `filter acl ace <1-2048> <1-2000> enable`
- `filter acl ace <1-2048> <1-2000> name WORD<1-32>`
- `no filter acl ace <1-2048> <1-2000>`
- `no filter acl ace <1-2048> <1-2000> enable`

### Default

None

### Command mode

Global Configuration

### Command parameters

Parameter	Description
<1-2000>	Specifies an access control entry (ACE) ID from 1 to 2000.
<1-2048>	Specifies an access control list (ACL) ID from 1 to 2048.
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.

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## filter acl ace action

Configure the access control entry (ACE) action mode as deny or permit.

### Syntax

- `default filter acl ace action <1-2048> <1-2000> { permit | deny } internal-qos`
- `default filter acl ace action <1-2048> <1-2000> { permit | deny } monitor-dst-mlt`
- `default filter acl ace action <1-2048> <1-2000> { permit | deny } monitor-dst-mlt count`
- `default filter acl ace action <1-2048> <1-2000> { permit | deny } monitor-dst-mlt count redirect-next-hop`
- `default filter acl ace action <1-2048> <1-2000> { permit | deny } monitor-dst-mlt redirect-next-hop`
- `default filter acl ace action <1-2048> <1-2000> { permit | deny } monitor-dst-mlt redirect-next-hop unreachable`
- `default filter acl ace action <1-2048> <1-2000> { permit | deny } monitor-dst-ports`
- `default filter acl ace action <1-2048> <1-2000> { permit | deny } redirect-next-hop`
- `default filter acl ace action <1-2048> <1-2000> { permit | deny } remark-dot1p`
- `default filter acl ace action <1-2048> <1-2000> { permit | deny } remark-dscp`
- `default filter acl ace action <1-2048> <1-2000> { permit | deny }`
- `default filter acl ace action <1-2048> <1-2000> { permit | deny } count`
- `filter acl ace action <1-2048> <1-2000> { permit | deny }`
- `filter acl ace action <1-2048> <1-2000> { permit | deny } count`
- `filter acl ace action <1-2048> <1-2000> { permit | deny } internal-qos <0-7>`
- `filter acl ace action <1-2048> <1-2000> { permit | deny } monitor-dst-mlt <1-512>`
- `filter acl ace action <1-2048> <1-2000> { permit | deny } monitor-dst-ports {slot/port[/sub-port][/-slot/port[/sub-port]][, ...]}`
- `filter acl ace action <1-2048> <1-2000> { permit | deny } redirect-next-hop WORD<1-45>`
- `filter acl ace action <1-2048> <1-2000> { permit | deny } remark-dot1p <0-7>`
- `filter acl ace action <1-2048> <1-2000> { permit | deny } remark-dscp <0-256 | 0-256>`
- `filter acl ace action <1-2048> <1-2000> { permit | deny } redirect-next-hop WORD<1-45> [count | unreachable | vrf {WORD <1-16>}]`
- `filter acl ace action <1-2048> <1-2000> { permit | deny } redirect-next-hop WORD<1-45> unreachable { permit | deny }`
- `filter acl ace action <1-2048> <1-2000> { permit | deny } redirect-next-hop WORD<1-45> unreachable { permit | deny } count`

- filter acl ace action <1-2048> <1-2000> { permit | deny } redirect-next-hop WORD<1-45> vrf WORD <1-16> unreachable { permit | deny }
- filter acl ace action <1-2048> <1-2000> { permit | deny } redirect-next-hop WORD<1-45> vrf WORD <1-16> unreachable { permit | deny } count
- no filter acl ace action <1-2048> <1-2000> { permit | deny }
- no filter acl ace action <1-2048> <1-2000> { permit | deny } count
- no filter acl ace action <1-2048> <1-2000> { permit | deny } internal-qos
- no filter acl ace action <1-2048> <1-2000> { permit | deny } monitor-dst-mlt
- no filter acl ace action <1-2048> <1-2000> { permit | deny } monitor-dst-mlt count
- no filter acl ace action <1-2048> <1-2000> { permit | deny } monitor-dst-mlt count [log [redirect-next-hop]]
- no filter acl ace action <1-2048> <1-2000> { permit | deny } monitor-dst-mlt count redirect-next-hop
- no filter acl ace action <1-2048> <1-2000> { permit | deny } monitor-dst-mlt log
- no filter acl ace action <1-2048> <1-2000> { permit | deny } monitor-dst-mlt log redirect-next-hop
- no filter acl ace action <1-2048> <1-2000> { permit | deny } monitor-dst-mlt redirect-next-hop
- no filter acl ace action <1-2048> <1-2000> { permit | deny } monitor-dst-ports
- no filter acl ace action <1-2048> <1-2000> { permit | deny } redirect-next-hop
- no filter acl ace action <1-2048> <1-2000> { permit | deny } remark-dot1p
- no filter acl ace action <1-2048> <1-2000> { permit | deny } remark-dscp

## Default

The default to configure ACE actions to meter flows after a packet matches an ACE is disabled.

## Command mode

Global Configuration

## Command parameters

Parameter	Description
<1-2000>	Specifies the access control entry (ACE) ID. Use ACE IDs 1-1000 for security rules. Use ACE IDs 1001-2000 for QoS rules. The ACE IDs for QoS rules are not supported on all hardware platforms. For more information, see Release Notes.
<1-2048>	Specifies an access control list (ACL) ID from 1 to 2048.
<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 (1-1000), 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 (1001-2000), 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 access control entry (ACE) ID must be in the range of 1001-2000. The default value is 1. This variable is not supported on all hardware platforms. For more information, see Release Notes.

monitor-dst-mlt <1-512>  
monitor-dst-ports  
{slot/port[- slot/port] [,...]}  
redirect-next-hop  
WORD<1-15>

Configures mirroring to a destination MLT group. This action is a security action. The ACE ID must be in the range of 1- 1000.

Configures mirroring to a destination port or ports. This action is a security action. The ACE ID must be in the range of 1-1000. {slot/port[- slot/port] [,...]} identifies the slot and port in one of the following format: a single slot and port (1/1).

Specifies the next-hop IP address for redirect mode (a.b.c.d). This action is a security action. The ACE ID must be in the range of 1-1000.

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. The ACE ID must be in the range of 1001-2000. This variable is not supported on all hardware platforms. For more information, see Release Notes.

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. The ACE ID must be in the range of 1001-2000. This variable is not supported on all hardware platforms. For more information, see Release Notes.

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## 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 <1-2048> <1-2000>`
- `filter acl ace arp <1-2048> <1-2000> operation eq arprequest`
- `filter acl ace arp <1-2048> <1-2000> operation eq arpresponse`
- `no filter acl ace arp <1-2048> <1-2000>`
- `no filter acl ace arp <1-2048> <1-2000> operation`

### Default

None

### Command mode

Global Configuration

### Command parameters

Parameter	Description
<code>&lt;1-2000&gt;</code>	Specifies an access control entry (ACE) ID from 1 to 2000.
<code>&lt;1-2048&gt;</code>	Specifies an access control list (ACL) ID from 1 to 2048.
<code>operation eq</code> <code>&lt;arprequest   arpresponse&gt;</code>	Specifies an ARP operation type of arpRequest or arpResponse. For ARP, only one operator and attribute exist (eq and operation).

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## filter acl ace ethernet

Use Ethernet access control entries (ACEs) to filter on Ethernet parameters.

### Syntax

- `default filter acl ace ethernet <1-2048> <1-2000>`
- `filter acl ace ethernet <1-2048> <1-2000> dst-mac eq WORD<1-1024>`
- `filter acl ace ethernet <1-2048> <1-2000> dst-mac mask WORD<1-1024> WORD<1-1024>`
- `filter acl ace ethernet <1-2048> <1-2000> ether-type eq WORD<1-200>`
- `filter acl ace ethernet <1-2048> <1-2000> port eq {slot/port}`
- `filter acl ace ethernet <1-2048> <1-2000> src-mac eq WORD<1-1024>`
- `filter acl ace ethernet <1-2048> <1-2000> src-mac mask WORD<1-1024> WORD<1-1024>`
- `filter acl ace ethernet <1-2048> <1-2000> vlan-id eq <1-4059>`
- `filter acl ace ethernet <1-2048> <1-2000> vlan-id mask <1-4059> <0-0xFFF | 0x0-0x0>`
- `filter acl ace ethernet <1-2048> <1-2000> vlan-tag-prio eq <0-7>`
- `filter acl ace ethernet <1-2048> <1-2000> vlan-tag-prio mask <0-7> <0-0x7 | 0x0-0x0>`
- `no filter acl ace ethernet <1-2048> <1-2000>`
- `no filter acl ace ethernet <1-2048> <1-2000> dst-mac`
- `no filter acl ace ethernet <1-2048> <1-2000> ether-type`
- `no filter acl ace ethernet <1-2048> <1-2000> port`
- `no filter acl ace ethernet <1-2048> <1-2000> src-mac`
- `no filter acl ace ethernet <1-2048> <1-2000> vlan-id`
- `no filter acl ace ethernet <1-2048> <1-2000> vlan-tag-prio`

### Default

None

### Command mode

Global Configuration

### Command parameters

Parameter	Description
<1-2000>	Specifies an access control entry (ACE) ID from 1 to 2000.
<1-2048>	Specifies an access control list (ACL) ID from 1 to 2048.

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, or PPPoE-session.
port eq <slot/port>	Specifies ports to which to match, where <slot/port> specifies the ports.
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. 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.
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.



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## 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 <1-2048> <1-2000>`
- `filter acl ace ip <1-2048> <1-2000> dscp eq <0-63 | 0-63>`
- `filter acl ace ip <1-2048> <1-2000> dscp mask <0-63 | 0-63> <0-0x40 | 0x0-0x0>`
- `filter acl ace ip <1-2048> <1-2000> dst-ip eq {A.B.C.D}`
- `filter acl ace ip <1-2048> <1-2000> dst-ip mask {A.B.C.D} <0-32>`
- `filter acl ace ip <1-2048> <1-2000> dst-ip mask {A.B.C.D} {A.B.C.D}`
- `filter acl ace ip <1-2048> <1-2000> dst-ip range {A.B.C.D} {A.B.C.D}`
- `filter acl ace ip <1-2048> <1-2000> ip-frag-flag eq { noFragment | anyFragment }`
- `filter acl ace ip <1-2048> <1-2000> ip-options any`
- `filter acl ace ip <1-2048> <1-2000> ip-protocol-type eq WORD<1-256>`
- `filter acl ace ip <1-2048> <1-2000> src-ip eq {A.B.C.D}`
- `filter acl ace ip <1-2048> <1-2000> src-ip mask {A.B.C.D} <0-32>`
- `filter acl ace ip <1-2048> <1-2000> src-ip mask {A.B.C.D} {A.B.C.D}`
- `filter acl ace ip <1-4096> <1-1000> dst-ip eq WORD <1-1024>`
- `no filter acl ace ip <1-2048> <1-2000>`
- `no filter acl ace ip <1-2048> <1-2000> dscp`
- `no filter acl ace ip <1-2048> <1-2000> dst-ip`
- `no filter acl ace ip <1-2048> <1-2000> ip-frag-flag`
- `no filter acl ace ip <1-2048> <1-2000> ip-options`
- `no filter acl ace ip <1-2048> <1-2000> ip-protocol-type`
- `no filter acl ace ip <1-2048> <1-2000> src-ip`

### Default

None

### Command mode

Global Configuration

## Command parameters

Parameter	Description
<1-2000>	Specifies an access control entry (ACE) ID from 1 to 2000.
<1-2048>	Specifies an access control list (ACL) ID from 1 to 2048.
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, or 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), or 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].

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## filter acl ace ipv6

Use access control entry (ACE) IPv6 entries to filter on IPv6 parameters.

### Syntax

- `filter acl ace ipv6 <1-2048> <1-2000> dst-ipv6 {eq | mask} WORD<0-255> [WORD<0-255>]`
- `filter acl ace ipv6 <1-2048> <1-2000> nxt-hdr eq {fragment | hop-by-hop | icmpv6 | ipsecah | ipsecesp | noHdr | routing | tcp | udp | undefined}`
- `filter acl ace ipv6 <1-2048> <1-2000> src-ipv6 {eq | mask} WORD<0-255> [WORD<0-255>]`
- `filter acl ace ipv6 <1-2048> <1-2000> traffic-class eq <0-255>`
- `no filter acl ace ipv6 <1-2048> <1-2000>`
- `no filter acl ace ipv6 <1-2048> <1-2000> dst-ipv6`
- `no filter acl ace ipv6 <1-2048> <1-2000> nxt-hdr`
- `no filter acl ace ipv6 <1-2048> <1-2000> src-ipv6`
- `no filter acl ace ipv6 <1-2048> <1-2000> traffic-class`

### Default

None

### Command mode

Global Configuration

### Command parameters

Parameter	Description
<code>&lt;1-2000&gt;</code>	Specifies an access control list (ACL) ID from 1 to 2048.
<code>&lt;1-2048&gt;</code>	Specifies an access control entry (ACE) ID from 1 to 2000.
<code>dst-ipv6 {eq   mask} WORD&lt;0-255&gt;</code>	The <code>&lt;eq mask&gt;</code> parameter specifies an operator for a field match condition. The <code>WORD&lt;0-255&gt;</code> 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, <code>[AA:BB:CC:DD:EE:FF]</code> .
<code>nxt-hdr eq &lt;fragment   hop-by-hop   icmpv6   ipsecah   ipsecesp   noHdr   routing   tcp   udp   undefined&gt;</code>	Specify next header of IP header.
<code>src-ipv6 {eq   mask} WORD&lt;0-255&gt;</code>	The <code>&lt;eq mask&gt;</code> parameter specifies an operator for a field match condition: equal to. The <code>WORD&lt;0-255&gt;</code> 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, <code>[AA:BB:CC:DD:EE:FF]</code> .

`traffic-class eq <0-255>` Specify traffic class attribute of IPv6 header.

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## 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 <1-2048> <1-2000>`
- `filter acl ace protocol <1-2048> <1-2000> dst-port eq WORD<1-60>`
- `filter acl ace protocol <1-2048> <1-2000> dst-port mask WORD<1-60> <0x0-0xFFFF>`
- `filter acl ace protocol <1-2048> <1-2000> icmp-msg-type eq WORD<1-200>`
- `filter acl ace protocol <1-2048> <1-2000> icmpv6-msg-type eq WORD<1-200>`
- `filter acl ace protocol <1-2048> <1-2000> src-port eq <0-65535>`
- `filter acl ace protocol <1-2048> <1-2000> src-port mask <0-65535> <0x0-0xFFFF>`
- `filter acl ace protocol <1-2048> <1-2000> tcp-flags eq WORD<1-50>`
- `filter acl ace protocol <1-2048> <1-2000> tcp-flags mask WORD<1-50> <0-0x3F | 0x0-0x0>`
- `filter acl ace protocol <1-2048> <1-2000> routing-type eq <0-2>`
- `no filter acl ace protocol <1-2048> <1-2000>`
- `no filter acl ace protocol <1-2048> <1-2000> dst-port`
- `no filter acl ace protocol <1-2048> <1-2000> icmp-msg-type`
- `no filter acl ace protocol <1-2048> <1-2000> src-port`
- `no filter acl ace protocol <1-2048> <1-2000> tcp-flags`
- `no filter acl ace protocol <1-2048> <1-2000> routing-type`

### Default

None

### Command mode

Global Configuration

### Command parameters

Parameter	Description
<1-2000>	Specifies an access control list (ACL) ID from 1 to 2048.
<1-2048>	Specifies an access control entry (ACE) ID from 1 to 2000.
dst-port	The <eq mask> parameter specifies an operator for a field match condition: equal to.
<eq mask>	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
WORD<1-	

60> 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|routersselect| 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.

## 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 <1-2048> {slot/port[/sub-port][-slot/port[/sub-port]][,...]}`
- `filter acl port <1-2048> {slot/port[/sub-port][-slot/port[/sub-port]][,...]}`
- `no filter acl port <1-2048> {slot/port[/sub-port][-slot/port[/sub-port]][,...]}`

### Default

None

### Command mode

Global Configuration

### Command parameters

Parameter	Description
<code>{slot/port[/sub-port][-slot/port[/sub-port]][,...]}</code>	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.
<code>&lt;1-2048&gt;</code>	Specifies an access control list (ACL) ID from 1-2048.

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## filter acl set

Configure an access control list (ACL) filter.

### Syntax

- `default filter acl set <1-2048> default-action`
- `default filter acl set <1-2048> global-action`
- `default filter acl set <1-2048> global-action monitor-dst-mlt`
- `default filter acl set <1-2048> global-action monitor-dst-ports`
- `filter acl set <1-2048> default-action deny`
- `filter acl set <1-2048> default-action deny control-packet-action deny`
- `filter acl set <1-2048> default-action deny control-packet-action permit`
- `filter acl set <1-2048> default-action permit`
- `filter acl set <1-2048> global-action monitor-dst-mlt <1-512>`
- `filter acl set <1-2048> global-action monitor-dst-ports {slot/port[/sub-port]][-slot/port[/sub-port]][,...]}`
- `no filter acl set <1-2048> global-action monitor-dst-mlt`
- `no filter acl set <1-2048> global-action monitor-dst-ports`

### Default

The default action is deny.

### Command mode

Global Configuration

### Command parameters

Parameter	Description
<code>{slot/port[/sub-port]][-slot/port[/sub-port]][,...]}</code>	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.
<code>&lt;1-2048&gt;</code>	Specifies the access control list (ACL) ID. The range is from 1-2048.
<code>default-action</code> <code>&lt;permit deny&gt;</code>	Specifies the action to be taken when none of the access control entries (ACEs) match. The options are deny or permit.
<code>global-action</code> <code>{monitor-dst-mlt&lt;1-512&gt; monitor-</code>	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]][,...]}.



dst-ports}

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## 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 <1-2048> <1-4059>`
- `filter acl vlan <1-2048> <1-4059>`
- `no filter acl vlan <1-2048> <1-4059>`

### Default

None

### Command mode

Global Configuration

### Command parameters

Parameter	Description
<1-2048>	Specifies an access control list (ACL) ID from 1-2048.
<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.

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## 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

### Default

The default value is enable.

### Command mode

BGP Router Configuration

### Command parameters

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

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## 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][,...]}`

### Default

None

### Command mode

Privileged EXEC

### Command parameters

Parameter	Description
<code>all {slot [-slot] [...]}</code>	Creates flight recorder snapshot, trace, and archive. {slot[-slot][,...]} specifies the slot number. Valid slot is 1.
<code>archive {slot [-slot] [...]}</code>	Creates tarball of flight recorder files, log files, config file and others. {slot [-slot][,...]} specifies the slot number.
<code>snapshot {slot [-slot] [...]}</code>	Takes the snapshot of flight recorder PMEM data. {slot[-slot][,...]} specifies the slot number.
<code>trace {slot [-slot] [...]}</code>	Takes the snapshot of always-on-trace data. {slot [-slot][,...]} specifies the slot number.

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## 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

### Default

None

### Command mode

BGP Router Configuration

### Command parameters

Parameter	Description
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.

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## 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>`

### Default

None

### Command mode

Privileged EXEC

### Command parameters

Parameter	Description
<code>error WORD &lt;1-99&gt;</code>	Searches for an error in a file. <code>WORD&lt;1-99&gt;</code> specifies a filename, <code>/intflash/&lt;file&gt;</code> .
<code>WORD&lt;0-1536&gt;</code> <code>WORD&lt;1-99&gt;</code>	Searches files for lines that match a given expression. <code>WORD&lt;0-1536&gt;</code> specifies the string to match.

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# Command: help

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## 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>

### Default

None

### Command mode

User EXEC

### Command parameters

Parameter	Description
WORD<1-255>	Enters a command to see the options for that command.

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# Command: helper-mode-disable

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## 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

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## 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`

### Default

None

### Command mode

GigabitEthernet Interface Configuration

### Command parameters

Parameter	Description
<code>enable</code>	Enables the high secure feature that blocks packets with illegal IP addresses. This flag is disabled by default.
<code>port {slot/port[/sub-port][-slot/port[/sub-port]][,...]}</code>	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.



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## hop-limit maximum

Enables verification of the advertised hop count limit.

### Syntax

- default hop-limit maximum
- hop-limit maximum <0-255>

### Default

The default maximum limit is 0.

### Command mode

RA-guard Configuration

### Command parameters

Parameter	Description
<0-255>	Specifies hop limit count.

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## hop-limit minimum

Enables verification of the advertised hop count limit.

### Syntax

- default hop-limit minimum
- hop-limit minimum <0-255>

### Default

The default minimum limit is 0.

### Command mode

RA-guard Configuration

### Command parameters

Parameter	Description
<0-255>	Specifies hop limit count.

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## 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}`

### Default

None

### Command mode

OSPF Router Configuration

### Command parameters

Parameter	Description
<code>&lt;A.B.C.D&gt;</code>	Specifies the IP address of the host router in a.b.c.d format.
<code>metric &lt;0-65535&gt;</code>	Configures the metric (cost) for the host route.

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## 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`

### Default

The default value is enable.

### Command mode

BGP Router Configuration

### Command parameters

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

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## 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`

### Default

The default value is enable.

### Command mode

BGP Router Configuration

### Command parameters

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

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## 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 <ctrl>`
- `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`



## Default

None

## Command mode

Global Configuration

## Command parameters

Parameter	Description
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.

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## 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>`

### Default

None

### Command mode

## Command parameters

Parameter	Description
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.

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## 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>

## Default

None

## Command mode

Global Configuration

## Command parameters

Parameter	Description
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.

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## 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}`

### Default

none

### Command mode

IS-IS Router Configuration

### Command parameters

Parameter	Description
{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.



# Command: interface GigabitEthernet

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## 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]][, ...]}`

### Default

None

### Command mode

Global Configuration

### Command parameters

Parameter	Description
<code>{slot/port[/sub-port][-slot/port[/sub-port]][, ...]}</code>	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.

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## interface Loopback

Use this command to enter Interface Configuration mode for a loopback interface.

### Syntax

- `interface Loopback <1-256>`

### Default

None

### Command mode

Global Configuration

### Command parameters

Parameter	Description
<1-256>	Specifies the loopback ID.

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# Command: interface mgmtEthernet

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## 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

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## interface mlt

Use this command to enter Interface Configuration mode for an MLT.

### Syntax

- `interface mlt <1-512>`

### Default

None

### Command mode

Global Configuration

### Command parameters

Parameter	Description
<1-512>	Specifies the MLT ID.

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## interface vlan

Use this command to enter Interface Configuration mode for a VLAN.

### Syntax

- `interface Vlan <1-4059>`

### Default

None

### Command mode

Global Configuration

### Command parameters

Parameter	Description
<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.

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# Command: ip address (for the management port)

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## ip address (for the management port)

Configure the IP address for the Ethernet management port. 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}

### Default

None

### Command mode

mgmtEthernet Interface Configuration

### Command parameters

Parameter	Description
{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.

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## 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>

### Default

None

### Command mode

Loopback Interface Configuration

### Command parameters

Parameter	Description
[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).

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## 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} <0-1535>
- no ip address {A.B.C.D}

### Default

None

### Command mode

VLAN Interface Configuration

### Command parameters

Parameter	Description
<0-1535>	Specifies the MAC offset value. Different hardware platforms support different MAC offset ranges. Use the CLI Help to see the available range.
<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.



# Command: ip alternative-route (globally)

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## ip alternative-route (globally)

Enable the alternative route feature globally.

### Syntax

- default ip alternative-route
- ip alternative-route
- no ip alternative-route

### Default

The default is enabled.

### Command mode

Global Configuration

### Command parameters

Parameter	Description
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.

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## 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`

### Default

The default is enabled.

### Command mode

VRF Router Configuration

### Command parameters

Parameter	Description
<code>alternative-route</code>	Enables or disables the Alternative Route feature. The default value is enabled. If the <code>alternative-route</code> parameter is disabled, all existing alternative routes are removed. When the parameter is enabled, all alternative routes are re-added.



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## 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>

### Default

None

### Command mode

Loopback Interface Configuration

### Command parameters

Parameter	Description
{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.

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## 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

### Default

None

### Command mode

OSPF Router Configuration

### Command parameters

Parameter	Description
{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.

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## 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`

### Default

The default is permit.

### Command mode

OSPF Router Configuration

### Command parameters

Parameter	Description
<code>{A.B.C.D}</code> <code>{A.B.C.D}</code>	The first IP address specifies the area IP address, and the second IP address specifies the virtual-link IP address.
<code>action</code> <code>&lt;drop permit&gt;</code>	Specifies the action of the IPsec policy under the OSPF virtual link to permit or drop traffic. The default is permit.

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## 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`

### Default

None

### Command mode

OSPF Router Configuration

### Command parameters

Parameter	Description
{A.B.C.D}	The first IP address specifies the area IP address, and the second IP address specifies the virtual-link IP address.
{A.B.C.D}	
<both in out>	Specifies the direction of the traffic of the IPsec policy under the OSPF virtual link.



# Command: ip area virtual-link ipsec enable

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## 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`

### Default

The default is disabled.

### Command mode

OSPF Router Configuration

### Command parameters

Parameter	Description
<code>{A.B.C.D}</code> <code>{A.B.C.D}</code>	The first IP address specifies the area IP address, and the second IP address specifies the virtual-link IP address.

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# Command: ip area virtual-link ipsec security-association

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## 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>`

### Default

None

### Command mode

OSPF Router Configuration

### Command parameters

Parameter	Description
{A.B.C.D}	The first IP address specifies the area IP address, and the second IP address specifies the virtual-link IP address.
{A.B.C.D}	
WORD<0-32>	Specifies the name of the security association.

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## 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[-slot/ port][,...]}`
- `ip arp request-threshold <50-1000>`
- `ip arp timeout <1-32767>`
- `no ip arp {A.B.C.D}`

### Default

None

### Command mode

Global Configuration

### Command parameters

Parameter	Description
{A.B.C.D}	Specifies the IP address.
{slot/port[-slot/ port] [,...]}	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.





## 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[-slot/ port][, ...]}`
- `ip arp {A.B.C.D} 0x00:0x00:0x00:0x00:0x00:0x00 {slot/port[-slot/ port][, ...]} vid <1-4059>`
- `ip arp timeout <1-32767>`
- `no ip arp {A.B.C.D}`

### Default

None

### Command mode

VRF Router Configuration

### Command parameters

Parameter	Description
<code>{A.B.C.D}</code>	Specifies the IP address.
<code>{slot/port[/sub-port][-slot/port[/sub-port]][, ...]}</code>	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.
<code>{slot[-slot][, ...]}</code>	Specifies the port that receives the flooding.
<code>0x00:0x00:0x00:0x00:0x00:0x00</code>	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).
<code>timeout &lt;1-32767&gt;</code>	Configures the timeout value.
<code>vid &lt;1-4059&gt;</code>	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.



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## 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

### Default

Untrusted

### Command mode

GigabitEthernet Interface Configuration

### Command parameters

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



# Command: ip arp-inspection enable

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## 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

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# Command: ip arp multicast-mac-flooding

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## 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



# Command: ip arp-proxy enable (for a port)

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## 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

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# Command: ip arp-proxy enable (for a VLAN)

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## 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

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# Command: ip arp-response (for a port)

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## 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

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# Command: ip arp-response (for a VLAN)

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## 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

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## 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[-slot/port]][, ...]] [WORD<1-16>]
- no ip arp static-mcast {A.B.C.D}

### Default

None

### Command mode

Global Configuration

### Command parameters

Parameter	Description
{slot/port[-slot/port]][ , ...]}	Specifies the port that receives the multicast flooding. Type the slot and port in one of the following formats: a single slot and port (3/1), a range of slots and ports (3/2-3/4), or a series of slots and ports (3/2,5/3,6/2).
<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.
vid1-4059	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<1-16>	Specifies the multilink trunk ID.

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## 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>`

### Default

None

### Command mode

Global Configuration

### Command parameters

Parameter	Description
<code>&lt;permit deny&gt;</code>	Permits or denies access for matching conditions.
<code>as-list &lt;1-1024&gt;</code>	Creates the specified AS-path list entry.
<code>as-path WORD &lt;0-1536&gt;</code>	Specifies an integer value between 0 and 1536 placed within quotation marks "."
<code>memberId &lt;0-65535&gt;</code>	Adds a regular expression entry to the specified AS-path list. It is an integer value between 0 and 65 535.

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## 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>

### Default

None

### Command mode

VRF Router Configuration

### Command parameters

Parameter	Description
{ 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.



# Command: ip bgp

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## 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

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## ip bgp aggregate-address

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

### Syntax

- default ip bgp aggregate-address <prefix/len>
- default ip bgp aggregate-address <prefix/len> advertise-map
- default ip bgp aggregate-address <prefix/len> as-set
- default ip bgp aggregate-address <prefix/len> attribute-map
- default ip bgp aggregate-address <prefix/len> summary-only
- default ip bgp aggregate-address <prefix/len> suppress-map
- ip bgp aggregate-address <prefix/len>
- ip bgp aggregate-address <prefix/len> advertise-map WORD<0-1536>
- ip bgp aggregate-address <prefix/len> as-set
- ip bgp aggregate-address <prefix/len> attribute-map WORD<0-1536>
- ip bgp aggregate-address <prefix/len> summary-only
- ip bgp aggregate-address <prefix/len> suppress-map WORD<0-1536>
- no ip bgp aggregate-address <prefix/len>
- no ip bgp aggregate-address <prefix/len> advertise-map
- no ip bgp aggregate-address <prefix/len> as-set
- no ip bgp aggregate-address <prefix/len> attribute-map
- no ip bgp aggregate-address <prefix/len> summary-only
- no ip bgp aggregate-address <prefix/len> suppress-map

### Default

The default is disabled.

### Command mode

VRF Router Configuration

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## 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



# Command: ip bgp always-compare-med

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## 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

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## 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>

### Default

None

### Command mode

User EXEC

### Command parameters

Parameter	Description
{direct dvr isis ospf rip static vrf}	Specifies the protocol type.
vrf WORD<1-16>	Specifies a VRF instance by name.
	Specifies the source VRF instance. This parameter

vrf-src WORD<1-16>

is not required for redistribution within the same VRF.

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# Command: ip bgp auto-peer-restart enable

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## 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

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## 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



# Command: ip bgp debug-screen

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## 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

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## 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`
- `ip bgp default-information originate`
- `no ip bgp default-information originate`

### Default

The default is disabled.

### Command mode

VRF Router Configuration

### Command parameters

Parameter	Description
<code>originate</code>	Enables the origination default route.



# Command: ip bgp default local-preference

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## 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`

### Default

The default is 0.

### Command mode

VRF Router Configuration

### Command parameters

Parameter	Description
<code>&lt;0-2147483647&gt;</code>	Specifies the preference value.

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## 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`

### Default

The default value is -1.

### Command mode

VRF Router Configuration

### Command parameters

Parameter	Description
<-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.

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# Command: ip bgp deterministic-med enable

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## 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

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# Command: ip bgp enable

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## 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

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## 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



# Command: ip bgp global-debug mask

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## 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

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# Command: ip bgp ibgp-report-import-rt enable

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## 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

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# Command: ip bgp ignore-illegal-rtrid enable

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## 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

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# Command: ip bgp in-route-map

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## 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

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# Command: ip bgp multiple-paths

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## 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

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## ip bgp neighbor

Configure BGP neighbors for a VRF context.

### Syntax

- `default ip bgp neighbor <nbr_ipaddr|peer-group-name>`
- `default ip bgp neighbor <nbr_ipaddr|peer-group-name> advertisement-interval`
- `default ip bgp neighbor <nbr_ipaddr|peer-group-name> allow-as-in`
- `default ip bgp neighbor <nbr_ipaddr|peer-group-name> as-override`
- `default ip bgp neighbor <nbr_ipaddr|peer-group-name> default-originate`
- `default ip bgp neighbor <nbr_ipaddr|peer-group-name> ebgp-multihop`
- `default ip bgp neighbor <nbr_ipaddr|peer-group-name> enable`
- `default ip bgp neighbor <nbr_ipaddr|peer-group-name> in-route-map`
- `default ip bgp neighbor <nbr_ipaddr|peer-group-name> max-prefix`
- `default ip bgp neighbor <nbr_ipaddr|peer-group-name> MD5-authentication enable`
- `default ip bgp neighbor <nbr_ipaddr|peer-group-name> neighbor-debug-mask`
- `default ip bgp neighbor <nbr_ipaddr|peer-group-name> next-hop-self`
- `default ip bgp neighbor <nbr_ipaddr|peer-group-name> out-route-map`
- `default ip bgp neighbor <nbr_ipaddr|peer-group-name> remote-as`
- `default ip bgp neighbor <nbr_ipaddr|peer-group-name> remove-private-as enable`
- `default ip bgp neighbor <nbr_ipaddr|peer-group-name> retry-interval`
- `default ip bgp neighbor <nbr_ipaddr|peer-group-name> send-community`
- `default ip bgp neighbor <nbr_ipaddr|peer-group-name> site-of-origin`
- `default ip bgp neighbor <nbr_ipaddr|peer-group-name> soft-reconfiguration-in enable`
- `default ip bgp neighbor <nbr_ipaddr|peer-group-name> timers`
- `default ip bgp neighbor <nbr_ipaddr|peer-group-name> update-source`
- `default ip bgp neighbor <nbr_ipaddr|peer-group-name> weight`
- `ip bgp neighbor <nbr_ipaddr|peer-group-name>`
- `ip bgp neighbor <nbr_ipaddr|peer-group-name> advertisement-interval <5-120>`
- `ip bgp neighbor <nbr_ipaddr|peer-group-name> allow-as-in <0-10>`
- `ip bgp neighbor <nbr_ipaddr|peer-group-name> as-override`

- ip bgp neighbor <nbr\_ipaddr|peer-group-name> default-originate
- ip bgp neighbor <nbr\_ipaddr|peer-group-name> ebgp-multihop
- ip bgp neighbor <nbr\_ipaddr|peer-group-name> enable
- ip bgp neighbor <nbr\_ipaddr|peer-group-name> in-route-map WORD<0-256>
- ip bgp neighbor <nbr\_ipaddr|peer-group-name> max-prefix <0-2147483647>
- ip bgp neighbor <nbr\_ipaddr|peer-group-name> MD5-authentication enable
- ip bgp neighbor <nbr\_ipaddr|peer-group-name> neighbor-debug-mask WORD<1-100>
- ip bgp neighbor <nbr\_ipaddr|peer-group-name> next-hop-self
- ip bgp neighbor <nbr\_ipaddr|peer-group-name> out-route-map WORD<0-256>
- ip bgp neighbor <nbr\_ipaddr|peer-group-name> peer-group WORD<0-1536>
- ip bgp neighbor <nbr\_ipaddr|peer-group-name> remote-as WORD<0-11>
- ip bgp neighbor <nbr\_ipaddr|peer-group-name> remove-private-as enable
- ip bgp neighbor <nbr\_ipaddr|peer-group-name> retry-interval <1-65535>
- ip bgp neighbor <nbr\_ipaddr|peer-group-name> send-community
- ip bgp neighbor <nbr\_ipaddr|peer-group-name> site-of-origin <0-65535> <0-2147483647>
- ip bgp neighbor <nbr\_ipaddr|peer-group-name> site-of-origin {A.B.C.D} <0-65535>
- ip bgp neighbor <nbr\_ipaddr|peer-group-name> soft-reconfiguration-in enable
- ip bgp neighbor <nbr\_ipaddr|peer-group-name> timers <0-21845> <0-65535>
- ip bgp neighbor <nbr\_ipaddr|peer-group-name> update-source {A.B.C.D}
- ip bgp neighbor <nbr\_ipaddr|peer-group-name> weight <0-65535>
- no ip bgp neighbor <nbr\_ipaddr|peer-group-name>
- no ip bgp neighbor <nbr\_ipaddr|peer-group-name> as-override
- no ip bgp neighbor <nbr\_ipaddr|peer-group-name> default-originate
- no ip bgp neighbor <nbr\_ipaddr|peer-group-name> ebgp-multihop
- no ip bgp neighbor <nbr\_ipaddr|peer-group-name> enable
- no ip bgp neighbor <nbr\_ipaddr|peer-group-name> in-route-map
- no ip bgp neighbor <nbr\_ipaddr|peer-group-name> MD5-authentication enable
- no ip bgp neighbor <nbr\_ipaddr|peer-group-name> neighbor-debug-mask
- no ip bgp neighbor <nbr\_ipaddr|peer-group-name> next-hop-self
- no ip bgp neighbor <nbr\_ipaddr|peer-group-name> out-route-map
- no ip bgp neighbor <nbr\_ipaddr|peer-group-name> peer-group
- no ip bgp neighbor <nbr\_ipaddr|peer-group-name> remove-private-as enable
- no ip bgp neighbor <nbr\_ipaddr|peer-group-name> send-community
- no ip bgp neighbor <nbr\_ipaddr|peer-group-name> site-of-origin
- no ip bgp neighbor <nbr\_ipaddr|peer-group-name> soft-reconfiguration-in enable

- no ip bgp neighbor <nbr\_ipaddr|peer-group-name> update-source

## Default

None

## Command mode

VRF Router Configuration

## Command parameters

Parameter	Description
<nbr_ipaddr peer-group-name>	Specifies the neighbor IP address or the neighbor group name.
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-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.
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 {A.B.C.D}	Specifies the update-source.
weight <0-65535>	Specifies the weight.



# Command: ip bgp neighbor password

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## 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>`

### Default

None

### Command mode

VRF Router Configuration

### Command parameters

Parameter	Description
<code>&lt;nbr_ipaddr peer-group-name&gt;</code>	Specifies the peer IP address or the peer group name.
<code>password</code>	Configures the IP BGP neighbor password.
<code>WORD&lt;0-1536&gt;</code>	Specifies a password for IP BGP.

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## 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 <prefix/len>
- ip bgp network <prefix/len>
- ip bgp network <prefix/len> metric <0-65535>
- no ip bgp network <prefix/len>

### Default

None

### Command mode

VRF Router Configuration

### Command parameters

Parameter	Description
<prefix/len>	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.



# Command: ip bgp no-med-path-is-worst enable

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## 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

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# Command: ip bgp out-route-map WORD<0-256>

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## 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

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## 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



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## 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 WORD<0-32>`
- `default ip bgp redistribute WORD<0-32> enable`
- `default ip bgp redistribute WORD<0-32> metric`
- `default ip bgp redistribute WORD<0-32> route-map`
- `default ip bgp redistribute WORD<0-32> vrf-src WORD<0-16>`
- `ip bgp redistribute WORD<0-32>`
- `ip bgp redistribute WORD<0-32> enable`
- `ip bgp redistribute WORD<0-32> metric <0-65535>`
- `ip bgp redistribute WORD<0-32> route-map WORD<0-64>`
- `ip bgp redistribute WORD<0-32> vrf-src WORD<0-16>`
- `no ip bgp redistribute WORD<0-32>`
- `no ip bgp redistribute WORD<0-32> enable`
- `no ip bgp redistribute WORD<0-32> route-map`
- `no ip bgp redistribute WORD<0-32> vrf-src WORD<0-16>`

### Default

None

### Command mode

VRF Router Configuration

### Command parameters

Parameter	Description
<code>enable</code>	Enables the route redistribution instance.
<code>metric &lt;0-65535&gt;</code>	Configures the metric to apply to redistributed routes.
<code>route-map WORD&lt;0-64&gt;</code>	Configures the route map to apply to redistributed routes.
<code>vrf-src WORD&lt;1-16&gt;</code>	Specifies the source VRF instance. This parameter is not required for redistribution within the same VRF.
<code>WORD&lt;0-32&gt;</code>	Specifies the type of routes to redistribute-the protocol source.



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## 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}

### Default

The default for soft-reconfiguration is: in

### Command mode

User EXEC

### Command parameters

Parameter	Description
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.

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## 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

### Default

None

### Command mode

VRF Router Configuration

### Command parameters

Parameter	Description
{A.B.C.D}	Identifies the router IP address.



# Command: ip bgp stats-clear-counters

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## 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>

### Default

None

### Command mode

User EXEC

### Command parameters

Parameter	Description
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.



# Command: ip bgp synchronization

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## 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

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# Command: ip bgp traps enable

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## 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

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## 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>`

### Default

None

### Command mode

Global Configuration

### Command parameters

Parameter	Description
<code>&lt;permit deny&gt;</code>	Sets the access mode, which permits or denies access for matching conditions.
<code>community-list &lt;1-1024&gt;</code>	Creates the specified community list entry. <code>&lt;1-1024&gt;</code> specifies the list id.
<code>community-string WORD&lt;0-256&gt;</code>	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).
<code>memberId &lt;0-65535&gt;</code>	Adds an entry to the community list. <code>&lt;0-65535&gt;</code> is an integer value that represents the member ID in the community list.





# Command: ip community-list (for a VRF)

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## 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>

### Default

None

### Command mode

VRF Router Configuration

### Command parameters

Parameter	Description
<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.

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## 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

## Default

None

## Command mode

MLT Interface Configuration

## Command parameters

Parameter	Description
{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.

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## 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`

### Default

None

### Command mode

**Command parameters**

Parameter	Description
<code>broadcast</code>	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.
<code>circuitId</code>	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.
<code>clear-counter</code>	Clears the dhcp-relay counter.
<code>max-hop &lt;1-16&gt;</code>	Configures the maximum number of hops before a BootP/DHCP packet is discarded (1-16). The default is 4.
<code>min-sec &lt;0-65535&gt;</code>	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.
<code>mode &lt;bootp   dhcp   bootp_dhcp&gt;</code>	Configures DHCP mode to forward BootP messages only, Dynamic Host Configuration Protocol (DHCP) messages only, or both. The default is both.
<code>remoteId</code>	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.
<code>trusted</code>	Configures the circuit as trusted in an Option 82 context.

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## 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

## Default

None

## Command mode

VLAN Interface Configuration

## Command parameters

Parameter	Description
{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.



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## 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`

### Default

None

### Command mode

Loopback Interface Configuration

### Command parameters

Parameter	Description
<code>{A.B.C.D} {A.B.C.D}</code>	The first IP address is the IP address of the dhcp-relay agent, while the second one is the IP address of the server.
<code>&lt;bootp dhcp bootp_dhcp&gt;</code>	Configures DHCP mode to forward BootP messages only, DHCP messages only, or both. The default is both.

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## 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>`

### Default

None

### Command mode

Global Configuration

### Command parameters

Parameter	Description
<code>fwd-path</code> <code>&lt;A.B.C.D&gt;</code> <code>&lt;A.B.C.D&gt;</code>	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.



# Command: ip dhcp-relay fwd-path enable

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## 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`

### Default

The ip dhcp-relay fwd-path default state is disabled.

### Command mode

Global Configuration

### Command parameters

Parameter	Description
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.

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## 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>`

### Default

None

### Command mode

GigabitEthernet Interface Configuration

### Command parameters

Parameter	Description
{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.

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## 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}`

### Default

None

### Command mode

VRF Router Configuration

### Command parameters

Parameter	Description
{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.

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## 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

### Default

The default mode is both.

### Command mode

Global Configuration

### Command parameters

Parameter	Description
fwd-path <A.B.C.D> <A.B.C.D> mode <bootp bootp- dhcp dhcp>	Modifies 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}.

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

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## 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`

### Default

The default mode is both.

### Command mode

GigabitEthernet Interface Configuration

### Command parameters

Parameter	Description
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.

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# Command: ip dhcp-relay fwd-path mode (for a VRF)

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## 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`

### Default

The default mode is both.

### Command mode

VRF Router Configuration

### Command parameters

Parameter	Description
<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.

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## 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`

### Default

None

### Command mode

Global Configuration

### Command parameters

Parameter	Description
<code>&lt;1-4059&gt;</code>	Specifies the VLAN ID.
<code>0x00:0x00:0x00:0x00:0x00:0x00</code>	Specifies the MAC address of the DHCP client.
<code>expiry &lt;0-2147483646&gt;</code>	Specifies the expiry time (in seconds) for the DHCP client.
<code>ip {A.B.C.D}</code>	Specifies the IP address of the DHCP client.
<code>port {slot/port[sub-port]}</code>	Specifies the switch port to which the DHCP client connects.

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# Command: ip dhcp-snooping enable

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## 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

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# Command: ip dhcp-snooping enable (for VLAN)

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## 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

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# Command: ip dhcp-snooping (for MLT)

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## 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

### Default

Untrusted

### Command mode

MLT Interface Configuration

### Command parameters

Parameter	Description
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.

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## 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`

### Default

Untrusted

### Command mode

GigabitEthernet Interface Configuration

### Command parameters

Parameter	Description
<code>trusted</code>	Sets the trust factor as trusted on the port for DHCP Snooping.
<code>untrusted</code>	Sets the trust factor as untrusted on the port for DHCP Snooping.



# Command: ip directed-broadcast (for a port)

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## 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

### Default

The default is enabled.

### Command mode

GigabitEthernet Interface Configuration

### Command parameters

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

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# Command: ip directed-broadcast (for a VLAN)

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## 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

### Default

The default is enabled.

### Command mode

VLAN Interface Configuration

### Command parameters

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

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## 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

### Default

None

### Command mode

Global Configuration

### Command parameters

Parameter	Description
WORD<0-255>	Configures the default domain name.

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## 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 <1-4>
- ip ecmp max-path <1-8>
- 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

### Default

The default is disabled.

## Command mode

Global Configuration

### Command parameters

Parameter	Description
<code>max-path &lt;1-4&gt;   max-path &lt;1-8&gt;</code>	Configures the maximum number of Equal Cost Multipath (ECMP) paths. Different platforms support a different maximum. For more information, see Release Notes.
<code>pathlist-1 WORD&lt;0-64&gt;</code>	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).
<code>pathlist-2 WORD&lt;0-64&gt;</code>	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).
<code>pathlist-3 WORD&lt;0-64&gt;</code>	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).
<code>pathlist-4 WORD&lt;0-64&gt;</code>	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).
<code>pathlist-5 WORD&lt;0-64&gt;</code>	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).
<code>pathlist-6 WORD&lt;0-64&gt;</code>	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).
<code>pathlist-7 WORD&lt;0-64&gt;</code>	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).
<code>pathlist-8 WORD&lt;0-64&gt;</code>	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).

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## 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>

### Default

None

### Command mode

User EXEC

### Command parameters

Parameter	Description
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.

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## 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>`

### Default

None

### Command mode

Global Configuration

### Command parameters

Parameter	Description
<code>&lt;1-65535&gt; WORD/1-15</code> <code>&lt;1-15&gt;</code>	Creates a new UDP protocol. <code>&lt;1-65535&gt;WORD &lt;1-15&gt;</code> is the UDP protocol name as a string.

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# Command: ip forward-protocol udp broadcastmask

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## 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}`

### Default

None

### Command mode

VLAN Interface Configuration

### Command parameters

Parameter	Description
<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.

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## 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>`

### Default

None

### Command mode

GigabitEthernet Interface Configuration

### Command parameters

Parameter	Description
<code>broadcastmask {A.B.C.D}</code>	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.
<code>maxttl &lt;1-16&gt;</code>	Sets the maximum time-to-live value (TTL) for the interface. The range is 1 to 16.



# Command: ip forward-protocol udp maxttl

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## 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>

### Default

None

### Command mode

VLAN Interface Configuration

### Command parameters

Parameter	Description
<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.
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.



# Command: ip forward-protocol udp maxttl (on a port)

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## 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>`

### Default

None

### Command mode

GigabitEthernet Interface Configuration

### Command parameters

Parameter	Description
<code>maxttl &lt;1-16&gt;</code>	Sets the maximum time-to-live value (TTL) for the interface. The range is 1 to 16.

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# Command: ip forward-protocol udp (on a port)

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## 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

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# Command: ip forward-protocol udp (on a VLAN)

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## 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>

### Default

None

### Command mode

VLAN Interface Configuration

### Command parameters

Parameter	Description
<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.

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## 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>`

### Default

None

### Command mode

GigabitEthernet Interface Configuration

### Command parameters

Parameter	Description
<code>broadcastmask {A.B.C.D}</code>	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.
<code>maxttl &lt;1-16&gt;</code>	Sets the maximum time-to-live value (TTL) for the interface. The range is 1 to 16.
<code>portfwdlist &lt;1-1000&gt;</code>	Creates a port forwarding list in the range of 1 to 1000.



# Command: ip forward-protocol udp portfwd

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## 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}`

### Default

None

### Command mode

Global Configuration

### Command parameters

Parameter	Description
<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.

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## ip forward-protocol udp portfwldlist

Configure the UDP port forwarding list.

### Syntax

- `default ip forward-protocol udp portfwldlist <1-1000>`
- `default ip forward-protocol udp portfwldlist <1-1000> <1-65535> {A.B.C.D}`
- `ip forward-protocol udp portfwldlist <1-1000>`
- `ip forward-protocol udp portfwldlist <1-1000> <1-65535> {A.B.C.D}`
- `ip forward-protocol udp portfwldlist <1-1000> name WORD<0-15>`
- `no ip forward-protocol udp portfwldlist <1-1000> <1-65535> {A.B.C.D}`
- `no ip forward-protocol udp portfwldlist <1-1000>`

### Default

None

### Command mode

Global Configuration

### Command parameters

Parameter	Description
{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.



# Command: ip forward-protocol udp portfwddlist (on a port)

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## ip forward-protocol udp portfwddlist (on a port)

Configure the UDP port forwarding list.

### Syntax

- `default ip forward-protocol udp portfwddlist <1-1000>`
- `ip forward-protocol udp portfwddlist <1-1000>`
- `no ip forward-protocol udp portfwddlist <1-1000>`

### Default

None

### Command mode

GigabitEthernet Interface Configuration

### Command parameters

Parameter	Description
<code>portfwddlist &lt;1-1000&gt;</code>	Creates a port forwarding list in the range of 1 to 1000.

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# Command: ip forward-protocol udp portfwddlist (on a VLAN)

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## ip forward-protocol udp portfwddlist (on a VLAN)

Configure the UDP port forwarding list.

### Syntax

- ip forward-protocol udp portfwddlist <1-1000>
- ip forward-protocol udp vlan <1-4059> portfwddlist <1-1000>
- no ip forward-protocol udp portfwddlist
- no ip forward-protocol udp portfwddlist <1-1000>

### Default

None

### Command mode

VLAN Interface Configuration

### Command parameters

Parameter	Description
<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. 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.



# Command: ip gratuitous-arp

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## 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

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## 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`

### Default

The default is disabled.

### Command mode

Global Configuration

### Command parameters

Parameter	Description
<code>echo-broadcast-request</code>	Enables or disables the processing of IPv4 ICMP messages sent to a broadcast address. The default value is enabled.
<code>unreachable</code>	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.



# Command: ip icmp echo-broadcast-request (for a VRF)

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## 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`

### Default

The default is enabled.

### Command mode

VRF Router Configuration

### Command parameters

Parameter	Description
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.

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# Command: ip icmp echo-broadcast-request (globally)

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## 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`

### Default

The default is enabled.

### Command mode

Global Configuration

### Command parameters

Parameter	Description
echo broadcast-request	Enables or disables the processing of IPv4 ICMP messages sent to a broadcast address globally. The default value is enabled.

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## 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

### Default

The default is disabled.

### Command mode

VRF Router Configuration

### Command parameters

Parameter	Description
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.

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## 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}

### Default

None

### Command mode

GigabitEthernet Interface Configuration

### Command parameters

Parameter	Description
{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.

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## 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}

### Default

None

### Command mode

VLAN Interface Configuration

### Command parameters

Parameter	Description
{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.



# Command: ip igmp access-list mode (for a port)

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## 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}

### Default

None

### Command mode

GigabitEthernet Interface Configuration

### Command parameters

Parameter	Description
{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.

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# Command: ip igmp access-list mode (for a VLAN)

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## 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}

### Default

None

### Command mode

VLAN Interface Configuration

### Command parameters

Parameter	Description
{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.

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## 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`

### Default

None

### Command mode

User EXEC

### Command parameters

Parameter	Description
<code>{slot/port[/sub-port][-slot/port[/sub-port]][,...]}</code>	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.
<code>grp-member</code>	Specifies a group member.

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## 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}`

### Default

None

### Command mode

User EXEC

### Command parameters

Parameter	Description
<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.

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## 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[-slot/port][,...]}
- no ip igmp router-alert

### Default

None

## Command mode

### GigabitEthernet Interface Configuration

## Command parameters

Parameter	Description
<code>compatibility-mode</code>	Activates v2-v3 compatibility mode. The default value is disabled, which means IGMPv3 is not compatible with IGMPv2.
<code>dynamic-downgrade-version</code>	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.
<code>igmpv3-explicit-host-tracking</code>	Enable igmpv3 explicit host tracking.
<code>immediate-leave</code>	Enable Immediate-leave.
<code>last-member-query-interval &lt;0-255&gt;</code>	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.
<code>port {slot/port[/sub-port]}[-slot/port[/sub-port]][,...]}</code>	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.
<code>query-interval &lt;1-65535&gt;</code>	Configures the frequency (in seconds) at which the VLAN transmits host query packets. The default is 125 seconds.
<code>query-max-response &lt;0-255&gt;</code>	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. The default is 100 tenths of a second (equal to 10 seconds).
<code>robust-value &lt;2-255&gt;</code>	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.
<code>router-alert</code>	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. 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.
<code>stream-limit</code>	Enable stream-limit.
<code>stream-limit stream-limit-max-streams &lt;0-65535&gt;</code>	Set the maximum number of streams allowed on an interface.
<code>version &lt;1-3&gt;</code>	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).

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## 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

## Default

None

## Command mode

VLAN Interface Configuration

## Command parameters

Parameter	Description
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. {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.
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. Instructs the router to ignore Internet Group Management Protocol (IGMP)

router-alert	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. 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).



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## 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]`

### Default

None

### Command mode

VRF Router Configuration

### Command parameters

Parameter	Description
<code>generate-log</code>	Sets the Internet Group Management Protocol (IGMP) log.
<code>generate-trap</code>	Sets the Internet Group Management Protocol (IGMP) trap.
<code>immediate-leave-mode &lt;multiple-user one-user&gt;</code>	Enables immediate leave mode to users which is either a single user or multiple users.
<code>ssm [dynamic-learning] [group-range {A.B.C.D/X}]</code>	Enables and sets the Source Specific Multicast (SSM) features. The parameter, <code>dynamic-learning</code> enables SSM dynamic learning. The parameter, <code>group range {A.B.C.D/X}</code> 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.

<code>ssm-map all</code>	Enables the Source Specific Multicast (SSM) map table for all static entries.
<code>ssm-map {A.B.C.D} {A.B.C.D} [enable]</code>	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 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.
<code>ssm-map {A.B.C.D} [enable]</code>	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.



# Command: ip igmp generate-log

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## ip igmp generate-log

Set igmp log.

### Syntax

- ip igmp generate-log

### Default

None

### Command mode

Global Configuration

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# Command: ip igmp generate-log (for a VRF)

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## 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

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# Command: ip igmp generate-trap (for a VRF)

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## 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

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## 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]`

### Default

None

### Command mode

Global Configuration

### Command parameters

Parameter	Description
<code>generate-log</code>	Sets the Internet Group Management Protocol (IGMP) log.
<code>generate-trap</code>	Sets the Internet Group Management Protocol (IGMP) trap.
<code>immediate-leave-mode &lt;multiple-user one-user&gt;</code>	Enables immediate leave mode to users which is either a single user or multiple users.
<code>ssm [dynamic-learning] [group-range {A.B.C.D/X}]</code>	Enables and sets the Source Specific Multicast (SSM) features. The parameter, <code>dynamic-learning</code> enables SSM dynamic learning. The parameter, <code>group range {A.B.C.D/X}</code> 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 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 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.



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

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## 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

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# Command: ip igmp igmpv3-explicit-host-tracking (for a VLAN)

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## 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

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# Command: ip igmp immediate-leave (for an Ethernet port)

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## 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

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# Command: ip igmp immediate-leave (for a VLAN)

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## 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

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## 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[-slot/port][,...]}
- ip igmp immediate-leave-members {slot/port[-slot/port][,...]}
- no ip igmp immediate-leave-members {slot/port[-slot/port][,...]}

### Default

None

### Command mode

VLAN Interface Configuration

### Command parameters

Parameter	Description
{slot/port[-slot/port][,...]}	Identifies the slot and port in one of the following formats: a single slot and port (3/1), a range of slots and ports (3/2-3/4), or a series of slots and ports (3/2,5/3,6/2).

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## 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`

### Default

The default is multiple-user.

### Command mode

VRF Router Configuration

### Command parameters

Parameter	Description
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.

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## 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`

### Default

None

### Command mode

VLAN Interface Configuration

### Command parameters

Parameter	Description
<code>maxadvertinterval &lt;2-180&gt;</code>	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.
<code>maxinitadvertinterval &lt;2-180&gt;</code>	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.
<code>maxinitadvertisements &lt;2-15&gt;</code>	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.
<code>minadvertinterval &lt;3-</code>	Configures the minimum number (in seconds) between successive

180> 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.

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## 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



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## 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`

### Default

The default value is 0.0.0.0.

### Command mode

VLAN Interface Configuration

### Command parameters

Parameter	Description
{A.B.C.D}	Specifies the IP address.



# Command: ip igmp ssm dynamic-learning (for a VRF)

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## 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

### Default

The default is enabled.

### Command mode

VRF Router Configuration

### Command parameters

Parameter	Description
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.

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# Command: ip igmp ssm group-range (for a VRF)

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## 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

### Default

The default IP address is 0.0.0.232. The default mask is 0.0.0.255.

### Command mode

VRF Router Configuration

### Command parameters

Parameter	Description
{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.

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## 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`

### Default

The default is disabled.

### Command mode

VRF Router Configuration

### Command parameters

Parameter	Description
<code>{A.B.C.D}</code> <code>{A.B.C.D}</code>	Enables the SSM map table for a specific entry or creates a static entry for a specific group. <code>{A.B.C.D} {A.B.C.D}</code> 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.
<code>all</code>	Enables the SSM map table for all static entries.
<code>enable</code>	Enables the static entry.

## 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[-slot/port][,...]} { static | blocked }`
- `default ip igmp static-group {A.B.C.D} {slot/port[-slot/port][,...]} { static | blocked }`
- `ip igmp static-group {A.B.C.D} {A.B.C.D} {slot/port[-slot/port][,...]} { static | blocked }`
- `ip igmp static-group {A.B.C.D} {A.B.C.D} port {slot/port[-slot/port][,...]} { static | blocked }`
- `ip igmp static-group {A.B.C.D} {slot/port[-slot/port][,...]} { static | blocked }`
- `ip igmp static-group {A.B.C.D} port {slot/port[-slot/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[-slot/port][,...]} { static | blocked }`

### Default

None

### Command mode

VLAN Interface Configuration

### Command parameters

Parameter	Description
<code>[static blocked]</code>	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.
<code>{slot/port[-slot/port][,...]}</code>	Creates static members on the interface. Specifies the port or list of ports to which you want to redirect the multicast stream for this multicast group. Use the format {slot/port[-slot/port][,...]}. Use the no operator to later remove this configuration.
<code>&lt;A.B.C.D&gt;</code> <code>&lt;A.B.C.D&gt;</code>	Indicates the IP address range from <A.B.C.D> to <A.B.C.D> of the selected multicast group.





# Command: ip igmp stream-limit (for a port)

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## 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

### Default

None

### Command mode

GigabitEthernet Interface Configuration

### Command parameters

Parameter	Description
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.

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# Command: ip igmp stream-limit (for a VLAN)

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## 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

### Default

None

### Command mode

VLAN Interface Configuration

### Command parameters

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

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## 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[-slot/port][,...]}`
- `default ip igmp stream-limit-group {slot/port[-slot/port][,...]} enable`
- `ip igmp stream-limit-group {slot/port[-slot/port][,...]} enable max-streams <0-65535>`
- `ip igmp stream-limit-group {slot/port[-slot/port][,...]} max-streams <0-65535>`
- `no ip igmp stream-limit-group {slot/port[-slot/port][,...]}`
- `no ip igmp stream-limit-group {slot/port[-slot/port][,...]} enable`

### Default

None

### Command mode

VLAN Interface Configuration

### Command parameters

Parameter	Description
<code>{slot/port[-slot/port][,...]}</code>	Specifies the slot and the port number.
<code>max-streams &lt;0-65535&gt;</code>	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: <code>default ip igmp stream-limit-group &lt;ports&gt;</code>



# Command: ip ipsec enable (for a loopback interface)

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## 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

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# Command: ip ipsec enable (for a mgmt port)

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## ip ipsec enable (for a mgmt port)

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

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# Command: ip ipsec enable (for a port)

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## 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

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# Command: ip ipsec enable (for a VLAN)

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## 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

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## 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`

### Default

None

### Command mode

Loopback Interface Configuration

### Command parameters

Parameter	Description
<code>dir</code> <code>&lt;both in out&gt;</code>	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.
<code>WORD&lt;1-32&gt;</code>	Specifies the IPsec policy name.

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## 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`

### Default

None

### Command mode

mgmtEthernet Interface Configuration

### Command parameters

Parameter	Description
<code>dir</code> <code>&lt;both in out&gt;</code>	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.
<code>WORD&lt;1-32&gt;</code>	Specifies the IPsec policy name.

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## 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

### Default

None

### Command mode

GigabitEthernet Interface Configuration

### Command parameters

Parameter	Description
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.

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## 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`

### Default

None

### Command mode

VLAN Interface Configuration

### Command parameters

Parameter	Description
<code>dir</code> <code>&lt;both in out&gt;</code>	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.
<code>WORD&lt;1-32&gt;</code>	Specifies the IPsec policy name.

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## 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

### Default

None

### Command mode

Global Configuration

### Command parameters

Parameter	Description
enable	Enables the router discovery protocol on the switch.

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## 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}

### Default

The default address is 255.255.255.255.

### Command mode

GigabitEthernet Interface Configuration

### Command parameters

Parameter	Description
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.

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## 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}

### Default

The default address is 255.255.255.255.

### Command mode

VLAN Interface Configuration

### Command parameters

Parameter	Description
<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.
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.



# Command: ip irdp holdtime (for a port)

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## ip irdp holdtime (for a port)

Configure the lifetime for advertisements.

### Syntax

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

### Default

The default is 1800.

### Command mode

GigabitEthernet Interface Configuration

### Command parameters

Parameter	Description
<4-4000>	Specifies the lifetime.

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## 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>

### Default

The default is 1800.

### Command mode

VLAN Interface Configuration

### Command parameters

Parameter	Description
<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.
<4-4000>	Specifies the lifetime.



# Command: ip irdp maxadvertinterval (for a port)

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## 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>

### Default

The default is 600 seconds.

### Command mode

GigabitEthernet Interface Configuration

### Command parameters

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

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# Command: ip irdp maxadvertinterval (for a VLAN)

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## 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>`

### Default

The default is 600 seconds.

### Command mode

VLAN Interface Configuration

### Command parameters

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





# Command: ip irdp minadvertinterval (for a port)

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## 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>

### Default

The default is 450 seconds.

### Command mode

GigabitEthernet Interface Configuration

### Command parameters

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

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# Command: ip irdp minadvertinterval (for a VLAN)

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## 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>`

### Default

The default is 450 seconds.

### Command mode

VLAN Interface Configuration

### Command parameters

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

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# Command: ip irdp multicast (for a port)

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## 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

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# Command: ip irdp multicast (for a VLAN)

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## 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

### Default

The default is enabled (true).

### Command mode

VLAN Interface Configuration

### Command parameters

Parameter	Description
<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.



# Command: ip irdp preference (for a port)

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## 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>`

### Default

The default is 0.

### Command mode

GigabitEthernet Interface Configuration

### Command parameters

Parameter	Description
<code>&lt;-2147483648-2147483647&gt;</code>	Specifies the preference value.

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# Command: ip irdp preference (for a VLAN)

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## 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>

### Default

The default is 0.

### Command mode

VLAN Interface Configuration

### Command parameters

Parameter	Description
<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.
<-2147483648-2147483647>	Specifies the preference value.

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## 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>`

### Default

None

### Command mode

Global Configuration

### Command parameters

Parameter	Description
<code>&lt;1-16777215&gt;</code>	Specifies an I-SID value.
<code>list WORD&lt;1-1024&gt;</code>	Specifies the of I-SID values.
<code>WORD&lt;1-32&gt;</code>	Specifies a name for the I-SID list.

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## 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>`

### Default

None

### Command mode

VRF Router Configuration

### Command parameters

Parameter	Description
<code>&lt;0-16777215&gt;</code>	Specifies an I-SID value.
<code>list WORD&lt;1-1024&gt;</code>	Specifies a list of I-SID values in one of the following formats (1,3,5,8-10).
<code>WORD&lt;1-32&gt;</code>	Specifies a name for the I-SID list.

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## 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



# Command: ip more-specific-non-local-route

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## 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`

### Default

The default is disabled.

### Command mode

Global Configuration

### Command parameters

Parameter	Description
enable	Enable more-specific-non-local-route

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## 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`

### Default

None

### Command mode

GigabitEthernet Interface Configuration

### Command parameters

Parameter	Description
<code>max-allowed-streams &lt;1-32768&gt;</code>	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.
<code>max-allowed-streams-timer-check &lt;1-3600&gt;</code>	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.
<code>port {slot/port[/sub-port]</code>	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

```
port][-  
slot/port[/sub-  
port]][,...]}  
stream-limit
```

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.

Enables stream limit on a particular interface.

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# Command: ip mroute resource-usage egress-threshold

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## 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>`

### Default

None

### Command mode

Global Configuration

### Command parameters

Parameter	Description
<code>egress-threshold &lt;0-32767&gt;</code>	Configures the egress record threshold (S,G). A notification message is sent if this value is exceeded. 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.
<code>ingress-threshold &lt;0-32767&gt;</code>	Configures the ingress record threshold (peps). A notification message is sent if this value is exceeded. 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.

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## 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`

### Default

None

### Command mode

VRF Router Configuration

### Command parameters

Parameter	Description
<code>egress-threshold &lt;0-32767&gt;</code>	Configures the egress record threshold (S,G). A notification message is sent if this value is exceeded. The default is 0.
<code>ingress-threshold &lt;0-32767&gt;</code>	Configures the ingress record threshold (peps). A notification message is sent if this value is exceeded. The default is 0.
<code>log-msg</code>	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

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## 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]`

### Default

None

### Command mode

Global Configuration

### Command parameters

Parameter	Description
<code>egress-threshold &lt;0-32767&gt;</code>	Configures the egress record threshold (S,G). A notification message is sent if this value is exceeded. 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.
<code>ingress-threshold &lt;0-32767&gt;</code>	Configures the ingress record threshold (peps). A notification message is sent if this value is exceeded. 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.
<code>log-msg</code>	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.
<code>trap-msg</code>	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.





# Command: ip mroute resource-usage log-msg trap-msg

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## 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`

### Default

None

### Command mode

Global Configuration

### Command parameters

Parameter	Description
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.



# Command: ip mroute static-source-group

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## 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>

### Default

None

### Command mode

Global Configuration

### Command parameters

Parameter	Description
<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.

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# Command: ip mroute stats enable

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## 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

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# Command: ip mroute stream-limit (globally)

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## 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

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# Command: ip msdp apply redistribute (for a VRF)

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## 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

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# Command: ip msdp apply redistribute (globally)

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## 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

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# Command: ip msdp connect—retry (for a VRF)

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## 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>

### Default

The default is 30 seconds.

### Command mode

VRF Router Configuration

### Command parameters

Parameter	Description
{A.B.C.D}	Specifies the MSDP peer IP address.
<1-65535>	Specifies the connect-retry interval in seconds. The default is 30 seconds.

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# Command: ip msdp connect—retry (globally)

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## 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>

### Default

The default is 30 seconds.

### Command mode

Global Configuration

### Command parameters

Parameter	Description
{A.B.C.D}	Specifies the MSDP peer IP address.
<1-65535>	Specifies the connect-retry interval in seconds. The default is 30 seconds.

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## 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`

### Default

None

### Command mode

VRF Router Configuration

### Command parameters

Parameter	Description
{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.



# Command: ip msdp enable

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## 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

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# Command: ip msdp (for a VRF)

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## 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

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# Command: ip msdp keepalive (for a VRF)

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## 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>

### Default

The default is 60 seconds.

### Command mode

VRF Router Configuration

### Command parameters

Parameter	Description
{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.

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## 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>

### Default

The default is 60 seconds.

### Command mode

Global Configuration

### Command parameters

Parameter	Description
{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.



# Command: ip msdp md5-authentication (for a VRF)

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## 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]

### Default

The default is disabled.

### Command mode

VRF Router Configuration

### Command parameters

Parameter	Description
{A.B.C.D}	Specifies the MSDP peer IP address.
enable	Enables MD5 authentication.

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# Command: ip msdp md5-authentication (globally)

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## 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]`

### Default

The default is disabled.

### Command mode

Global Configuration

### Command parameters

Parameter	Description
{A.B.C.D}	Specifies the MSDP peer IP address.
enable	Enables MD5 authentication.

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# Command: ip msdp mesh-group (for a VRF)

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## 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}

### Default

None

### Command mode

VRF Router Configuration

### Command parameters

Parameter	Description
{A.B.C.D}	Specifies the MSDP peer IP address.
WORD<1-64>	Specifies the mesh group name.

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# Command: ip msdp mesh-group (globally)

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## 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}`

### Default

None

### Command mode

Global Configuration

### Command parameters

Parameter	Description
{A.B.C.D}	Specifies the MSDP peer IP address.
WORD<1-64>	Specifies the mesh group name.

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# Command: ip msdp originator-id (for a VRF)

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## 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}`

### Default

None

### Command mode

VRF Router Configuration

### Command parameters

Parameter	Description
{A.B.C.D}	Specifies the MSDP source IP address.

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# Command: ip msdp originator-id (globally)

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## 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}`

### Default

None

### Command mode

Global Configuration

### Command parameters

Parameter	Description
{A.B.C.D}	Specifies the MSDP source IP address.

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# Command: ip msdp password peer (for a VRF)

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## 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>

### Default

None

### Command mode

VRF Router Configuration

### Command parameters

Parameter	Description
{A.B.C.D}	Specifies the MSDP peer IP address.
WORD<1-80>	Specifies the MD5 authentication password.

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# Command: ip msdp password peer (globally)

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## 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>

### Default

None

### Command mode

Global Configuration

### Command parameters

Parameter	Description
{A.B.C.D}	Specifies the MSDP peer IP address.
WORD<1-80>	Specifies the MD5 authentication password.

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## 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>`

### Default

The default is disabled.

### Command mode

VRF Router Configuration

### Command parameters

Parameter	Description
{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).



# Command: ip msdp redistribute (for a VRF)

[Home](#) | [Command modes](#) | [Alphabetical listing](#)

## 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

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# Command: ip msdp redistribute (globally)

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## 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

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# Command: ip msdp redistribute route-policy (for a VRF)

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## 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>

### Default

None

### Command mode

VRF Router Configuration

### Command parameters

Parameter	Description
WORD<1-64>	Specifies the route policy name.

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# Command: ip msdp redistribute route-policy (globally)

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## 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>

### Default

None

### Command mode

Global Configuration

### Command parameters

Parameter	Description
WORD<1-64>	Specifies the route policy name.

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# Command: ip msdp sa-filter in (for a VRF)

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## 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>`

### Default

None

### Command mode

VRF Router Configuration

### Command parameters

Parameter	Description
<code>{A.B.C.D}</code>	Specifies the MSDP peer IP address.
<code>route-policy WORD&lt;1-64&gt;</code>	Specifies the route policy name for an inbound filter.

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## 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>`

### Default

None

### Command mode

Global Configuration

### Command parameters

Parameter	Description
{A.B.C.D}	Specifies the MSDP peer IP address.
route-policy WORD<1-64>	Specifies the route policy name for an inbound filter.

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# Command: ip msdp sa-filter out (for a VRF)

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## 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}`

### Default

None

### Command mode

VRF Router Configuration

### Command parameters

Parameter	Description
{A.B.C.D}	Specifies the MSDP peer IP address.
route-policy WORD<1-64>	Specifies the route policy name for an outbound filter.

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# Command: ip msdp sa-filter out (globally)

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## 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>`

### Default

None

### Command mode

Global Configuration

### Command parameters

Parameter	Description
{A.B.C.D}	Specifies the MSDP peer IP address.
route-policy WORD<1-64>	Specifies the route policy name for an outbound filter.

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## 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>

### Default

The default is 6144.

### Command mode

VRF Router Configuration

### Command parameters

Parameter	Description
{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.

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## 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>`

### Default

The default is 6144.

### Command mode

Global Configuration

### Command parameters

Parameter	Description
{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.





# Command: ip msdp ttl-threshold (for a VRF)

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## 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>`

### Default

The default is 1.

### Command mode

VRF Router Configuration

### Command parameters

Parameter	Description
{A.B.C.D}	Specifies the MSDP peer IP address.
<1-255>	Specifies the Time-To-Live value. The default is 1.

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# Command: ip msdp ttl-threshold (globally)

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## 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>`

### Default

The default is 1.

### Command mode

Global Configuration

### Command parameters

Parameter	Description
{A.B.C.D}	Specifies the MSDP peer IP address.
<1-255>	Specifies the Time-To-Live value. The default is 1.

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## 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`

### Default

None

### Command mode

Global Configuration

### Command parameters

Parameter	Description
<code>&lt;primary secondary tertiary&gt;WORD&lt;0-46&gt;</code>	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.



# Command: ip ospf

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## ip ospf

Configures OSPF settings.

### Syntax

- default ip ospf
- ip ospf
- no ip ospf

### Default

None

### Command mode

VRF Router Configuration

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## 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`

### Default

None

### Command mode

VRF Router Configuration

### Command parameters

Parameter	Description
{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.





# Command: ip ospf admin-state

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## 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

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

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## 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

### Default

The default is disabled.

### Command mode

GigabitEthernet Interface Configuration

### Command parameters

Parameter	Description
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.

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# Command: ip ospf advertise-when-down enable (for a VLAN)

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## 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

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## 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>

### Default

The default is disabled.

### Command mode

User EXEC

### Command parameters

Parameter	Description
[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.

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## 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>

### Default

None

### Command mode

User EXEC

### Command parameters

Parameter	Description
{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.

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## 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>

### Default

None

### Command mode

User EXEC

### Command parameters

Parameter	Description
{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.

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## 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

### Default

None

### Command mode

GigabitEthernet Interface Configuration

### Command parameters

Parameter	Description
<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.

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## 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

### Default

None

### Command mode

VLAN Interface Configuration

### Command parameters

Parameter	Description
<A.B.C.D>	Configures the OSPF identification number for the area, typically formatted as an IP address.

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## 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`

### Default

None

### Command mode

VRF Router Configuration

### Command parameters

Parameter	Description
<code>&lt;A.B.C.D&gt;</code>	Configures the OSPF identification number for the area, typically formatted as an IP address.
<code>default-cost &lt;0-16777215&gt;</code>	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.
<code>import</code> <code>&lt;external noexternal nssa&gt;</code>	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. Configures the area support to import summary advertisements

`import-summaries enable`

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.

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## 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 }`

### Default

None

### Command mode

VRF Router Configuration

### Command parameters

Parameter	Description
<code>{A.B.C.D} {A.B.C.D/X}</code>	<A.B.C.D> identifies an OSPF area and <A.B.C.DX> is the IP address and subnet mask of the range, respectively.
<code>&lt;summary-link nssaextlink&gt;</code>	Specifies the LSA type. If you configure the range as type nssaextlink then you cannot configure the advertise-metric.
<code>advertise-metric &lt;0-65535&gt;</code>	Changes the advertised metric cost of the OSPF area range.
<code>advertise-mode &lt;summarize suppress nosummarize</code>	Changes the advertisement mode of the range.

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## 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}`

### Default

None

### Command mode

VRF Router Configuration

### Command parameters

Parameter	Description
<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.

<pre>authentication-key WORD&lt;0-8&gt;</pre>	<p>Configures the authentication key of up to eight characters.</p>
<pre>authentication-type &lt;none simple messagedigest&gt;</pre>	<p>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.</p>
<pre>dead-interval &lt;0-2147483647&gt;</pre>	<p>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.</p>
<pre>hello-interval &lt;1-65535&gt;</pre>	<p>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.</p>
<pre>primary-md5-key &lt;1-255&gt;</pre>	<p>Changes the primary key used to encrypt outgoing packets. &lt;1-255&gt; is the ID for the message digest key.</p>
<pre>retransmit-interval &lt;0-3600&gt;</pre>	<p>Configures the retransmit interval for the virtual interface, the number of seconds between link-state advertisement retransmissions. The range is from 0 to 3600.</p>
<pre>transit-delay &lt;0-3600&gt;</pre>	<p>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.</p>

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## 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>`

### Default

None

### Command mode

VRF Router Configuration

### Command parameters

Parameter	Description
<code>&lt;1-255&gt; md5-key WORD&lt;1-16&gt;</code>	<code>&lt;A.B.C.D&gt;</code> is the virtual interface id. <code>&lt;1-255&gt;</code> is the ID for the message digest key. <code>WORD&lt;0-16&gt;</code> is an alphanumeric password in the range of 0 to 16 characters.
<code>&lt;A.B.C.D&gt;</code> <code>&lt;A.B.C.D&gt;</code>	Adds a Message Digest 5 algorithm (MD5) key to the interface. At most, you can configure two MD5 keys to an interface. <code>&lt;A.B.C.D&gt;</code> identifies an OSPF area.



# Command: ip ospf as-boundary-router enable (for a VRF)

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## 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

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# Command: ip ospf as-boundary-router (for a VRF)

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## 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

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# Command: ip ospf authentication-key (for a port)

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## 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>

### Default

None

### Command mode

GigabitEthernet Interface Configuration

### Command parameters

Parameter	Description
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.

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# Command: ip ospf authentication-key (for a VLAN)

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## 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>`

### Default

None

### Command mode

VLAN Interface Configuration

### Command parameters

Parameter	Description
WORD<0-8>	Specifies the authentication key.

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## 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 authentication-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

### Default

The default is none.

### Command mode

GigabitEthernet Interface Configuration

### Command parameters

Parameter	Description
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	Configures the authentication-type to secure hash algorithm 2 (SHA-2). Specifies SHA-2, which is an update of SHA-1, offering 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.
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 authentication-key WORD<0-8> command.

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## 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 authentication-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

### Default

The default is none.

### Command mode

VLAN Interface Configuration

### Command parameters

Parameter	Description
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	Configures the authentication-type to secure hash algorithm 2 (SHA-2). Specifies SHA-2, which is an update of SHA-1, offering 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.
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 authentication-key WORD<0-8> command.





# Command: ip ospf auto-vlink (for a VRF)

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## 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

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# Command: ip ospf bad-lsa-ignore enable (for a VRF)

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## 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

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## 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>

### Default

The default is 0.

### Command mode

GigabitEthernet Interface Configuration

### Command parameters

Parameter	Description
<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.

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## 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>

### Default

The default is 0.

### Command mode

VLAN Interface Configuration

### Command parameters

Parameter	Description
<1-65535>	Specifies the cost range.





# Command: ip ospf dead-interval (for a port)

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## 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>

### Default

The default is 40.

### Command mode

GigabitEthernet Interface Configuration

### Command parameters

Parameter	Description
<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.

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# Command: ip ospf dead-interval (for a VLAN)

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## 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>

### Default

The default is 40.

### Command mode

VLAN Interface Configuration

### Command parameters

Parameter	Description
<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.

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## 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>`

### Default

None

### Command mode

VRF Router Configuration

### Command parameters

Parameter	Description
<code>ethernet &lt;1-65535&gt;</code>	Configures the OSPF default metrics for 10 Mb/s Ethernet. The default is 100.
<code>fast-ethernet &lt;1-65535&gt;</code>	Configures the OSPF default metrics for 100 Mb/s (Fast) Ethernet. The default is 10.
<code>forty-gig-ethernet &lt;1-65535&gt;</code>	Configures the OSPF default metrics for 40 Gigabit Ethernet. The default is 1.
<code>gig-ethernet &lt;1-65535&gt;</code>	Configures the OSPF default metrics for Gigabit Ethernet. The default is 1.
<code>hundred-gig-ethernet &lt;1-65535&gt;</code>	Configures the OSPF default metrics for 100 Gigabit Ethernet. The default is 1.
<code>ten-gig-ethernet &lt;1-65535&gt;</code>	Configures the OSPF default metrics for 10 Gigabit Ethernet. The default is 1.

twentyfive-gig-ethernet  
<1-65535>  
vlan

Configures the OSPF default metrics for 25 Gigabit Ethernet. The default is 1.

Configures the OSPF default metrics for a VLAN. The default is 1.

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# Command: ip ospf digest-key (for a port)

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## 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>`

### Default

None

### Command mode

GigabitEthernet Interface Configuration

### Command parameters

Parameter	Description
<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).

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# Command: ip ospf digest-key (for a VLAN)

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## 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>`

### Default

None

### Command mode

VLAN Interface Configuration

### Command parameters

Parameter	Description
<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).

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## 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]][,...]}

### Default

The default is disabled.

### Command mode

GigabitEthernet Interface Configuration

### Command parameters

Parameter	Description
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.

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# Command: ip ospf enable (for a VLAN)

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## 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

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# Command: ip ospf (for a VRF)

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## 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

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# Command: ip ospf hello-interval (for a port)

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## 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>

### Default

The default is 10.

### Command mode

GigabitEthernet Interface Configuration

### Command parameters

Parameter	Description
<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.

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# Command: ip ospf hello-interval (for a VLAN)

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## 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>

### Default

The default is 10.

### Command mode

VLAN Interface Configuration

### Command parameters

Parameter	Description
<1-65535>	Specifies the Hello interval range in seconds. Dead Interval must be a multiple of Hello Interval.

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# Command: ip ospf host-route {A.B.C.D} (for a VRF)

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## 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}`

### Default

None

### Command mode

VRF Router Configuration

### Command parameters

Parameter	Description
<code>&lt;A.B.C.D&gt;</code>	Specifies the IP address of the host router in a.b.c.d format.
<code>metric &lt;0-65535&gt;</code>	Configures the metric (cost) for the host route.

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## 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>`

### Default

The default is disabled.

### Command mode

Loopback Interface Configuration

### Command parameters

Parameter	Description
<code>&lt;1-256&gt;</code>	Specifies the interface identification number for the CLIP.
<code>vrf WORD&lt;1-16&gt;</code>	Specifies an associated VRF by name.



# Command: ip ospf mtu-ignore enable (for a port)

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## 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

### Default

None

### Command mode

GigabitEthernet Interface Configuration

### Command parameters

Parameter	Description
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.

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# Command: ip ospf mtu-ignore enable (for a VLAN)

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## 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

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## 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}`

### Default

None

### Command mode

VRF Router Configuration

### Command parameters

Parameter	Description
<code>&lt;A.B.C.D&gt;</code>	Identifies an OSPF area in IP address format A.B.C.D.
<code>priority &lt;0-255&gt;</code>	Changes the priority level of the neighbor.

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## 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}

### Default

None

### Command mode

GigabitEthernet Interface Configuration

### Command parameters

Parameter	Description
<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.

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## ip ospf network (for a VLAN)

Specify the type of OSPF interface.

### Syntax

- default ip ospf network
- ip ospf network { broadcast | nbma | passive }

### Default

None

### Command mode

VLAN Interface Configuration

### Command parameters

Parameter	Description
<broadcast   nbma   passive>	Specifies the interface type.

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## 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}

### Default

None

### Command mode

VRF Router Configuration

### Command parameters

Parameter	Description
{A.B.C.D}	Specifies the IP address of the network.
area {A.B.C.D}	Specifies the OSPF area.

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## 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>

### Default

The default is 120.

### Command mode

GigabitEthernet Interface Configuration

### Command parameters

Parameter	Description
<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.



# Command: ip ospf poll-interval (for a VLAN)

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## 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>

### Default

The default is 120.

### Command mode

VLAN Interface Configuration

### Command parameters

Parameter	Description
<0-2147483647>	Specifies the poll interval range in seconds.

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# Command: ip ospf primary-digest-key (for a port)

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## 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>

### Default

None

### Command mode

GigabitEthernet Interface Configuration

### Command parameters

Parameter	Description
<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.

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# Command: ip ospf primary-digest-key (for a VLAN)

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## 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>

### Default

None

### Command mode

VLAN Interface Configuration

### Command parameters

Parameter	Description
<1-255>	Specifies the primay md5 key range.

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## 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>

### Default

The default is 1.

### Command mode

GigabitEthernet Interface Configuration

### Command parameters

Parameter	Description
<0-255>	Specifies the priority 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.



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## 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>

### Default

The default is 1.

### Command mode

VLAN Interface Configuration

### Command parameters

Parameter	Description
<0-255>	Specifies the priority range.

## 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`

### Default

None

## Command mode

VRF Router Configuration

## Command parameters

Parameter	Description
{ 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.



# Command: ip ospf retransmit-interval (for a port)

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## 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>

### Default

None

### Command mode

GigabitEthernet Interface Configuration

### Command parameters

Parameter	Description
<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.

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# Command: ip ospf retransmit-interval (for a VLAN)

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## 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>

### Default

None

### Command mode

VLAN Interface Configuration

### Command parameters

Parameter	Description
<0-3600>	Specifies the retransmit interval range in seconds.

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# Command: ip ospf rfc1583-compatibility enable (for a VRF)

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## 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

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## 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

### Default

None

### Command mode

VRF Router Configuration

### Command parameters

Parameter	Description
router-id <A.B.C.D>	Configures the OSPF router ID IP address, where A.B.C.D is the IP address.

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## 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>

### Default

None

### Command mode

User EXEC

### Command parameters

Parameter	Description
vrf WORD<1-16>	Specifies a VRF instance by name.

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# Command: ip ospf timers basic holddown (for a VRF)

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## 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>`

### Default

The default is 120 seconds.

### Command mode

VRF Router Configuration

### Command parameters

Parameter	Description
<3-60>	Configures the holddown timer value.

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# Command: ip ospf transit-delay (for a port)

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## 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>

### Default

None

### Command mode

GigabitEthernet Interface Configuration

### Command parameters

Parameter	Description
<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.

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# Command: ip ospf transit-delay (for a VLAN)

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## 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

None

### Command mode

VLAN Interface Configuration

### Command parameters

Parameter	Description
<0-3600>	Specifies the transit delay range.

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## 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

### Default

The default value is disable.

### Command mode

VRF Router Configuration

### Command parameters

Parameter	Description
enable	Enables OSPF traps.

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## 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>`

### Default

None

### Command mode

VLAN Interface Configuration

### Command parameters

Parameter	Description
	Specifies the VLAN ID in the range of 1 to 4059. By default, VLAN IDs 1 to 4059

<1-4059>	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.
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} authentication-key WORD<0-8>	Configures OSPF parameters on a VLAN to control how OSPF behaves. 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.



# Command: ip pim bsr-candidate preference (for a port)

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## 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

### Default

None

### Command mode

GigabitEthernet Interface Configuration

### Command parameters

Parameter	Description
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.

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# Command: ip pim bsr-candidate preference (for a VLAN)

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## 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

### Default

None

### Command mode

VLAN Interface Configuration

### Command parameters

Parameter	Description
preference <0-255>	Configure additional routers as candidate BSRs (C-BSR) to provide backup protection in the event that the primary BSR fails.

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## 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`

### Default

None

### Command mode

GigabitEthernet Interface Configuration

### Command parameters

Parameter	Description
<code>active</code>	Enables PIM and sets interface type to active.
<code>bsr-candidate &lt;preference&gt;</code>	Enables BSR candidate on an interface.
<code>enable</code>	Configure PIM for each interface to enable the interface to perform multicasting operations.
<code>hello-interval &lt;0-18724&gt;</code>	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.

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## 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

### Default

None

### Command mode

VLAN Interface Configuration

### Command parameters

Parameter	Description
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.

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## 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`

### Default

The default is disabled.

### Command mode

## Command parameters

Parameter	Description
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 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.



# Command: ip pim hello-interval (for a port)

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## 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>

### Default

30 seconds.

### Command mode

GigabitEthernet Interface Configuration

### Command parameters

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

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# Command: ip pim interface-type (for a port)

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## ip pim interface-type (for a port)

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

### Default

The default is active.

### Command mode

GigabitEthernet Interface Configuration

### Command parameters

Parameter	Description
<active passive>	Specifies the interface type.

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# Command: ip pim interface-type (for a VLAN)

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## 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

### Default

The default is active.

### Command mode

VLAN Interface Configuration

### Command parameters

Parameter	Description
<active passive>	Specifies the interface type.

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# Command: ip pim join-prune-interval (for a port)

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## 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>

### Default

60 seconds.

### Command mode

GigabitEthernet Interface Configuration

### Command parameters

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

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## 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>`

### Default

The default is -1, which indicates that the current interface is not a C-BSR.

### Command mode

Loopback Interface Configuration

### Command parameters

Parameter	Description
<0-255>	Specifies the preference value.
<1-256>	Specifies the interface ID.

<code>bsr-candidate preference &lt;0-255&gt; vrf WORD&lt;1- 16&gt;</code>	<p>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).</p> <p>Specifies the VRF name.</p>
---	---

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## 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

### Default

The default is sparse.

### Command mode

Global Configuration

### Command parameters

Parameter	Description
<ssm sparse>	Specifies the mode. Configures Source Specific Multicast (SSM) to optimize PIM-SM by simplifying the many-to-many model (servers-to-receivers).

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## 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>`

### Default

None

### Command mode

Global Configuration

### Command parameters

Parameter	Description
{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.
{A.B.C.D}	
rp	Specifies the IP address of the C-RP router. This address must be one of the local PIM-SM enabled interfaces.
{A.B.C.D}	

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## 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

### Default

The default is disabled.

### Command mode

Global Configuration

### Command parameters

Parameter	Description
<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.

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## 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>

### Default

None

### Command mode

Global Configuration

### Command parameters

Parameter	Description
<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.

## 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}`

### Default

None

### Command mode

Global Configuration

### Command parameters

Parameter	Description
<code>&lt;A.B.C.D/X&gt;</code>	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: <code>no ip prefix-list WORD&lt;1-64&gt; &lt;A.B.C.D/X&gt;</code>
<code>ge&lt;0-32&gt;</code>	Specifies the minimum length to match. Lower bound and higher bound mask lengths together can define a range of networks.
<code>id&lt;1-2147483647&gt;</code>	Specifies the prefix list ID.
<code>le&lt;0-32&gt;</code>	Specifies the maximum length to match. Lower bound and higher bound mask lengths together can define a range of networks.
<code>name WORD&lt;1-64&gt;</code>	Renames the specified prefix list. The name length is from 1 to 64 characters.



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## 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}

### Default

None

### Command mode

VRF Router Configuration

### Command parameters

Parameter	Description
<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.



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

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## 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

### Default

The default is disabled.

### Command mode

GigabitEthernet Interface Configuration

### Command parameters

Parameter	Description
<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.

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# Command: ip rip advertise-when-down enable (for a VLAN)

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## 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

### Default

The default is disabled.

### Command mode

VLAN Interface Configuration

### Command parameters

Parameter	Description
<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.

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## 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>

## Default

None

## Command mode

User EXEC

## Command parameters

Parameter	Description
{ 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.



# Command: ip rip auto-aggregation enable (for a VLAN)

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## 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`

### Default

The default is disabled.

### Command mode

VLAN Interface Configuration

### Command parameters

Parameter	Description
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.

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# Command: ip rip auto-aggregation (for a port)

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## 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`

### Default

The default is disabled.

### Command mode

GigabitEthernet Interface Configuration

### Command parameters

Parameter	Description
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.

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# Command: ip rip cost (for a port)

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## ip rip cost (for a port)

Configure the RIP cost for this port (link).

### Syntax

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

### Default

None

### Command mode

GigabitEthernet Interface Configuration

### Command parameters

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

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## ip rip cost (for a VLAN)

Configure the RIP cost for this port (link).

### Syntax

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

### Default

None

### Command mode

VLAN Interface Configuration

### Command parameters

Parameter	Description
<1-15>	Configures the RIP cost for this interface.

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# Command: ip rip default-listen enable (for a VLAN)

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## 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`

### Default

The default is disabled.

### Command mode

VLAN Interface Configuration

### Command parameters

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

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# Command: ip rip default-listen (for a port)

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## 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

### Default

The default is disabled.

### Command mode

GigabitEthernet Interface Configuration

### Command parameters

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

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# Command: ip rip default-metric (for a VRF)

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## 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>

### Default

The default value is -1.

### Command mode

VRF Router Configuration

### Command parameters

Parameter	Description
<0-15>	Configures the value of default import metric to import a route into RIP domain.

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# Command: ip rip default-supply enable (for a port)

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## 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`

### Default

The default is false.

### Command mode

GigabitEthernet Interface Configuration

### Command parameters

Parameter	Description
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.

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# Command: ip rip default-supply enable (for a VLAN)

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## 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`

### Default

The default is false.

### Command mode

VLAN Interface Configuration

### Command parameters

Parameter	Description
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.

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## ip rip domain (for a VRF)

Specify the RIP domain.

### Syntax

- default ip rip domain
- ip rip domain <0-39321>

### Default

The default is 0.

### Command mode

VRF Router Configuration

### Command parameters

Parameter	Description
<0-39321>	Specifies the RIP domain.



# Command: ip rip enable (for a port)

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## ip rip enable (for a port)

Enable RIP routing on the interface.

### Syntax

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

### Default

The default is disabled.

### Command mode

GigabitEthernet Interface Configuration

### Command parameters

Parameter	Description
enable	Enables RIP routing on the interface.

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# Command: ip rip enable (for a VLAN)

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## ip rip enable (for a VLAN)

Enable RIP routing on the interface.

### Syntax

- ip rip enable
- no ip rip enable

### Default

The default is disabled.

### Command mode

VLAN Interface Configuration

### Command parameters

Parameter	Description
enable	Enables RIP routing on the interface.

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## ip rip enable (for a VRF)

Enable RIP routing on the interface.

### Syntax

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

### Default

The default is disabled.

### Command mode

VRF Router Configuration

### Command parameters

Parameter	Description
enable	Enables RIP routing on the interface.



# Command: ip rip (for a VRF)

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## 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

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# Command: ip rip holddown (for a port)

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## 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>

### Default

The default is 120.

### Command mode

GigabitEthernet Interface Configuration

### Command parameters

Parameter	Description
<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.

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## 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>

### Default

The default is 120.

### Command mode

VLAN Interface Configuration

### Command parameters

Parameter	Description
<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.

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## 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>

### Default

None

### Command mode

GigabitEthernet Interface Configuration

### Command parameters

Parameter	Description
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.

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## ip rip in-policy (for a VLAN)

Configures the rip in-policy on specific interface.

### Syntax

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

### Default

None

### Command mode

GigabitEthernet Interface Configuration

### Command parameters

Parameter	Description
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.



# Command: ip rip listen enable (for a VLAN)

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## 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

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## 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

### Default

The default is enabled.

### Command mode

GigabitEthernet Interface Configuration

### Command parameters

Parameter	Description
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.



# Command: ip rip out-policy (for a port)

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## ip rip out-policy (for a port)

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 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>

### Default

None

### Command mode

GigabitEthernet Interface Configuration

### Command parameters

Parameter	Description
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.

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## 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>

### Default

None

### Command mode

VLAN Interface Configuration

### Command parameters

Parameter	Description
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.



# Command: ip rip poison enable (for a port)

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## ip rip poison enable (for a port)

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

### Default

The default is disabled.

### Command mode

GigabitEthernet Interface Configuration

### Command parameters

Parameter	Description
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.

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## 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

### Default

The default is disabled.

### Command mode

VLAN Interface Configuration

### Command parameters

Parameter	Description
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.

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## 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]][,...]}`

### Default

None

### Command mode

GigabitEthernet Interface Configuration

### Command parameters

Parameter	Description
<code>{slot/port[/sub-port][-slot/port[/sub-port]][,...]}</code>	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.

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# Command: ip rip receive version (for a port)

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## 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 }

### Default

The default is rip1orrip 2.

### Command mode

GigabitEthernet Interface Configuration

### Command parameters

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

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# Command: ip rip receive version (for a VLAN)

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## 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 }

### Default

The default is rip1orrip 2.

### Command mode

VLAN Interface Configuration

### Command parameters

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

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## 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>`

### Default

None

## Command mode

VRF Router Configuration

## Command parameters

Parameter	Description
<code>enable</code>	Enables the route redistribution instance.
<code>metric &lt;0-65535&gt;</code>	Configures the metric to apply to redistributed routes.
<code>route-map WORD&lt;0-64&gt;</code>	Configures the route map to apply to redistributed routes.
<code>vrf WORD &lt;0-16&gt;</code>	Specifies the VRF instance.
<code>vrf-src WORD&lt;0-16&gt;</code>	Specifies the source VRF instance. This parameter is not required for redistribution within the same VRF.
<code>WORD&lt;0-32&gt;</code>	Specifies the type of routes to redistribute-the protocol source.

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## 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>`

### Default

None

## Command mode

VRF Router Configuration

## Command parameters

Parameter	Description
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.

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# Command: ip rip send (for a port)

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## 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 }

### Default

The default is rip1Compatible.

### Command mode

GigabitEthernet Interface Configuration

### Command parameters

Parameter	Description
<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

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## 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>

### Default

The default is rip1Compatible.

### Command mode

VLAN Interface Configuration

### Command parameters

Parameter	Description
<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

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## 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

### Default

The default is enabled.

### Command mode

GigabitEthernet Interface Configuration

### Command parameters

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

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## 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

### Default

The default is enabled.

### Command mode

VLAN Interface Configuration

### Command parameters

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

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## ip rip timeout (for a port)

Configure the RIP timeout interval in seconds.

### Syntax

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

### Default

None

### Command mode

GigabitEthernet Interface Configuration

### Command parameters

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

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# Command: ip rip timeout (for a VLAN)

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## ip rip timeout (for a VLAN)

Configure the RIP timeout interval in seconds.

### Syntax

- ip rip timeout <15-259200>

### Default

None

### Command mode

VLAN Interface Configuration

### Command parameters

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

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# Command: ip rip timers basic holddown (for a VRF)

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## 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>`

### Default

The default is 120 seconds.

### Command mode

VRF Router Configuration

### Command parameters

Parameter	Description
<code>&lt;0-360&gt;</code>	Configures the holddown timer value.

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# Command: ip rip timers basic timeout (for a VRF)

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## 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>

### Default

The default is 180.

### Command mode

VRF Router Configuration

### Command parameters

Parameter	Description
<15-259200>	Configures the value of default import metric to import a route into RIP domain.

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# Command: ip rip timers basic update (for a VRF)

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## 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>

### Default

The default is 30 seconds.

### Command mode

VRF Router Configuration

### Command parameters

Parameter	Description
<1-360>	Configures the update interval.

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## 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

### Default

The default is disabled.

### Command mode

GigabitEthernet Interface Configuration

### Command parameters

Parameter	Description
<enable disable>	Enables automatic triggered updates for RIP.

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## 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

### Default

The default is disabled.

### Command mode

VLAN Interface Configuration

### Command parameters

Parameter	Description
<enable disable>	Enables automatically triggered updates for RIP.

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## 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`

### Default

None

### Command mode



## Command parameters

Parameter	Description
{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.

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## 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`

### Default

None

### Command mode

Global Configuration

## Command parameters

Parameter	Description
{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.

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## ip route preference protocol ebgp

Configure the global route preference.

### Syntax

- `default ip route preference protocol ebgp`
- `ip route preference protocol ebgp <0-255>`

### Default

The default is 45.

### Command mode

Global Configuration

### Command parameters

Parameter	Description
<0-255>	Configures the preference value for the specified protocol. If two protocols have the same configured value, the default value is used.



# Command: ip route preference protocol (for a VRF)

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## 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>

### Default

None

### Command mode

VRF Router Configuration

### Command parameters

Parameter	Description
{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).



# Command: ip route preference protocol ibgp

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## ip route preference protocol ibgp

Configure the global route preference.

### Syntax

- `default ip route preference protocol ibgp`
- `ip route preference protocol ibgp <0-255>`

### Default

The default is 175.

### Command mode

Global Configuration

### Command parameters

Parameter	Description
<0-255>	Configures the preference value for the specified protocol. If two protocols have the same configured value, the default value is used.

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## 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>`

### Default

The default is 120.

### Command mode

Global Configuration

### Command parameters

Parameter	Description
<code>&lt;0-255&gt;</code>	Configures the preference value for the specified protocol. If two protocols have the same configured value, the default value is used.



# Command: ip route preference protocol ospf-extern2

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## 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>`

### Default

The default is 125.

### Command mode

Global Configuration

### Command parameters

Parameter	Description
<0-255>	Configures the preference value for the specified protocol. If two protocols have the same configured value, the default value is used.

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## 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>`

### Default

The default is 25.

### Command mode

Global Configuration

### Command parameters

Parameter	Description
<code>&lt;0-255&gt;</code>	Configures the preference value for the specified protocol. If two protocols have the same configured value, the default value is used.



# Command: ip route preference protocol ospf-intra

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## 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>`

### Default

The default is 20.

### Command mode

Global Configuration

### Command parameters

Parameter	Description
<code>&lt;0-255&gt;</code>	Configures the preference value for the specified protocol. If two protocols have the same configured value, the default value is used.

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# Command: ip route preference protocol rip

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## ip route preference protocol rip

Configure the global route preference.

### Syntax

- `default ip route preference protocol rip`
- `ip route preference protocol rip <0-255>`

### Default

The default is 100.

### Command mode

Global Configuration

### Command parameters

Parameter	Description
<code>&lt;0-255&gt;</code>	Configures the preference value for the specified protocol. If two protocols have the same configured value, the default value is used.

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# Command: ip route preference protocol spbm-level1

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## 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>`

### Default

The default is 7.

### Command mode

Global Configuration

### Command parameters

Parameter	Description
<0-255>	Configures the preference value for the specified protocol. If two protocols have the same configured value, the default value is used.

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# Command: ip route preference protocol static

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## ip route preference protocol static

Configure the global route preference.

### Syntax

- `default ip route preference protocol static`
- `ip route preference protocol static <0-255>`

### Default

The default is 5.

### Command mode

Global Configuration

### Command parameters

Parameter	Description
<0-255>	Configures the preference value for the specified protocol. If two protocols have the same configured value, the default value is used.

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## 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

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## 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

### Default

None

### Command mode

VLAN Interface Configuration

### Command parameters

Parameter	Description
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 180.



# Command: ip rsmlt edge-support

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## 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>

### Default

The default is disabled.

### Command mode

Global Configuration

### Command parameters

Parameter	Description
edge-support	Enables RSMLT-edge support.

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## 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

### Default

None

### Command mode

GigabitEthernet Interface Configuration

### Command parameters

Parameter	Description
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.

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## 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>`

### Default

The default is disabled.

### Command mode

Global Configuration

### Command parameters

Parameter	Description
<code>action &lt;drop permit&gt;</code>	Specifies the action the policy takes. The default is permit.
<code>dport&lt;1-65535 &lt;any&gt;</code>	Specifies the destination port for TCP and UDP. You can specify any port as the destination port. The default is any.
<code>laddr WORD&lt;1-32&gt;</code>	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



# Command: ipsec policy admin enable

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## 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

### Default

The default is disabled.

### Command mode

Global Configuration

### Command parameters

Parameter	Description
WORD<1-32>	Specifies the IPsec policy name.

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# Command: ipsec policy security-association

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## 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

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## 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>

## Default

None

## Command mode

Global Configuration

## Command parameters

Parameter	Description
<code>auth-algo &lt;AES-XCBC-MAC   32 MD5   SHA1   SHA2&gt;</code>	The authentication algorithm parameter specifies the authorization algorithm, which includes one of the following values: AES-XCBC-MAC, MD5, SHA1, and SHA2. The default authentication algorithm name is MD5.
<code>auth-key WORD&lt;1-256&gt; [KeyLength WORD&lt;1-256&gt;]</code>	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.
<code>encap-proto &lt;AH   ESP&gt;</code>	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.
<code>Encrpt-algo &lt;3DES   AES24 CBC   AES-CTR   NULL&gt;</code>	Specifies the encryption algorithm value as one of the following: 3DES-CBC, AES-CBC, AES-CTR, and 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.
<code>EncrptKey WORD&lt;1-256&gt; [KeyLength WORD&lt;1-256&gt;]</code>	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.
<code>key-mode &lt;automatic   manual&gt;</code>	Specifies the key-mode as one of the following: automatic or manual. The default is manual.
<code>lifetime &lt;Bytes &lt;1-4294967295&gt;   seconds &lt;1-4294967295&gt;</code>	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.
<code>mode &lt;transport   tunnel&gt;</code>	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.
<code>policy WORD&lt;1-32&gt;</code>	Specifies the policy ID.
<code>spi &lt;1-4294967295&gt;</code>	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.
<code>WORD&lt;1-32&gt;</code>	Specifies the security association.
<code>WORD&lt;1-32&gt;</code>	Specifies the security association and creates the security association.





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## 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`

### Default

None

### Command mode

IS-IS Router Configuration

### Command parameters

Parameter	Description
<A.B.C.D>	Specifies the circuitless IP (CLIP) interface as the source address for SPBM IP shortcuts.



# Command: ip source-route

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## 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

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# Command: ip source-route (for VRF)

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## 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

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# Command: ip source verify

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

### Command mode

GigabitEthernet Interface Configuration

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# Command: ip spb-multicast enable (for a port)

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## 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

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# Command: ip spb-multicast enable (for a VLAN)

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## 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

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# Command: ip spb-pim-gw enable (for a port)

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## 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

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# Command: ip spb-pim-gw enable (for a VLAN)

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## 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

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# Command: ip spb-pim-gw foreign-source (for a VRF)

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## 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}

### Default

None

### Command mode

VRF Router Configuration

### Command parameters

Parameter	Description
{A.B.C.D}	Specifies the multicast foreign source IP address.
group {A.B.C.D}	Specifies the group IP address.

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# Command: ip spb-pim-gw foreign-source (globally)

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## 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}`

### Default

None

### Command mode

Global Configuration

### Command parameters

Parameter	Description
<code>{A.B.C.D}</code>	Specifies the multicast foreign source IP address.
<code>group {A.B.C.D}</code>	Specifies the group IP address.

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

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## 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>`

### Default

The default value is 30 seconds.

### Command mode

GigabitEthernet Interface Configuration

### Command parameters

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

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# Command: ip spb-pim-gw hello-interval (for a VLAN)

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## 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>

### Default

The default value is 30 seconds.

### Command mode

VLAN Interface Configuration

### Command parameters

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

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

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## 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>

### Default

The default value is 60 seconds.

### Command mode

GigabitEthernet Interface Configuration

### Command parameters

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

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# Command: ip spb-pim-gw ip join-prune-interval (for a VLAN)

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## 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>

### Default

The default value is 60 seconds.

### Command mode

VLAN Interface Configuration

### Command parameters

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

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# Command: ip supernet

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## ip supernet

Enable or disable supernetting. If supernetting is globally enabled, the switch can learn routes with a route mask of less than 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

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## 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`

### Default

The default value is 255.

### Command mode

Global Configuration

### Command parameters

Parameter	Description
<code>ttl&lt;1-255&gt;</code>	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.

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## 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`

### Default

None

### Command mode

IS-IS Router Configuration

### Command parameters

Parameter	Description
{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.



# Command: ipv6 alternative-route

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## 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

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## 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`

### Default

None

### Command mode

OSPF Router Configuration

### Command parameters

Parameter	Description
{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.

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.

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).

translator-role {1|2}

type {nssa|stub}

## 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`

### Default

None

### Command mode

OSPF Router Configuration

### Command parameters

Parameter	Description
{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 advertise-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.



## 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}`

### Default

The default is disabled.

### Command mode

OSPF Router Configuration

### Command parameters

Parameter	Description
<code>{A.B.C.D}</code> <code>{A.B.C.D}</code>	Specifies the area address and the virtual link address.
<code>dead-interval</code> <code>&lt;1-65535&gt;</code>	Specifies the dead interval, as the number of seconds to wait before determining the OSPF router is down. The default dead-interval is 60.
<code>hello-interval</code> <code>&lt;1-65535&gt;</code>	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.
<code>retransmit-</code> <code>interval &lt;1-</code> <code>1800&gt;</code>	Specifies the retransmit interval, in seconds, for link-state advertisements. The default retransmit-interval is 5.
<code>transit-delay</code> <code>&lt;1-1800&gt;</code>	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.





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## 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`

### Default

None

### Command mode

OSPF Router Configuration

### Command parameters

Parameter	Description
<code>{A.B.C.D}</code> <code>{A.B.C.D}</code>	The first IP address specifies the area IP address, and the second IP address specifies the virtual-link IP address.

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## 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`

### Default

The default is permit.

### Command mode

OSPF Router Configuration

### Command parameters

Parameter	Description
{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.



# Command: ipv6 area virtual-link ipsec direction

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## 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`

### Default

None

### Command mode

OSPF Router Configuration

### Command parameters

Parameter	Description
{A.B.C.D}	The first IP address specifies the area IP address, and the second IP address specifies the virtual-link IP address.
{A.B.C.D}	
<both in out>	Specifies the direction of the traffic of the IPsec policy under the OSPF virtual link.

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# Command: ipv6 area virtual-link ipsec enable

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## 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`

### Default

The default is disabled.

### Command mode

OSPF Router Configuration

### Command parameters

Parameter	Description
<code>{A.B.C.D}</code> <code>{A.B.C.D}</code>	The first IP address specifies the area IP address, and the second IP address specifies the virtual-link IP address.

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# Command: ipv6 area virtual-link ipsec security-association

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## 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>`

### Default

None

### Command mode

OSPF Router Configuration

### Command parameters

Parameter	Description
{A.B.C.D}	The first IP address specifies the area IP address, and the second IP address specifies the virtual-link IP address.
{A.B.C.D}	
WORD<0-32>	Specifies the name of the security association.

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## 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]`

### Default

The default is disabled.

### Command mode

OSPF Router Configuration

### Command parameters

Parameter	Description
enable	Enables the boundary-router.



# Command: ipv6 autoconfig

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## ipv6 autoconfig

Enable or disable IPv6 autoconfiguration.

### Syntax

- `ipv6 autoconfig`

### Default

The default is disabled.

### Command mode

Global Configuration

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# Command: ipv6 default-information enable

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## 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

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# Command: ipv6 default-information metric

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## ipv6 default-information metric

Configure IPv6 default route metric value.

### Syntax

- `default ipv6 default-information metric`
- `ipv6 default-information metric <1-15>`

### Default

None

### Command mode

RIP Router Configuration

### Command parameters

Parameter	Description
<1-15>	Specifies the IPv6 route metric value.

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## 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`

### Default

None

### Command mode

GigabitEthernet Interface Configuration

### Command parameters

Parameter	Description
<code>max-hop &lt;1-32&gt;</code>	Configures the maximum number of hops before a BootP/DHCP packet is discarded. The default is 32.
<code>remoteId</code>	Enables the Remote ID. The default is disabled.
<code>vrid WORD&lt;1-255&gt;</code>	Specifies the ID of the virtual router and is an integer from 1-255.
<code>WORD&lt;0-255&gt;</code>	Creates a forwarding path to the Dynamic Host Configuration Protocol (DHCP) server with a mode and a state. <code>WORD&lt;0-255&gt;</code> is the IPv6 address of the server. The default IP

255> 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.

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## 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`

### Default

None

### Command mode

VLAN Interface Configuration

### Command parameters

Parameter	Description
<code>max-hop &lt;1-32&gt;</code>	Configures the maximum number of hops before a BootP/DHCP packet is discarded. The default is 32.
<code>remoteId</code>	Enables the Remote ID. The default is disabled.
<code>vrid WORD&lt;1-255&gt;</code>	Specifies the ID of the virtual router and is an integer from 1-255.
<code>WORD&lt;0-255&gt;</code>	Creates a forwarding path to the Dynamic Host Configuration Protocol (DHCP) server with a mode and a state. <code>WORD&lt;0-255&gt;</code> is the IPv6 address of the server. The default IP

255> 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.

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## 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`

### Default

The default is disabled.

### Command mode

Global Configuration

### Command parameters

Parameter	Description
<code>enable</code>	Enables the forwarding path to the server.
<code>WORD&lt;0-255&gt;</code>	Configures the forwarding path from the client to the server. The first <code>WORD&lt;0-255&gt;</code> 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.
<code>WORD&lt;0-255&gt;</code>	The second <code>WORD&lt;0-255&gt;</code> 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.

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## ipv6 ecmp

IPv6 ECMP configuration.

### Syntax

- `default ipv6 ecmp enable`
- `default ipv6 ecmp max-path`
- `ipv6 ecmp enable`
- `ipv6 ecmp max-path <1-4>`
- `ipv6 ecmp max-path <1-8>`
- `no ipv6 ecmp enable`

### Default

Disabled

### Command mode

Global Configuration

### Command parameters

Parameter	Description
<code>enable</code>	Enables IPv6 ECMP globally.
<code>max-path</code> <code>&lt;1-4&gt;   &lt;1-8&gt;</code>	Sets the maximum number of ECMP paths. The default value for max-path is the maximum value, which varies depending on your hardware platform.

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## 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`

### Default

None

### Command mode

GigabitEthernet Interface Configuration

### Command parameters

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

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# Command: ipv6 fhs dhcp-guard enable

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## 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

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## 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>`

### Default

None

### Command mode

Global Configuration

### Command parameters

Parameter	Description
WORD<1-64>	Specifies the policy name.



# Command: ipv6 fhs enable

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## 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

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## 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>]`

### Default

None

### Command mode

Global Configuration

### Command parameters

Parameter	Description
<code>ge &lt;0-128&gt;</code>	Specifies the minimum IPv6 mask length. By default, the value is equal to the configured prefix length.
<code>le &lt;0-128&gt;</code>	Specifies the maximum IPv6 mask length. By default, the value is equal to the configured prefix length.
<code>mode &lt;allow   deny&gt;</code>	Specifies the access mode. By default, the value is allow.
<code>WORD&lt;0-46&gt;</code>	Specifies the IPv6 address or the prefix length to be added to the IP access list.
<code>WORD&lt;1-64&gt;</code>	Specifies the IP access list name.



# Command: ipv6 fhs mac-access-list

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## 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>`

### Default

None

### Command mode

Global Configuration

### Command parameters

Parameter	Description
<code>0x00:0x00:0x00:0x00:0x00:0x00</code>	Specifies the MAC address to be added or deleted.
<code>mode &lt;allow   deny&gt;</code>	Specifies the access mode. By default, the value is allow.
<code>WORD&lt;1-64&gt;</code>	Specifies the MAC access list name.

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# Command: ipv6 fhs nd-inspection enable (for a port)

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## 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

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# Command: ipv6 fhs nd-inspection enable (for a VLAN)

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## 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

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# Command: ipv6 fhs nd-inspection enable (globally)

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## 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

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## 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`

### Default

None

### Command mode

GigabitEthernet Interface Configuration

### Command parameters

Parameter	Description
<code>attach-policy</code>	Attach ra-guard policy to interface.
<code>device-role</code>	Set ra-guard device role.
<code>host</code>	Set device role as host.
<code>router</code>	Set device role as router.
<code>WORD&lt;1-64&gt;</code>	Specifies the policy name.

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# Command: ipv6 fhs ra-guard enable

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## 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

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## 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>`

### Default

None

### Command mode

Global Configuration

### Command parameters

Parameter	Description
WORD<1-64>	Specifies the name of the RA-guard policy to be created or deleted.

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# Command: ipv6 fhs snooping dhcp enable (for a VLAN)

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## 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

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# Command: ipv6 fhs snooping static-binding

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## 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>`

### Default

None

### Command mode

Global Configuration

### Command parameters

Parameter	Description
<code>ipv6-address WORD&lt;0-46&gt;</code>	Specifies the IPv6 address of the binding entry.
<code>mac-address &lt;0x00:0x00:0x00:0x00:0x00:0x00&gt;</code>	Specifies the MAC address of the binding entry.
<code>port {slot/port[/sub-port]}</code>	Specifies the port of the binding entry.
<code>vlan &lt;1-4059&gt;</code>	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.



# Command: ipv6 forwarding (for a port)

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## 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

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# Command: ipv6 forwarding (for a VLAN)

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## 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

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# Command: ipv6 forwarding (globally)

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## 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

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## 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>`

### Default

The default hop limit is 64.

### Command mode

Global Configuration

### Command parameters

Parameter	Description
<code>&lt;0-255&gt;</code>	Inserts a value into the hop-limit field of IPv6 header in the range of 0 to 255.



# Command: ipv6 icmp addr-unreach

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## 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

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# Command: ipv6 icmp echo multicast-request (globally)

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## 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`

### Default

The default is enabled.

### Command mode

Global Configuration

### Command parameters

Parameter	Description
echo multicast-request	Enables or disables the processing of IPv6 ICMP messages sent to a multicast address globally. The default value is enabled.

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## 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>

### Default

The default error interval is 1000.

### Command mode

Global Configuration

### Command parameters

Parameter	Description
<0-2147483647>	Configures the interval (in milliseconds) for sending ICMPv6 error messages. An entry of 0 seconds results in no sent ICMPv6 error messages.

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## 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>

### Default

The default error quota is 50.

### Command mode

Global Configuration

### Command parameters

Parameter	Description
<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.



# Command: ipv6 icmp port-unreach

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## 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

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# Command: ipv6 icmp unreachable-msg

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## ipv6 icmp unreachable-msg

Enable Internet Control Message Protocol (ICMP) network unreachable messages.

### Syntax

- `default ipv6 icmp unreachable-msg`
- `ipv6 icmp unreachable-msg`
- `no ipv6 icmp unreachable-msg`

### Default

By default ICMP network unreachable messages are disabled.

### Command mode

Global Configuration

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# Command: ipv6 interface address (for a port)

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## 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>`

### Default

None

### Command mode

GigabitEthernet Interface Configuration

### Command parameters

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

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# Command: ipv6 interface address (for a VLAN)

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## 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>`

### Default

None

### Command mode

VLAN Interface Configuration

### Command parameters

Parameter	Description
WORD<0-255>	Assigns an IPv6 address to the VLAN.

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# Command: ipv6 interface address (for the management port)

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## ipv6 interface address (for the management port)

Configure the IPv6 address for the Ethernet management port. 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>`

### Default

None

### Command mode

mgmtEthernet Interface Configuration

### Command parameters

Parameter	Description
WORD<0-255> eui <1-3>	Assigns an IPv6 address, prefix length, and extended unique identifier to the to the management port.

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# Command: ipv6 interface address <IPv6addr/prefixlen>

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## 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

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# Command: ipv6 interface address (loopback)

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## ipv6 interface address (loopback)

Create an ipv6 loopback interface address.

### Syntax

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

### Default

None

### Command mode

Loopback Interface Configuration

### Command parameters

Parameter	Description
WORD<0-255>	Assigns an IPv6 address to the Loopback Interface.

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# Command: ipv6 interface enable (for a port)

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## 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

### Default

The default is disabled.

### Command mode

GigabitEthernet Interface Configuration

### Command parameters

Parameter	Description
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.



# Command: ipv6 interface enable (for a VLAN)

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## 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

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# Command: ipv6 interface enable (for the management port)

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## ipv6 interface enable (for the management port)

Enable IPv6 route advertisement on the Ethernet management port. 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

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# Command: ipv6 interface (for a port)

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## 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

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# Command: ipv6 interface hop-limit (for a port)

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## 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>

### Default

The default is 64 hops.

### Command mode

GigabitEthernet Interface Configuration

### Command parameters

Parameter	Description
<1-255>	Configures the maximum hops.

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# Command: ipv6 interface hop-limit (for a VLAN)

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## 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>

### Default

The default is 64 hops.

### Command mode

VLAN Interface Configuration

### Command parameters

Parameter	Description
<1-255>	Configures the maximum hops.

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# Command: ipv6 interface hop-limit (for the management port)

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## ipv6 interface hop-limit (for the management port)

Configure the maximum number of hops before packets drop. This command does not apply to all hardware platforms.

### Syntax

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

### Default

The default is 30 hops.

### Command mode

mgmtEthernet Interface Configuration

### Command parameters

Parameter	Description
<1-255>	Configures the maximum hops.

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## 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 <0-1535>`
- `ipv6 interface link-local WORD<0-19> name WORD<0-255>`
- `ipv6 interface link-local WORD<0-19> vlan <1-4059>`

### Default

None

### Command mode

GigabitEthernet Interface Configuration

### Command parameters

Parameter	Description
<code>address WORD&lt;0-46&gt;</code>	Specifies the IPv6 address.
<code>enable</code>	Enables route advertisement.
<code>mac-offset &lt;0-1535&gt;</code>	Use <code>mac-offset</code> to request a particular MAC for an IPv6 VLAN. The system has 1536 MAC addresses. The last four addresses are reserved. You can specify a MAC offset when you configure IPv6 on a VLAN, or the system can assign a MAC address from within the available range.
<code>name WORD&lt;0-255&gt;</code>	Assigns a descriptive name. The network management system also configures this string.
<code>vlan &lt;1-4059&gt;</code>	Specifies the VLAN associated with this entry. This value corresponds to the lower 12 bits of the IEEE 802.1Q VLAN tag. 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.
<code>WORD&lt;0-19&gt;</code>	Specifies the 64-bit interface ID used to calculate the actual link-local address.





# Command: ipv6 interface link-local (for a VLAN)

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## ipv6 interface link-local (for a VLAN)

Create a link-local address for the VLAN.

### Syntax

- `ipv6 interface link-local WORD<0-19>`

### Default

None

### Command mode

VLAN Interface Configuration

### Command parameters

Parameter	Description
WORD<0-19>	Specifies the 64-bit interface ID used to calculate the actual link-local address.

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# Command: ipv6 interface link-local (for the management port)

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## ipv6 interface link-local (for the management port)

Create a link-local address for the Ethernet management port. This command does not apply to all hardware platforms.

### Syntax

- `ipv6 interface link-local WORD<0-19>`

### Default

None

### Command mode

mgmtEthernet Interface Configuration

### Command parameters

Parameter	Description
WORD<0-19>	Specifies the link-local address for the management port.

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## ipv6 interface mac-offset

Request a MAC for an IPv6 VLAN.

### Syntax

- `ipv6 interface mac-offset <0-511>`

### Default

None

### Command mode

VLAN Interface Configuration

### Command parameters

Parameter	Description
<code>&lt;0-511&gt;</code>	Specifies the MAC offset value. Different hardware platforms may support different MAC offset ranges. Use the CLI Help to see the available range.





# Command: ipv6 interface mtu (for a port)

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## ipv6 interface mtu (for a port)

Configure the maximum transmission unit for the port.

### Syntax

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

### Default

The default is 1500.

### Command mode

GigabitEthernet Interface Configuration

### Command parameters

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

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# Command: ipv6 interface mtu (for a VLAN)

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## ipv6 interface mtu (for a VLAN)

Configure the maximum transmission unit for the VLAN.

### Syntax

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

### Default

The default is 1500.

### Command mode

VLAN Interface Configuration

### Command parameters

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

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# Command: ipv6 interface mtu (for the management port)

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## ipv6 interface mtu (for the management port)

Configure the maximum transmission unit for the Ethernet management port. This command does not apply to all hardware platforms.

### Syntax

- `default ipv6 interface mtu`
- `ipv6 interface mtu <1280-1500>`

### Default

The default is 1500.

### Command mode

mgmtEthernet Interface Configuration

### Command parameters

Parameter	Description
<1280-1500>	Configures the maximum transmission unit for the interface.

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# Command: ipv6 interface name (for a port)

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## ipv6 interface name (for a port)

Configure an interface description for the port.

### Syntax

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

### Default

None

### Command mode

GigabitEthernet Interface Configuration

### Command parameters

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

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# Command: ipv6 interface name (for a VLAN)

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## ipv6 interface name (for a VLAN)

Configure an interface description for the VLAN.

### Syntax

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

### Default

None

### Command mode

VLAN Interface Configuration

### Command parameters

Parameter	Description
WORD<0-255>	Assigns a descriptive name to the VLAN.

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# Command: ipv6 interface name (for the management port)

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## ipv6 interface name (for the management port)

Configure an interface description for the Ethernet management port. This command does not apply to all hardware platforms.

### Syntax

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

### Default

None

### Command mode

mgmtEthernet Interface Configuration

### Command parameters

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

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# Command: ipv6 interface process-redirect (for the management port)

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## 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

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# Command: ipv6 interface reachable-time (for a port)

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## 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>

### Default

The default is 30000.

### Command mode

GigabitEthernet Interface Configuration

### Command parameters

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

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# Command: ipv6 interface reachable-time (for a VLAN)

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## 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>

### Default

The default is 30000.

### Command mode

VLAN Interface Configuration

### Command parameters

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

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# Command: ipv6 interface reachable-time (for the management port)

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## ipv6 interface reachable-time (for the management port)

Configure the time a neighbor is considered reachable after receiving a reachability confirmation. This command does not apply to all hardware platforms.

### Syntax

- default ipv6 interface reachable-time
- ipv6 interface reachable-time <0-3600000>

### Default

The default is 30000.

### Command mode

mgmtEthernet Interface Configuration

### Command parameters

Parameter	Description
<0-3600000>	Configures the time, in milliseconds, a neighbor is considered reachable after receiving a reachability confirmation.

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# Command: ipv6 interface retransmit-timer (for a port)

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## 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>

### Default

The default is 1000.

### Command mode

GigabitEthernet Interface Configuration

### Command parameters

Parameter	Description
<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.

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# Command: ipv6 interface retransmit-timer (for a VLAN)

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## 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>

### Default

The default is 1000.

### Command mode

VLAN Interface Configuration

### Command parameters

Parameter	Description
<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.

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# Command: ipv6 interface retransmit-timer (for the management port)

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## 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. This command does not apply to all hardware platforms.

### Syntax

- `default ipv6 interface retransmit-timer`
- `ipv6 interface retransmit-timer <0-3600000>`

### Default

The default is 1000.

### Command mode

mgmtEthernet Interface Configuration

### Command parameters

Parameter	Description
<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.

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# Command: ipv6 interface vlan (for a port)

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## ipv6 interface vlan (for a port)

Configure the interface as part of an IPv6 VLAN.

### Syntax

- `ipv6 interface vlan <1-4059>`

### Default

None

### Command mode

GigabitEthernet Interface Configuration

### Command parameters

Parameter	Description
<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.

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# Command: ipv6 ipsec enable (for a loopback interface)

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## 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

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# Command: ipv6 ipsec enable (for a mgmt port)

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## ipv6 ipsec enable (for a mgmt port)

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

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# Command: ipv6 ipsec enable (for a port)

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## 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

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# Command: ipv6 ipsec enable (for a VLAN)

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## 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

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## 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`

### Default

None

### Command mode

Loopback Interface Configuration

### Command parameters

Parameter	Description
<code>dir</code> <code>&lt;both in out&gt;</code>	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.
<code>WORD&lt;1-32&gt;</code>	Specifies the IPsec policy name.

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## 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`

### Default

None

### Command mode

mgmtEthernet Interface Configuration

### Command parameters

Parameter	Description
<code>dir</code> <code>&lt;both in out&gt;</code>	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.
<code>WORD&lt;1-32&gt;</code>	Specifies the IPsec policy name.

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## 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`

### Default

None

### Command mode

GigabitEthernet Interface Configuration

### Command parameters

Parameter	Description
<code>dir</code> <code>&lt;both in out&gt;</code>	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.
<code>WORD&lt;1-32&gt;</code>	Specifies the IPsec policy name.



# Command: ipv6 ipsec policy (for a VLAN)

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## 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`

### Default

None

### Command mode

VLAN Interface Configuration

### Command parameters

Parameter	Description
<code>dir</code> <code>&lt;both in out&gt;</code>	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.
<code>WORD&lt;1-32&gt;</code>	Specifies the IPsec policy name.

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## 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`

### Default

None

### Command mode

User EXEC

### Command parameters

Parameter	Description
<code>grp-member</code>	Flushes MLD group members.
<code>port {slot/port[/sub-port][-slot/port[/sub-port]][,...]}</code>	Flushes MLD group members by router port.
<code>sender</code>	Flushes MLD senders.
<code>vlan &lt;1-4059&gt;</code>	Flushes MLD group members or senders by VLAN.



# Command: ipv6 mld generate-log

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## 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

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# Command: ipv6 mld generate-trap

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## 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

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

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## 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

### Default

None

### Command mode

GigabitEthernet Interface Configuration

### Command parameters

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

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# Command: ipv6 mld last-listener-query-interval (for a VLAN)

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## 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

### Default

None

### Command mode

VLAN Interface Configuration

### Command parameters

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

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# Command: ipv6 mld query-interval (for a port)

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## 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`

### Default

None

### Command mode

GigabitEthernet Interface Configuration

### Command parameters

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

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# Command: ipv6 mld query-interval (for a VLAN)

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## 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`

### Default

None

### Command mode

VLAN Interface Configuration

### Command parameters

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

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# Command: ipv6 mld query-max-response (for a port)

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## 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`

### Default

None

### Command mode

GigabitEthernet Interface Configuration

### Command parameters

Parameter	Description
<0-60>	Indicates the query maximum response interval time in seconds.

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# Command: ipv6 mld query-max-response (for a VLAN)

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## 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`

### Default

None

### Command mode

VLAN Interface Configuration

### Command parameters

Parameter	Description
<0-60>	Indicates the query maximum response interval time in seconds.

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# Command: ipv6 mld robust-value (for a port)

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## 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

### Default

None

### Command mode

GigabitEthernet Interface Configuration

### Command parameters

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

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# Command: ipv6 mld robust-value (for a VLAN)

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## 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

### Default

None

### Command mode

VLAN Interface Configuration

### Command parameters

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

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# Command: ipv6 mld snooping

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## 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

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# Command: ipv6 mld ssm-snoop

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## 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

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## ipv6 mld version (for a port)

Configure MLD version

### Syntax

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

### Default

None

### Command mode

GigabitEthernet Interface Configuration

### Command parameters

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

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# Command: ipv6 mld version (for a VLAN)

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## ipv6 mld version (for a VLAN)

Configure MLD version

### Syntax

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

### Default

None

### Command mode

VLAN Interface Configuration

### Command parameters

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

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## 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

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## 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>

### Default

The default is 1.

### Command mode

GigabitEthernet Interface Configuration

### Command parameters

Parameter	Description
<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.

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## 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

### Default

The default is 1.

### Command mode

VLAN Interface Configuration

### Command parameters

Parameter	Description
<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.





# Command: ipv6 nd dad-ns (for the management port)

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## ipv6 nd dad-ns (for the management port)

Configure the number of neighbor solicitation messages from duplicate address detection. This command does not apply to all hardware platforms.

### Syntax

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

### Default

The default is 1.

### Command mode

mgmtEthernet Interface Configuration

### Command parameters

Parameter	Description
<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.

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## 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

### Default

None

### Command mode

GigabitEthernet Interface Configuration

### Command parameters

Parameter	Description
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.



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## ipv6 nd hop-limit (for a port)

Configure the hop limit sent in router advertisements.

### Syntax

- `ipv6 nd hop-limit <0-255>`

### Default

The default is 64.

### Command mode

GigabitEthernet Interface Configuration

### Command parameters

Parameter	Description
<code>hoplimit</code> <code>&lt;0-255&gt;</code>	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.



# Command: ipv6 nd hop-limit (for a VLAN)

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## ipv6 nd hop-limit (for a VLAN)

Configure the hop limit sent in router advertisements.

### Syntax

- `ipv6 nd hop-limit <0-255>`

### Default

The default is 64.

### Command mode

VLAN Interface Configuration

### Command parameters

Parameter	Description
<code>hoplimit</code> <code>&lt;0-255&gt;</code>	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.

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# Command: ipv6 nd managed-config-flag (for a port)

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## 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

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# Command: ipv6 nd managed-config-flag (for a VLAN)

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## 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

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## ipv6 nd mtu (for a port)

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

### Syntax

- `ipv6 nd mtu <0-9500>`

### Default

None

### Command mode

GigabitEthernet Interface Configuration

### Command parameters

Parameter	Description
<code>mtu &lt;0-9500&gt;</code>	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.





# Command: ipv6 nd other-config-flag (for a port)

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## 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

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# Command: ipv6 nd other-config-flag (for a VLAN)

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## 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

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## 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

### Default

None

### Command mode

GigabitEthernet Interface Configuration

### Command parameters

Parameter	Description
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.



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## 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]`

### Default

None

### Command mode

VLAN Interface Configuration

### Command parameters

Parameter	Description
<code>infinite</code>	Configures the prefix as infinite.
<code>no-advertise</code>	Removes the prefix from the neighbor advertisement. The default for noadvertise is disabled.
<code>preferred-life &lt;0-4294967295&gt;</code>	Configures the preferred life, in seconds. The valid range is 0-4294967295. The default preferred-life is 604800.
<code>valid-life &lt;0-4294967295&gt;</code>	Configures the valid life, in seconds. The valid range is 0-4294967295. The default valid-life is 2592000.
<code>WORD &lt;0-255&gt;</code>	Specifies the IPv6 address prefix.

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## 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]`

### Default

None

### Command mode

GigabitEthernet Interface Configuration

### Command parameters

Parameter	Description
<code>eui &lt;1-3&gt;</code>	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.
<code>no-advertise</code>	Removes the prefix from the neighbor advertisement. The default is disabled.
<code>no-autoconfig</code>	Configures if the prefix is used for autonomous address configuration.
<code>no-onlink</code>	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.
<code>WORD &lt;0-255&gt;</code>	Specifies the IPv6 address prefix.



# Command: ipv6 nd ra-lifetime (for a port)

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## 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>

### Default

The default is 1800.

### Command mode

GigabitEthernet Interface Configuration

### Command parameters

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

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# Command: ipv6 nd ra-lifetime (for a VLAN)

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## 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>

### Default

The default is 1800.

### Command mode

VLAN Interface Configuration

### Command parameters

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

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# Command: ipv6 nd reachable-time (for a port)

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## ipv6 nd reachable-time (for a port)

Configure the neighbor reachable time.

### Syntax

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

### Default

None

### Command mode

GigabitEthernet Interface Configuration

### Command parameters

Parameter	Description
<code>reachable-time &lt;0-3600000&gt;</code>	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.

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# Command: ipv6 nd retransmit-timer (for a port)

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## ipv6 nd retransmit-timer (for a port)

Configure the time between neighbor solicitation messages.

### Syntax

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

### Default

None

### Command mode

GigabitEthernet Interface Configuration

### Command parameters

Parameter	Description
<code>retransmit-timer &lt;0-4294967295&gt;</code>	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.

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

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## 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>

### Default

The default is 600.

### Command mode

GigabitEthernet Interface Configuration

### Command parameters

Parameter	Description
<4-1800>	Specifies the maximum interval value.

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# Command: ipv6 nd rtr-advert-max-interval (for a VLAN)

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## 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>`

### Default

The default is 600.

### Command mode

VLAN Interface Configuration

### Command parameters

Parameter	Description
<4-1800>	Specifies the maximum interval value.

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

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## 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>`

### Default

The default is 200.

### Command mode

GigabitEthernet Interface Configuration

### Command parameters

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

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# Command: ipv6 nd rtr-advert-min-interval (for a VLAN)

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## 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>`

### Default

The default is 200.

### Command mode

VLAN Interface Configuration

### Command parameters

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

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# Command: ipv6 nd send-ra (for a port)

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## 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

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# Command: ipv6 nd send-ra (for a VLAN)

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## 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

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# Command: ipv6 nd valid-life (for a port)

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## 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>`

### Default

The default is 2592000.

### Command mode

GigabitEthernet Interface Configuration

### Command parameters

Parameter	Description
<code>valid-life</code> <code>&lt;0-4294967295&gt;</code>	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.
<code>WORD&lt;0-255&gt;</code>	Specifies the IPv6 address and prefix.

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## ipv6 neighbor

Commands 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>`

### Default

None

### Command mode

Global Configuration

### Command parameters

Parameter	Description
<code>mac</code> <code>0x00:0x00:0x00:0x00:0x00:0x00</code>	Specifies the MAC address.
<code>port {slot/port[sub-port]}</code>	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.
<code>vlan &lt;1-4059&gt;</code>	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.
<code>WORD&lt;0-128&gt;</code>	IPv6 address in hex colon format.

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## 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>`

### Default

None

### Command mode

GigabitEthernet Interface Configuration

### Command parameters

Parameter	Description
<code>area {A.B.C.D}</code>	Creates an IPv6 OSPF area.
<code>cost &lt;0-65535&gt;</code>	Configures the OSPF metric for the interface. The switch advertises the metric in router link advertisements. The default is 1.
<code>dead-interval &lt;1-65535&gt;</code>	Specifies the dead interval, as the number of seconds to wait before determining the OSPF router is down. The default is 40.
<code>hello-interval &lt;1-65535&gt;</code>	Specifies the hello interval, in seconds, for hello packets sent between switches for a virtual interface in an OSPF area. The default is 10.
<code>network &lt;eth nbma p2mp p2p passive&gt;</code>	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.

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.

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## 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>`

### Default

None

### Command mode

VLAN Interface Configuration

### Command parameters

Parameter	Description
<code>area {A.B.C.D}</code>	Creates an IPv6 OSPF area.
<code>cost &lt;0-65535&gt;</code>	Configures the OSPF metric for the interface. The switch advertises the metric in router link advertisements. The default is 1.
<code>dead-interval &lt;1-65535&gt;</code>	Specifies the dead interval, as the number of seconds to wait before determining the OSPF router is down. The default is 40.
<code>hello-interval &lt;1-65535&gt;</code>	Specifies the hello interval, in seconds, for hello packets sent between switches for a virtual interface in an OSPF area. The default is 10.
<code>network &lt;eth nbma p2mp p2p passive&gt;</code>	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.

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.

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## 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>`

## Default

None

## Command mode

GigabitEthernet Interface Configuration

## Command parameters

Parameter	Description
<code>cost &lt;0-65535&gt;</code>	Configures the OSPF metric for the interface. The switch advertises the metric in router link advertisements. The default is 1.
<code>dead-interval &lt;1-65535&gt;</code>	Specifies the dead interval, as the number of seconds to wait before determining the OSPF router is down. The default is 40.
<code>enable</code>	Enables the OSPF on the IPv6 interface.
<code>hello-interval &lt;1-65535&gt;</code>	Specifies the hello interval, in seconds, for hello packets sent between switches for a virtual interface in an OSPF area. The default is 10.
<code>link-lsa-suppression</code>	Enables link lsa suppression
<code>nbma-nbr WORD&lt;0-43&gt;</code>	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.
<code>poll-interval &lt;0-65535&gt;</code>	Configures the polling interval for the OSPF interface in seconds. The default is 120.
<code>priority &lt;0-255&gt;</code>	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.
<code>retransmit-interval &lt;1-1800&gt;</code>	Specifies the retransmit interval, in seconds, for link-state advertisements. The default is 5.
<code>transit-delay &lt;1-1800&gt;</code>	Specifies the transit-delay interval, in seconds, required to transmit a link-state update packet over the virtual interface. The default is 1.



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## 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>`

### Default

None

### Command mode

## Command parameters

Parameter	Description
<code>cost &lt;0-65535&gt;</code>	Configures the OSPF metric for the interface. The switch advertises the metric in router link advertisements. The default is 1.
<code>dead-interval &lt;1-65535&gt;</code>	Specifies the dead interval, as the number of seconds to wait before determining the OSPF router is down. The default is 40.
<code>enable</code>	Enables the OSPF on the IPv6 interface.
<code>hello-interval &lt;1-65535&gt;</code>	Specifies the hello interval, in seconds, for hello packets sent between switches for a virtual interface in an OSPF area. The default is 10.
<code>nbma-nbr WORD&lt;0-43&gt;</code>	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.
<code>network &lt;eth   nbma   p2mp   p2p   passive&gt;</code>	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.
<code>poll-interval &lt;0-65535&gt;</code>	Configures the polling interval for the OSPF interface in seconds. The default is 120.
<code>priority &lt;0-255&gt;</code>	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.
<code>retransmit-interval &lt;1-1800&gt;</code>	Specifies the retransmit interval, in seconds, for link-state advertisements. The default is 5.
<code>transit-delay &lt;1-1800&gt;</code>	Specifies the transit-delay interval, in seconds, required to transmit a link-state update packet over the virtual interface. The default is 1.

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## 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>

### Default

The default is 60.

### Command mode

Global Configuration

### Command parameters

Parameter	Description
<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.



# Command: ipv6 pim enable

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## 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

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# Command: ipv6 pim enable (for a port)

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## 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

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# Command: ipv6 pim enable (for a VLAN)

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## 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

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## ipv6 pim fwd-cache-timeout

Configure the forward cache timeout.

### Syntax

- default ipv6 pim fwd-cache-timeout
- ipv6 pim fwd-cache-timeout <10-86400>

### Default

The default is 210.

### Command mode

Global Configuration

### Command parameters

Parameter	Description
<10-86400>	Specifies the forward cache timeout value.



# Command: ipv6 pim hello-interval (for a port)

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## 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>

### Default

The default is 30 seconds

### Command mode

GigabitEthernet Interface Configuration

### Command parameters

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

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# Command: ipv6 pim hello-interval (for a VLAN)

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## 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>

### Default

The default is 30 seconds

### Command mode

VLAN Interface Configuration

### Command parameters

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

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## 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>

### Default

The default is 60.

### Command mode

Global Configuration

### Command parameters

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



# Command: ipv6 pim join-prune-interval (for a port)

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## 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>

### Default

The default is disabled

### Command mode

GigabitEthernet Interface Configuration

### Command parameters

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

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# Command: ipv6 pim join-prune-interval (for a VLAN)

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## 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>

### Default

The default is disabled

### Command mode

VLAN Interface Configuration

### Command parameters

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

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# Command: ipv6 pim mode

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## ipv6 pim mode

Configure the PIM mode.

### Syntax

- `default ipv6 pim mode`
- `ipv6 pim mode sparse`
- `ipv6 pim mode ssm`

### Default

The default is sparse.

### Command mode

Global Configuration

### Command parameters

Parameter	Description
<code>sparse</code>	Configures the PIM mode on the switch
<code>ssm</code>	Configures the PIM mode on the switch

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# Command: ipv6 pim register-suppression-timeout

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## 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>

### Default

The default is 60.

### Command mode

Global Configuration

### Command parameters

Parameter	Description
<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.

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## 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`

### Default

The default is disabled.

### Command mode

Global Configuration

### Command parameters

Parameter	Description
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.



# Command: ipv6 pim unicast-route-change-timeout

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## 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>`

### Default

The default is 5.

### Command mode

Global Configuration

### Command parameters

Parameter	Description
<2-65535>	Specifies the duration in seconds the switch polls the RTM for unicast routing information updates for PIM.

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## 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>]`

### Default

None

### Command mode

Global Configuration

### Command parameters

Parameter	Description
<code>ge &lt;0-128&gt;</code>	Specifies the minimum length to match. Lower bound and higher bound mask lengths together can define a range of networks.
<code>id &lt;1-2147483647&gt;</code>	Specifies the prefix list ID.
<code>le &lt;0-128&gt;</code>	Specifies the maximum length to match. Lower bound and higher bound mask lengths together can define a range of networks.
<code>name WORD&lt;1-64&gt;</code>	Renames the specified prefix list. The name length is from 1 to 64 characters.
<code>WORD&lt;1-256&gt;</code>	Specifies the IPv6 address and length.
<code>WORD&lt;1-64&gt;</code>	Adds a prefix entry to the prefix list. <code>WORD&lt;1-64&gt;</code> is the prefix-list name. <code>WORD&lt;1-256&gt;</code> is the IPv6 address and length. <code>&lt;ge le&gt;&lt;0- 128&gt;</code> is the minimum and maximum length to match. Lower bound and higher bound mask lengths together can define a range of networks.



# Command: ipv6 redistribute bgp enable

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## 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

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# Command: ipv6 redistribute bgp enable (For IS-IS)

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## ipv6 redistribute bgp enable (For IS-IS)

Enable IPv6 BGP redistribute.

### Syntax

- `ipv6 redistribute bgp enable`

### Default

None

### Command mode

IS-IS Router Configuration

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# Command: ipv6 redistribute bgp enable (For OSPF)

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## 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

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# Command: ipv6 redistribute bgp enable (For RIPng)

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## ipv6 redistribute bgp enable (For RIPng)

Enable IPv6 BGP redistribute.

### Syntax

- `ipv6 redistribute bgp enable`

### Default

None

### Command mode

RIP Router Configuration

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# Command: ipv6 redistribute direct enable

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## 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

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## ipv6 redistribute (for GRT)

Ipv6 configurations.

### Syntax

- default ipv6 redistribute {bgp|direct|static} [enable]
- ipv6 redistribute bgp enable
- ipv6 redistribute direct enable
- ipv6 redistribute static enable
- no ipv6 redistribute {bgp|direct|static} [enable]

### Default

None

### Command mode

IS-IS Router Configuration

### Command parameters

Parameter	Description
{direct ospf static>}	Specifies the type of IPv6 route to redistribute to the IS-IS routing domain.
enable	Enables redistribution.

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## ipv6 redistribute (for ISIS)

Enable redistribution to redistribute IPv6 routes into an ISIS routing domain.

### Syntax

- `default ipv6 redistribute {direct|ospf|static} [enable]`
- `ipv6 redistribute direct enable`
- `ipv6 redistribute ospf enable`
- `ipv6 redistribute static enable`
- `no ipv6 redistribute {direct|ospf|static} [enable]`

### Default

The default is disabled.

### Command mode

IS-IS Router Configuration

### Command parameters

Parameter	Description
<code>{direct ospf static}</code>	Specifies the type of IPv6 route to redistribute to the ISIS routing domain.
<code>enable</code>	Enables redistribution.



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## ipv6 redistribute (for OSPF)

Enable redistribution to redistribute IPv6 routes into an OSPFv3 routing domain.

### Syntax

- `default ipv6 redistribute {direct|isis|static} [enable]`
- `ipv6 redistribute direct enable`
- `ipv6 redistribute isis enable`
- `ipv6 redistribute static enable`
- `no ipv6 redistribute {direct|isis|static} [enable]`

### Default

The default is disabled.

### Command mode

OSPF Router Configuration

### Command parameters

Parameter	Description
<code>{direct isis static}</code>	Specifies the type of IPv6 route to redistribute to the OSPFv3 routing domain.
<code>enable</code>	Enables redistribution.



# Command: ipv6 redistribute isis enable

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## 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

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# Command: ipv6 redistribute ospf enable

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## 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

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# Command: ipv6 redistribute static enable

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## 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

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## ipv6 rip cost (for a port )

Configure the RIPng cost for this port (link).

### Syntax

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

### Default

None

### Command mode

GigabitEthernet Interface Configuration

### Command parameters

Parameter	Description
<1-15>	Specifies the cost value.

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## ipv6 rip cost (for a VLAN)

Configure the RIPng cost for this port (link).

### Syntax

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

### Default

None

### Command mode

VLAN Interface Configuration

### Command parameters

Parameter	Description
<1-15>	Specifies the cost value.



# Command: ipv6 rip poison enable (for a port)

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## 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

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# Command: ipv6 rip poison enable (for a VLAN)

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## 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

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## 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}`
- `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}`
- `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}`
- `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}`
- `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}`
- `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}
- 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}
- no ipv6 route WORD<0-46> tunnel <1-2000>
- no ipv6 route WORD<0-46> vlan <1-4059>

## Default

The default state for a new static route is enable.

## Command mode

Global Configuration

## Command parameters

Parameter	Description
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}	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.
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. 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.

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## 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`

### Default

None

### Command mode

Global Configuration

### Command parameters

Parameter	Description
{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.



# Command: ipv6 router-id

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## ipv6 router-id

Configure the OSPF router ID.

### Syntax

- default ipv6 router-id
- ipv6 router-id {A.B.C.D}

### Default

None

### Command mode

OSPF Router Configuration

### Command parameters

Parameter	Description
{A.B.C.D}	Specifies the address for the router ID.

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## 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`

### Default

The default is enabled.

### Command mode

Global Configuration

### Command parameters

Parameter	Description
<code>enable</code>	Enables the static routes globally.
<code>static</code>	Modifies IPv6 static route parameters.

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## 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`

### Default

None

### Command mode

GigabitEthernet Interface Configuration

### Command parameters

Parameter	Description
<code>mode</code> { <code>strict</code>   <code>exist-only</code> }	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.



# Command: ipv6 send-trap enable

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## 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

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## 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>`

### Default

None

### Command mode

IS-IS Router Configuration

### Command parameters

Parameter	Description
WORD<0-46>	Enter isis ipv6 source address.





# Command: ipv6-source-address <ipv6-addr>

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## 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

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# Command: ipv6 source-guard

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## 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

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

### Command mode

GigabitEthernet Interface Configuration

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# Command: ipv6 source-route

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## 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

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# Command: ipv6 timers basic holddown

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## ipv6 timers basic holddown

Configure RIPng holddown timer.

### Syntax

- `ipv6 timers basic holddown <0-360>`

### Default

None

### Command mode

RIP Router Configuration

### Command parameters

Parameter	Description
<0-360>	Specifies the RIPng holddown timer in seconds.

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# Command: ipv6 timers basic timeout

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## ipv6 timers basic timeout

Configure RIPng timeout timer.

### Syntax

- `ipv6 timers basic timeout <0-360>`

### Default

None

### Command mode

RIP Router Configuration

### Command parameters

Parameter	Description
<code>&lt;0-360&gt;</code>	Specifies the RIPng timeout timer in seconds.

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## ipv6 timers basic update

Configure RIPng update timer.

### Syntax

- `ipv6 timers basic update <0-360>`

### Default

None

### Command mode

RIP Router Configuration

### Command parameters

Parameter	Description
<code>&lt;0-360&gt;</code>	Specifies the RIPng update timer in seconds.

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## 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>`

### Default

The default hop-limit is 255.

### Command mode

Global Configuration

### Command parameters

Parameter	Description
<code>&lt;1-2000&gt;</code>	Specifies the tunnel ID.
<code>address WORD&lt;0-46&gt;</code>	Specifies the IPv6 address and length for the local VLAN or brouter port.
<code>destination{A.B.C.D}</code>	Configures the address of the remote endpoint of the tunnel.
<code>hop-limit &lt;0-255&gt;</code>	Configures the maximum number of hops in the tunnel.
<code>source {A.B.C.D}</code>	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.

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## 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`

### Default

None

### Command mode

OSPF Router Configuration

### Command parameters

Parameter	Description
{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.



# Command: ipv6 vrrp address (for a port)

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## 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>`

### Default

None

### Command mode

GigabitEthernet Interface Configuration

### Command parameters

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

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# Command: ipv6 vrrp address (for a VLAN)

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## 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>

### Default

None

### Command mode

VLAN Interface Configuration

### Command parameters

Parameter	Description
<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.

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## 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`

## Default

None

## Command mode

GigabitEthernet Interface Configuration

## Command parameters

Parameter	Description
<code>&lt;1-255&gt;</code>	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.
<code>&lt;1-255&gt; preempt-mode enable</code>	Enable IPv6 vrrp preempt mode.
<code>accept-mode enable</code>	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 <code>accept-mode enable</code> is disabled.
<code>action &lt;none preempt&gt;</code>	Lists options to override the holddown timer manually and force preemption. None does not override the timer. <code>preempt</code> preempts the timer. This parameter applies only if the holddown timer is active.
<code>adver-int &lt;1- 40&gt;</code>	Specifies the time interval, in seconds, between sending advertisement messages. Only the master router sends advertisements. The default is 1.
<code>backup-master enable</code>	Uses the backup Virtual Router Redundancy Protocol (VRRP) switch for traffic forwarding. This option reduces the traffic on the IST link. The default <code>backupmaster enable</code> is disabled.
<code>critical-ip enable</code>	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.
<code>critical-ip- addr WORD&lt;0- 46&gt; enable</code>	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 <code>critical-ip enable</code> is disabled.
<code>fast-adv enable</code>	Enables IPv6 Virtual Router Redundancy Protocol (VRRP). The default is disabled. Enables or disables the fast advertisement interval. When disabled, the regular advertisement interval is used. The default <code>fast-adv-int</code> is 200.
<code>fast-adv-int &lt;200-1000&gt;</code>	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.
<code>holddown- timer&lt;0-21600&gt;</code>	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.
	Specifies the priority value used by this Virtual Router Redundancy Protocol (VRRP)

priority <1-  
255>

router. The value 255 is reserved for the router that owns the IP addresses associated with the virtual router. The default priority is 100.

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## 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

## Default

None

## Command mode

VLAN Interface Configuration

## Command parameters

Parameter	Description
<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.



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## ipvpn

Create an IP Virtual Private Network (VPN) instance on the Virtual Routing and Forwarding (VRF).

### Syntax

- default ipvpn
- ipvpn
- ipvpn enable
- no ipvpn

### Default

The default is disabled.

### Command mode

VRF Router Configuration

### Command parameters

Parameter	Description
enable	Enable IP Virtual Private Network (VPN) on the Virtual Routing and Forwarding (VRF).



# Command: ipvpn enable

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## 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

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## 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 <0-15488 | 0-500000>`
- `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`

### Default

None

### Command mode

Global Configuration

### Command parameters

Parameter	Description
<code>max-routes &lt;0-15488   0-500000&gt;</code>	Specifies the maximum number of routes for the VRF. Depending on the hardware platform, the parameter range can be one of the following: <code>&lt;0-15488&gt;</code> or <code>&lt;0-500000&gt;</code> .
<code>max-routes-trap enable</code>	Enables the sending of traps after the maximum number of routes is reached. The default is enabled.
<code>name WORD&lt;1-16&gt;</code>	Renames the VRF instance.
<code>vrfid &lt;1-511&gt;</code>	Specifies a VRF ID. The switch supports 512 VRFs.
<code>vrf-trap enable</code>	Enables the device to send VRF-related traps. The default is enabled.
<code>WORD&lt;1-16&gt;</code>	Specifies the name for the VRF.



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## 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}`

### Default

None

### Command mode

GigabitEthernet Interface Configuration

### Command parameters

Parameter	Description
{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.

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## 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

## Default

None

## Command mode

GigabitEthernet Interface Configuration

## Command parameters

Parameter	Description
<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 fast-adv enable	Enables Virtual Router Redundancy Protocol (VRRP) on the interface. 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.





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## 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}

## Default

None

## Command mode

VLAN Interface Configuration

## Command parameters

Parameter	Description
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.



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## ip vrrp version

Configure VRRP version on an interface.

### Syntax

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

### Default

version 2

### Command mode

GigabitEthernet Interface Configuration

### Command parameters

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

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## 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>`

### Default

None

### Command mode

Global Configuration

### Command parameters

Parameter	Description
<code>&lt;0-16777215&gt;</code>	Specifies the service instance identifier (I-SID).
<code>&lt;1-16777215&gt;</code>	Specifies the Transparent UNI based service instance identifier (I-SID).
<code>elan-transparent</code>	Specifies the elan-transparent (Transparent UNI) based service.



# Command: i-sid (for a mlt)

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## i-sid (for a mlt)

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

### Syntax

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

### Default

None

### Command mode

MLT Interface Configuration

### Command parameters

Parameter	Description
<code>&lt;1-16777215&gt;</code>	Specifies the service instance identifiers (I-SID) number.
<code>elan</code>	Create an Elan based service.

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# Command: i-sid (for a port)

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## i-sid (for a port)

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

### Syntax

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

### Default

None

### Command mode

GigabitEthernet Interface Configuration

### Command parameters

Parameter	Description
<code>&lt;1-16777215&gt;</code>	Specifies the I-sid number.
<code>elan</code>	Create an elan based service.

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## 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`

### Default

The default is disabled.

### Command mode

VRF Router Configuration

### Command parameters

Parameter	Description
<code>&lt;0-16777215&gt;</code>	Specifies the service instance identifier (I-SID).

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## 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`

### Default

None

### Command mode

Global Configuration

### Command parameters

Parameter	Description
<code>&lt;1-16777215&gt;</code>	Specifies the FDB based service instance identifier (I-SID).
<code>flush</code>	Flushes MAC address on an i-sid
<code>sync</code>	Sync forwarding database with the other aggregation switch



# Command: i-sid (T-UNI based)

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## 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>`

### Default

None

### Command mode

Global Configuration

### Command parameters

Parameter	Description
<code>&lt;1-16777215&gt;</code>	Specifies the Transparent UNI based service instance identifier (I-SID).
<code>elan-transparent</code>	Specifies the elan-transparent (Transparent UNI) based service.

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## 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`

### Default

The default is disabled.

### Command mode

VRF Router Configuration

### Command parameters

Parameter	Description
<code>adv-rtr &lt;x.xx.xx&gt;</code>	Specifies a specific advertising BEB for the IS-IS accept policy. The x.xx.xx variable specifies an SPBM nickname.

<code>enable</code>	Enables the IS-IS accept policy.
<code>i-sid &lt;0-16777215&gt;</code>	Configures the service instance identifier (I-SID) to which the IS-IS accept policy applies. The number 0 represents the GRT.
<code>isid-list WORD &lt;1-32&gt;</code>	Configures a list of I-SIDs to which the IS-IS accept policy applies.
<code>route-map WORD&lt;1-64&gt;</code>	Specifies an IS-IS route policy.

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## 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`

### Default

The default is disabled.

### Command mode

VRF Router Configuration

### Command parameters

Parameter	Description
<code>enable</code>	Enables the IS-IS accept policy.
<code>i-sid &lt;0-16777215&gt;</code>	Specifies a service instance identifier (I-SID) number representing a local or remote Layer 3 VSN. The number 0 represents the GRT.
<code>isid-list WORD &lt;1-32&gt;</code>	Specifies a list of I-SID numbers representing local or remote Layer 3 VSNs.
<code>route-map WORD&lt;1-64&gt;</code>	Specifies an IS-IS route policy.



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## 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>`

### Default

None

### Command mode

User EXEC

### Command parameters

Parameter	Description
<code>vrf WORD&lt;1-16&gt;</code>	Specifies a VRF instance.

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## 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 direct`
- `isis apply redistribute direct`
- `isis apply redistribute direct vrf WORD<1-16>`
- `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`
- `isis apply redistribute static vrf WORD<1-16>`
- `isis apply redistribute static vrf WORD<1-16>`
- `isis apply redistribute vrf WORD<1-16>`
- `isis apply redistribute vrf WORD<1-16>`

### Default

None

### Command mode

User EXEC

### Command parameters

Parameter	Description
<code>{direct dvr isis ospf rip static vrf}</code> <code>WORD&lt;1-16&gt;</code>	Specifies the protocol type. Specifies the VRF name.





# Command: isis dup-detection-temp-disable

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## isis dup-detection-temp-disable

Temporarily disables isis duplicate detection

### Syntax

- `isis dup-detection-temp-disable`

### Default

None

### Command mode

User EXEC

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## 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 }`
- `isis hello-auth type { none | simple | hmac-md5 } key WORD<1-16>`
- `isis hello-auth type { none | simple | hmac-md5 } key WORD<1-16> key-id <1-255>`
- `no isis hello-auth`

### Default

The default is none.

### Command mode

MLT Interface Configuration

### Command parameters

Parameter	Description
<code>key WORD&lt;1-16&gt;</code>	Specifies the authentication key (password) used by the receiving router to verify the packet.
<code>key-id &lt;1-255&gt;</code>	Specifies the optional key ID.
<code>type { none   simple   hmac-md5 }</code>	Specifies the authentication type used for IS-IS hello packets on the interface. The type can be one of the following: none, simple or hmac-md5. 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. There is an optional key ID. The default type is none. Use the no or default options to set the hello-auth type to none.

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## 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, simple or hmac-md5.

### Syntax

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

### Default

The default hello-auth type is none.

### Command mode

GigabitEthernet Interface Configuration

### Command parameters

Parameter	Description
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 }	Specifies the authentication type used for IS-IS hello packets on the interface. The type can be one of the following: none, simple or hmac-md5. 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. There is an optional key ID. The default type is none. Use the no or default options to set the hello-auth type to none.



# Command: isis l1-dr-priority (on an MLT)

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## 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`

### Default

The default Level 1 designated router priority value is 64.

### Command mode

MLT Interface Configuration

### Command parameters

Parameter	Description
<code>&lt;0-127&gt;</code>	Configures the Level 1 Intermediate-System-to-Intermediate-System (IS-IS) designated router priority to the specified value.

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## 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`

### Default

The default Level 1 designated router priority value is 64.

### Command mode

GigabitEthernet Interface Configuration

### Command parameters

Parameter	Description
<0-127>	Configures the Level 1 Intermediate-System-to-Intermediate-System (IS-IS) designated router priority to the specified value.

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## 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`

### Default

The default Level 1 hello interval value is 9 seconds.

### Command mode

MLT Interface Configuration

### Command parameters

Parameter	Description
<code>&lt;1-600&gt;</code>	Configures the Level 1 hello interval.



# Command: isis l1-hello-interval (on a port)

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## 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`

### Default

The default Level 1 hello interval value is 9 seconds.

### Command mode

GigabitEthernet Interface Configuration

### Command parameters

Parameter	Description
<1-600>	Configures the Level 1 hello interval.

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# Command: isis l1-hello-multiplier (on an MLT)

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## 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`

### Default

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

### Command mode

MLT Interface Configuration

### Command parameters

Parameter	Description
<code>&lt;1-600&gt;</code>	Configures the Level 1 hello multiplier.

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# Command: isis l1-hello-multiplier (on a port)

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## 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`

### Default

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

### Command mode

GigabitEthernet Interface Configuration

### Command parameters

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

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# Command: isis (on an MLT)

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## 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`

### Default

None

### Command mode

MLT Interface Configuration

### Command parameters

Parameter	Description
<code>enable</code>	Enables the Intermediate-System-to-Intermediate-System (IS-IS) circuit and interface on the selected MLT.

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# Command: isis (on a port)

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## 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`

### Default

None

### Command mode

GigabitEthernet Interface Configuration

### Command parameters

Parameter	Description
<code>enable</code>	Enables the Intermediate-System-to-Intermediate-System (IS-IS) circuit and interface on the selected ports.

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## 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`

### Default

By default, redistribution is disabled.

### Command mode

VRF Router Configuration

### Command parameters

Parameter	Description
enable	Enables Border Gateway Protocol (BGP) route redistribution.

<code>metric &lt;0-65535&gt;</code>	Specifies the metric for the redistributed route. Use a value that is consistent with the destination protocol. The default is 1.
<code>metrictype external</code>	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.
<code>metrictype internal</code>	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.
<code>routermap WORD&lt;0-64&gt;</code>	Configures the route policy to apply to redistributed routes. Specifies a name.
<code>subnets allow</code>	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.
<code>subnets suppress</code>	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.

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## 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`

### Default

By default, redistribution is disabled.

### Command mode

VRF Router Configuration

### Command parameters

Parameter	Description
<code>enable</code>	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.

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## 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`

### Default

By default, redistribution is disabled.

### Command mode

VRF Router Configuration

### Command parameters

Parameter	Description
enable	Enables route redistribution.



<code>metric &lt;0-65535&gt;</code>	Configures the metric (cost) to apply to redistributed routes. The default is 1.
<code>metrictype external</code>	Configures the type of route to import into the protocol. The default is internal.
<code>metrictype internal</code>	Configures the type of route to import into the protocol. The default is internal.
<code>routermap WORD&lt;0-64&gt;</code>	Configures the route policy to apply to redistributed routes. Specifies a name.
<code>subnets allow</code>	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.
<code>subnets allow</code>	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.
<code>subnets allow</code>	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.
<code>subnets suppress</code>	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.
<code>subnets suppress</code>	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.
<code>subnets suppress</code>	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.

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## 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`

### Default

By default, redistribution is disabled.

### Command mode

VRF Router Configuration

### Command parameters

Parameter	Description
<code>enable</code>	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.
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.
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.
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.
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.
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.

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## 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`

### Default

By default, redistribution is disabled.

### Command mode

VRF Router Configuration

### Command parameters

Parameter	Description
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.
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.
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.
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.
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.
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.



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## 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> ll-metric`
- `isis spbm <1-100>`
- `isis spbm <1-100> interface-type { broadcast | pt-pt }`
- `isis spbm <1-100> ll-metric <1-16777215>`
- `no isis spbm <1-100>`
- `no isis spbm <1-100> interface-type`
- `no isis spbm <1-100> ll-metric`

### Default

None

### Command mode

MLT Interface Configuration

### Command parameters

Parameter	Description
<code>&lt;1-100&gt;</code>	Specifies the Shortest Path Bridging MAC (SPBM) instance ID.
<code>interface-type { broadcast   pt-pt }</code>	Configures the Shortest Path Bridging MAC (SPBM) instance interface type.
<code>ll-metric &lt;1-16777215&gt;</code>	Configures the cost for the Shortest Path Bridging MAC (SPBM) instance.

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## 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> ll-metric`
- `isis spbm <1-100>`
- `isis spbm <1-100> interface-type { broadcast | pt-pt }`
- `isis spbm <1-100> ll-metric <1-16777215>`
- `no isis spbm <1-100>`
- `no isis spbm <1-100> interface-type`
- `no isis spbm <1-100> ll-metric`
- `no Isis spbm <1-100>`
- `no isis spbm <1-100> interface-type`
- `no Isis spbm <1-100> ll-metric`

### Default

None

### Command mode

GigabitEthernet Interface Configuration

### Command parameters

Parameter	Description
<code>&lt;1-100&gt;</code>	Specifies the Shortest Path Bridging MAC (SPBM) instance ID.
<code>interface-type { broadcast   pt-pt }</code>	Configures the Shortest Path Bridging MAC (SPBM) instance interface type.
<code>ll-metric &lt;1-16777215&gt;</code>	Configures the cost for the Shortest Path Bridging MAC (SPBM) instance.



## 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`

### Default

The default router type is Level 1 (l1).

### Command mode

IS-IS Router Configuration

### Command parameters

Parameter	Description
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.

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## 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>`

### Default

None

### Command mode

User EXEC

### Command parameters

Parameter	Description
<code>burst-count &lt;1-200&gt;</code>	Specifies the burst count.
<code>data-tlv-size &lt;0-400&gt;</code>	Specifies the data Type-Length-Value (TLV) size. The default is 0.
<code>frame-size &lt;64-1500&gt;</code>	Specifies the frame size. The default is 0.
<code>priority &lt;0-7&gt;</code>	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 smItVirtual	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.

## 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>`

### Default

None

### Command mode

## Command parameters

Parameter	Description
<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.



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## I2 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>`

### Default

None

### Command mode

User EXEC

### Command parameters

Parameter	Description
<code>group {A.B.C.D}</code>	Specifies the multicast group address.
<code>priority &lt;0-7&gt;</code>	Specifies the priority. The default is 7.
<code>source {A.B.C.D}</code>	Specifies the source address.
<code>ttl-value &lt;1-255&gt;</code>	Specifies the time-to-live value for the trace.
<code>vlan &lt;1-4059&gt;</code>	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.
<code>vrf WORD&lt;1-16&gt;</code>	Specifies the VRF name.

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## 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>`

### Default

None

### Command mode

User EXEC

### Command parameters

Parameter	Description
<code>ip-address</code> <code>WORD&lt;0-255&gt;</code>	Specifies the IP address.
<code>priority</code> <code>&lt;0-7&gt;</code>	Specifies the priority. The default is 7.
<code>source-mode</code> <code>nodal</code>	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.
<code>source-mode</code> <code>smltVirtual</code>	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.
<code>ttl-value</code> <code>&lt;1-255&gt;</code>	Specifies the time-to-live (TTL) value. The default is 64.
<code>vrf</code> <code>WORD&lt;1-16&gt;</code>	Specifies the VRF name.
<code>WORD&lt;0-255&gt;</code>	Specifies the IP address.



## 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>`

### Default

None

### Command mode

User EXEC

### Command parameters

Parameter	Description
<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.
routername WORD<0-255>	Specifies the router node name.
tvl-value <1-255>	Specifies the time-to-live (TTL) value. The default is 64.

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## I2 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

- `I2 tracetree <1-4059> <1-16777215>`
- `I2 tracetree <1-4059> <1-16777215> mac 0x00:0x00:0x00:0x00:0x00:0x00`
- `I2 tracetree <1-4059> <1-16777215> mac 0x00:0x00:0x00:0x00:0x00:0x00 priority <0-7>`
- `I2 tracetree <1-4059> <1-16777215> priority <0-7>`
- `I2 tracetree <1-4059> <1-16777215> routernodename WORD<0-255>`
- `I2 tracetree <1-4059> <1-16777215> routernodename WORD<0-255> priority <0-7>`
- `I2 tracetree <1-4059> <1-16777215> routernodename WORD<0-255> source-mode nodal ttl-value <1-255>`
- `I2 tracetree <1-4059> <1-16777215> routernodename WORD<0-255> source-mode smltVirtual ttl-value <1-255>`
- `I2 tracetree <1-4059> <1-16777215> routernodename WORD<0-255> ttl-value <1-255>`
- `I2 tracetree <1-4059> <1-16777215> source-mode nodal ttl-value <1-255>`
- `I2 tracetree <1-4059> <1-16777215> source-mode smltVirtual ttl-value <1-255>`
- `I2 tracetree <1-4059> <1-16777215> ttl-value <1-255>`

### Default

None

### Command mode

User EXEC

### Command parameters

Parameter	Description
<code>&lt;1-16777215&gt;</code>	Specifies the service instance identifier (I-SID).
<code>&lt;1-4059&gt;</code>	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.
<code>mac</code> <code>&lt;0x00:0x00:0x00:0x00:0x00:0x00&gt;</code>	Specifies the MAC address.

<code>priority &lt;0-7&gt;</code>	Specifies the priority value. The default is 7.
<code>routernodename WORD&lt;0-255&gt;</code>	Specifies the router node name.
<code>source-mode nodal</code>	Specifies the source mode of nodal. The default is nodal.
<code>source-mode smltVirtual</code>	Specifies the source mode of smltVirtual. The default is nodal.
<code>ttl-value &lt;1-255&gt;</code>	Specifies the time-to-live (TTL) value. The default is 64.



# Command: lacp aggregation enable

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## 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

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# Command: lacp aggr-wait-time

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## lacp aggr-wait-time

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

### Syntax

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

### Default

The default value is 2000.

### Command mode

GigabitEthernet Interface Configuration

### Command parameters

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

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# Command: lacp enable (for a port)

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## 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

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# Command: lacp fast-periodic-time

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## 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>

### Default

The default is 20000 ms.

### Command mode

GigabitEthernet Interface Configuration

### Command parameters

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

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## 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 0x00:0x00:0x00:0x00:0x00:0x00:0x00
- lacp system-priority <0-65535>
- lacp timeout-scale <2-10>
- no lacp
- no lacp enable

### Default

The default is disabled.

### Command mode

Global Configuration

### Command parameters

Parameter	Description
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.
	Sets the fast-periodic time (in milliseconds) globally. The

<code>fast-periodic-time &lt;200-20000&gt;</code>	default is 20000 ms.
<code>slow-periodic-time &lt;10000-30000&gt;</code>	Sets the slow periodic time globally. The default value is 1000 ms.
<code>smlt-sys-id &lt;0x00:0x00:0x00:0x00:0x00:0x00&gt;</code>	Sets the LACP system ID globally. Enter a MAC address in the following format: 0x00:0x00:0x00:0x00:0x00:0x00.
<code>system-priority &lt;0-65535&gt;</code>	Sets the global LACP system priority. The default value is 32768.
<code>timeout-scale &lt;2-10&gt;</code>	Sets the timeout scale globally. The default value is 3.

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## lacp key

Configure the aggregation key for the port.

### Syntax

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

### Default

The default is 0.

### Command mode

GigabitEthernet Interface Configuration

### Command parameters

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

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## 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

### Default

The default is passive.

### Command mode

GigabitEthernet Interface Configuration

### Command parameters

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

## 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

### Default

None

### Command mode

MLT Interface Configuration

### Command parameters

Parameter	Description
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.



# Command: lacp partner-key

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## lacp partner-key

Configure the partner administrative key.

### Syntax

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

### Default

The default is 0.

### Command mode

GigabitEthernet Interface Configuration

### Command parameters

Parameter	Description
<0-65535>	Specifies the partner administrative key.

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## lacp partner-port

Configure the partner administrative port value.

### Syntax

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

### Default

None

### Command mode

GigabitEthernet Interface Configuration

### Command parameters

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



# Command: lacp partner-port-priority

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## lacp partner-port-priority

Configure the partner administrative port priority value.

### Syntax

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

### Default

The default is 0.

### Command mode

GigabitEthernet Interface Configuration

### Command parameters

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

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## 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>

### Default

None

### Command mode

GigabitEthernet Interface Configuration

### Command parameters

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

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# Command: lacp partner-system-id

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## 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>

### Default

None

### Command mode

GigabitEthernet Interface Configuration

### Command parameters

Parameter	Description
<0x00:0x00:0x00:0x00:0x00:0x00>	Specifies the partner administration system ID.

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## lacp partner-system-priority

Configure the partner administrative system priority value.

### Syntax

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

### Default

The default value is 32768.

### Command mode

GigabitEthernet Interface Configuration

### Command parameters

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

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## lacp priority

Configure the port priority.

### Syntax

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

### Default

The default value is 32768.

### Command mode

GigabitEthernet Interface Configuration

### Command parameters

Parameter	Description
<0-65535>	Specifies the port priority.

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## lacp slow-periodic-time

Configure the slow periodic time.

### Syntax

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

### Default

The default value is 1000 ms.

### Command mode

GigabitEthernet Interface Configuration

### Command parameters

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

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## lacp system-priority

Configure the LACP system priority.

### Syntax

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

### Default

The default value is 32768.

### Command mode

GigabitEthernet Interface Configuration

### Command parameters

Parameter	Description
<code>&lt;0-65535&gt;</code>	Specifies the system priority for this port.

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## lacp timeout-scale

Configure the timeout scale.

### Syntax

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

### Default

The default is 3.

### Command mode

GigabitEthernet Interface Configuration

### Command parameters

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

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## lacp timeout-time

Configure the timeout to either long or short.

### Syntax

- default lacp timeout-time
- lacp timeout-time long
- lacp timeout-time short

### Default

The default is long.

### Command mode

GigabitEthernet Interface Configuration

### Command parameters

Parameter	Description
{long   short}	Specifies the timeout.

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## 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.

### Syntax

- `license-grant {slot[-slot][,...]}`
- `no license-grant {slot[-slot][,...]}`

### Default

None

### Command mode

Global Configuration

### Command parameters

Parameter	Description
<code>{slot[-slot][,...]}</code>	Specifies the slot. Valid IO slots are 1-8.

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## 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 <67-179> <0-4>
- line-card <1-4> trace level
- line-card <1-4> trace grep

### Default

None

### Command mode

User EXEC

### Command parameters

Parameter	Description
<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.
level <67-179> <0-4>	Sets the trace level. <67-179> specifies the Module Id. <0-4> specifies the trace level.
trace	Sets the trace level.
trace grep WORD<0-1024>	Greps the string in the range of 0 to 1024.
trace level <67-179> <0-4>	Sets the trace level.

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## 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`

### Default

None

### Command mode

Global Configuration

### Command parameters

Parameter	Description
<code>auto-port-down</code>	Activates automatic disabling of the port if the link-flap threshold is exceeded. The default is disabled.
<code>frequency &lt;1-9999&gt;</code>	Configures the number of changes that are allowed during the time specified by the interval command. The default is 20.
<code>interval &lt;2-600&gt;</code>	Configures the link-flap-detect interval in seconds. The default is 60.
<code>send-trap</code>	Activates sending traps. The default is enabled.

## 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>

### Default

None

### Command mode

User EXEC

### Command parameters

Parameter	Description
<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.





# Command: lldp tx-hold-multiplier

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## lldp tx-hold-multiplier

Configure the time to live value in seconds.

### Syntax

- `lldp tx-hold-multiplier <2-10>`

### Default

Default value is 4 seconds.

### Command mode

Global Configuration

### Command parameters

Parameter	Description
<code>&lt;2-10&gt;</code>	Specifies the Tx hold multiplier in seconds.

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## 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>`

### Default

Default value is 30 seconds.

### Command mode

Global Configuration

### Command parameters

Parameter	Description
<code>tx-hold-multiplier &lt;2-10&gt;</code>	Specifies the Tx hold multiplier in seconds.
<code>&lt;5-32768&gt;</code>	Specifies the global Tx interval in seconds.

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## load-license

Load a license file to unlock the licensed features.

### Syntax

- `load-license WORD<0-63>`

### Default

None

### Command mode

Global Configuration

### Command parameters

Parameter	Description
WORD<0-63>	Specifies the license filename. This parameter does not apply to all hardware platforms.



## 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

### Default

None

### Command mode

GigabitEthernet Interface Configuration

### Command parameters

Parameter	Description
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.

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## logging level

Determine what messages the system records in the log.

### Syntax

- `default logging level <0-4>`
- `logging level <0-4>`

### Default

None

### Command mode

Global Configuration

### Command parameters

Parameter	Description
<code>level &lt;0-4&gt;</code>	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.

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## logging screen

Configure the system to display log messages on screen.

### Syntax

- default logging screen
- logging screen
- no logging screen

### Default

None

### Command mode

Global Configuration

### Command parameters

Parameter	Description
screen	Configures the system to display the log messages on screen.

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# Command: logging transferFile

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## 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}

### Default

None

### Command mode

Global Configuration

### Command parameters

Parameter	Description
<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.

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# Command: logging transferFile filename-prefix

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## 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>

### Default

None

### Command mode

Global Configuration

### Command parameters

Parameter	Description
<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.

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## logging write

Write to the log file automatically created by the system.

### Syntax

- logging write WORD<1-1536>

### Default

None

### Command mode

Global Configuration

### Command parameters

Parameter	Description
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 (").

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## 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>`

### Default

None

### Command mode

Global Configuration

### Command parameters

Parameter	Description
<code>&lt;1-255&gt;</code>	Specifies the ISIS logical interface ID.
<code>dest-ip {A.B.C.D}</code>	Specifies the destination IP address for the logical interface.
<code>mlt PT_MLT&lt;1-512&gt;</code>	Specifies the MLT ID that the logical interface is connected to in an L2 network.
<code>name WORD&lt;1-16&gt;</code>	Specifies the administratively-assigned name of this logical interface, which can be up to 16 characters.
<code>port {slot/port[sub-port]}</code>	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/subport.
<code>primary-vid &lt;2-4059&gt;</code>	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. If you enable VRF scaling and SPBM mode, the system also reserves VLAN IDs 3500 to 3998.
<code>vid {vlan-id[-vlan-id][,....]}</code>	Specifies the list of VLANs that are associated with this logical interface.



# Command: login

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## login

Login to a different user access level.

### Syntax

- login

### Default

None

### Command mode

User EXEC

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# Command: login-message

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## login-message

Change the login prompt for CLI.

### Syntax

- default login-message
- login-message WORD<1-1513>
- no login-message

### Default

The default is Login.

### Command mode

Global Configuration

### Command parameters

Parameter	Description
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.

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# Command: logout

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## logout

Ends the current session.

### Syntax

- logout

### Default

None

### Command mode

User EXEC

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## 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

## Default

None

## Command mode

User EXEC

## Command parameters

Parameter	Description
<0x00:0x00:0x00:0x00:0x00:0x00> <1-8191>	Specifies the remote MAC address to reach the MEP/MIP. 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 msec. A value of 0 msec 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.

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## ls

Lists files in a directory.

### Syntax

- `ls`
- `ls -r`
- `ls WORD<1-99>`

### Default

None

### Command mode

User EXEC

### Command parameters

Parameter	Description
<code>-r</code>	Recurse into directories.
<code>WORD&lt;1-99&gt;</code>	Specify the directory path name.

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## mac-address-table

Configure MAC address table settings.

### Syntax

- default mac-address-table aging-time
- mac-address-table aging-time <10-1000000>

### Default

The default is 600.

### Command mode

Global Configuration

### Command parameters

Parameter	Description
aging-time <10-1000000>	Configure MAC address table aging time.

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# Command: macsec confidentiality-offset

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## 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`

### Default

None

### Command mode

GigabitEthernet Interface Configuration

### Command parameters

Parameter	Description
<code>&lt;30-50&gt;</code>	Enter the value of confidentiality offset to be achieved. Only 30 and 50 are valid values.

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# Command: macsec connectivity-association (globally)

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## 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>`

### Default

None

### Command mode

Global Configuration

### Command parameters

Parameter	Description
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.





# Command: macsec connectivity-association (to a port)

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## 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>`

### Default

None

### Command mode

GigabitEthernet Interface Configuration

### Command parameters

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

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# Command: macsec enable

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## macsec enable

Enable MACsec on the specified port.

### Syntax

- macsec enable
- no macsec enable

### Default

None

### Command mode

GigabitEthernet Interface Configuration

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# Command: macsec encryption

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## macsec encryption

Enable encryption for the frames transmitted on MACsec enabled port.

### Syntax

- macsec encryption
- no macsec encryption

### Default

None

### Command mode

GigabitEthernet Interface Configuration

### Command parameters

Parameter	Description
encryption	Enables encryption for the frames transmitted on MACsec enabled port.

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## 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-addr`
- `mac-security limit-learning enable`
- `mac-security limit-learning max-addr <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-addr <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`

### Default

None

### Command mode

GigabitEthernet Interface Configuration

### Command parameters

Parameter	Description
<code>enable</code>	Limits the MAC learning for the port.
<code>limit-learning max-addr &lt;1-32000&gt;</code>	Specifies the maximum number of MAC addresses to learn.
<code>port {slot/port[/sub-port][-slot/port[/sub-port]][,...]}</code>	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

slot/port[/sub-  
port]][,...]}

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

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# Command: mac-security (T-UNI based)

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## mac-security (T-UNI based)

Set maximum MAC learning limit for Transparent UNI service instance identifier (I-SID).

### Syntax

- default mac-security limit-learning max-addr
- mac-security limit-learning max-addr <1-32000>

### Default

None

### Command mode

Elan-Transparent Configuration

### Command parameters

Parameter	Description
limit-learning enable	Enables (or disables) the maximum MAC learning limit for the Transparent UNI based service instance identifier (I-SID).
limit-learning max-addr <1-32000>	Sets the maximum MAC learning limit in the range of 1-32000 for the Transparent UNI based service instance identifier (I-SID).

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# Command: maintenance system-action

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## **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

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## 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>

### Default

None

### Command mode

RA-guard Configuration

### Command parameters

Parameter	Description
none	Set managed config flag to none.
off	Set managed config flag to off.
on	Set managed config flat to on.





# Command: manual-area

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## 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

### Default

None

### Command mode

IS-IS Router Configuration

### Command parameters

Parameter	Description
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.  Extreme Networks VSP Operating System Software Release NN47227-104 Extreme Networks Command Line Interface Commands Reference Version 11.02 December 2017 ©Extreme Networks, Inc. 2017 All Rights Reserved. <a href="http://ExtremeNetworks.com/support">ExtremeNetworks.com/support</a>



# Command: manualtrigger ip rip interface

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## manualtrigger ip rip interface

Sends a triggered update.

### Syntax

- `manualtrigger ip rip interface vlan <1-4059>`

### Default

None

### Command mode

User EXEC

### Command parameters

Parameter	Description
<code>vlan &lt;1-4059&gt;</code>	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.

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## 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>`

### Default

None

### Command mode

Route-Map Configuration

### Command parameters

Parameter	Description
WORD<0-256>	Specifies the list IDs of AS-lists, separated by a comma.

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# Command: match community

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## 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>`

### Default

None

### Command mode

Route-Map Configuration

### Command parameters

Parameter	Description
WORD<0-256>	Specifies the list IDs of up to four defined community lists, separated by a comma.

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## 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

### Default

The default is disable.

### Command mode

Route-Map Configuration

### Command parameters

Parameter	Description
enable	Enables match community-exact.



# Command: match extcommunity

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## match extcommunity

Match the extended community.

### Syntax

- `default match extcommunity WORD<0-1027>`
- `match extcommunity WORD<0-1027>`
- `no match extcommunity WORD<0-1027>`

### Default

None

### Command mode

Route-Map Configuration

### Command parameters

Parameter	Description
WORD<0-1027>	Specifies the list IDs of AS-lists, separated by a comma.

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## 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>`

### Default

None

### Command mode

Route-Map Configuration

### Command parameters

Parameter	Description
WORD<0-259>	Specifies the name of up to four defined prefix lists, separated by a comma.

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## match local-preference

Match the preference value from 0-2147483647.

### Syntax

- default match local-preference
- match local-preference <0-2147483647>

### Default

The default is 0.

### Command mode

Route-Map Configuration

### Command parameters

Parameter	Description
<0-2147483647>	Specifies the preference value.

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# Command: match metric

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## 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>

### Default

The default is 0.

### Command mode

Route-Map Configuration

### Command parameters

Parameter	Description
<0-65535>	Specifies the metric to match.

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## 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}

### Default

The default is any.

### Command mode

Route-Map Configuration

### Command parameters

Parameter	Description
{ 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.



# Command: match network

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## 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>`

### Default

None

### Command mode

Route-Map Configuration

### Command parameters

Parameter	Description
WORD<0-259>	Specifies the name of up to four defined prefix lists, separated by a comma.

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## 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>`

### Default

None

### Command mode

Route-Map Configuration

### Command parameters

Parameter	Description
WORD<0-259>	Specifies the name of up to four defined prefix lists, separated by a comma.

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## 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>

### Default

The default is any.

### Command mode

Route-Map Configuration

### Command parameters

Parameter	Description
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.

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## 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

### Default

None

### Command mode

RA-guard Configuration

### Command parameters

Parameter	Description
WORD<1-64>	Specifies the MAC access list name.

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# Command: match ra-prefix-list

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## 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

### Default

None

### Command mode

RA-guard Configuration

### Command parameters

Parameter	Description
WORD<1-64>	Specifies the prefix list name.

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# Command: match ra-srcaddr-list

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## 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`

### Default

None

### Command mode

RA-guard Configuration

### Command parameters

Parameter	Description
WORD<1-64>	Specifies the MAC access list name.

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## 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`

### Default

None

### Command mode

DHCP-guard Configuration

### Command parameters

Parameter	Description
WORD<1-64>	Specifies the prefix list name.

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## 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>`

### Default

None

### Command mode

Route-Map Configuration

### Command parameters

Parameter	Description
WORD<0-259>	Specifies the name of up to four defined prefix lists, separated by a comma.

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## 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 }

### Default

The default is any.

### Command mode

Route-Map Configuration

### Command parameters

Parameter	Description
{ 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.



# Command: match server access-list

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## 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

### Default

None

### Command mode

DHCP-guard Configuration

### Command parameters

Parameter	Description
WORD<1-64>	Specifies the access list name.

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## 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

### Default

None

### Command mode

Route-Map Configuration

### Command parameters

Parameter	Description
WORD<0-256>	Specifies one or more tag values.

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## 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>`

### Default

None

### Command mode

Route-Map Configuration

### Command parameters

Parameter	Description
WORD<1-16>	Specifies the VRF name.

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## 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>`

### Default

None

### Command mode

Route-Map Configuration

### Command parameters

Parameter	Description
WORD<0-511>	Specifies the VRF ID.

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# Command: max-logins

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## max-logins

Configure the number of supported rlogin sessions.

### Syntax

- default max-logins
- max-logins <0-8>

### Default

The default is 8.

### Command mode

Global Configuration

### Command parameters

Parameter	Description
<0-8>	Configures the maximum number of inbound remote CLI logon sessions.

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## 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

### Default

The default maximum interval value is 900.

### Command mode

IS-IS Router Configuration

### Command parameters

Parameter	Description
<30-900>	Specifies the time interval at which the generated Link State Packet (LSP) is refreshed.

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## md5

Calculate the Message Digest 5 algorithm (MD5) digest to verify the MD5 checksum. The md5 command calculates the MD5 digest for files on the internal or external flash and either Display the output on screen or stores the output in a file that you specify.

### Syntax

- md5 WORD<1-99>
- md5 WORD<1-99> -a
- md5 WORD<1-99> -c
- md5 WORD<1-99> -f WORD<1-99>
- md5 WORD<1-99> -r

### Default

None

### Command mode

User EXEC

### Command parameters

Parameter	Description
WORD<1-99> -a	Adds data to the output file instead of overwriting it. You cannot use the -a option with the -c option.
WORD<1-99> -c	Compares the checksum of the specified file by WORD<1-99> with the MD5 checksum present in the checksum file name. You can specify the checksum file name using the -f option. If the checksum filename is not specified, the file /intflash/checksum.md5 is used for comparison. If the supplied checksum filename and the default file are not available on flash, the following error message appears: Error: Checksum file <filename> not present The -c option also calculates the checksum of files specified by WORD<1-99> compares the checksum with all keys in the checksum file, even if filenames do not match displays the output of comparison
WORD<1-99> -f WORD<1-99>	Stores the result of MD5 checksum to a file on internal or external flash. If the output file specified with the -f option is one of the reserved filenames on the switch, the command fails with the error message: Error: Invalid operation. If the output file specified with the -f option is one of the files for which MD5 checksum is to be computed, the command fails with the error message: md5 *.cfg -f config.cfg Error: Invalid operation on file <filename>. If the checksum filename specified by the -f option exists on the switch (and is not one of the reserved filenames), the following message appears on the switch: File exists. Do you wish to overwrite? (y/n)
WORD<1-99> -r	Reverses the output. Use with the -f option to store the output to a file. You cannot use the -r option with the -c option.





# Command: mef-uni enable (for a mlt)

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## 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

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# Command: mef-uni enable (for a port)

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## 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

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# Command: metric

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## 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

### Default

The default IS-IS metric type is wide.

### Command mode

IS-IS Router Configuration

### Command parameters

Parameter	Description
narrow	Configures the metric type as narrow. The switch only supports wide.
wide	Configures the metric type as wide. The switch only supports wide.

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## 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[-slot/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[slot/port][,...]} { monitor-mlt <1-512>|out-port {slot/port [slot/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]][,...]}

## Default

The default DSCP is 0. The default TTL is 64.

## Command mode

Global Configuration

## Command parameters

Parameter	Description
<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. 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.

```
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. 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.



# Command: mkdir

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## mkdir

Make directory on filesystem.

### Syntax

- `mkdir WORD<1-99>`

### Default

None

### Command mode

Privileged EXEC

### Command parameters

Parameter	Description
WORD<1-99>	Directory path name.

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## 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>`

### Default

None

### Command mode

Global Configuration

### Command parameters

Parameter	Description
<code>&lt;1-512&gt;</code>	Specifies the MLT ID in the range of 1-512.
<code>enable</code>	Creates and enables a new MLT.
<code>encapsulation dot1q</code>	Sets encapsulation. dot1q enables trunking on the MLT.
<code>member{{slot/port[/sub-port] [-slot/port[/sub-port]] [,...]}</code>	Adds ports to this MLT. {{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

<code>name &lt;0-20&gt;</code>	specify the sub-port in the format slot/port/sub-port.
<code>private-vlan</code>	Changes the name for this MLT in the range of 0-20 characters.
<code>{isolated promiscuous trunk}</code>	Specifies the private VLAN port type for this MLT.
<code>vlan &lt;1-4059&gt;</code>	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.

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## 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]][,...]}

### Default

None

### Command mode

Global Configuration

### Command parameters

Parameter	Description
{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. 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.



# Command: mlt (T-UNI based)

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## mlt (T-UNI based)

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

### Syntax

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

### Default

None

### Command mode

Elan-Transparent Configuration

### Command parameters

Parameter	Description
<code>&lt;1-512&gt;</code>	Specifies the MLT ID in the range of 1-512 of the mlt being added to (or removed from) the Transparent UNI based service instance identifier (I-SID).

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# Command: monitor ip mroute stats

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## 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][,...]}]`

### Default

None

### Command mode

Privileged EXEC

### Command parameters

Parameter	Description
WORD<7-160> {A.B.C.D[,E.F.G.H][,...]}	Monitor IP multicast route statistics

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# Command: monitor ipv6 mroute stats

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## monitor ipv6 mroute stats

Monitor Ipv6 multicast route statistics

### Syntax

- `monitor ipv6 mroute stats [WORD<7-400> {Ipv6address[,Ipv6address][,...]}]`

### Default

None

### Command mode

Privileged EXEC

### Command parameters

Parameter	Description
WORD<7-400> {Ipv6address[,Ipv6address][,...]}	Monitor IPv6 multicast route statistics.

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## 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 [-slot/port][, ...]}`
- `monitor ip vrrp statistics gigabitethernet {slot/port [-slot/port][, ...]} verbose`
- `monitor ip vrrp statistics gigabitethernet verbose`

### Default

None

### Command mode

Privileged EXEC

### Command parameters

Parameter	Description
<code>gigabitethernet {slot/port[/sub-port][-slot/port[/sub-port]][, ...]}</code>	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.
<code>verbose</code>	Specifies the complete list of configuration information.

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## monitor mlt error collision

Monitor MultiLink Trunking (MLT) collision error information.

### Syntax

- `monitor mlt error collision`
- `monitor mlt error collision <1-512>`

### Default

None

### Command mode

Privileged EXEC

### Command parameters

Parameter	Description
<code>&lt;1-512&gt;</code>	Specifies the MLT ID.

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## monitor mlt error main

Monitor MultiLink Trunking (MLT) general error information.

### Syntax

- monitor mlt error main
- monitor mlt error main <1-512>

### Default

None

### Command mode

Privileged EXEC

### Command parameters

Parameter	Description
<1-512>	Specifies the MLT ID.



# Command: monitor mlt stats interface main

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## monitor mlt stats interface main

Show MultiLink Trunking (MLT) interface statistics.

### Syntax

- monitor mlt stats interface main
- monitor mlt stats interface main <1-512>

### Default

None

### Command mode

Privileged EXEC

### Command parameters

Parameter	Description
<1-512>	Specifies the MLT ID.

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# Command: monitor mlt stats interface utilization

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## 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>`

### Default

None

### Command mode

Privileged EXEC

### Command parameters

Parameter	Description
<code>&lt;1-512&gt;</code>	Specifies the MLT ID.

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## 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]][,...]}`

### Default

None

### Command mode

Privileged EXEC

### Command parameters

Parameter	Description
<code>{{slot/port[/sub-port][-slot/port[/sub-port]]}</code>	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

<code>port]][,...]]}</code>	channelization and the port is channelized, you must also specify the sub-port in the format slot/port/sub-port.
<code>collision</code>	Monitors port collision error information.
<code>main</code>	Monitors port general error information.
<code>ospf</code>	Monitors ports general Open Shortest Path First (OSPF) information.
<code>verbose</code>	Monitors port extended error information.
<code>verbose</code>	Monitors port extended error information on a particular slot and port or particular slots and ports.

## 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 main`
- `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]][,...]}`

### Default

None

### Command mode



Privileged EXEC

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# Command: monitor ports statistics bridging

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## 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]][,...]}`

### Default

None

### Command mode

Privileged EXEC

### Command parameters

Parameter	Description
<code>from {slot/port[/sub-port]][-slot/port[/sub-port]][,...]}</code>	Monitors port bridging 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.

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# Command: monitor ports statistics dhcp-relay

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## 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]][,...]}`

### Default

None

### Command mode

Privileged EXEC

### Command parameters

Parameter	Description
<code>dhcp-relay</code>	Monitors port DHCP-relay statistics.
<code>from {slot/port[/sub-port][<code>-</code>slot/port[/sub-port]][,...]}</code>	Monitors port bridging statistics from a particular starting port. {slot/port[/sub-port][ <code>-</code> 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.

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## 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]] [,...]}`

### Default

None

### Command mode

Privileged EXEC

### Command parameters

Parameter	Description
<code>from {slot/port[/sub-port] [-slot/port[/sub-port]] [,...]}</code>	Monitors port DHCP-relay 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.
<code>main</code>	Monitors port interface statistics.
<code>utilization</code>	Monitors port interface utilization statistics.
<code>utilization from {slot/port[/sub-port] [-slot/port[/sub-port]] [,...]}</code>	Monitors port DHCP-relay statistics from a particular starting 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.
<code>verbose</code>	Monitors port interface statistics.
<code>verbose from {slot/port[/sub-port] [-slot/port[/sub-port]] [,...]}</code>	Specifies 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

```
slot/port[/sub-  
port]][,...]}
```

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.

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## monitor ports statistics ospf main

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]][,...]}`

### Default

None

### Command mode

Privileged EXEC

### Command parameters

Parameter	Description
<code>main</code>	Monitors ports statistics for OSPF main command.
<code>main from {slot/port[/sub-port][-slot/port[/sub-port]][,...]}</code>	Monitors port interface 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.
<code>verbose</code>	Monitors ports statistics for OSPF verbose command.
<code>verbose from {slot/port[/sub-port][-slot/port[/sub-port]][,...]}</code>	Monitors port interface statistics from a particular starting 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.

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## 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]][,...]}`

### Default

None

### Command mode

Privileged EXEC

### Command parameters

Parameter	Description
<code>from {slot/port[/sub-port][-slot/port[/sub-port]][,...]}</code>	Monitors port interface utilization 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.
<code>rmon</code>	Monitors port remote monitoring statistics.



# Command: monitor ports statistics routing

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## 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]][,...]}`

### Default

None

### Command mode

Privileged EXEC

### Command parameters

Parameter	Description
<code>from {slot/port[/sub-port][-slot/port[/sub-port]][,...]}</code>	Monitors port interface utilization statistics from a particular starting 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.
<code>routing</code>	Monitors port routing statistics.



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## 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>`

### Default

None

### Command mode

Global Configuration

### Command parameters

Parameter	Description
<code>duration &lt;1-1800&gt;</code>	Change monitor time duration.
<code>interval &lt;1-600&gt;</code>	Change monitor time interval.

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## monitor-statistics duration

Change monitor time duration.

### Syntax

- `monitor-statistics duration <1-1800>`

### Default

None

### Command mode

Global Configuration

### Command parameters

Parameter	Description
<code>&lt;1-1800&gt;</code>	Monitors statistics time duration in seconds.

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## monitor-statistics interval

Change monitor time interval.

### Syntax

- `monitor-statistics interval <1-600>`

### Default

None

### Command mode

Global Configuration

### Command parameters

Parameter	Description
<code>&lt;1-600&gt;</code>	Monitor statistics time interval in seconds.

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## more

Display contents of file.

### Syntax

- `more WORD<1-99>`
- `more WORD<1-99> { binary | ascii }`

### Default

None

### Command mode

Privileged EXEC

### Command parameters

Parameter	Description
<code>{ binary   ascii }</code>	Filename, a.b.c.d:<file>   /intflash/<file>   /usb/<file>.
<code>WORD&lt;1-99&gt;</code>	Specifies the file name in the following format: /usb/<file>. The file name, including the directory structure, can include up to 99 characters.



# Command: multicast software-forwarding

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## 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

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## mv

Move or rename file or directory, with wildcard pattern.

### Syntax

- mv /intflash/<srcfile> /usb/<destfile>
- mv WORD<1-255> WORD<1-255>

### Default

None

### Command mode

Privileged EXEC

### Command parameters

Parameter	Description
/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>.



# Command: mvpn enable

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## 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

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# Command: mvpn fwd-cache-timeout <10-86400>

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## 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

### Default

The default is 210 seconds.

### Command mode

VRF Router Configuration

### Command parameters

Parameter	Description
<10-86400>	Specifies the timeout value. The default is 210 seconds.

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# Command: name

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## name

Rename a policy and changes the name field for all sequence numbers under the given policy.

### Syntax

- name WORD<1-64>

### Default

None

### Command mode

Route-Map Configuration

### Command parameters

Parameter	Description
WORD<1-64>	Specifies the new name for the policy.

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## 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]][,...]}

### Default

None

### Command mode

GigabitEthernet Interface Configuration

### Command parameters

Parameter	Description
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.

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## 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`

### Default

The default value is none.

### Command mode

BGP Router Configuration

### Command parameters

Parameter	Description
<code>mask &lt;WORD 1-100&gt;</code>	<code>&lt;WORD 1-100&gt;</code> is a list of mask choices separated by commas with no space between choices.

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## 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}`

### Default

None

### Command mode

OSPF Router Configuration

### Command parameters

Parameter	Description
<code>&lt;A.B.C.D&gt;</code>	Identifies an OSPF area in IP address format A.B.C.D.
<code>priority &lt;0-255&gt;</code>	Changes the priority level of the neighbor.



# Command: neighbor password

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## 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>`

### Default

None

### Command mode

BGP Router Configuration

### Command parameters

Parameter	Description
<code>&lt;nbr_ipaddr peer-group-name&gt; WORD &lt;0-1536&gt;</code>	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.

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# Command: neighbor WORD<0-1536>

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## 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

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# Command: neighbor WORD<0-1536> address-family

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## 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



# Command: neighbor WORD<0-1536> advertisement-interval <5-120>

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## 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

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# Command: neighbor WORD<0-1536> default-ipv6-originate

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## 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

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# Command: neighbor WORD<0-1536> default-originate

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## 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

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# Command: neighbor WORD<0-1536> ebgp-multihop

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## 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

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# Command: neighbor WORD<0-1536> enable

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## 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

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# Command: neighbor WORD<0-1536> in-route-map WORD<0-256>

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## 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

### Default

None

### Command mode

BGP Router Configuration

### Command parameters

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

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

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## 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

### Default

None

### Command mode

BGP Router Configuration

### Command parameters

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

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# Command: neighbor WORD<0-1536> max-prefix <0-2147483647>

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## 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>

### Default

The default value is 12000 routes

### Command mode

BGP Router Configuration

### Command parameters

Parameter	Description
<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.

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# Command: neighbor WORD<0-1536> MD5-authentication enable

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## 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

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# Command: neighbor WORD<0-1536> neighbor-debug-mask WORD<1-100>

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## 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

### Default

The default value is none.

### Command mode

BGP Router Configuration

### Command parameters

Parameter	Description
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.



# Command: neighbor WORD<0-1536> next-hop-self

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## 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

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# Command: neighbor WORD<0-1536> out-route-map WORD<0-256>

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## 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

### Default

None

### Command mode

BGP Router Configuration

### Command parameters

Parameter	Description
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.

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# Command: neighbor WORD<0-1536> peer-group WORD<0-1536>

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## 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

### Default

None

### Command mode

BGP Router Configuration

### Command parameters

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

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# Command: neighbor WORD<0-1536> remote-as WORD<0-11>

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## 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

### Default

None

### Command mode

BGP Router Configuration

### Command parameters

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

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# Command: neighbor WORD<0-1536> remove-private-as enable

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## 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

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# Command: neighbor WORD<0-1536> retry-interval <1-65535>

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## 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

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# Command: neighbor WORD<0-1536> route-reflector-client

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## 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

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# Command: neighbor WORD<0-1536> route-refresh

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## 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

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# Command: neighbor WORD<0-1536> send-community

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## 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

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# Command: neighbor WORD<0-1536> soft-reconfiguration-in enable

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## 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

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# Command: neighbor WORD<0-1536> timers

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## 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>

### Default

None

### Command mode

BGP Router Configuration

### Command parameters

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

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# Command: neighbor WORD<0-1536> update-source

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## 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

### Default

None

### Command mode

BGP Router Configuration

### Command parameters

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

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# Command: neighbor WORD<0-1536> weight

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## 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

### Default

The default value is 0.

### Command mode

BGP Router Configuration

### Command parameters

Parameter	Description
<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.

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## 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>`

### Default

None

### Command mode

BGP Router Configuration

### Command parameters

Parameter	Description
<code>metric &lt;0-65535&gt;</code>	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.
<code>WORD &lt;1-256&gt;</code>	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.

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## 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}`

### Default

None

### Command mode

OSPF Router Configuration

### Command parameters

Parameter	Description
<code>{A.B.C.D}</code>	Specifies the IP address of the network.
<code>area {A.B.C.D}</code>	Specifies the OSPF area.



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## network (for RIP)

Enable RIP on a network.

### Syntax

- network {A.B.C.D}
- no network {A.B.C.D}

### Default

None

### Command mode

RIP Router Configuration

### Command parameters

Parameter	Description
{A.B.C.D}	Specifies the IP address of the network.



# Command: nlb-mode

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## nlb-mode

Configure the NLB support on an IP interface to enable or disable the Network Load Balancer (NLB) support.

### Syntax

- `nlb-mode unicast`

### Default

None

### Command mode

VLAN Interface Configuration

### Command parameters

Parameter	Description
<code>unicast</code>	Set <code>nlb-mode</code> to <code>unicast</code> .

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## 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`

### Default

The default value is enable.

### Command mode

BGP Router Configuration

### Command parameters

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

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## ntp

Enable Network Time Protocol (NTP) globally and create an authentication key.

### Syntax

- `default ntp`
- `default ntp authentication-key <1-2147483647>`
- `default ntp authentication-key <1-2147483647> type`
- `default ntp interval`
- `no ntp`
- `no ntp authentication-key <1-2147483647>`
- `ntp`
- `ntp authentication-key <1-2147483647> type <md5|sha1>`
- `ntp authentication-key <1-2147483647> WORD<0-20>`
- `ntp authentication-key <1-2147483647> WORD<0-20> type <md5|sha1>`
- `ntp interval <10-1440>`

### Default

The default configuration removes the secret key.

### Command mode

Global Configuration

### Command parameters

Parameter	Description
<code>authentication-key&lt;1-2147483647&gt; WORD&lt;0-20&gt;</code>	Creates an authentication key for Message Digest 5 (MD5) or Secure Hash Algorithm 1 (SHA1) authentication. WORD<0-20> specifies the secret key.
<code>interval &lt;10-1440&gt;</code>	Specifies the time interval, in minutes, between successive Network Time Protocol (NTP) updates. The default value is 15. If NTP is already activated, this configuration does not take effect until you disable NTP, and then re-enable it.
<code>type &lt;md5 sha1&gt;</code>	Specifies the type of authentication, whether MD5 or SHA1. The default is MD5 authentication.

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## ntp server

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

### Syntax

- `default ntp server {A.B.C.D}`
- `default ntp server {A.B.C.D} auth-enable`
- `default ntp server {A.B.C.D} authentication-key`
- `default ntp server {A.B.C.D} enable`
- `default ntp server {A.B.C.D} source-ip`
- `no ntp server {A.B.C.D}`
- `no ntp server {A.B.C.D} auth-enable`
- `no ntp server {A.B.C.D} enable`
- `no ntp server {A.B.C.D} source-ip`
- `ntp server {A.B.C.D}`
- `ntp server {A.B.C.D} auth-enable`
- `ntp server {A.B.C.D} authentication-key <0-2147483647>`
- `ntp server {A.B.C.D} enable`
- `ntp server {A.B.C.D} source-ip`

### Default

The default configuration does not use MD5 authentication.

### Command mode

Global Configuration

### Command parameters

Parameter	Description
{A.B.C.D}	Specifies the IP address of the Network Time Protocol (NTP) server to add or modify.
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 <0-2147483647>	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

source-ip WORD  
<0-46>

Activates the Network Time Protocol (NTP) server.

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.

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# Command: overload

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## 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

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## 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>

### Default

The default overload-on-startup value is 20 seconds.

### Command mode

IS-IS Router Configuration

### Command parameters

Parameter	Description
<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.



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## 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>`

### Default

None

### Command mode

Global Configuration

### Command parameters

Parameter	Description
<code>access level WORD&lt;2-8&gt;</code>	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.
<code>aging-time day &lt;1-365&gt;</code>	Configures the expiration period for passwords in days, from 1-365. The default aging time is 90 days.
<code>default-lockout-time &lt;60-65000&gt;</code>	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.
<code>lockout WORD&lt;0-46&gt; time &lt;60-65000&gt;</code>	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.
<code>min-passwd-len &lt;10-20&gt;</code>	Configures the minimum length for passwords in high-secure mode. The default minimum password length is 10 characters.
<code>password-history &lt;3-32&gt;</code>	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.



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## 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>`

### Default

By default, all access levels are permitted.

### Command mode

Global Configuration

### Command parameters

Parameter	Description
<code>access level WORD&lt;2-8&gt;</code>	Allows or blocks this access level.
<code>aging-time day &lt;1-365&gt;</code>	Configures the expiration period for passwords in days, from 1-365.
<code>default-lockout-time &lt;60-65000&gt;</code>	Changes the default lockout time after three invalid attempts. Configures the lockout time, in seconds, and is in the 60-65000 range.
<code>min-passwd-len &lt;10-20&gt;</code>	Configures the minimum length for passwords in high-secure mode.
<code>password-history &lt;3-32&gt;</code>	Specifies the number of previous passwords the switch stores. You cannot reuse a password that is stored in the password history.
<code>WORD&lt;2-8&gt;</code>	Permits or blocks this access level. The available access levels are: I1 I2 I3 ro rw rwa.

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## 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>`

### Default

The default is 90 days.

### Command mode

Global Configuration

### Command parameters

Parameter	Description
<code>day &lt;1-365&gt;</code>	Configures the password expiry date. The default is 90 days.
<code>user WORD&lt;1-255&gt;</code>	Specifies the user name.

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## 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>`

### Default

The default is 24 hours.

### Command mode

Global Configuration

### Command parameters

Parameter	Description
<code>&lt;1-999&gt;</code>	Configures the minimum interval between consecutive password changes in hours. The default is 24 hours.

## password create-user

Configure multiple users in each role based on their user names. You can configure the following roles: administrator, security, adutor, 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>

### Default

None

### Command mode

Global Configuration

### Command parameters

Parameter	Description
{ 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 exist 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.

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## 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>`

### Default

None

### Command mode

Global Configuration

### Command parameters

Parameter	Description
<code>&lt;60-65000&gt;</code>	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.
<code>min-passwd-len &lt;10-20&gt;</code>	Set the minimum length of passwords in hsecure mode.
<code>password-history &lt;3-32&gt;</code>	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.

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## password delete-user

Delete a user.

### Syntax

- `password delete-user WORD<1-255>`

### Default

None

### Command mode

Global Configuration

### Command parameters

Parameter	Description
WORD<1-255>	Specifies the user name of the person to connect a particular user role level with a username.



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## 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>`

### Default

None

### Command mode

Global Configuration

### Command parameters

Parameter	Description
<code>lockout WORD&lt;0-46&gt;</code>	Specifies the host IP address in the format a.b.c.d.
<code>time &lt;60-65000&gt;</code>	Specifies the lockout-out time, in seconds, in the 60-65000 range.

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## 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>`

### Default

The default is 3.

### Command mode

Global Configuration

### Command parameters

Parameter	Description
<code>max-sessions &lt;1-8&gt;</code>	Specifies the number of logon attempts.
<code>user-name WORD&lt;1-255&gt;</code>	Specifies the user name

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## 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>

### Default

The default is 8 characters in enhanced secure ON mode.

### Command mode

Global Configuration

### Command parameters

Parameter	Description
<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.

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## 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>`

### Default

The default is 3.

### Command mode

Global Configuration

### Command parameters

Parameter	Description
<1-99>	Configures the minimum number of previous passwords to remember. The default is 3.

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## 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>

### Default

The default is 1111.

### Command mode

Global Configuration

### Command parameters

Parameter	Description
<1-2>	The first <1-2> configures the minimum uppercase characters required. The second <1-2> configures the minimum number of lowercase characters required. 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.
<1-2>	
<1-2>	
<1-2>	



# Command: password post-expiry-notification-interval

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## 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>`

### 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

### Command parameters

Parameter	Description
<1-99>	The first <1-99> configures the first post password expiry notification. The default is one day after the expiration. The second <1-99> value configures the second post password expiry notification. The default is 7 days after the notification. The third <1-99> configures the third post password expiry notification. The default is 30 days after the expiration.
<1-99>	
<1-99>	



# Command: password post-pass-expiry-notification-interval

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## 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>`

### 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

### Command parameters

Parameter	Description
<1-99>	The first <1-99> configures the first post password expiry notification. The default is one day after the expiration. The second <1-99> value configures the second post password expiry notification. The default is 7 days after the notification. The third <1-99> configures the third post password expiry notification. The default is 30 days after the expiration.
<1-99>	
<1-99>	



# Command: password pre-expiry-notification-interval

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## 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

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# Command: password pre-pass-expiry-notification-interval

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## 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>`

### 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

### Command parameters

Parameter	Description
<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.
<1-99>	
<1-99>	



# Command: passwordprompt

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## passwordprompt

Change the password prompt for CLI sessions.

### Syntax

- default passwordprompt
- no passwordprompt
- passwordprompt WORD<1-1510>

### Default

The default is Password.

### Command mode

Global Configuration

### Command parameters

Parameter	Description
WORD <1-1510>	Changes the CLI password prompt. WORD <1-1510> is an ASCII string from 1-1510 characters.

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# Command: password set-password

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## password set-password

Enable the setting of a new password in case the password expires.

### Syntax

- `password set-password user-name WORD<1-255>`

### Default

None

### Command mode

Global Configuration

### Command parameters

Parameter	Description
<code>user-name WORD&lt;1-255&gt;</code>	Specifies the username.

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# Command: permit

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## 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

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## 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> -d
- ping WORD<0-256> datasize <28-51200>
- 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> scopeid <1-9999>
- ping WORD<0-256> source WORD<1-256>
- ping WORD<0-256> -t <1-120>
- ping WORD<0-256> vrf WORD<1-16>

### Default

None

### Command mode

User EXEC

### Command parameters

Parameter	Description
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	Specifies a specific outgoing interface to use by IP address. Additional ping interface filters: gigabitEthernet: {slot/port[sub-port]} gigabit vlan: Specifies the

<pre>{slot/port[sub- port]}   tunnel &lt;1-2000&gt;   vlan &lt;1-4059&gt;</pre>	<p>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.</p>
<pre>WORD &lt;0-256&gt;</pre>	<p>Specifies the host name or IPv4 (a.b.c.d) or IPv6 (x:x:x:x:x:x:x) address (string length 0-256). Specifies the address to ping.</p>
<pre>WORD&lt;0-256&gt; count &lt;1-9999&gt;</pre>	<p>Specifies the number of times to ping(for IPV4/IPV6).</p>
<pre>WORD&lt;0-256&gt; -d</pre>	<p>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).</p>
<pre>WORD&lt;0-256&gt; datasize &lt;28- 51200&gt;</pre>	<p>Specifies the size of ping data sent in bytes. The datasize for IPv4 addresses is &lt;28-9216&gt;. The datasize for IPv6 addresses is &lt;28-51200&gt;. The default is 0.</p>
<pre>WORD&lt;0-256&gt; -I &lt;1-60&gt;</pre>	<p>Specifies the interval between transmissions (for IPV4/IPV6).</p>
<pre>WORD&lt;0-256&gt; interface mgmtEthernet mgmt</pre>	<p>Specifies an IP address that will be used as the source IP address in the packet header.</p>
<pre>WORD&lt;0-256&gt; interface tunnel &lt;1-2000&gt;</pre>	<p>Specifies the tunnel interface.</p>
<pre>WORD&lt;0-256&gt; interface vlan &lt;1-4059&gt;</pre>	<p>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.</p>
<pre>WORD&lt;0-256&gt; -s</pre>	<p>Configures the continuous ping at the interval rate defined by the [-I] parameter (for IPV4/IPV6).</p>
<pre>WORD&lt;0-256&gt; scopeid &lt;1- 9999&gt;</pre>	<p>Specifies the scope ID. &lt;1-9999&gt; specifies the circuit ID for IPv6.</p>
<pre>WORD&lt;0-256&gt; source WORD&lt;1- 256&gt;</pre>	<p>Specifies an IP address that will be used as the source IP address in the packet header.</p>
<pre>WORD&lt;0-256&gt; -t &lt;1-120&gt;</pre>	<p>Specifies the no-answer timeout value in seconds (1-120) (for IPV4/IPV6).</p>
<pre>WORD&lt;0-256&gt; vrf WORD&lt;1-16&gt;</pre>	<p>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.</p>

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## 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>`

### Default

None

### Command mode

VRRP Router Configuration

### Command parameters

Parameter	Description
<code>enable</code>	Enables the virtual address ping.
<code>vrf WORD &lt;0-16&gt;</code>	Specifies the virtual routing and forwarding (VRF) name from 1-16 characters.

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## 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]}`

### Default

The default is disable.

### Command mode

Global Configuration

### Command parameters

Parameter	Description
<code>ddm-alarm-portdown</code>	Sets the port down when an alarm occurs. When enabled, the port goes down when any alarm occurs.
<code>ddm-monitor</code>	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.
<code>ddm-monitor-interval &lt;5-60&gt;</code>	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.
<code>ddm-traps-send</code>	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. {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.

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## 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>

### Default

The default is 32 watts.

### Command mode

GigabitEthernet Interface Configuration

### Command parameters

Parameter	Description
{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.

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## 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`

### Default

The default is `802dot3at_and_legacy`.

### Command mode

Global Configuration

### Command parameters

Parameter	Description
<code>802dot3af</code>	Sets PD detection mode in 802.3af.
<code>802dot3af_and_legacy</code>	Sets PD detection mode in 802.3af and legacy.
<code>802dot3at</code>	Sets PD detection mode in 802.3at.
<code>802dot3at_and_legacy</code>	Sets PD detection mode in 802.3at and legacy. The default is <code>802dot3at_and_legacy</code> .



# Command: poe poe-power-usage-threshold

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## poe poe-power-usage-threshold

Configure the power usage threshold.

### Syntax

- default poe poe-power-usage-threshold
- poe poe-power-usage-threshold <1-99>

### Default

The default is 80 percentage

### Command mode

Global Configuration

### Command parameters

Parameter	Description
<1-99>	Specifies the PoE usage threshold in the range of 1-99 percent.

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## 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}`

### Default

The default is low.

### Command mode

GigabitEthernet Interface Configuration

### Command parameters

Parameter	Description
<code>{critical high low}</code>	Configures the port priority.
<code>port {slot/port[/sub-port][-slot/port[/sub-port]][,...]}</code>	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.

## 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]][,...]}`

### Default

The default is false.

### Command mode

GigabitEthernet Interface Configuration

### Command parameters

Parameter	Description
<code>port {slot/port[/sub-port][-slot/port[/sub-port]][,...]}</code>	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.

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## 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`

### Default

None

### Command mode

GigabitEthernet Interface Configuration

### Command parameters

Parameter	Description
<code>{source-mac subnet}</code>	Indicates that the source MAC-based or subnet-based VLAN classification takes precedence.
<code>port {slot/port[/sub-port][-slot/port[/sub-port]][,...]}</code>	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.



# Command: portlock enable

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## 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

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# Command: port (T-UNI based)

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## port (T-UNI based)

Add ports to elan-transparent (Transparent 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]][,...]}>

### Default

None

### Command mode

Elan-Transparent Configuration

### Command parameters

Parameter	Description
{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.

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# Command: preference max-limit

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## 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>

### Default

None

### Command mode

DHCP-guard Configuration

### Command parameters

Parameter	Description
<0-255>	Specifies the maximum limit value.

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## 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>`

### Default

None

### Command mode

DHCP-guard Configuration

### Command parameters

Parameter	Description
<code>&lt;0-255&gt;</code>	Specifies the minimum limit value.



# Command: private-vlan

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## private-vlan

Sets the Private VLAN port type.

### Syntax

- `default private-vlan`
- `no private-vlan`
- `private-vlan <isolated|promiscuous|trunk>`

### Default

None

### Command mode

GigabitEthernet Interface Configuration

### Command parameters

Parameter	Description
<code>&lt;isolated promiscuous trunk&gt;</code>	Sets Private VLAN port type to isolated, promiscuous, or trunk.

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## prompt

Change the root level prompt or the system name for run-time mode.

### Syntax

- default prompt
- no prompt
- prompt WORD <0-255>

### Default

None

### Command mode

Global Configuration

### Command parameters

Parameter	Description
WORD <0-255>	Specifies the box level or root level prompt in the range of 0 to 255.

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## 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]][, ...]}`

### Default

The default is enabled.

### Command mode

GigabitEthernet Interface Configuration

### Command parameters

Parameter	Description
<code>enable</code>	Enables or disables protocol-based VLAN for the port.
<code>port {slot/port[/sub-port][-slot/port[/sub-port]][, ...]}</code>	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.



# Command: psnp-interval

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## 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>

### Default

The default PSNP value is 2 seconds.

### Command mode

IS-IS Router Configuration

### Command parameters

Parameter	Description
<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.

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# Command: pwc

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## pwc

Prints the current working level.

### Syntax

- pwc

### Default

None

### Command mode

User EXEC

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# Command: pwd

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## pwd

Print current filesystem directory path.

### Syntax

- pwd

### Default

None

### Command mode

Privileged EXEC

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## 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`

### Default

The default is disabled.

### Command mode

GigabitEthernet Interface Configuration

### Command parameters

Parameter	Description
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).

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## 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>`

### Default

None

### Command mode

Global Configuration

### Command parameters

Parameter	Description
<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, and 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.

## qos if-policer

Configures ingress police or ingress rate-limit on ports. Note that not all platforms support the this command. For more information, see Release Notes.

### Syntax

- `default qos if-policer`
- `default qos if-policer port {slot/port[/sub-port][-slot/port[/sub-port]][,...]}`
- `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]][,...]}`
- `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 peak-rate <0-100000000> svc-rate <0-100000000>`
- `qos if-policer port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} peak-rate <64-10000000> svc-rate <64-10000000>`
- `qos if-policer port {slot/port[/sub-port][-slot/port[/sub-port]][,...]} peak-rate <0-100000000> svc-rate <0-100000000>`

### Default

None

### Command mode

GigabitEthernet Interface Configuration

### Command parameters

Parameter	Description
<code>peak-rate &lt;0-100000000&gt;</code>	Specifies the peak rate limit in kbps {64 - 100000000}.
<code>peak-rate &lt;64-100000000&gt;</code>	Specifies the peak rate limit in Kbps. The range is 64-100000000.
<code>port {slot/port[/sub-port][-slot/port[/sub-port]][,...]}</code>	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.
<code>port {slot/port[/sub-port][-slot/port[/sub-port]][,...]}</code>	Specifies the portlist.

```
svc-rate <0-  
100000000>
```

Specifies the service rate limit in kbps {64 - 100000000}.

```
svc-rate <64-  
10000000>
```

Specifies the service rate limit in Kbps. The range is 64-10000000.

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## qos if-rate-limiting

Configures ingress port rate limiting in kbps. Note that not all platforms support the this command. For more information, see Release Notes.

### Syntax

- `default qos if-rate-limiting [port {slot/port[/sub-port][ slot/port[/subport]][,...]]`
- `no qos if-rate-limiting [port {slot/port[/sub-port][-slot/port[/subport]][,...]]`
- `qos if-rate-limiting [port {slot/port[/sub-port][-slot/port[/subport]][,...]] rate <1000-40000000>`

### Default

None

### Command mode

GigabitEthernet Interface Configuration

### Command parameters

Parameter	Description
<code>port {slot/port[sub-port]}</code>	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.
<code>rate &lt;1000-40000000&gt;</code>	Specifies the ingress rate limit in Kbps. The range is 1000–40000000.

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## 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]}`
- `no qos if-shaper`
- `no qos if-shaper port {slot/port[sub-port]}`
- `qos if-shaper port {slot/port[sub-port]} shape-rate <10000-100000000>`
- `qos if-shaper shape-rate <10000-100000000>`

### Default

None

### Command mode

GigabitEthernet Interface Configuration

### Command parameters

Parameter	Description
<code>port {slot/port[sub-port]}</code>	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.
<code>shape-rate &lt;10000-100000000&gt;</code>	Configures the shaping rate from 10000-100000000 Kb/s. Different hardware platforms support different ranges of shape rates. Use the CLI Help to see the available range.

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## qos ingressmap

Modify the ingress mappings to change traffic priorities. However, it is recommended that you use the default mappings.

### Syntax

- `default qos ingressmap lp`
- `default qos ingressmap ds`
- `qos ingressmap lp <0-7> <0-7>`
- `qos ingressmap ds <0-63> <0-7>`
- `qos ingressmaplp <0-7> <0-7> ds <0-63> <0-7>`

### Default

None

### Command mode

Global Configuration

### Command parameters

Parameter	Description
<code>lp &lt;0-7&gt; &lt;0-7&gt;</code>	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, and level 7-7.
<code>ds &lt;0- 63&gt; &lt;0- 7&gt;</code>	Maps the Differentiated Services Code Point (DSCP) to Quality of Service (QoS) level.



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## 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>

### Default

The default value is 1.

### Command mode

GigabitEthernet Interface Configuration

### Command parameters

Parameter	Description
<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 subport in the format slot/port/sub-port.



# Command: qos queue-profile <1-5>

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## qos queue-profile <1-5>

Configure a queue profile

### Syntax

- `qos queue-profile <1-5> apply`

### Default

None

### Command mode

Global Configuration

### Command parameters

Parameter	Description
apply	Applies queue profile settings.

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# Command: qos queue-profile queue <1-5> <0-7>

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## qos queue-profile queue <1-5> <0-7>

Configure a queue of a specific queue profile

### Syntax

- default qos queue-profile queue <1-5> <0-7> min-weight <1-100>
- default qos queue-profile queue <1-5> <0-7> rate-limit-enable
- no qos queue-profile queue <1-5> <0-7> min-weight <1-100>
- no qos queue-profile queue <1-5> <0-7> rate-limit-enable
- qos queue-profile queue <1-5> <0-7> min-weight <1-100>
- qos queue-profile queue <1-5> <0-7> rate-limit-enable

### Default

None

### Command mode

Global Configuration

### Command parameters

Parameter	Description
min-weight <1-100>	Configures the minimum weight of a specific queue.
rate-limit-enable	Enables rate limiting on a weighted queue.

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## 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`

### Default

The default value is enable.

### Command mode

BGP Router Configuration

### Command parameters

Parameter	Description
<code>enable</code>	Enables the quick-start flag for exponential backoff.

## 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>

## Default

None

## Command mode

Global Configuration

## Command parameters

Parameter	Description
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.



# Command: radius access-priority-attribute

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## radius access-priority-attribute

Configure radius access priority.

### Syntax

- default radius access-priority-attribute
- radius access-priority-attribute <192-240>

### Default

The default value of access-priority-attribute is 192.

### Command mode

Global Configuration

### Command parameters

Parameter	Description
<192-240>	Specifies the value of the Access Priority attribute in the range of 192 to 240. The default is 192.

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# Command: radius accounting attribute-value

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## radius accounting attribute-value

Configure radius accounting attribute.

### Syntax

- default radius accounting attribute-value
- radius accounting attribute-value <192-240>

### Default

The default value of the attribute-value is 193.

### Command mode

Global Configuration

### Command parameters

Parameter	Description
<192-240>	CLI Command attribute value.

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# Command: radius accounting enable

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## 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

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# Command: radius accounting include-cli-commands

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## 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

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## 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>`

### Default

The default value of `auth-info-attr-value` is 91.

### Command mode

Global Configuration

### Command parameters

Parameter	Description
<code>&lt;0-255&gt;</code>	Specifies the value of the authentication-information attribute in the range of 0 to 255. The default is 91.



# Command: radius clear-stat

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## radius clear-stat

Clear the radius statistics.

### Syntax

- radius clear-stat

### Default

None

### Command mode

Global Configuration

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## 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>

### Default

The default value is 40.

### Command mode

Global Configuration

### Command parameters

Parameter	Description
<1-40>	Specifies a value of the CLI command count in the range of 1 to 40.



# Command: radius cli-profile

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## 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

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# Command: radius command-access-attribute

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## 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>

### Default

The default value is 194.

### Command mode

Global Configuration

### Command parameters

Parameter	Description
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.

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# Command: radius enable

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## 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

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# Command: radius maxserver

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## radius maxserver

Configure the maximum number of servers allowed to be configured

### Syntax

- default radius maxserver
- radius maxserver <1-10>

### Default

The default value is 10.

### Command mode

Global Configuration

### Command parameters

Parameter	Description
<1-10>	Number of maximum server allowed to be configured.

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# Command: radius mcast-addr-attr-value

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## 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

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## 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>`

### Default

The default is 180 seconds.

### Command mode

Global Configuration

### Command parameters

Parameter	Description
<code>&lt;30-600&gt;</code>	Specifies, in seconds, the interval between checks when radius server is reachable. The default is 180 seconds.

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## radius reachability password

Configure the radius request password.

### Syntax

- default radius reachability password
- radius reachability password WORD<1-16>

### Default

The default is extremenetworks.

### Command mode

Global Configuration

### Command parameters

Parameter	Description
WORD<1-16>	Configures the RADIUS request password.

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## 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>`

### Default

The default is 60 seconds.

### Command mode

Global Configuration

### Command parameters

Parameter	Description
<code>&lt;30-600&gt;</code>	Specifies, in seconds, the interval between checks when radius server is unreachable. The default is 60 seconds.



# Command: radius reachability username

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## radius reachability username

Configure the RADIUS request username.

### Syntax

- default radius reachability username
- radius reachability username WORD<1-16>

### Default

The default is extremenetworks.

### Command mode

Global Configuration

### Command parameters

Parameter	Description
WORD<1-16>	Configures the RADIUS request username.

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## 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>



## Default

None

## Command mode

Global Configuration

## Command parameters

Parameter	Description
<code>acct-enable</code>	Enables Remote Dial-In User Services (RADIUS) accounting on this server. The default for <code>acct-enable</code> is enabled.
<code>acct-port &lt;1-65536&gt;</code>	Specify a UDP port of the Remote Dial-In User Services (RADIUS) accounting server. The default is 1816.
<code>enable</code>	Enables this server.
<code>host WORD &lt;0-46&gt;</code>	Create a host server. Remote Dial-In User Services (RADIUS) supports IPv4 addresses. <code>WORD &lt;0-46&gt;</code> specifies an address in A.B.C.D or x:x:x:x:x:x:x format.
<code>key WORD&lt;-32&gt;</code>	Specify a secret key in the range of 0-20 characters.
<code>port &lt;1-65536&gt;</code>	Specify a UDP port of the Remote Dial-In User Services (RADIUS) server.
<code>priority &lt;1-10&gt;</code>	Specify the priority value for this server. The default is 10.
<code>retry &lt;0-6&gt;</code>	Specify the maximum number of authentication retries. The default is 3.
<code>source-ip WORD &lt;0-46&gt;</code>	Specify a configured IP address as the source address when transmitting RADIUS packets. Remote Dial-In User Services (RADIUS) supports IPv4 addresses. <code>WORD &lt;0-46&gt;</code> specifies an address in A.B.C.D or x:x:x:x:x:x:x format.
<code>timeout &lt;1-20&gt;</code>	Specify the number of seconds before the authentication request times out. The default is 3.
<code>used-by {cli snmp web}</code>	Specify how the server functions: <code>cli-configure</code> the server for CLI authentication. <code>snmp-configure</code> the server for Simple Network Management Protocol (SNMP) authentication. <code>web-configure</code> the server for web authentication. The default for <code>used-by</code> is <code>cli</code> .

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## 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>`

### Default

The default value is disabled.

### Command mode

Global Configuration

### Command parameters

Parameter	Description
<code>abort-session-timer &lt;30-65535&gt;</code>	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.
<code>acct-enable</code>	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.
<code>re-auth-timer &lt;30-65535&gt;</code>	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.
<code>user WORD&lt;0-20&gt;</code>	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.

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# Command: radius sourceip-flag

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## 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

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## 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>}`

### Default

The default is disabled (no rate limit).

### Command mode

GigabitEthernet Interface Configuration

### Command parameters

Parameter	Description
<code>&lt;1-65535&gt;</code>	Specifies the bandwidth limit for broadcast and multicast traffic from 1-65535 packets per second.
<code>broadcast {&lt;1-65535&gt;   &lt;50-65000000&gt;}</code>	Rate limit for broadcast. Range depends on hardware platform.
<code>multicast {&lt;1-65535&gt;   &lt;50-</code>	Rate limit for multicast. Range depends on hardware platform.

```
65000000>}
```

```
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.

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## 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`

### Default

By default, route redistribution is disabled.

### Command mode

IS-IS Router Configuration

### Command parameters

Parameter	Description
-----------	-------------

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.



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## 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>`

### Default

By default, route redistribution is disabled.

### Command mode

BGP Router Configuration

### Command parameters

Parameter	Description
<code>enable</code>	Enables the redistribution.
<code>metric &lt;0-65535&gt;</code>	Specifies the value of the metric to be announced in the advertisement. The default is 0.
<code>metric-type live-metric</code>	Configures the route redistribution metric type. The default is disabled.
<code>route-map WORD&lt;0-64&gt;</code>	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.

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## 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`

### Default

By default, route redistribution is disabled.

### Command mode

IS-IS Router Configuration

### Command parameters

Parameter	Description
-----------	-------------

<code>enable</code>	Enables route redistribution of the direct protocol. The prefix "default" before the command sets the isis redistribute direct enable to default.
<code>metric &lt;0- 65535&gt;</code>	Configures the metric (cost) to apply to redistributed routes. The default is 1.
<code>metric- type external</code>	Configures the type of route to import into the protocol. The default is internal.
<code>metric- type internal</code>	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.
<code>route- map WORD&lt;0- 64&gt;</code>	Configures the route policy to apply to redistributed routes.
<code>subnets allow</code>	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.
<code>subnets suppress</code>	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.

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## 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>`

### Default

By default, route redistribution is disabled.

### Command mode

BGP Router Configuration

### Command parameters

Parameter	Description
<code>enable</code>	Enables the redistribution.
<code>metric &lt;0-65535&gt;</code>	Specifies the value of the metric to be announced in the advertisement. The default is 0.
<code>metric-type live-metric</code>	Configures the route redistribution metric type. The default is disabled.
<code>route-map WORD&lt;0-64&gt;</code>	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.

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## 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>`

### Default

By default, route redistribution is disabled.

### Command mode

## Command parameters

Parameter	Description
{ 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.



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## 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>

## Default

By default, route redistribution is disabled.

## Command mode

RIP Router Configuration

## Command parameters

Parameter	Description
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.

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## 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>`

### Default

By default, route redistribution is disabled.

### Command mode

BGP Router Configuration

### Command parameters

Parameter	Description
<code>enable</code>	Enables the redistribution.
<code>metric &lt;0-65535&gt;</code>	Specifies the value of the metric to be announced in the advertisement. The default is 0.
<code>route-map WORD&lt;0-64&gt;</code>	Configures the route policy to apply to redistributed routes.



# Command: redistribute ipv6-isis enable

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## 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

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## redistribute ipv6-isis metric

Configure the metric to apply to redistributed routes.

### Syntax

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

### Default

The default value is 0.

### Command mode

BGP Router Configuration

### Command parameters

Parameter	Description
<0-65535>	Specifies the BGP metric.



# Command: redistribute ipv6-isis route-map

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## 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>

### Default

The default value is 0.

### Command mode

BGP Router Configuration

### Command parameters

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

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## 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>`

### Default

By default, route redistribution is disabled.

### Command mode

BGP Router Configuration

### Command parameters

Parameter	Description
<code>enable</code>	Enables the redistribution.
<code>metric &lt;0-65535&gt;</code>	Specifies the value of the metric to be announced in the advertisement. The default is 0.
<code>route-map WORD&lt;0-64&gt;</code>	Configures the route policy to apply to redistributed routes.

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## 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>`

### Default

By default, route redistribution is disabled.

### Command mode

BGP Router Configuration

### Command parameters

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



redistribution within the same VRF.

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## 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>`

### Default

By default, route redistribution is disabled.

### Command mode

BGP Router Configuration

### Command parameters

Parameter	Description
<code>enable</code>	Enables the redistribution.
<code>metric &lt;0-65535&gt;</code>	Specifies the value of the metric to be announced in the advertisement. The default is 0.
<code>metric-type live-metric</code>	Configures the route redistribution metric type. The default is disabled.
<code>route-map WORD&lt;0-64&gt;</code>	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.

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## 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`

### Default

By default, route redistribution is disabled.

### Command mode

IS-IS Router Configuration

### Command parameters

Parameter	Description
-----------	-------------

<code>enable</code>	Enables the redistribution of the OSPF protocol into the Shortest Path Bridging MAC (SPBM) network.
<code>metric &lt;0- 65535&gt;</code>	Configures the metric (cost) to apply to redistributed routes. The default is 1.
<code>metric- type external</code>	Configures the type of route to import into the protocol. The default is internal.
<code>metric- type internal</code>	Configures the type of route to import into the protocol. The default is internal.
<code>route- map WORD&lt;0- 64&gt;</code>	Configures the route policy to apply to redistributed routes.
<code>subnets allow</code>	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.
<code>subnets suppress</code>	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.

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## 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>`

### Default

By default, route redistribution is disabled.

### Command mode

BGP Router Configuration

### Command parameters

Parameter	Description
<code>enable</code>	Enables the redistribution.
<code>metric &lt;0-65535&gt;</code>	Specifies the value of the metric to be announced in the advertisement. The default is 0.
<code>route-map WORD&lt;0-64&gt;</code>	Configures the route policy to apply to redistributed routes.

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## 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>`

### Default

By default, route redistribution is disabled.

### Command mode

BGP Router Configuration

### Command parameters

Parameter	Description
<code>enable</code>	Enables the redistribution.
<code>metric &lt;0-65535&gt;</code>	Specifies the value of the metric to be announced in the advertisement. The default is 0.
<code>metric-type live-metric</code>	Configures the route redistribution metric type. The default is disabled.
<code>route-map WORD&lt;0-64&gt;</code>	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.

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## 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`

### Default

By default, route redistribution is disabled.

### Command mode

IS-IS Router Configuration

### Command parameters

Parameter	Description
-----------	-------------

<code>enable</code>	Enables route redistribution.
<code>metric</code> <code>&lt;0-</code> <code>65535&gt;</code>	Configures the metric (cost) to apply to redistributed routes. The default is 1.
<code>metric-</code> <code>type</code> <code>external</code>	Configures the type of route to import into the protocol. The default is internal.
<code>metric-</code> <code>type</code> <code>internal</code>	Configures the type of route to import into the protocol.
<code>route-</code> <code>map</code> <code>WORD&lt;0-</code> <code>64&gt;</code>	Configures the route policy to apply to redistributed routes.
<code>subnets</code> <code>allow</code>	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.
<code>subnets</code> <code>suppress</code>	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.



# Command: redistribute ripng enable

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## 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

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## redistribute ripng metric

Configure the metric to apply to redistributed routes.

### Syntax

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

### Default

The default value is 0.

### Command mode

BGP Router Configuration

### Command parameters

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

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## 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>

### Default

The default value is 0.

### Command mode

BGP Router Configuration

### Command parameters

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

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## 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>`

### Default

By default, route redistribution is disabled.

### Command mode

BGP Router Configuration

### Command parameters

Parameter	Description
<code>enable</code>	Enables the redistribution.
<code>metric &lt;0-65535&gt;</code>	Specifies the value of the metric to be announced in the advertisement. The default is 0.
<code>metric-type live-metric</code>	Configures the route redistribution metric type. The default is disabled.
<code>route-map WORD&lt;0-64&gt;</code>	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.

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## 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`

### Default

By default, route redistribution is disabled.

### Command mode

IS-IS Router Configuration

### Command parameters

Parameter	Description
-----------	-------------



<code>enable</code>	Enables route redistribution.
<code>metric</code> <code>&lt;0-</code> <code>65535&gt;</code>	Configures the metric (cost) to apply to redistributed routes. The default is 1.
<code>metric-</code> <code>type</code> <code>external</code>	Configures the type of route to import into the protocol. The default is internal.
<code>metric-</code> <code>type</code> <code>internal</code>	Configures the type of route to import into the protocol. The default is internal.
<code>route-</code> <code>map</code> <code>WORD&lt;0-</code> <code>64&gt;</code>	Configures the route policy to apply to redistributed routes.
<code>subnets</code> <code>allow</code>	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.
<code>subnets</code> <code>suppress</code>	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.

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## remove

Remove files or directories to free space.

### Syntax

- `remove WORD<1-255>`
- `remove WORD<1-255> -y`

### Default

None

### Command mode

User EXEC

### Command parameters

Parameter	Description
<code>WORD&lt;1-255&gt;</code>	Specifies the file to rename.
<code>WORD&lt;1-255&gt; -y</code>	Skips the confirm question.

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## rename

Use this command to rename a file.

### Syntax

- `rename WORD<1-255> <file>`
- `rename WORD<1-255> WORD<1-255>`

### Default

None

### Command mode

Privileged EXEC

### Command parameters

Parameter	Description
WORD<1-255>	Specifies the file to rename.
WORD<1-255> WORD<1-255>	Specifies the file name to rename.
WORD<1-255> <file>	Specifies the file name to rename in the following format: /intflash/ <file>. Word<1-255> is a string of 1-255 characters.

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## reset

Reset the platform to reload system parameters from the most recently saved configuration file.

### Syntax

- `reset`
- `reset [-y] [-coredump]`
- `reset -coredump`
- `reset -y`

### Default

None

### Command mode

Privileged EXEC

### Command parameters

Parameter	Description
<code>-coredump</code>	Creates a core file before resetting the switch.
<code>-y</code>	Suppresses the confirmation message before the switch resets. If you omit this parameter, you must confirm the action before the switch resets.



# Command: restore

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## restore

Use this command to restore the internal flash from the USB device. You must disable logging to the compact flash you want to restore before you can use the restore command.

### Syntax

- restore intflash

### Default

None

### Command mode

Privileged EXEC

### Command parameters

Parameter	Description
intflash	Specifies the internal flash to be restored.

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## 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>`

### Default

The default is 5 seconds.

### Command mode

IS-IS Router Configuration

### Command parameters

Parameter	Description
<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.



# Command: rfc1583-compatibility enable

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## 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



# Command: rlogin

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## rlogin

Use this command to login remotely to a remote host.

### Syntax

- `rlogin {A.B.C.D}`

### Default

None

### Command mode

Privileged EXEC

### Command parameters

Parameter	Description
{A.B.C.D}	Specifies the IP address.

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## 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>`

### Default

None

### Command mode

Global Configuration

### Command parameters

Parameter	Description
{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.

[Home](#) | [Command modes](#) | [Alphabetical listing](#)

## 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`

### Default

None

### Command mode

Global Configuration

### Command parameters

Parameter	Description
<code>&lt;1-65535&gt;</code>	Specifies the event index number.
<code>community</code> <code>WORD&lt;1-127&gt;</code>	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.
<code>description</code> <code>WORD&lt;0-127&gt;</code>	Specifies the event description.
<code>log</code>	Specifies if this event stores a log when the event is triggered by the alarm.
<code>owner</code> <code>WORD&lt;1-127&gt;</code>	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.
<code>trap</code>	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.

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# Command: rmon (for a port)

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## 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

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## 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>`

### Default

None

### Command mode

Global Configuration

### Command parameters

Parameter	Description
<code>{slot/port[/sub-port][-slot/port[/sub-port]][,...]}</code>	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.
<code>&lt;1-65535&gt;</code>	Specifies the index number of the history control interface.
<code>buckets &lt;1-65535&gt;</code>	Specifies the number of buckets requested. The default is 50.
<code>interval &lt;1-3600&gt;</code>	Specifies the the time interval in seconds over which the data is sampled for each bucket. The default is 1800.
<code>owner WORD&lt;1-127&gt;</code>	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.



## 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>`

### Default

None

### Command mode

Global Configuration

### Command parameters

Parameter	Description
<code>{slot/port[/sub-port][-slot/port[/sub-port]][,...]}</code>	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.
<code>&lt;1-65535&gt;</code>	Specifies the index number of the ether stats control interface.
<code>owner WORD&lt;1-127&gt;</code>	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.



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## rmon util-method

Controls whether port utilization is calculated in half or full duplex.

### Syntax

- default rmon util-method
- rmon util-method <half|full>

### Default

The default is half.

### Command mode

Global Configuration

### Command parameters

Parameter	Description
<half full>	Controls whether port utilization is calculated in half or full duplex.

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## 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 }`

### Default

None

### Command mode

Global Configuration

### Command parameters

Parameter	Description
<1-65535>	Specifies the sequence number for the route policy.
<permit deny>	Permit or deny the route.
WORD<1-64>	Specifies the policy name.

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## router bgp

Access the router configuration mode to configure the Border Gateway Protocol (BGP) commands.

### Syntax

- `router bgp`
- `router bgp [WORD<0-11>] [enable]`

### Default

None

### Command mode

Global Configuration

### Command parameters

Parameter	Description
<code>enable</code>	Enables BGP on the router.
<code>WORD &lt;0-11&gt;</code>	Specifies the AS number. You cannot enable BGP until you change the local AS to a value other than 0.



# Command: router bgp as-4-byte enable

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## 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

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# Command: router bgp as-dot enable

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## 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

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## 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`

### Default

The default value is enable.

### Command mode

BGP Router Configuration

### Command parameters

Parameter	Description
enable	Enables route-reflector to reflect routes from iBGP neighbors.



# Command: route-refresh

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## 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

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## 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}

### Default

None

### Command mode

BGP Router Configuration

### Command parameters

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

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## 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}`

### Default

None

### Command mode

OSPF Router Configuration

### Command parameters

Parameter	Description
<code>router-id &lt;A.B.C.D&gt;</code>	Configures the OSPF router ID IP address, where A.B.C.D is the IP address.

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# Command: router isis

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## 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

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# Command: router isis enable

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## 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

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## 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`

### Default

None

### Command mode

Global Configuration

### Command parameters

Parameter	Description
<code>enable</code>	Enables OSPF routing on the switch.
<code>ipv6-enable</code>	Enables OSPFv3 for IPv6 routing.

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## 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}`

### Default

None

### Command mode

RA-guard Configuration

### Command parameters

Parameter	Description
<code>maximum {none   high   low   medium}</code>	Verifies if the advertised default router-preference parameter value is lower than or equal to a specified limit.

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## 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>

### Default

None

### Command mode

Global Configuration

### Command parameters

Parameter	Description
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.



# Command: router rip ipv6-enable

[Home](#) | [Command modes](#) | [Alphabetical listing](#)

## 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

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# Command: router vrf

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## router vrf

Enable VRF for the switch.

### Syntax

- `router vrf WORD <1-16>`

### Default

None

### Command mode

Global Configuration

### Command parameters

Parameter	Description
WORD<0-16>	Specifies the VRF name.

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# Command: router vrrp

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## router vrrp

Enable VRRP for the switch.

### Syntax

- `router vrrp`

### Default

None

### Command mode

Global Configuration

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## rsh

Use this command to 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>`

### Default

None

### Command mode

Privileged EXEC

### Command parameters

Parameter	Description
<code>{A.B.C.D} -l WORD&lt;0-1536&gt; WORD&lt;1-1536&gt; WORD&lt;0-1536&gt; WORD&lt;0-1536&gt; WORD&lt;0-1536&gt; WORD&lt;0-1536&gt; WORD&lt;0-1536&gt;</code>	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}
<code>{A.B.C.D} -l WORD&lt;0-1536&gt; WORD&lt;1-1536&gt; WORD&lt;0-1536&gt; WORD&lt;0-1536&gt; WORD&lt;0-1536&gt; WORD&lt;0-1536&gt; WORD&lt;0-1536&gt;</code>	Specifies the user login name.
<code>{A.B.C.D} -l WORD&lt;0-1536&gt; WORD&lt;1-1536&gt; WORD&lt;0-1536&gt; WORD&lt;0-1536&gt; WORD&lt;0-1536&gt; WORD&lt;0-1536&gt;</code>	Specifies the IP address in the {A.B.C.D} format.

1536> WORD<0-1536>  
WORD<0-1536>  
-1

Specifies the user login name.

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# Command: run spbm

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## run spbm

Configure all SPBM, CFM, IS-IS and interface level settings in one command.

### Syntax

- run spbm
- run spbm clean

### Default

None

### Command mode

Global Configuration

### Command parameters

Parameter	Description
clean	Run SPBM clean command.

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## run spbm interface

Configures IS-IS SPBM port and MLT interfaces.

### Syntax

- run spbm interface
- run spbm interface clean

### Default

None

### Command mode

Global Configuration

### Command parameters

Parameter	Description
clean	Deletes specified IS-IS port and MLT interfaces.

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## 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.

### Syntax

- `run vms layer-2 switch <5-99>`
- `run vms layer-2 switch <5-99> [syntax]`
- `run vms layer-2 switch <5-99> syntax`

### Default

None

### Command mode

Global Configuration

### Command parameters

Parameter	Description
<5-99>	Configures predefined values and settings without user intervention. The switch value is a numerical value from 5 to 99 and is used to seed unique values in the configuration script.
<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.
syntax	Lists all the commands run by the script.



# Command: run vms layer-3 switch

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## 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. 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>`

### Default

None

### Command mode

Global Configuration

### Command parameters

Parameter	Description
<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.

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# Command: save

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## save

Save running configuration to a file.

### Syntax

- save { log | }
- save { log | } file WORD<1-99>

### Default

None

### Command mode

Privileged EXEC

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## save config

Save configuration information.

### Syntax

- save config
- save config [file WORD<1-99>] [verbose] [backup WORD<1-99>]
- save config backup WORD<1-99>
- save config file WORD<1-99>
- save config verbose

### Default

None

### Command mode

Privileged EXEC

### Command parameters

Parameter	Description
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.



# Command: save log

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## save log

Save the log files, assuming the files use the default file names.

### Syntax

- `save log [file WORD<1-99>]`

### Default

None

### Command mode

Privileged EXEC

### Command parameters

Parameter	Description
<code>file WORD&lt;1- 99&gt;</code>	Specifies the file name in one of the following formats: <code>a.b.c.d: &lt;file&gt;</code> , or <code>/intflash/ &lt;file&gt;</code> . <code>WORD&lt;1-99&gt;</code> is a string of 1-99 characters.

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# Command: save trace

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## save trace

Save the trace file to the card for retrieval.

### Syntax

- `save trace [file WORD<1-99>]`

### Default

None

### Command mode

Privileged EXEC

### Command parameters

Parameter	Description
<code>file WORD&lt;1-99&gt;</code>	Specifies the file name in one of the following formats: a.b.c.d: <file>, or /intflash/<file> .

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## 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>`

### Default

Generation of SNMP traps for VRRP events is enabled.

### Command mode

VRRP Router Configuration

### Command parameters

Parameter	Description
<code>enable</code>	Enable a trap for VRRP events.
<code>vrf WORD&lt;1-16&gt;</code>	Specifies the VRF name.

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## 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>`

### Default

None

### Command mode

Route-Map Configuration

### Command parameters

Parameter	Description
WORD<0-256>	Specifies the list ID of up to four defined AS-lists separated by a comma.

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## 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

### Default

The default is prepend.

### Command mode

Route-Map Configuration

### Command parameters

Parameter	Description
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.

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## 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`

### Default

The default is disable.

### Command mode

Route-Map Configuration

### Command parameters

Parameter	Description
enable	Enables this configuration.



# Command: set community

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## 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>`

### Default

None

### Command mode

Route-Map Configuration

### Command parameters

Parameter	Description
WORD<0-256>	Specifies the list ID of up to four defined community lists separated by a comma.

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## set community-mode

Configure the community mode.

### Syntax

- default set community-mode
- set community-mode additive
- set community-mode none
- set community-mode unchanged

### Default

The default is unchanged.

### Command mode

Route-Map Configuration

### Command parameters

Parameter	Description
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.



# Command: set injectlist

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## 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>

### Default

None

### Command mode

Route-Map Configuration

### Command parameters

Parameter	Description
WORD<0-1027>	Specifies one prefix list by name.

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# Command: set ip-preference

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## 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>`

### Default

The default is 0.

### Command mode

Route-Map Configuration

### Command parameters

Parameter	Description
<code>&lt;0-255&gt;</code>	Assigns the preference to the routes. If you configure the default, the global preference value is used.

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## 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>`

### Default

The default is 0.

### Command mode

Route-Map Configuration

### Command parameters

Parameter	Description
<code>&lt;0-65535&gt;</code>	Specifies the local preference value.

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## 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}

### Default

The default is 0.0.0.0.

### Command mode

Route-Map Configuration

### Command parameters

Parameter	Description
{A.B.C.D}	Specifies a valid contiguous IP mask.

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# Command: set metric

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## 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>

### Default

The default is 0.

### Command mode

Route-Map Configuration

### Command parameters

Parameter	Description
<0-65535>	Specifies a metric value.

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# Command: set metric-type

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## 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 }`

### Default

The default is type 2.

### Command mode

Route-Map Configuration

### Command parameters

Parameter	Description
<code>{ type1   type2 }</code>	Specifies the metric type to announce.

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## 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>`

### Default

The default is 0.

### Command mode

Route-Map Configuration

### Command parameters

Parameter	Description
<0-1>	Specifies the Interior Gateway Protocol (IGP) metric value.

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## 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}`

### Default

The default is any.

### Command mode

Route-Map Configuration

### Command parameters

Parameter	Description
<code>{ any   internal   external }</code>	Specifies IS-IS routes of the specified type. • <code>internal</code> – permits or denies routes that are internal to the IS-IS domain. • <code>external</code> – permits or denies routes that originate from an external routing protocol domain. • <code>any</code> – permits or denies both internal routes as well as external routes.



# Command: set-metric-type-live-metric

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## 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

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## 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>`

### Default

None

### Command mode

Route-Map Configuration

### Command parameters

Parameter	Description
WORD<1-256>	Specifies the IP address of the next-hop router.

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## 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`

### Default

The default is enable.

### Command mode

Route-Map Configuration

### Command parameters

Parameter	Description
enable	Enables P bit translation.

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## 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 }

### Default

The default is unchanged.

### Command mode

Route-Map Configuration

### Command parameters

Parameter	Description
{ igp   egp   incomplete }	Specifies the origin path attribute.

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# Command: set origin-egp-as

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## 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>`

### Default

The default is 0.

### Command mode

Route-Map Configuration

### Command parameters

Parameter	Description
<code>&lt;0-65535&gt;</code>	Indicates the remote Autonomous System (AS) number.

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# Command: set tag

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## 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>

### Default

The default is 0.

### Command mode

Route-Map Configuration

### Command parameters

Parameter	Description
<0-65535>	Specifies the tag value. A value of 0 indicates that this parameter is not set.

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# Command: set weight

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## 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>

### Default

The default is 0.

### Command mode

Route-Map Configuration

### Command parameters

Parameter	Description
<0-65535>	Specifies the weight value. A value of 0 indicates that this parameter is not set.

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## sflow agent-ip

Specifies the agent IP address (IPv4).

### Syntax

- `sflow agent-ip {A.B.C.D}`

### Default

None

### Command mode

Global Configuration

### Command parameters

Parameter	Description
<code>sflow agent-ip {A.B.C.D}</code>	Specifies the agent IP address (IPv4).

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## 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> owner WORD<1-20>`
- `sflow collector <1-2> port <1-65535>`
- `sflow collector <1-2> timeout <1-65535>`

### Default

None

### Command mode

Global Configuration

### Command parameters

Parameter	Description
<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.

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## 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>

### Default

The default is 0 (disabled).

### Command mode

GigabitEthernet Interface Configuration

### Command parameters

Parameter	Description
<1-3600>	Specifies the polling interval for a slot.



# Command: sflow enable

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## sflow enable

Globally enables sFlow.

### Syntax

- default sflow enable
- no sflow enable
- sflow enable

### Default

None

### Command mode

Global Configuration

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## 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>

### Default

The default is 128.

### Command mode

GigabitEthernet Interface Configuration

### Command parameters

Parameter	Description
<64-256>	Identifies the maximum number of bytes to be copied from the sampled packet.

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## sflow sampling-rate

Configures the packet sampling rate on a port.

### Syntax

- default sflow sampling-rate
- no sflow sampling-rate
- sflow sampling-rate <8192-1000000>

### Default

The default is 0 (disabled).

### Command mode

GigabitEthernet Interface Configuration

### Command parameters

Parameter	Description
<8192-1000000>	Configures the packet sampling rate on a port.

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## sha512

Calculate or compare the SHA512 digest for a file.

### Syntax

- sha512 WORD<1-99>
- sha512 WORD<1-99> -a
- sha512 WORD<1-99> -c
- sha512 WORD<1-99> -f WORD<1-99>
- sha512 WORD<1-99> -r

### Default

None

### Command mode

User EXEC

### Command parameters

Parameter	Description
-a	Appends to the end of the file.
-c	Compares the digest.
-f WORD<1-99>	Specifies the filename.
-r	Reverses the output.
WORD<1-99>	Specifies the filename.

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## 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>`

### Default

None

### Command mode

Privileged EXEC

### Command parameters

Parameter	Description
<code>by-mac</code>	Show access policy by-mac information.
<code>snmp-group</code>	Show access-policy snmp-group information.
<code>WORD&lt;0-15&gt;</code>	Specifies an access policy name.



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## 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

### Default

None

### Command mode

Privileged EXEC

### Command parameters

Parameter	Description
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.

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## 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 <0x0-0x0FFFFFFF | 0x0-0x0>
- show alarm database module WORD<0-100>
- show alarm database severity WORD<0-25>

### Default

None

### Command mode

User EXEC

### Command parameters

Parameter	Description
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 <0x0-0x0FFFFFFF   0x0-0x0>	Event Code
module WORD<0-100>	Module
severity WORD<0-25>	Severity

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# Command: show alarm statistics

[Home](#) | [Command modes](#) | [Alphabetical listing](#)

## show alarm statistics

Show the statistics of alarm-log buffers

### Syntax

- `show alarm statistics`

### Default

None

### Command mode

User EXEC

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# Command: show application chef client

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## show application chef client

Displays Chef configuration information.

### Syntax

- `show application chef client`

### Default

None

### Command mode

Application Configuration

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# Command: show application slamon agent

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## 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

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## show asg

Shows the ASG global configuration. This command is not available on all hardware platforms.

### Syntax

- show asg
- show asg accounts
- show asg af-header
- show asg status

### Default

None

### Command mode

User EXEC

### Command parameters

Parameter	Description
accounts	Shows ASG-enabled usernames.
af-header	Shows the header of the loaded AF file.
status	Shows the ASG enable status.



# Command: show autotopology

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## show autotopology

View topology message status to view the interconnections between Layer 2 devices in a network.

### Syntax

- `show autotopology nmm-table`

### Default

None

### Command mode

User EXEC

### Command parameters

Parameter	Description
<code>nmm-table</code>	Displays topology table information.

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# Command: show banner

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## show banner

Display the banner information.

### Syntax

- show banner

### Default

None

### Command mode

User EXEC

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# Command: show basic config

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## show basic config

Display the basic switch configuration.

### Syntax

- `show basic config`

### Default

None

### Command mode

User EXEC

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## show bgp ipv6 aggregates

Display BGP IPv6 aggregates information.

### Syntax

- show bgp ipv6 aggregates
- show bgp ipv6 aggregates WORD<1-256>

### Default

None

### Command mode

User EXEC

### Command parameters

Parameter	Description
WORD <1-256>	Specifies the IPv6 prefix and length.

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# Command: show bgp ipv6 imported-routes

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## show bgp ipv6 imported-routes

Display BGP IPv6 imported-routes information.

### Syntax

- `show bgp ipv6 imported-routes`
- `show bgp ipv6 imported-routes WORD<1-256>`
- `show bgp ipv6 imported-routes WORD<1-256> longer-prefixes`

### Default

None

### Command mode

User EXEC

### Command parameters

Parameter	Description
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.)
WORD <1-256>	Specifies the IPv6 prefix and length.

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## show bgp ipv6 neighbors

Display BGP IPv6 neighbors.

### Syntax

- `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`

### Default

None

### Command mode

User EXEC

### Command parameters

Parameter	Description
<code>advertised-routes WORD&lt;1-256&gt;</code>	Displays information about BGP peer advertised routes. The IPv6 address is optional.
<code>community &lt;disable   enable&gt;</code>	Enables the display of community attributes.
<code>longer-prefixes</code>	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).
<code>routes WORD&lt;1-256&gt;</code>	Displays information about BGP peer routes.
<code>WORD&lt;1-256&gt;</code>	Specifies the IPv4 or IPv6 address.



# Command: show bgp ipv6 networks

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## show bgp ipv6 networks

Display information about BGP network configurations.

### Syntax

- show bgp ipv6 networks
- show bgp ipv6 networks WORD<1-256>

### Default

None

### Command mode

User EXEC

### Command parameters

Parameter	Description
WORD <1-256>	Specifies IPv6 prefix and length in the range of 1 to 256

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# Command: show bgp ipv6 redistributed-routes

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## show bgp ipv6 redistributed-routes

Display BGP IPv6 redistributed-routes information.

### Syntax

- `show bgp ipv6 redistributed-routes`

### Default

None

### Command mode

User EXEC

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## show bgp ipv6 route

Display information about BGP IPv6 routes.

### Syntax

- `show bgp ipv6 route`
- `show bgp ipv6 route community {disable|enable}`
- `show bgp ipv6 route ipv6 WORD<1-256>`
- `show bgp ipv6 route WORD <1-256>`
- `show bgp ipv6 route WORD<1-256> longer-prefixes`

### Default

None

### Command mode

User EXEC

### Command parameters

Parameter	Description
<code>community {disable enable}</code>	Enables or disables the display of community attributes.
<code>ipv6 WORD&lt;1-256&gt;</code>	Specifies an IPv6 address.
<code>longer-prefixes</code>	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.)
<code>WORD &lt;1-256&gt;</code>	Specifies IPv6 address and length in the range of 1 to 256

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## show boot config

Display the configuration to view current or changed settings for the boot parameters.

### Syntax

- `show boot config <choice|flags|general|host|running-config [verbose]|sio{<1-8> | SF1 | SF2 | SF3}>`
- `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`

### Default

None

### Command mode

Privileged EXEC

### Command parameters

Parameter	Description
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. verbose includes all possible information. If you omit verbose, the system displays only the values that you changed from their default value.
running-config [verbose]	Displays the current boot configuration. verbose includes all possible information. If you omit verbose, the system displays only the values that you changed from their default value.
running-config verbose	Shows all of the configuration.
sio {<1-8>   SF1   SF2   SF3}	Specifies the current configuration of the serial port. Range depends on hardware platform.







# Command: show boot config choice

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## 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

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# Command: show boot config flags

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## show boot config flags

Check the status of the boot flags.

### Syntax

- `show boot config flags`

### Default

None

### Command mode

Privileged EXEC

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# Command: show router

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## show router

Show router port information.

### Syntax

- `show router`

### Default

None

### Command mode

User EXEC

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## show certificate ca

Display the certificate authority details.

### Syntax

- show certificate ca WORD<1-45>

### Default

None

### Command mode

User EXEC

### Command parameters

Parameter	Description
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.

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## 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>

### Default

None

### Command mode

User EXEC

### Command parameters

Parameter	Description
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.



# Command: show certificate key-name

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## 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

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# Command: show certificate subject

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## show certificate subject

Displays the details of the configured subject.

### Syntax

- `show certificate subject`

### Default

None

### Command mode

User EXEC

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# Command: show cfm cmac

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## 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

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# Command: show cfm maintenance-association

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## 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

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# Command: show cfm maintenance-domain

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## 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

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# Command: show cfm maintenance-endpoint

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## 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

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# Command: show cfm spbm

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## show cfm spbm

Displays the global CFM MEP configuration for SPBM VLANs.

### Syntax

- `show cfm spbm`

### Default

None

### Command mode

User EXEC

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# Command: show cli info

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## show cli info

Display general Console settings.

### Syntax

- `show cli info`

### Default

None

### Command mode

User EXEC

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## 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.

### Syntax

- show clilog
- show clilog [file] [tail] [grep WORD<1-256>]

### Default

None

### Command mode

User EXEC

### Command parameters

Parameter	Description
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.



# Command: show cli password

[Home](#) | [Command modes](#) | [Alphabetical listing](#)

## show cli password

Display CLI usernames and passwords.

### Syntax

- `show cli password`

### Default

None

### Command mode

User EXEC

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## show clock

Display the current time.

### Syntax

- show clock
- show clock detail
- show clock time-zone

### Default

None

### Command mode

User EXEC

### Command parameters

Parameter	Description
detail	Displays detailed date information.
time-zone	Displays the local time-zone configuration.

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## show debug

Shows debugging configuration.

### Syntax

- `show debug ip pim`
- `show debug ipv6 pim`

### Default

None

### Command mode

User EXEC

### Command parameters

Parameter	Description
<code>ip pim</code>	Shows the configuration of IP PIM debugging commands.
<code>ipv6 pim</code>	Shows the configuration of IPv6 PIM debugging commands.



# Command: show dvr

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## show dvr

Displays a summary of the DvR configuration on a DvR Controller or a DvR Leaf.

### Syntax

- show dvr

### Default

none

### Command mode

User EXEC

### Command parameters

Parameter	Description
none	Displays a summary of the DvR configuration on a DvR Controller or a DvR Leaf.

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## show dvr backbone-entries

Displays the DvR backbone entries.

### Syntax

- `show dvr backbone-entries`
- `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>`
- `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 <0-16777215>`
- `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 <0-16777215> 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 <0-16777215> next-hop WORD<1-255> nh-as-mac`
- `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 <0-16777215> nh-as-mac`
- `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> 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> next-hop WORD<1-255> nh-as-mac`
- `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> nh-as-mac`
- `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} l3isid <0-16777215>`
- `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} l3isid <0-16777215> 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} l3isid <0-16777215> next-hop WORD<1-255> nh-as-mac`
- `show dvr backbone-entries adv-controller WORD<1-255> domain-id <1-255> host-mac-address`













- 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
- 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 <0-16777215>
- show dvr backbone-entries host-mac-address 0x00:0x00:0x00:0x00:0x00:0x00 ipv4 {A.B.C.D} l2isid <1-16777215> l3isid <0-16777215> 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 <0-16777215> next-hop WORD<1-255> nh-as-mac
- 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 <0-16777215>
- show dvr backbone-entries ipv4 {A.B.C.D} l2isid <1-16777215> l3isid <0-16777215> next-hop WORD<1-255>
- show dvr backbone-entries ipv4 {A.B.C.D} l2isid <1-16777215> l3isid <0-16777215> next-hop WORD<1-255> nh-as-mac
- show dvr backbone-entries ipv4 {A.B.C.D} l3isid <0-16777215>
- show dvr backbone-entries ipv4 {A.B.C.D} l3isid <0-16777215> next-hop WORD<1-255>
- show dvr backbone-entries ipv4 {A.B.C.D} l3isid <0-16777215> 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
- show dvr backbone-entries l2isid <1-16777215>
- show dvr backbone-entries l2isid <1-16777215> l3isid <0-16777215>
- show dvr backbone-entries l2isid <1-16777215> l3isid <0-16777215> next-hop WORD<1-255>
- show dvr backbone-entries l2isid <1-16777215> l3isid <0-16777215> next-hop WORD<1-255> nh-as-mac
- show dvr backbone-entries l3isid <0-16777215>
- show dvr backbone-entries l3isid <0-16777215> next-hop WORD<1-255>
- show dvr backbone-entries l3isid <0-16777215> next-hop WORD<1-255> nh-as-mac
- show dvr backbone-entries next-hop WORD<1-255>
- show dvr backbone-entries next-hop WORD<1-255> nh-as-mac
- show dvr backbone-entries nh-as-mac

## Default

none

## Command mode

User EXEC

## Command parameters

Parameter	Description
adv-controller WORD<1-255>	Displays the DvR backbone entries for the specified advertising DvR Controller.
domain-id <1-255>	Displays the DvR backbone entries for the specified DvR domain ID.
host-mac-address 0x00:0x00:0x00:0x00:0x00:0x00	Displays the DvR backbone entries for the specified host MAC address.
ipv4 {A.B.C.D}	Displays the DvR backbone entries for the specified IPv4 address.
l2isid <1-16777215>	Displays the DvR backbone entries for the specified Layer 2 I-SID.
l3isid <0-16777215>	Displays the DvR backbone entries for the specified Layer 3 I-SID.
next-hop WORD<1-255>	Displays the DvR backbone entries for the specified next hop node.
nh-as-mac	Displays the DvR backbone entries for a specific next hop node whose MAC address is specified.
none	Displays the DvR backbone entries.



# Command: show dvr backbone-members

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## 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`

### Default

none

### Command mode

User EXEC

### Command parameters

Parameter	Description
<code>controller</code>	Displays information about DvR backbone members that are Controllers.
<code>non-dvr-beb</code>	Displays information about DvR backbone members that are non-DvR BEBs.
<code>none</code>	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.

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## 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>`

### Default

None

### Command mode

User EXEC

### Command parameters

Parameter	Description
<code>ipv4 {A.B.C.D}</code>	Displays database entries for a specific net.
<code>l3isid &lt;1-16777215&gt;</code>	Displays database entries for a particular l3isid.
<code>nh-as-mac</code>	Displays database entries next hop as mac.
<code>vrf WORD &lt;1-16&gt;</code>	Specifies a VRF instance by name.
<code>vrfids WORD&lt;0-512&gt;</code>	Specifies a range of VRFs by ID number.

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## 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>`

### Default

None

### Command mode

User EXEC

### Command parameters

Parameter	Description
<code>domain-id &lt;1-255&gt;</code>	Displays host entries for a particular domain-id.
<code>ipv4 {A.B.C.D}</code>	Displays host entries for a specific net.
<code>l2isid &lt;1-16777215&gt;</code>	Displays host entries for a particular l2isid.
<code>l3isid &lt;1-16777215&gt;</code>	Displays host entries for a particular l3isid.
<code>nh-as-mac</code>	Displays host entries next hop as mac.
<code>type &lt;1-2&gt;</code>	Displays host entries for a particular type - 1= local, 2 = dynamic.
<code>vrf WORD &lt;1-16&gt;</code>	Specifies a VRF instance by name.
<code>vrfids WORD&lt;0-512&gt;</code>	Specifies a range of VRFs by ID number.

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## 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

### Default

none

### Command mode

User EXEC

### Command parameters

Parameter	Description
<code>l3isid</code> <code>&lt;0-16777215&gt;</code>	Displays the DvR interfaces for the specified Layer 3 I-SID.
<code>none</code>	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.
<code>vrf</code> <code>WORD&lt;1-16&gt;</code>	Displays the DvR interfaces for a specific VRF whose name is specified.
<code>vrfids</code> <code>WORD&lt;0-512&gt;</code>	Displays the DvR interfaces for a specific VRF whose VRF ID is specified.

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## 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>`

### Default

none

### Command mode

User EXEC

### Command parameters

Parameter	Description
<code>l3isid &lt;0-16777215&gt;</code>	Displays the Layer 3 VSN information for the specified Layer 3 I-SID.
<code>none</code>	Displays the Layer 3 VSN information on either a Controller or a Leaf node.
<code>vrf WORD&lt;1-16&gt;</code>	Displays the Layer 3 VSN information for a specific VRF whose name is specified.
<code>vrfids WORD&lt;0-512&gt;</code>	Displays the Layer 3 VSN information for a specific VRF whose VRF ID is specified.



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## 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

### Default

none

### Command mode

User EXEC

### Command parameters

Parameter	Description
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.

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## 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>

### Default

none

### Command mode

User EXEC

### Command parameters

Parameter	Description
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 specified.
vrfids WORD<0-512>	Displays the DvR domain redistribution information for a VRF whose VRF ID is specified.

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## 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>`

### Default

None

### Command mode

User EXEC

### Command parameters

Parameter	Description
<code>ipv4 {A.B.C.D}</code>	Displays routes for a specific net.
<code>l3isid &lt;1-16777215&gt;</code>	Displays routes for a particular l3isid.
<code>nh-as-mac</code>	Displays routes next hop as mac.
<code>vrf WORD &lt;1-16&gt;</code>	Specifies a VRF instance by name.
<code>vrfids WORD&lt;0-512&gt;</code>	Specifies a range of VRFs by ID number.



# Command: show eapol auth-diags interface

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## 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]] [,...]}`

### Default

None

### Command mode

User EXEC

### Command parameters

Parameter	Description
<code>gigabitethernet {slot/port[/sub-port][-slot/port[/sub-port]] [,...]}</code>	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.
<code>vlan &lt;1-4059&gt;</code>	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.



# Command: show eapol auth-stats interface

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## 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]] [,...]}`

### Default

None

### Command mode

User EXEC

### Command parameters

Parameter	Description
<code>gigabitEthernet {slot/port[/sub-port] [-slot/port[/sub-port]] [,...]}</code>	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.
<code>vlan &lt;1-4059&gt;</code>	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.



# Command: show eapol multihost non-eap-mac status

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## 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]][,...]}`

### Default

None

### Command mode

User EXEC

### Command parameters

Parameter	Description
<code>{slot/port[/sub-port][slot/port[/sub-port]][,...]}</code>	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.
<code>vlan &lt;1-4059&gt;</code>	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.

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## 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]][,...]}`

### Default

None

### Command mode

Privileged EXEC

### Command parameters

Parameter	Description
<code>gigabitEthernet {slot/port[/sub-port]][-slot/port[/sub-port]][,...]}</code>	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.
<code>vlan &lt;1-4059&gt;</code>	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.

## 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]][,...]}`

### Default

None

### Command mode

User EXEC

### Command parameters

Parameter	Description
<code>{slot/port[sub-port]}</code>	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.
<code>gigabitethernet {slot/port[/sub-port][-slot/port[/sub-port]][,...]}</code>	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.
<code>vlan &lt;1-4059&gt;</code>	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.



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## 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>]`

### Default

None

### Command mode

Privileged EXEC

### Command parameters

Parameter	Description
<code>gigabitethernet {slot/port[/sub-port][-slot/port[/sub-port]] [,...]}</code>	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.
<code>vlan &lt;1-4059&gt;</code>	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.



# Command: show eapol session-stats interface

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## 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]][,...]}`

### Default

None

### Command mode

User EXEC

### Command parameters

Parameter	Description
<code>gigabitethernet {slot/port[/sub-port][-slot/port[/sub-port]][,...]}</code>	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.
<code>vlan &lt;1-4059&gt;</code>	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.

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## 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]] [,...]}

### Default

None

### Command mode

User EXEC

### Command parameters

Parameter	Description
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.
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.

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## show eapol system

Display the current Extensible Authentication Protocol (EAPoL) setting on the switch.

### Syntax

- show eapol system

### Default

None

### Command mode

User EXEC

### Command parameters

Parameter	Description
config	Shows eapol system configured values.

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# Command: show fa

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## show fa

Display the Fabric Attach configuration status.

### Syntax

- show fa

### Default

None

### Command mode

User EXEC

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# Command: show fa agent

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## show fa agent

Display Fabric Attach agent information.

### Syntax

- `show fa agent`

### Default

None

### Command mode

User EXEC

### Command parameters

Parameter	Description
<code>config</code>	Display Fabric Attach agent information.

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## 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]][,...]}

### Default

None

### Command mode

User EXEC

### Command parameters

Parameter	Description
{slot/port[/sub-port][ <b>-</b> 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.

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## show fa elements

Display Fabric Attach discovery elements.

### Syntax

- show fa elements
- show fa elements {slot/port[/sub-port][-slot/port[/sub-port]][,...]}

### Default

None

### Command mode

User EXEC

### Command parameters

Parameter	Description
{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.

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# Command: show fa interface

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## show fa interface

Display Fabric Attach configuration on all interfaces.

### Syntax

- `show fa interface`

### Default

None

### Command mode

User EXEC

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# Command: show fa interface disabled-auth

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## show fa interface disabled-auth

Display Fabric Attach interfaces with authentication disabled.

### Syntax

- `show fa interface disabled-auth`

### Default

None

### Command mode

User EXEC

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# Command: show fa interface enabled-auth

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## show fa interface enabled-auth

Display Fabric Attach interfaces with authentication enabled.

### Syntax

- `show fa interface enabled-auth`

### Default

None

### Command mode

User EXEC

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## show fa interface mlt

Display Fabric Attach interfaces on an MLT.

### Syntax

- show fa interface mlt
- show fa interface mlt <1-512>

### Default

None

### Command mode

User EXEC

### Command parameters

Parameter	Description
<1-512>	Display Fabric Attach interfaces on an MLT.

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## 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]][, ...]}

### Default

None

### Command mode

User EXEC

### Command parameters

Parameter	Description
{slot/port[/sub-port][ <b>-</b> 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.

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## 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

### Default

None

### Command mode

User EXEC

### Command parameters

Parameter	Description
{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.



# Command: show fa zero-touch-client

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## show fa zero-touch-client

Display fabric attach zero touch client information

### Syntax

- `show fa zero-touch-client`

### Default

None

### Command mode

User EXEC

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# Command: show fdb-filter

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## 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

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## show filter acl

Display filter access control list (ACL) configuration information.

### Syntax

- `show filter acl`
- `show filter acl <1-2048>`

### Default

None

### Command mode

Privileged EXEC

### Command parameters

Parameter	Description
<code>&lt;1-2048&gt;</code>	Specifies an access control list (ACL) ID from 1 to 2048.

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## 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 <1-2048>`
- `show filter acl ace <1-2048> <1-2000>`

### Default

None

### Command mode

Privileged EXEC

### Command parameters

Parameter	Description
<1-2000>	Specifies an access control entry (ACE) ID from 1 to 2000.
<1-2048>	Specifies an access control entry (ACL) ID from 1 to 2048.

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## show filter acl action

Display the filter access control list (ACL) advanced information.

### Syntax

- `show filter acl action`
- `show filter acl action <1-2048>`
- `show filter acl action <1-2048> <1-2000>`

### Default

None

### Command mode

Privileged EXEC

### Command parameters

Parameter	Description
<1-2000>	Specifies an access control entry (ACE) ID from 1 to 2000.
<1-2048>	Specifies an access control entry (ACL) ID from 1 to 2048.

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## show filter acl arp

Display the filter access control list (ACL) ARP operation configuration information.

### Syntax

- `show filter acl arp`
- `show filter acl arp <1-2048>`
- `show filter acl arp <1-2048> <1-2000>`

### Default

None

### Command mode

Privileged EXEC

### Command parameters

Parameter	Description
<1-2000>	Specifies an access control entry (ACE) ID from 1 to 2000.
<1-2048>	Specifies an access control list (ACL) ID from 1 to 2048.

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## show filter acl config

Review your configuration to ensure that it is correct.

### Syntax

- `show filter acl config`
- `show filter acl config <1-2048>`
- `show filter acl config <1-2048> <1-2000>`

### Default

None

### Command mode

Privileged EXEC

### Command parameters

Parameter	Description
<1-2000>	Specifies an access control entry (ACE) ID from 1 to 2000.
<1-2048>	Specifies an access control entry (ACL) ID from 1-2048.

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# Command: show filter acl ethernet

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## show filter acl ethernet

Display the filter access control list (ACL) Ethernet configuration information.

### Syntax

- `show filter acl ethernet`
- `show filter acl ethernet <1-2048>`
- `show filter acl ethernet <1-2048> <1-2000>`

### Default

None

### Command mode

Privileged EXEC

### Command parameters

Parameter	Description
<1-2000>	Specifies an access control entry (ACE) ID from 1 to 2000.
<1-2048>	Specifies an access control entry (ACL) ID from 1 to 2048.

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## show filter acl ip

Display the filter access control list (ACL) IP configuration information.

### Syntax

- `show filter acl ip`
- `show filter acl ip <1-2048>`
- `show filter acl ip <1-2048> <1-2000>`

### Default

None

### Command mode

Privileged EXEC

### Command parameters

Parameter	Description
<1-2000>	Specifies an access control entry (ACE) ID from 1 to 2000.
<1-2048>	Specifies an access control entry (ACL) ID from 1 to 2048.

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## show filter acl ipv6

Display the filter access control list (ACL) IPv6 configuration information.

### Syntax

- `show filter acl ipv6`
- `show filter acl ipv6 <1-2048>`
- `show filter acl ipv6 <1-2048> <1-2000>`

### Default

None

### Command mode

Privileged EXEC

### Command parameters

Parameter	Description
<1-2000>	Specifies an access control entry (ACE) ID from 1 to 2000.
<1-2048>	Specifies an access control entry (ACL) ID from 1 to 2048.

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## show filter acl protocol

Display the filter access control list (ACL) protocol configuration information.

### Syntax

- `show filter acl protocol`
- `show filter acl protocol <1-2048>`
- `show filter acl protocol <1-2048> <1-2000>`

### Default

None

### Command mode

Privileged EXEC

### Command parameters

Parameter	Description
<1-2000>	Specifies an access control entry (ACE) ID from 1 to 2000.
<1-2048>	Specifies an access control entry (ACL) ID from 1 to 2048.

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## 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 <1-2048>`
- `show filter acl statistics <1-2048> <1-2000>`
- `show filter acl statistics <1-2048> qos`
- `show filter acl statistics <1-2048> security`
- `show filter acl statistics all`
- `show filter acl statistics default`
- `show filter acl statistics default <1-2048>`
- `show filter acl statistics global`
- `show filter acl statistics global <1-2048>`

### Default

None

### Command mode

Privileged EXEC

### Command parameters

Parameter	Description
<code>&lt;1-2000&gt;</code>	Specifies an access control entry (ACE) ID from 1 to 2000.
<code>&lt;1-2048&gt;</code>	Specifies an access control entry (ACL) ID from 1 to 2048.
<code>&lt;1-2048&gt; qos</code>	Shows statistics for Quality of Service (QoS) access control entries.
<code>&lt;1-2048&gt; security</code>	Shows ACL statistics for Security ACEs
<code>all</code>	Shows all statistics for all access control entry.
<code>default</code>	Shows traffic statistics for access control entry..
<code>default &lt;1-2048&gt;</code>	Specifies the access control list (ACL) and the ACE ID.
<code>global</code>	Shows global statistics for access control entry.



# Command: show ftp-access

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## show ftp-access

Show the maximum FTP sessions.

### Syntax

- `show ftp-access`

### Default

None

### Command mode

User EXEC

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## 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>]

### Default

None

### Command mode

User EXEC

### Command parameters

Parameter	Description
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



# Command: show history

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## 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

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# Command: show hosts

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## 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>`

### Default

None

### Command mode

User EXEC

### Command parameters

Parameter	Description
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).

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## 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>`

### Default

None

### Command mode

User EXEC

### Command parameters

Parameter	Description
<code>laddr WORD&lt;1-256&gt;</code>	Specifies the local IPv4 or IPv6 address.
<code>raddr WORD&lt;1-256&gt;</code>	Specifies the remote IPv4 or IPv6 address.
<code>WORD&lt;1-32&gt;</code>	Specifies the name of the policy to be displayed.

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## show ike profile

Display IKEv2 profiles.

### Syntax

- show ike profile
- show ike profile WORD<1-32>

### Default

None

### Command mode

User EXEC

### Command parameters

Parameter	Description
WORD<1-32>	Specifies the name of the profile to be displayed.

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## 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>`

### Default

None

### Command mode

User EXEC

### Command parameters

Parameter	Description
<code>laddr WORD&lt;1-256&gt;</code>	Specifies the local IPv4 or IPv6 address.
<code>raddr WORD&lt;1-256&gt;</code>	Specifies the remote IPv4 or IPv6 address.
<code>version v1 WORD&lt;1-32&gt;</code>	Specifies the local IPv4 or IPv6 address for IKE Phase 1, version 1 SA.
<code>version v2 WORD&lt;1-32&gt;</code>	Specifies the local IPv4 or IPv6 address for IKE Phase 1, version 2 SA.

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## show ike v2-profile

Display IKE profiles.

### Syntax

- `show ike v2-profile`
- `show ike v2-profile WORD<1-32>`

### Default

None

### Command mode

User EXEC

### Command parameters

Parameter	Description
WORD<1-32>	Specifies the name of the profile to be displayed.

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# Command: show interface gigabitethernet config

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## 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

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# Command: show interfaces gigabitethernet

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## 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>`

### Default

None

### Command mode

Privileged EXEC

### Command parameters

Parameter	Description
<code>{slot/port[/sub-port][-slot/port[/sub-port]][,...]}</code>	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.
<code>&lt;1-4059&gt;</code>	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.

## 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[/sub-port] [-slot/port[/sub-port]] [,...]}`
- `show interfaces gigabitEthernet channelize detail`
- `show interfaces gigabitEthernet channelize detail {slot/port[/sub-port] [-slot/port[/sub-port]] [,...]}`

### Default

None

### Command mode

Privileged EXEC

### Command parameters

Parameter	Description
<code>[port {slot/port [-slot/port] [,...]}]</code>	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.
<code>detail {slot/port[/sub-port] [-slot/port[/sub-port]] [,...]}</code>	Display the detailed channelization information for sub-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.

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## 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]][,...]}`

### Default

None

### Command mode

Privileged EXEC

### Command parameters

Parameter	Description
<code>{slot/port[/sub-port][-slot/port[/sub-port]][,...]}</code>	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.
<code>&lt;1-4059&gt;</code>	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.

## 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]][,...]}`

### Default

None

### Command mode

Privileged EXEC

### Command parameters

Parameter	Description
<code>{slot/port[/sub-port]][-slot/port[/sub-port]][,...]}</code>	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.
<code>collision</code>	Show port collision error information.
<code>ospf</code>	Show port ospf error information.
<code>verbose</code>	Show port error information. Display priority-based flow control pause transmit and receive counter.

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## 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]][,...]}`

### Default

None

### Command mode

Privileged EXEC

### Command parameters

Parameter	Description
<code>{slot/port[/sub-port][-slot/port[/sub-port]][,...]}</code>	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.
<code>&lt;1-4059&gt;</code>	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.





# Command: show interfaces gigabitethernet high-secure

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## 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>`

### Default

None

### Command mode

Privileged EXEC

### Command parameters

Parameter	Description
<code>{slot/port[/sub-port][-slot/port[/sub-port]][, ...]}</code>	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.
<code>&lt;1-4059&gt;</code>	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.



# Command: show interfaces gigabitethernet interface

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## 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>`

### Default

None

### Command mode

Privileged EXEC

### Command parameters

Parameter	Description
<code>{slot/port[/sub-port][-slot/port[/sub-port]][,...]}</code>	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.
<code>&lt;1-4059&gt;</code>	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.



# Command: show interfaces gigabitEthernet i-sid

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## 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]][,...]}`

### Default

None

### Command mode

Privileged EXEC

### Command parameters

Parameter	Description
<code>{slot/port[/sub-port][-slot/port[/sub-port]][,...]}</code>	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.

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## 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>`

### Default

None

### Command mode

Privileged EXEC

### Command parameters

Parameter	Description
<code>{slot/port[/sub-port][-slot/port[/sub-port]] [,...]}</code>	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.
<code>&lt;1-4059&gt;</code>	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.



# Command: show interfaces gigabitethernet limit-fdb-learning

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## 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]][, ...]]`

### Default

None

### Command mode

Privileged EXEC

### Command parameters

Parameter	Description
{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.



# Command: show interfaces gigabitethernet loop-detected

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## 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>`

### Default

None

### Command mode

Privileged EXEC

### Command parameters

Parameter	Description
<code>{slot/port[/sub-port][-slot/port[/sub-port]][[,...]]}</code>	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.
<code>&lt;1-4059&gt;</code>	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.

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## 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>`

### Default

None

### Command mode

Privileged EXEC

### Command parameters

Parameter	Description
<code>{slot/port[/sub-port][ -slot/port[/sub-port]] [,...]}</code>	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.
<code>&lt;1-4059&gt;</code>	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.



# Command: show interfaces gigabitethernet name

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## 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]][,...]}`

### Default

None

### Command mode

Privileged EXEC

### Command parameters

Parameter	Description
<code>{slot/port[/sub-port][-slot/port[/sub-port]][,...]}</code>	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.
<code>&lt;1-4059&gt;</code>	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.





# Command: show interfaces gigabitethernet ospf

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## 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]][,...]}`

### Default

None

### Command mode

Privileged EXEC

### Command parameters

Parameter	Description
<code>{slot/port[/sub-port][-slot/port[/sub-port]][,...]}</code>	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.
<code>&lt;1-4059&gt;</code>	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.



# Command: show interfaces gigabitethernet private-vlan

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## 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>`

### Default

None

### Command mode

Privileged EXEC

### Command parameters

Parameter	Description
<code>{slot/port[/sub-port]][-slot/port[/sub-port]][,...]</code>	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.
<code>&lt;2-4059&gt;</code>	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.

## 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]][,...]}`

### Default

None

### Command mode

Privileged EXEC

### Command parameters

Parameter	Description
<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.
{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.



# Command: show interfaces gigabitethernet shape

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## 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]][,...]}`

### Default

None

### Command mode

Privileged EXEC

### Command parameters

Parameter	Description
<code>{slot/port[/sub-port][-slot/port[/sub-port]][,...]}</code>	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.

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# Command: show interfaces gigabitethernet slpp

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## 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]][,...]}`

### Default

None

### Command mode

Privileged EXEC

### Command parameters

Parameter	Description
<code>{slot/port[/sub-port][<b>-</b>slot/port[/sub-port]][,...]}</code>	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.

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# Command: show interfaces gigabitethernet state

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## 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]][,...]}`

### Default

None

### Command mode

Privileged EXEC

### Command parameters

Parameter	Description
<code>{slot/port[/sub-port][-slot/port[/sub-port]][,...]}</code>	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.
<code>&lt;1-4059&gt;</code>	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.



# Command: show interfaces gigabitethernet statistics

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## 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`

### Default

None

### Command mode

Privileged EXEC

### Command parameters

Parameter	Description
<code>{slot/port[/sub-port]][-slot/port[/sub-port]][,...]}</code>	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.

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# Command: show interfaces gigabitethernet statistics bridging

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## 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][,...]}`

### Default

None

### Command mode

Privileged EXEC

### Command parameters

Parameter	Description
<code>{slot/port[/sub-port][-slot/port[/sub-port]][,...]}</code>	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.

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## 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>`

### Default

None

### Command mode

Privileged EXEC

### Command parameters

Parameter	Description
<code>{slot/port[/sub-port]][-slot/port[/sub-port]][,...]</code>	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.
<code>vrf WORD&lt;1-16&gt;</code>	Displays all statistics by port.
<code>vrfids WORD&lt;0-512&gt;</code>	Specifies the slot and the port number.



# Command: show interfaces gigabitethernet statistics lacp

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## 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]][,...]}`

### Default

None

### Command mode

Privileged EXEC

### Command parameters

Parameter	Description
<code>{slot/port[/sub-port][-slot/port[/sub-port]][,...]}</code>	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.

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# Command: show interfaces gigabitethernet statistics policer

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## 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][,...]}`

### Default

None

### Command mode

Privileged EXEC

### Command parameters

Parameter	Description
<code>{slot/port[/sub-port][-slot/port[/sub-port]][,...]}</code>	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.

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# Command: show interfaces gigabitethernet statistics rmon

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## 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]][,...]}`

### Default

None

### Command mode

Privileged EXEC

### Command parameters

Parameter	Description
<code>{slot/port[/sub-port][-slot/port[/sub-port]][,...]}</code>	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.
<code>history</code>	Displays all statistics by port.
<code>history {slot/port[/sub-port][-slot/port[/sub-port]][,...]}</code>	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.



# Command: show interfaces gigabitethernet statistics verbose

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## 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]][,...]}`

### Default

None

### Command mode

Privileged EXEC

### Command parameters

Parameter	Description
<code>{slot/port[/sub-port][ -slot/port[/sub-port]][,...]}</code>	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.

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# Command: show interfaces gigabitethernet vlan

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## 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]][,...]}`

### Default

None

### Command mode

Privileged EXEC

### Command parameters

Parameter	Description
<code>{slot/port[/sub-port][-slot/port[/sub-port]][,...]}</code>	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.
<code>&lt;1-4059&gt;</code>	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.

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## show interfaces gigabitethernet vrf

Show VRF-association information for the port..

### Syntax

- `show interfaces gigabitEthernet vrf`
- `show interfaces gigabitEthernet vrf {slot/port[/sub-port][  
-slot/port[/sub-port]][,...]}`
- `show interfaces gigabitEthernet vrf vrf WORD<1-16>`
- `show interfaces gigabitEthernet vrf vrfids WORD<0-512>`

### Default

None

### Command mode

Privileged EXEC

### Command parameters

Parameter	Description
<code>{slot/port[/sub-port][ -slot/port[/sub-port]][,...]}</code>	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.
<code>vrf WORD&lt;1-16&gt;</code>	Specifies a VRF instance by name.
<code>vrfids WORD&lt;0-512&gt;</code>	Specifies a range of VRFs by ID number.



# Command: show interfaces loopback

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## show interfaces loopback

Show loopback interface information.

### Syntax

- `show interfaces loopback vrf WORD <1-16> vrfids WORD<0-512>`

### Default

None

### Command mode

Privileged EXEC

### Command parameters

Parameter	Description
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.

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# Command: show interfaces mgmtethernet

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## show interfaces mgmtethernet

Show configuration information for MgmtEthernet ports.

### Syntax

- `show interfaces mgmtEthernet`

### Default

None

### Command mode

Privileged EXEC

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# Command: show interfaces mgmtethernet config-L1

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## show interfaces mgmtethernet config-L1

Show port config-L1 information.

### Syntax

- `show interfaces mgmtethernet config-L1`

### Default

None

### Command mode

Privileged EXEC

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# Command: show interfaces mgmtethernet error

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## show interfaces mgmtethernet error

Show port general error information

### Syntax

- `show interfaces mgmtethernet error {collision|verbose}`

### Default

None

### Command mode

Privileged EXEC

### Command parameters

Parameter	Description
<code>collision</code>	Shows management port collision error information.
<code>verbose</code>	Displays all statistics by management port.

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# Command: show interfaces mgmtethernet statistics

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## 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

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## show interfaces vlan

Show basic and advanced VLAN information.

### Syntax

- `show interfaces vlan`
- `show interfaces vlan <1-4059>`

### Default

None

### Command mode

Privileged EXEC

### Command parameters

Parameter	Description
<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.

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## show interfaces vlan arp

Display Address Resolution Protocol (ARP) information for the VLAN.

### Syntax

- `show interfaces vlan arp`
- `show interfaces vlan arp <1-4059>`

### Default

None

### Command mode

Privileged EXEC

### Command parameters

Parameter	Description
<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.



# Command: show interfaces vlan autolearn-mac

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## 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

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## 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>`

### Default

None

### Command mode

Privileged EXEC

### Command parameters

Parameter	Description
<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.



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## 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>`

### Default

None

### Command mode

Privileged EXEC

### Command parameters

Parameter	Description
<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>	Enter vrf ids
WORD<0-32>	Specify the vrf name



# Command: show interfaces vlan igmp-mrdisc

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## 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>]`

### Default

None

### Command mode

Privileged EXEC

### Command parameters

Parameter	Description
<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.

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## 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>`

### Default

None

### Command mode

Privileged EXEC

### Command parameters

Parameter	Description
<code>&lt;1-4059&gt;</code>	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.
<code>vrf WORD&lt;1- 16&gt;</code>	Specifies a VRF by name.
<code>vrfids WORD&lt;0- 512&gt;</code>	Displays ip address information for particular vrfids.



# Command: show interfaces vlan manual-edit-mac

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## 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

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# Command: show interfaces vlan nlb-mode

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## 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

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# Command: show interfaces vlan vlan-bysrcmac

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## show interfaces vlan vlan-bysrcmac

Show source MAC-based VLAN information.

### Syntax

- `show interfaces vlan vlan-bysrcmac`

### Default

None

### Command mode

Privileged EXEC

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## show interfaces vlan vrf

Show VRF-association information for the VLAN.

### Syntax

- `show interfaces vlan vrf`
- `show interfaces vlan vrf <1-4059>`
- `show interfaces vlan vrf {slot/port[/sub-port][-slot/port[/sub-port]][, ...]}`
- `show interfaces vlan vrf vrf WORD<1-16>`
- `show interfaces vlan vrf vrfids WORD<0-512>`

### Default

None

### Command mode

Privileged EXEC

### Command parameters

Parameter	Description
<code>{slot/port[/sub-port][-slot/port[/sub-port]][, ...]}</code>	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.
<code>&lt;1-4059&gt;</code>	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.
<code>vrf WORD&lt;1-16&gt;</code>	Specifies a VRF instance by name.
<code>vrfids WORD&lt;0-512&gt;</code>	Specifies a range of VRFs by ID number.



# Command: show interface vlan nlb-mode

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## show interface vlan nlb-mode

Displays the NLB information.

### Syntax

- show interface vlan nlb-mode
- show interface vlan nlb-mode <1-4059>

### Default

None

### Command mode

Privileged EXEC

### Command parameters

Parameter	Description
<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.

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## show io

Shows IO information.

### Syntax

- `show io 12-tables`
- `show io 13-tables`

### Default

None

### Command mode

User EXEC

### Command parameters

Parameter	Description
12-tables	Shows the Layer 2 tables.
13-tables	Shows the Layer 3 tables.

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## 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>

### Default

None

### Command mode

User EXEC

### Command parameters

Parameter	Description
{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.
	Specifies the VLAN ID in the range of 1 to 4059. By default, VLAN IDs 1 to 4059

vlan <1-4059>	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).

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## 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>`

### Default

None

### Command mode

User EXEC

### Command parameters

Parameter	Description
<code>{slot/port[sub-port]}</code>	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.
<code>vrf WORD&lt;1-16&gt;</code>	Specifies a VRF instance by name.
<code>vrfids WORD&lt;0-512&gt;</code>	Specifies a range of VRFs by ID number.

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## 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>

### Default

None

### Command mode

User EXEC

### Command parameters

Parameter	Description
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).



# Command: show ip arp-inspection interface

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## 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>

### Default

None

### Command mode

User EXEC

### Command parameters

Parameter	Description
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.

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## 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>`

### Default

None

### Command mode

User EXEC

### Command parameters

Parameter	Description
<code>{slot/port[/sub-port][-slot/port[/sub-port]][,...]}</code>	Displays DAI configuration for a particular port.
<code>&lt;1-4059&gt;</code>	Displays the DAI VLAN configuration.
<code>vrf WORD&lt;1-16&gt;</code>	Displays DAI configuration for a particular VRF.
<code>vrfids WORD&lt;0-512&gt;</code>	Displays DAI configuration for a particular VRF ID.

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## 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>

### Default

None

### Command mode

User EXEC

### Command parameters

Parameter	Description
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.





# Command: show ip arp spbm-tunnel-as-mac

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## 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

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## 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>]`

### Default

None

### Command mode

User EXEC

### Command parameters

Parameter	Description
<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.

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# Command: show ip bgp aggregates

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## 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>]`

### Default

None

### Command mode

User EXEC

### Command parameters

Parameter	Description
<code>&lt;prefix/len&gt;</code>	Specifies the IP address and the mask length (the length can be 0 to 32).
<code>vrf WORD&lt;1-16&gt;</code>	Specifies a VRF instance by name.
<code>vrfids WORD &lt;0-512&gt;</code>	Specifies a range of VRFs by ID number.

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## 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>]`

### Default

None

### Command mode

User EXEC

### Command parameters

Parameter	Description
<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.



# Command: show ip bgp confederation

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## show ip bgp confederation

View BGP confederation information on the switch.

### Syntax

- show ip bgp confederation

### Default

None

### Command mode

User EXEC

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# Command: show ip bgp dampened-paths

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## 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>]`

### Default

None

### Command mode

User EXEC

### Command parameters

Parameter	Description
{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.



# Command: show ip bgp flap-damp-config

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## 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>]`

### Default

None

### Command mode

User EXEC

### Command parameters

Parameter	Description
<code>[&lt;prefix/len&gt;]</code>	Specifies the exact match the prefix {a,b,c,d/len}.
<code>vrf WORD &lt;1-16&gt;</code>	Displays BGP configuration for a particular VRF.
<code>vrfids WORD&lt;0-512&gt;</code>	Specifies the VRF ID in the range of 0 to 512.

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## 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>]`

### Default

None

### Command mode

User EXEC

### Command parameters

Parameter	Description
<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.



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## 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>]`

### Default

None

### Command mode

User EXEC

### Command parameters

Parameter	Description
{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.



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## show ip bgp networks

Display information about BGP network configurations.

### Syntax

- `show ip bgp networks [<prefix/len>] [vrf WORD<1-16>] [vrfids WORD<0-255>]`

### Default

None

### Command mode

User EXEC

### Command parameters

Parameter	Description
<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<0-255>	Specifies a range of VRFs by ID number.

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## 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>]`

### Default

None

### Command mode

User EXEC

### Command parameters

Parameter	Description
<code>vrf WORD&lt;1-16&gt;</code>	Specifies a VRF instance by name.
<code>vrfids WORD&lt;0-512&gt;</code>	Specifies a range of VRFs by ID number.
<code>WORD&lt;0-1536&gt;</code>	Specifies the name of the peer group.

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# Command: show ip bgp redistributed-routes

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## 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>`

### Default

None

### Command mode

User EXEC

### Command parameters

Parameter	Description
<code>&lt;prefix/len&gt;</code>	Shows paths with this prefix. The prefix is the IP address and exact mask length (must be an integer value between 0 and 32).
<code>vrf WORD&lt;1-16&gt;</code>	Specifies a VRF instance by name.
<code>vrfids WORD&lt;0-512&gt;</code>	Specifies a range of VRFs by ID number.

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## 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>]`

### Default

None

### Command mode

User EXEC

### Command parameters

Parameter	Description
<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.

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## 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>`

### Default

None

### Command mode

User EXEC

### Command parameters

Parameter	Description
<code>vrf WORD&lt;1-16&gt;</code>	Specifies a VRF instance by name.
<code>vrfids WORD&lt;0-512&gt;</code>	Specifies a range of VRFs by ID number.

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# Command: show ip bgp summary

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## 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>]`

### Default

None

### Command mode

User EXEC

### Command parameters

Parameter	Description
<code>vrf WORD &lt;1-16&gt;</code>	Specifies a VRF instance by name.
<code>vrfids WORD &lt;0-512&gt;</code>	Specifies a range of VRFs by ID number.

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## 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>]`

### Default

None

### Command mode

User EXEC

### Command parameters

Parameter	Description
<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.

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## 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>`

### Default

None

### Command mode

User EXEC

### Command parameters

Parameter	Description
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.

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## 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>`

### Default

None

### Command mode

User EXEC

### Command parameters

Parameter	Description
<code>vlan &lt;1-4059&gt;</code>	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.
<code>vrf WORD&lt;1-16&gt;</code>	Specifies the name of the VRF.
<code>vrfids &lt;0-512&gt;</code>	Specifies the ID of the VRF. The value is an integer in the range of 0 to 512.

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## 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>`

### Default

None

### Command mode

User EXEC

### Command parameters

Parameter	Description
<code>vlan &lt;1-4059&gt;</code>	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.
<code>vrf WORD&lt;1-16&gt;</code>	Specifies the name of the VRF.
<code>vrfids &lt;0-512&gt;</code>	Specifies the ID of the VRF. The value is an integer in the range of 0 to 512.



# Command: show ip dhcp-snooping binding address

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## 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`

### Default

None

### Command mode

User EXEC

### Command parameters

Parameter	Description
{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.

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# Command: show ip dhcp-snooping binding interface

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## 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>`

### Default

None

### Command mode

User EXEC

### Command parameters

Parameter	Description
<code>gigabitEthernet {slot/port[/sub-port]][-slot/port[/sub-port]][,...]</code>	Displays DHCP Snooping binding table information for the specified port number.
<code>vlan &lt;1-4059&gt;</code>	Displays DHCP Snooping binding table information for the specified VLAN.
<code>vrf WORD&lt;1-16&gt;</code>	Displays DHCP Snooping binding table information for the specified VRF name.
<code>vrfids WORD&lt;0-512&gt;</code>	Displays DHCP Snooping binding table information for the specified VRF ID.



# Command: show ip dhcp-snooping binding summary

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## 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>

### Default

None

### Command mode

User EXEC

### Command parameters

Parameter	Description
{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.





# Command: show ip dhcp-snooping binding type

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## 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`

### Default

None

### Command mode

User EXEC

### Command parameters

Parameter	Description
<code>dynamic</code>	Displays DHCP Snooping binding table information for dynamic entries.
<code>static</code>	Displays DHCP Snooping binding table information for static entries.

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# Command: show ip dhcp-snooping interface

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## 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>`

### Default

None

### Command mode

User EXEC

### Command parameters

Parameter	Description
<code>vlan &lt;1-4059&gt;</code>	Displays the DHCP Snooping VLAN configuration.
<code>vrf WORD&lt;1-16&gt;</code>	Displays DHCP Snooping configuration for a particular VRF.
<code>vrfids WORD&lt;0-512&gt;</code>	Displays DHCP Snooping configuration for a particular VRF ID.

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## 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>`

### Default

None

### Command mode

User EXEC

### Command parameters

Parameter	Description
<code>{slot/port[/sub-port][-slot/port[/sub-port]][,...]}</code>	Displays DHCP Snooping configuration for a particular port.
<code>&lt;1-4059&gt;</code>	Displays the DHCP Snooping VLAN configuration.
<code>vrf WORD&lt;1-16&gt;</code>	Displays DHCP Snooping configuration for a particular VRF.
<code>vrfids WORD&lt;0-512&gt;</code>	Displays DHCP Snooping configuration for a particular VRF ID.

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## 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]}`

### Default

None

### Command mode

User EXEC

### Command parameters

Parameter	Description
<code>interface GigabitEthernet {slot/port[sub- port]}</code>	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.

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# Command: show ip dns

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## show ip dns

View the DNS client system status.

### Syntax

- `show ip dns`

### Default

None

### Command mode

User EXEC

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## 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>`

## Default

None

## Command mode

User EXEC

## Command parameters

Parameter	Description
<code>max-path</code>	Configures the maximum number of Equal Cost Multipath (ECMP) paths.
<code>vrf WORD&lt;1-16&gt;</code>	Displays the prefix list of routes for a particular VRF. <code>WORD&lt;0-16&gt;</code> specifies the VRF name.
<code>vrfids WORD&lt;0-512&gt;</code>	Displays the prefix list of routes for a particular VRF ID. <code>WORD&lt;0-512&gt;</code> specifies the VRF ID.

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## 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>`

### Default

None

### Command mode

User EXEC

### Command parameters

Parameter	Description
<code>&lt;1-1024&gt;</code>	Specifies the extended community list ID.
<code>vrf WORD&lt;1-16&gt;</code>	Displays extended community list for a particular VRF.
<code>vrfids WORD&lt;0-512&gt;</code>	Specifies VRF IDs.

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## 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>`

### Default

None

### Command mode

User EXEC

### Command parameters

Parameter	Description
<code>interface &lt;A.B.C.D&gt;</code>	Displays information about the UDP interface for all IP addresses or a specified IP address.
<code>portfwd</code>	Displays the UDP port forwarding table.
<code>portfwdlist &lt;1-1000&gt;</code>	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.
<code>vrf WORD&lt;1-16&gt;</code>	Specifies the name of the VRF in the range of 0 to 16 characters.
<code>vrfids &lt;0-512&gt;</code>	Specifies the ID of the port and is an integer in the range of 0 to 512.



# Command: show ip forward-protocol udp portfwd

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## 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>]`

### Default

None

### Command mode

User EXEC

### Command parameters

Parameter	Description
<code>vrf WORD&lt;1-16&gt;</code>	Specifies the name of the VRF in the range of 0 to 16 characters.
<code>vrfids &lt;0-512&gt;</code>	Specifies the ID of VRF and is an integer between 0 and 512.

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## show ip forward-protocol udp portfwddlist

View and confirm the configuration setting on the IP forwarding list.

### Syntax

- `show ip forward-protocol udp portfwddlist`
- `show ip forward-protocol udp portfwddlist <1-1000>`
- `show ip forward-protocol udp portfwddlist <1-1000> [vrf WORD<1-16>] [vrfids <0-512>]`
- `show ip forward-protocol udp portfwddlist vrf WORD<1-16>`
- `show ip forward-protocol udp portfwddlist vrfids WORD<0-512>`

### Default

None

### Command mode

User EXEC

### Command parameters

Parameter	Description
<code>&lt;1-1000&gt;</code>	Specifies the port forward list id which is an integer in the range of 1 to 1000.
<code>vrf WORD&lt;1-16&gt;</code>	Specifies the name of the VRF in the range of 0 to 16 characters.
<code>vrfids &lt;0-512&gt;</code>	Specifies the ID of the port and is an integer in the range of 0 to 512.

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## 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>`

### Default

None

### Command mode

Privileged EXEC

### Command parameters

Parameter	Description
<code>vrf WORD&lt;1-16&gt;</code>	Specifies a VRF by name.
<code>vrfids &lt;0-512&gt;</code>	Specifies a VRF by ID.

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## 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>`

### Default

None

### Command mode

Privileged EXEC

### Command parameters

Parameter	Description
<code>vrf WORD&lt;1-16&gt;</code>	Specifies a VRF by name.
<code>vrfids &lt;0-512&gt;</code>	Specifies a VRF by ID.

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## 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>`

### Default

None

### Command mode

Privileged EXEC

### Command parameters

Parameter	Description
<code>count</code>	Specifies the number of entries.
<code>group {A.B.C.D}</code>	Specifies the group address.
<code>member-subnet default   {A.B.C.D/X}</code>	Specifies the IP address and network mask.
<code>vrf WORD&lt;1-16&gt;</code>	Specifies a VRF by name.
<code>vrfids &lt;0-512&gt;</code>	Specifies a VRF by ID.

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## 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>`

### Default

None

### Command mode

Privileged EXEC

### Command parameters

Parameter	Description
<code>group {A.B.C.D}</code>	Specifies the group address.
<code>member-subnet default   {A.B.C.D/X}</code>	Specifies the IP address and network mask.
<code>vrf WORD&lt;1-16&gt;</code>	Specifies a VRF by name.
<code>vrfids &lt;0-512&gt;</code>	Specifies a VRF by ID.

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## 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>

### Default

None

### Command mode

Privileged EXEC

### Command parameters

Parameter	Description
{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. 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 by name.
vrfids <0-512>	Specifies a VRF by ID.

## show ip igmp group count group {A.B.C.D} tracked-members

Displays the number of tracked-members 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} 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} 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} 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 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 count 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 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>
- 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> vrfids WORD<0-512>
- 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]][,...]} 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]][,...]}
- 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]][,...]} 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} 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>









- 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>
- show ip igmp group count group {A.B.C.D} tracked-members vrfids WORD<0-512>

## Default

None

## Command mode

Privileged EXEC

## Command parameters

Parameter	Description
{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. 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 by name.
vrfids WORD <0-512>	Specifies the ID of the VRF and is an integer in the range of 0 to 512.

## show ip igmp group count member-subnet

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 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 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}`
- `show ip igmp group count member-subnet {A.B.C.D/X} group {A.B.C.D}`
- `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[-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} 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>`
- `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-`













- 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>
- show ip igmp group count member-subnet {A.B.C.D/X} group {A.B.C.D} tracked-members vrfids WORD<0-512>
- 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>
- show ip igmp group count member-subnet {A.B.C.D/X} group {A.B.C.D} vrfids WORD<0-512>
- 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>
- show ip igmp group count member-subnet {A.B.C.D/X} vrfids WORD<0-512>

## Default

None

## Command mode

Privileged EXEC

## Command parameters

Parameter	Description
{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. 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 by name.
vrfids WORD <0-512>	Specifies the ID of the VRF and is an integer in the range of 0 to 512.

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## 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>

### Default

None

## Command mode

Privileged EXEC

## Command parameters

Parameter	Description
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. 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 by name.
vrfids <0-512>	Specifies a VRF by ID.

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## 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}
- 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]][,...]}
- 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}
- 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} 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} 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]][,...]} 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]][,...]} 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

















- `show ip igmp group group {A.B.C.D} tracked-members vrfids WORD<0-512>`

## Default

None

## Command mode

Privileged EXEC

## Command parameters

Parameter	Description
<code>member-subnet {A.B.C.D/X}</code>	Specifies the IP address and mask of the IGMP member.
<code>port {slot/port[/sub-port] [-slot/port[/sub-port]][, ...]}</code>	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.
<code>source-subnet {A.B.C.D/X}</code>	Specifies the source IP address and the subnet mask.
<code>vlan &lt;1-4059&gt;</code>	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.
<code>vrf WORD&lt;1-16&gt;</code>	Specifies a VRF by name.
<code>vrfids &lt;0-512&gt;</code>	Specifies a VRF by ID.

## 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`

### Default

None

### Command mode

Privileged EXEC

### Command parameters

Parameter	Description
{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.

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## 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>`

### Default

None

### Command mode

Privileged EXEC

### Command parameters

Parameter	Description
<code>gigabitethernet {slot/port[/sub-port][ -slot/port[/sub-port]][,...]}</code>	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.
<code>interface</code>	Shows Internet Group Management Protocol (IGMP) interfaces.
<code>vlan &lt;1-4059&gt;</code>	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.
<code>vrf WORD&lt;1-16&gt;</code>	Specifies a VRF by name.
<code>vrfids &lt;0-512&gt;</code>	Specifies a VRF by ID.



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## 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>`

### Default

None

### Command mode

Privileged EXEC

### Command parameters

Parameter	Description
<code>vrf WORD&lt;1-16&gt;</code>	Specifies a VRF by name.
<code>vrfids &lt;0-512&gt;</code>	Specifies a VRF by ID.

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# Command: show ip igmp mrdisc neighbors

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## 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>`

### Default

None

### Command mode

Privileged EXEC

### Command parameters

Parameter	Description
<code>vrf WORD&lt;1-16&gt;</code>	Specifies a VRF by name.
<code>vrfids &lt;0-512&gt;</code>	Specifies a VRF by ID.

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## 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>`

### Default

None

### Command mode

Privileged EXEC

### Command parameters

Parameter	Description
<code>vrf WORD&lt;1-16&gt;</code>	Specifies a VRF by name.
<code>vrfids &lt;0-512&gt;</code>	Specifies a VRF by ID.

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## 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>`

### Default

None

### Command mode

Privileged EXEC

### Command parameters

Parameter	Description
<code>count</code>	Specifies the number of entries.
<code>group {A.B.C.D}</code>	Specifies the group address.
<code>member-subnet default   {A.B.C.D/X}</code>	Specifies the IP address and network mask.
<code>vrf WORD&lt;1-16&gt;</code>	Specifies a VRF by name.
<code>vrfids &lt;0-512&gt;</code>	Specifies a VRF by ID.



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## 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>`

### Default

None

### Command mode

Privileged EXEC

### Command parameters

Parameter	Description
<code>vrf WORD&lt;1-16&gt;</code>	Specifies a VRF by name.
<code>vrfids &lt;0-512&gt;</code>	Specifies a VRF by ID.

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## 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>`

### Default

None

### Command mode

Privileged EXEC

### Command parameters

Parameter	Description
<code>group &lt;A.B.C.D&gt;</code>	Specifies the multicast group address.
<code>source &lt;A.B.C.D&gt;</code>	Specifies the multicast source address.
<code>vrf WORD&lt;1-16&gt;</code>	Specifies a VRF by name.
<code>vrfids &lt;0-512&gt;</code>	Specifies a VRF by ID.

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## 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>`

### Default

None

### Command mode

Privileged EXEC

### Command parameters

Parameter	Description
<code>vrf WORD&lt;1-16&gt;</code>	Specifies a VRF by name.
<code>vrfids &lt;0-512&gt;</code>	Specifies a VRF by ID.

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## 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>`

### Default

None

### Command mode

Privileged EXEC

### Command parameters

Parameter	Description
<code>vrf WORD&lt;1-16&gt;</code>	Specifies a VRF by name.
<code>vrfids &lt;0-512&gt;</code>	Specifies a VRF by ID.

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## 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>`

### Default

None

### Command mode

Privileged EXEC

### Command parameters

Parameter	Description
<code>vrf WORD&lt;1-16&gt;</code>	Specifies a VRF by name.
<code>vrfids &lt;0-512&gt;</code>	Specifies a VRF by ID.

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## 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>`

### Default

None

### Command mode

Privileged EXEC

### Command parameters

Parameter	Description
<code>interface</code>	Specifies the type of interface to include in the output. The results display all ports using stream limitation on the selected interface type.
<code>port</code>	Specifies the Internet Group Management Protocol (IGMP) stream limitation port details.
<code>vrf</code> <code>WORD&lt;1-16&gt;</code>	Specifies a VRF by name.
<code>vrfids</code> <code>&lt;0-512&gt;</code>	Specifies a VRF by ID.



# Command: show ip igmp sys

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## 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>`

### Default

None

### Command mode

Privileged EXEC

### Command parameters

Parameter	Description
<code>vrf WORD&lt;1-16&gt;</code>	Specifies a VRF by name.
<code>vrfids &lt;0-512&gt;</code>	Specifies a VRF by ID.

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## 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>

### Default

None

### Command mode

User EXEC

### Command parameters

Parameter	Description
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.



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## 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>`

### Default

None

### Command mode

User EXEC

### Command parameters

Parameter	Description
<code>vrf WORD&lt;1-16&gt;</code>	Specifies a VRF.
<code>vrfids WORD&lt;0-512&gt;</code>	Specifies the VRF ID.

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## 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>

### Default

None

### Command mode

Privileged EXEC

### Command parameters

Parameter	Description
interface vlan	Show route discovery per interface information.
vrfids WORD<0-512>	Show route discovery for particular vrfids

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## 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>`

### Default

None

### Command mode

User EXEC

### Command parameters

Parameter	Description
<code>vrf WORD&lt;1-16&gt;</code>	Displays I-SID list information for a particular VRF by name.
<code>WORD&lt;1-32&gt;</code>	Displays I-SID list information for a particular I-SID list by name.

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## 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>`

### Default

None

### Command mode

User EXEC

### Command parameters

Parameter	Description
<code>vrf WORD&lt;1-16&gt;</code>	Specifies a particular VRF. Type a name between 0-16 characters in length.
<code>vrfids WORD&lt;0-512&gt;</code>	Specifies the VRF ID.

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# Command: show ip mroute hw-resource-usage

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## 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>`

### Default

None

### Command mode

User EXEC

### Command parameters

Parameter	Description
<code>vrf WORD&lt;1-32&gt;</code>   <code>vrf WORD&lt;1-16&gt;</code>	Specifies a VRF by name. Range depends on hardware platform.
<code>vrfids WORD &lt;0-255&gt;</code>   <code>vrfids WORD &lt;0-512&gt;</code>	Specifies a VRF by ID. Range depends on hardware platform.

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## 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>`

### Default

None

### Command mode

User EXEC

### Command parameters

Parameter	Description
<code>gigabitethernet {slot/port[/sub-port][ -slot/port[/sub-port]][,...]}</code>	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.
<code>vrf WORD&lt;1-32&gt;</code>   <code>vrf WORD&lt;1-16&gt;</code>	Specifies a VRF by name. Range depends on hardware platform.
<code>vrfids WORD &lt;0-255&gt;</code>   <code>vrfids WORD &lt;0-512&gt;</code>	Specifies a VRF ID. Range depends on hardware platform.

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## 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>`

### Default

None

### Command mode

User EXEC

### Command parameters

Parameter	Description
<code>vrf WORD&lt;1-32&gt;</code>   <code>vrf WORD&lt;1-16&gt;</code>	Specifies a VRF by name. Range depends on hardware platform.
<code>vrfids WORD &lt;0-255&gt;</code>   <code>vrfids WORD &lt;0-512&gt;</code>	Specifies a VRF by ID. Range depends on hardware platform.

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## 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>`

### Default

None

### Command mode

User EXEC

### Command parameters

Parameter	Description
<code>vrf WORD&lt;1-32&gt;</code>   <code>vrf WORD&lt;1-16&gt;</code>	Specifies a VRF by name. Range depends on hardware platform.
<code>vrfids WORD &lt;0-255&gt;</code>   <code>vrfids WORD &lt;0-512&gt;</code>	Specifies a VRF by ID. Range depends on hardware platform.



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## 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>`

### Default

None

### Command mode

User EXEC

### Command parameters

Parameter	Description
<code>&lt;A.B.C.D&gt;</code>	Specifies the group IP address.
<code>vrf WORD&lt;1-32&gt;</code>   <code>vrf WORD&lt;1-16&gt;</code>	Specifies a VRF by name. Range depends on hardware platform.
<code>vrfids WORD &lt;0-255&gt;</code>   <code>vrfids WORD &lt;0-512&gt;</code>	Specifies a VRF by ID. Range depends on hardware platform.

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## 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][,....]}]

### Default

None

### Command mode

User EXEC

### Command parameters

Parameter	Description
WORD<3-160> {A.B.C.D[,E.F.G.H][,....]}	Displays the IP multicast route statistics.

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## 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>

### Default

None

### Command mode

Privileged EXEC

### Command parameters

Parameter	Description
vrf WORD<1-16>	Specifies a particular VRF. Type a name between 1-16 characters in length.
vrfids WORD<0-512> WORD<0-11>	Specifies the VRF ID. 0-65535(2-Byte AS) 0-4294967295(4-Byte AS) Default AS Number: 0

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## 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>`

### Default

None

### Command mode

Privileged EXEC

### Command parameters

Parameter	Description
<code>vrf WORD&lt;1-16&gt;</code>	Specifies a particular VRF. Type a name between 1-16 characters in length.
<code>vrfids WORD&lt;0-512&gt;</code>	Specifies the VRF ID.
<code>WORD&lt;1-64&gt;</code>	specifies the Mesh group name.

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## 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>`

### Default

None

### Command mode

Privileged EXEC

### Command parameters

Parameter	Description
<code>{A.B.C.D}</code>	Specifies the Peer address.
<code>vrf WORD&lt;1-16&gt;</code>	Specifies a particular VRF. Type a name between 1-16 characters in length.
<code>vrfids WORD&lt;0-512&gt;</code>	Specifies the VRF ID.

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## show ip msdp rpf

Display the rpf-peer information.

### Syntax

- `show ip msdp rpf {A.B.C.D}`

### Default

None

### Command mode

Privileged EXEC

### Command parameters

Parameter	Description
<code>{A.B.C.D}</code>	Specifies the RPF address.
<code>vrf WORD&lt;1-16&gt;</code>	Specifies a particular VRF. Type a name between 1-16 characters in length.
<code>vrfids WORD&lt;0-512&gt;</code>	Specifies the VRF ID.

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## 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>`

### Default

None

### Command mode

Privileged EXEC

### Command parameters

Parameter	Description
<code>group {A.B.C.D}</code>	Specifies all cache entries that match the group address.
<code>local</code>	Specifies the local SA cache.
<code>rp {A.B.C.D}</code>	Specifies cache entries that match the Rendezvous Point address.
<code>source {A.B.C.D}</code>	Specifies cache entries that match the source address.
<code>vrf WORD&lt;1-16&gt;</code>	Specifies a particular VRF. Type a name between 1-16 characters in length.
<code>vrfids WORD&lt;0-512&gt;</code>	Specifies the VRF ID.

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## 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>

### Default

None

### Command mode

Privileged EXEC

### Command parameters

Parameter	Description
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.



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## 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>`

### Default

None

### Command mode

Privileged EXEC

### Command parameters

Parameter	Description
<code>file WORD&lt;1-99&gt;</code>	Specifies the filename - <code>{/intflash/ } &lt;file&gt; {string length 1...99}</code> .
<code>vrf WORD&lt;1-16&gt;</code>	Specifies a particular VRF. Type a name between 1-16 characters in length.
<code>vrfids WORD&lt;0-512&gt;</code>	Specifies the VRF ID.

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## 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>`

### Default

None

### Command mode

Privileged EXEC

### Command parameters

Parameter	Description
<code>vrf WORD&lt;1-16&gt;</code>	Specifies a particular VRF. Type a name between 1-16 characters in length.
<code>vrfids WORD&lt;0-512&gt;</code>	Specifies the VRF ID.

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## 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>`

### Default

None

### Command mode

OSPF Router Configuration

### Command parameters

Parameter	Description
<code>vrf WORD &lt;1-16&gt;</code>	Specifies a VRF by name.
<code>vrfids WORD &lt;0-512&gt;</code>	Specifies a range of VRF IDs.

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## 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>`

### Default

None

### Command mode

User EXEC

### Command parameters

Parameter	Description
<code>vrf ids WORD&lt;0-512&gt;</code>	Specifies the ID of the VRF.
<code>vrf WORD&lt;1-16&gt;</code>	Specifies the name of the VRF.

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## 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>`

### Default

None

### Command mode

User EXEC

### Command parameters

Parameter	Description
<code>vrf WORD &lt;1-16&gt;</code>	Specifies a VRF by name.
<code>vrfids WORD&lt;0-512&gt;</code>	Specifies a range of VRF IDs.

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## 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>`

### Default

None

### Command mode

User EXEC

### Command parameters

Parameter	Description
<code>vrf &lt;WORD 1-16&gt;</code>	Specifies a VRF by name.
<code>vrfids &lt;WORD 0-512&gt;</code>	Specifies a range of VRF IDs.

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## 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>`

### Default

None

### Command mode

User EXEC

### Command parameters

Parameter	Description
<code>metric-type &lt;1-2&gt;</code>	Specifies the metric type as a string of 1 to 2 characters.
<code>vrf WORD&lt;1-16&gt;</code>	Identifies the VRF by name.
<code>vrfids WORD&lt;0-512&gt;</code>	Specifies a VRF by ID.

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## 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>`

### Default

None

### Command mode

User EXEC

### Command parameters

Parameter	Description
<code>interface</code> <code>gigabitethernet</code> <code>{slot/port[/sub-port] [-slot/port[/sub-port]][, ...]}</code>	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.
<code>vlan &lt;1-4059&gt;</code>	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.



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## 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>`

### Default

None

### Command mode

User EXEC

### Command parameters

Parameter	Description
<code>vrf WORD&lt;1-16&gt;</code>	Specifies a VRF by name.
<code>vrfids WORD&lt;0-512&gt;</code>	Specifies a range of VRF IDs.

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## 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>`

### Default

None

### Command mode

User EXEC

### Command parameters

Parameter	Description
<code>vrf WORD&lt;1-16&gt;</code>	Specifies a VRF by name.
<code>vrfids WORD&lt;0-512&gt;</code>	Specifies a range of VRF IDs.

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## 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>] [vrffids WORD<0-512>]
- show ip ospf ifstats mismatch [vrf WORD <1-16>] [vrffids WORD<0-512>]
- show ip ospf ifstats vlan <1-4059>
- show ip ospf ifstats vrf WORD<1-16>
- show ip ospf ifstats vrffids WORD<0-512>

### Default

None

### Command mode

User EXEC

### Command parameters

Parameter	Description
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.
vrffids WORD<0-512>	Specifies a VRF or range of VRFs by ID.

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## 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>`

### Default

None

### Command mode

User EXEC

### Command parameters

Parameter	Description
<code>vrf WORD&lt;1-16&gt;</code>	Displays ospf authentication configuration for a particular VRF.
<code>vrfids WORD&lt;0-512&gt;</code>	Specifies a range of VRF IDs.

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## 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>`

### Default

None

### Command mode

User EXEC

### Command parameters

Parameter	Description
<code>gigabitethernet {slot/port[/sub-port][-slot/port[/sub-port]][,...]}</code>	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.
<code>vlan &lt;1-4059&gt;</code>	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.
<code>vrf WORD&lt;1-16&gt;</code>	Displays ospf configuration for a particular VRF.
<code>vrfids WORD&lt;0-512&gt;</code>	Specifies a range of VRF IDs.

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## 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>`

### Default

None

### Command mode

User EXEC

### Command parameters

Parameter	Description
<code>vrf WORD&lt;1-16&gt;</code>	Displays ospf timer configuration for a particular VRF.
<code>vrfids WORD&lt;0-512&gt;</code>	Specifies a range of VRF IDs.

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## show ip ospf lsdb

View the area advertisements and other information contained in the link-state database (LSDB) 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>`

### Default

None

### Command mode

User EXEC

### Command parameters

Parameter	Description
-----------	-------------

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.

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## 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>`

### Default

None

### Command mode

User EXEC

### Command parameters

Parameter	Description
<code>vrf WORD &lt;1-16&gt;</code>	Specifies a VRF by name.
<code>vrfids WORD&lt;0-512&gt;</code>	Specifies a range of VRF IDs.

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## 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>`

### Default

None

### Command mode

User EXEC

### Command parameters

Parameter	Description
<code>port</code> <code>{slot/port[/sub-port][-slot/port[/sub-port]][,...]}</code>	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.
<code>vrf WORD&lt;1-16&gt;</code>	Specifies a VRF by name.
<code>vrfids WORD&lt;0-512&gt;</code>	Specifies a range of VRF IDs.

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## 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>`

### Default

None

### Command mode

User EXEC

### Command parameters

Parameter	Description
<code>vrf WORD &lt;1-16&gt;</code>	Specifies a VRF by name.
<code>vrfids WORD &lt;0-512&gt;</code>	Specifies a range of VRF IDs.

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## 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>`

### Default

None

### Command mode

User EXEC

### Command parameters

Parameter	Description
<code>vrf WORD&lt;1-16&gt;</code>	Specifies a VRF instance by VRF name.
<code>vrfids WORD&lt;0-512&gt;</code>	Specifies a VRF or range of VRFs by ID.

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## 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>`

### Default

None

### Command mode

User EXEC

### Command parameters

Parameter	Description
{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.

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## 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>`

### Default

None

### Command mode

User EXEC

### Command parameters

Parameter	Description
<code>vrfids WORD&lt;0-512&gt;</code>	Specifies the VRF ID.
<code>WORD&lt;1-16&gt;</code>	Specifies the VRF name.

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## show ip ospf vrfids

Displays the OSPF configuration for VRFs by VRF ID.

### Syntax

- `show ip ospf vrfids WORD<0-512>`

### Default

None

### Command mode

User EXEC

### Command parameters

Parameter	Description
WORD<0-512>	Specifies the VRF ID.

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# Command: show ip pim

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## 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

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## 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>

### Default

None

### Command mode

User EXEC

### Command parameters

Parameter	Description
group <A.B.C.D>	Specifies the multicast group address.

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# Command: show ip pim bsr

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## 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

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## 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>]`

### Default

None

### Command mode

User EXEC

### Command parameters

Parameter	Description
<code>gigabitethernet {slot/port[/sub-port] [-slot/port[/sub-port]][,...]}</code>	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.
<code>vlan [&lt;1-4059&gt;]</code>	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.



# Command: show ip pim mode

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## 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

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## 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}`

### Default

None

### Command mode

User EXEC

### Command parameters

Parameter	Description
<code>group {A.B.C.D}</code>	Specifies the multicast group address.
<code>source {A.B.C.D}</code>	Specifies the source IP address.
<code>terse</code>	Excludes the VLAN timers from the command output.



# Command: show ip pim neighbor

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## 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

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# Command: show ip pim rp-candidate

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## 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

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# Command: show ip pim rp-hash

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## 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

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# Command: show ip pim static-rp

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## show ip pim static-rp

Displays the static rendezvous point (RP) table.

### Syntax

- `show ip pim static-rp`

### Default

None

### Command mode

User EXEC

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# Command: show ip pim virtual-neighbor

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## show ip pim virtual-neighbor

Display the virtual neighbor.

### Syntax

- `show ip pim virtual-neighbor`

### Default

None

### Command mode

User EXEC

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## 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>`

### Default

None

### Command mode

User EXEC

### Command parameters

Parameter	Description
<code>prefix {A.B.C.D}</code>	Adds a prefix entry to the prefix list. {A.B.C.D} is the IP address.
<code>vrf WORD&lt;1-16&gt;</code>	Shows prefix list for particular VRF ids. The ID of the VRF and is an integer in the range of 0 to 512.
<code>vrfids WORD&lt;0-512&gt;</code>	Renames the specified prefix list. The name length is from 1 to 64 characters.
<code>WORD &lt;1-64&gt;</code>	Renames the specified prefix list. The name length is from 1 to 64 characters.

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## 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>]`

### Default

None

### Command mode

Privileged EXEC

### Command parameters

Parameter	Description
<code>&lt;ospf bgp static direct rip&gt;</code>	Specifies the type of routes to redistribute-the protocol source.
<code>interface</code>	Shows rip information for each interface.
<code>vrf WORD&lt;1-16&gt;</code>	Displays rip configuration for a particular VRF.
<code>vrfids WORD&lt;0-512&gt;</code>	Specifies a list of VRF IDs.

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## 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>`

### Default

None

### Command mode

User EXEC

### Command parameters

Parameter	Description
<code>vrf WORD&lt;1-16&gt;</code>	Specifies a VRF by name.
<code>vrfids WORD&lt;0-512&gt;</code>	Specifies a range of VRF IDs.

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## 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>

### Default

None

### Command mode

User EXEC

### Command parameters

Parameter	Description
{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.



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## 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>`

### Default

None

### Command mode

User EXEC

### Command parameters

Parameter	Description
<code>vrf</code> <code>WORD&lt;1-16&gt;</code>	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.
<code>vrfids</code> <code>WORD&lt;0-512&gt;</code>	Specifies a range of VRF IDs.



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## 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>`

### Default

None

### Command mode

User EXEC

### Command parameters

Parameter	Description
<code>vrfids WORD&lt;0-512&gt;</code>	Specifies the VRF ID.
<code>WORD&lt;1-16&gt;</code>	Specifies the VRF name.

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## show ip rip vrfids

Shows RIP information for a particular VRF by ID.

### Syntax

- `show ip rip vrfids WORD<0-512>`

### Default

None

### Command mode

User EXEC

### Command parameters

Parameter	Description
WORD<0-512>	Specifies the VRF ID.

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## 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>`

## Default

None

## Command mode

User EXEC

## Command parameters

Parameter	Description
{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.

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## 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>`

### Default

None

### Command mode

User EXEC

### Command parameters

Parameter	Description
<code>vrf WORD&lt;1-16&gt;</code>	Display the ip routing configuration information.
<code>vrfids WORD&lt;0-512&gt;</code>	Specifies a VRF instance by VRF number.

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## 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>

### Default

None

### Command mode

User EXEC

### Command parameters

Parameter	Description
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.

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# Command: show ip rsmlt edge-support

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## 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

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# Command: show ipsec interface (for a port)

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## 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]][,...]}

### Default

None

### Command mode

User EXEC

### Command parameters

Parameter	Description
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.

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# Command: show ipsec interface (for a VLAN)

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## 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>

### Default

None

### Command mode

User EXEC

### Command parameters

Parameter	Description
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.

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# Command: show ipsec interface mgmtethernet mgmt

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## 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

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## show ipsec policy

Display Internet Protocol Security (IPsec) policy information.

### Syntax

- `show ipsec policy all`
- `show ipsec policy interface WORD<1-32>`
- `show ipsec policy name WORD<1-32>`

### Default

None

### Command mode

User EXEC

### Command parameters

Parameter	Description
<code>all</code>	Displays all of the IPsec policies on the switch.
<code>interface WORD&lt;1-32&gt;</code>	Displays a specific IPsec policy based on the policy name on the interface.
<code>name WORD&lt;1-32&gt;</code>	Displays the IPsec policy based on the name of the policy.

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## show ipsec sa

Display Internet Protocol Security (IPsec) security association information.

### Syntax

- `show ipsec sa all`
- `show ipsec sa name WORD<1-32>`

### Default

None

### Command mode

User EXEC

### Command parameters

Parameter	Description
<code>all</code>	Displays all of the IPsec security association information.
<code>name WORD&lt;1-32&gt;</code>	Displays information about a specific IPsec security association.

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# Command: show ipsec sa-policy

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## 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

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# Command: show ipsec statistics gigabitethernet

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## show ipsec statistics gigabitethernet

Display statistics for Internet Protocol Security (IPsec) for an Ethernet interface.

### Syntax

- `show ipsec statistics gigabitethernet {slot/port[/sub-port][-slot/port[/sub-port]][,...]}`

### Default

None

### Command mode

User EXEC

### Command parameters

Parameter	Description
<code>gigabitethernet {slot/port[/sub-port][-slot/port[/sub-port]][,...]}</code>	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.

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# Command: show ipsec statistics mgmtethernet mgmt

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## show ipsec statistics mgmtethernet mgmt

Displays the IPsec status on a management interface. This command applies to hardware with a dedicated, physical management interface.

### Syntax

- `show ipsec statistics mgmtethernet mgmt`

### Default

None

### Command mode

User EXEC

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# Command: show ipsec statistics system

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## 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

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## show ipsec statistics vlan

Display statistics for Internet Protocol Security (IPsec) for an VLAN interface.

### Syntax

- `show ipsec statistics vlan <1-4059>`

### Default

None

### Command mode

User EXEC

### Command parameters

Parameter	Description
<code>vlan &lt;1-4059&gt;</code>	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.

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## 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 gigabitEthernet`
- `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>`

### Default

None

### Command mode

User EXEC

### Command parameters

Parameter	Description
<code>{A.B.C.D}</code>	Displays the IP Source Guard address bindings for the specified IPv4 address.
<code>interface gigabitEthernet {slot/port[/sub-port][ -slot/port[/sub-port]][,...]}</code>	Displays the IPv4 addresses that are allowed on the specified IP Source Guard port.
<code>vlan &lt;1-4059&gt;</code>	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.
<code>vrf WORD&lt;1-16&gt;</code>	Displays the IP Source Guard address bindings list for a specific vrf.
<code>vrfids WORD&lt;0-512&gt;</code>	Displays the IP Source Guard address bindings list for a specific vrf id.

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## 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`

### Default

None

### Command mode

User EXEC

### Command parameters

Parameter	Description
<code>interface gigabitethernet</code>	Displays IP Source Guard configuration on all ports on the switch, for IPv4 addresses.
<code>interface gigabitethernet</code> <code>[[slot/port[/sub-port] [-slot/port[/sub-port]] [,...]]</code>	Displays IP Source Guard configuration on the specified port(s), for IPv4 addresses.

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## 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

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## 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`

### Default

None

### Command mode

User EXEC

### Command parameters

Parameter	Description
<code>all</code>	Displays information for all the VRF IDs from the Controller and Gateway foreign source database.
<code>controller</code>	Displays information from the Controller foreign source database. Only displays information on nodes configured as Controller.
<code>gateway</code>	Displays information from the Gateway foreign source database. Only displays information on nodes configured as Gateway.
<code>group {A.B.C.D}</code>	Displays information for the specific multicast group IP address from the Controller foreign source database.
<code>msdp</code>	Displays information from the Controller foreign source database that is learned through MSDP.
<code>source {A.B.C.D}</code>	Displays information for the specific source IP address from the Controller foreign source database.
<code>spb-node-</code>	Displays the MAC address for the assigned SPB-PIM Gateway.

<code>as-mac</code>	
<code>static</code>	Displays information from the Controller foreign source database that is configured statically.
<code>vrf WORD&lt;1-16&gt;]</code>	Displays information from the Controller foreign source database for a specific VRF name.
<code>vrfids WORD&lt;0-512&gt;</code>	Displays information from the Controller foreign source database for a range of VRF IDs.

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# Command: show ip spb-pim-gw interface

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## show ip spb-pim-gw interface

Display the SPB-PIM Gateway VLAN interface information

### Syntax

- `show ip spb-pim-gw interface vlan <1-4059>`

### Default

None

### Command mode

User EXEC

### Command parameters

Parameter	Description
<code>{slot/port[/sub-port] [-slot/port[/sub-port]][,...]}</code> <code>{slot/port[/sub-port] [-slot/port[/sub-port]][,...]}</code>	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.
<code>vlan &lt;1-4059&gt;</code>	Specifies the VLAN ID of an interface to display.
<code>vrf WORD&lt;1-16&gt;</code>	Specifies the SPB-PIM Gateway interface neighbor information for a specific VRF.
<code>vrfids WORD&lt;0-512&gt;</code>	Specifies the SPB-PIM Gateway interface neighbor information for a range of VRF IDs.



# Command: show ip spb-pim-gw neighbor

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## 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>

### Default

None

### Command mode

User EXEC

### Command parameters

Parameter	Description
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.

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# Command: show ip spb-pim-gw node

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## 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`

### Default

None

### Command mode

User EXEC

### Command parameters

Parameter	Description
<code>controller</code>	Displays only the controller nodes.
<code>gateway</code>	Displays only the gateway nodes.
<code>spb-node-as-mac</code>	Displays the node list with mac address.

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## 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>

### Default

None

### Command mode

User EXEC

### Command parameters

Parameter	Description
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.

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## 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>`

### Default

None

### Command mode

User EXEC

### Command parameters

Parameter	Description
<code>group {A.B.C.D}</code>	Displays mroute information specific to a group IP address.
<code>source {A.B.C.D}</code>	Displays mroute information specific to a source IP address.
<code>vrf WORD&lt;1-16&gt;</code>	Specifies the SPB-PIM Gateway mroute information for a specific VRF.
<code>vrfids WORD&lt;0-512&gt;</code>	Specifies the SPB-PIM Gateway mroute information for a range of VRF IDs.

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## 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>`

### Default

None

### Command mode

User EXEC

### Command parameters

Parameter	Description
<code>vrf WORD&lt;1-16&gt;</code>	Specifies a VRF instance by VRF name.
<code>vrfids WORD&lt;0-512&gt;</code>	Specifies a VRF instance by VRF number.

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# Command: show ip tcp properties

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## show ip tcp properties

Displays global properties.

### Syntax

- show ip tcp properties

### Default

None

### Command mode

User EXEC

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# Command: show ip tcp statistics

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## show ip tcp statistics

View TCP statistics to manage network performance.

### Syntax

- show ip tcp statistics

### Default

None

### Command mode

User EXEC

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# Command: show ip udp endpoints

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## show ip udp endpoints

Displays ip udp endpoints information.

### Syntax

- show ip udp endpoints

### Default

None

### Command mode

User EXEC

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# Command: show ip udp statistics

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## show ip udp statistics

Display UDP statistics information.

### Syntax

- show ip udp statistics

### Default

None

### Command mode

User EXEC

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## 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 tunnel <1-2000>`
- `show ipv6 address interface vlan [ <1-4059>]`

### Default

None

### Command mode

User EXEC

### Command parameters

Parameter	Description
<code>{slot/port[/sub-port]][-slot/port[/sub-port]][, ...]}</code>	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.
<code>&lt;1-4059&gt;</code>	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.
<code>tunnel &lt;1-2000&gt;</code> <code>WORD&lt;0-46&gt;</code>	Displays the address entries specific to a tunnel ID. Specifies an IPv6 address.

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## 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>`

### Default

None

### Command mode

User EXEC

### Command parameters

Parameter	Description
<code>gigabitethernet {slot/port[sub-port]}</code>	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.
<code>mgmtethernet mgmt</code>	Identifies the management port.
<code>tunnel &lt;1-2000&gt;</code>	Specifies the tunnel ID.
<code>vlan &lt;1-4059&gt;</code>	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.



# Command: show ipv6 default-routers

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## show ipv6 default-routers

Display default routers learned from router advertisement messages.

### Syntax

- `show ipv6 default-routers`

### Default

None

### Command mode

User EXEC

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## 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 fwd-path`
- `show ipv6 dhcp-relay interface [gigabitethernet {slot/port[/sub-port] [-slot/port[/sub-port]] [,...]}] [vlan <1-4059>]`

### Default

None

### Command mode

User EXEC

### Command parameters

Parameter	Description
<code>counters</code>	Displays the count of DHCP Relay requests and replies.
<code>fwd-path</code>	Displays information about DHCP Relay forward paths.
<code>gigabitethernet {slot/port[/sub-port] [-slot/port[/sub-port]] [,...]}</code>	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.
<code>vlan &lt;1-4059&gt;</code>	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.



# Command: show ipv6 fhs dhcp-guard policy

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## 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>`

### Default

None

### Command mode

User EXEC

### Command parameters

Parameter	Description
WORD<1-64>	Specifies the policy name.

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# Command: show ipv6 fhs ipv6-access-list

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## 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>`

### Default

None

### Command mode

User EXEC

### Command parameters

Parameter	Description
WORD<1-64>	Specifies the access list name.

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# Command: show ipv6 fhs mac-access-list

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## 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>`

### Default

None

### Command mode

User EXEC

### Command parameters

Parameter	Description
WORD<1-64>	Specifies the MAC access list name.

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## 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]][,...]}`

### Default

None

### Command mode

User EXEC

### Command parameters

Parameter	Description
<code>{slot/port[/sub-port][-slot/port[/sub-port]][,...]}</code>	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.

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# Command: show ipv6 fhs ra-guard policy

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## 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>`

### Default

None

### Command mode

User EXEC

### Command parameters

Parameter	Description
WORD<1-64>	Specifies the policy name.

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## 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>`

### Default

None

### Command mode

User EXEC

### Command parameters

Parameter	Description
<code>ipv6-address</code> <code>WORD&lt;0-46&gt;</code>	Displays a specific binding entry based on its IPv6 address.
<code>type</code> <code>&lt;dynamic static&gt;</code>	Displays binding entries by type.
<code>vlan &lt;1-4059&gt;</code>	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.

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## 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[/subport]][,...]}`
- `show ipv6 fhs statistics ra-guard`
- `show ipv6 fhs statistics ra-guard {slot/port[/sub-port][-slot/port[/sub-port]][,...]}`

### Default

None

### Command mode

Privileged EXEC

### Command parameters

Parameter	Description
<code>{slot/port[/sub-port][-slot/port[/subport]][,...]}</code>	Displays the statistics on either a single port or a set of ports. <code>{slot/port[/sub-port][-slot/port[/subport]][,...]}</code> 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.
<code>all</code>	Displays all IPv6 FHS statistics.
<code>dhcp-guard</code>	Displays DHCP-Guard statistics.
<code>nd-inspection</code>	Displays Neighbor Discovery Inspection statistics.
<code>ra-guard</code>	Displays RA-Guard statistics.

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## 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>`

### Default

None

### Command mode

User EXEC

### Command parameters

Parameter	Description
<code>vlan &lt;1-4059&gt;</code>	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.



# Command: show ipv6 forwarding

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## show ipv6 forwarding

Show IPv6 forwarding information.

### Syntax

- `show ipv6 forwarding`

### Default

The default is disabled.

### Command mode

User EXEC

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# Command: show ipv6 global

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## show ipv6 global

Show global IPv6 configuration information.

### Syntax

- `show ipv6 global`

### Default

None

### Command mode

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## 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 [ vlan <1-4059>]`
- `show ipv6 interface icmpstatistics gigabitEthernet [{slot/port[/sub-port]}[-slot/port[/sub-port]][,...]]`
- `show ipv6 interface icmpstatistics mgmtEthernet`
- `show ipv6 interface icmpstatistics mgmtEthernet mgmt`
- `show ipv6 interface icmpstatistics tunnel <1-2000>`
- `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 mgmtEthernet`
- `show ipv6 interface statistics mgmtEthernet mgmt`
- `show ipv6 interface statistics tunnel <1-2000>`
- `show ipv6 interface statistics vlan <1-4059>`
- `show ipv6 interface tunnel <1-2000>`
- `show ipv6 interface vlan [<1-4059>]`

### Default

None

### Command mode

User EXEC

### Command parameters

Parameter	Description
	Displays IPv6 interface information for gigabitEthernet. {slot/port[/sub-port]}[-

<pre> gigabitEthernet {slot/port[/sub- port][- slot/port[/sub- port]][,...]} </pre>	<p>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.</p>
<pre> icmpstatistics [gigabitEthernet   mgmtEthernet   tunnel   vlan] </pre>	<p>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.</p>
<pre> loopback &lt;1-256&gt; </pre>	<p>Displays the interface loopback configurations.</p>
<pre> mgmtEthernet mgmt </pre>	<p>Displays IPv6 interface information for the management port.</p>
<pre> statistics [gigabitEthernet   mgmtEthernet   tunnel   vlan] </pre>	<p>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</p>
<pre> tunnel &lt;1-2000&gt; </pre>	<p>Displays IPv6 interface information for a tunnel. The tunnel ID is expressed as a value from 1 to 2000.</p>
<pre> vlan &lt;1-4059&gt; </pre>	<p>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.</p>



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## show ipv6 interface loopback

Display the ipv6 loopback interface details.

### Syntax

- `show ipv6 interface loopback <1-256>`

### Default

None

### Command mode

User EXEC

### Command parameters

Parameter	Description
<1-256>	Specifies the interface ID value.

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# Command: show ipv6 isis redistribute

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## show ipv6 isis redistribute

Display the rules for redistribution of routes into ISIS for GRT.

### Syntax

- `show ipv6 isis redistribute`

### Default

The default is disabled.

### Command mode

Privileged EXEC

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# Command: show ipv6 mld cache

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## show ipv6 mld cache

Displays the learned multicast groups in the cache

### Syntax

- `show ipv6 mld cache`

### Default

None

### Command mode

User EXEC

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# Command: show ipv6 mld group

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## show ipv6 mld group

Displays MLD group information

### Syntax

- `show ipv6 mld group`

### Default

None

### Command mode

User EXEC

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# Command: show ipv6 mld group count

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## show ipv6 mld group count

Displays the number of MLD entries

### Syntax

- `show ipv6 mld group count`

### Default

None

### Command mode

User EXEC

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## show ipv6 mld group group

Displays the MLD group IPv6 address

### Syntax

- show ipv6 mld group group WORD<0-255>

### Default

None

### Command mode

User EXEC

### Command parameters

Parameter	Description
{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.



# Command: show ipv6 mld group group WORD<0-255> detail

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## 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

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# Command: show ipv6 mld group member-subnet

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## show ipv6 mld group member-subnet

Displays the MLD IPv6 address and network mask

### Syntax

- `show ipv6 mld group member-subnet WORD<0-255>`

### Default

None

### Command mode

User EXEC

### Command parameters

Parameter	Description
WORD<0-255>	Specifies the IPv6 address or the network mask.

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# Command: show ipv6 mld-host-cache

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## 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

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## 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>`

### Default

None

### Command mode

User EXEC

### Command parameters

Parameter	Description
<code>gigabitEthernet {slot/port[/sub-port][-slot/port[/sub-port]][,...]}</code>	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.
<code>vlan &lt;1-4059&gt;</code>	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

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## 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>`

### Default

None

### Command mode

User EXEC

### Command parameters

Parameter	Description
<code>count</code>	Displays number of MLD entries.
<code>group WORD&lt;0-255&gt;</code>	Displays the MLD IPv6 group address.
<code>sender-subnet WORD&lt;0-255&gt;</code>	Displays the MLD IPv6 address and network mask.



# Command: show ipv6 mld snooping

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## show ipv6 mld snooping

Displays MLD snooping information

### Syntax

- `show ipv6 mld snooping`

### Default

None

### Command mode

User EXEC

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# Command: show ipv6 mld snoop-trace

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## show ipv6 mld snoop-trace

Displays MLD snooping tracing information

### Syntax

- `show ipv6 mld snoop-trace`

### Default

None

### Command mode

User EXEC

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# Command: show ipv6 mld sys

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## show ipv6 mld sys

Displays MLD system parameters

### Syntax

- `show ipv6 mld sys`

### Default

None

### Command mode

User EXEC

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## 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]][,...]}`

### Default

None

### Command mode

User EXEC

### Command parameters

Parameter	Description
<code>gigabitEthernet {slot/port[/sub-port][-slot/port[/sub-port]][,...]}</code>	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.

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## 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>`

### Default

None

### Command mode

User EXEC

### Command parameters

Parameter	Description
<code>vlan &lt;1-4059&gt;</code>	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.





# Command: show ipv6 mroute route

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## show ipv6 mroute route

Displays the IPv6 mroute route information

### Syntax

- show ipv6 mroute route

### Default

None

### Command mode

User EXEC

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## show ipv6 mroute stats

Display IPv6 multicast route statistics.

### Syntax

- show ipv6 mroute stats
- show ipv6 mroute stats [WORD<7-400> ]

### Default

None

### Command mode

User EXEC

### Command parameters

Parameter	Description
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 ( , ).

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## 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>]`

### Default

None

### Command mode

User EXEC

### Command parameters

Parameter	Description
<code>gigabitEthernet {slot/port[/sub-port]}[-slot/port[/sub-port]][, ...]</code>	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.
<code>mgmtEthernet mgmt</code>	Displays the neighbor discovery management interface configuration.
<code>vlan &lt;1-4059&gt;</code>	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.

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## show ipv6 nd-prefix

View all configured neighbor discovery prefixes.

### Syntax

- `show ipv6 nd-prefix [detail]`
- `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>]`

### Default

None

### Command mode

User EXEC

### Command parameters

Parameter	Description
<code>detail</code>	Shows detailed information.
<code>gigabitEthernet {slot/port[/sub-port]][-slot/port[/sub-port]][,...]</code>	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.
<code>vlan &lt;1-4059&gt;</code>	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.

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## 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 vlan <1-4059>`
- `show ipv6 neighbor type <1-4>`
- `show ipv6 neighbor WORD<0-46>`

### Default

None

### Command mode

User EXEC

### Command parameters

Parameter	Description
<code>{slot/port[sub-port]}</code>	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.
<code>&lt;1-512&gt;</code>	Specifies the MLT ID.
<code>mgmtEthernet</code> <code>[mgmt]</code>	Displays neighbor entries for a management port.
<code>type &lt;1-4&gt;</code>	Specifies the type of mapping: 1: other, 2: dynamic, 3: static, or 4: local.
<code>vlan &lt;1-4059&gt;</code>	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.
<code>WORD&lt;0-46&gt;</code>	Specifies the neighbor address.



# Command: show ipv6 ospf

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## show ipv6 ospf

Show the IPv6 OSPFv3 global configuration.

### Syntax

- `show ipv6 ospf`

### Default

None

### Command mode

User EXEC

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# Command: show ipv6 ospf area

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## show ipv6 ospf area

Show the IPv6 OSPFv3 area configuration.

### Syntax

- show ipv6 ospf area

### Default

None

### Command mode

User EXEC

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# Command: show ipv6 ospf area-range

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## show ipv6 ospf area-range

Show the IPv6 OSPFv3 range configuration.

### Syntax

- `show ipv6 ospf area-range`

### Default

None

### Command mode

User EXEC

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## show ipv6 ospf ase

Show the IPv6 OSPFv3 as-external LSAs.

### Syntax

- `show ipv6 ospf ase [metric-type <1-2>]`

### Default

None

### Command mode

User EXEC

### Command parameters

Parameter	Description
<code>metric-type &lt;1-2&gt;</code>	Specifies the external type.

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## show ipv6 ospf interface

Show the IPv6 OSPFv3 interface configuration.

### Syntax

- `show ipv6 ospf interface [gigabitEthernet {slot/port[sub-port]}] [vlan <1-4059>]`

### Default

None

### Command mode

User EXEC

### Command parameters

Parameter	Description
<code>{slot/port[sub-port]}</code>	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.
<code>vlan &lt;1-4059&gt;</code>	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.



# Command: show ipv6 ospf int-timers

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## show ipv6 ospf int-timers

Show the IPv6 OSPFv3 interface timers.

### Syntax

- `show ipv6 ospf int-timers`

### Default

None

### Command mode

User EXEC

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## show ipv6 ospf lsdb

Show the IPv6 OSPFv3 Link-state database configuration.

### Syntax

- `show ipv6 ospf lsdb`
- `show ipv6 ospf lsdb adv-rtr {A.B.C.D}`
- `show ipv6 ospf lsdb area {A.B.C.D}`
- `show ipv6 ospf lsdb detail`
- `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>`

### Default

None

### Command mode

User EXEC

### Command parameters

Parameter	Description
<code>adv-rtr {A.B.C.D}</code>	Specifies the advertise router configurations.
<code>area {A.B.C.D}</code>	Specifies the ipv6 lsdb area configurations.
<code>gigabitEthernet {slot/port[sub-port]}</code>	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.
<code>interface</code>	Specifies the ipv6 ospf lsdb interface configurations.
<code>lsa-type &lt;1-11&gt;</code>	Specifies the ipv6 ospf lsdb lsa-type.
<code>lsid &lt;0-4294967295&gt;</code>	Specifies the ospf lsdb configuration for specific lsid.
<code>scope &lt;1-3&gt;</code>	Specifies the ipv6 ospf lsdb scope.
<code>tunnel &lt;1-2000&gt;</code>	Specifies the ipv6 ospf lsdb tunnel parameters.
<code>vlan &lt;1-4059&gt;</code>	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.

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# Command: show ipv6 ospf nbma-nbr interface

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## 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>]`

### Default

None

### Command mode

User EXEC

### Command parameters

Parameter	Description
<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.

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# Command: show ipv6 ospf neighbor

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## show ipv6 ospf neighbor

Show the IPv6 OSPFv3 neighbor configuration.

### Syntax

- `show ipv6 ospf neighbor`

### Default

None

### Command mode

User EXEC

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# Command: show ipv6 ospf redistribute

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## show ipv6 ospf redistribute

Show the IPv6 OSPFv3 redistribution configuration.

### Syntax

- `show ipv6 ospf redistribute`

### Default

None

### Command mode

User EXEC

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# Command: show ipv6 ospf statistics

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## show ipv6 ospf statistics

Show the IPv6 OSPFv3 statistics.

### Syntax

- `show ipv6 ospf statistics`

### Default

None

### Command mode

User EXEC

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# Command: show ipv6 pim

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## show ipv6 pim

Displays PIM IPv6 configurations.

### Syntax

- `show ipv6 pim`

### Default

None

### Command mode

User EXEC

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# Command: show ipv6 pim active-rp

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## 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

### Default

None

### Command mode

User EXEC

### Command parameters

Parameter	Description
group	Specifies the IPv6 group address.

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## 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>`

### Default

None

### Command mode

User EXEC

### Command parameters

Parameter	Description
<code>gigabitEthernet {slot/port[/sub-port][-slot/port[/sub-port]][,...]}</code>	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.
<code>vlan &lt;1-4059&gt;</code>	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.



# Command: show ipv6 pim mode

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## show ipv6 pim mode

Displays the IPv6 PIM mode.

### Syntax

- `show ipv6 pim mode`

### Default

None

### Command mode

User EXEC

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# Command: show ipv6 pim mroute

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## show ipv6 pim mroute

Displays the IPv6 mroute information

### Syntax

- show ipv6 pim mroute
- show ipv6 pim mroute source WORD<0-255>

### Default

None

### Command mode

User EXEC

### Command parameters

Parameter	Description
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.

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## 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>`

### Default

None

### Command mode

User EXEC

### Command parameters

Parameter	Description
WORD<0-255>	Specifies the IPv6 address.

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# Command: show ipv6 pim rp-hash

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## 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

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# Command: show ipv6 pim static-rp

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## show ipv6 pim static-rp

Displays the IPv6 static RP table

### Syntax

- `show ipv6 pim static-rp`

### Default

None

### Command mode

User EXEC

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## show ipv6 prefix-list

Show IPv6 prefix-list information.

### Syntax

- `show ipv6 prefix-list`
- `show ipv6 prefix-list prefix WORD<1-256>`
- `show ipv6 prefix-list WORD<1-64>`

### Default

None

### Command mode

User EXEC

### Command parameters

Parameter	Description
<code>prefix WORD&lt;1-256&gt;</code>	Specifies the prefix.
<code>WORD&lt;1-64&gt;</code>	Specifies the prefix-list name.

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# Command: show ipv6 rip

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## show ipv6 rip

Displays RIPng parameters per interface.

### Syntax

- `show ipv6 rip`

### Default

None

### Command mode

RIP Router Configuration

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## 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>`

### Default

None

### Command mode

RIP Router Configuration

### Command parameters

Parameter	Description
<code>gigabitEthernet {slot/port[sub-port]}</code>	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.
<code>vlan &lt;1-4059&gt;</code>	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.



# Command: show ipv6 rip statistics

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## show ipv6 rip statistics

Displays RIPng statistics.

### Syntax

- `show ipv6 rip statistics`

### Default

None

### Command mode

RIP Router Configuration

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## show ipv6 route

Display the b-mac address as next hop rather than host name.

### Syntax

- `show ipv6 route`
- `show ipv6 route dest WORD<0-46>`
- `show ipv6 route gigabitethernet {slot/port[sub-port]}`
- `show ipv6 route next-hop WORD<0-46>`
- `show ipv6 route protocol bgp`
- `show ipv6 route protocol isis`
- `show ipv6 route protocol local`
- `show ipv6 route protocol ospf`
- `show ipv6 route protocol rip`
- `show ipv6 route protocol static`
- `show ipv6 route spbm-nh-as-mac`
- `show ipv6 route static`
- `show ipv6 route tunnel <1-2000>`
- `show ipv6 route vlan <1-4059>`

### Default

None

### Command mode

User EXEC

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## show ipv6 route alternative

Display IPv6 alternative routes.

### Syntax

- `show ipv6 route alternative protocol bgp`
- `show ipv6 route alternative protocol isis`
- `show ipv6 route alternative protocol local`
- `show ipv6 route alternative protocol rip`
- `show ipv6 route alternative protocol static`
- `show ipv6 route alternative spbm-nh-as-mac`

### Default

None

### Command mode

Global Configuration

### Command parameters

Parameter	Description
<code>protocol {bgp   isis   local   ospf   rip   static}</code>	Displays routes for a particular protocol
<code>spbm-nh-as-mac</code>	Shows spbm route next hop as mac.



# Command: show ipv6 route preference

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## show ipv6 route preference

Display the IPv6 route preference information to confirm that the configuration is correct.

### Syntax

- `show ipv6 route preference`

### Default

None

### Command mode

User EXEC

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# Command: show ipv6 source-guard

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## 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

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## 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>`

### Default

None

### Command mode

User EXEC

### Command parameters

Parameter	Description
<code>interface gigabitethernet</code> <code>[{slot/port[/sub-port] [-slot/port[/sub-port]] [,...]]</code>	Displays the IPv6 addresses that are allowed on the specified IP Source Guard port.
<code>WORD&lt;0-46&gt;</code>	Specifies the IPv6 address bindings for the specified IPv6 address.

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## 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 listener
- show ipv6 tcp properties
- show ipv6 tcp statistics

### Default

None

### Command mode

User EXEC

### Command parameters

Parameter	Description
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.

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## show ipv6 trace

Show the status of IPv6 trace commands.

### Syntax

- show ipv6 trace base
- show ipv6 trace forwarding
- show ipv6 trace nd
- show ipv6 trace ospf
- show ipv6 trace rip
- show ipv6 trace rtm
- show ipv6 trace transport

### Default

None

### Command mode

User EXEC

### Command parameters

Parameter	Description
[base forwarding nd ospf rip rtm transport]	Shows the status for the selected type of trace command.

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## 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}`

### Default

None

### Command mode

User EXEC

### Command parameters

Parameter	Description
<code>&lt;1-2000&gt;</code>	Shows configuration information for a specific tunnel ID.
<code>detail</code>	Shows detailed configuration information, for example, the operational status and origin.
<code>local {A.B.C.D}</code>	Shows configuration information for a specific local endpoint address.
<code>remote {A.B.C.D}</code>	Shows configuration information for a specific remote endpoint address.

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## show ipv6 udp

Show IPv6 User Datagram Protocol (UDP) information.

### Syntax

- `show ipv6 udp`
- `show ipv6 udp endpoints`
- `show ipv6 udp local_addr WORD<0-128> [{slot/port[sub-port]}]`
- `show ipv6 udp remote_addr WORD<0-128> [{slot/port[sub-port]}]`

### Default

None

### Command mode

User EXEC

### Command parameters

Parameter	Description
<code>endpoints</code>	Shows IPv6 UDP information for the endpoints.
<code>local_addr</code> <code>WORD&lt;0-128&gt;</code> <code>{slot/port[sub-port]}</code>	Shows IPv6 UDP information for a local IPv6 address or slot and port. <code>{slot/port[sub-port]}</code> 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 <code>slot/port/sub-port</code> .
<code>remote_addr</code> <code>WORD&lt;0-128&gt;</code> <code>{slot/port[sub-port]}</code>	Shows IPv6 UDP information for a remote IPv6 address or slot and port. <code>{slot/port[sub-port]}</code> 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 <code>slot/port/sub-port</code> .



# Command: show ipv6 vrrp

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## show ipv6 vrrp

Shows the global status of Virtual Router Redundancy Protocol (VRRP) for IPv6.

### Syntax

- `show ipv6 vrrp`

### Default

None

### Command mode

User EXEC

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## 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 vrid <1-255>`

### Default

None

### Command mode

User EXEC

### Command parameters

Parameter	Description
<code>link-local WORD&lt;0-127&gt;</code>	Displays information by link-local IPv6 address.
<code>vrid &lt;1-255&gt;</code>	Displays information by virtual router ID.

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## 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 vlan [<1-4059>] [verbose]`
- `show ipv6 vrrp interface vrid <1-255> [verbose]`

### Default

None

### Command mode

User EXEC

### Command parameters

Parameter	Description
{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.



# Command: show ipv6 vrrp interface gigabitethernet statistics

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## 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]`

### Default

None

### Command mode

User EXEC

### Command parameters

Parameter	Description
<code>statistics</code> <code>{slot/port[/sub-port]][-slot/port[/sub-port]][, ...]}</code>	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.
<code>verbose</code>	Displays extended information.

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## show ipv6 vrrp statistics

Views VRRP for IPv6 statistics to manage network performance.

### Syntax

- `show ipv6 vrrp statistics link-local [WORD<0-127>]`
- `show ipv6 vrrp statistics vrid <1-255>`

### Default

None

### Command mode

User EXEC

### Command parameters

Parameter	Description
<1-255>	Displays information by virtual router ID.
WORD<0-127>	Displays information by link-local IPv6 address.

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## show ip vrf

View VRF configuration by VRF name.

### Syntax

- `show ip vrf`
- `show ip vrf max-routes`
- `show ip vrf max-routes [WORD <1-16>] [vrfids WORD <0-512>]`
- `show ip vrf vrf WORD <1-16>`
- `show ip vrfids WORD <0-512>`

### Default

None

### Command mode

User EXEC

### Command parameters

Parameter	Description
<code>max-routes</code>	Displays max routes for vrf.
<code>mvpn</code>	Displays mvpn information for vrf.
<code>vrfids WORD&lt;0-512&gt;</code>	Displays configuration information for a VRF ID.
<code>WORD&lt;1-16&gt;</code>	Specifies a VRF instance by VRF name.

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# Command: show ip vrf mvpn

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## show ip vrf mvpn

Displays information about all VRFS with MVPN enabled.

### Syntax

- `show ip vrf mvpn`

### Default

None

### Command mode

User EXEC

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# Command: show ip vrrp

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## 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

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## 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>

### Default

None

### Command mode

User EXEC

### Command parameters

Parameter	Description
[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.

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## 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>

### Default

None

### Command mode

User EXEC

### Command parameters

Parameter	Description
[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.







# Command: show ip vrrp interface gigabitEthernet

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## 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

### Default

None

### Command mode

User EXEC

### Command parameters

Parameter	Description
{slot/port[/sub-port][ <b>-</b> 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.



# Command: show ip vrrp interface gigabitEthernet statistics

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## 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`

### Default

None

### Command mode

User EXEC

### Command parameters

Parameter	Description
<code>{slot/port[/sub-port][ -slot/port[/sub-port]][,...]}</code>	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.
<code>verbose</code>	Displays all available information about the VRRP interface gigabitEthernet configurations.

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## 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

### Default

None

### Command mode

User EXEC

### Command parameters

Parameter	Description
{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.

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## 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>`

### Default

None

### Command mode

User EXEC

### Command parameters

Parameter	Description
<code>[version &lt;2 3&gt;</code>	Displays the VRRP version configured.
<code>address {A.B.C.D}</code>	Specifies the address of the backup VRRP.
<code>vrf WORD&lt;1-16&gt;</code>	Specifies the VRF name.
<code>vrfids WORD&lt;0-512&gt;</code>	Specifies the ID of the VRF and is an integer in the range of 0 to 512.
<code>vrid WORD&lt;1-255&gt;</code>	Specifies a unique integer 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.

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## 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`

### Default

None

### Command mode

User EXEC

### Command parameters

Parameter	Description
<code>&lt;1-16777215&gt;</code>	Specifies a service instance identifier (I-SID).
<code>elan</code>	Specifies the elan (Switched UNI) based service instance identifiers (I-SID).
<code>elan-transparent</code>	Specifies the elan-transparent (Transparent UNI) based service instance identifiers (I-SID).



# Command: show i-sid limit-fdb-learning

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## show i-sid limit-fdb-learning

Displays the maximum MAC learning limit configured for an ISID.

### Syntax

- `show i-sid limit-fdb-learning`

### Default

None

### Command mode

User EXEC

### Command parameters

Parameter	Description
<code>limit-fdb-learning</code>	Shows the ISID based max MAC limit information.

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## 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`

### Default

None

### Command mode

User EXEC

### Command parameters

Parameter	Description
<code>{slot/port[/sub-port]][-slot/port[/sub-port]][,...]}</code>	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.
<code>&lt;0x00:0x00:0x00:0x00:0x00:0x00&gt;</code>	Specifies a MAC id.
<code>&lt;1-16777215&gt;</code>	Specifies a service instance identifier (I-SID).





# Command: show isis

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## show isis

Display the global Intermediate-System-to-Intermediate-System (IS-IS) configuration.

### Syntax

- `show isis`

### Default

None

### Command mode

User EXEC

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# Command: show isis adjacencies

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## show isis adjacencies

Display Intermediate-System-to-Intermediate-System (IS-IS) adjacencies.

### Syntax

- `show isis adjacencies`

### Default

None

### Command mode

User EXEC

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# Command: show isis area

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## show isis area

Display the Intermediate-System-to-Intermediate-System (IS-IS) area address.

### Syntax

- `show isis area`

### Default

None

### Command mode

User EXEC

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# Command: show isis dup-detection-temp-disable

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## 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`

### Default

None

### Command mode

User EXEC

### Command parameters

Parameter	Description
remaining-time	Displays IS-IS duplicate detection temp disable remaining time.

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# Command: show isis int-auth

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## 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

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# Command: show isis int-ckt-level

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## 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

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# Command: show isis int-counters

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## 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

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## 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`

### Default

None

### Command mode

User EXEC

### Command parameters

Parameter	Description
<pre>{ l1   l2   l12 }</pre>	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.





# Command: show isis int-l1-cntl-pkts

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## 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

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# Command: show isis int-l2-cntl-pkts

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## 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

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# Command: show isis int-timers

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## 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

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## show isis logical-interface

Display IS-IS logical interfaces.

### Syntax

- `show isis logical-interface`
- `show isis logical-interface [name]`

### Default

None

### Command mode

User EXEC

### Command parameters

Parameter	Description
name	Displays ISIS logical interface name.

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## 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 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>`

### Default

None

### Command mode

User EXEC

### Command parameters

Parameter	Description
<code>detail</code>	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.
<code>ip-unicast</code>	Displays the link state database for the ip-unicast.
<code>i-sid &lt;0-16777215&gt;</code>	Specifies the i-sid value to filter by.
<code>level { l1   l2   l12 }</code>	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		Displays the link state database for the specified Link State Packet (LSP) ID. The LSP ID is assigned to external IS-IS routing devices.
xxxx.xxxx.xxxx.xx- xx - 8 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.
sub-tlv <1-3>		
sysid		Displays the link state database for the specified system ID.
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.
sysid		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.
xxxx.xxxx.xxxx - 6 bytes		
tlv <1-236>		



# Command: show isis manual-area

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## show isis manual-area

Display Intermediate-System-to-Intermediate-System (IS-IS) areas.

### Syntax

- `show isis manual-area`

### Default

None

### Command mode

User EXEC

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# Command: show isis net

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## show isis net

Display Intermediate-System-to-Intermediate-System (IS-IS) net information.

### Syntax

- `show isis net`

### Default

None

### Command mode

User EXEC

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# Command: show isis spbm

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## show isis spbm

Display isis spbm related info.

### Syntax

- `show isis spbm`

### Default

None

### Command mode

User EXEC

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# Command: show isis spb-mcast summary

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## 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`

### Default

None

### Command mode

User EXEC

### Command parameters

Parameter	Description
<code>host-name WORD&lt;0-255&gt;</code>	Specifies the host name of the source.
<code>lspid xxxx.xxxx.xxxx.xx-xx</code>	Specifies the LSP ID in xxx.xxx.xxx.xx-xx — 8 byte format.

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# Command: show isis spbm ip-multicast-fib

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## 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

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## 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

### Default

None

### Command mode

User EXEC

### Command parameters

Parameter	Description
all	Displays all route information.
detail	Displays detailed route information. Shows only for L3 context when vlan/vsn-isis options are not used.
group {A.B.C.D}	Displays the group IP address. Shows only for L3 context when vlan/vsn-isis 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-isis	Displays the ip-multicast-route by vsn-isis.

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## 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`

### Default

None

### Command mode

User EXEC

### Command parameters

Parameter	Description
<code>{A.B.C.D}</code>	Displays route information by multicast group address.
<code>detail</code>	Displays detailed route information.
<code>source {A.B.C.D}</code>	Displays information for the source IP address.
<code>source-beb WORD&lt;0-255&gt;</code>	Displays information for a specific backbone edge bridge.

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## 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`

### Default

None

### Command mode

User EXEC

### Command parameters

Parameter	Description
<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-	Displays information for a specific backbone edge bridge.
255>	

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## 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`

### Default

None

### Command mode

User EXEC

### Command parameters

Parameter	Description
<code>detail</code>	Displays detailed route information.
<code>group {A.B.C.D}</code>	Displays route information by multicast group address.
<code>source {A.B.C.D}</code>	Displays information for the source IP address.
<code>source-beb WORD&lt;0-255&gt;</code>	Displays information for a specific backbone edge bridge.
<code>WORD&lt;1-16&gt;</code>	Specifies the VRF name.



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## show isis spbm ip-multicast-route vsn-isis

Displays IP multicast route information by VSN I-SID.

### Syntax

- `show isis spbm ip-multicast-route vsn-isis <1-16777215>`
- `show isis spbm ip-multicast-route vsn-isis <1-16777215> detail`
- `show isis spbm ip-multicast-route vsn-isis <1-16777215> group {A.B.C.D}`
- `show isis spbm ip-multicast-route vsn-isis <1-16777215> group {A.B.C.D} detail`
- `show isis spbm ip-multicast-route vsn-isis <1-16777215> group {A.B.C.D} source {A.B.C.D}`
- `show isis spbm ip-multicast-route vsn-isis <1-16777215> group {A.B.C.D} source {A.B.C.D} detail`
- `show isis spbm ip-multicast-route vsn-isis <1-16777215> group {A.B.C.D} source {A.B.C.D} source-beb WORD<1-255>`
- `show isis spbm ip-multicast-route vsn-isis <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-isis <1-16777215>`
- `show isis spbm ip-multicast-route vsn-isis <1-16777215> detail`
- `show isis spbm ip-multicast-route vsn-isis <1-16777215> group {A.B.C.D}`
- `show isis spbm ip-multicast-route vsn-isis <1-16777215> group {A.B.C.D} detail`
- `show isis spbm ip-multicast-route vsn-isis <1-16777215> group {A.B.C.D} source {A.B.C.D}`
- `show isis spbm ip-multicast-route vsn-isis <1-16777215> group {A.B.C.D} source {A.B.C.D} detail`
- `show isis spbm ip-multicast-route vsn-isis <1-16777215> group {A.B.C.D} source {A.B.C.D} source-beb WORD<1-255>`
- `show isis spbm ip-multicast-route vsn-isis <1-16777215> group {A.B.C.D} source {A.B.C.D} source-beb WORD<1-255> detail`

### Default

None

### Command mode

User EXEC

### Command parameters

Parameter	Description
<code>&lt;1-16777215&gt;</code>	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.

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## 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`

### Default

None

### Command mode

User EXEC

### Command parameters

Parameter	Description
<code>all</code>	Displays the IP unicast Forwarding Information Base (FIB) entries for all VRFs.
<code>id &lt;1-16777215&gt;</code>	Displays the IP unicast Forwarding Information Base (FIB) for the given service instance identifier (I-SID) value.
<code>spbm-nh-as-mac</code>	Displays the next hop Backbone MAC entry in the IP unicast Forwarding Information Base (FIB).

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# Command: show isis spbm ipv6-unicast-fib

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## show isis spbm ipv6-unicast-fib

Display 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 ip-unicast-fib spbm-nh-as-mac`
- `show isis spbm ipv6-unicast-fib`

### Default

None

### Command mode

User EXEC

### Command parameters

Parameter	Description
spbm-nh-as-mac	Displays the next hop Backbone MAC entry in the IPv6 unicast Forwarding Information Base (FIB).

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## 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>`

### Default

None

### Command mode

User EXEC

### Command parameters

Parameter	Description
<code>id &lt;1-16777215&gt;</code>	Displays service instance identifier (I-SID) information for the specified I-SID.
<code>nick-name x.xx.xx - 2.5 bytes</code>	Displays service instance identifier (I-SID) information for the specified nickname.
<code>vlan &lt;2-4059&gt;</code>	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.



# Command: show isis spbm multicast

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## show isis spbm multicast

Displays the status of the global SPBM multicast configuration.

### Syntax

- `show isis spbm multicast`

### Default

None

### Command mode

User EXEC

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## 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>`

### Default

None

### Command mode

User EXEC

### Command parameters

Parameter	Description
<code>i-sid &lt;1-16777215&gt;</code>	Displays the FIB for the specified I-SID.
<code>summary</code>	Displays a summary of the FIB.
<code>vlan &lt;2-4059&gt;</code>	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.



# Command: show isis spbm nick-name

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## 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

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## 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>`

### Default

None

### Command mode

User EXEC

### Command parameters

Parameter	Description
<code>b-mac</code> <code>0x00:0x00:0x00:0x00:0x00:0x00</code>	Displays the Forwarding Information Base (FIB) entry for the specified Backbone MAC (BMAC).
<code>summary</code>	Displays a summary of the Forwarding Information Base (FIB).
<code>vlan &lt;2-4059&gt;</code>	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.



# Command: show isis spbm unicast-tree

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## 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`

### Default

None

### Command mode

User EXEC

### Command parameters

Parameter	Description
<code>&lt;2-4059&gt;</code>	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.
<code>destination xxxx.xxxx.xxxx - 6 bytes</code>	Displays the unicast tree for the specified destination.



# Command: show isis statistics

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## show isis statistics

Display Intermediate-System-to-Intermediate-System (IS-IS) statistics.

### Syntax

- `show isis statistics`

### Default

None

### Command mode

User EXEC

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# Command: show isis system-id

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## 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

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## 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]] [, ... ]}`

### Default

None

### Command mode

User EXEC

### Command parameters

Parameter	Description
<code>{slot/port[/sub-port] [-slot/port[/sub-port]] [, ... ]}</code>	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.
<code>port-statistics</code>	Displays port statistics.



# Command: show khi fe-ona detail

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## 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

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# Command: show khi fe-ona status

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## 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

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## 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][,...]}`

### Default

None

### Command mode

User EXEC

### Command parameters

Parameter	Description
<code>buffer-pool {slot [-slot] [,...]}</code>	Shows buffer performance and utilization statistics. {slot [-slot] [,...]} specifies the slot number.
<code>cpu {slot [-slot] [,...]}</code>	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.
<code>memory {slot [-slot] [,...]}</code>	Shows memory performance and utilization statistics. {slot [-slot][,...]} specifies the slot number.
<code>process {slot [-slot] [,...]}</code>	Shows process performance and utilization statistics. {slot [-slot][,...]} specifies the slot number.
<code>pthread {slot [-slot] [,...]}</code>	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.

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## 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>`

### Default

None

## Command mode

User EXEC

## Command parameters

Parameter	Description
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 administrative 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.

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## 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>`

### Default

None

### Command mode

User EXEC

### Command parameters

Parameter	Description
<code>gigabitethernet {slot/port[/sub-port][-slot/port[/sub-port]][, ...]}</code>	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.
<code>mlt &lt;64-6399&gt;</code>	Shows the MLT LACP information for all MLTs or the specific MLT index.
<code>mlt id &lt;1-512&gt;</code>	Specifies the MLT ID.
<code>vid &lt;1-4059&gt;</code>	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.



# Command: show license

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## show license

Display the existing software licenses on the platform.

### Syntax

- `show license`

### Default

None

### Command mode

User EXEC

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# Command: show link-flap-detect

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## show link-flap-detect

Show link-flap-detect configuration.

### Syntax

- `show link-flap-detect`

### Default

None

### Command mode

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# Command: show lldp

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## show lldp

Display LLDP information.

### Syntax

- `show lldp`

### Default

None

### Command mode

User EXEC

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# Command: show lldp local-sys-data

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## show lldp local-sys-data

Display LLDP local system data.

### Syntax

- `show lldp local-sys-data`

### Default

None

### Command mode

User EXEC

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## show lldp neighbor

Display details of LLDP neighbors learnt.

### Syntax

- `show lldp neighbor`
- `show lldp neighbor port {slot/port[/sub-port][-slot/port[/sub-port]][,...]}`
- `show lldp neighbor summary [port {slot/port[/sub-port][-slot/port[/sub-port]][,...]}]`

### Default

None

### Command mode

User EXEC

### Command parameters

Parameter	Description
<code>port</code> <code>{slot/port[/sub-port][-slot/port[/sub-port]][,...]}</code>	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.
<code>summary [port</code> <code>{slot/port[/sub-port][-slot/port[/sub-port]][,...]}]</code>	Displays the summary of the LLDP neighbors on a single port or a range of ports.

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## show lldp port

Display LLDP port list.

### Syntax

- show lldp port
- show lldp port {slot/port[/sub-port][-slot/port[/sub-port]][,...]}

### Default

None

### Command mode

User EXEC

### Command parameters

Parameter	Description
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 channelizations and the port is channelized, you must also specify the sub-port in the format slot/port/sub-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.

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## 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]][,...]}`

### Default

None

### Command mode

User EXEC

### Command parameters

Parameter	Description
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.

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# Command: show lldp stats

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## show lldp stats

Verify LLDP statistics.

### Syntax

- `show lldp stats`

### Default

None

### Command mode

User EXEC

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## 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]][,...]}

### Default

None

### Command mode

User EXEC

### Command parameters

Parameter	Description
port {slot/port[/sub-port][ <b>-</b> 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.

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## show logging

Use this command to display logging information.

### Syntax

- show logging config
- show logging info
- show logging level
- show logging transferFile <1-10>

### Default

None

### Command mode

User EXEC

### Command parameters

Parameter	Description
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.

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## 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>`

### Default

None

### Command mode

User EXEC

### Command parameters

Parameter	Description
<code>alarm</code>	Displays alarm log entries.
<code>CPU WORD&lt;0-100&gt;</code>	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.
<code>detail</code>	Displays CLI and SNMP logging information.
<code>event-code WORD&lt;0-10&gt;</code>	Specifies a number that precisely identifies the event reported. WORD<0-10> specifies the event code in the format: {0x0-0x00FFFFFF  0x0-0x00FFFFFF}.
<code>module WORD&lt;0-100&gt;</code>	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 cli log 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.





# Command: show mac-address-entry

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## 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

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# Command: show mac-address-table aging-time

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## 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

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# Command: show macsec connectivity-association

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## 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>`

### Default

None

### Command mode

Privileged EXEC

### Command parameters

Parameter	Description
<code>&lt;ca-name&gt;</code>	Specifies a connectivity-association name. An 80 byte alphanumeric string.
<code>WORD&lt;5-15&gt;</code>	Specifies a connectivity-association name. It is a 5 to 15 character alphanumeric string.

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# Command: show macsec status

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## 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]][, ...]}

### Default

None

### Command mode

Privileged EXEC

### Command parameters

Parameter	Description
{slot/port[/sub-port][ <b>-</b> 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.

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# Command: show mirror-by-port

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## show mirror-by-port

Show mirror-by-port diagnostic information.

### Syntax

- `show mirror-by-port`
- `show mirror-by-port WORD<1-1024> MirrorId List {1-479}`

### Default

None

### Command mode

User EXEC

### Command parameters

Parameter	Description
MirrorID List {1-479}	Displays the requested mirrors.
WORD<1-1024>	Displays mirror-by-port diagnostic information.

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## show mlt

Display MultiLink Trunking (MLT) information, including port type, port members and designated ports.

### Syntax

- `show mlt`
- `show mlt <1-512>`

### Default

None

### Command mode

User EXEC

### Command parameters

Parameter	Description
<code>&lt;1-512&gt;</code>	Specifies the MLT ID. The value ranges from 1-512.

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## 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>`

### Default

None

### Command mode

User EXEC

### Command parameters

Parameter	Description
<1-512>	Specifies the MLT ID. The value ranges from 1-512.

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## 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>`

### Default

None

### Command mode

User EXEC

### Command parameters

Parameter	Description
<1-512>	Specifies the MLT ID. The value ranges from 1-512.

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# Command: show mlt i-sid

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## show mlt i-sid

Display all configured service instance identifiers (I-SID) on mlt.

### Syntax

- `show mlt i-sid <1-512>`

### Default

None

### Command mode

User EXEC

### Command parameters

Parameter	Description
<1-512>	specifies the MLT ID.

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## 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>`

### Default

None

### Command mode

User EXEC

### Command parameters

Parameter	Description
<code>&lt;1-512&gt;</code>	Specifies the MLT ID. The value ranges from 1-512.

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# Command: show monitor-statistics

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## show monitor-statistics

Display monitor timer configurations, including duration and interval.

### Syntax

- `show monitor-statistics`

### Default

None

### Command mode

User EXEC

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# Command: show multicast software-forwarding

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## show multicast software-forwarding

Show the software forwarding configuration.

### Syntax

- `show multicast software-forwarding`

### Default

None

### Command mode

User EXEC

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## show ntp

View the Network Time Protocol (NTP) server status statistics.

### Syntax

- `show ntp`
- `show ntp key`
- `show ntp server`
- `show ntp statistics`

### Default

None

### Command mode

User EXEC

### Command parameters

Parameter	Description
<code>key</code>	Specifies to show NTP authentication key information.
<code>server</code>	Specifies to show NTP server information.
<code>statistics</code>	Specifies to show NTP statistics information.



# Command: show pluggable-optical-modules

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## 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]][,...]}`

### Default

None

### Command mode

Privileged EXEC

### Command parameters

Parameter	Description
<code>{slot/port[/sub-port][-slot/port[/sub-port]][,...]}</code>	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.
<code>basic</code>	Shows basic transceiver information.
<code>config</code>	Shows pluggable optical modules configuration information.
<code>detail</code>	Shows detailed transceiver information.
<code>temperature</code>	Shows transceiver temperature information.
<code>voltage</code>	Shows transceiver voltage information.



# Command: show poe-main-status

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## show poe-main-status

View main PoE status.

### Syntax

- show poe-main-status

### Default

None

### Command mode

Privileged EXEC

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# Command: show poe-port-status

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## show poe-port-status

View port PoE status.

### Syntax

- show poe-port-status

### Default

None

### Command mode

Privileged EXEC

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# Command: show poe-power-measurement

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## show poe-power-measurement

View PoE power measurement per port.

### Syntax

- `show poe-power-measurement {slot/port[/sub-port][-slot/port[/sub-port]][, ...]}`

### Default

None

### Command mode

Privileged EXEC

### Command parameters

Parameter	Description
<code>{slot/port[/sub-port][-slot/port[/sub-port]][, ...]}</code>	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.

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# Command: show ports statistics ospf extended

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## 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]][,...]}`

### Default

None

### Command mode

Privileged EXEC

### Command parameters

Parameter	Description
{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 subport in the format slot/port/sub-port.

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# Command: show ports statistics ospf main

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## 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]][,...]}`

### Default

None

### Command mode

Privileged EXEC

### Command parameters

Parameter	Description
{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 subport in the format slot/port/sub-port.

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## 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>`

### Default

None

### Command mode

User EXEC

### Command parameters

Parameter	Description
<code>gigabitEthernet {slot/port[/sub-port][-slot/port[/sub-port]][,...]}</code>	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.
<code>vlan &lt;1-4059&gt;</code>	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.

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## show qos cosq-stats

Display the Quality of Service (QoS) egress queues statistics.

### Syntax

- `show qos cosq-stats cpu-port`
- `show qos cosq-stats interface <PT_PORT>`
- `show qos cosq-stats loopback-port <1-2>`

### Default

None

### Command mode

User EXEC

### Command parameters

Parameter	Description
<code>show qos cosq-stats cpu-port</code>	Shows Qos Cosq Stats on cpu port.
<code>show qos cosq-stats interface &lt;PT_PORT&gt;</code>	Shows Qos Cosq Stats on port.
<code>show qos cosq-stats loopback-port &lt;1-2&gt;</code>	Shows Qos Cosq Stats on loopback port.

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## 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>`

### Default

None

### Command mode

User EXEC

### Command parameters

Parameter	Description
<code>1p &lt;0-7&gt;</code>	Displays the QoS level to IEEE 802.1p priority mapping.
<code>ds &lt;0-7&gt;</code>	Displays the QoS level to DS byte mapping.



# Command: show qos ingressmap

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## show qos ingressmap

Ensure the accuracy of the ingress configuration.

### Syntax

- `show qos ingressmap`
- `show qos ingressmap lp`
- `show qos ingressmap lp <0-7>`
- `show qos ingressmap ds`
- `show qos ingressmap ds <0-63>`

### Default

None

### Command mode

User EXEC

### Command parameters

Parameter	Description
<code>lp &lt;0-7&gt;</code>	Show IEEE 1p to Qos level mapping
<code>ds &lt;0-63&gt;</code>	Show DS Byte to Qos level mapping

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## 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]][,...]]`

### Default

None

### Command mode

Privileged EXEC

### Command parameters

Parameter	Description
<code>interface gigabitEthernet {slot/port[/sub-port]}[-slot/port[/sub-port]][,...]</code>	Identifies the slot and port.

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## 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`

### Default

None

### Command mode

User EXEC

### Command parameters

Parameter	Description
<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.

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## show qos rate-limiting

Show port ingress rate-limit information. Note that not all platforms support the this command. For more information, see Release Notes.

### Syntax

- `show qos rate-limiting interface gigabitEthernet`
- `show qos rate-limiting interface gigabitEthernet [{slot/port[/sub-port]][-slot/port[/sub-port]][,...]]`

### Default

None

### Command mode

User EXEC

### Command parameters

Parameter	Description
<code>interface gigabitEthernet {slot/port[/sub-port]][-slot/port[/sub-port]][,...]</code>	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 that not all platforms support this command. For more information, see Release Notes.

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## 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]][,...]]`

### Default

None

### Command mode

User EXEC

### Command parameters

Parameter	Description
<code>interface gigabitEthernet {slot/port[/sub-port]][-slot/port[/sub-port]][,...]}</code>	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.

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# Command: show radius

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## show radius

Display the global status of Remote Access Dial-In User Services (RADIUS) information.

### Syntax

- `show radius`

### Default

None

### Command mode

User EXEC

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# Command: show radius reachability

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## show radius reachability

Display the RADIUS server reachability settings.

### Syntax

- `show radius reachability`

### Default

None

### Command mode

User EXEC

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# Command: show radius-server

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## 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

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# Command: show radius-server statistics

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## 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

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# Command: show radius snmp

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## 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

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## 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`

### Default

None

### Command mode

User EXEC

### Command parameters

Parameter	Description
<code>address-map</code>	Displays the RMON control tables on the switch.
<code>alarm</code>	Displays RMON alarm entries on the switch.
<code>application-host-stats WORD&lt;1-64&gt;</code>	Displays RMON application host statistics on the switch. <code>WORD&lt;1-64&gt;</code> specifies one of the following application protocols: TCP, UDP, FTP, TELNET, HTTP, RLOGIN, SSH, TFTP, SNMP, HTTPS.
<code>ctl-table</code>	Displays the RMON address map on the switch.
<code>event</code>	Displays RMON event entries on the switch.
<code>history</code>	Displays RMON history entries on the switch.
<code>log</code>	Displays RMON logs on the switch.
<code>network-host-stats</code>	Displays RMON network host statistics on the switch.
<code>protocol-dist-stats</code>	Displays RMON protocol distribution statistics on the switch.

stats

Displays RMON statistics information on the switch.

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## 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>`

### Default

None

### Command mode

User EXEC

### Command parameters

Parameter	Description
<code>detail</code>	Specifies the long format information of the route map.
<code>vrf WORD&lt;1-16&gt;</code>	Specifies the name of the VRF.
<code>vrfids WORD&lt;0-512&gt;</code>	Specifies the ID of the VRF and is an integer in the range of 0 to 512.
<code>WORD&lt;1-64&gt;</code> <code>seq &lt;1-65535&gt;</code>	Displays a route policy with a policy name and a sequence number. <code>WORD&lt;1-64&gt;</code> is the policy name. <code>seq &lt;1-65535&gt;</code> is the sequence number.



# Command: show routing statistics

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## 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]][, ...]]`

### Default

None

### Command mode

Privileged EXEC

### Command parameters

Parameter	Description
<code>gigabitethernet {slot/port[/sub-port]][-slot/port[/sub-port]][, ...]}</code>	Indicates the interface type and the slot and the port number.

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## show running-config

Display the current switch configuration.

### Syntax

- show running-config
- show running-config module { boot | cfm | chef | cli | diag | dvr | fa | fhs | filter | ip | ipsec | ipv6 | isis | i-sid | lacp | lldp | macsec | mlt | naap | ntp | port | qos | radius | rmon | sflow | security | slamon | slpp | slpp-guard | smtp | spbm | stg | sys | tacacs | vlan | web | vxlan }
- show running-config verbose

### Default

None

### Command mode

Privileged EXEC

### Command parameters

Parameter	Description
<pre>module { boot   cfm   chef   cli   diag   dvr   fa   fhs   filter   ip   ipsec   ipv6   isis   i-sid   lacp   lldp   macsec   mlt   naap   ntp   port   qos   radius   rmon   sflow   security   slamon   slpp   slpp-guard   smtp   spbm   stg   sys   tacacs   vlan   web   vxlan }</pre>	<p>Specifies the command group for which you request configuration settings.</p> <p>Specifies the complete list of configuration information on the switch.</p>
<pre>verbose</pre>	



# Command: show sflow

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## show sflow

Display sFlow configurations.

### Syntax

- `show sflow`

### Default

None

### Command mode

User EXEC

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# Command: show sflow collector

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## show sflow collector

Display sFlow collector information.

### Syntax

- `show sflow collector <1-2>`

### Default

None

### Command mode

User EXEC

### Command parameters

Parameter	Description
<1-2>	Specifies which collector ID to display.

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## show sflow interface

Display sFlow interface configurations.

### Syntax

- `show sflow interface {slot/port[/sub-port] [-slot/port[/sub-port]] [,...]}`

### Default

None

### Command mode

User EXEC

### Command parameters

Parameter	Description
<code>{slot/port[/sub-port] [-slot/port[/sub-port]] [,...]}</code>	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.

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## show sflow statistics

Display sFlow statistics.

### Syntax

- `show sflow statistics [collector <1-2>]`

### Default

None

### Command mode

User EXEC

### Command parameters

Parameter	Description
[collector <1-2>]	Specifies the collector ID to display the statistics.

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## show slot

Show slot configuration.

### Syntax

- show slot
- show slot <1>

### Default

None

### Command mode

Privileged EXEC

### Command parameters

Parameter	Description
<1>	Specifies the interface slot number <1>.



# Command: show slpp

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## show slpp

Use Simple Loop Prevention Protocol (SLPP) information to view loop information.

### Syntax

- `show slpp`

### Default

None

### Command mode

User EXEC

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## 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]] [, ...]}`

### Default

None

### Command mode

User EXEC

### Command parameters

Parameter	Description
<code>{slot/port[/sub-port] [-slot/port[/sub-port]] [, ...]}</code>	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.

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## 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]][,...]]`

### Default

None

### Command mode

User EXEC

### Command parameters

Parameter	Description
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.

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## show smlt

View all ports for a single port SMLT to ensure the correct ports are configured.

### Syntax

- show smlt
- show smlt mlt

### Default

None

### Command mode

User EXEC

### Command parameters

Parameter	Description
mlt	Displays SMLT information for the MLT interface.

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# Command: show smtp

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## 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`

### Default

None

### Command mode

User EXEC

### Command parameters

Parameter	Description
<code>event-id</code>	Shows a list of active event IDs for which the switch generates email notification.

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# Command: show snmplog

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## show snmplog

View the contents of the Simple Network Management Protocol (SNMP) log.

### Syntax

- `show snmplog`

### Default

None

### Command mode

User EXEC

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## 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>]`

### Default

None

### Command mode

User EXEC

### Command parameters

Parameter	Description
<code>community</code>	Displays the SNMP community table.
<code>context</code>	Displays vacm context table.
<code>group</code>	Displays SNMP group access table.
<code>host</code>	Displays SNMP host details.
<code>notify-filter</code>	Displays SNMP notify-filter details.
<code>user</code>	Displays SNMP users.
<code>view</code>	Displays SNMP MIB view table.
<code>viewname WORD&lt;0-32&gt;</code>	Displays the view for a particular view name.



# Command: show snmp-server host

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## 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

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# Command: show snmp-server notify-filter

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## show snmp-server notify-filter

Display a new notify filter configuration information.

### Syntax

- `show snmp-server notify-filter`

### Default

None

### Command mode

User EXEC

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## show software

Display unpacked software releases information.

### Syntax

- show software
- show software detail
- show software release WORD<1-99>
- show software slot

### Default

None

### Command mode

User EXEC

### Command parameters

Parameter	Description
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.



# Command: show spanning-tree bpduguard

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## 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]] [,...]}`

### Default

None

### Command mode

User EXEC

### Command parameters

Parameter	Description
<code>{slot/port[/sub-port] [-slot/port[/subport]] [,...]}</code>	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.

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# Command: show spanning-tree config

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## 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

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# Command: show spanning-tree mstp config

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## 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

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# Command: show spanning-tree mstp msti config

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## 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>`

### Default

None

### Command mode

User EXEC

### Command parameters

Parameter	Description
<1-63>	Specifies the MSTP instance ID.

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## 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]][,...]]`

### Default

None

### Command mode

User EXEC

### Command parameters

Parameter	Description
<code>config</code> {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.
<code>role</code> {slot/port[/sub-port]][-slot/port[/sub-port]][,...]]	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 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.
<code>statistics</code> {slot/port[/sub-port]][-slot/port[/sub-port]][,...]]	Shows the statistics 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.





# Command: show spanning-tree mstp port config

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## 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]][,...]}`

### Default

None

### Command mode

User EXEC

### Command parameters

Parameter	Description
<code>{slot/port[/sub-port][-slot/port[/sub-port]][,...]}</code>	Displays the MSTP port information. <code>{slot/port[/sub-port][-slot/port[/sub-port]][,...]}</code> 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.

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# Command: show spanning-tree mstp port role

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## 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]][,...]}`

### Default

None

### Command mode

User EXEC

### Command parameters

Parameter	Description
<code>{slot/port[/sub-port][-slot/port[/sub-port]][,...]}</code>	Displays the MSTP port configurations, which display MSTP-related bridge-level VLAN and region information.

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# Command: show spanning-tree mstp port statistics

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## 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]][,...]}

### Default

None

### Command mode

User EXEC

### Command parameters

Parameter	Description
{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.

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# Command: show spanning-tree mstp statistics

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## 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

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# Command: show spanning-tree mstp status

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## 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

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# Command: show spanning-tree rstp config

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## 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

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# Command: show spanning-tree rstp port config

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## 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]][,...]]

### Default

None

### Command mode

User EXEC

### Command parameters

Parameter	Description
{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.

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# Command: show spanning-tree rstp port role

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## 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]] [, ...]]

### Default

None

### Command mode

User EXEC

### Command parameters

Parameter	Description
{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.

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# Command: show spanning-tree rstp port statistics

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## 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]][,...]]

### Default

None

### Command mode

User EXEC

### Command parameters

Parameter	Description
{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.

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# Command: show spanning-tree rstp port status

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## 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]][,...]]

### Default

None

### Command mode

User EXEC

### Command parameters

Parameter	Description
{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.

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# Command: show spanning-tree rstp statistics

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## 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

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# Command: show spanning-tree rstp status

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## 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

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# Command: show spanning-tree status

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## show spanning-tree status

View spanning-tree status information.

### Syntax

- `show spanning-tree status`

### Default

None

### Command mode

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# Command: show spbm

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## 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

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## 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`

### Default

None

### Command mode

User EXEC

### Command parameters

Parameter	Description
<code>global</code>	Displays global system SSH information.
<code>session</code>	Displays the current session SSH information.



# Command: show ssh rekey

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## show ssh rekey

Displays the SSH rekey configuration information on the switch.

### Syntax

- `show ssh rekey`

### Default

None

### Command mode

User EXEC

### Command parameters

Parameter	Description
<code>info</code>	Shows information about key exchange between server and client.

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# Command: show sys dns

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## show sys dns

Shows the DNS default domain name.

### Syntax

- `show sys dns`

### Default

None

### Command mode

User EXEC

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# Command: show sys force-msg

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## show sys force-msg

Shows the message control force message pattern settings.

### Syntax

- `show sys force-msg`

### Default

None

### Command mode

User EXEC

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## 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`

### Default

None

### Command mode

User EXEC

### Command parameters

Parameter	Description
<code>card</code>	Specifies information about all the installed modules, including cooling modules (fans).
<code>cpld</code>	Specifies cpld details. This parameter is not available on all hardware platforms.
<code>fan</code>	Specifies information about installed cooling modules (fans).
<code>led</code>	Shows system LED status.
<code>power</code>	Specifies information about installed power supplies.
<code>temperature</code>	Specifies information about temperature.
<code>uboot</code>	Specifies information about uboot image. This parameter is not available on all hardware platforms.
<code>usb</code>	Specifies information about cached USB information.



# Command: show syslog

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## show syslog

View the syslog information to ensure accuracy.

### Syntax

- show syslog

### Default

None

### Command mode

User EXEC

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# Command: show syslog host

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## show syslog host

View the syslog host information to ensure accuracy.

### Syntax

- `show syslog host <1-10>`

### Default

None

### Command mode

User EXEC

### Command parameters

Parameter	Description
<1-10>	Specifies the syslog host ID.

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# Command: show sys mgid-usage

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## 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

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# Command: show sys msg-control

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## show sys msg-control

Shows the system message control function status (activated or disabled).

### Syntax

- `show sys msg-control`

### Default

None

### Command mode

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# Command: show sys mtu

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## show sys mtu

Shows system maximum transmission unit (MTU) information.

### Syntax

- `show sys mtu`

### Default

None

### Command mode

User EXEC

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## 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`

### Default

None

### Command mode

User EXEC

### Command parameters

Parameter	Description
<code>global</code>	Shows a summary of the power redundancy settings.
<code>power-supply</code>	Shows detailed power information for each power supply.
<code>slot</code>	Shows detailed power information for the slot.



# Command: show sys setting

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## show sys setting

Shows system settings.

### Syntax

- `show sys setting`

### Default

None

### Command mode

User EXEC

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# Command: show sys software

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## show sys software

Verify that the image and configuration are loaded properly.

### Syntax

- `show sys software`

### Default

None

### Command mode

User EXEC

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# Command: show sys stats

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## show sys stats

Shows system statistics.

### Syntax

- `show sys stats`

### Default

None

### Command mode

User EXEC

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# Command: show sys stats ipmc-threshold-exceeded-cnt

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## 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

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# Command: show sys topology-ip

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## show sys topology-ip

Shows the circuitless IP set.

### Syntax

- `show sys topology-ip`

### Default

None

### Command mode

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# Command: show tacacs

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## show tacacs

show TACACS information.

### Syntax

- `show tacacs`

### Default

None

### Command mode

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# Command: show tech

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## 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

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# Command: show telnet-access

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## show telnet-access

Show the maximum number of Telnet sessions.

### Syntax

- `show telnet-access`

### Default

None

### Command mode

User EXEC

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# Command: show trace cfm

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## show trace cfm

Shows the configuration status for CFM trace.

### Syntax

- `show trace cfm`

### Default

None

### Command mode

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## show trace file

View the trace results.

### Syntax

- show trace file
- show trace file tail

### Default

None

### Command mode

User EXEC

### Command parameters

Parameter	Description
tail	Show file from tail



# Command: show trace level

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## show trace level

Show the current trace level for all modules.

### Syntax

- `show trace level`

### Default

None

### Command mode

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# Command: show trace modid-list

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## 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

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# Command: show trace spbm isis

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## show trace spbm isis

View trace results.

### Syntax

- `show trace spbm isis`

### Default

None

### Command mode

User EXEC

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# Command: show trace sub-system

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## show trace sub-system

Show trace sub-system name.

### Syntax

- show trace sub-system

### Default

None

### Command mode

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# Command: show unsupported-lastset

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## show unsupported-lastset

Display the last set of masked commands in the release.

### Syntax

- show unsupported-lastset

### Default

None

### Command mode

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# Command: show users

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## show users

Display a list of users who are logged on to the system.

### Syntax

- show users

### Default

None

### Command mode

User EXEC

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# Command: show virtual-ist

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## show virtual-ist

Show virtual IST information.

### Syntax

- show virtual-ist

### Default

None

### Command mode

User EXEC

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# Command: show virtual-ist stat

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## show virtual-ist stat

Display stat for virtual ist.

### Syntax

- `show virtual-ist stat`

### Default

None

### Command mode

User EXEC

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# Command: show vlacp

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## show vlacp

Display Virtual Link Aggregation Control Protocol (VLACP) global information.

### Syntax

- `show vlacp`

### Default

None

### Command mode

User EXEC

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## 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]][, ...]}`

### Default

None

### Command mode

User EXEC

### Command parameters

Parameter	Description
<code>gigabitethernet {slot/port[/sub-port][-slot/port[/sub-port]][, ...]}</code>	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.
<code>vid &lt;1-4059&gt;</code>	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.

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## 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>

### Default

None

### Command mode

User EXEC

### Command parameters

Parameter	Description
<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.





# Command: show vlan autolearn-mac

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## show vlan autolearn-mac

View autolearned MAC addresses.

### Syntax

- `show vlan autolearn-mac`

### Default

None

### Command mode

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## 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>`

### Default

None

### Command mode

User EXEC

### Command parameters

Parameter	Description
<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.



# Command: show vlan brouter-port

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## 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

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## 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>`

### Default

None

### Command mode

User EXEC

### Command parameters

Parameter	Description
<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.

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## 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`

### Default

None

### Command mode

User EXEC

### Command parameters

Parameter	Description
<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.



# Command: show vlan mac-address-static

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## 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]][,...]}`

### Default

None

### Command mode

User EXEC

### Command parameters

Parameter	Description
<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.



# Command: show vlan manual-edit-mac

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## 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

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## 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]][,...]}

### Default

None

### Command mode

User EXEC

### Command parameters

Parameter	Description
<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.



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## 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>`

### Default

None

### Command mode

User EXEC

### Command parameters

Parameter	Description
<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.

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## 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>`

### Default

None

### Command mode

User EXEC

### Command parameters

Parameter	Description
<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.

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## show vlan private-vlan

Display the list of private VLANs.

### Syntax

- `show vlan private-vlan <2-4059>`

### Default

None

### Command mode

User EXEC

### Command parameters

Parameter	Description
<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.

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## 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

### Default

None

### Command mode

User EXEC

### Command parameters

Parameter	Description
<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.



# Command: show vlan src-mac

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## 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>`

### Default

None

### Command mode

Privileged EXEC

### Command parameters

Parameter	Description
<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.

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## show vlan static-mcastmac

Display the Layer 2 multicast media access control (MAC) filters.

### Syntax

- `show vlan static-mcastmac [<1-4059>]`

### Default

None

### Command mode

User EXEC

### Command parameters

Parameter	Description
<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.



# Command: show vnid i-sid

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## 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>}`

### Default

None

### Command mode

Privileged EXEC

### Command parameters

Parameter	Description
<1-500>	Displays information about the specified VNID.

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# Command: show vnid mac-address-entry

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## 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]`

### Default

None

### Command mode

Privileged EXEC

### Command parameters

Parameter	Description
<code>[&lt;1-16777215&gt;   port &lt;{slot/port [-slot/port] [,...]}&gt;   mac &lt;0x00:0x00:0x00:0x00:0x00:0x00&gt;   remote]</code>	Display the FDB table for the specified VNID.

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# Command: show vtep local

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## 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

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# Command: show vtep remote

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## 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>]`

### Default

None

### Command mode

Privileged EXEC

### Command parameters

Parameter	Description
<1-500>	Displays information about the specified remote VTEP.

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# Command: show vtep remote name

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## 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>]

### Default

None

### Command mode

Privileged EXEC

### Command parameters

Parameter	Description
<1-500>	Displays the name of the specified remote VTEP.

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# Command: show web-server

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## show web-server

Display the web server information.

### Syntax

- show web-server

### Default

None

### Command mode

User EXEC

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## 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]][,...]}

### Default

None

### Command mode

GigabitEthernet Interface Configuration

### Command parameters

Parameter	Description
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.

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# Command: shutdown (for the management port)

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## shutdown (for the management port)

Disable the Ethernet management port. 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

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## 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.

### 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>

### Default

None

### Command mode

Application Configuration

### Command parameters

Parameter	Description
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.



# Command: slamon agent-comm-port

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## 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.

### Syntax

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

### Default

The default is 50012.

### Command mode

Application Configuration

### Command parameters

Parameter	Description
<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.

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## 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.

### Syntax

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

### Default

By default, the SLA Mon agent uses an Avaya SIP certificate to secure communications with the SLA Mon server.

### Command mode

Application Configuration

### Command parameters

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

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# Command: slamon oper-mode enable

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## 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.

### 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

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## 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.

### 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>

### Default

None

### Command mode

Application Configuration

### Command parameters

Parameter	Description
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.



# Command: slot reset

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## 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

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## slot shutdown

Slot shutdown.

### Syntax

- `default slot shutdown {slot[-slot][,...]}`
- `no slot shutdown {slot[-slot][,...]}`
- `slot shutdown {slot[-slot][,...]}`

### Default

None

### Command mode

Global Configuration

### Command parameters

Parameter	Description
<code>{slot[-slot][,...]}</code>	Specifies the slot number. The valid slot numbers differ depending on hardware platform. For more information about slot numbers, see your hardware documentation.

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## 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>

### Default

None

### Command mode

GigabitEthernet Interface Configuration

### Command parameters

Parameter	Description
{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-	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 <1-  
500>

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.

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## 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>

### Default

None

### Command mode

Global Configuration

### Command parameters

Parameter	Description
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. 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.



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## slpp-guard ethertype

Configures Set SLPP-guard ethertype.

### Syntax

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

### Default

The default value is 0x8102.

### Command mode

Global Configuration

### Command parameters

Parameter	Description
<0x0600-0xffff>	Specifies a hexadecimal value ranging from 0x0600– 0xffff. The default value is 0x8102.

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## 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>

### Default

The default is disabled.

### Command mode

GigabitEthernet Interface Configuration

### Command parameters

Parameter	Description
{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.

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## 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>`

### Default

None

### Command mode

VLAN Interface Configuration

### Command parameters

Parameter	Description
<code>enable</code>	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.
<code>tx-interval &lt;500-5000&gt;</code>	Configures the SLPP packet transmit interval, expressed in milliseconds, in a range from 500-5000. The default is 500.
<code>vid &lt;1-4059&gt;</code>	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.

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## smtp

Configures SMTP to generate email notifications for component failures, critical conditions, or general system health status.

### Syntax

- `default smtp enable`
- `no smtp enable`
- `smtp 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>`

### Default

The default is disabled.

### Command mode

Global Configuration

### Command parameters

Parameter	Description
<code>status-send-timer &lt;0   30-43200&gt;</code>	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.
<code>domain-name WORD&lt;1-254&gt;</code>	Specifies the hostname or IPv4 address.
<code>enable</code>	Enables SMTP.
<code>event id {add   remove} WORD&lt;1-1100&gt;</code>	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.
<code>port &lt;1-65535&gt;</code>	Specifies the SMTP server TCP port number. The default is 25.
<code>receiver-mail</code>	Adds or removes an email address to the recipient list. The recipients receive the

{add |  
remove}  
WORD<3-1274>  
sender-mail  
WORD<3-254>  
server  
WORD<1-256>

email notification generated by the switch. The maximum length for the address is 254 characters.

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.

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.

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# Command: snmplog

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## 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

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# Command: snmp-server authentication-trap enable

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## 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

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## 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>`

### Default

None

### Command mode

Global Configuration

### Command parameters

Parameter	Description
<code>community-by-index WORD&lt;1-32&gt;</code>	Specifies the community string by index to delete.
<code>context WORD&lt;0-32&gt;</code>	Specifies the context in which management information is accessed when you use the specified community string.
<code>group WORD&lt;0-32&gt;</code>	Specifies the group name.
<code>index WORD&lt;0-32&gt;</code>	Specifies the unique index value of a row in this table.
<code>secname WORD&lt;0-32&gt;</code>	Maps the community string to the security name in the VACM Group Member Table. The range is 0-32 characters.
<code>WORD&lt;1-32&gt;</code>	Specifies a community string, from 1-32 characters.



# Command: snmp-server contact

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## 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>

### Default

None

### Command mode

Global Configuration

### Command parameters

Parameter	Description
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.)

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# Command: snmp-server force-iphdr-sender enable

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## 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

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# Command: snmp-server force-trap-sender enable

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## 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

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## 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>`

### Default

None

### Command mode

Global Configuration

### Command parameters

Parameter	Description
<code>auth-no-priv</code>	Assigns the minimum level of security required to gain the access rights allowed by this conceptual row. If the <code>auth-no-priv</code> parameter is included, it creates one entry for SNMPv3 access.
<code>auth-priv</code>	Assigns the minimum level of security required to gain the access rights allowed by this conceptual row. If the <code>auth-priv</code> parameter is included, it creates one entry for SNMPv3 access.
<code>group WORD&lt;1-32&gt;</code>	Assigns the group name for data access. The range is 1-32 characters. Use the <code>no</code> operator to remove this configuration.

32>

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.

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## 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>`

### Default

None

### Command mode

Global Configuration

### Command parameters

Parameter	Description
<code>filter WORD&lt;1-32&gt;</code>	Specifies a filter profile name.
<code>port&lt;1-65535&gt;</code>	Specifies the host server port number.
<code>v1 WORD &lt;1-32&gt; [filter WORD&lt;1-32&gt;]</code>	Specifies the SNMP v1 security name.
<code>WORD&lt;1-256&gt;</code>	Specifies either an IPv4 or IPv6 address.

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## 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>`

### Default

None

### Command mode

Global Configuration



## Command parameters

Parameter	Description
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.
v2c WORD<1-32>	Specifies the SNMPv2 security name
WORD<1-256>	Specifies the IPv4 or IPv6 host address.

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## 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>`

### Default

None

### Command mode

Global Configuration

## Command parameters

Parameter	Description
{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.

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## 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>

### Default

None

### Command mode

Global Configuration

### Command parameters

Parameter	Description
WORD <0255>	Specifies an ASCII string from 0-255 characters.

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# Command: snmp-server login-success-trap enable

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## 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

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# Command: snmp-server name

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## 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>

### Default

None

### Command mode

Global Configuration

### Command parameters

Parameter	Description
WORD <0255>	Specifies an ASCII string from 0-255 characters.

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## 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>`

### Default

None

### Command mode

Global Configuration

### Command parameters

Parameter	Description
WORD<1-32>	The first WORD<1-32> specifies the name of the filter profile. 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.
WORD<1-32>	

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## snmp-server sender-ip

Configure the IP interface from which the SNMP traps originate if the switch has multiple interfaces.

### Syntax

- `snmp-server sender-ip {A.B.C.D} {A.B.C.D}`

### Default

None

### Command mode

Global Configuration

### Command parameters

Parameter	Description
$\{A.B.C.D\}$ $\{A.B.C.D\}$	Specifies the IP address of the destination SNMP server that receives the SNMP trap notification in the first IP address. Specifies the source IP address of the SNMP trap notification packet that is transmitted in the second IP address. If this is set to 0.0.0.0 then the switch uses the IP address of the local interface that is closest (from an IP routing table perspective) to the destination SNMP server.



## 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>`

## Default

None

## Command mode

Global Configuration

## Command parameters

Parameter	Description
<code>{aes des}</code> <code>WORD&lt;1-32&gt;</code>	Specifies a privacy protocol. If no value is entered, no authentication capability exists. <code>WORD&lt;1-32&gt;</code> assigns a privacy password. If no value is entered, no privacy capability exists. You must set authentication before you can set the privacy option.
<code>{md5 sha}</code> <code>WORD&lt;1-32&gt;</code>	Specifies an authentication protocol. If no value is entered, no authentication capability exists. <code>WORD&lt;1-32&gt;</code> specifies an authentication password. If no value is entered, no authentication capability exists.
<code>engine-id</code> <code>WORD&lt;1-32&gt;</code>	Assigns a Simple Network Management Protocol version 3 (SNMPv3) engine ID. Use the no operator to remove this configuration.
<code>group</code> <code>WORD&lt;1-32&gt;</code>	Specifies the group access name.
<code>notify-view</code> <code>WORD&lt;1-32&gt;</code>	The first instance is a noAuth view. The second instance is an auth view and the last instance is an authPriv view.
<code>read-view</code> <code>WORD&lt;1-32&gt;</code>	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.
<code>write-view</code> <code>WORD&lt;1-32&gt;</code>	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.

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## 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>`

### Default

None

### Command mode

Global Configuration

### Command parameters

Parameter	Description
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.

## 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`

### Default

The default is enabled.

### Command mode

GigabitEthernet Interface Configuration

### Command parameters

Parameter	Description
<code>enable</code>	Enables or disables link-trap status for the port.
<code>port</code> <code>{slot/port[/sub-port][-slot/port[/sub-port]][,...]}</code>	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.

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## 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>`

### Default

None

### Command mode

Privileged EXEC

### Command parameters

Parameter	Description
<code>activate WORD&lt;1-99&gt;</code>	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.
<code>add WORD&lt;1-99&gt;</code>	Unpacks a software release <version>.
<code>add-modules WORD&lt;1-99&gt;</code>	Add modules to existing software release in /intflash/release/<version>
<code>commit</code>	Ensures the running software release is trusted.
<code>remove WORD&lt;1-99&gt;</code>	Removes the software release <version>.
<code>reset-commit-time &lt;1-60&gt;</code>	Extends or reduces the software commit or rollback time.



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## 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>`

### Default

The default is 10 minutes.

### Command mode

Privileged EXEC

### Command parameters

Parameter	Description
<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 <code>software reset-commit-time 5</code> , you reduce the commit timer to 5 minutes. If you enter the command string of <code>software reset-commit-time 25</code> , you extend the commit timer by 15 minutes, for a total of 25 minutes.

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## source

Source a configuration to merge a script file into the running configuration. Warning: You are not able to source a complete configuration file to merge it with your running configuration because the system can crash. The source command can be used to merge smaller portions of a configuration into the existing configuration.

### Syntax

- source WORD<1-99> {debug | stop | syntax}
- source WORD<1-99> debug {stop | syntax}
- source WORD<1-99> stop {syntax}
- source WORD<1-99> syntax

### Default

None

### Command mode

Privileged EXEC

### Command parameters

Parameter	Description
debug	Debugs the script output.
stop	Stops the merge after an error occurs.
syntax	Verifies the script syntax.
syntax	Verifies the script syntax.
WORD<1-99>	Specifies a filename and location.



## 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[-slot/port][, ...]}`
- `no source-mac-vlan`
- `no source-mac-vlan enable`
- `no source-mac-vlan port {slot/port[-slot/port][, ...]}`
- `source-mac-vlan`
- `source-mac-vlan enable`
- `source-mac-vlan port {slot/port[-slot/port][, ...]}`

### Default

The default is enabled.

### Command mode

GigabitEthernet Interface Configuration

### Command parameters

Parameter	Description
<code>enable</code>	Enables or disables source MAC-based VLAN for the port.
<code>port {slot/port[/sub-port][-slot/port[/sub-port]][, ...]}</code>	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.

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## spanning-tree bpduguard

Configures spanning-tree BPDU Guard configuration.

### Syntax

- `spanning-tree bpduguard enable`
- `spanning-tree bpduguard port {slot/port[/sub-port][-slot/port[/ subport]][,...]} enable`
- `spanning-tree bpduguard port {slot/port[/sub-port][-slot/port[/ subport]][,...]} timeout <0-65535>`
- `spanning-tree bpduguard timeout <0-65535>`

### Default

The default is disabled.

### Command mode

GigabitEthernet Interface Configuration

### Command parameters

Parameter	Description
<code>enable</code>	Enables BPDU Guard on the port. The default is disabled.
<code>port {slot/port[/sub-port][-slot/port[/ subport]][,...]}</code>	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.
<code>timeout &lt;0-65535&gt;</code>	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.

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## 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>

### Default

The default is 2000000.

### Command mode

GigabitEthernet Interface Configuration

### Command parameters

Parameter	Description
<1-200000000>	Specifies the cost value. The default is 2000000.

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# Command: spanning-tree mstp edge-port

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## 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 }`

### Default

The default is disabled (false).

### Command mode

GigabitEthernet Interface Configuration

### Command parameters

Parameter	Description
<code>&lt;false true&gt;</code>	Enables or disables the port as an edge port.

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# Command: spanning-tree mstp force-port-state

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## 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

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# Command: spanning-tree mstp forward-time

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## 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>`

### Default

None

### Command mode

Global Configuration

### Command parameters

Parameter	Description
<code>&lt;400-3000&gt;</code>	Configures the MSTP forward delay for the bridge, in hundredths of a second.

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# Command: spanning-tree mstp hello-time (on a port)

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## 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>

### Default

The default is 2.

### Command mode

GigabitEthernet Interface Configuration

### Command parameters

Parameter	Description
<100-1000>	Configures the hello-time for a port in one hundredths of a second. The default is 2.

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# Command: spanning-tree mstp max-age

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## 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>

### Default

The default is 2000.

### Command mode

Global Configuration

### Command parameters

Parameter	Description
<600-4000>	Assigns the MSTP maximum age time for the bridge, in one hundredths of a second.

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# Command: spanning-tree mstp max-hop

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## 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>

### Default

The default is 2000.

### Command mode

Global Configuration

### Command parameters

Parameter	Description
<100-4000>	Assigns the MSTP bridge maximum hop count. The range is 100 to 4000 one hundredths of a second.

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# Command: spanning-tree mstp msti (globally)

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## 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>`

### Default

None

### Command mode

Global Configuration

### Command parameters

Parameter	Description
<code>&lt;1-63&gt;</code>	Specifies the instance parameter.
<code>priority &lt;0-65535&gt;</code>	Configures the MSTP bridge priority. Allowed values are 4096, 8192, 12288, 16384, 20480, 24576, 28672, 32768, 36864, 40960, 45056, 49152, 53248, 57344, 61440.

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## 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>`

### Default

None

### Command mode

GigabitEthernet Interface Configuration

### Command parameters

Parameter	Description
<code>&lt;1-63&gt;</code>	Specifies the instance parameter.
<code>cost &lt;1-200000000&gt;</code>	Configures the path cost for the port
<code>force-port-state</code>	Enables MSTI learning for the port.

enable

port  
{slot/port[/sub-  
port]][-  
slot/port[/sub-  
port]][,...]}

priority <0-  
65535>

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.

Configures the MSTP bridge priority. Allowed values are 4096, 8192, 12288, 16384, 20480, 24576, 28672, 32768, 36864, 40960,45056, 49152, 53248, 57344, 61440.

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## 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

### Default

The default is auto.

### Command mode

GigabitEthernet Interface Configuration

### Command parameters

Parameter	Description
<code>&lt;auto   force- false   false- true&gt;</code>	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 autonegotiation or by management means. The default is auto.



# Command: spanning-tree mstp pathcost-type

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## 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`

### Default

The default is 32 bits.

### Command mode

Global Configuration

### Command parameters

Parameter	Description
<code>&lt;bits16 bits32&gt;</code>	Specifies the pathcost value.

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## 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`

### Default

None

### Command mode

GigabitEthernet Interface Configuration

## Command parameters

Parameter	Description
<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 autonegotiation 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.





# Command: spanning-tree mstp priority (globally)

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## 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>

### Default

The default is 32768.

### Command mode

Global Configuration

### Command parameters

Parameter	Description
<0-61440>	Assigns the MSTP bridge priority. The values configured for port priority must be in steps of 4096.

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# Command: spanning-tree mstp priority (on a port)

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## 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>

### Default

The default is 128.

### Command mode

GigabitEthernet Interface Configuration

### Command parameters

Parameter	Description
<0-240>	Specifies the four most significant bits of the port identifier. The values configured for port priority must be in steps of 16.

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# Command: spanning-tree mstp protocol-migration

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## 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`

### Default

The default is false.

### Command mode

GigabitEthernet Interface Configuration

### Command parameters

Parameter	Description
<code>&lt;false true&gt;</code>	Configures the protocol migration state of this port.

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## 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>`

### Default

The default region and version is 0.

### Command mode

Global Configuration

### Command parameters

Parameter	Description
<code>config-id-sel &lt;0-255&gt;</code>	Assigns the MSTP region configuration ID number.
<code>region-name WORD&lt;1-32&gt;</code>	Assigns the MSTP region name.
<code>region-version &lt;0-65535&gt;</code>	Assigns the MSTP region version.



# Command: spanning-tree mstp tx-holdcount

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## 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>`

### Default

The default is 3.

### Command mode

Global Configuration

### Command parameters

Parameter	Description
<1-10>	Assigns the MSTP transmit hold count.

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## 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`

### Default

The default is MSTP.

### Command mode

Global Configuration

### Command parameters

Parameter	Description
<code>mstp</code>	Configures the version as MSTP.
<code>rstp</code>	Configures the version as RSTP.
<code>stp-compatible</code>	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 MSTP mode cannot recognize the spanning tree groups running on a chassis configured with STP. MSTP spanning tree groups are not the same as 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.

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## 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>

### Default

The default is 2000000.

### Command mode

GigabitEthernet Interface Configuration

### Command parameters

Parameter	Description
<1-200000000>	Specifies the cost value.



# Command: spanning-tree rstp edge-port

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## 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 }

### Default

The default is disabled (false).

### Command mode

GigabitEthernet Interface Configuration

### Command parameters

Parameter	Description
<false true>	Enables or disables the port as an edge port.

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# Command: spanning-tree rstp forward-time

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## 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>`

### Default

The default is 1500 (15 seconds).

### Command mode

Global Configuration

### Command parameters

Parameter	Description
<code>&lt;400-3000&gt;</code>	Configures the RSTP forward delay for the bridge, in hundredths of a second.

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# Command: spanning-tree rstp group-stp enable

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## 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

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## 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>`

### Default

The default is 200 (2 seconds).

### Command mode

Global Configuration

### Command parameters

Parameter	Description
<code>&lt;100-1000&gt;</code>	Configures the hello-time for a port in one hundredths of a second.

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## 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>

### Default

The default value is 2000 (2 seconds).

### Command mode

Global Configuration

### Command parameters

Parameter	Description
<600-4000>	Assigns the RSTP maximum age time for the bridge, in one hundredths of a second.

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## 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

### Default

The default is auto.

### Command mode

GigabitEthernet Interface Configuration

### Command parameters

Parameter	Description
<code>&lt;auto   force- false   false- true&gt;</code>	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 autonegotiation or by management means.



# Command: spanning-tree rstp pathcost-type

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## 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`

### Default

The default is 32 bits.

### Command mode

Global Configuration

### Command parameters

Parameter	Description
<code>&lt;bits16 bits32&gt;</code>	Specifies the pathcost value.

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## 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}`
- `no spanning-tree rstp`
- `no spanning-tree rstp port {slot/port}`
- `spanning-tree rstp port {slot/port} cost <1-200000000>`
- `spanning-tree rstp port {slot/port} edge-port { false | true }`
- `spanning-tree rstp port {slot/port} p2p auto`
- `spanning-tree rstp port {slot/port} p2p force-false`
- `spanning-tree rstp port {slot/port} p2p force-true`
- `spanning-tree rstp port {slot/port} priority <0-240>`
- `spanning-tree rstp port {slot/port} protocol-migration false`
- `spanning-tree rstp port {slot/port} protocol-migration true`
- `spanning-tree rstp port {slot/port} stp enable`

### Default

None

### Command mode

GigabitEthernet Interface Configuration

### Command parameters

Parameter	Description
<code>cost &lt;1-200000000&gt;</code>	Specifies the cost value. The default is 2000000.
<code>edge-port &lt;false true&gt;</code>	Enables or disables the port as an edge port. The default is disabled (false).
<code>p2p &lt;auto force-false force-true&gt;</code>	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 autonegotiation

	or by management means. The default is auto.
port {slot/port}	Specifies the slot and port to configure.
port {slot/port}	Specifies the slot and port to configure.
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.





# Command: spanning-tree rstp priority (globally)

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## 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>

### Default

The default is 32768.

### Command mode

Global Configuration

### Command parameters

Parameter	Description
<0-61440>	Assigns the RSTP bridge priority in a range of 0 to 61440 in steps of 4096.

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# Command: spanning-tree rstp priority (on a port)

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## 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>`

### Default

The default is 128.

### Command mode

GigabitEthernet Interface Configuration

### Command parameters

Parameter	Description
<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.

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# Command: spanning-tree rstp protocol-migration

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## 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`

### Default

The default is false.

### Command mode

GigabitEthernet Interface Configuration

### Command parameters

Parameter	Description
<code>&lt;false true&gt;</code>	Configures the protocol migration state of this port.

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# Command: spanning-tree rstp stp

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## 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

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# Command: spanning-tree rstp tx-holdcount

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## 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>`

### Default

The default is 6.

### Command mode

Global Configuration

### Command parameters

Parameter	Description
<1-10>	Assigns the RSTP transmit hold count.

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# Command: spanning-tree rstp version

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## 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`

### Default

The default is RSTP.

### Command mode

Global Configuration

### Command parameters

Parameter	Description
<code>rstp</code>	Configures the version as RSTP.
<code>stp-compatible</code>	Configures the version as STP-compatible.

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# Command: spbm

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## spbm

Enable Shortest Path Bridging MAC (SPBM) globally.

### Syntax

- `default spbm`
- `no spbm`
- `spbm`

### Default

The default is disabled.

### Command mode

Global Configuration

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# Command: spbm <1-100>

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## 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>

### Default

None

### Command mode

IS-IS Router Configuration

### Command parameters

Parameter	Description
<1-100>	Specifies the Shortest Path Bridging MAC (SPBM) instance ID. Creates the SPBM instance. In this release only one SPBM instance is supported.

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# Command: spbm <1-100> b-vid

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## 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>

### Default

None

### Command mode

IS-IS Router Configuration

### Command parameters

Parameter	Description
{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. 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.



# Command: spbm <1-100> ip

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## 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

### Default

The default is disabled.

### Command mode

IS-IS Router Configuration

### Command parameters

Parameter	Description
<1-100>	Specifies the Shortest Path Bridging MAC (SPBM) instance ID.
ip enable	Enables Shortest Path Bridging MAC (SPBM) IP shortcuts.

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# Command: spbm <1-100> ipv6

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## 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`

### Default

The default is disabled.

### Command mode

IS-IS Router Configuration

### Command parameters

Parameter	Description
<1-100>	Specifies the Shortest Path Bridging MAC (SPBM) instance ID.
enable	Enables Shortest Path Bridging MAC (SPBM) IPv6 shortcuts.

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## 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

### Default

The default is disabled.

### Command mode

IS-IS Router Configuration

### Command parameters

Parameter	Description
<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.



# Command: spbm <1-100> multicast

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## 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

### Default

The default is disabled.

### Command mode

IS-IS Router Configuration

### Command parameters

Parameter	Description
<1-100>	Specifies the Shortest Path Bridging MAC (SPBM) instance ID.
enable	Enables SPBM multicast globally.

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# Command: spbm <1-100> multicast fwd-cache-timeout

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## 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>

### Default

The default is 210 seconds.

### Command mode

IS-IS Router Configuration

### Command parameters

Parameter	Description
<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.

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# Command: spbm <1-100> multicast spb-pim-gw controller

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## 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`

### Default

The default is disabled.

### Command mode

IS-IS Router Configuration

### Command parameters

Parameter	Description
enable	Enables the SPB-PIM Gateway Controller.

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# Command: spbm <1-100> nick-name

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## 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

### Default

By default, no nickname exists.

### Command mode

IS-IS Router Configuration

### Command parameters

Parameter	Description
<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>).

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# Command: `spbm <1-100> smlt-peer-system-id`

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## 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`

### Default

None

### Command mode

IS-IS Router Configuration

### Command parameters

Parameter	Description
<code>&lt;1-100&gt;</code>	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.
<code>xxxx.xxxx.xxxx</code> - 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.



# Command: `spbm <1-100> smlt-virtual-bmac`

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## 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`

### Default

None

### Command mode

IS-IS Router Configuration

### Command parameters

Parameter	Description
<code>&lt;1-100&gt;</code>	Specifies the SPBM instance ID.
<code>0x00:0x00:0x00:0x00:0x00:0x00</code>	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.

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## spbm ethertype

Configure the ethertype for Shortest Path Bridging MAC (SPBM).

### Syntax

- `default spbm ethertype`
- `spbm ethertype 0x8100`
- `spbm ethertype 0x88a8`

### Default

The default is 0x8100.

### Command mode

Global Configuration

### Command parameters

Parameter	Description
0x8100	Configures the ethertype to 0x8100.
0x88a8	Configures the ethertype to 0x88a8.

## 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

### Default

None

### Command mode

GigabitEthernet Interface Configuration

### Command parameters

Parameter	Description
{slot/port[/sub-port][-slot/port[/sub-port]][,...]}	Specifies the slot and the port number.
<10 100>	Specifies the port speed. Not applicable to 1 Gigabit or 10 GigabitEthernet modules.



# Command: speed (for the management port)

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## 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>

### Default

None

### Command mode

mgmtEthernet Interface Configuration

### Command parameters

Parameter	Description
<10 100>	Configures the connection speed for ports to 10 or 100 Mb/s.

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## 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>`

### Default

The default is 100 milliseconds.

### Command mode

IS-IS Router Configuration

### Command parameters

Parameter	Description
<code>&lt;0-5000&gt;</code>	Configures the delay, in milliseconds.

## 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]][,...]}`

### Default

The default is disabled.

### Command mode

GigabitEthernet Interface Configuration

### Command parameters

Parameter	Description
<code>enable</code>	Enables spoof detection on the port.
<code>port</code> <code>{slot/port[/sub-port][-slot/port[/sub-port]][,...]}</code>	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.

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## ssh client

Configures the SSH client parameter.

### Syntax

- `default ssh client enable`
- `no ssh client enable`
- `ssh client enable`

### Default

Enabled

### Command mode

Global Configuration

### Command parameters

Parameter	Description
<code>enable</code>	Enables SSH client.



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## 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`
- `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
- 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

## Default

The default is disabled.

## Command mode

Global Configuration

## Command parameters

Parameter	Description
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, and 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.
ssh encryption-type [3des-cbc][aead-aes-128-gcm-ssh ] [aead-aes-256-gcm-ssh] [aes128-cbc] [aes128-ctr] [aes192-cbc] [aes192-ctr] [aes256-cbc] [aes256-ctr] [blowfish-cbc] [rijndael128-cbc] [rijndael192-cbc]	Specifies the encryption-type.
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.



# Command: ssh (connection)

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## ssh (connection)

Connect to a remote Secure Shell (SSH) host

### Syntax

- `ssh WORD<1-256> -l WORD<1-32> [-p <1-32768>]`

### Default

None

### Command mode

User EXEC

### Command parameters

Parameter	Description
<code>-l WORD&lt;1-32&gt;</code>	Specifies the login name of the remote Secure Shell (SSH) server.
<code>-p &lt;1-32768&gt;</code>	Specifies the remote Secure Shell (SSH) server port number to which to connect. The default is 22.
<code>WORD&lt;1-256&gt;</code>	Specifies the IP address or host name.

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# Command: ssh keyboard-interactive-auth

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## 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. If you use the ASG feature, the SSH server must use keyboard-interactive authentication. Note that not all platforms support the ASG feature. For more information, see Release Notes.

### Syntax

- `default ssh keyboard-interactive-auth`
- `no ssh keyboard-interactive-auth`
- `ssh keyboard-interactive-auth`

### Default

The default is disabled.

### Command mode

Global Configuration

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## 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`

### Default

The default is disabled.

### Command mode

Global Configuration

### Command parameters

Parameter	Description
<code>enable</code>	Enables SSH rekey on the switch.

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## ssh rekey data-limit

Configures SSH rekey data limit in GB.

### Syntax

- default ssh rekey data-limit
- ssh rekey data-limit <1-6>

### Default

1 GB

### Command mode

Global Configuration

### Command parameters

Parameter	Description
<1-6>	Specifies the SSH rekey data limit in GB.



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## ssh rekey time-interval

Sets SSH rekey time interval in hours.

### Syntax

- `default ssh rekey time-interval`
- `ssh rekey time-interval <1-6>`

### Default

1 hour

### Command mode

Global Configuration

### Command parameters

Parameter	Description
<1-6>	Specifies the SSH rekey time interval in hours.

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## ssh sftp

SSH is enabled when SFTP is disabled.

### Syntax

- `default ssh sftp`
- `no ssh sftp enable`
- `ssh sftp enable`

### Default

The default is enabled.

### Command mode

Global Configuration

### Command parameters

Parameter	Description
<code>enable</code>	Enables or disables ssh sftp. The default is enabled.

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## ssl certificate

Create and install a new self-signed SSL server certificate.

### Syntax

- `ssl certificate`
- `ssl certificate validity-period-in-days <30-3650>`

### Default

365

### Command mode

Global Configuration

### Command parameters

Parameter	Description
<code>validity-period-in-days &lt;30-3650&gt;</code>	Number of days for which the certificate remains valid.

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# Command: ssl reset

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## ssl reset

Install current SSL server certificate.

### Syntax

- `ssl reset`

### Default

None

### Command mode

Global Configuration

### Command parameters

Parameter	Description
<code>reset</code>	Install current SSL server certificate; if missing, create and install a new self-signed certificate.

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## 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]][, ...]}`

### Default

The default is enabled.

### Command mode

GigabitEthernet Interface Configuration

### Command parameters

Parameter	Description
<code>enable</code>	Enables or disables subnet-based VLAN for the port.
<code>port {slot/port[/sub-port][-slot/port[/sub-port]][, ...]}</code>	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.



# Command: synchronization

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## 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

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## 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`

### Default

None

### Command mode

Privileged EXEC

### Command parameters

Parameter	Description
<code>reset</code> <code>{console counters}</code>	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.

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# Command: sys clipId-topology-ip

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## 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>`

### Default

The default is 0.

### Command mode

Global Configuration

### Command parameters

Parameter	Description
<1-256>	Specifies the CLIP interface ID.

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## 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>`

### Default

None

### Command mode

Global Configuration

### Command parameters

Parameter	Description
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.

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## 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

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## 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

### Default

The default is disabled.

### Command mode

Global Configuration

### Command parameters

Parameter	Description
enable	Enables the sending of syslog messages on the switch.

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## 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 }
- syslog host <1-10> udp-port <514-530>
- syslog host <1-10> secure-forwarding tcp-port <1025-49151>

### Default

None

### Command mode

## Command parameters

Parameter	Description
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).

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## syslog ip-header-type

Configure the syslog message IP header type.

### Syntax

- `syslog ip-header-type circuitless-ip`
- `syslog ip-header-type default`

### Default

The default is `default`.

### Command mode

Global Configuration

### Command parameters

Parameter	Description
<code>circuitless-ip</code>	Set the ip address in syslog header to <code>circuitless-ip</code>
<code>default</code>	Set the ip address in syslog header to <code>default</code>



# Command: `syslog max-hosts <1-10>`

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## **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

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## 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>`

### Default

None

### Command mode

Global Configuration

### Command parameters

Parameter	Description
<code>install-filename &lt;file-name&gt;</code>	Specifies the name of the root certificate to be installed on the store.

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## 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>`

### Default

None

### Command mode

Global Configuration

### Command parameters

Parameter	Description
<code>action &lt;both send-trap  suppress-msg&gt;</code>	Configures the message control action. You can either suppress the message or send a trap notification, or both. The default is <code>suppress-msg</code> .
<code>control-interval &lt;1-30&gt;</code>	Configures the message control interval in minutes. The default control-interval is 5.
<code>max-msg-num &lt;2-500&gt;</code>	Configures the number of occurrences of a message after which the control action occurs. The default is 5 messages.

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## sys mtu

Enable support for jumbo frames on the switch.

### Syntax

- default sys mtu
- sys mtu <1522-9600>

### Default

The default value is 1950.

### Command mode

Global Configuration

### Command parameters

Parameter	Description
<1522-9600>	Activates Jumbo frame support for the data path. The value can be either 1522, 1950, or 9600 bytes. 1950 or 9600 bytes activate Jumbo frame support.



# Command: sys name

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## sys name

Configure system identification to specify the name of the switch.

### Syntax

- default sys name
- sys name WORD<0-255>

### Default

The default differs depending on hardware platform.

### Command mode

Global Configuration

### Command parameters

Parameter	Description
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).

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# Command: sys-name

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## sys-name

Configure the name for the system.

### Syntax

- default sys-name
- no sys-name
- sys-name WORD<0-255>

### Default

By default, the system name is the host name at the system level.

### Command mode

IS-IS Router Configuration

### Command parameters

Parameter	Description
WORD<0-255>	Specifies the system name.

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## 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>`

### Default

None

### Command mode

Global Configuration

### Command parameters

Parameter	Description
<code>&lt;1-4 1-8 SF1-SF3&gt;</code>	Identifies the slot to supply power to.

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# Command: sys power slot-priority

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## 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>`

### Default

None

### Command mode

Global Configuration

### Command parameters

Parameter	Description
<3-8>	Identifies the slot to prioritize.

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# Command: sys security-console

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## 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

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# Command: sys shutdown

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## 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

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# Command: sys software auto-commit

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## 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

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## sys software commit-time

Configure the commit feature for software upgrades to allow 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>

### Default

The default is 10 minutes.

### Command mode

Global Configuration

### Command parameters

Parameter	Description
<10-60>	Specifies the commit timer in minutes.



# Command: sys system-default

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## 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

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## 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

### Default

The default system ID is the node Backbone MAC.

### Command mode

IS-IS Router Configuration

### Command parameters

Parameter	Description
xxxx.xxxx.xxxx - 6 bytes	Specifies the system ID in 6 octets.

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# Command: sys usb disable

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## sys usb disable

Disable the USB drive.

### Syntax

- default sys usb disable
- no sys usb disable
- sys usb disable

### Default

None

### Command mode

Global Configuration

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# Command: sys usb enable

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## sys usb enable

Disable the USB drive.

### Syntax

- default sys usb enable
- no usb enable
- sys usb enable

### Default

None

### Command mode

Global Configuration

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## 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`

### Default

None. If unassigned, TACACS+ does not perform the accounting function.

### Command mode

Global Configuration

### Command parameters

Parameter	Description
<code>cli</code>	Specifies the command line as the application.
<code>disable</code>	Disables the accounting function for the specified application.
<code>enable</code>	Enables the accounting function for the specified application.

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## 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`

### Default

The default value is `cli`.

### Command mode

Global Configuration

### Command parameters

Parameter	Description
<code>all</code>	TACACS+ authenticates all applications.
<code>cli</code>	TACACS+ authenticates command line connections.
<code>web</code>	TACACS+ authenticates web connections.



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## 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`

### Default

The default is disabled.

### Command mode

Global Configuration

### Command parameters

Parameter	Description
<code>disable</code>	Disables command authorization.
<code>enable</code>	Enables command authorization.
<code>level &lt;1-6&gt;</code>	Enables command authorization for a specific privilege level.
<code>level all</code>	Enables command authorization for all privilege levels.
<code>level none</code>	Disables command authorization for all privilege levels.



# Command: tacacs protocol enable

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## 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

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## 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>`

### Default

None

### Command mode

Global Configuration

### Command parameters

Parameter	Description
{A.B.C.D}	Specifies the IP address of the primary TACACS+ server.
Key WORD<0-	Configures the secret key to share with this TACACS+ server. If the key length is zero,

128>	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.

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## 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>`

### Default

None

### Command mode

Global Configuration

### Command parameters

Parameter	Description
{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.
	Specifies if the TCP connection between the device and the TACACS+ server is a single

single-connection	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.

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## 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>

### Default

None

### Command mode

Global Configuration

### Command parameters

Parameter	Description
back	Returns the privilege level to the original level.
level <1-15>	Selects a specific privilege level. The switch supports levels 1 through 6: read-only (1), Layer 1 read-write (2), Layer 2 read-write (3), Layer 3 read-write (4), read-write (5), and read-write-all (6), and level 15.

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## 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`

### Default

The default is disabled.

### Command mode

GigabitEthernet Interface Configuration

### Command parameters

Parameter	Description
<code>enable</code>	Discards tagged frames on the port.
<code>port {slot/port[/sub-port][-slot/port[/sub-port]][,...]}</code>	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.



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## telnet

Use this command to access another platform remotely.

### Syntax

- telnet
- telnet WORD<1-256>

### Default

None

### Command mode

User EXEC

### Command parameters

Parameter	Description
WORD <1-256>	Specifies the host name, IPv4 address or IPv6 address.

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## telnet-access sessions

Configures the number of supported inbound Telnet sessions.

### Syntax

- `default telnet-access sessions`
- `telnet-access sessions <0-8>`

### Default

The default is 8.

### Command mode

Global Configuration

### Command parameters

Parameter	Description
<0-8>	Configures the allowable number of inbound Telnet sessions.

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## terminal

Configures the CLI display.

### Syntax

- terminal length <8-64>
- terminal length default
- terminal more disable
- terminal more enable

### Default

None

### Command mode

User EXEC

### Command parameters

Parameter	Description
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.



# Command: timers basic holddown (for OSPF)

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## 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>

### Default

The default is 120 seconds.

### Command mode

OSPF Router Configuration

### Command parameters

Parameter	Description
<3-60>	Configures the holddown timer value.

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# Command: timers basic holddown (for RIP)

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## 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>

### Default

The default is 120 seconds.

### Command mode

RIP Router Configuration

### Command parameters

Parameter	Description
<0-360>	Configures the holddown timer value.

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## 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>]

### Default

The default value is 180.

### Command mode

RIP Router Configuration

### Command parameters

Parameter	Description
<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.

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## 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>`

### Default

The default is 30 seconds.

### Command mode

RIP Router Configuration

### Command parameters

Parameter	Description
<code>&lt;1-360&gt;</code>	Configures the update interval.



# Command: trace cfm

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## trace cfm

cfm related tracing information.

### Syntax

- `trace cfm level <0-4>`

### Default

None

### Command mode

User EXEC

### Command parameters

Parameter	Description
<code>level &lt;0-4&gt;</code>	tracing level for cfm.

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## 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

### Default

None

### Command mode

User EXEC

### Command parameters

Parameter	Description
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.

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## 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`

### Default

None

### Command mode

User EXEC

### Command parameters

Parameter	Description
<code>&lt;0-136&gt;</code>	Specifies the module ID.
<code>clear</code>	Clears trace filter information.
<code>disable</code>	Disables the trace filter.
<code>info</code>	Shows the trace filter configuration for the module.
<code>suppress</code>	Suppresses the trace filter.

## 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 | redistrib | 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 | redistrib | 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 | redistrib | 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 | redistrib | tx-snp | rx-snp | timer | spbm-decide | global | perf | ucast-fib | node | mcast-fib | isid | ip-shortcut | debug}

### Default

None

### Command mode

User EXEC

### Command parameters

Parameter	Description
adj	Specifies the option of adjacencies.
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.

## 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>

### Default

By default, all flags are turned off.

### Command mode

User EXEC

### Command parameters

Parameter	Description
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 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.

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## trace grep

Search trace results for a specific string value, for example, the word error.

### Syntax

- trace grep
- trace grep WORD<0-128>

### Default

None

### Command mode

User EXEC

### Command parameters

Parameter	Description
WORD<0-128>	Specifies the search keyword. You can use a specific MAC address or search for errors, using the command, trace grep error.

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## trace ipv6 base

Configure trace parameters for the IPv6 base.

### Syntax

- trace ipv6 base disable {all|debug|error|icmp|info|ipclient|nbr|pkt|warn}
- trace ipv6 base enable {all|debug|error|icmp|info|ipclient|nbr|pkt|warn}

### Default

None

### Command mode

Privileged EXEC

### Command parameters

Parameter	Description
<all debug error icmp info ipclient nbr pkt warn>	Specifies the trace category.
disable	Disables the trace.
enable	Enables the trace.



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## trace ipv6 forwarding

Configure trace parameters for IPv6 forwarding.

### Syntax

- `trace ipv6 forwarding disable {all|debug|error|info|pkt|warn}`
- `trace ipv6 forwarding enable {all|debug|error|info|pkt|warn}`

### Default

None

### Command mode

Privileged EXEC

### Command parameters

Parameter	Description
<code>&lt;all debug error info pkt warn&gt;</code>	Specifies the trace category.
<code>disable</code>	Disables the trace.
<code>enable</code>	Enables the trace.

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## trace ipv6 nd

Configure trace parameters for IPv6 neighbor discovery.

### Syntax

- `trace ipv6 nd disable {all|debug|error|info|nbr|pkt|redirect|warn}`
- `trace ipv6 nd disable {all|debug|error|info|nbr|pkt|redirect|warn}`
- `trace ipv6 nd enable {all|debug|error|info|nbr|pkt|redirect|warn}`
- `trace ipv6 nd enable {all|debug|error|info|nbr|pkt|redirect|warn}`

### Default

None

### Command mode

Privileged EXEC

### Command parameters

Parameter	Description
<all debug error info nbr pkt redirect warn>	Specifies the trace category.
disable	Disables the trace.
enable	Enables the trace.

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## trace ipv6 ospf

Configure trace parameters for IPv6 OSPF.

### Syntax

- `trace ipv6 ospf disable {all|debug|error|info|nbr|pkt|redirect|warn}`
- `trace ipv6 ospf enable {all|debug|error|info|nbr|pkt|redirect|warn}`

### Default

None

### Command mode

Privileged EXEC

### Command parameters

Parameter	Description
<code>&lt;all debug error info nbr pkt redirect warn&gt;</code>	Specifies the trace category.
<code>disable</code>	Disables the trace.
<code>enable</code>	Enables the trace.

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## 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}
- trace ipv6 rtm enable {all|change-list|debug|error|fib|info|redist|update|warn}

### Default

None

### Command mode

Privileged EXEC

### Command parameters

Parameter	Description
<all changelist debug error fib info redist update warn>	Specifies the trace category.
disable	Disables the trace.
enable	Enables the trace.



# Command: trace ipv6 transport

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## trace ipv6 transport

Configure trace parameters for IPv6 transport.

### Syntax

- trace ipv6 transport disable {all|common|tcp|udp}
- trace ipv6 transport enable {all|common|tcp|udp}

### Default

None

### Command mode

Privileged EXEC

### Command parameters

Parameter	Description
<all common tcp udp>	Specifies the trace category.
disable	Disables the trace.
enable	Enables the trace.

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## trace level

Use trace to observe the status of a software module at a given time.

### Syntax

- trace level
- trace level <0-215> <0-4>
- trace level <0-227> <0-4>
- trace level <0-234> <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

### Default

None

### Command mode

User EXEC

### Command parameters

Parameter	Description
level	Starts the trace by specifying the module ID and level. <0-215> specifies the module ID.

<0-215>	<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. Range depends on hardware platform.
<0-4>	
level	Starts the trace by specifying the module ID and level. <0-227> specifies the module ID.
<0-227>	<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. Range depends on hardware platform.
<0-4>	
level	Starts the trace by specifying the module ID and level <0-219> specifies the module ID.
<0-234>	<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. Range depends on hardware platform.
<0-4>	

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## 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> <1-1444>`
- `traceroute WORD<0-256> -m <1-255>`
- `traceroute WORD<0-256> -p <0-65535>`
- `traceroute WORD<0-256> -q <1-255>`
- `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>`

### Default

None

### Command mode

Privileged EXEC

### Command parameters

Parameter	Description
<code>&lt;1-1444&gt;</code>	Specifies the size of the probe packet. The range depends on the hardware platform.
<code>-m &lt;1-255&gt;</code>	Specifies the is maximum time-to-live (TTL).
<code>-p &lt;0-65535&gt;</code>	Specifies the base UDP port number.
<code>-q &lt;1-255&gt;</code>	Specifies the number of probes per TTL.
<code>source WORD&lt;1-256&gt;</code>	Specifies the source IP address for use in traceroutes.
<code>-v</code>	Specifies verbose mode (detailed output).
<code>vrf WORD&lt;1-16&gt;</code>	Specifies the VRF instance by VRF name.
<code>-w &lt;1-255&gt;</code>	Specifies the wait time per probe.
<code>WORD&lt;0-256&gt;</code>	Specifies the hostname, or IP address.
<code>WORD&lt;0-256&gt; &lt;1-1176&gt;</code>	Specifies the wait time per probe. The range depends on the hardware platform.
<code>WORD&lt;0-256&gt; -m &lt;1-255&gt;</code>	Specifies the is maximum time-to-live (TTL).
<code>WORD&lt;0-256&gt; -p &lt;1-65535&gt;</code>	Specifies the base UDP port number.



WORD<0-256> -q <1-255>	Specifies the number of probes per TTL.
WORD<0-256> source	Source address for trace route.
WORD<1-256>	
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.

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## 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`

### Default

None

### Command mode

User EXEC

### Command parameters

Parameter	Description
<code>{ off   on }</code>	Enables or disables tracing.
<code>address {A.B.C.D}</code>	Specifies the interface address.
<code>iflist WORD&lt;1-256&gt;</code>	Specifies the interface list name.
<code>name WORD&lt;1-64&gt;</code>	Specifies the name of a route-map.
<code>protocol</code>	Specifies a routing protocol.
<code>type</code>	Specifies a route-map type.



# Command: trace save

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## trace save

Save Trace Sub-System Configuration.

### Syntax

- trace save

### Default

None

### Command mode

User EXEC

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## trace screen

Configure if the system Display trace information on screen.

### Syntax

- trace screen disable
- trace screen enable

### Default

None

### Command mode

User EXEC

### Command parameters

Parameter	Description
disable	Prevents the trace messages from appearing on screen.
enable	Shows the trace messages on screen.



# Command: trace shutdown

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## trace shutdown

Disables trace.

### Syntax

- `trace shutdown`

### Default

None

### Command mode

User EXEC

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# Command: trace spbm isis level

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## 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

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## trap

Enable OSPF traps.

### Syntax

- default trap
- default trap enable
- no trap
- no trap enable
- trap enable

### Default

The default value is disable.

### Command mode

OSPF Router Configuration

### Command parameters

Parameter	Description
enable	Enables OSPF traps.

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## traps

Enable BGP traps.

### Syntax

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

### Default

The default value is disable.

### Command mode

BGP Router Configuration

### Command parameters

Parameter	Description
enable	Enables BGP traps.



## 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`

### Default

The default is disabled.

### Command mode

GigabitEthernet Interface Configuration

### Command parameters

Parameter	Description
<code>enable</code>	Enables the TX flow control on the module.
<code>port {slot/port[/sub-port][-slot/port[/sub-port]][,...]}</code>	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.



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## 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>`

### Default

None

### Command mode

Privileged EXEC

### Command parameters

Parameter	Description
WORD<1-99>	Specifies the full path and filename that contains the uboot image. This command is not available on all hardware platforms.



# Command: udp checksum

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## 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

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## 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]][,...]}`

### Default

None

### Command mode

GigabitEthernet Interface Configuration

### Command parameters

Parameter	Description
<code>port</code> <code>{slot/port[/sub-port][-slot/port[/sub-port]][,...]}</code>	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.

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## 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`
- `no untagged-traffic port {slot/port[/sub-port] [-slot/port[/sub-port]][, ...]} bpdu enable`
- `untagged-traffic mlt <1-512> bpdu enable`
- `untagged-traffic port {slot/port[/sub-port] [-slot/port[/sub-port]][, ...]} bpdu enable`

### Default

None

### Command mode

MLT Interface Configuration

### Command parameters

Parameter	Description
<code>bpdu</code>	Set bpdu forwarding.
<code>enable</code>	Enable bpdu forwarding.
<code>mlt &lt;1-512&gt;</code>	Add mlt to Elan based service.
<code>port</code> <code>{slot/port[/sub-</code> <code>port] [-</code> <code>slot/port[/sub-</code> <code>port]][, ...]}</code>	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.

## 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 mlt <1-512> bpdu enable`
- `no untagged-traffic port {slot/port[/sub-port][-slot/port[/sub-port]][, ...]} bpdu enable`
- `untagged-traffic mlt <1-512> bpdu enable`
- `untagged-traffic port {slot/port[/sub-port][-slot/port[/sub-port]][, ...]} bpdu enable`

### Default

None

### Command mode

GigabitEthernet Interface Configuration

### Command parameters

Parameter	Description
<code>bpdu</code>	Set bpdu forwarding.
<code>enable</code>	Enable bpdu forwarding.
<code>mlt &lt;1-512&gt;</code>	Add mlt to Elan based service.
<code>port</code> <code>{slot/port[/sub-port]</code> <code>[-slot/port[/sub-port]]</code> <code>[, ...]}</code>	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.



# Command: untagged-traffic (for a VXLAN Gateway mlt)

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## 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>

### Default

None

### Command mode

VXLAN Configuration

### Command parameters

Parameter	Description
mlt <1-4094>	Specifies the MLTs that support untagged traffic.

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# Command: untagged-traffic (for a VXLAN Gateway port)

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## 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]][,...]}`

### Default

None

### Command mode

VXLAN Configuration

### Command parameters

Parameter	Description
<code>port {slot/port[/sub-port][-slot/port[/sub-port]][,...]}</code>	Specifies the ports that support untagged traffic.

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## 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]][,...]}`

### Default

The default is disabled.

### Command mode

GigabitEthernet Interface Configuration

### Command parameters

Parameter	Description
<code>enable</code>	Untags the default VLAN for the port.
<code>port {slot/port[/sub-port][-slot/port[/sub-port]][,...]}</code>	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.



# Command: usb-stop

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## usb-stop

Use this command to safely remove the USB drive from the USB port.

### Syntax

- `usb-stop`

### Default

None

### Command mode

Privileged EXEC

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## username

Change user profile.

### Syntax

- `default username WORD<1-20> level 11`
- `default username WORD<1-20> level 12`
- `default username WORD<1-20> level 13`
- `default username WORD<1-20> level ro`
- `default username WORD<1-20> level rw`
- `default username WORD<1-20> level rwa`
- `username WORD<1-20> level 11`
- `username WORD<1-20> level 12`
- `username WORD<1-20> level 13`
- `username WORD<1-20> level ro`
- `username WORD<1-20> level rw`
- `username WORD<1-20> level rwa`

### Default

None

### Command mode

Global Configuration

### Command parameters

Parameter	Description
<password>	Cleartext password (when password security is disabled)
<WORD>	Username
ro	Read-only user name reset to default.
rw	Read-write user name reset to default.
rwa	Change read write all enable password

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## 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>`

### Default

None

### Command mode

Global Configuration

### Command parameters

Parameter	Description
<code>peer-ip</code> <code>{A.B.C.D}</code>	Specifies the peer IP address—the IP address of the IST VLAN on the other aggregation switch.
<code>vlan &lt;1-4059&gt;</code>	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.

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# Command: virtual-ist (on an MLT)

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## 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`

### Default

None

### Command mode

MLT Interface Configuration

### Command parameters

Parameter	Description
enable	Enables vIST on the specified MLT ID.

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## vlacp

Configure Virtual Link Aggregation Control Protocol (VLACP) on a port to ensure there is end-to-end reachability.

### Syntax

- `default vlacp`
- `default vlacp etherstype`
- `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 etherstype <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>`

### Default

None

### Command mode

GigabitEthernet Interface Configuration

### Command parameters

Parameter	Description
<code>enable</code>	Enables VLACP for this port.
<code>etherstype &lt;0X600-0Xffff&gt;</code>	Sets the VLACP protocol identification for this port.
<code>fast-periodic-time &lt;100-20000&gt;</code>	Sets the fast periodic time (in milliseconds) for this port.
<code>funcmac-addr</code>	Sets the multicast MAC address used for the VLACPDU.
<code>&lt;0x00:0x00:0x00:0x00:0x00:0x00&gt;</code>	Specify a MAC address in the format

slow-periodic-time <10000-30000>

timeout {long|short}

timeout-scale <2-10>

0x00:0x00:0x00:0x00:0x00:0x00.

Sets the slow periodic time (in milliseconds) for a specific port type.

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.

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.





# Command: vlacp enable

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## 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

### Default

None

### Command mode

Global Configuration

### Command parameters

Parameter	Description
enable	Enables the Virtual Link Aggregation Control Protocol (VLACP) globally.

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## 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 }`

### Default

None

### Command mode

Global Configuration

### Command parameters

Parameter	Description
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 addresses 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.

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## vlan agetime

Configure the agetime for dynamic VLAN membership.

### Syntax

- default vlan agetime <2-4059>
- vlan agetime <2-4059> <0-1000000>

### Default

The default is 600 seconds.

### Command mode

Global Configuration

### Command parameters

Parameter	Description
<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. If you enable VRF scaling and SPBM mode, the system also reserves VLAN IDs 3500 to 3998.

## 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>`

### Default

None

### Command mode

Global Configuration

### Command parameters

Parameter	Description
<code>&lt;2-4059&gt;</code>	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.
<code>color &lt;0-32&gt;</code>	Specifies the color of the VLAN. Specifies the VLAN name in the range of 0-64. This parameter is optional.

<pre>name WORD&lt;0-64&gt;</pre>	<p>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.</p>
<pre>port-mstprstp &lt;0-63&gt;</pre>	<p>Specifies the VLAN type as created by port. &lt;0-63&gt; specifies the instance ID.</p>
<pre>protocol-mstprstp &lt;0-63&gt;</pre>	<p>Specifies the VLAN type as created by protocol. &lt;0-63&gt; specifies the instance ID.</p>
<pre>pvlan-mstprstp &lt;0-63&gt;</pre>	<p>Specifies the VLAN type as private for use in Etree deployments. &lt;0-63&gt; specifies the instance ID.</p>
<pre>spbm-bvlan</pre>	<p>Specifies the VLAN type as the backbone VLAN (B-VLAN) for Shortest Path Bridging MAC (SPBM).</p>
<pre>type ipsubnet- mstprstp &lt;0-63&gt; &lt;A.B.C.D/X&gt; [color &lt;0-32&gt;]</pre>	<p>Creates a VLAN by IP subnet: &lt;0-63&gt; 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 &lt;0-32&gt; is the color of the VLAN in the range of 0 to 32.</p>
<pre>type port- mstprstp &lt;0-63&gt; [color &lt;0-32&gt;]</pre>	<p>Creates a VLAN by port: 0-63 is the STP instance ID from 0 to 63. color &lt;0-32&gt; is the color of the VLAN in the range of 0 to 32.</p>
<pre>type protocol- mstprstp &lt;0-63&gt; {appleTalk   decLat   decOther   ip   ipv6   ipx802dot2   ipx802dot3   ipxEthernet2   ipxsnap   netBios   PPPoE   rarp   sna802dot2   snaEthernet2   vines   xns} [color &lt;0-32&gt;]</pre>	<p>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. 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 &lt;0-32&gt; is the color of the VLAN in the range of 0 to 32.</p>
<pre>type protocol- mstprstp &lt;0-63&gt; userDefined {0x0000   &lt;decimal value&gt;} [color ] &lt;0-32&gt;] [encap {ethernet- ii   llc   snap}]</pre>	<p>Creates a VLAN using a user defined protocol. &lt;0-63&gt; is the STP instance ID in the range of 0-63. {0x0000 &lt;decimal value&gt;} is the protocol ID in hexadecimal or decimal value. color &lt;0-32&gt; is the color of the VLAN in the range of 0 to 32. encap specifies the frame encapsulation header type.</p>
<pre>type pvlan- mstprstp &lt;0-63&gt; secondary &lt;2-4059&gt; color &lt;0-32&gt;</pre>	<p>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.</p>
<pre>type srcmac- mstprstp &lt;0-63&gt; [color&lt;0-32&gt; ]</pre>	<p>Creates a VLAN by source MAC address: 0-63 is the STP instance ID in the range of 0-63. color &lt;0-32&gt; is the color of the VLAN in the range of 0 to 32.</p>

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## vlan delete

Delete a VLAN.

### Syntax

- no vlan <2-4059>
- vlan delete <2-4059>

### Default

None

### Command mode

Global Configuration

### Command parameters

Parameter	Description
<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.

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## 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>`

### Default

The default I-SID is 0.

### Command mode

Global Configuration

### Command parameters

Parameter	Description
<code>&lt;0-16777215&gt;</code>	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.
<code>&lt;1-4059&gt;</code>	Specifies the C-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..

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## 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`

### Default

None

### Command mode

Global Configuration

### Command parameters

Parameter	Description
<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.
flush	Flushes the FDB.
sync	Synchronizes the switch forwarding database with the forwarding database of the other aggregation switch.



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## 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]][,...]`

### Default

None

### Command mode

Global Configuration

### Command parameters

Parameter	Description
<code>{slot/port[/sub-port]][-slot/port[/sub-port]][,...]</code>	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.
<code>&lt;0x00:0x00:0x00:0x00:0x00:0x00&gt;</code>	Adds a static member to a VLAN bridge:
<code>&lt;1-4059&gt;</code>	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.

## 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 }`

### Default

None

### Command mode

Global Configuration

### Command parameters

Parameter	Description
<code>{slot/port[/sub-port][-slot/port[/sub-port]][,...]}</code>	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.
<code>&lt;1-4059&gt;</code>	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.
<code>notallowed</code>	Selects the port type to not-allowed.
<code>portmember</code>	Select the port type to port member.
<code>static</code>	Selects the port type to static.

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## vlan mlt

Add an MLT to a VLAN.

### Syntax

- `vlan mlt <1-4059> <1-512>`

### Default

None

### Command mode

Global Configuration

### Command parameters

Parameter	Description
<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.
<1-512>	Specifies the MLT ID.



# Command: vlan name

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## vlan name

Change the name of a VLAN.

### Syntax

- `vlan name <2-4059> WORD<0-64>`

### Default

None

### Command mode

Global Configuration

### Command parameters

Parameter	Description
<2-4059>	Specifies the VLAN ID in the range of 2 to 4059. VLAN IDs 2 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.
<LINE>	New name for VLAN

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## 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>

### Default

None

### Command mode

Global Configuration

### Command parameters

Parameter	Description
<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.
<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.

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## 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>

### Default

None

### Command mode

Global Configuration

### Command parameters

Parameter	Description
<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<0-15>	Adds the nodal Maintenance Intermediate Point (MIP) level.

## 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`

### Default

None

### Command mode

Global Configuration

### Command parameters

Parameter	Description
<code>{slot/port[/sub-port][-slot/port[/sub-port]][,...]}</code>	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.
<code>&lt;LINE&gt;</code>	Port list
<code>disable</code>	Disable tagging on this port
<code>enable</code>	Enable tagging on this port
<code>filter-unregistered-frames {disable   enable}</code>	Enable/disable filtering of unregistered frames
<code>filter-untagged-frame {disable   enable}</code>	Enable/disable filtering of untagged frames
<code>name &lt;LINE&gt;</code>	Set VLAN port name
<code>priority &lt;0-7&gt;</code>	Set VLAN port priority
<code>pvid &lt;1-4094&gt;</code>	Change PVID
<code>tagAll</code>	Enable tagging on this port
<code>tagging {disable   enable   tagAll   tagPvidOnly   untagAll   untagPvidOnly}</code>	Enable/disable tagging
<code>tagPvidOnly</code>	Enable tagging of packets matching the
<code>untagAll</code>	Disable tagging on this port
<code>untagPvidOnly</code>	Disable tagging of packets matching the Pv







# Command: vlan rmon

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## vlan rmon

Enable RMON on this VLAN.

### Syntax

- `default vlan rmon <1-4059>`
- `no vlan rmon <1-4059>`
- `vlan rmon <1-4059>`

### Default

The default is disabled.

### Command mode

Global Configuration

### Command parameters

Parameter	Description
<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.

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## 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`

### Default

None

### Command mode

Global Configuration

### Command parameters

Parameter	Description
<code>&lt;0x00:0x00:0x00:0x00:0x00:0x00&gt;</code>	Specifies the source MAC address.
<code>&lt;2-4059&gt;</code>	Specifies the VLAN ID in the range of 2 to 4059. VLAN IDs 2 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.

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## 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[-slot/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[-slot/port][,...]}`  
`[0x00:0x00:0x00:0x00:0x00:0x00]`
- `vlan static-mcastmac <1-4059> ports {slot/port[-slot/port][,...]}`  
`[0x00:0x00:0x00:0x00:0x00:0x00]`
- `vlan static-mcastmac <1-4059>[0x00:0x00:0x00:0x00:0x00:0x00][{slot/port[-slot/port][,...]}]`  
`[mlt WORD<1-256>]`

### Default

None

### Command mode

Global Configuration

### Command parameters

Parameter	Description
<code>{slot/port[-slot/port][,...]}</code>	Identifies the slot and port in one of the following formats: a single slot and port (3/1), a range of slots and ports (3/2-3/4), or a series of slots and ports (3/2,5/3,6/2).
<code>&lt;1-256&gt;</code>	Specifies the MLT ID.
<code>&lt;1-4059&gt;</code>	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.
<code>0x00:0x00:0x00:0x00:0x00:0x00</code>	Specifies the MAC address.



# Command: vnid

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## vnid

Create a VNID instance.

### Syntax

- `no vnid <1-16777215> i-sid <1-16777215>`
- `vnid <1-16777215> i-sid <1-16777215>`

### Default

None

### Command mode

Global Configuration

### Command parameters

Parameter	Description
<code>&lt;1-16777215&gt;</code>	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 that the command prompt changes to <code>#vxlan</code> to indicate that you are now in VXLAN Configuration mode for the VNID specified in <code>vnid &lt;1-16777215&gt;</code> .
<code>i-sid &lt;1-16777215&gt;</code>	

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## 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`

### Default

None

### Command mode

Global Configuration

### Command parameters

Parameter	Description
<code>&lt;1-16777215&gt;</code>	Flush all the learned MAC addresses from the forwarding database of the selected VNID.
<code>flush</code>	

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## 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>

### Default

None

### Command mode

GigabitEthernet Interface Configuration

### Command parameters

Parameter	Description
vrf WORD<1-16>	Specifies the VRF name.

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## 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>

### Default

None

### Command mode

VLAN Interface Configuration

### Command parameters

Parameter	Description
vrf WORD<1-16>	Specifies the VRF name.

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# Command: vtep (association)

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## vtep (association)

Associate VTEPs to the specified VNID instance.

### Syntax

- no vtep <1-255>
- vtep <1-255>

### Default

None

### Command mode

VXLAN Configuration

### Command parameters

Parameter	Description
<1-255>	Lists the remote VTEP destinations to associate with the specified VNID.

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## vtep (configuration)

Configure the remote VTEP IP address. Note that 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>]`

### Default

None

### Command mode

Global Configuration

### Command parameters

Parameter	Description
<code>&lt;1-500&gt; ip &lt;A.B.C.D&gt; [name WORD&lt;1-64&gt;]</code>	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>

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## 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>]`

### Default

None

### Command mode

Global Configuration

### Command parameters

Parameter	Description
<code>&lt;A.B.C.D&gt; [vrf WORD&lt;1-16&gt;]</code>	Specifies the VXLAN tunnel end point (VTEP) source IP address, which can be on the GRT or a VRF.

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## 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 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`

## Default

The Web server is disabled, by default.

## Command mode

Global Configuration

## Command parameters

Parameter	Description
<code>def-display-rows &lt;10-100&gt;</code>	Configures the web server default display row width. The default is 30.
<code>enable</code>	Enables the web interface. You must enable the web interface before you can connect to the system using Enterprise Device Manager (EDM).
<code>help-tftp WORD&lt;0-256&gt;</code>	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:/
<code>http-port &lt;80-49151&gt;</code>	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 <code>show ip tcp connections</code> command to list the ports already in use, and then select a port that does not appear in the command output.
<code>https-port &lt;443-49151&gt;</code>	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 <code>show ip tcp connections</code> command to list the ports already in use, and then select a port that does not appear in the command output.
<code>inactivity-timeout &lt;30-65535&gt;</code>	Changes the web-server login session inactivity timeout. The default is 900 seconds (15 minutes)
<code>password {ro rw rwa} WORD&lt;1-20&gt; WORD&lt;1-32&gt;</code>	Specifies the username and the password for the access level. The access level can be read-only, read-write access, or read-write-all.
<code>password min-password-len &lt;1-32&gt;</code>	Configures the minimum password length. By default, the minimum password length is 8 characters.
<code>secure-only</code>	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: <code>no web-server secure-only</code> . The default is enabled.
<code>tls-min-ver &lt;tlsv10 tlsv11 tlsv12&gt;</code>	Configures the minimum version of the TLS protocol supported by the web-server. The default is tlsv12.



# Command: write memory

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## write memory

Save to memory.

### Syntax

- write memory

### Default

None

### Command mode

Privileged EXEC

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